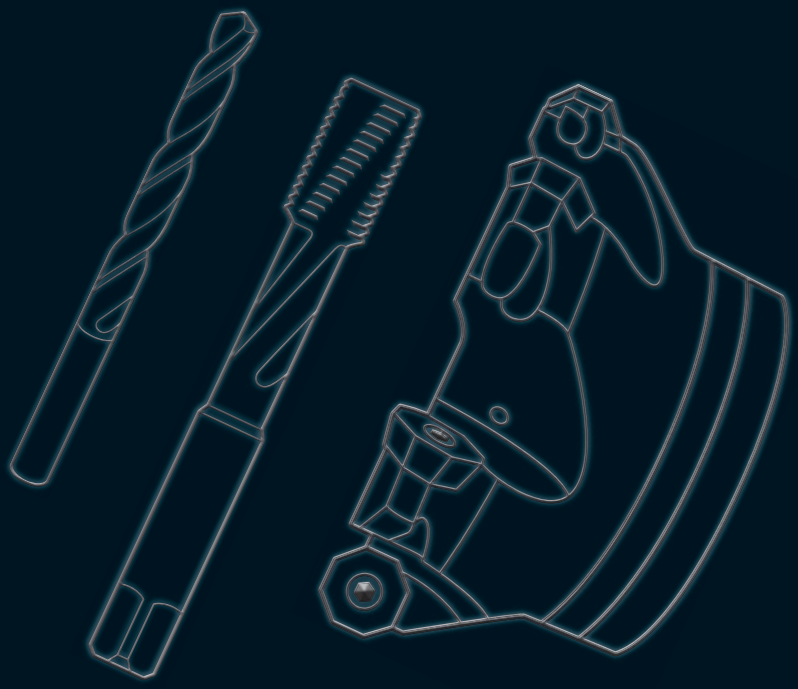


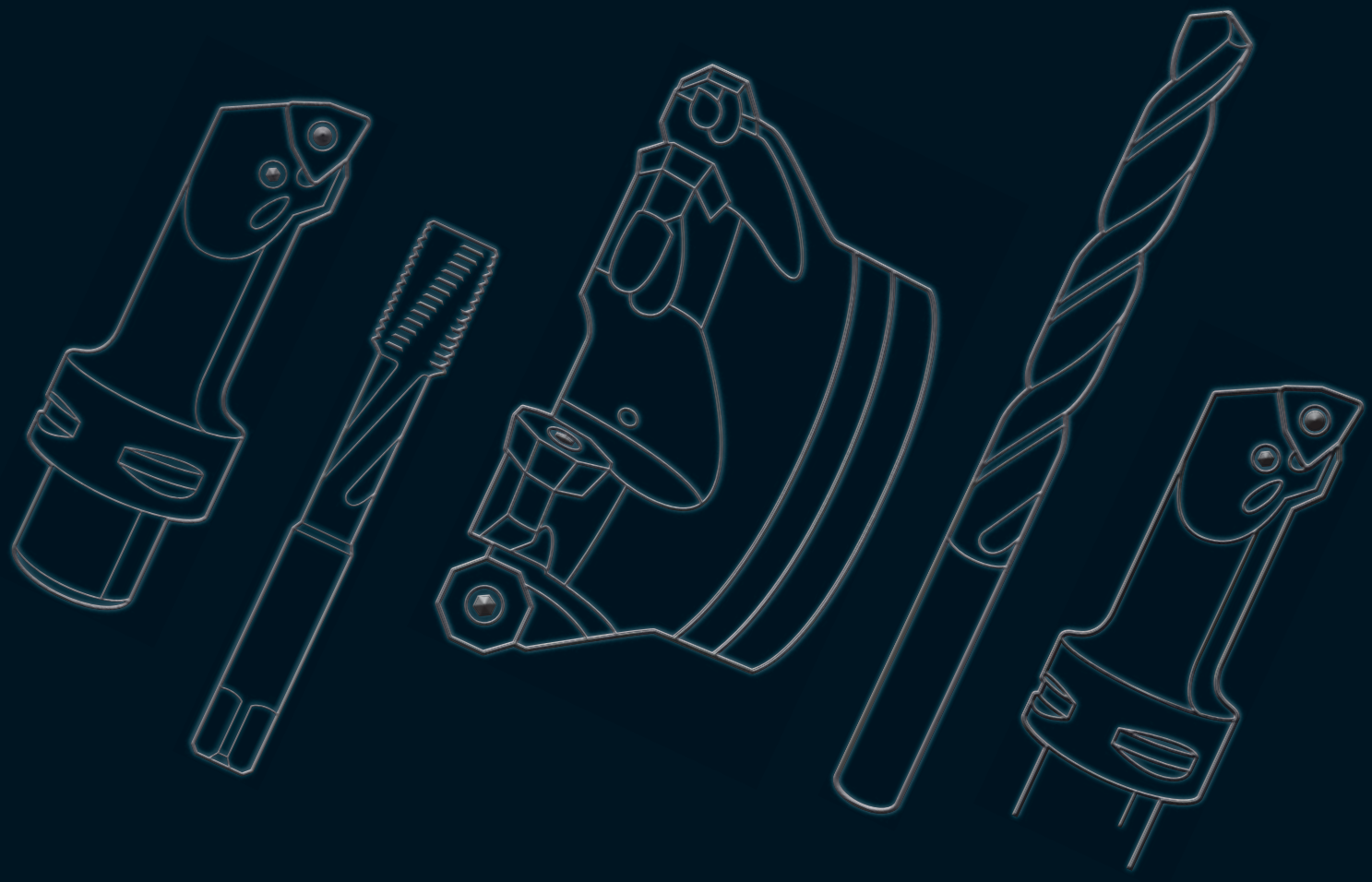
WALTER
Engineering Kompetenz

2017

Turning, Drilling, Threading,
Milling, Adaptors

_ SETTING NEW STANDARDS IN MACHINING

General Catalogue



WALTER

WALTER TITEX

WALTER PROTOTYP

ENGINEERING

ENGINEERING KOMPETENZ

ENGINEERING
KOMPETENZ

ENGINEERING KOMPETENZ

KOMPETENZ

ENGINEERING KOMPETENZ

ENGINEERING KOMPETENZ – FROM THE PRODUCT THROUGH TO THE PROCESS SOLUTION.

Perfection and precision are basic requirements for your success. We want more. Goals and solutions that are still unimaginable today will be the benchmarks of tomorrow. Whether for turning, milling, drilling or threading, if you are looking for solutions to meet the challenges of tomorrow, you will find Walter. This we can promise you through, as we call it: Engineering Kompetenz.

Walter's Engineering Kompetenz is demonstrated not only by our more than 200 patents worldwide, but also by the professionalism we show in making your tasks our own – going beyond not only focusing on the product but also by considering your machining process too.

More than 45,000 standard tools and numerous special tools as well as industry-specific solutions for the general mechanical engineering, aerospace, automotive, energy, railway and mould making sectors, and the oil and gas industry: This is what Walter stands for. Benefit from 400 years of innovation and experience along the entire process chain: From our comprehensive range of precision tools to individual consulting through to unique product services.


WALTER

_ PRODUCT

Make exceeding standards the standard.

With Walter, you can achieve exceptional results without exceptional effort. This is because, with 45,000 standard tools, Walter already offers a wide range of solutions that enable you to exceed standards, without needing to use a special tool.

Set new standards in your machining work – with innovations from us.

We achieve more than 40% of our turnover with tools that we have launched in the last five years. This means that you can always rely on having cutting-edge technology with Walter – both now and in the future – as we continuously develop and improve our tool solutions as a matter of course so that you can consistently develop your own advantages.

Walter tools perform above and beyond what is considered standard, because we pour all of our experience, knowledge and engineering expertise into every innovation.



_ PROCESS

Optimise processes with a clear perspective.

With Walter solutions, you can benefit from comprehensive experience, expertise and transparency: From production to logistics and software, through to training sessions held at your location. We analyse all of your processes, define possible improvements and support you in implementing those improvements.

This enables you to increase efficiency across all of your production processes.

For your machining processes, choose a service provider rather than a supplier. Walter Multiply offers you first-hand expert knowledge. Thanks to the Multiply effect, you can make your entire process chain even more effective, efficient and target-oriented – in every phase, long before the first chip is cut. This enables you to fully utilise all of our expertise.

The secret to all success is crystal-clear understanding. We analyse, understand and optimise your processes, and you in turn benefit not only from extraordinary products, but also from tailor-made advice and services.



_ SOLUTION

Absolute perfection, down to the smallest detail.

For us, there is no such thing as a second-best solution. Only the best is good enough for your requirements. When providing this, we do not reinvent the wheel every day. But we do when it makes sense. Talk to us about your challenges, and we will tailor our tool and application solutions to meet them perfectly.

Benefits for all sectors – in terms of time and quality.

Whether you work in the general mechanical engineering, aerospace, automotive, energy, oil and gas, railway or mould making sectors, our engineers develop new solutions for your challenges, day after day. In our Industry Solutions department, we test the use of these solutions within optimised manufacturing processes. If it is worthwhile to use special tools, we will develop a component-specific machining concept for you, which will provide measurable increases in productivity within a short time frame.

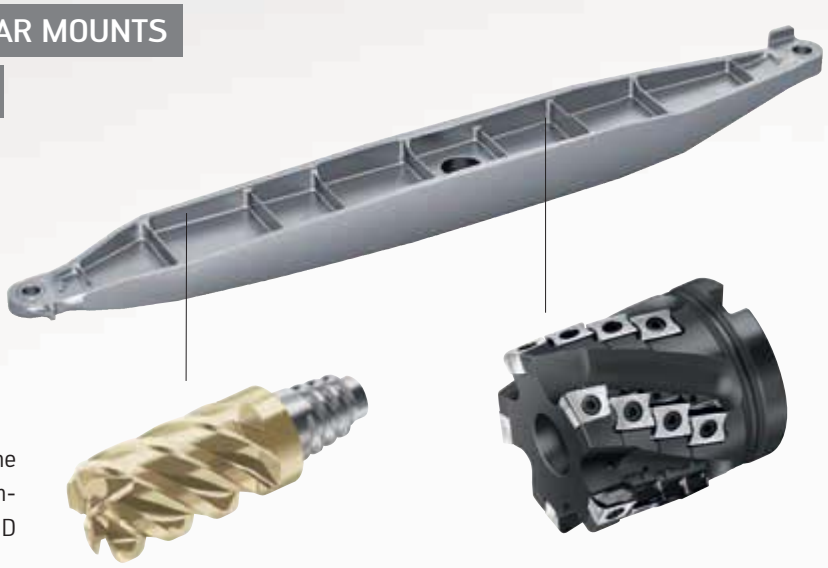
Perfection is our first priority when it comes to transforming your requirements into perfect solutions. We focus on your application and what you want to achieve with it.

Achieve ambitious goals with ease.

By 2030, the number of passenger planes will more than double, increasing to 40,000 aircraft. This presents a huge challenge for suppliers in the aerospace industry, as everything will need to be improved: Materials and components will need to be lighter, while solutions and entire processes will need to be simplified. Walter provides you with the widest range of machining tools for the aerospace industry in the world.

LANDING GEAR MOUNTS

TITANIUM ALLOYS



Wall finishing operation with the waterline process using the Ti50 high-performance milling cutter, 1.5 × D

Roughing operations (slot, corner, contour and pocket milling) on titanium alloys using the Walter BLAXX M3255 porcupine milling cutter

WING RIBS

ALUMINIUM



Rough milling and semi-finishing of pockets with high chip volumes using the Walter 2131 ramping milling cutter

HPC pocket and base finishing using the Walter Prototyp HPC Al30 close pitch cutter

Achieve powerful results.

Whether they specialise in wind turbines or gas, coal or hydroelectric power stations, manufacturers of systems and components for power generation face considerable challenges. They need to construct cost-effective systems that nevertheless produce the maximum amount of power. The precise yet cost-effective machining of components made of a wide range of materials plays a particularly important role here.

TURBINE BLADE

DIFFICULT-TO-MACHINE MATERIALS



Finishing the transition radius and platform using the Walter Prototyp conical ball-nose end mill



Roughing the blade root, turbine blade and blade head using the M2471 negative round insert milling cutter

THERMAL SHAFT

ALLOY STEEL





Machining fir-tree grooves using a semi-finishing and finishing face milling cutter with indexable inserts



Roughing and semi-finish machining of curved fir-tree grooves using the modular bell-type milling cutter

You can find more information at www.walter-tools.com

We put you in motion.

Increasing environmental awareness constantly requires new technologies for automotive development. This is in addition to rapid changes in models and demanding economic conditions, which often make increases in productivity necessary. By choosing Walter, you are choosing a proven specialist in the automotive sector.

TURBINE HOUSING WITH MANIFOLD

HEAT-RESISTANT CAST STEEL





Finish machining of the flange surface using the Walter Xpress M2029 finishing face milling cutter



Roughing and finishing operations on the V-seal using Walter interpolation turning tools

ENGINE BLOCK

GREY CAST IRON





Finish machining of the main surfaces using the Walter M2025/M2026 finishing face milling cutter



Finish machining of the cylinder main bore using a Walter MODCO® actuation tool

You can find more information at www.walter-tools.com

Grow to meet your challenges.

Growth and innovations in mechanical engineering produce a constant flow of new challenges for manufacturers of machine components. Whether for turning, milling, drilling or threading, Walter offers you intelligent solutions for the entire spectrum of machining tools. This enables you to meet any demands placed on you by increases in productivity, leaner processes and short production time frames.



RM5 turning insert
Jet guiding geometry for optimum cooling when carrying out ISO turning on stainless steels and high-temperature alloys



G2042-P parting blade
With excellent chip control for grooving operations thanks to precision cooling



MC326 Supreme solid carbide cutter
For reliable roughing and finishing with a long tool life and high cutting speeds



TC142 Supreme tap
For exceptional thread quality in stainless steel thanks to excellent chip control



M4132 shoulder milling cutter (Walter M4000 range)
Face and shoulder milling of steel, cast iron, stainless steels and materials with difficult cutting properties



B4030 precision boring head (ScrewFit)
For machining high-precision bores



DC170 Supreme solid carbide drill
For drilling steel and cast iron including interrupted cuts or inclined exits



B4213 indexable insert drill
Universal drilling and reaming tool for a wide range of applications

Multiply your success factors.

With our Walter Multiply service concept, you can benefit from the full range of our solutions expertise, from production to logistics through to software and training courses. This enables you to not only increase the efficiency of your production process, but also maintain control of each individual step in your process chain.

For maximum productivity and process reliability

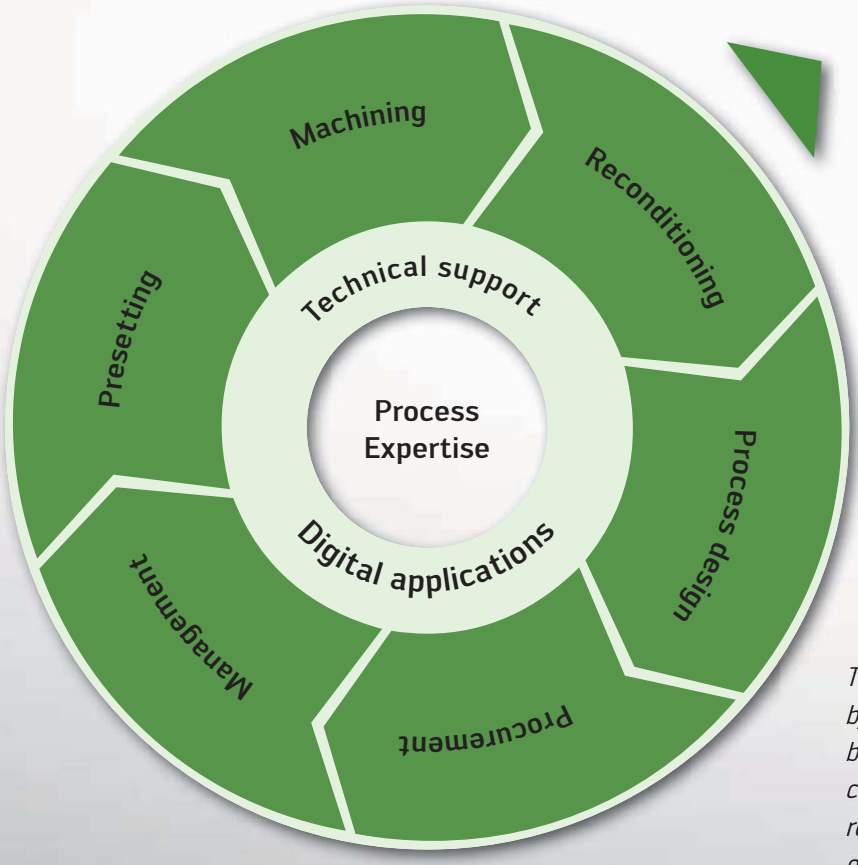
With Walter Multiply, you benefit from customised services from a single source, without any unnecessary interfaces or service components. In order to provide you with these services, we consider all aspects of your manufacturing process, from procurement and provision of tools to the use of these tools through to reconditioning.

Experienced point of contact for the entire process

With sophisticated complete solutions and a comprehensive tool range, we optimise your manufacturing processes throughout the entire life cycle of your tools, regardless of whether this involves planning new manufacturing processes, optimising existing ones, selecting the ideal workholding system, generating the most efficient NC program or choosing the best possible tools.

With Walter Multiply, you can benefit from our comprehensive Engineering Kompetenz:

- Expert and professional process management
- Always the best technologies – automatically implemented
- Guaranteed process results within the package price
- Reduced resource consumption
- Sustainable productivity advantages instead of short-term savings at the point of purchase

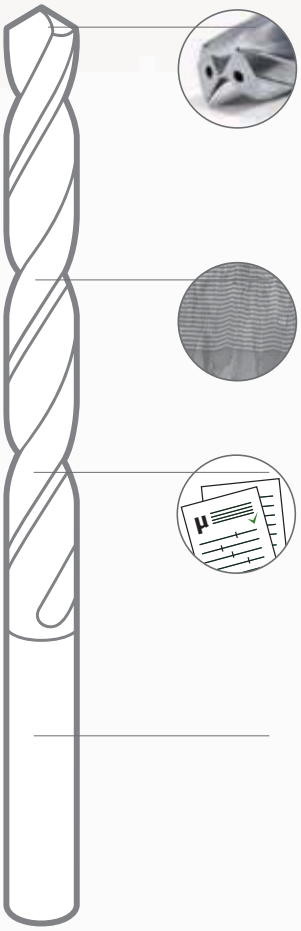


An example of Walter Multiply expertise

The modular solutions provided by Walter Multiply form a solid basis for customised solution concepts oriented towards the requests and requirements of our customers.

Reconditioning to the original manufacturer quality pays off.

The Walter Reconditioning Service makes a significant contribution towards lowering your production costs. This service provides you with Walter Titex and Walter Prototyp tools that are as good as new, to the original manufacturer quality and at an attractive price-performance ratio.



ORIGINAL GEOMETRIES
Cutting edge geometries are extremely complex. During reconditioning, Walter calls upon its extensive engineering expertise to return them to their original condition.

ORIGINAL COATING
When it comes to tool performance, the coating is key. Only Walter uses the original coating process during reconditioning.

ORIGINAL TOLERANCES
These tolerances and marks of quality are just as important when reconditioning as when Walter manufactures a completely new tool. To achieve this, we only use the most up-to-date measuring machinery.

RECONDITIONING RANGE
- Solid carbide drills and milling cutters
- Solid carbide special drills and special milling cutters
- High-performance solid carbide reaming tools
- Solid carbide thread milling cutters

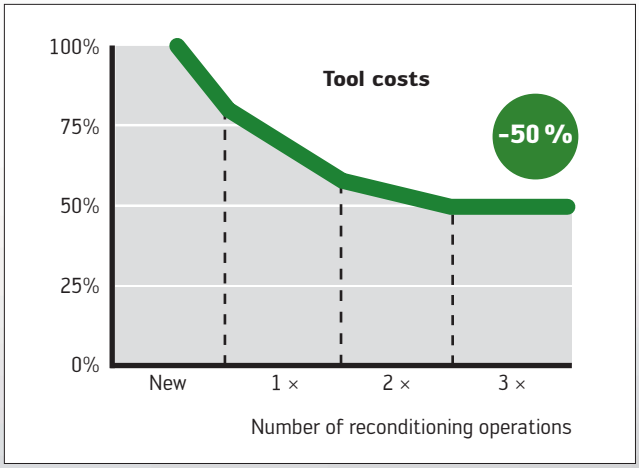
OUR MARK OF 100% QUALITY

Look out for the Original Walter Quality label. This label indicates that a tool has been reconditioned to original manufacturer quality. It even appears in the ordering documents, enabling you to see the tools for which we recommend our Reconditioning Service.

50% LOWER COSTS

Tools are often disposed of far too early, even though the Walter Reconditioning Service can restore the tool a number of times to original manufacturer quality. You can benefit from reduced costs, reliable production processes and consistent tool life by reconditioning your tools at our Reconditioning Center, which is available worldwide. It could save you up to 50% on your tool costs!

You can find more information at www.reconditioning.walter



A compendium of expertise in machining.

The new Walter General Catalogue 2017 contains the entire standard range of our competence brands Walter, Walter Titex and Walter Prototyp. It replaces all previous General and Supplementary Catalogues and is continuously expanded with product innovation brochures.



The catalogue consists of a total of four volumes, and is divided into:

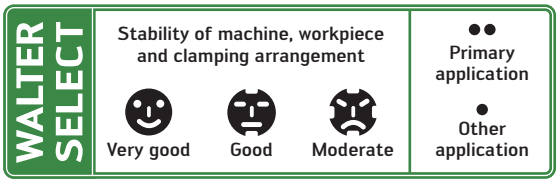
- **A – Turning catalogue**
- **B – Drilling and Threading catalogue**
- **C – Milling catalogue**
- **D – Adaptors catalogue**

The individual chapters for an application are each expanded with a technical information section, which applies directly to the previously described application.
General information regarding the application is summarised at the end of the volume.
You can find our complete range of tools in these catalogues as well as in the Product innovations issues from 2017-1 onwards.

Find what you're looking for without having to search – in the Walter General Catalogue

The volumes of the Walter General Catalogue are clearly arranged, easy to read and structured for ease of use. With our proven Walter Select search system, you can easily and quickly find the right tool for drilling and threading, milling and turning:

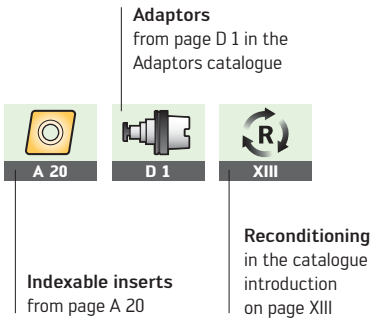
→ First select the appropriate subject area in the **Table of contents** of a section
→ Then find the appropriate tool in the **Product range overview** in the section
→ The **Walter Select** selection aid leads you to the right tool without fail



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●	●		
TiN	●●	●●	●●	●			

If you already know what you need, use the alphanumeric index.

You will find additional information for tools in bars with cross references, for instance:



Icon	Additional information for
	Assembly parts and accessories
	Assembly and setting instructions
ConeFit / ScrewFit	Open-ended spanners for ConeFit or ScrewFit tools
	Technical information
Vc	Cutting data

Icon	Additional information for
HSC	Information on high-speed applications
Ra/Rz	Achievable surface quality
	External holders for turning or grooving
	Internal holders for turning or grooving

Subject to change without notice due to technical improvements.

Walter General Catalogue

Contents

		Page
A – Turning catalogue		**A 2**
	A 1: ISO turning	**A 4**
	A 2: Grooving	**A 269**
	A 3: Thread turning	**A 421**
	A 4: General information – Turning	**A 465**
B – Drilling and Threading catalogue		B 2 and B 706
Drilling	B 1: Solid drilling	B 4
	B 2: Counterboring and precision boring	B 494
	B 3: Reaming	B 651
	B 4: General information – Drilling	B 695
Threading	B 5: Tapping	B 708
	B 6: Thread forming	B 1023
	B 7: Thread milling	B 1083
	B 8: Threading dies	B 1135
	B 9: General information – Threading	B 1143
C – Milling catalogue		C 2
	C 1: Solid carbide, PCD and HSS milling tools	C 4
	C 2: Milling tools with indexable inserts	C 274
	C 3: General information – Milling	C 667
D – Adaptors catalogue		
	D 1: Stationary adaptors	D 3
	D 2: Rotating adaptors	D 50
	D 3: General information – Adaptors	D 159

Turning tools

Walter offers a complete range of tools for turning, grooving and thread machining.
All tools are available with standard ISO square shanks and boring bars, and also with Walter Capto™ interface C3-C8 in accordance with ISO 26623 for maximum flexibility, stability and accuracy.

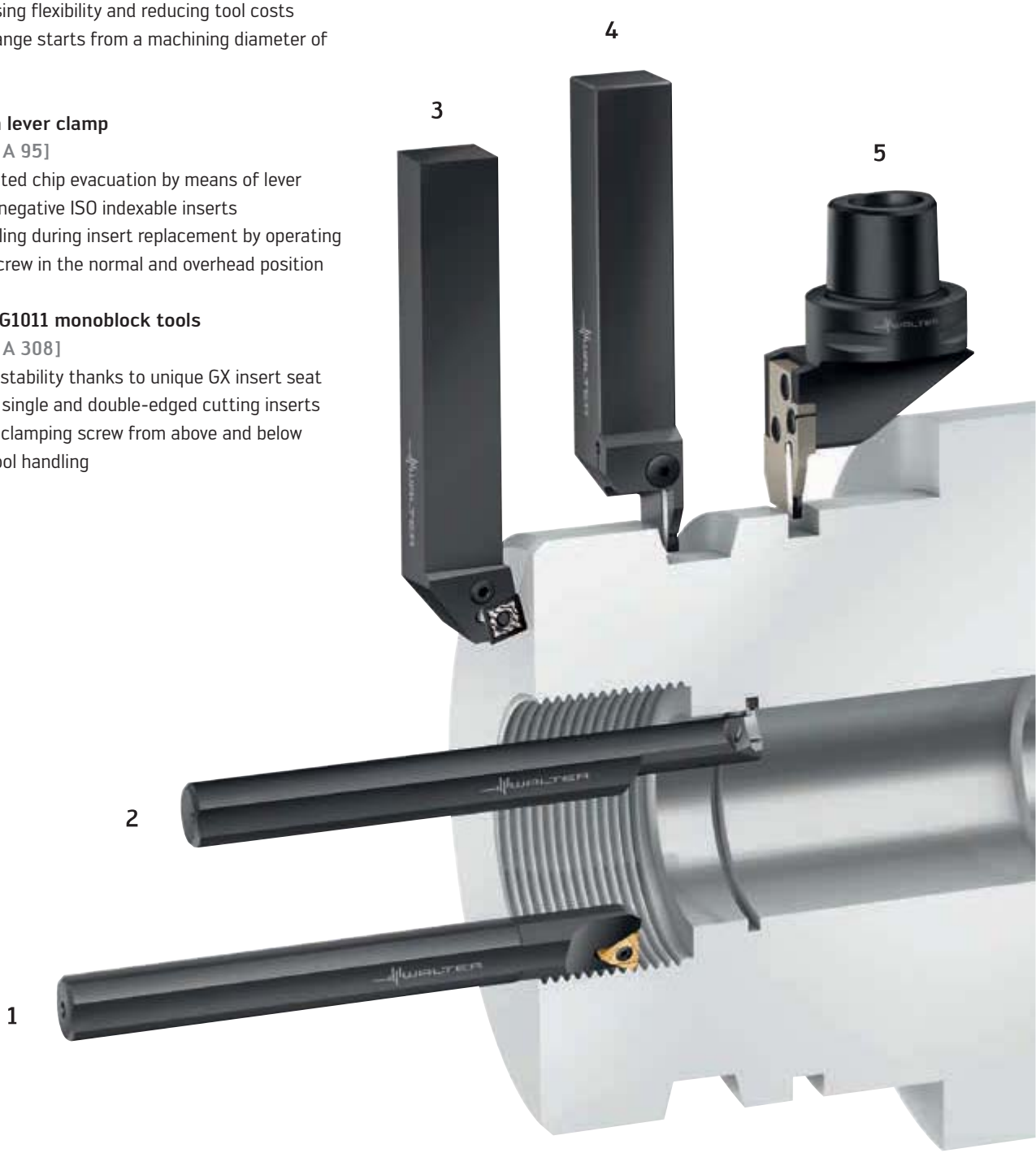
1 Walter NTS thread turning – Internal machining
[from page A 453]
- Standard ISO boring bars and Walter Capto™ boring bars
- Three-edged indexable inserts for all of the most popular threads such as ISO metric, Whitworth, American UN, etc.

2 Walter Cut – Internal machining
[from page A 325]
- Modular system for double-edged GX indexable inserts for increasing flexibility and reducing tool costs
- The tool range starts from a machining diameter of 16 mm

3 Walter Turn lever clamp
[from page A 95]
- Unobstructed chip evacuation by means of lever clamp for negative ISO indexable inserts
- Easy handling during insert replacement by operating just one screw in the normal and overhead position

4 Walter Cut G1011 monoblock tools
[from page A 308]
- Maximum stability thanks to unique GX insert seat design for single and double-edged cutting inserts
- Access to clamping screw from above and below for easy tool handling

5 Walter Cut modular system
[from page A 368]
- Maximum flexibility with more than 900 possible combinations
- Reduction in inventory costs and faster set-up times

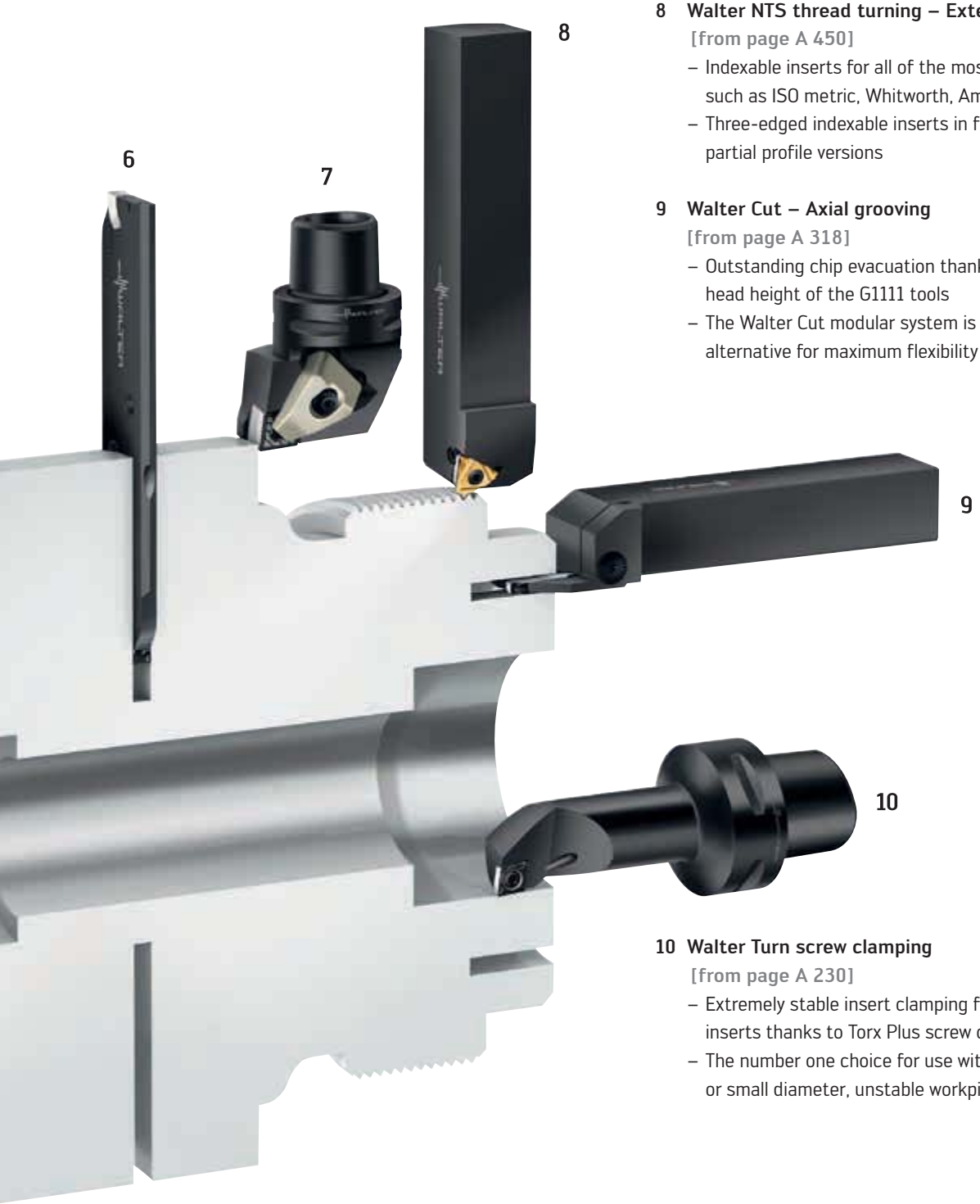


6 Walter Cut G2042 deep parting blade
[from page A 330]
- Stable self-clamping system for SX cutting inserts using integral top clamp and optimised insert seat
- Cost-effective, single-edged parting off solution for a cutting depth of up to 80 mm

7 Walter Turn rigid clamping
[from page A 93]
- Extremely stable insert clamping for negative ISO indexable inserts
- Walter precision cooling on the rake face and flank face increases tool life by 30-150%

8 Walter NTS thread turning – External machining
[from page A 450]
- Indexable inserts for all of the most popular threads such as ISO metric, Whitworth, American UN, etc.
- Three-edged indexable inserts in full profile and partial profile versions

9 Walter Cut – Axial grooving
[from page A 318]
- Outstanding chip evacuation thanks to the low tool head height of the G1111 tools
- The Walter Cut modular system is available as an alternative for maximum flexibility



10 Walter Turn screw clamping
[from page A 230]
- Extremely stable insert clamping for positive ISO indexable inserts thanks to Torx Plus screw clamping
- The number one choice for use with low cutting pressures or small diameter, unstable workpieces

		Page
Indexable inserts	Product range overview – ISO indexable inserts	A 7
	Designation key – ISO indexable inserts	A 8
	Walter Select – ISO turning	A 12
	ISO indexable inserts – Negative basic shape	A 20
	ISO indexable inserts – Positive basic shape 5°/7°/11°	A 37
	Product range overview – CBN/PCD/ceramic	A 60
	Designation key – CBN/PCD/ceramic	A 61
	ISO indexable inserts – CBN/PCD/ceramic	A 64
Walter Turn turning tools – External machining	Product description	A 78
	Product range overview	A 80
	System overview	A 89
	Designation key	A 90
	Walter Select – External machining	A 92
	Square-shank turning toolholders – Negative basic shape	A 93
	Square-shank turning toolholders – Positive basic shape	A 126
	Square-shank turning toolholders – Ceramic indexable inserts	A 145
	Walter Capto™ turning toolholders – Negative basic shape	A 148
	Walter Capto™ turning toolholders – Positive basic shape	A 168
	Walter Capto™ turning toolholders – Turning and milling centres	A 182

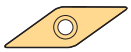
		Page
Walter Turn turning tools – Internal machining	Product description	A 189
	Product range overview	A 190
	System overview	A 195
	Designation key	A 196
	Walter Select – Internal machining	A 198
	Boring bars – Negative basic shape	A 199
	Boring bars – Positive basic shape	A 210
	Walter Capto™ boring bars – Negative basic shape	A 222
	Walter Capto™ boring bars – Positive basic shape	A 230
Technical information – ISO turning	Cutting data	A 234
	Cutting tool material application charts	A 244
	Geometry overview – Turning inserts	A 247
	Application information	A 255
Assembly parts and accessories	Walter Turn rigid clamping	A 262
	Shims for ISO clamp holders	A 265
	Coolant hose set for turning toolholders with precision cooling	A 266
	Coolant nozzles and adaptors	A 267



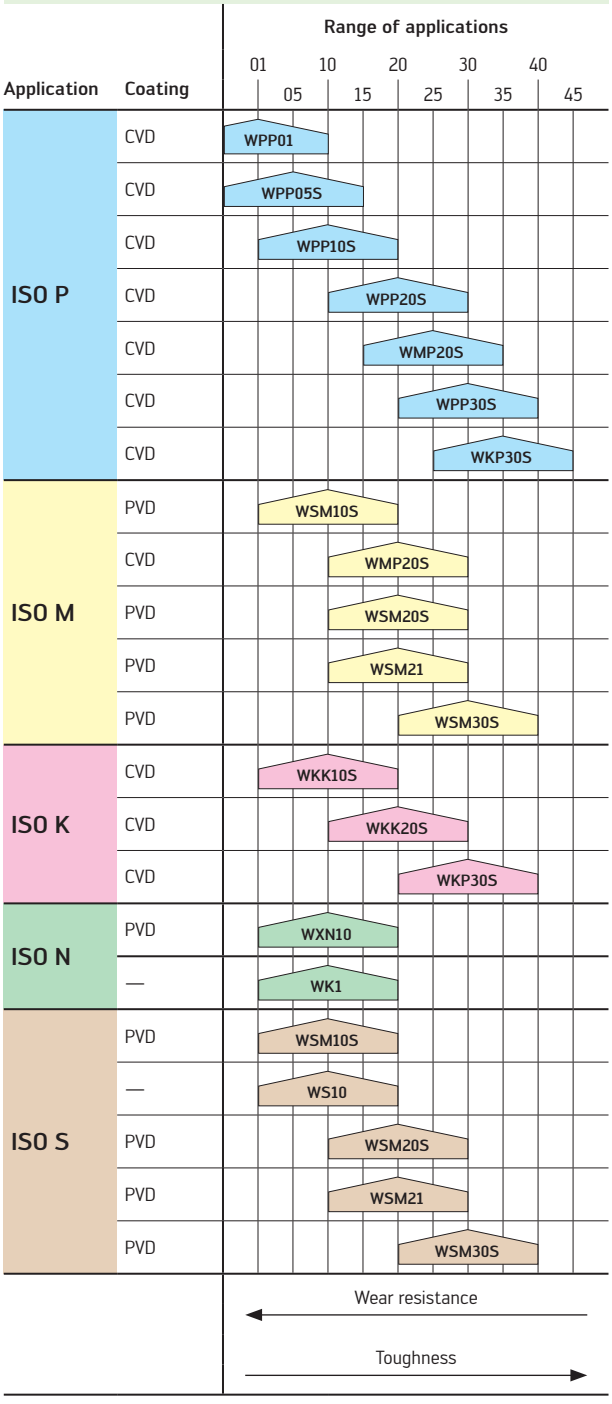
Product range overview of indexable inserts and cutting tool materials: ISO turning – Carbides



Indexable inserts

Insert shape		Description	Page
  Wiper	**C**	Negative basic shape	A 20
		Positive basic shape 7°	A 37
		Positive basic shape 11°	A 41
  Wiper	**D**	Negative basic shape	A 24
		Positive basic shape 7°	A 42
		Positive basic shape 11°	A 45
	**R**	Positive basic shape 7°	A 46
	**S**	Negative basic shape	A 27
		Positive basic shape 7°	A 48
		Positive basic shape 11°	A 50
	**T**	Negative basic shape	A 30
		Positive basic shape 7°	A 51
		Positive basic shape 11°	A 54
	**V**	Negative basic shape	A 33
		Positive basic shape 5°/7°	A 55
  Wiper	**W**	Negative basic shape	A 34
		Positive basic shape 7°	A 58

Cutting tool materials: Carbide

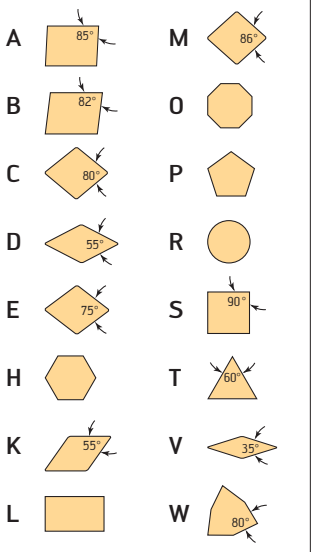


Designation key in accordance with ISO 1832 for indexable inserts for turning

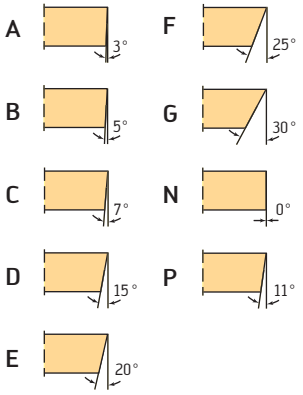
Example 1:

C	N	M	G	12	04	08	–	M	P	5
1	2	3	4	5	6	7		12	13	14

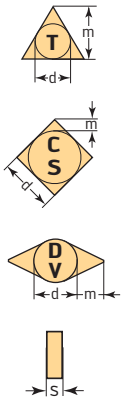
1 Insert shape



2 Clearance angle



3 Tolerances



Permissible deviation in mm for

	d	m	s
A	± 0,025	± 0,005	± 0,025
C	± 0,025	± 0,013	± 0,025
E	± 0,025	± 0,025	± 0,025
F	± 0,013	± 0,005	± 0,025
G	± 0,025	± 0,025	± 0,130
H	± 0,013	± 0,013	± 0,025
J[1]	± 0,05–0,15[2]	± 0,005	± 0,025
K[1]	± 0,05–0,15[2]	± 0,013	± 0,025
L[1]	± 0,05–0,15[2]	± 0,025	± 0,025
M	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,130
N	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,025
U	± 0,08–0,25[2]	± 0,13–0,38[2]	± 0,130

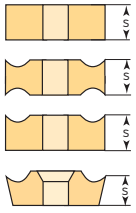
[1] Inserts with ground planar cutting edges
[2] Depending on the insert size (see ISO standard 1832)

5 Cutting edge length l [mm]

Inner circle diameter d		C		D		R	S		T		V		W	
mm	Inches	Size	l	Size	l	Size	Size	l	Size	l	Size	l	Size	l
3,97	5/32								**06**	6,9				
5	0,197					**05**							**03**	3,8
5,56	7/32								**09**	9				
6	0,236					**06**								
6,35	2/8	**06**	6,4	**07**	7,7	**06**[1]			**11**	11	**11**	11	**04**	4,3
8	0,315					**08**							**05**	5,2
9,525	3/8	**09**	9,6	**11**	11,6	**09**[1]	**09**	9,5	**16**	16,5	**16**	16,5	**06**	6,5
10	0,394					**10**								
12	0,472					**12**								
12,7	4/8	**12**	12,9	**15**	15,5	**12**[1]	**12**	12,7	**22**	22	**22**	22,1	**08**	8,7
15,875	5/8	**16**	16,1				**15**	15,8	**27**	27			**10**	10,8
16	0,63					**16**								
17,46	11/16												**12**	11,6
19,05	6/8	**19**	19,3			**19**[1]	**19**	19,0						
20	0,787					**20**								
25	0,984					**25**								
25,4	8/8	**25**	25,8			**25**[1]	**25**	25,4						
32	1,26					**32**								

[1] Inch version (00)

6 Insert thickness s [mm]



01	s = 1,59
T1	s = 1,98
02	s = 2,38
T2	s = 2,78
03	s = 3,18
T3	s = 3,97
04	s = 4,76
05	s = 5,56
06	s = 6,35
07	s = 7,94
09	s = 9,52

Example 2:

T	N	M	A	16	04	08	T	020	20
1	2	3	4	5	6	7	8	10	11

4 – Machining and fastening features

A	H β = 70–90°	R	X Drawing or precise description of the indexable insert is required
B β = 70–90°	J β = 70–90°	T β = 40–60°	
C β = 70–90°	M	U β = 40–60°	
F	N	W β = 40–60°	
G	Q β = 40–60°		

7 – Corner radius (r) [mm]

01	r = 0,1
02	r = 0,2
04	r = 0,4
08	r = 0,8
12	r = 1,2
16	r = 1,6
24	r = 2,4
R	

M0 Metric version (diameter in [mm])

00 Inch version (diameter with inch units in [mm])

8 – Edge formation

F

E

T

S

9 – Cutting direction

R

L

N

10 – Chamfer width

010 = 0,10 mm

020 = 0,20 mm

025 = 0,25 mm

070 = 0,70 mm

150 = 1,50 mm

200 = 2,00 mm

11 – Chamfer angle

15 = 15°

20 = 20°

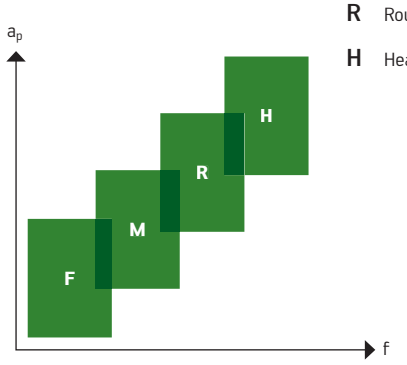
Geometry designation key for indexable inserts for turning

Geometry index

C	N	M	G	12	04	08	–	M	P	5
1	2	3	4	5	6	7		12	13	14

New geometry index (valid from 09/2011)

12 – Chip breaking area



- F Finishing operation
- M Medium machining
- R Roughing operation
- H Heavy cutting

13 – Material

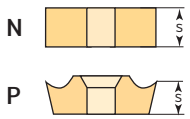
- P Steel
- M Stainless steel
- K Cast iron
- N NF metals
- S Materials with difficult cutting properties
- H Hard materials
- U Universal
- W Wiper

14 – Feed/depth of cut within the chip breaking area

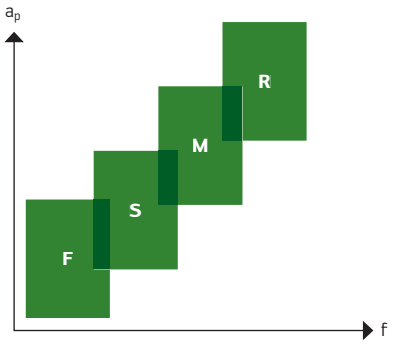
High
9
8
7
6
5
4
3
2
1
Low

Old geometry index

12 – Basic shape



13 – Chip breaking area



- F Finishing operation
- S Semi-finishing
- M Medium machining
- R Roughing operation

14 – Cutting edge type



- 1 Fine
- 4 Average
- 9 Robust
- S ISO S high-temperature alloy materials
- T ISO S titanium materials

Designation key for carbide cutting tool materials – Turning

Example:

W	M	P	20	S
Walter	1	2	3	4

1

1. Primary application or coating type

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials
A	CVD aluminium oxide coating
X	PVD coating

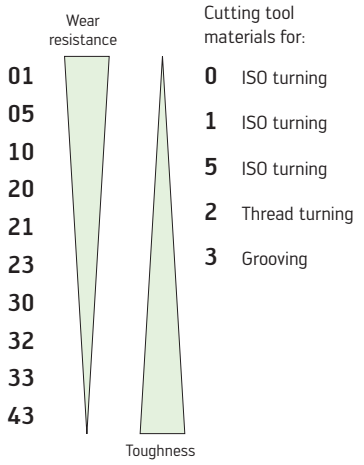
2

2. Primary application

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials

3

ISO range of applications



01		0	ISO turning
05		1	ISO turning
10		5	ISO turning
20		2	Thread turning
21		3	Grooving
23			
30			
32			
33			
43			

Cutting tool materials for:

4

Generation

S	Tiger·tec® Silver

Walter Select for indexable inserts for turning

Step by step to the right indexable insert

STEP 1

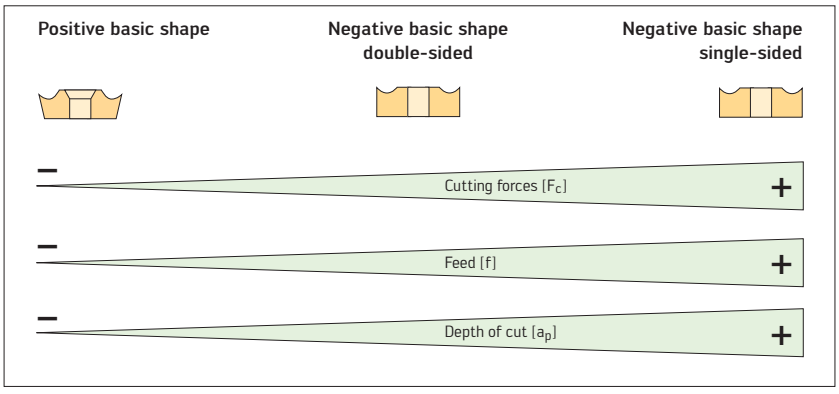
Determine the **material** to be machined from page A 468 onwards.

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Determine the **basic shape** of the indexable insert:



STEP 3

Select the **machining conditions:**

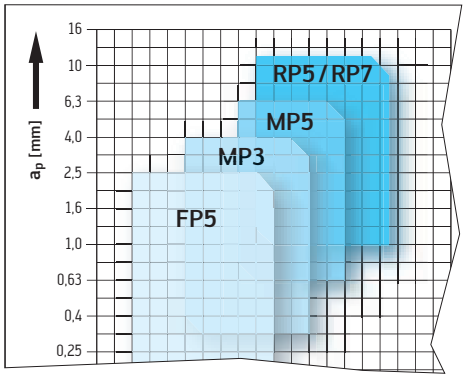
Type of cutting action	Machine stability, clamping system and workpiece		
	very good	good	moderate
Smooth cut, premachined surface	☺	☺	😐
Cast or forged skin, variable depths of cut	☺	😐	☹
Interrupted cuts	😐	☹	☹

STEP 4

Determine the **indexable insert geometry** via the depth of cut (a_p) and the feed (f).

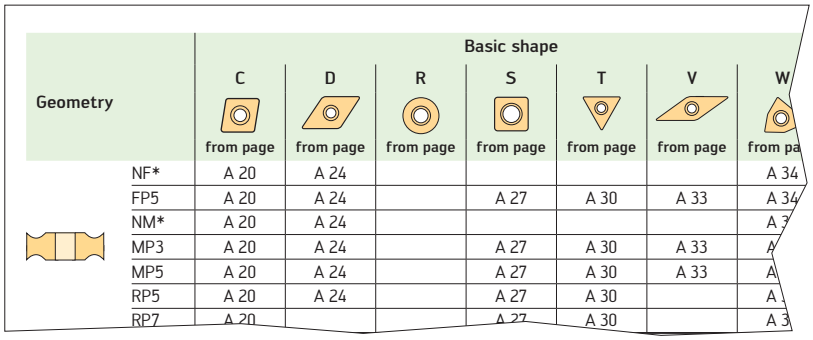
Geometries for

P	Steel	See page A 14
M	Stainless steel	See page A 15
K	Cast iron	See page A 16
N	NF metals	See page A 17
S	High-temperature alloys	See page A 18
H	Hard materials	See page A 19



STEP 5

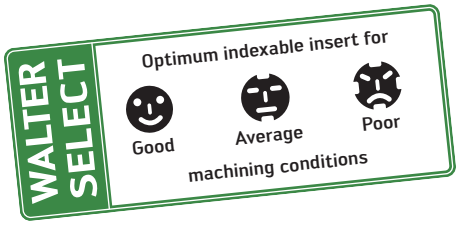
Overview of catalogue page on which you will find the selected **geometry** in the relevant **basic shape**.

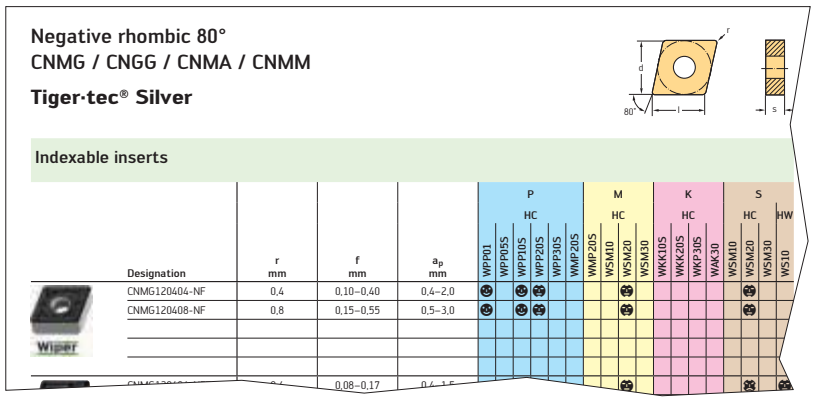


Geometry		Basic shape C from page	D from page	R from page	S from page	T from page	V from page	W from page
	NF*	A 20	A 24					A 34
	FP5	A 20	A 24		A 27	A 30	A 33	A 34
	NM*	A 20	A 24					A 3
	MP3	A 20	A 24		A 27	A 30	A 33	A
	MP5	A 20	A 24		A 27	A 30	A 33	A
	RP5	A 20	A 24		A 27	A 30		A
	RP7	A 20			A 27	A 30		A 3

STEP 6

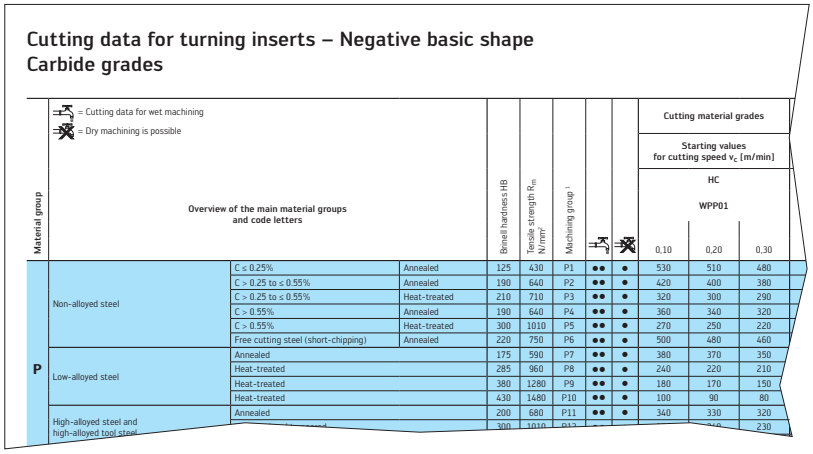
You will find the cutting tool material recommendation, the feed value (f) and the depth of cut (a_p) on the specified catalogue page.





STEP 7

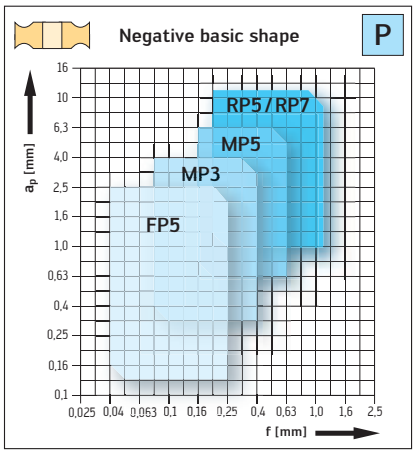
Select the **cutting data** in the technical information from page A 234 onwards for your selected indexable insert.

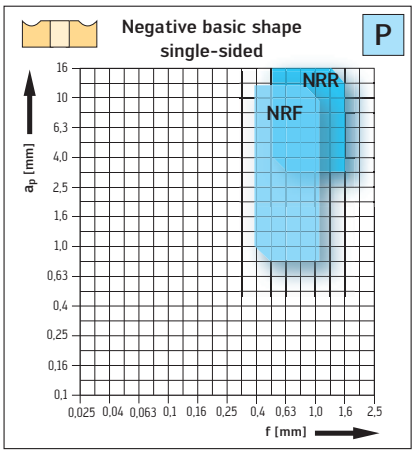


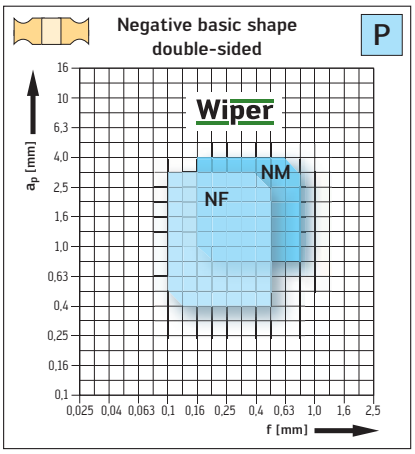
Walter Select – ISO P steel machining

STEP 4

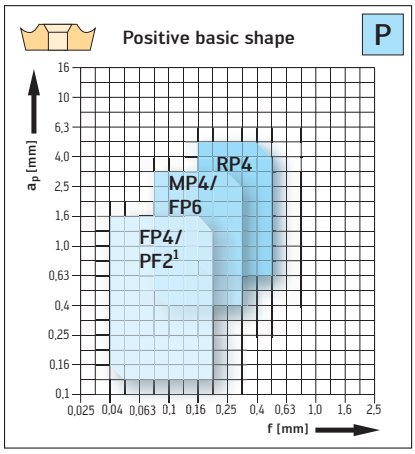
Determine the **indexable insert geometry** via the depth of cut (a_p) and the feed (f).

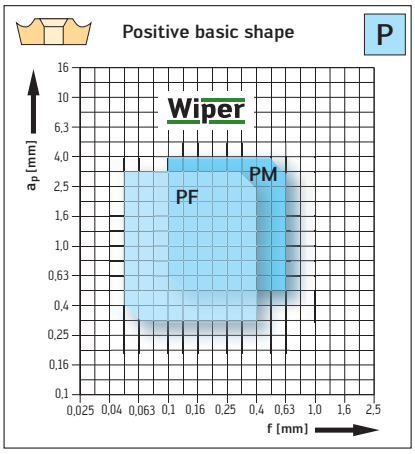






RP5: For universal machining
RP7: For interrupted cuts, cast skin/forged skin





MP4: For universal machining, copy turning
FP6: For semi-finishing operations
[1] Circumference fully ground

Wiper

For more technical information, see page A 255 onwards.

STEP 5

Overview of catalogue page on which you will find the selected **geometry** in the relevant **basic shape**.

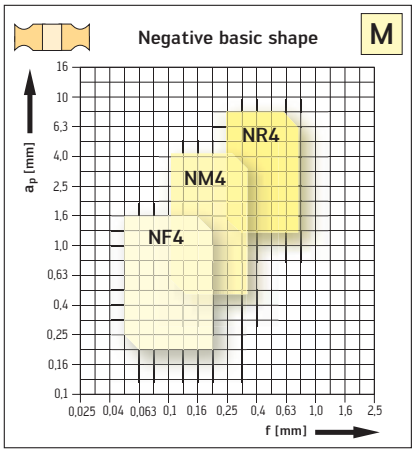
Geometry		Basic shape C from page	D from page	R from page	S from page	T from page	V from page	W from page
	NF*	A 20	A 24					A 34
	FP5	A 20	A 24		A 27	A 30	A 33	A 34
	NM*	A 20	A 24					A 34
	MP3	A 20	A 24		A 27	A 30	A 33	A 34
	MP5	A 20	A 24		A 27	A 30	A 33	A 34
	RP5	A 20	A 24		A 27	A 30		A 34
	RP7	A 20			A 27	A 30		A 34
	NRF	A 20	A 24		A 27	A 30		A 34
	NRR	A 20			A 27	A 30		
	PF*	A 37	A 42					A 58
	PF2	A 37	A 42		A 48	A 51	A 55	A 58
	FP4	A 37	A 42	A 46	A 48	A 51	A 55	A 58
	FP6	A 37	A 42		A 48	A 51	A 55	A 58
	PM*	A 37	A 42					
	MP4	A 37	A 42		A 48	A 51	A 55	A 58
	RP4	A 37	A 42	A 46	A 48	A 51	A 55	A 58
	HU6			A 46				

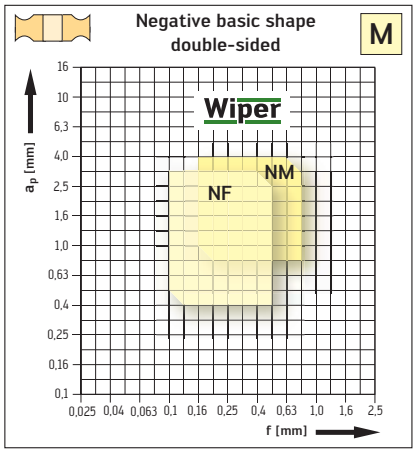
* Wiper

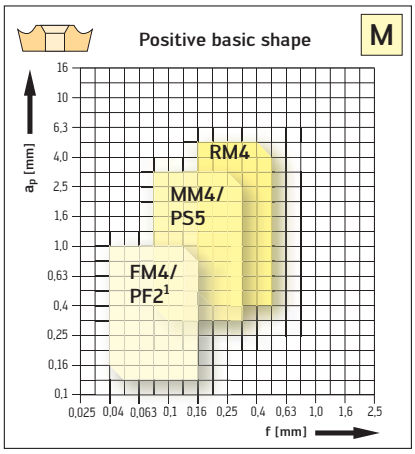
Walter Select – ISO M stainless steel

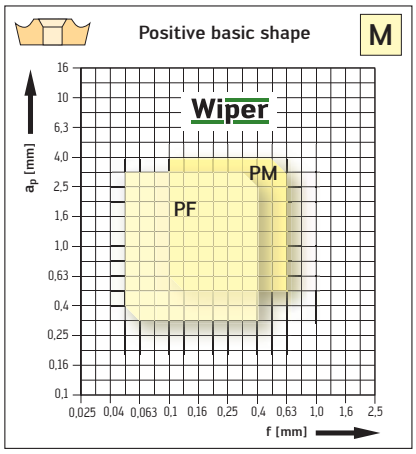
STEP 4

Determine the **indexable insert geometry** via the depth of cut (a_p) and the feed (f).









MM4: For universal machining, copy turning
PS5: For semi-finishing operations
[1] Circumference fully ground

Wiper

For more technical information, see page A 255 onwards.

STEP 5

Overview of catalogue page on which you will find the selected **geometry** in the relevant **basic shape**.

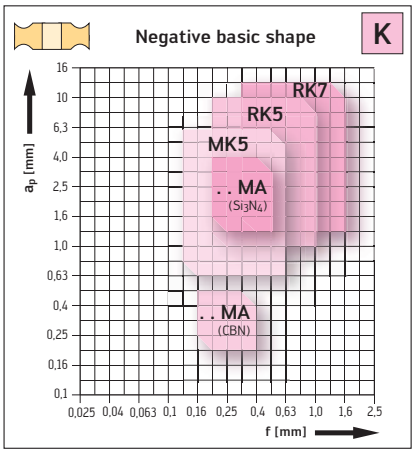
Geometry		Basic shape C from page	D from page	R from page	S from page	T from page	V from page	W from page
	NF*	A 20	A 24					A 34
	NF4	A 20	A 24		A 27	A 30		A 34
	NM*	A 20						A 34
	NM4	A 20	A 24		A 27	A 30	A 33	A 34
	NR4	A 20	A 24		A 27	A 30		A 34
	PF*	A 37	A 42					A 58
	PF2	A 37	A 42		A 48	A 51	A 55	A 58
	FM4	A 37	A 42	A 46	A 48	A 51	A 55	A 58
	PF5	A 37		A 46			A 55	
	PS5	A 37	A 42		A 48	A 51	A 55	
	PM*	A 37	A 42					
	MM4	A 37	A 42		A 48	A 51	A 55	A 58
	RM4	A 37	A 42	A 46	A 48	A 51	A 55	A 58

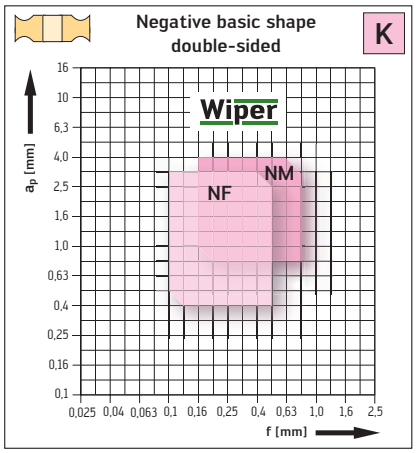
* Wiper

Walter Select – ISO K cast iron machining

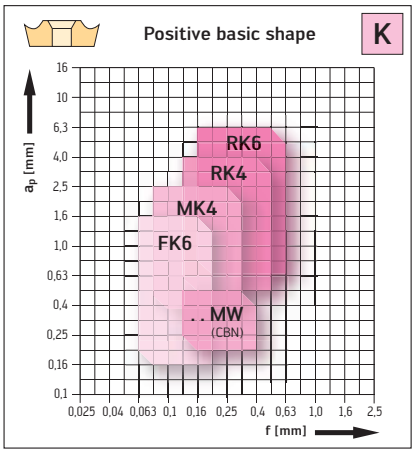
STEP 4

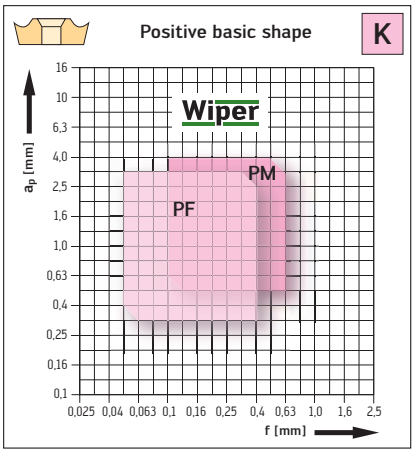
Determine the **indexable insert geometry** via the depth of cut (a_p) and the feed (f).





RK5: For universal machining
RK7: For interrupted cuts, extreme cast skin





Wiper

For more technical information, see page A 255 onwards.

STEP 5

Overview of catalogue page on which you will find the selected **geometry** in the relevant **basic shape**.

Geometry		Basic shape C from page	D from page	R from page	S from page	T from page	V from page	W from page
	NF*	A 20	A 24					A 34
	NM*	A 20	A 24					A 34
	MK5	A 20	A 24		A 27	A 30	A 33	A 34
	RK5	A 20	A 24		A 27	A 30	A 33	A 34
	RK7	A 20	A 24		A 27	A 30		A 34
	. . MA (CBN)	A 64	A 64		A 65			
	. . MA (Si_3N_4)	A 73	A 73		A 74			
	PF*	A 37	A 42					A 58
	FK6	A 37	A 42		A 48	A 51	A 55	A 58
	PM*	A 37	A 42					
	MK4	A 37	A 42		A 48	A 51	A 55	A 58
	RK4	A 37	A 42	A 46	A 48	A 51	A 55	A 58
	RK6	A 37	A 42		A 48	A 51	A 55	
	HU6			A 46				
	. . MW (CBN)	A 66	A 67			A 67	A 68	A 68

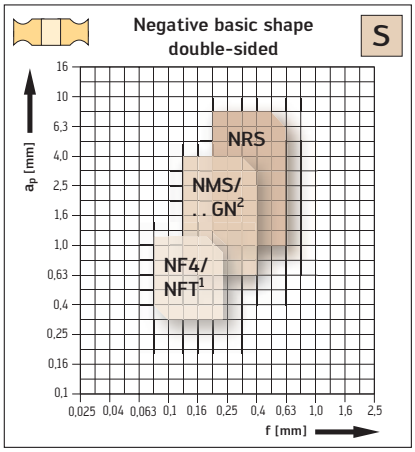
* Wiper

Walter Select – ISO S high-temperature and titanium alloys

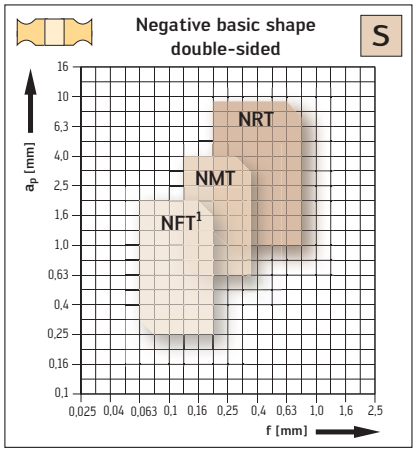
STEP 4

Determine the **indexable insert geometry** via the depth of cut (a_p) and the feed (f).

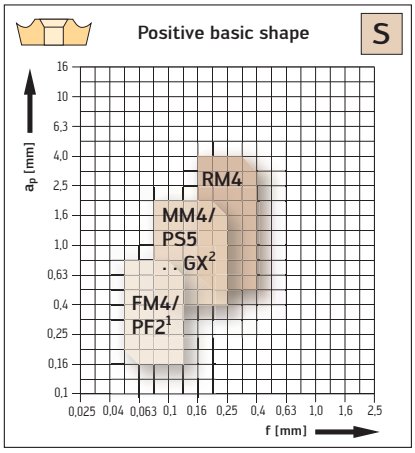
Ni, Co and Fe-based alloys



Titanium-based alloys



Ni, Co, Fe and titanium-based alloys



MM4: For universal machining, copy turning
PS5: For semi-finishing operations

[1] Circumference fully ground
[2] Ceramic

STEP 5

Overview of catalogue page on which you will find the selected **geometry** in the relevant **basic shape**.

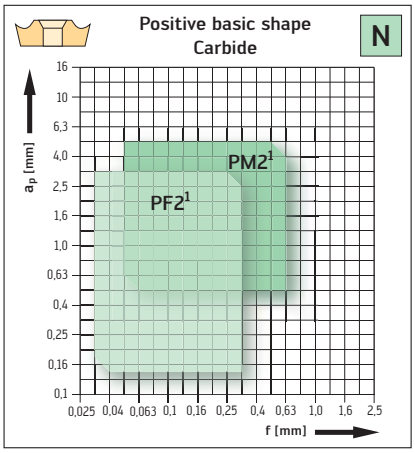
Geometry		Basic shape						
		C	D	R	S	T	V	W
		from page	from page	from page	from page	from page	from page	from page
	NFT	A 20	A 24				A 33	
	NF4	A 20	A 24		A 27	A 30		A 34
	NMT	A 20	A 24			A 30		A 34
	NMS	A 20	A 24			A 30	A 33	A 34
	NRT	A 20			A 27			
	NRS	A 20	A 24		A 27	A 30		A 34
	. . GN[2]	A 73	A 73	A 74	A 74			
	PF2	A 37	A 42		A 48	A 51	A 55	A 58
	FM4	A 37	A 42	A 46	A 48	A 51	A 55	A 58
	PF5	A 37		A 46			A 55	
	PS5	A 37	A 42		A 48	A 51	A 55	
	MM4	A 37	A 42		A 48	A 51	A 55	A 58
	RM4	A 37	A 42	A 46	A 48	A 51	A 55	A 58
	. . GX[2]			A 74				

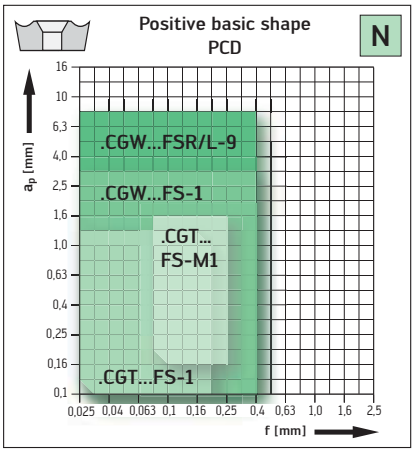
[2] Ceramic

Walter Select – ISO N NF metals

STEP 4

Determine the **indexable insert geometry** via the depth of cut (a_p) and the feed (f).





[1] Circumference fully ground

STEP 5

Overview of catalogue page on which you will find the selected **geometry** in the relevant **basic shape**.

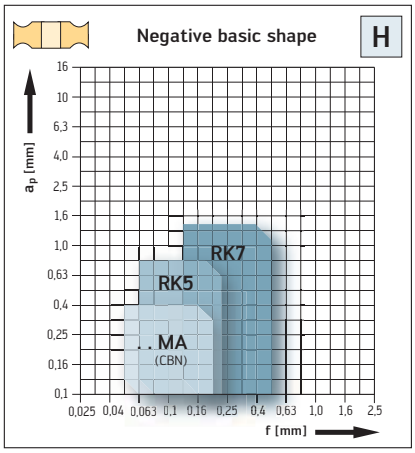
Geometry		Basic shape						
		C	D	R	S	T	V	W
		from page	from page	from page	from page	from page	from page	from page
	PF2	A 37	A 42		A 48	A 51	A 55	A 58
	PM2	A 37	A 42	A 46	A 48	A 51	A 55	A 58
	. CGT . . . FS-M1[1]	A 69	A 70					
	. CGT . . . FS-1[1]	A 69	A 70				A 72	
	. CGW . . . FS-1[1]	A 69	A 70			A 71	A 72	
	. CGW . . . FSR/L-9[1]	A 69			A 71	A 71		

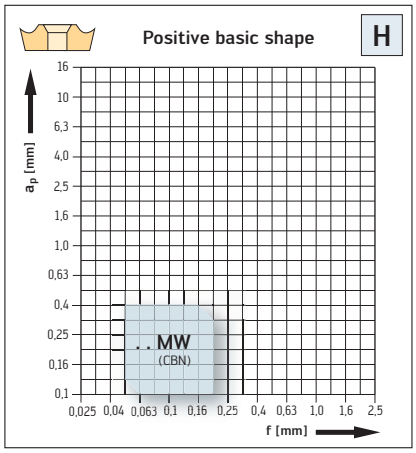
[1] PCD

Walter Select – ISO H hard machining

STEP 4

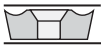
Determine the **indexable insert geometry** via the depth of cut (a_p) and the feed (f).





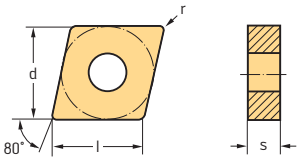
STEP 5

Overview of catalogue page on which you will find the selected **geometry** in the relevant **basic shape**.

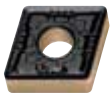
Geometry		Basic shape C from page	D from page	R from page	S from page	T from page	V from page	W from page
	RK5[1]	A 20	A 24		A 27	A 30	A 33	A 34
	RK7[1]	A 20	A 24		A 27	A 30	A 33	A 34
	. . MA[2]	A 64	A 64		A 65	A 65		
	. . MW[2]	A 66	A 67			A 67	A 68	

[1] Use grade WKK10S
[2] CBN

Negative rhombic 80°
CNMG / CNGG / CNMA / CNMM
Tiger·tec® Silver



Indexable inserts

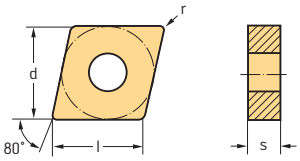
	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	K HC WAK30	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	CNMG120404-NF	0,4	0,10–0,40	0,4–2,0	●		●	●					●						●		
	CNMG120408-NF	0,8	0,15–0,55	0,5–3,0	●		●	●					●						●		
	CNMG120404-NFT	0,4	0,08–0,17	0,4–1,5									●						✖		●
	CNMG120408-NFT	0,8	0,10–0,20	0,5–2,0									●						✖		●
	CNGG120404-NFT	0,4	0,06–0,15	0,3–1,5																	●
	CNGG120408-NFT	0,8	0,08–0,18	0,4–2,0																	●
	CNMG120404-NF4	0,4	0,05–0,12	0,2–1,0						●	●	●	●						●	●	
	CNMG120408-NF4	0,8	0,07–0,16	0,4–1,5						●	●	●	●						●	●	
	CNMG120412-NF4	1,2	0,10–0,20	0,5–1,6								●	●						●	●	
	CNMG090304-FP5	0,4	0,04–0,20	0,1–1,5			●	●													
	CNMG090308-FP5	0,8	0,08–0,25	0,2–2,0			●	●													
	CNMG120404-FP5	0,4	0,04–0,20	0,1–1,5			●	●													
	CNMG120408-FP5	0,8	0,08–0,25	0,2–2,0			●	●													
	CNMG120412-FP5	1,2	0,10–0,25	0,5–2,5			●	●													
	CNMG120408-NM	0,8	0,20–0,55	0,8–3,0			●	●					●		●	●			●		
	CNMG120412-NM	1,2	0,25–0,70	1,5–4,0			●	●					●		●	●			●		
	CNMG120408-NMT	0,8	0,12–0,30	0,8–4,0									●						●		●
	CNMG120412-NMT	1,2	0,15–0,32	1,0–4,0									●						●		●
	CNMG120404-NMS	0,4	0,10–0,24	0,6–2,5								●	●	✖					●	●	✖	
	CNMG120408-NMS	0,8	0,13–0,32	0,8–3,5								●	●	✖					●	●	✖	
	CNMG120412-NMS	1,2	0,16–0,36	1,0–3,5								●	●	✖					●	●	✖	
	CNMG090304-MP3	0,4	0,06–0,20	0,3–2,2			●	●													
	CNMG090308-MP3	0,8	0,10–0,28	0,6–3,0			●	●													
	CNMG120404-MP3	0,4	0,08–0,22	0,3–2,5			●	●	✖												
	CNMG120408-MP3	0,8	0,12–0,32	0,6–3,2		●	●	●	✖												
	CNMG120412-MP3	1,2	0,16–0,40	0,8–3,5		●	●	●	✖												

See the ISO 1832 designation key for dimensions

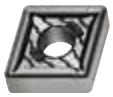
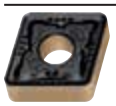
HC = Coated carbide
HW = Uncoated carbide

A 234 A 244 A 256 A 80 A 190

Negative rhombic 80°
CNMG / CNGG / CNMA / CNMM
Tiger·tec® Silver

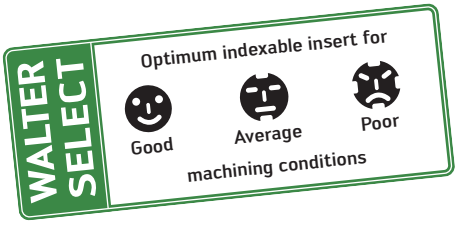


Indexable inserts

	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	K HC WAK30	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	CNMG120404-MP5	0,4	0,16–0,25	0,5–4,0		☺	☺	😐	☹													
	CNMG120408-MP5	0,8	0,18–0,40	0,6–5,0		☺	☺	😐	☹						☺							
	CNMG120412-MP5	1,2	0,20–0,45	1,0–5,0		☺	☺	😐	☹													
	CNMG120416-MP5	1,6	0,25–0,50	1,2–5,0			☺	😐	☹													
	CNMG160608-MP5	0,8	0,25–0,50	0,8–7,0		☺	☺	😐	☹													
	CNMG160612-MP5	1,2	0,30–0,50	1,0–7,0		☺	☺	😐	☹													
	CNMG160616-MP5	1,6	0,35–0,55	1,2–7,0			☺	😐	☹													
	CNMG120404-NM4	0,4	0,10–0,20	0,5–3,0						😐	😐	☺	😐	☹					☺	😐	☹	
	CNMG120408-NM4	0,8	0,15–0,32	0,8–3,0						😐	😐	☺	😐	☹					☺	😐	☹	
	CNMG120412-NM4	1,2	0,15–0,35	0,8–3,5						😐	😐	☺	😐	☹					☺	😐	☹	
	CNMG120416-NM4	1,6	0,15–0,40	1,0–4,0									😐	☹						😐	☹	
	CNMG160608-NM4	0,8	0,15–0,35	0,8–4,5						😐	😐	☺	😐	☹					☺	😐	☹	
	CNMG160612-NM4	1,2	0,18–0,40	0,8–4,5						😐	😐	☺	😐	☹					☺	😐	☹	
	CNMG160616-NM4	1,6	0,20–0,45	1,0–4,5									😐	☹						😐	☹	
	CNMG090308-MK5	0,8	0,10–0,20	0,2–3,0											☺	😐						
	CNMG120404-MK5	0,4	0,16–0,25	0,6–5,0											☺	😐						
	CNMG120408-MK5	0,8	0,25–0,50	0,8–5,0											☺	😐						
	CNMG120412-MK5	1,2	0,30–0,50	1,2–5,0											☺	😐						
	CNMG120416-MK5	1,6	0,35–0,50	1,5–5,0											☺	😐						
	CNMG160608-MK5	0,8	0,25–0,50	0,8–7,0											☺	😐						
	CNMG160612-MK5	1,2	0,30–0,60	1,2–7,0											☺	😐						
	CNMG160616-MK5	1,6	0,35–0,60	1,5–7,0											☺	😐						
	CNMG190612-MK5	1,2	0,30–0,65	1,2–8,0											☺	😐						
	CNMG190616-MK5	1,6	0,35–0,80	1,5–8,0											☺	😐						
	CNMG120408-NRT	0,8	0,18–0,35	1,0–6,0									😐							😐		😐
	CNMG120412-NRT	1,2	0,20–0,40	1,2–6,0									😐							😐		😐
	CNMG160612-NRT	1,2	0,28–0,55	1,5–7,5									😐							😐		😐
	CNMG190616-NRT	1,6	0,35–0,70	2,0–9,0									😐							😐		😐
	CNMG120408-NRS	0,8	0,16–0,35	1,0–4,0								☺	😐	☹					☺	😐	☹	
	CNMG120412-NRS	1,2	0,18–0,40	1,2–4,0								☺	😐	☹					☺	😐	☹	
	CNMG160612-NRS	1,2	0,21–0,45	1,2–6,5								☺	😐	☹					☺	😐	☹	
	CNMG160616-NRS	1,6	0,23–0,50	1,5–6,5								☺	😐						☺	😐		
	CNMG190608-NRS	0,8	0,20–0,45	1,0–8,0								☺	😐						☺	😐		
	CNMG190612-NRS	1,2	0,23–0,50	1,2–8,5								☺	😐						☺	😐		

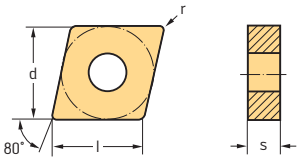
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide



A 234 A 244 A 256 A 80 A 190

Negative rhombic 80°
CNMG / CNGG / CNMA / CNMM
Tiger·tec® Silver



Indexable inserts

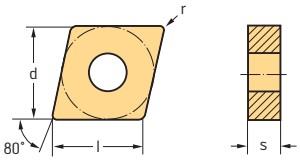
	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	K HC WAK30	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	CNMG120408-NR4	0,8	0,22–0,40	1,2–5,0						●	●	●	●	●					●	●	●	
	CNMG120412-NR4	1,2	0,25–0,50	1,5–5,0						●	●	●	●	●					●	●	●	
	CNMG120416-NR4	1,6	0,30–0,55	2,0–5,0									●	●						●	●	
	CNMG160608-NR4	0,8	0,22–0,45	1,2–7,0								●	●	●					●	●	●	
	CNMG160612-NR4	1,2	0,25–0,60	1,5–7,0						●	●	●	●	●					●	●	●	
	CNMG160616-NR4	1,6	0,30–0,65	2,0–7,0									●	●						●	●	
	CNMG190612-NR4	1,2	0,25–0,60	1,5–8,0						●	●	●	●	●					●	●	●	
	CNMG190616-NR4	1,6	0,30–0,80	2,0–8,0								●	●	●					●	●	●	
	CNMG120408-RP5	0,8	0,20–0,40	0,8–6,0		●	●	●	●						●	●						
	CNMG120412-RP5	1,2	0,25–0,60	1,0–6,0		●	●	●	●						●	●						
	CNMG120416-RP5	1,6	0,35–0,70	1,6–6,0		●	●	●	●													
	CNMG160608-RP5	0,8	0,20–0,45	1,0–8,0			●	●	●													
	CNMG160612-RP5	1,2	0,25–0,60	1,2–8,0		●	●	●	●							●						
	CNMG160616-RP5	1,6	0,35–0,70	1,6–8,0		●	●	●	●							●						
	CNMG160624-RP5	2,4	0,40–0,90	2,0–8,0			●	●	●													
	CNMG190608-RP5	0,8	0,20–0,50	1,0–10,0			●	●	●													
	CNMG190612-RP5	1,2	0,25–0,65	1,2–10,0		●	●	●	●													
	CNMG190616-RP5	1,6	0,35–0,80	1,6–10,0		●	●	●	●													
	CNMG190624-RP5	2,4	0,45–1,00	2,0–10,0			●	●	●													
	CNMG250924-RP5	2,4	0,45–1,20	2,0–12,0			●	●	●													
	CNMG120408-RP7	0,8	0,25–0,50	0,8–5,0			●	●	●								●					
	CNMG120412-RP7	1,2	0,30–0,50	1,2–5,0			●	●	●								●					
	CNMG120416-RP7	1,6	0,35–0,50	1,5–5,0			●	●	●													
	CNMG160608-RP7	0,8	0,30–0,50	0,8–6,0			●	●	●													
	CNMG160612-RP7	1,2	0,35–0,60	1,2–6,0			●	●	●								●					
	CNMG160616-RP7	1,6	0,40–0,60	1,5–6,0			●	●	●								●					
	CNMG190612-RP7	1,2	0,35–0,60	1,2–7,0			●	●	●								●					
	CNMG190616-RP7	1,6	0,40–0,60	1,5–7,0			●	●	●								●					
	CNMG250924-RP7	2,4	0,45–1,00	3,0–9,0				●									●					
	CNMA120404-RK5	0,4	0,16–0,25	0,6–5,0											●	●						
	CNMA120408-RK5	0,8	0,25–0,50	0,8–5,0											●	●						
	CNMA120412-RK5	1,2	0,30–0,50	1,2–5,0											●	●						
	CNMA120416-RK5	1,6	0,35–0,70	1,5–5,0											●	●						
	CNMA160612-RK5	1,2	0,35–0,70	1,2–7,0											●	●						
	CNMA160616-RK5	1,6	0,35–0,80	1,5–7,0											●	●						
	CNMA190612-RK5	1,2	0,30–0,65	1,2–8,0											●	●						
	CNMA190616-RK5	1,6	0,35–0,80	1,5–8,0											●	●						
	CNMA190624-RK5	2,4	0,40–0,90	2,5–8,0												●						

See the ISO 1832 designation key for dimensions

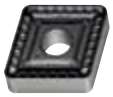
HC = Coated carbide
HW = Uncoated carbide

A 234 A 244 A 256 A 80 A 190

Negative rhombic 80°
CNMG / CNGG / CNMA / CNMM
Tiger·tec® Silver

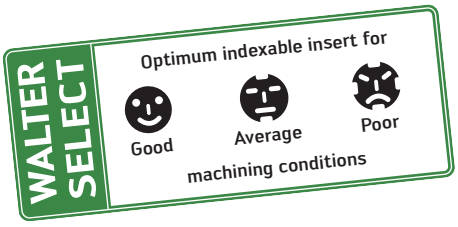


Indexable inserts

	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	K HC WAK30	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	CNMA120408-RK7	0,8	0,25–0,50	0,8–5,0											☺	😐						
	CNMA120412-RK7	1,2	0,30–0,50	1,2–5,0											☺	😐						
	CNMA120416-RK7	1,6	0,35–0,70	1,5–5,0											☺	😐						
	CNMA160612-RK7	1,2	0,35–0,70	1,2–7,0											☺	😐						
	CNMA160616-RK7	1,6	0,35–0,80	1,5–7,0											☺	😐						
	CNMA190612-RK7	1,2	0,30–0,65	1,2–8,0											☺	😐						
	CNMA190616-RK7	1,6	0,35–0,80	1,5–8,0											☺	😐						
	CNMM120408-NRF	0,8	0,30–0,50	0,8–7,0			☺	😐	☹													
	CNMM120412-NRF	1,2	0,35–0,70	1,2–7,0		☺	☺	😐	☹													
	CNMM120416-NRF	1,6	0,40–0,80	1,6–7,0			☺	😐	☹													
	CNMM160612-NRF	1,2	0,35–0,70	1,2–9,0		☺	☺	😐	☹													
	CNMM160616-NRF	1,6	0,40–0,90	1,6–9,0		☺	☺	😐	☹													
	CNMM160624-NRF	2,4	0,45–1,00	2,4–9,0			☺	😐	☹													
	CNMM190612-NRF	1,2	0,35–0,70	1,2–10,0			☺	😐	☹													
	CNMM190616-NRF	1,6	0,40–0,90	1,6–10,0			☺	😐	☹													
	CNMM190624-NRF	2,4	0,45–1,10	2,4–10,0			☺	😐	☹													
	CNMM250924-NRF	2,4	0,45–1,20	2,4–12,0				😐	☹													
	CNMM120412-NRR	1,2	0,40–0,80	1,5–8,0			☺	😐	☹													
	CNMM160612-NRR	1,2	0,50–0,90	2,0–10,0			☺	😐	☹									☹				
	CNMM160616-NRR	1,6	0,50–1,10	2,0–10,0			☺	😐	☹									☹				
	CNMM160624-NRR	2,4	0,50–1,30	2,0–10,0			☺	😐	☹													
	CNMM190612-NRR	1,2	0,50–0,90	2,0–13,0			☺	😐	☹													
	CNMM190616-NRR	1,6	0,50–1,10	2,0–13,0			☺	😐	☹									☹				
	CNMM190624-NRR	2,4	0,60–1,60	3,0–13,0			☺	😐	☹									☹				
	CNMM250924-NRR	2,4	0,60–1,60	3,0–17,0			☺	😐	☹													

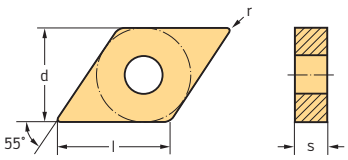
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide



A 234 A 244 A 256 A 80 A 190

Negative rhombic 55°
DNMG / DNGG / DNMA / DNMM
Tiger·tec® Silver



Indexable inserts

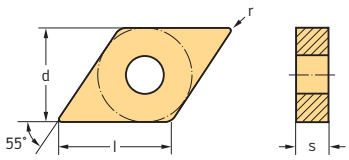
	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	DNMG110408-NF	0,8	0,15–0,50	0,5–2,0	●		●						●						●		
	DNMG150408-NF	0,8	0,15–0,50	0,5–3,0	●		●						●						●		
	DNMG150608-NF	0,8	0,15–0,50	0,5–3,0	●		●						●						●		
	DNMG150404-NFT	0,4	0,06–0,16	0,4–1,5									●						●		●
	DNMG150408-NFT	0,8	0,08–0,19	0,5–2,0									●						●		●
	DNMG150604-NFT	0,4	0,06–0,16	0,4–1,5									●						●		●
	DNMG150608-NFT	0,8	0,08–0,19	0,5–2,0									●						●		●
	DNGG150404-NFT	0,4	0,05–0,14	0,2–1,5																	●
	DNGG150408-NFT	0,8	0,07–0,17	0,3–2,0																	●
	DNGG150604-NFT	0,4	0,05–0,14	0,2–1,5																	●
	DNGG150608-NFT	0,8	0,07–0,17	0,3–2,0																	●
	DNMG110404-NF4	0,4	0,05–0,12	0,2–1,0						●	●	●	●					●	●		
	DNMG110408-NF4	0,8	0,07–0,16	0,4–1,5						●	●	●	●					●	●		
	DNMG150404-NF4	0,4	0,05–0,12	0,2–1,0						●	●	●	●					●	●		
	DNMG150408-NF4	0,8	0,07–0,16	0,4–1,5						●	●	●	●					●	●		
	DNMG150604-NF4	0,4	0,05–0,12	0,2–1,0						●	●	●	●					●	●		
	DNMG150608-NF4	0,8	0,07–0,16	0,4–1,5						●	●	●	●					●	●		
	DNMG150612-NF4	1,2	0,10–0,20	0,5–1,6								●	●					●	●		
	DNMG110402-FP5	0,2	0,04–0,12	0,1–0,5			●	●													
	DNMG110404-FP5	0,4	0,04–0,20	0,1–1,5			●	●													
	DNMG110408-FP5	0,8	0,08–0,25	0,2–2,0			●	●													
	DNMG110412-FP5	1,2	0,10–0,25	0,5–2,5			●	●													
	DNMG150404-FP5	0,4	0,05–0,20	0,1–1,5			●	●													
	DNMG150408-FP5	0,8	0,08–0,25	0,2–2,0			●	●													
	DNMG150412-FP5	1,2	0,10–0,25	0,5–2,5			●	●													
	DNMG150604-FP5	0,4	0,05–0,20	0,1–1,5			●	●													
	DNMG150608-FP5	0,8	0,08–0,25	0,2–2,0			●	●													
	DNMG150612-FP5	1,2	0,10–0,25	0,5–2,5			●	●													
	DNMG110408-NM	0,8	0,15–0,50	0,8–3,0			●	●							●						
	DNMG110412-NM	1,2	0,20–0,60	1,5–4,0			●								●	●					
	DNMG150408-NM	0,8	0,15–0,50	0,8–3,0			●								●						
	DNMG150608-NM	0,8	0,15–0,50	0,8–3,0		●	●	●							●	●					
	DNMG150612-NM	1,2	0,20–0,60	1,5–4,0		●	●								●	●					
	DNMG110404-NMT	0,4	0,08–0,22	0,4–2,5									●						●		●
	DNMG110408-NMT	0,8	0,12–0,28	0,6–3,2								●	●					●	●		●
	DNMG150408-NMT	0,8	0,12–0,28	0,6–4,0									●						●		●
	DNMG150608-NMT	0,8	0,12–0,28	0,6–4,0								●	●					●	●		●
	DNMG150612-NMT	1,2	0,15–0,30	0,8–4,0									●						●		●

See the ISO 1832 designation key for dimensions

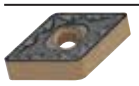
HC = Coated carbide
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A 234 A 244 A 256 A 80 A 190

Negative rhombic 55°
DNMG / DNGG / DNMA / DNMM
Tiger·tec® Silver

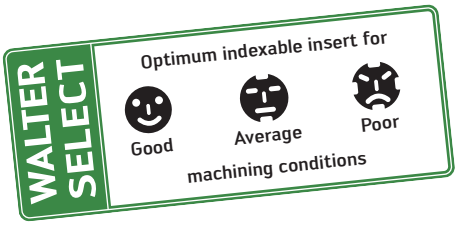


Indexable inserts

	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	DNMG150404-NMS	0,4	0,09–0,22	0,6–2,5								☺	😐					☺	😐		
	DNMG150408-NMS	0,8	0,11–0,30	0,8–3,5								☺	😐	☹				☺	😐	☹	
	DNMG150604-NMS	0,4	0,09–0,22	0,6–2,5								☺	😐					☺	😐		
	DNMG150608-NMS	0,8	0,11–0,30	0,8–3,5								☺	😐	☹				☺	😐	☹	
	DNMG110404-MP3	0,4	0,08–0,22	0,3–2,2			☺	😐	☹												
	DNMG110408-MP3	0,8	0,12–0,32	0,6–3,0		☺	☺	😐	☹												
	DNMG110412-MP3	1,2	0,16–0,40	0,8–3,2		☺	☺	😐	☹												
	DNMG150404-MP3	0,4	0,08–0,22	0,3–2,5			☺	😐	☹												
	DNMG150408-MP3	0,8	0,12–0,32	0,6–3,2		☺	☺	😐	☹												
	DNMG150412-MP3	1,2	0,16–0,40	0,8–3,5		☺	☺	😐	☹												
	DNMG150604-MP3	0,4	0,08–0,22	0,3–2,5			☺	😐	☹												
	DNMG150608-MP3	0,8	0,12–0,32	0,6–3,2		☺	☺	😐	☹												
	DNMG150612-MP3	1,2	0,16–0,40	0,8–3,5		☺	☺	😐	☹												
	DNMG110404-MP5	0,4	0,16–0,25	0,5–4,0			☺	😐	☹												
	DNMG110408-MP5	0,8	0,18–0,35	0,6–4,0			☺	😐	☹												
	DNMG110412-MP5	1,2	0,20–0,40	1,0–4,0			☺	😐	☹												
	DNMG150404-MP5	0,4	0,16–0,25	0,5–4,0			☺	😐	☹												
	DNMG150408-MP5	0,8	0,18–0,35	0,6–5,0		☺	☺	😐	☹												
	DNMG150412-MP5	1,2	0,20–0,40	1,0–5,0		☺	☺	😐	☹												
	DNMG150416-MP5	1,6	0,25–0,45	1,2–5,0			☺	😐	☹												
	DNMG150604-MP5	0,4	0,16–0,25	0,5–4,0			☺	😐	☹												
	DNMG150608-MP5	0,8	0,18–0,35	0,6–5,0		☺	☺	😐	☹												
	DNMG150612-MP5	1,2	0,20–0,40	1,0–5,0		☺	☺	😐	☹												
	DNMG150616-MP5	1,6	0,25–0,45	1,2–5,0			☺	😐	☹												
	DNMG110404-NM4	0,4	0,10–0,18	0,5–2,0						😐	😐	☺	😐	☹				☺	😐	☹	
	DNMG110408-NM4	0,8	0,15–0,25	0,8–3,0						😐	😐	☺	😐	☹				☺	😐	☹	
	DNMG150404-NM4	0,4	0,10–0,18	0,5–2,5						😐	😐	☺	😐	☹				☺	😐	☹	
	DNMG150408-NM4	0,8	0,15–0,25	0,8–3,0						😐	😐	☺	😐	☹				☺	😐	☹	
	DNMG150412-NM4	1,2	0,18–0,30	0,8–3,0								☺	😐	☹				☺	😐	☹	
	DNMG150604-NM4	0,4	0,10–0,18	0,5–2,5						😐	😐	☺	😐	☹				☺	😐	☹	
	DNMG150608-NM4	0,8	0,15–0,25	0,8–3,0						😐	😐	☺	😐	☹				☺	😐	☹	
	DNMG150612-NM4	1,2	0,18–0,30	0,8–3,0						😐	😐	☺	😐	☹				☺	😐	☹	

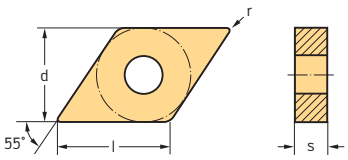
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A 234 A 244 A 256 A 80 A 190

Negative rhombic 55°
DNMG / DNGG / DNMA / DNMM
Tiger·tec® Silver



Indexable inserts

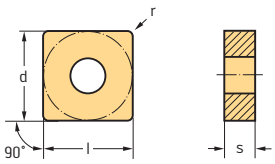
	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	DNMG110404-MK5	0,4	0,15–0,25	0,6–4,0											☻	😐					
	DNMG110408-MK5	0,8	0,15–0,40	0,6–4,0											☻	😐					
	DNMG110412-MK5	1,2	0,20–0,50	1,0–4,0											☻	😐					
	DNMG150408-MK5	0,8	0,20–0,45	0,8–5,0											☻	😐					
	DNMG150412-MK5	1,2	0,25–0,45	1,2–5,0											☻	😐					
	DNMG150608-MK5	0,8	0,25–0,45	0,8–5,0											☻	😐					
	DNMG150612-MK5	1,2	0,30–0,45	1,2–5,0											☻	😐					
	DNMG150616-MK5	1,6	0,35–0,45	1,6–5,0											☻	😐					
	DNMG150408-NRS	0,8	0,13–0,32	1,0–4,0								☻	😐					☻	😐		
	DNMG150608-NRS	0,8	0,13–0,32	1,0–4,0								☻	😐					☻	😐		
	DNMG150612-NRS	1,2	0,15–0,35	1,2–4,0								☻	😐					☻	😐		
	DNMG110408-NR4	0,8	0,22–0,40	1,2–3,0									😐	😵					😐	😵	
	DNMG110412-NR4	1,2	0,25–0,50	1,5–3,5									😐	😵					😐	😵	
	DNMG150408-NR4	0,8	0,22–0,40	1,2–4,0						😐	😐		😐	😵					😐	😵	
	DNMG150608-NR4	0,8	0,22–0,40	1,2–4,0						😐	😐	☻	😐	😵				☻	😐	😵	
	DNMG150612-NR4	1,2	0,25–0,50	1,5–4,0						😐	😐		😐	😵					😐	😵	
	DNMG110408-RP5	0,8	0,18–0,35	0,8–4,0		☻	☻	😐	😵												
	DNMG110412-RP5	1,2	0,20–0,40	1,0–4,0		☻	☻	😐	😵												
	DNMG150408-RP5	0,8	0,15–0,35	0,8–5,0		☻	☻	😐	😵												
	DNMG150412-RP5	1,2	0,20–0,40	1,0–5,0			☻	😐	😵												
	DNMG150416-RP5	1,6	0,25–0,50	1,6–5,0			☻	😐	😵												
	DNMG150608-RP5	0,8	0,15–0,35	0,8–5,0		☻	☻	😐	😵							😐					
	DNMG150612-RP5	1,2	0,20–0,55	1,0–5,0		☻	☻	😐	😵							😐					
	DNMG150616-RP5	1,6	0,25–0,65	1,6–5,0		☻	☻	😐	😵												
	DNMA110404-RK5	0,4	0,16–0,25	0,6–4,0											☻	😐					
	DNMA110408-RK5	0,8	0,18–0,40	0,6–4,0											☻	😐					
	DNMA150408-RK5	0,8	0,15–0,50	0,8–4,0											☻	😐					
	DNMA150412-RK5	1,2	0,20–0,60	1,5–4,0											☻	😐					
	DNMA150608-RK5	0,8	0,20–0,45	0,8–5,0											☻	😐					
	DNMA150612-RK5	1,2	0,25–0,45	1,2–5,0											☻	😐					
	DNMA150608-RK7	0,8	0,20–0,45	0,8–5,0											☻	😐					
	DNMA150612-RK7	1,2	0,25–0,45	1,2–5,0											☻	😐					
	DNMM150608-NRF	0,8	0,25–0,45	0,8–5,0			☻	😐	😵												
	DNMM150612-NRF	1,2	0,30–0,50	1,2–5,0		☻	☻	😐	😵												
	DNMM150616-NRF	1,6	0,35–0,60	1,6–5,0		☻	☻	😐	😵												

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A 234 A 244 A 256 A 80 A 190

Negative square
SNMG / SNMA / SNMM
Tiger·tec® Silver



Indexable inserts

	Designation	r mm	f mm	a_p mm	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	K HC WAK30	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	SNMG120404-NF4	0,4	0,05–0,12	0,2–1,0							☺	😐						☺	😐		
	SNMG120408-NF4	0,8	0,07–0,16	0,4–1,5							☺	😐						☺	😐		
	SNMG120412-NF4	1,2	0,10–0,20	0,5–1,6							☺	😐						☺	😐		
	SNMG090308-FP5	0,8	0,06–0,20	0,2–1,5		☺	😐														
	SNMG120404-FP5	0,4	0,04–0,22	0,1–1,8		☺	😐														
	SNMG120408-FP5	0,8	0,08–0,25	0,2–2,0		☺	😐														
	SNMG120412-FP5	1,2	0,10–0,25	0,5–2,5		☺	😐														
	SNMG090308-MP3	0,8	0,10–0,32	0,6–3,0		☺	😐														
	SNMG120404-MP3	0,4	0,08–0,25	0,3–2,5		☺	😐														
	SNMG120408-MP3	0,8	0,12–0,35	0,6–3,2		☺	😐	☹													
	SNMG120412-MP3	1,2	0,16–0,40	0,8–3,5		☺	😐														
	SNMG090308-MP5	0,8	0,10–0,32	0,6–3,0			😐	☹													
	SNMG120408-MP5	0,8	0,18–0,40	0,6–5,0	☺	☺	😐	☹													
	SNMG120412-MP5	1,2	0,20–0,45	1,0–5,0	☺	☺	😐	☹													
	SNMG120416-MP5	1,6	0,25–0,50	1,2–5,0	☺	☺	😐	☹													
	SNMG150608-MP5	0,8	0,25–0,50	0,8–8,0		☺	😐	☹													
	SNMG150612-MP5	1,2	0,30–0,50	1,0–8,0		☺	😐	☹													
	SNMG150616-MP5	1,6	0,35–0,55	1,2–8,0		☺	😐	☹													
	SNMG120404-NM4	0,4	0,10–0,18	0,5–2,0								😐	☹						😐	☹	
	SNMG120408-NM4	0,8	0,15–0,25	0,8–3,0					😐	😐	☺	😐	☹					☺	😐	☹	
	SNMG120412-NM4	1,2	0,18–0,30	0,8–3,5					😐	😐	☺	😐	☹					☺	😐	☹	
	SNMG090308-MK5	0,8	0,10–0,20	0,2–3,0										☺	😐						
	SNMG120408-MK5	0,8	0,25–0,50	0,8–5,0										☺	😐						
	SNMG120412-MK5	1,2	0,30–0,50	1,2–5,0										☺	😐						
	SNMG120416-MK5	1,6	0,35–0,50	1,5–5,0										☺	😐						
	SNMG150612-MK5	1,2	0,30–0,60	1,2–7,0										☺	😐						
	SNMG150616-MK5	1,6	0,35–0,60	1,5–7,0										☺	😐						
	SNMG190612-MK5	1,2	0,30–0,65	1,2–8,0										☺	😐						
	SNMG190616-MK5	1,6	0,35–0,80	1,5–8,0										☺	😐						
	SNMG120412-NRT	1,2	0,25–0,50	0,8–6,0								😐							😐		😐
	SNMG150612-NRT	1,2	0,30–0,60	1,0–7,5								😐							😐		😐
	SNMG190616-NRT	1,6	0,40–0,80	1,5–9,0								😐							😐		😐

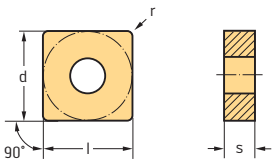
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HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
☺ Good
😐 Average
☹ Poor
machining conditions

A 234 A 244 A 256 A 80 A 190

Negative square
SNMG / SNMA / SNMM
Tiger·tec® Silver



Indexable inserts

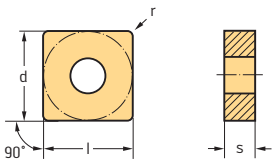
	Designation	r mm	f mm	a_p mm	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	K HC WAK30	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	SNMG120408-NRS	0,8	0,20–0,40	0,8–5,0							●	●	●					●	●	●	
	SNMG120412-NRS	1,2	0,22–0,45	1,0–5,0							●	●	●					●	●	●	
	SNMG150616-NRS	1,6	0,24–0,55	1,2–7,0							●	●						●	●		
	SNMG190612-NRS	1,2	0,24–0,55	1,0–9,0							●	●						●	●		
	SNMG190616-NRS	1,6	0,27–0,60	1,2–9,0							●	●						●	●		
	SNMG120408-NR4	0,8	0,22–0,40	1,2–4,0					●	●		●	●						●	●	
	SNMG120412-NR4	1,2	0,25–0,50	1,5–5,0					●	●		●	●						●	●	
	SNMG120416-NR4	1,6	0,30–0,55	2,0–5,0								●	●						●	●	
	SNMG150608-NR4	0,8	0,22–0,45	1,2–7,0								●	●						●	●	
	SNMG150612-NR4	1,2	0,25–0,60	1,5–7,0					●	●		●	●						●	●	
	SNMG150616-NR4	1,6	0,30–0,65	2,0–7,0								●	●						●	●	
	SNMG190612-NR4	1,2	0,25–0,60	1,5–8,0					●	●		●	●						●	●	
	SNMG190616-NR4	1,6	0,30–0,80	2,0–8,0								●	●						●	●	
	SNMG120408-RP5	0,8	0,20–0,50	0,8–6,0		●	●	●													
	SNMG120412-RP5	1,2	0,25–0,65	1,0–6,0	●	●	●	●													
	SNMG120416-RP5	1,6	0,35–0,75	1,6–6,0	●	●	●	●													
	SNMG150612-RP5	1,2	0,25–0,70	1,2–8,0	●	●	●	●													
	SNMG150616-RP5	1,6	0,35–0,80	1,6–8,0	●	●	●	●													
	SNMG190612-RP5	1,2	0,30–0,70	1,2–10,0		●	●	●													
	SNMG190616-RP5	1,6	0,35–0,80	1,6–10,0		●	●	●													
	SNMG190624-RP5	2,4	0,44–1,20	2,0–10,0		●	●	●													
	SNMG250924-RP5	2,4	0,55–1,20	2,5–12,0		●	●	●													
	SNMG120408-RP7	0,8	0,25–0,50	0,8–5,0		●	●	●													
	SNMG120412-RP7	1,2	0,30–0,50	1,2–5,0		●	●	●													
	SNMG120416-RP7	1,6	0,35–0,60	1,5–5,0		●	●	●													
	SNMG150608-RP7	0,8	0,30–0,50	0,8–6,0			●	●													
	SNMG150612-RP7	1,2	0,35–0,60	1,2–6,0		●	●	●								●					
	SNMG150616-RP7	1,6	0,40–0,70	1,5–6,0		●	●	●								●					
	SNMG190612-RP7	1,2	0,35–0,60	1,2–7,0		●	●	●													
	SNMG190616-RP7	1,6	0,40–0,70	1,5–7,0		●	●	●								●					
	SNMG190624-RP7	2,4	0,40–0,80	2,5–7,0			●	●													
	SNMG250924-RP7	2,4	0,55–1,00	3,0–10,0			●									●					
	SNMA090308-RK5	0,8	0,20–0,45	0,6–4,0											●						
	SNMA120408-RK5	0,8	0,25–0,50	0,8–5,0										●	●						
	SNMA120412-RK5	1,2	0,30–0,60	1,2–5,0										●	●						
	SNMA120416-RK5	1,6	0,35–0,70	1,5–5,0										●	●						
	SNMA150612-RK5	1,2	0,30–0,65	1,2–7,0										●	●						
	SNMA150616-RK5	1,6	0,35–0,80	1,5–7,0										●	●						
	SNMA190612-RK5	1,2	0,30–0,65	1,2–8,0										●	●						
	SNMA190616-RK5	1,6	0,35–0,80	1,5–8,0										●	●						
	SNMA190624-RK5	2,4	0,40–0,90	2,5–8,0											●						

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 234 A 244 A 256 A 80 A 190

Negative square
SNMG / SNMA / SNMM
Tiger·tec® Silver

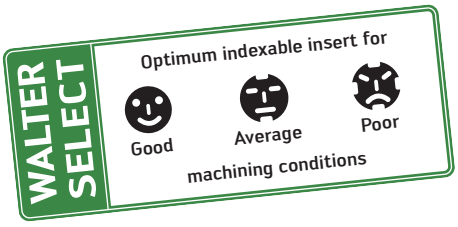


Indexable inserts

	Designation	r mm	f mm	a_p mm	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	K HC WAK30	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	SNMA120408-RK7	0,8	0,25–0,50	0,8–5,0										☺	😐						
	SNMA120412-RK7	1,2	0,30–0,60	1,2–5,0										☺	😐						
	SNMA120416-RK7	1,6	0,35–0,70	1,5–5,0										☺	😐						
	SNMA150616-RK7	1,6	0,35–0,80	1,5–7,0										☺	😐						
	SNMA190616-RK7	1,6	0,35–0,80	1,5–8,0										☺	😐						
	SNMM120408-NRF	0,8	0,30–0,50	0,8–7,0			😐	☹													
	SNMM120412-NRF	1,2	0,35–0,70	1,2–7,0		☺	😐	☹													
	SNMM120416-NRF	1,6	0,40–0,90	1,6–7,0		☺	😐	☹													
	SNMM150612-NRF	1,2	0,35–0,75	1,2–9,0		☺	😐	☹													
	SNMM150616-NRF	1,6	0,40–0,90	1,6–9,0		☺	😐	☹													
	SNMM150624-NRF	2,4	0,45–1,10	2,0–9,0		☺	😐	☹													
	SNMM190612-NRF	1,2	0,35–0,75	1,2–10,0		☺	😐	☹													
	SNMM190616-NRF	1,6	0,40–1,00	1,6–10,0		☺	😐	☹													
	SNMM190624-NRF	2,4	0,45–1,20	2,0–10,0		☺	😐	☹													
	SNMM250716-NRF	1,6	0,45–1,00	1,6–12,0			😐	☹													
	SNMM250724-NRF	2,4	0,55–1,20	2,5–12,0			😐	☹													
	SNMM250916-NRF	1,6	0,45–1,00	1,6–12,0		☺	😐	☹													
	SNMM250924-NRF	2,4	0,55–1,20	2,5–12,0			😐	☹													
	SNMM150612-NRR	1,2	0,50–0,80	1,5–10,0			😐	☹													
	SNMM150616-NRR	1,6	0,45–1,00	2,0–12,0		☺	😐	☹													
	SNMM150624-NRR	2,4	0,50–1,40	2,5–12,0			😐	☹													
	SNMM190612-NRR	1,2	0,50–1,00	2,0–13,0		☺	😐	☹													
	SNMM190616-NRR	1,6	0,50–1,10	2,5–13,0		☺	😐	☹									☹				
	SNMM190624-NRR	2,4	0,60–1,60	3,0–13,0		☺	😐	☹									☹				
	SNMM250716-NRR	1,6	0,50–1,10	2,5–17,0		☺	😐	☹									☹				
	SNMM250724-NRR	2,4	0,60–1,60	3,0–17,0		☺	😐	☹									☹				
	SNMM250732-NRR	3,2	0,60–1,80	4,0–17,0			😐	☹													
	SNMM250916-NRR	1,6	0,50–1,10	2,5–17,0		☺	😐	☹													
	SNMM250924-NRR	2,4	0,60–1,60	3,0–17,0		☺	😐	☹									☹				
	SNMM250932-NRR	3,2	0,60–1,80	4,0–17,0			😐	☹													

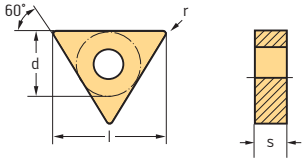
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide



A 234 A 244 A 256 A 80 A 190

Negative triangular 60°
TNMG / TNMA / TNMM
Tiger·tec® Silver



Indexable inserts

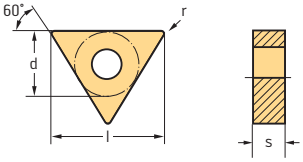
	Designation	r mm	f mm	a_p mm	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	TNMG160404-NF4	0,4	0,05–0,12	0,2–1,0					●	●	●	●					●	●		
	TNMG160408-NF4	0,8	0,07–0,16	0,4–1,5					●	●	●	●					●	●		
	TNMG160412-NF4	1,2	0,10–0,20	0,5–1,6							●	●					●	●		
	TNMG110304-FP5	0,4	0,04–0,15	0,1–1,2		●	●													
	TNMG110308-FP5	0,8	0,08–0,20	0,2–1,5		●	●													
	TNMG160404-FP5	0,4	0,04–0,20	0,1–1,5		●	●													
	TNMG160408-FP5	0,8	0,08–0,25	0,2–2,0		●	●													
	TNMG160412-FP5	1,2	0,10–0,25	0,5–2,5		●	●													
	TNMG160404-NMT	0,4	0,08–0,20	0,6–3,0								●						●		●
	TNMG160408-NMT	0,8	0,12–0,30	1,0–4,0								●						●		●
	TNMG160404-NMS	0,4	0,09–0,22	0,6–2,5							●	●	●				●	●	●	
	TNMG160408-NMS	0,8	0,11–0,30	0,8–3,5							●	●	●				●	●	●	
	TNMG110304-MP3	0,4	0,06–0,18	0,3–2,0		●	●													
	TNMG110308-MP3	0,8	0,10–0,25	0,6–2,2		●	●													
	TNMG160304-MP3	0,4	0,08–0,22	0,3–2,2			●													
	TNMG160308-MP3	0,8	0,12–0,32	0,6–3,0			●													
	TNMG160404-MP3	0,4	0,08–0,22	0,3–2,2		●	●	●												
	TNMG160408-MP3	0,8	0,12–0,32	0,6–3,0	●	●	●	●												
	TNMG160412-MP3	1,2	0,16–0,40	0,8–3,2	●	●	●	●												
	TNMG220408-MP3	0,8	0,12–0,32	0,6–3,2	●	●	●	●												
	TNMG220412-MP3	1,2	0,16–0,40	0,8–3,5	●	●	●	●												
	TNMG160308-MP5	0,8	0,18–0,35	0,6–4,0			●	●						●						
	TNMG160404-MP5	0,4	0,16–0,25	0,5–4,0		●	●	●												
	TNMG160408-MP5	0,8	0,18–0,35	0,6–4,0	●	●	●	●												
	TNMG160412-MP5	1,2	0,20–0,40	1,0–4,0	●	●	●	●												
	TNMG220404-MP5	0,4	0,16–0,25	0,7–4,0		●	●													
	TNMG220408-MP5	0,8	0,18–0,35	0,8–5,0		●	●	●												
	TNMG220412-MP5	1,2	0,20–0,40	1,0–5,0		●	●	●												
	TNMG220416-MP5	1,6	0,25–0,45	1,2–5,0		●	●													
	TNMG270608-MP5	0,8	0,25–0,45	0,8–7,0		●	●	●												
	TNMG270612-MP5	1,2	0,30–0,50	1,0–7,0		●	●	●												
	TNMG270616-MP5	1,6	0,35–0,55	1,2–7,0		●	●	●												
	TNMG160404-NM4	0,4	0,10–0,18	0,5–2,0					●	●	●	●	●				●	●	●	
	TNMG160408-NM4	0,8	0,15–0,25	0,8–3,0					●	●	●	●	●				●	●	●	
	TNMG160412-NM4	1,2	0,18–0,30	0,8–3,5					●	●	●	●	●				●	●	●	
	TNMG160416-NM4	1,6	0,20–0,35	1,0–4,0								●	●					●	●	

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 234 A 244 A 256 A 80 A 190

Negative triangular 60°
TNMG / TNMA / TNMM
Tiger·tec® Silver



Indexable inserts

	Designation	r mm	f mm	a_p mm	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	TNMG110308-MK5	0,8	0,20–0,40	0,8–3,5										☺	😐					
	TNMG160404-MK5	0,4	0,16–0,25	0,6–4,0										☺	😐					
	TNMG160408-MK5	0,8	0,25–0,45	0,8–5,0										☺	😐					
	TNMG160412-MK5	1,2	0,30–0,45	1,2–5,0										☺	😐					
	TNMG160416-MK5	1,6	0,35–0,45	1,5–5,0										☺	😐					
	TNMG220408-MK5	0,8	0,25–0,45	1,0–6,0										☺	😐					
	TNMG220412-MK5	1,2	0,30–0,45	1,4–6,0										☺	😐					
	TNMG220416-MK5	1,6	0,35–0,45	1,6–6,0										☺	😐					
	TNMG270612-MK5	1,2	0,35–0,65	1,2–8,0										☺	😐					
	TNMG270616-MK5	1,6	0,45–0,90	3,0–9,0										☺	😐					
	TNMG160412-NRS	1,2	0,25–0,50	1,5–4,5							😐	😐					☺	😐		
	TNMG160408-NR4	0,8	0,22–0,40	1,2–4,0					😐	😐		😐	☹					😐	☹	
	TNMG160412-NR4	1,2	0,25–0,50	1,5–4,5					😐	😐		😐	☹					😐	☹	
	TNMG220408-NR4	0,8	0,22–0,40	1,2–5,0					😐	😐		😐	☹					😐	☹	
	TNMG220412-NR4	1,2	0,25–0,55	1,5–6,0					😐	😐		😐	☹					😐	☹	
	TNMG270612-NR4	1,2	0,35–0,65	1,2–8,0								😐	☹					😐	☹	
	TNMG160408-RP5	0,8	0,20–0,40	0,8–5,0	☺	☺	😐	☹						☺	😐					
	TNMG160412-RP5	1,2	0,25–0,55	1,0–5,0	☺	☺	😐	☹						☺	😐					
	TNMG220408-RP5	0,8	0,20–0,45	0,8–7,0		☺	😐	☹												
	TNMG220412-RP5	1,2	0,25–0,60	1,0–7,0	☺	☺	😐	☹												
	TNMG220416-RP5	1,6	0,35–0,70	1,6–7,0	☺	☺	😐	☹												
	TNMG270612-RP5	1,2	0,35–0,70	1,6–10,0		☺	😐	☹												
	TNMG270616-RP5	1,6	0,35–0,80	2,0–10,0		☺	😐	☹												
	TNMG330924-RP5	2,4	0,45–1,20	2,5–13,0		☺	😐	☹												
	TNMG270616-RP7	1,6	0,45–0,90	3,0–9,0			😐													
	TNMG270624-RP7	2,4	0,55–1,00	3,0–9,0			😐													

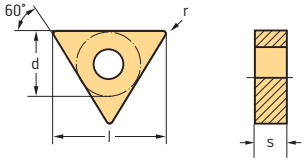
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
Good ☺ Average 😐 Poor ☹
machining conditions

A 234 A 244 A 256 A 80 A 190

Negative triangular 60°
TNMG / TNMA / TNMM
Tiger·tec® Silver



Indexable inserts

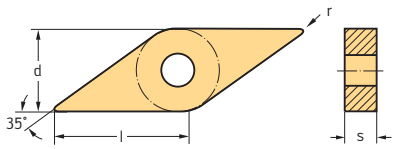
	Designation	r mm	f mm	a_p mm	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	TNMA110308-RK5	0,8	0,15–0,35	1,0–4,0											☹					
	TNMA160404-RK5	0,4	0,16–0,25	0,6–5,0										☺	☹					
	TNMA160408-RK5	0,8	0,25–0,45	0,8–5,0										☺	☹					
	TNMA160412-RK5	1,2	0,30–0,50	1,2–5,0										☺	☹					
	TNMA160416-RK5	1,6	0,25–0,60	1,5–5,0										☺	☹					
	TNMA220408-RK5	0,8	0,25–0,45	1,0–6,0										☺	☹					
	TNMA220412-RK5	1,2	0,30–0,55	1,4–6,0										☺	☹					
	TNMA220416-RK5	1,6	0,35–0,60	1,6–6,0											☹					
	TNMA270616-RK5	1,6	0,40–0,65	1,8–7,0											☹					
	TNMA160408-RK7	0,8	0,25–0,45	0,8–5,0										☺	☹					
	TNMA160412-RK7	1,2	0,30–0,50	1,2–5,0										☺	☹					
	TNMA220408-RK7	0,8	0,25–0,45	1,0–6,0										☺	☹					
	TNMA220412-RK7	1,2	0,30–0,55	1,4–6,0										☺	☹					
	TNMM160408-NRF	0,8	0,30–0,45	0,8–6,0		☺	☹	☹												
	TNMM160412-NRF	1,2	0,35–0,50	1,2–6,0		☺	☹	☹												
	TNMM220408-NRF	0,8	0,30–0,50	0,8–7,0		☺	☹	☹												
	TNMM220412-NRF	1,2	0,35–0,60	1,2–7,0		☺	☹	☹												
	TNMM220416-NRF	1,6	0,40–0,80	1,6–7,0		☺	☹	☹												
	TNMM270612-NRF	1,2	0,35–0,65	1,2–8,0			☹	☹												
	TNMM270616-NRF	1,6	0,40–0,85	1,6–8,0			☹	☹												
	TNMM270616-NRR	1,6	0,50–1,10	2,0–13,0			☹	☹												
	TNMM270624-NRR	2,4	0,60–1,60	3,0–13,0			☹	☹												

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 234 A 244 A 256 A 80 A 190

Negative rhombic 35°
VNMG / VNGG / VNMA
Tiger·tec® Silver

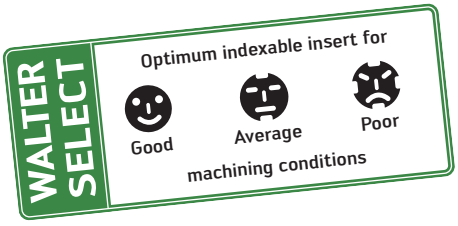


Indexable inserts

	Designation	r mm	f mm	a_p mm	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	VNMG160404-NFT	0,4	0,05–0,15	0,2–1,5								😐						😐		😐
	VNMG160408-NFT	0,8	0,07–0,18	0,3–2,0								😐						😐		😐
	VNGG160404-NFT	0,4	0,04–0,13	0,1–1,5																😐
	VNGG160408-NFT	0,8	0,06–0,16	0,2–2,0																😐
	VNGG160412-NFT	1,2	0,06–0,16	0,2–2,0																😐
	VNMG160404-FP5	0,4	0,04–0,22	0,1–1,5		😊	😐													
	VNMG160408-FP5	0,8	0,08–0,25	0,2–2,0		😊	😐													
	VNMG160404-NMS	0,4	0,08–0,16	0,5–1,5							😊	😐					😊	😐		
	VNMG160408-NMS	0,8	0,10–0,22	0,8–2,2							😊	😐					😊	😐		
	VNMG160404-MP3	0,4	0,08–0,22	0,3–2,2		😊	😐	😟												
	VNMG160408-MP3	0,8	0,12–0,32	0,6–3,0		😊	😐	😟												
	VNMG160412-MP3	1,2	0,16–0,35	0,8–3,2		😊	😐	😟												
	VNMG160404-MP5	0,4	0,10–0,18	0,5–2,0		😊	😐	😟												
	VNMG160408-MP5	0,8	0,18–0,35	0,6–4,0		😊	😐	😟												
	VNMG160412-MP5	1,2	0,20–0,40	0,8–4,0		😊	😐	😟												
	VNMG220408-MP5	0,8	0,18–0,35	0,6–4,0		😊	😐													
	VNMG160404-NM4	0,4	0,10–0,18	0,5–2,0					😐	😐	😊	😐	😟				😊	😐	😟	
	VNMG160408-NM4	0,8	0,15–0,25	0,8–3,0					😐	😐	😊	😐	😟				😊	😐	😟	
	VNMG160404-MK5	0,4	0,16–0,25	0,6–4,0										😊	😐					
	VNMG160408-MK5	0,8	0,18–0,35	0,8–4,0										😊	😐					
	VNMG160412-MK5	1,2	0,20–0,35	1,0–4,0										😊	😐					
	VNMA160404-RK5	0,4	0,16–0,25	0,6–4,0										😊	😐					
	VNMA160408-RK5	0,8	0,18–0,35	0,8–4,0										😊	😐					
	VNMA160412-RK5	1,2	0,20–0,40	1,0–4,0										😊	😐					

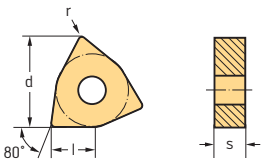
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide



A 234 A 244 A 256 A 80 A 190

Negative Trigon 80°
WNMG / WNMA / WNMM
Tiger·tec® Silver



Indexable inserts

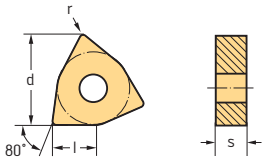
	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	WNMG060404-NF	0,4	0,10–0,40	0,4–2,0	●		●						●						●		
	WNMG060408-NF	0,8	0,15–0,50	0,5–3,0	●		●						●						●		
	WNMG080404-NF	0,4	0,20–0,40	0,4–2,0	●		●						●						●		
	WNMG080408-NF	0,8	0,25–0,55	0,5–3,0	●		●						●						●		
	WNMG080412-NF	1,2	0,25–0,70	0,8–3,0			●						●						●		
	WNMG060404-NF4	0,4	0,05–0,12	0,2–1,0								●	●					●	●		
	WNMG060408-NF4	0,8	0,07–0,16	0,4–1,5								●	●					●	●		
	WNMG080404-NF4	0,4	0,05–0,12	0,2–1,0						●	●	●	●					●	●		
	WNMG080408-NF4	0,8	0,07–0,16	0,4–1,5						●	●	●	●					●	●		
	WNMG080412-NF4	1,2	0,10–0,20	0,5–1,6								●	●					●	●		
	WNMG060404-FP5	0,4	0,04–0,20	0,1–1,5			●	●													
	WNMG060408-FP5	0,8	0,08–0,25	0,2–2,0			●	●													
	WNMG080404-FP5	0,4	0,05–0,20	0,1–1,5			●	●													
	WNMG080408-FP5	0,8	0,08–0,25	0,2–2,0			●	●													
	WNMG080412-FP5	1,2	0,10–0,25	0,5–2,5			●	●													
	WNMG060408-NM	0,8	0,20–0,55	0,8–3,0			●								●						
	WNMG060412-NM	1,2	0,25–0,55	1,5–4,0			●								●						
	WNMG080408-NM	0,8	0,20–0,55	0,8–3,0			●	●					●		●	●			●		
	WNMG080412-NM	1,2	0,25–0,70	1,5–4,0			●	●					●		●	●			●		
	WNMG080408-NMT	0,8	0,12–0,30	0,8–4,0									●						●		●
	WNMG080412-NMT	1,2	0,15–0,32	1,0–4,0									●						●		●
	WNMG060408-NMS	0,8	0,10–0,30	0,8–3,0								●	●					●	●		
	WNMG080404-NMS	0,4	0,10–0,24	0,6–2,5								●	●	✖				●	●	✖	
	WNMG080408-NMS	0,8	0,13–0,32	0,8–3,5								●	●	✖				●	●	✖	
	WNMG060404-MP3	0,4	0,08–0,22	0,3–2,2			●	●	✖												
	WNMG060408-MP3	0,8	0,12–0,32	0,6–3,0			●	●	✖												
	WNMG060412-MP3	1,2	0,16–0,35	0,8–3,2			●	●	✖												
	WNMG080404-MP3	0,4	0,08–0,22	0,3–2,5			●	●	✖												
	WNMG080408-MP3	0,8	0,12–0,32	0,6–3,2		●	●	●	✖												
	WNMG080412-MP3	1,2	0,16–0,40	0,8–3,5		●	●	●	✖												
	WNMG080416-MP3	1,6	0,20–0,50	0,9–4,0			●	●													

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A 234 A 244 A 256 A 80 A 190

Negative Trigon 80°
WNMG / WNMA / WNMM
Tiger·tec® Silver

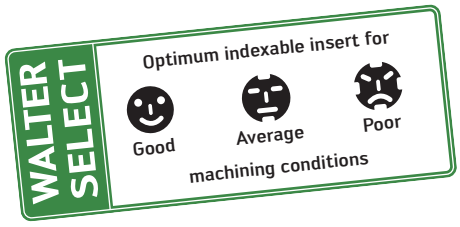


Indexable inserts

	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	WNMG060404-MP5	0,4	0,16–0,25	0,5–4,0			☺	😐	☹												
	WNMG060408-MP5	0,8	0,18–0,35	0,6–4,0		☺	☺	😐	☹												
	WNMG060412-MP5	1,2	0,20–0,40	1,0–4,0		☺	☺	😐	☹												
	WNMG080404-MP5	0,4	0,16–0,25	0,5–4,0			☺	😐	☹												
	WNMG080408-MP5	0,8	0,18–0,40	0,6–5,0		☺	☺	😐	☹												
	WNMG080412-MP5	1,2	0,20–0,45	1,0–5,0		☺	☺	😐	☹												
	WNMG080416-MP5	1,6	0,25–0,50	1,2–5,0			☺	😐	☹												
	WNMG100608-MP5	0,8	0,25–0,40	0,8–7,0			☺	😐	☹												
	WNMG100612-MP5	1,2	0,30–0,50	1,0–7,0			☺	😐	☹												
	WNMG100616-MP5	1,6	0,35–0,55	1,2–7,0			☺	😐	☹												
	WNMG060404-NM4	0,4	0,10–0,18	0,5–2,0						😐	😐	☺	😐	☹				☺	😐	☹	
	WNMG060408-NM4	0,8	0,15–0,25	0,8–2,5						😐	😐	☺	😐	☹				☺	😐	☹	
	WNMG060412-NM4	1,2	0,18–0,30	0,8–3,0									😐	☹					😐	☹	
	WNMG080404-NM4	0,4	0,10–0,20	0,5–3,0						😐	😐	☺	😐	☹				☺	😐	☹	
	WNMG080408-NM4	0,8	0,15–0,32	0,8–3,0						😐	😐	☺	😐	☹				☺	😐	☹	
	WNMG080412-NM4	1,2	0,15–0,35	0,8–3,5						😐	😐	☺	😐	☹				☺	😐	☹	
	WNMG080416-NM4	1,6	0,15–0,40	1,0–4,0									😐	☹					😐	☹	
	WNMG100608-NM4	0,8	0,18–0,40	0,8–4,5									😐	☹					😐	☹	
	WNMG100612-NM4	1,2	0,20–0,45	0,8–4,5									😐	☹					😐	☹	
	WNMG060404-MK5	0,4	0,16–0,25	0,6–4,0											☺	😐					
	WNMG060408-MK5	0,8	0,20–0,40	0,8–4,0											☺	😐					
	WNMG060412-MK5	1,2	0,16–0,45	0,6–4,0											☺	😐					
	WNMG080404-MK5	0,4	0,16–0,25	0,6–5,0											☺	😐					
	WNMG080408-MK5	0,8	0,20–0,45	1,2–5,0											☺	😐					
	WNMG080412-MK5	1,2	0,22–0,50	1,5–5,0											☺	😐					
	WNMG080416-MK5	1,6	0,25–0,55	2,0–5,0											☺	😐					
	WNMG100608-MK5	0,8	0,25–0,50	0,8–7,0											☺	😐					
	WNMG100612-MK5	1,2	0,30–0,60	1,2–7,0											☺	😐					
	WNMG100616-MK5	1,6	0,35–0,60	1,5–7,0											☺	😐					
	WNMG080408-NRS	0,8	0,16–0,35	1,0–4,0								☺	😐					☺	😐		
	WNMG080412-NRS	1,2	0,18–0,40	1,2–4,0								☺	😐					☺	😐		
	WNMG060408-NR4	0,8	0,22–0,40	1,2–3,5									😐	☹					😐	☹	
	WNMG080408-NR4	0,8	0,22–0,40	1,2–4,5						😐	😐	☺	😐	☹				☺	😐	☹	
	WNMG080412-NR4	1,2	0,25–0,50	1,5–4,5						😐	😐	☺	😐	☹				☺	😐	☹	
	WNMG100612-NR4	1,2	0,25–0,60	1,5–6,0									😐	☹					😐	☹	

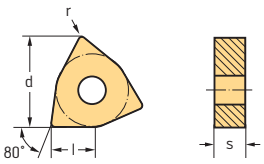
See the ISO 1832 designation key for dimensions

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A 234 A 244 A 256 A 80 A 190

Negative Trigon 80°
WNMG / WNMA / WNMM
Tiger·tec® Silver



Indexable inserts

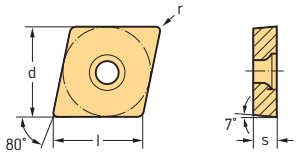
	Designation	r mm	f mm	a_p mm	P HC WPP01	P HC WPP05S	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WKP30S	S HC WSM10	S HC WSM20	S HC WSM30	HW WS10
	WNMG060408-RP5	0,8	0,20–0,40	0,8–4,0			●	●	●												
	WNMG060412-RP5	1,2	0,25–0,50	1,0–4,0			●	●	●												
	WNMG080408-RP5	0,8	0,20–0,40	0,8–6,0		●	●	●	●						●	●					
	WNMG080412-RP5	1,2	0,25–0,60	1,0–6,0		●	●	●	●						●	●					
	WNMG080416-RP5	1,6	0,35–0,70	1,6–6,0		●	●	●	●												
	WNMG100612-RP5	1,2	0,25–0,60	1,2–8,0		●	●	●	●												
	WNMG100616-RP5	1,6	0,35–0,70	1,6–8,0		●	●	●	●												
	WNMG080408-RP7	0,8	0,16–0,45	1,0–5,0			●	●	●												
	WNMG080412-RP7	1,2	0,20–0,45	1,5–5,0			●	●	●												
	WNMG100608-RP7	0,8	0,30–0,50	0,8–6,0				●	●												
	WNMG100612-RP7	1,2	0,35–0,60	1,2–6,0			●	●	●												
	WNMG100616-RP7	1,6	0,40–0,60	1,5–6,0				●	●												
	WNMA060404-RK5	0,4	0,16–0,25	0,6–4,0											●	●					
	WNMA060408-RK5	0,8	0,20–0,40	0,8–4,0											●	●					
	WNMA060412-RK5	1,2	0,22–0,50	1,2–4,0											●	●					
	WNMA080404-RK5	0,4	0,16–0,25	0,6–5,0											●	●					
	WNMA080408-RK5	0,8	0,20–0,45	1,2–5,0											●	●					
	WNMA080412-RK5	1,2	0,22–0,50	1,5–5,0											●	●					
	WNMA100612-RK5	1,2	0,25–0,60	1,5–6,0											●	●					
	WNMA100616-RK5	1,6	0,30–0,65	1,5–6,0											●	●					
	WNMA060408-RK7	0,8	0,20–0,40	0,8–4,0											●	●					
	WNMA080408-RK7	0,8	0,20–0,45	1,2–5,0											●	●					
	WNMA080412-RK7	1,2	0,22–0,50	1,5–5,0											●	●					
	WNMM080412-NRF	1,2	0,35–0,60	1,2–6,0			●	●	●												
	WNMM100612-NRF	1,2	0,35–0,70	1,2–8,0			●	●	●												
	WNMM100616-NRF	1,6	0,40–0,90	1,6–8,0			●	●	●												

See the ISO 1832 designation key for dimensions

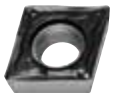
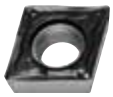
HC = Coated carbide
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A 234 A 244 A 256 A 80 A 190

Positive rhombic 80°
CCMT / CCGT / CCMW
Tiger·tec® Silver



Indexable inserts

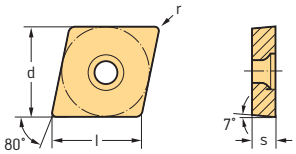
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	CCMT060204-PF	6,45	0,4	0,05–0,30	0,3–2,0	●	●	●								●	●									●	●
	CCMT060208-PF	6,45	0,8	0,09–0,35	0,3–2,0		●	●								●										●	
	CCMT09T304-PF	9,67	0,4	0,07–0,30	0,3–3,0	●	●	●								●	●									●	●
	CCMT09T308-PF	9,67	0,8	0,12–0,45	0,3–3,0	●	●	●								●	●									●	●
	CCGT060201-PF2	6,45	0,1	0,02–0,06	0,1–1,5											●				●						●	
	CCGT060202-PF2	6,45	0,2	0,05–0,12	0,2–2,0											●				●	●					●	
	CCGT060204-PF2	6,45	0,4	0,08–0,25	0,2–2,5											●				●	●					●	
	CCGT09T301-PF2	9,67	0,1	0,02–0,06	0,1–1,5											●				●						●	
	CCGT09T302-PF2	9,67	0,2	0,05–0,12	0,2–2,0											●				●	●					●	
	CCGT09T304-PF2	9,67	0,4	0,08–0,25	0,2–2,5										●	●				●	●				●	●	
	CCGT09T308-PF2	9,67	0,8	0,10–0,30	0,3–3,0										●	●				●	●				●	●	
	CCGT120404-PF2	12,90	0,4	0,08–0,25	0,2–3,0											●				●	●					●	
	CCGT120408-PF2	12,90	0,8	0,10–0,30	0,3–3,5											●				●	●					●	
	CCMT060202-FM4	6,45	0,2	0,04–0,12	0,1–1,0					●	●	●	●	●								●	●	●			
	CCMT060204-FM4	6,45	0,4	0,05–0,16	0,1–1,5					●	●	●	●	●								●	●	●			
	CCMT060208-FM4	6,45	0,8	0,08–0,20	0,1–1,5					●	●		●	●									●	●			
	CCMT09T302-FM4	9,67	0,2	0,04–0,12	0,1–1,0					●	●	●	●	●								●	●	●			
	CCMT09T304-FM4	9,67	0,4	0,05–0,16	0,1–1,5					●	●	●	●	●								●	●	●			
	CCMT09T308-FM4	9,67	0,8	0,08–0,20	0,1–1,5					●	●	●	●	●								●	●	●			
	CCMT120404-FM4	12,90	0,4	0,05–0,16	0,1–1,5							●	●	●								●	●	●			
	CCMT120408-FM4	12,90	0,8	0,08–0,20	0,1–1,5							●	●	●								●	●	●			
	CCMT060202-FP4	6,45	0,2	0,04–0,12	0,1–1,0		●	●																			
	CCMT060204-FP4	6,45	0,4	0,05–0,16	0,1–1,5		●	●																			
	CCMT060208-FP4	6,45	0,8	0,08–0,20	0,1–1,5		●	●																			
	CCMT09T302-FP4	9,67	0,2	0,04–0,12	0,1–1,0		●	●																			
	CCMT09T304-FP4	9,67	0,4	0,05–0,16	0,1–1,5		●	●																			
	CCMT09T308-FP4	9,67	0,8	0,08–0,20	0,1–1,5		●	●																			
	CCMT120404-FP4	12,90	0,4	0,05–0,16	0,1–1,5		●	●																			
	CCMT120408-FP4	12,90	0,8	0,08–0,20	0,1–1,5		●	●																			
	CCMT060202-PF4	6,45	0,2	0,04–0,12	0,1–1,0	●																					
	CCMT060204-PF4	6,45	0,4	0,05–0,16	0,1–1,5	●																					
	CCMT060208-PF4	6,45	0,8	0,08–0,20	0,1–1,5	●																					
	CCMT09T302-PF4	9,67	0,2	0,04–0,12	0,1–1,0	●																					
	CCMT09T304-PF4	9,67	0,4	0,05–0,16	0,1–1,5	●																					
	CCMT09T308-PF4	9,67	0,8	0,08–0,20	0,1–1,5	●																					
	CCMT120404-PF4	12,90	0,4	0,05–0,16	0,1–1,5	●																					
	CCMT120408-PF4	12,90	0,8	0,08–0,20	0,1–1,5	●																					

See the ISO 1832 designation key for dimensions

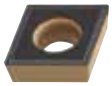
HC = Coated carbide
HW = Uncoated carbide

A 238 A 244 A 256 A 80 A 190

Positive rhombic 80°
CCMT / CCGT / CCMW
Tiger·tec® Silver

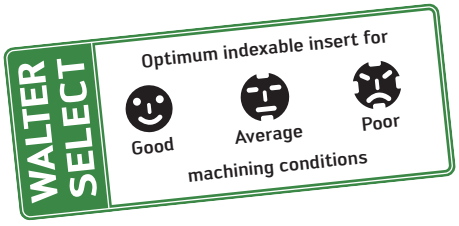


Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	CCGT060202-PF5	6,45	0,2	0,04–0,10	0,1–0,6												☹									
	CCGT060204-PF5	6,45	0,4	0,06–0,12	0,2–0,6												☹									
	CCGT09T302-PF5	9,67	0,2	0,04–0,10	0,1–1,0												☹									
	CCGT09T304-PF5	9,67	0,4	0,06–0,12	0,2–1,0												☹									
	CCMT060204-PS5	6,45	0,4	0,06–0,18	0,3–2,0											😐	☹								😐	☹
	CCMT060208-PS5	6,45	0,8	0,10–0,20	0,5–2,0											😐	☹								😐	☹
	CCMT09T304-PS5	9,67	0,4	0,08–0,20	0,3–2,0											😐	☹								😐	☹
	CCMT09T308-PS5	9,67	0,8	0,12–0,32	0,5–2,0											😐	☹								😐	☹
	CCMT120404-PS5	12,90	0,4	0,10–0,25	0,3–2,5											😐	☹								😐	☹
	CCMT120408-PS5	12,90	0,8	0,12–0,32	0,5–2,5											😐	☹								😐	☹
	CCMT060204-FP6	6,45	0,4	0,06–0,18	0,3–2,0		😊	😐																		
	CCMT060208-FP6	6,45	0,8	0,10–0,20	0,5–2,0			😐																		
	CCMT09T304-FP6	9,67	0,4	0,08–0,20	0,3–2,0		😊	😐																		
	CCMT09T308-FP6	9,67	0,8	0,12–0,32	0,5–2,0		😊	😐																		
	CCMT120404-FP6	12,90	0,4	0,10–0,25	0,3–2,5			😐																		
	CCMT120408-FP6	12,90	0,8	0,12–0,32	0,5–2,5			😐																		
	CCMT060204-FK6	6,45	0,4	0,06–0,18	0,3–2,0													😊	😐							
	CCMT060208-FK6	6,45	0,8	0,10–0,20	0,5–2,0													😊	😐							
	CCMT09T304-FK6	9,67	0,4	0,08–0,20	0,3–2,0													😊	😐							
	CCMT09T308-FK6	9,67	0,8	0,10–0,25	0,5–2,0													😊	😐							
	CCMT120404-FK6	12,90	0,4	0,10–0,25	0,3–2,5													😊	😐							
	CCMT120408-FK6	12,90	0,8	0,12–0,32	0,5–2,5													😊	😐							
 Wiper	CCMT09T304-PM	9,67	0,4	0,12–0,40	0,5–4,0		😊	😐										😊	😐							
	CCMT09T308-PM	9,67	0,8	0,15–0,50	0,7–4,0		😊	😐										😊	😐							
	CCMT09T312-PM	9,67	1,2	0,17–0,50	0,7–4,0			😐										😊	😐							
	CCMT120408-PM	12,90	0,8	0,15–0,50	0,7–4,0			😐										😊	😐							
	CCGT060201-PM2	6,45	0,1	0,02–0,06	0,5–1,5															😊	😊					
	CCGT060202-PM2	6,45	0,2	0,05–0,12	0,5–2,0															😊	😊					
	CCGT060204-PM2	6,45	0,4	0,08–0,25	0,6–3,0															😊	😊					
	CCGT09T301-PM2	9,67	0,1	0,02–0,06	0,5–1,5															😊	😊					
	CCGT09T302-PM2	9,67	0,2	0,05–0,12	0,5–2,0															😊	😊					
	CCGT09T304-PM2	9,67	0,4	0,08–0,25	0,6–4,0															😊	😊					
	CCGT09T308-PM2	9,67	0,8	0,10–0,35	0,8–4,0															😊	😊					
	CCGT120402-PM2	12,90	0,2	0,05–0,12	0,5–2,0															😊	😊					
	CCGT120404-PM2	12,90	0,4	0,08–0,25	0,6–5,0															😊	😊					
	CCGT120408-PM2	12,90	0,8	0,10–0,35	0,8–5,0															😊	😊					

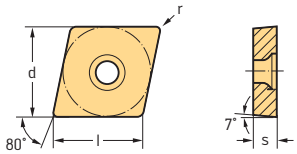
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide



A 238 A 244 A 256 A 80 A 190

Positive rhombic 80°
CCMT / CCGT / CCMW
Tiger·tec® Silver



Indexable inserts

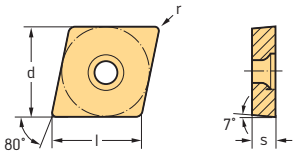
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	CCMT060204-MM4	6,45	0,4	0,08–0,20	0,4–2,0					●	●	●	●									●				
	CCMT060208-MM4	6,45	0,8	0,12–0,25	0,5–2,0					●	●		●										●				
	CCMT09T304-MM4	9,67	0,4	0,08–0,25	0,4–3,0					●	●	●	●									●	●				
	CCMT09T308-MM4	9,67	0,8	0,12–0,32	0,5–3,0					●	●	●	●									●	●				
	CCMT120404-MM4	12,90	0,4	0,12–0,25	0,4–3,5								●										●				
	CCMT120408-MM4	12,90	0,8	0,12–0,32	0,5–3,5							●	●									●	●				
	CCGT060204-MM4	6,45	0,4	0,08–0,20	0,4–2,0								●										●				
	CCGT060208-MM4	6,45	0,8	0,12–0,25	0,5–2,0								●										●				
	CCGT09T304-MM4	9,67	0,4	0,08–0,25	0,4–3,0								●										●				
	CCGT09T308-MM4	9,67	0,8	0,12–0,32	0,5–3,0								●										●				
	CCGT120408-MM4	12,90	0,8	0,12–0,32	0,5–3,5								●										●				
	CCMT060204-MP4	6,45	0,4	0,08–0,20	0,4–2,0		●	●																			
	CCMT060208-MP4	6,45	0,8	0,12–0,25	0,5–2,0		●	●																			
	CCMT09T304-MP4	9,67	0,4	0,08–0,25	0,4–3,0		●	●																			
	CCMT09T308-MP4	9,67	0,8	0,12–0,32	0,5–3,0		●	●																			
	CCMT120404-MP4	12,90	0,4	0,12–0,25	0,4–3,5		●	●																			
	CCMT120408-MP4	12,90	0,8	0,12–0,32	0,5–3,5		●	●																			
	CCGT060204-MP4	6,45	0,4	0,08–0,20	0,4–2,0		●	●																			
	CCGT060208-MP4	6,45	0,8	0,12–0,25	0,5–2,0		●	●																			
	CCGT09T304-MP4	9,67	0,4	0,08–0,25	0,4–3,0		●	●																			
	CCGT09T308-MP4	9,67	0,8	0,12–0,32	0,5–3,0		●	●																			
	CCGT120408-MP4	12,90	0,8	0,12–0,32	0,5–3,5		●	●																			
	CCMT060204-MK4	6,45	0,4	0,08–0,20	0,4–2,0													●	●								
	CCMT060208-MK4	6,45	0,8	0,12–0,25	0,5–2,0													●	●								
	CCMT09T304-MK4	9,67	0,4	0,08–0,25	0,4–3,0													●	●								
	CCMT09T308-MK4	9,67	0,8	0,12–0,32	0,5–3,0													●	●								
	CCMT120404-MK4	12,90	0,4	0,12–0,25	0,4–3,5													●	●								
	CCMT120408-MK4	12,90	0,8	0,12–0,32	0,5–3,5													●	●								
	CCGT060204-MK4	6,45	0,4	0,08–0,20	0,4–2,0														●								
	CCGT060208-MK4	6,45	0,8	0,12–0,25	0,5–2,0														●								
	CCGT09T304-MK4	9,67	0,4	0,08–0,25	0,4–3,0														●								
	CCGT09T308-MK4	9,67	0,8	0,12–0,32	0,5–3,0														●								
	CCGT120408-MK4	12,90	0,8	0,12–0,32	0,5–3,5														●								
	CCMT060204-RM4	6,45	0,4	0,12–0,25	0,4–2,5					●	●	●	●	●								●	●	●			
	CCMT060208-RM4	6,45	0,8	0,16–0,30	0,6–2,5					●	●	●	●	●								●	●	●			
	CCMT09T304-RM4	9,67	0,4	0,12–0,25	0,4–3,0					●	●	●	●	●								●	●	●			
	CCMT09T308-RM4	9,67	0,8	0,16–0,35	0,6–4,0					●	●	●	●	●								●	●	●			
	CCMT120404-RM4	12,90	0,4	0,12–0,25	0,4–3,0					●	●	●	●	●								●	●	●			
	CCMT120408-RM4	12,90	0,8	0,16–0,40	0,6–5,0					●	●	●	●	●								●	●	●			
	CCMT120412-RM4	12,90	1,2	0,20–0,50	0,8–5,0					●	●		●	●									●	●			

See the ISO 1832 designation key for dimensions

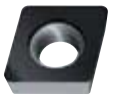
HC = Coated carbide
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A 238 A 244 A 256 A 80 A 190

Positive rhombic 80°
CCMT / CCGT / CCMW
Tiger·tec® Silver



Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	CCMT060204-RP4	6,45	0,4	0,12–0,25	0,4–2,5		☺	😐	☹																		
	CCMT060208-RP4	6,45	0,8	0,16–0,30	0,6–2,5		☺	😐	☹																		
	CCMT09T304-RP4	9,67	0,4	0,12–0,25	0,4–3,0		☺	😐	☹																		
	CCMT09T308-RP4	9,67	0,8	0,16–0,35	0,6–4,0		☺	😐	☹																		
	CCMT120404-RP4	12,90	0,4	0,12–0,30	0,4–4,0		☺	😐	☹																		
	CCMT120408-RP4	12,90	0,8	0,16–0,40	0,6–5,0		☺	😐	☹																		
	CCMT120412-RP4	12,90	1,2	0,20–0,50	0,8–5,0		☺	😐	☹																		
	CCMT060204-RK4	6,45	0,4	0,12–0,25	0,4–2,5													☺	😐								
	CCMT060208-RK4	6,45	0,8	0,16–0,30	0,6–2,5													☺	😐								
	CCMT09T304-RK4	9,67	0,4	0,12–0,25	0,4–3,0													☺	😐								
	CCMT09T308-RK4	9,67	0,8	0,16–0,35	0,6–4,0													☺	😐								
	CCMT120404-RK4	12,90	0,4	0,12–0,30	0,4–4,0													☺	😐								
	CCMT120408-RK4	12,90	0,8	0,16–0,40	0,6–5,0													☺	😐								
	CCMT120412-RK4	12,90	1,2	0,20–0,50	0,8–5,0													☺	😐								
	CCMW060202-RK6	6,45	0,2	0,08–0,12	0,2–2,5													☺	😐								
	CCMW060204-RK6	6,45	0,4	0,12–0,25	0,4–2,5													☺	😐								
	CCMW060208-RK6	6,45	0,8	0,16–0,30	0,5–2,5													☺	😐								
	CCMW09T304-RK6	9,67	0,4	0,12–0,25	0,4–3,0													☺	😐								
	CCMW09T308-RK6	9,67	0,8	0,16–0,35	0,5–4,0													☺	😐								
	CCMW120404-RK6	12,90	0,4	0,12–0,30	0,4–4,0													☺	😐								
	CCMW120408-RK6	12,90	0,8	0,16–0,40	0,6–5,0														😐								
	CCMW120412-RK6	12,90	1,2	0,20–0,50	0,8–5,0														😐								

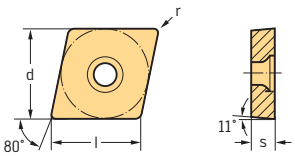
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
Good
Average
Poor
machining conditions

A 238 A 244 A 256 A 80 A 190

Positive rhombic 80°
CPMT / CPGT
Tiger·tec® Silver



Indexable inserts

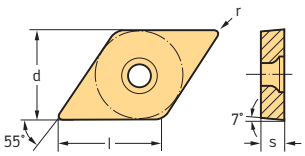
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	K HC WKK10S	K HC WKK20S	S HC WSM10S	S HC WSM20S	S HC WSM30S
	CPMT060204-MM4	6,45	0,4	0,08–0,20	0,4–2,0							●					●	
	CPMT060208-MM4	6,45	0,8	0,12–0,25	0,5–2,0							●					●	
	CPMT09T304-MM4	9,67	0,4	0,08–0,25	0,4–3,0							●					●	
	CPMT09T308-MM4	9,67	0,8	0,12–0,32	0,5–3,0							●					●	
	CPGT050204-MM4	5,56	0,4	0,08–0,20	0,4–1,5							●					●	
	CPGT060204-MM4	6,45	0,4	0,08–0,20	0,4–2,0							●					●	
	CPGT060208-MM4	6,45	0,8	0,12–0,25	0,5–2,0							●					●	
	CPGT09T304-MM4	9,67	0,4	0,08–0,25	0,4–3,0							●					●	
	CPGT09T308-MM4	9,67	0,8	0,12–0,32	0,5–3,0							●					●	
	CPMT060204-MP4	6,45	0,4	0,08–0,20	0,4–2,0		●											
	CPMT060208-MP4	6,45	0,8	0,12–0,25	0,5–2,0		●											
	CPMT09T304-MP4	9,67	0,4	0,08–0,25	0,4–3,0		●											
	CPMT09T308-MP4	9,67	0,8	0,12–0,32	0,5–3,0		●											
	CPGT050204-MP4	5,56	0,4	0,08–0,20	0,4–1,5		●											
	CPGT060204-MP4	6,45	0,4	0,08–0,20	0,4–2,0	●	●											
	CPGT060208-MP4	6,45	0,8	0,12–0,25	0,5–2,0	●	●											
	CPGT09T304-MP4	9,67	0,4	0,08–0,25	0,4–3,0	●	●											
	CPGT09T308-MP4	9,67	0,8	0,12–0,32	0,5–3,0	●	●											
	CPMT060204-MK4	6,45	0,4	0,08–0,20	0,4–2,0										●			
	CPMT060208-MK4	6,45	0,8	0,12–0,25	0,5–2,0										●			
	CPMT09T304-MK4	9,67	0,4	0,08–0,25	0,4–3,0										●			
	CPMT09T308-MK4	9,67	0,8	0,12–0,32	0,5–3,0										●			
	CPGT050204-MK4	5,56	0,4	0,08–0,20	0,4–1,5										●			
	CPGT060204-MK4	6,45	0,4	0,08–0,20	0,4–2,0										●			
	CPGT060208-MK4	6,45	0,8	0,12–0,25	0,5–2,0										●			
	CPGT09T304-MK4	9,67	0,4	0,08–0,25	0,4–3,0										●			
	CPGT09T308-MK4	9,67	0,8	0,12–0,32	0,5–3,0										●			

See the ISO 1832 designation key for dimensions

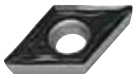
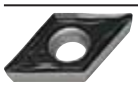
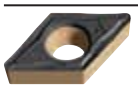
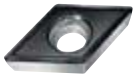
HC = Coated carbide

A 238 A 244 A 256 A 80 A 190

Positive rhombic 55°
DCMT / DCGT / DCMW
Tiger·tec® Silver

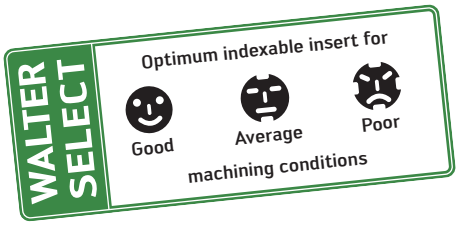


Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	DCMT070204-PF	7,75	0,4	0,05–0,25	0,3–2,0	☺	☺	😐								😐	☹									😐	☹
	DCMT11T304-PF	11,63	0,4	0,07–0,30	0,3–3,0	☺	☺	😐								😐	☹									😐	☹
	DCMT11T308-PF	11,63	0,8	0,12–0,40	0,3–3,0	☺	☺	😐								😐	☹									😐	☹
	DCGT070201-PF2	7,75	0,1	0,02–0,06	0,1–1,5											😐				☺						😐	
	DCGT070202-PF2	7,75	0,2	0,05–0,12	0,2–2,0											😐				☺	☺					😐	
	DCGT070204-PF2	7,75	0,4	0,08–0,25	0,2–2,5											😐				☺	☺					😐	
	DCGT11T301-PF2	11,63	0,1	0,02–0,06	0,1–1,5											😐				☺						😐	
	DCGT11T302-PF2	11,63	0,2	0,05–0,12	0,2–2,0											😐				☺	☺					😐	
	DCGT11T304-PF2	11,63	0,4	0,08–0,25	0,2–2,5										☺	😐				☺	☺				☺	😐	
	DCGT11T308-PF2	11,63	0,8	0,10–0,30	0,3–3,0										☺	😐				☺	☺				☺	😐	
	DCMT070202-FM4	7,75	0,2	0,04–0,12	0,1–1,0							☺	😐	☹								☺	😐	☹			
	DCMT070204-FM4	7,75	0,4	0,05–0,16	0,1–1,5					😐	😐	☺	😐	☹								☺	😐	☹			
	DCMT070208-FM4	7,75	0,8	0,08–0,20	0,1–1,5							☺	😐									☺	😐				
	DCMT11T302-FM4	11,63	0,2	0,04–0,12	0,1–1,0					😐	😐	☺	😐	☹								☺	😐	☹			
	DCMT11T304-FM4	11,63	0,4	0,05–0,16	0,1–1,5					😐	😐	☺	😐	☹								☺	😐	☹			
	DCMT11T308-FM4	11,63	0,8	0,08–0,20	0,1–1,5					😐	😐	☺	😐	☹								☺	😐	☹			
	DCMT070202-FP4	7,75	0,2	0,04–0,12	0,1–1,0		☺	😐																			
	DCMT070204-FP4	7,75	0,4	0,05–0,16	0,1–1,5		☺	😐																			
	DCMT070208-FP4	7,75	0,8	0,08–0,20	0,1–1,5		☺	😐																			
	DCMT11T302-FP4	11,63	0,2	0,04–0,12	0,1–1,0		☺	😐																			
	DCMT11T304-FP4	11,63	0,4	0,05–0,16	0,1–1,5		☺	😐																			
	DCMT11T308-FP4	11,63	0,8	0,08–0,20	0,1–1,5		☺	😐																			
	DCMT070202-PF4	7,75	0,2	0,04–0,12	0,1–1,0	☺																					
	DCMT070204-PF4	7,75	0,4	0,05–0,16	0,1–1,5	☺																					
	DCMT11T302-PF4	11,63	0,2	0,04–0,12	0,1–1,0	☺																					
	DCMT11T304-PF4	11,63	0,4	0,05–0,16	0,1–1,5	☺																					
	DCMT11T308-PF4	11,63	0,8	0,08–0,20	0,1–1,5	☺																					
	DCMT070204-PS5	7,75	0,4	0,06–0,18	0,3–2,0											😐	☹									😐	☹
	DCMT070208-PS5	7,75	0,8	0,08–0,25	0,5–2,0												☹										☹
	DCMT11T304-PS5	11,63	0,4	0,08–0,20	0,3–2,0											😐	☹									😐	☹
	DCMT11T308-PS5	11,63	0,8	0,10–0,25	0,5–2,0											😐	☹									😐	☹
	DCMT070204-FP6	7,75	0,4	0,06–0,18	0,3–2,0		☺	😐																			
	DCMT11T304-FP6	11,63	0,4	0,08–0,20	0,3–2,0		☺	😐																			
	DCMT11T308-FP6	11,63	0,8	0,10–0,25	0,5–2,0		☺	😐																			
	DCMT070204-FK6	7,75	0,4	0,06–0,18	0,3–2,0													☺	😐								
	DCMT11T304-FK6	11,63	0,4	0,08–0,20	0,3–2,0													☺	😐								
	DCMT11T308-FK6	11,63	0,8	0,10–0,25	0,5–2,0													☺	😐								

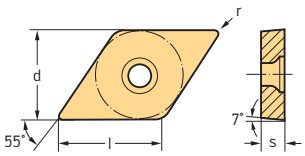
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

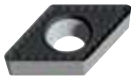
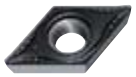


A 238 A 244 A 256 A 80 A 190

Positive rhombic 55°
DCMT / DCGT / DCMW
Tiger·tec® Silver



Indexable inserts

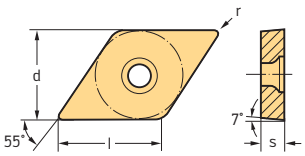
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	DCMT11T304-PM	11,63	0,4	0,12–0,40	0,5–4,0		●	●					○			●		●	●							●	
	DCMT11T308-PM	11,63	0,8	0,15–0,50	0,5–4,0		●	●					○			●		●	●							●	
Wiper																											
	DCGT070201-PM2	7,75	0,1	0,02–0,06	0,5–1,5															●	●						
	DCGT070202-PM2	7,75	0,2	0,05–0,12	0,5–2,0															●	●						
	DCGT070204-PM2	7,75	0,4	0,08–0,25	0,6–2,5															●	●						
	DCGT11T301-PM2	11,63	0,1	0,02–0,06	0,5–1,5															●	●						
	DCGT11T302-PM2	11,63	0,2	0,05–0,12	0,5–2,0															●	●						
	DCGT11T304-PM2	11,63	0,4	0,08–0,25	0,6–3,0															●	●						
	DCGT11T308-PM2	11,63	0,8	0,10–0,30	0,8–3,5															●	●						
	DCMT070204-MM4	7,75	0,4	0,08–0,20	0,4–2,0					○	○	○	○									●	○				
	DCMT070208-MM4	7,75	0,8	0,12–0,25	0,5–2,0					○	○	○	○									●	○				
	DCMT11T304-MM4	11,63	0,4	0,08–0,25	0,4–3,0					○	○	○	○									●	○				
	DCMT11T308-MM4	11,63	0,8	0,12–0,32	0,5–3,0					○	○	○	○									●	○				
	DCMT11T312-MM4	11,63	1,2	0,15–0,35	0,5–3,0								○										○				
	DCGT070204-MM4	7,75	0,4	0,08–0,20	0,4–2,0								○										○				
	DCGT11T304-MM4	11,63	0,4	0,08–0,25	0,4–3,0								○										○				
	DCGT11T308-MM4	11,63	0,8	0,12–0,32	0,5–3,0								○										○				
	DCMT070204-MP4	7,75	0,4	0,08–0,20	0,4–2,0		●	●																			
	DCMT070208-MP4	7,75	0,8	0,12–0,25	0,5–2,0		●	●																			
	DCMT11T304-MP4	11,63	0,4	0,08–0,25	0,4–3,0		●	●																			
	DCMT11T308-MP4	11,63	0,8	0,12–0,32	0,5–3,0		●	●																			
	DCMT11T312-MP4	11,63	1,2	0,15–0,35	0,5–3,0		●	●																			
	DCGT070204-MP4	7,75	0,4	0,08–0,20	0,4–2,0		●	●																			
	DCGT11T304-MP4	11,63	0,4	0,08–0,25	0,4–3,0		●	●																			
	DCGT11T308-MP4	11,63	0,8	0,12–0,32	0,5–3,0		●	●																			
	DCMT070204-MK4	7,75	0,4	0,08–0,20	0,4–2,0													●	○								
	DCMT070208-MK4	7,75	0,8	0,12–0,25	0,5–2,0														○								
	DCMT11T304-MK4	11,63	0,4	0,08–0,25	0,4–3,0													●	○								
	DCMT11T308-MK4	11,63	0,8	0,12–0,32	0,5–3,0													●	○								
	DCMT11T312-MK4	11,63	1,2	0,15–0,35	0,5–3,0													●	○								
	DCMT070204-RM4	7,75	0,4	0,12–0,20	0,4–2,0					○	○	○	○	✕								●	○	✕			
	DCMT070208-RM4	7,75	0,8	0,16–0,30	0,6–2,0							○	○	✕								●	○	✕			
	DCMT11T304-RM4	11,63	0,4	0,12–0,25	0,4–3,0					○	○	○	○	✕								●	○	✕			
	DCMT11T308-RM4	11,63	0,8	0,16–0,35	0,6–4,0					○	○	○	○	✕								●	○	✕			
	DCMT11T312-RM4	11,63	1,2	0,20–0,40	0,8–4,0								○	✕									○	✕			

See the ISO 1832 designation key for dimensions

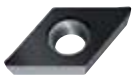
HC = Coated carbide
HW = Uncoated carbide

A 238 A 244 A 256 A 80 A 190

Positive rhombic 55°
DCMT / DCGT / DCMW
Tiger·tec® Silver

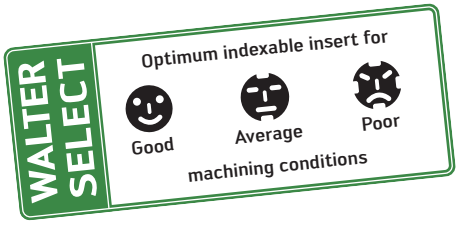


Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	DCMT070204-RP4	7,75	0,4	0,12–0,20	0,4–2,0		☺	😐	☹																		
	DCMT070208-RP4	7,75	0,8	0,16–0,30	0,6–2,0		☺	😐	☹																		
	DCMT11T304-RP4	11,63	0,4	0,12–0,25	0,4–3,0		☺	😐	☹																		
	DCMT11T308-RP4	11,63	0,8	0,16–0,35	0,6–4,0		☺	😐	☹																		
	DCMT11T312-RP4	11,63	1,2	0,20–0,40	0,8–4,0		☺	😐	☹																		
	DCMT070204-RK4	7,75	0,4	0,12–0,20	0,4–2,0													☺	😐								
	DCMT070208-RK4	7,75	0,8	0,16–0,30	0,6–2,0													☺	😐								
	DCMT11T304-RK4	11,63	0,4	0,12–0,25	0,4–3,0													☺	😐								
	DCMT11T308-RK4	11,63	0,8	0,16–0,35	0,6–4,0													☺	😐								
	DCMT11T312-RK4	11,63	1,2	0,20–0,40	0,8–4,0													☺	😐								
	DCMW11T304-RK6	11,63	0,4	0,12–0,25	0,4–3,0													☺	😐								
	DCMW11T308-RK6	11,63	0,8	0,16–0,35	0,5–4,0													☺	😐								

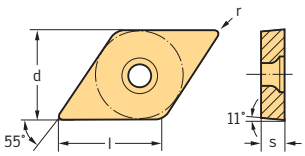
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

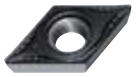


A 238 A 244 A 256 A 80 A 190

Positive rhombic 55°
DPMT / DPGT
Tiger·tec® Silver



Indexable inserts

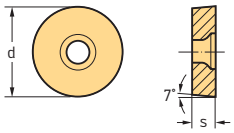
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	K HC WKK10S	K HC WKK20S	S HC WSM10S	S HC WSM20S	S HC WSM30S
	DPMT070204-MM4	7,75	0,4	0,08–0,20	0,4–2,0							●					●	
	DPMT11T304-MM4	11,63	0,4	0,08–0,25	0,4–3,0							●					●	
	DPMT11T308-MM4	11,63	0,8	0,12–0,32	0,5–3,0							●					●	
	DPGT070204-MM4	7,75	0,4	0,08–0,20	0,4–2,0							●					●	
	DPGT11T304-MM4	11,63	0,4	0,08–0,25	0,4–3,0							●					●	
	DPGT11T308-MM4	11,63	0,8	0,12–0,32	0,5–3,0							●					●	
	DPMT070204-MP4	7,75	0,4	0,08–0,20	0,4–2,0		●											
	DPMT11T304-MP4	11,63	0,4	0,08–0,25	0,4–3,0		●											
	DPMT11T308-MP4	11,63	0,8	0,12–0,32	0,5–3,0		●											
	DPGT070204-MP4	7,75	0,4	0,08–0,20	0,4–2,0	●	●											
	DPGT11T304-MP4	11,63	0,4	0,08–0,25	0,4–3,0	●	●											
	DPGT11T308-MP4	11,63	0,8	0,12–0,32	0,5–3,0	●	●											
	DPMT070204-MK4	7,75	0,4	0,08–0,20	0,4–2,0										●			
	DPMT11T304-MK4	11,63	0,4	0,08–0,25	0,4–3,0										●			
	DPMT11T308-MK4	11,63	0,8	0,12–0,32	0,5–3,0										●			

See the ISO 1832 designation key for dimensions

HC = Coated carbide

A 238 A 244 A 256 A 80 A 190

Positive round
RCMT / RCGT / RCMX
Tiger·tec® Silver

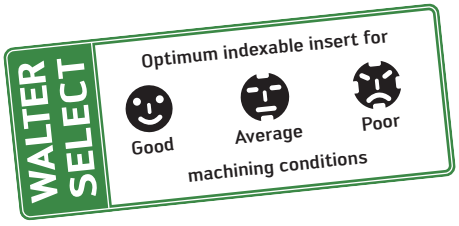


Indexable inserts

	Designation	d mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM30	S HW WS10
	RCMT0602M0-FM4	6	0,07–0,30	0,6–2,5						☺	😐							☺	😐			
	RCMT0803M0-FM4	8	0,08–0,30	0,8–3,0						☺	😐	☹						☺	😐	☹		
	RCMT10T3M0-FM4	10	0,10–0,35	1,0–4,0						☺	😐	☹						☺	😐	☹		
	RCMT1204M0-FM4	12	0,12–0,40	1,2–5,0						☺	😐	☹						☺	😐	☹		
	RCMT0602M0-FP4	6	0,07–0,30	0,6–2,5	☺	😐																
	RCMT0803M0-FP4	8	0,08–0,30	0,8–3,0		😐																
	RCMT10T3M0-FP4	10	0,10–0,35	1,0–4,0		😐																
	RCMT1204M0-FP4	12	0,12–0,40	1,2–5,0	☺	😐																
	RCGT0502M0-PF5	5	0,07–0,25	0,6–2,5																		😐
	RCGT0602M0-PF5	6	0,07–0,25	0,6–2,5									☹								😐	😐
	RCGT0803M0-PF5	8	0,08–0,30	0,8–3,0									☹								😐	😐
	RCGT10T3M0-PF5	10	0,10–0,35	1,0–4,0									☹								😐	😐
	RCGT1204M0-PF5	12	0,12–0,40	1,2–5,0																		😐
	RCGT0602M0-PM2	6	0,10–0,55	0,6–2,5												☺	☺					
	RCGT060300-PM2	6,35	0,10–0,55	0,6–2,5												☺						
	RCGT0803M0-PM2	8	0,12–0,60	0,7–3,0												☺	☺					
	RCGT09T300-PM2	9,525	0,12–0,60	0,7–3,0												☺						
	RCGT10T3M0-PM2	10	0,15–0,70	0,8–4,0												☺	☺					
	RCGT1204M0-PM2	12	0,18–0,80	1,0–5,0												☺	☺					
	RCGT120400-PM2	12,7	0,18–0,80	1,0–5,0												☺						
	RCMT0602M0-RM4	6	0,08–0,50	0,6–2,5							😐	☹							😐	☹		
	RCMT060300-RM4	6,35	0,08–0,50	0,6–2,5							😐								😐			
	RCMT0803M0-RM4	8	0,10–0,60	0,8–3,0				😐	😐		😐	☹							😐	☹		
	RCMT09T300-RM4	9,525	0,10–0,60	0,8–3,0							😐								😐			
	RCMT10T3M0-RM4	10	0,12–0,80	1,0–4,0				😐	😐		😐	☹							😐	☹		
	RCMT1204M0-RM4	12	0,12–1,00	1,2–5,0				😐	😐		😐	☹							😐	☹		
	RCMT120400-RM4	12,7	0,12–1,00	1,2–5,0							😐								😐			
	RCMT1606M0-RM4	16	0,15–1,20	1,6–7,0							😐	☹							😐	☹		
	RCMT0602M0-RP4	6	0,08–0,50	0,6–2,5	☺	😐	☹															
	RCMT060300-RP4	6,35	0,08–0,50	0,6–2,5		😐	☹															
	RCMT0803M0-RP4	8	0,10–0,60	0,8–3,0	☺	😐	☹															
	RCMT09T300-RP4	9,525	0,10–0,60	0,8–3,0		😐	☹															
	RCMT10T3M0-RP4	10	0,12–0,80	1,0–4,0	☺	😐	☹															
	RCMT1204M0-RP4	12	0,12–1,00	1,2–5,0	☺	😐	☹															
	RCMT120400-RP4	12,7	0,12–1,00	1,2–5,0		😐	☹															
	RCMT1605M0-RP4	16	0,15–1,20	1,6–7,0	☺	😐	☹															
	RCMT1606M0-RP4	16	0,15–1,20	1,6–7,0	☺	😐	☹															

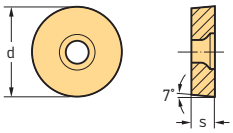
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide



A 238 A 244 A 256 A 80 A 190

Positive round
RCMT / RCGT / RCMX
Tiger·tec® Silver



Indexable inserts

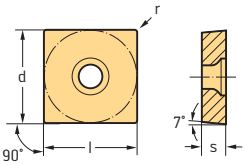
	Designation	d mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM30	S HW WS10
	RCMT0602M0-RK4	6	0,08–0,50	0,6–2,5											☻							
	RCMT0803M0-RK4	8	0,10–0,60	0,8–3,0											☻							
	RCMT10T3M0-RK4	10	0,12–0,80	1,0–4,0										☻	☻							
	RCMT1204M0-RK4	12	0,12–1,00	1,2–5,0										☻	☻							
	RCMT1605M0-RK4	16	0,15–1,20	1,6–7,0											☻							
	RCMT1606M0-RK4	16	0,15–1,20	1,6–7,0										☻	☻							
	RCMT10T3M0-HU6	10	0,12–0,80	1,0–4,0	☻	☻	☻															
	RCMT1204M0-HU6	12	0,12–1,20	1,2–5,0	☻	☻	☻															
	RCMT1606M0-HU6	16	0,15–1,20	1,6–7,0	☻	☻	☻								☻							
	RCMX2006M0-HU6	20	0,25–1,40	2,0–9,0	☻	☻	☻								☻							
	RCMX2507M0-HU6	25	0,30–1,60	2,5–11,0	☻	☻	☻								☻							
	RCMX3209M0-HU6	32	0,30–1,70	3,2–15,0	☻	☻	☻								☻							

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 238 A 244 A 256 A 80 A 190

Positive square
SCGT / SCMT / SCMW
Tiger·tec® Silver

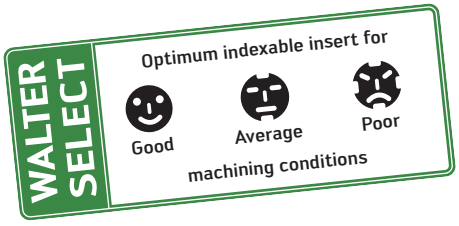


Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM20	S HC WSM30
	SCGT09T304-PF2	9,53	0,4	0,08–0,25	0,2–2,5									●				●					●	
	SCGT09T308-PF2	9,53	0,8	0,10–0,30	0,3–3,0									●				●					●	
	SCGT120408-PF2	12,7	0,8	0,10–0,30	0,3–3,5									●				●					●	
	SCMT09T304-FM4	9,53	0,4	0,05–0,15	0,1–1,5				●	●		●	✖								●	✖		
	SCMT09T308-FM4	9,53	0,8	0,05–0,18	0,1–1,8				●	●		●	✖								●	✖		
	SCMT120408-FM4	12,7	0,8	0,05–0,18	0,1–1,8							●	✖								●	✖		
	SCMT09T304-FP4	9,53	0,4	0,05–0,15	0,1–1,5	☺	●																	
	SCMT09T308-FP4	9,53	0,8	0,05–0,18	0,1–1,8	☺	●																	
	SCMT120404-FP4	12,7	0,4	0,05–0,15	0,1–1,5	☺	●																	
	SCMT120408-FP4	12,7	0,8	0,05–0,18	0,1–1,8	☺	●																	
	SCMT120412-FP4	12,7	1,2	0,12–0,32	0,3–1,8	☺	●																	
	SCMT09T304-PS5	9,53	0,4	0,08–0,20	0,3–2,0									●	✖								●	✖
	SCMT09T308-PS5	9,53	0,8	0,10–0,25	0,5–2,0									●	✖								●	✖
	SCMT120408-PS5	12,7	0,8	0,12–0,32	0,5–2,5									●	✖								●	✖
	SCMT09T304-FP6	9,53	0,4	0,08–0,20	0,3–2,0		●																	
	SCMT09T308-FP6	9,53	0,8	0,10–0,25	0,5–2,0		●																	
	SCMT120408-FP6	12,7	0,8	0,12–0,32	0,5–2,5		●																	
	SCMT09T304-FK6	9,53	0,4	0,08–0,20	0,3–2,0											☺	●							
	SCMT09T308-FK6	9,53	0,8	0,10–0,25	0,5–2,0											☺	●							
	SCMT120408-FK6	12,7	0,8	0,12–0,32	0,5–2,5											☺	●							
	SCGT09T304-PM2	9,53	0,4	0,08–0,25	0,6–4,0													☺	☺					
	SCGT09T308-PM2	9,53	0,8	0,10–0,35	0,7–4,0													☺	☺					
	SCGT120408-PM2	12,7	0,8	0,10–0,40	0,8–6,0													☺	☺					
	SCMT09T304-MM4	9,53	0,4	0,08–0,25	0,4–3,0				●	●	☺	●								☺	●			
	SCMT09T308-MM4	9,53	0,8	0,12–0,32	0,5–3,0				●	●	☺	●								☺	●			
	SCMT120408-MM4	12,7	0,8	0,12–0,32	0,5–3,5							●									●			
	SCGT09T304-MM4	9,53	0,4	0,08–0,25	0,4–3,0							●									●			
	SCGT09T308-MM4	9,53	0,8	0,12–0,32	0,5–3,0							●									●			
	SCGT120408-MM4	12,7	0,8	0,12–0,32	0,5–3,5							●									●			

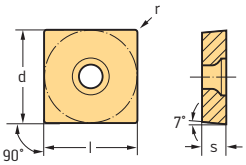
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide



A 238 A 244 A 256 A 80 A 190

Positive square
SCGT / SCMT / SCMW
Tiger·tec® Silver



Indexable inserts

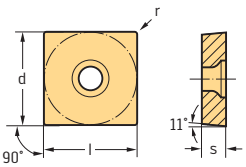
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM20	S HC WSM30
	SCMT09T304-MP4	9,53	0,4	0,08–0,25	0,4–3,0	●	●																	
	SCMT09T308-MP4	9,53	0,8	0,12–0,32	0,5–3,0	●	●																	
	SCMT120408-MP4	12,7	0,8	0,12–0,32	0,5–3,5	●	●																	
	SCGT09T304-MP4	9,53	0,4	0,08–0,25	0,4–3,0	●	●																	
	SCGT09T308-MP4	9,53	0,8	0,12–0,32	0,5–3,0	●	●																	
	SCGT120408-MP4	12,7	0,8	0,12–0,32	0,5–3,5	●	●																	
	SCMT09T304-MK4	9,53	0,4	0,08–0,25	0,4–3,0											●	●							
	SCMT09T308-MK4	9,53	0,8	0,12–0,32	0,5–3,0											●	●							
	SCMT120408-MK4	12,7	0,8	0,12–0,32	0,5–3,5											●	●							
	SCGT09T304-MK4	9,53	0,4	0,08–0,25	0,4–3,0												●							
	SCGT09T308-MK4	9,53	0,8	0,12–0,32	0,5–3,0												●							
	SCGT120408-MK4	12,7	0,8	0,12–0,32	0,5–3,5												●							
	SCMT09T304-RM4	9,53	0,4	0,12–0,25	0,4–3,0				●	●		●	●								●	●		
	SCMT09T308-RM4	9,53	0,8	0,16–0,35	0,6–4,0				●	●	●	●	●							●	●	●		
	SCMT120404-RM4	12,7	0,4	0,12–0,25	0,4–3,0							●	●								●	●		
	SCMT120408-RM4	12,7	0,8	0,16–0,40	0,6–5,0				●	●	●	●	●							●	●	●		
	SCMT120412-RM4	12,7	1,2	0,20–0,50	0,8–5,0				●	●		●	●								●	●		
	SCMT09T304-RP4	9,53	0,4	0,12–0,25	0,4–3,0	●	●	●																
	SCMT09T308-RP4	9,53	0,8	0,16–0,35	0,6–4,0	●	●	●																
	SCMT09T312-RP4	9,53	1,2	0,20–0,45	0,8–5,0	●																		
	SCMT120404-RP4	12,7	0,4	0,12–0,25	0,4–3,0	●	●	●																
	SCMT120408-RP4	12,7	0,8	0,16–0,40	0,6–5,0	●	●	●																
	SCMT120412-RP4	12,7	1,2	0,20–0,50	0,8–5,0	●	●	●																
	SCMT09T304-RK4	9,53	0,4	0,12–0,25	0,4–3,0											●	●							
	SCMT09T308-RK4	9,53	0,8	0,16–0,35	0,6–4,0											●	●							
	SCMT120404-RK4	12,7	0,4	0,12–0,25	0,4–3,0											●	●							
	SCMT120408-RK4	12,7	0,8	0,16–0,40	0,6–5,0											●	●							
	SCMT120412-RK4	12,7	1,2	0,20–0,50	0,8–5,0											●	●							
	SCMW09T304-RK6	9,53	0,4	0,12–0,25	0,4–3,0											●	●							
	SCMW09T308-RK6	9,53	0,8	0,16–0,35	0,6–4,0											●	●							
	SCMW120404-RK6	12,7	0,4	0,12–0,25	0,4–4,0												●							
	SCMW120408-RK6	12,7	0,8	0,16–0,40	0,6–5,0												●							
	SCMW120412-RK6	12,7	1,2	0,20–0,50	0,8–5,0												●							

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 238 A 244 A 256 A 80 A 190

Positive square
SPMT / SPGT
Tiger·tec® Silver



Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	K HC WKK10S	K HC WKK20S	S HC WSM10S	S HC WSM20S	S HC WSM30S
	SPMT09T304-MM4	9,53	0,4	0,08–0,25	0,4–3,0							☹					☹	
	SPMT09T308-MM4	9,53	0,8	0,12–0,32	0,5–3,0							☹					☹	
	SPGT09T304-MM4	9,53	0,4	0,08–0,25	0,4–3,0							☹					☹	
	SPGT09T308-MM4	9,53	0,8	0,12–0,32	0,5–3,0							☹					☹	
	SPMT09T304-MP4	9,53	0,4	0,08–0,25	0,4–3,0		☹											
	SPMT09T308-MP4	9,53	0,8	0,12–0,32	0,5–3,0		☹											
	SPGT09T304-MP4	9,53	0,4	0,08–0,25	0,4–3,0	☺	☹											
	SPGT09T308-MP4	9,53	0,8	0,12–0,32	0,5–3,0	☺	☹											
	SPMT09T304-MK4	9,53	0,4	0,08–0,25	0,4–3,0										☹			
	SPMT09T308-MK4	9,53	0,8	0,12–0,32	0,5–3,0										☹			
	SPGT09T304-MK4	9,53	0,4	0,08–0,25	0,4–3,0										☹			
	SPGT09T308-MK4	9,53	0,8	0,12–0,32	0,5–3,0										☹			

See the ISO 1832 designation key for dimensions

HC = Coated carbide

WALTER SELECT

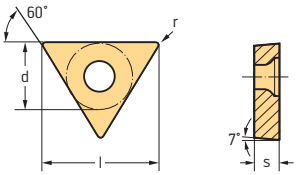
Optimum indexable insert for

Good ☺ Average 😐 Poor ☹

machining conditions

A 238 A 244 A 256 A 80 A 190

Positive triangular 60°
TCGT / TCMT / TCMW
Tiger·tec® Silver



Indexable inserts

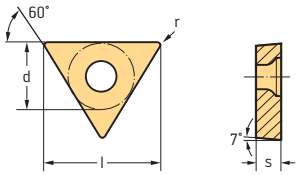
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM20	M HC WSM21	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM20	S HC WSM30
	TCGT06T101-PF2	6,62	0,1	0,02–0,06	0,1–1,5											⊠				☺						
	TCGT06T102-PF2	6,62	0,2	0,05–0,12	0,2–2,0											⊠				☺						
	TCGT06T104-PF2	6,62	0,4	0,08–0,25	0,2–2,5											⊠				☺	☺					
	TCGT090201-PF2	9,37	0,1	0,02–0,06	0,1–1,5															☺						
	TCGT090202-PF2	9,37	0,2	0,05–0,12	0,2–2,0										☹					☺					☹	
	TCGT090204-PF2	9,37	0,4	0,08–0,25	0,2–2,5										☹					☺	☺				☹	
	TCGT110201-PF2	10,74	0,1	0,02–0,06	0,1–1,5															☺						
	TCGT110202-PF2	10,74	0,2	0,05–0,12	0,2–2,0										☹					☺					☹	
	TCGT110204-PF2	10,74	0,4	0,08–0,25	0,2–2,5										☹					☺	☺				☹	
	TCGT16T301-PF2	16,50	0,1	0,02–0,06	0,1–1,5															☺						
	TCGT16T302-PF2	16,50	0,2	0,05–0,12	0,2–2,0										☹					☺					☹	
	TCGT16T304-PF2	16,50	0,4	0,08–0,25	0,2–2,5										☹					☺	☺				☹	
	TCGT16T308-PF2	16,50	0,8	0,10–0,30	0,3–3,0										☹					☺	☺				☹	
	TCMT06T102-FM4	6,62	0,2	0,02–0,10	0,1–1,0											⊠										
	TCMT06T104-FM4	6,62	0,4	0,04–0,17	0,1–1,0											⊠										
	TCMT090202-FM4	9,37	0,2	0,04–0,12	0,1–1,0							☺	☹	⊠								☺	☹	⊠		
	TCMT090204-FM4	9,37	0,4	0,05–0,16	0,1–1,5							☺	☹	⊠								☺	☹	⊠		
	TCMT090208-FM4	9,37	0,8	0,08–0,20	0,1–1,5							☺	☹									☺	☹			
	TCMT110202-FM4	10,74	0,2	0,04–0,12	0,1–1,0							☺	☹	⊠								☺	☹	⊠		
	TCMT110204-FM4	10,74	0,4	0,05–0,16	0,1–1,5					☹	☹	☺	☹	⊠								☺	☹	⊠		
	TCMT110208-FM4	10,74	0,8	0,08–0,20	0,1–1,5							☺	☹	⊠								☺	☹	⊠		
	TCMT16T302-FM4	16,50	0,2	0,04–0,12	0,1–1,0							☺	☹									☺	☹			
	TCMT16T304-FM4	16,50	0,4	0,05–0,16	0,1–1,5					☹	☹	☺	☹	⊠								☺	☹	⊠		
	TCMT16T308-FM4	16,50	0,8	0,08–0,20	0,1–1,5					☹	☹	☺	☹	⊠								☺	☹	⊠		
	TCMT06T102-FP4	6,62	0,2	0,02–0,10	0,1–1,0			☹																		
	TCMT06T104-FP4	6,62	0,4	0,04–0,17	0,1–1,0			☹																		
	TCMT090202-FP4	9,37	0,2	0,04–0,12	0,1–1,0			☹																		
	TCMT090204-FP4	9,37	0,4	0,05–0,16	0,1–1,5		☺	☹																		
	TCMT090208-FP4	9,37	0,8	0,08–0,20	0,1–1,5			☹																		
	TCMT110202-FP4	10,74	0,2	0,04–0,12	0,1–1,0		☺	☹																		
	TCMT110204-FP4	10,74	0,4	0,05–0,16	0,1–1,5		☺	☹																		
	TCMT110208-FP4	10,74	0,8	0,08–0,20	0,1–1,5		☺	☹																		
	TCMT16T302-FP4	16,50	0,2	0,04–0,12	0,1–1,0			☹																		
	TCMT16T304-FP4	16,50	0,4	0,05–0,16	0,1–1,5		☺	☹																		
	TCMT16T308-FP4	16,50	0,8	0,08–0,20	0,1–1,5		☺	☹																		
	TCMT16T304-PF4	16,50	0,4	0,05–0,16	0,1–1,5	☺																				
	TCMT16T308-PF4	16,50	0,8	0,08–0,20	0,1–1,5	☺																				

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 238 A 244 A 256 A 80 A 190

Positive triangular 60°
TCGT / TCMT / TCMW
Tiger·tec® Silver



Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM20	M HC WSM21	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM20	S HC WSM30
	TCMT110204-PS5	10,74	0,4	0,06–0,18	0,3–2,0										☺		☹								☺	☹
	TCMT110208-PS5	10,74	0,8	0,10–0,20	0,5–2,0										☺		☹								☺	☹
	TCMT16T304-PS5	16,50	0,4	0,08–0,20	0,3–2,0										☺		☹								☺	☹
	TCMT16T308-PS5	16,50	0,8	0,10–0,25	0,5–2,0										☺		☹								☺	☹
	TCMT110204-FP6	10,74	0,4	0,06–0,18	0,3–2,0			☺																		
	TCMT110208-FP6	10,74	0,8	0,10–0,20	0,5–2,0			☺																		
	TCMT16T304-FP6	16,50	0,4	0,08–0,20	0,3–2,0			☺																		
	TCMT16T308-FP6	16,50	0,8	0,10–0,25	0,5–2,0			☺																		
	TCMT110204-FK6	10,74	0,4	0,06–0,18	0,3–2,0													☺	☺							
	TCMT110208-FK6	10,74	0,8	0,10–0,20	0,5–2,0													☺	☺							
	TCMT16T304-FK6	16,50	0,4	0,08–0,20	0,3–2,0													☺	☺							
	TCMT16T308-FK6	16,50	0,8	0,10–0,25	0,5–2,0													☺	☺							
	TCGT110201-PM2	10,74	0,1	0,02–0,06	0,5–1,5															☺	☺					
	TCGT110202-PM2	10,74	0,2	0,05–0,12	0,6–2,0															☺	☺					
	TCGT110204-PM2	10,74	0,4	0,08–0,25	0,6–3,0															☺	☺					
	TCGT16T302-PM2	16,50	0,2	0,05–0,12	0,5–2,0															☺	☺					
	TCGT16T304-PM2	16,50	0,4	0,08–0,25	0,6–4,0															☺	☺					
	TCGT16T308-PM2	16,50	0,8	0,10–0,35	0,8–4,0															☺	☺					
	TCMT090204-MM4	9,37	0,4	0,08–0,20	0,4–2,0							☺	☺									☺	☺			
	TCMT090208-MM4	9,37	0,8	0,12–0,25	0,5–2,0							☺	☺									☺	☺			
	TCMT110204-MM4	10,74	0,4	0,08–0,20	0,4–2,0							☺	☺									☺	☺			
	TCMT110208-MM4	10,74	0,8	0,12–0,30	0,5–2,0							☺	☺									☺	☺			
	TCMT16T304-MM4	16,50	0,4	0,08–0,25	0,4–3,0					☹	☹	☺	☹									☺	☹			
	TCMT16T308-MM4	16,50	0,8	0,12–0,32	0,5–3,0					☹	☹	☺	☹									☺	☹			
	TCGT090204-MM4	9,37	0,4	0,08–0,20	0,4–2,0								☹										☹			
	TCGT110204-MM4	10,74	0,4	0,08–0,20	0,4–2,0								☹										☹			
	TCGT110208-MM4	10,74	0,8	0,12–0,30	0,5–2,0								☹										☹			
	TCGT16T304-MM4	16,50	0,4	0,08–0,25	0,4–3,0								☹										☹			
	TCGT16T308-MM4	16,50	0,8	0,12–0,32	0,5–3,0								☹										☹			
	TCMT090204-MP4	9,37	0,4	0,08–0,20	0,4–2,0		☺	☹																		
	TCMT090208-MP4	9,37	0,8	0,12–0,25	0,5–2,0		☺	☹																		
	TCMT110204-MP4	10,74	0,4	0,08–0,20	0,4–2,0		☺	☹																		
	TCMT110208-MP4	10,74	0,8	0,12–0,30	0,5–2,0		☺	☹																		
	TCMT16T304-MP4	16,50	0,4	0,08–0,25	0,4–3,0		☺	☹																		
	TCMT16T308-MP4	16,50	0,8	0,12–0,32	0,5–3,0		☺	☹																		

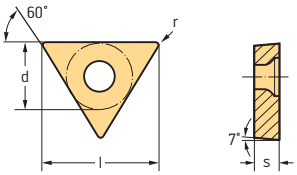
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
Good
Average
Poor
machining conditions

A 238 A 244 A 256 A 80 A 190

Positive triangular 60°
TCGT / TCMT / TCMW
Tiger·tec® Silver



Indexable inserts

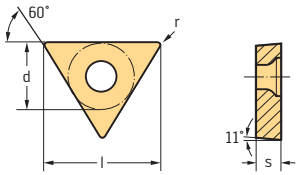
	Designation	l mm	r mm	f mm	a_p mm	P					M							K		N		S					
							HC					HC						HC		HC	HW	HC					
						WPP01	WPP10S	WPP20S	WPP30S	WMP20S	WMP20S	WSM10S	WSM20S	WSM30S	WSM20	WSM21	WSM30	WKK10S	WKK20S	WXN10	WK1	WSM10S	WSM20S	WSM30S	WSM20	WSM30
	TCGT090204-MP4	9,37	0,4	0,08–0,20	0,4–2,0		●	●																		
	TCGT110204-MP4	10,74	0,4	0,08–0,20	0,4–2,0		●	●																		
	TCGT110208-MP4	10,74	0,8	0,12–0,30	0,5–2,0		●	●																		
	TCGT16T304-MP4	16,50	0,4	0,08–0,25	0,4–3,0		●	●																		
	TCGT16T308-MP4	16,50	0,8	0,12–0,32	0,5–3,0		●	●																		
	TCMT090204-MK4	9,37	0,4	0,08–0,20	0,4–2,0													●	●								
	TCMT090208-MK4	9,37	0,8	0,12–0,25	0,5–2,0													●	●								
	TCMT110204-MK4	10,74	0,4	0,08–0,20	0,4–2,0													●	●								
	TCMT110208-MK4	10,74	0,8	0,12–0,30	0,5–2,0													●	●								
	TCMT16T304-MK4	16,50	0,4	0,08–0,25	0,4–3,0													●	●								
	TCMT16T308-MK4	16,50	0,8	0,12–0,32	0,5–3,0													●	●								
	TCGT090204-MK4	9,37	0,4	0,08–0,20	0,4–2,0														●								
	TCGT110204-MK4	10,74	0,4	0,08–0,20	0,4–2,0														●								
	TCGT110208-MK4	10,74	0,8	0,12–0,30	0,5–2,0														●								
	TCGT16T304-MK4	16,50	0,4	0,08–0,25	0,4–3,0														●								
	TCGT16T308-MK4	16,50	0,8	0,12–0,32	0,5–3,0														●								
	TCMT090204-RM4	9,37	0,4	0,12–0,25	0,4–3,0								●	●									●	●		
	TCMT090208-RM4	9,37	0,8	0,16–0,30	0,6–3,0								●	●									●	●		
	TCMT110204-RM4	10,74	0,4	0,12–0,25	0,4–3,0					●	●	●	●	●								●	●	●		
	TCMT110208-RM4	10,74	0,8	0,16–0,30	0,6–3,0					●	●		●	●									●	●		
	TCMT16T304-RM4	16,50	0,4	0,12–0,25	0,4–3,0					●	●	●	●	●								●	●	●		
	TCMT16T308-RM4	16,50	0,8	0,16–0,35	0,6–4,0					●	●	●	●	●								●	●	●		
	TCMT16T312-RM4	16,50	1,2	0,20–0,40	0,8–4,0					●	●		●	●									●	●		
	TCMT090204-RP4	9,37	0,4	0,12–0,25	0,4–3,0		●	●	●																	
	TCMT090208-RP4	9,37	0,8	0,16–0,30	0,6–3,0		●	●	●																	
	TCMT110204-RP4	10,74	0,4	0,12–0,25	0,4–3,0		●	●	●																	
	TCMT110208-RP4	10,74	0,8	0,16–0,30	0,6–3,0		●	●	●																	
	TCMT16T304-RP4	16,50	0,4	0,12–0,25	0,4–3,0		●	●	●																	
	TCMT16T308-RP4	16,50	0,8	0,16–0,35	0,6–4,0		●	●	●																	
	TCMT16T312-RP4	16,50	1,2	0,20–0,40	0,8–4,0		●	●	●																	
	TCMT090204-RK4	9,37	0,4	0,12–0,25	0,4–3,0													●	●								
	TCMT090208-RK4	9,37	0,8	0,16–0,30	0,6–3,0													●	●								
	TCMT110204-RK4	10,74	0,4	0,12–0,25	0,4–3,0													●	●								
	TCMT110208-RK4	10,74	0,8	0,16–0,30	0,6–3,0													●	●								
	TCMT16T304-RK4	16,50	0,4	0,12–0,25	0,4–3,0													●	●								
	TCMT16T308-RK4	16,50	0,8	0,16–0,35	0,6–4,0													●	●								
	TCMT16T312-RK4	16,50	1,2	0,20–0,40	0,8–4,0													●	●								
	TCMW110202-RK6	10,74	0,2	0,08–0,12	0,2–3,0													●	●								
	TCMW110204-RK6	10,74	0,4	0,12–0,25	0,4–3,0													●	●								
	TCMW110208-RK6	10,74	0,8	0,16–0,30	0,6–3,0													●	●								
	TCMW16T304-RK6	16,50	0,4	0,12–0,25	0,4–3,0													●	●								
	TCMW16T308-RK6	16,50	0,8	0,16–0,35	0,6–4,0													●	●								

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 238 A 244 A 256 A 80 A 190

Positive triangular 60°
TPMT / TPGT
Tiger·tec® Silver

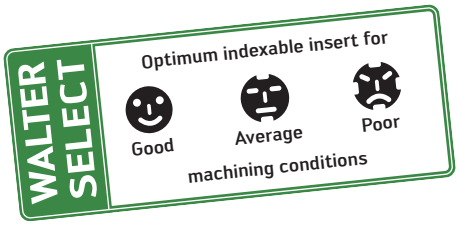


Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	K HC WKK10S	K HC WKK20S	S HC WSM10S	S HC WSM20S	S HC WSM30S
	TPMT090204-MM4	9,90	0,4	0,08–0,20	0,4–2,0							☺					☺	
	TPMT110204-MM4	11,00	0,4	0,08–0,20	0,4–2,0							☺					☺	
	TPMT110208-MM4	11,00	0,8	0,12–0,30	0,5–2,0							☺					☺	
	TPMT16T304-MM4	16,50	0,4	0,08–0,25	0,4–3,0							☺					☺	
	TPMT16T308-MM4	16,50	0,8	0,12–0,32	0,5–3,0							☺					☺	
	TPGT110204-MM4	11,00	0,4	0,08–0,20	0,4–2,0							☺					☺	
	TPGT110208-MM4	11,00	0,8	0,12–0,30	0,5–2,0							☺					☺	
	TPGT16T304-MM4	16,50	0,4	0,08–0,25	0,4–3,0							☺					☺	
	TPGT16T308-MM4	16,50	0,8	0,12–0,32	0,5–3,0							☺					☺	
	TPMT090204-MP4	9,90	0,4	0,08–0,20	0,4–2,0		☺											
	TPMT110204-MP4	11,00	0,4	0,08–0,20	0,4–2,0		☺											
	TPMT110208-MP4	11,00	0,8	0,12–0,30	0,5–2,0		☺											
	TPMT16T304-MP4	16,50	0,4	0,08–0,25	0,4–3,0		☺											
	TPMT16T308-MP4	16,50	0,8	0,12–0,32	0,5–3,0		☺											
	TPGT090204-MP4	9,90	0,4	0,08–0,20	0,4–2,0	☺	☺											
	TPGT110204-MP4	11,00	0,4	0,08–0,20	0,4–2,0	☺	☺											
	TPGT110208-MP4	11,00	0,8	0,12–0,30	0,5–2,0	☺	☺											
	TPGT16T304-MP4	16,50	0,4	0,08–0,25	0,4–3,0	☺	☺											
	TPGT16T308-MP4	16,50	0,8	0,12–0,32	0,5–3,0	☺	☺											
	TPMT090204-MK4	9,90	0,4	0,08–0,20	0,4–2,0										☺			
	TPMT110204-MK4	11,00	0,4	0,08–0,20	0,4–2,0										☺			
	TPMT110208-MK4	11,00	0,8	0,12–0,30	0,5–2,0										☺			
	TPMT16T304-MK4	16,50	0,4	0,08–0,25	0,4–3,0										☺			
	TPMT16T308-MK4	16,50	0,8	0,12–0,32	0,5–3,0										☺			
	TPGT090204-MK4	9,90	0,4	0,08–0,20	0,4–2,0										☺			
	TPGT110204-MK4	11,00	0,4	0,08–0,20	0,4–2,0										☺			
	TPGT110208-MK4	11,00	0,8	0,12–0,30	0,5–2,0										☺			
	TPGT16T304-MK4	16,50	0,4	0,08–0,25	0,4–3,0										☺			
	TPGT16T308-MK4	16,50	0,8	0,12–0,32	0,5–3,0										☺			
	TPMR110308	11,00	0,8	0,16–0,30	0,6–3,0										☺			
	TPMR160304	16,50	0,4	0,12–0,25	0,4–3,0		☺											
	TPMR160308	16,50	0,8	0,16–0,30	0,6–4,0		☺											

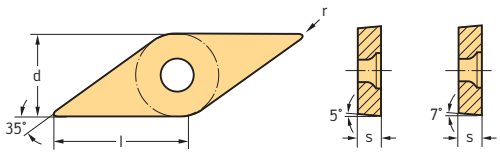
See the ISO 1832 designation key for dimensions

HC = Coated carbide



A 238 A 244 A 256 A 80 A 190

Positive rhombic 35°
VCGT / VCMT / VBGT / VBMT / VCMW
Tiger·tec® Silver



Indexable inserts

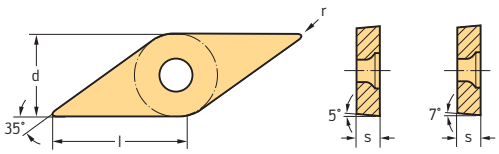
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	VCGT110301-PF2	11,07	0,1	0,02–0,06	0,1–1,5											●				●						●	
	VCGT110302-PF2	11,07	0,2	0,05–0,12	0,2–2,0											●				●	●					●	
	VCGT110304-PF2	11,07	0,4	0,08–0,25	0,2–2,5										●	●				●	●				●	●	
	VCGT160402-PF2	16,61	0,2	0,05–0,12	0,2–2,0											●				●	●					●	
	VCGT160404-PF2	16,61	0,4	0,08–0,25	0,2–2,5										●	●				●	●				●	●	
	VCGT160408-PF2	16,61	0,8	0,10–0,30	0,3–3,0										●	●				●	●				●	●	
	VCMT110302-FM4	11,07	0,2	0,04–0,12	0,1–1,0					●	●	●	●	●								●	●	●			
	VCMT110304-FM4	11,07	0,4	0,05–0,16	0,1–1,5					●	●	●	●	●								●	●	●			
	VCMT160402-FM4	16,61	0,2	0,04–0,12	0,1–1,0					●	●	●	●	●								●	●	●			
	VCMT160404-FM4	16,61	0,4	0,05–0,16	0,1–1,5					●	●	●	●	●								●	●	●			
	VCMT160408-FM4	16,61	0,8	0,08–0,20	0,1–1,5					●	●	●	●	●								●	●	●			
	VCMT110302-FP4	11,07	0,2	0,04–0,12	0,1–1,0		●	●																			
	VCMT110304-FP4	11,07	0,4	0,05–0,16	0,1–1,5		●	●																			
	VCMT160402-FP4	16,61	0,2	0,04–0,12	0,1–1,0		●	●																			
	VCMT160404-FP4	16,61	0,4	0,05–0,16	0,1–1,5		●	●																			
	VCMT160408-FP4	16,61	0,8	0,08–0,20	0,1–1,5		●	●																			
	VCMT110302-PF4	11,07	0,2	0,04–0,12	0,1–1,0	●																					
	VCMT110304-PF4	11,07	0,4	0,05–0,16	0,1–1,5	●																					
	VCMT160402-PF4	16,61	0,2	0,04–0,12	0,1–1,0	●																					
	VCMT160404-PF4	16,61	0,4	0,05–0,16	0,1–1,5	●																					
	VCMT160408-PF4	16,61	0,8	0,08–0,20	0,1–1,5	●																					
	VBGT110302-PF5	11,07	0,2	0,04–0,10	0,1–0,6												●										●
	VBGT110304-PF5	11,07	0,4	0,06–0,12	0,2–0,6												●										●
	VBMT110304-PS5	11,07	0,4	0,06–0,18	0,3–2,0										●	●	●								●	●	●
	VBMT110308-PS5	11,07	0,8	0,10–0,20	0,5–2,0										●	●	●								●	●	●
	VBMT160404-PS5	16,61	0,4	0,08–0,20	0,3–2,0										●	●	●								●	●	●
	VBMT160408-PS5	16,61	0,8	0,10–0,25	0,5–2,0										●	●	●								●	●	●
	VBMT160412-PS5	16,61	1,2	0,12–0,30	0,6–2,0										●	●	●								●	●	●
	VBMT110304-FP6	11,07	0,4	0,06–0,18	0,3–2,0		●	●																			
	VBMT110308-FP6	11,07	0,8	0,10–0,20	0,5–2,0		●	●																			
	VBMT160404-FP6	16,61	0,4	0,08–0,20	0,3–2,0		●	●																			
	VBMT160406-FP6	16,61	0,6	0,10–0,25	0,4–2,0		●	●																			
	VBMT160408-FP6	16,61	0,8	0,10–0,25	0,5–2,0		●	●																			
	VBMT160412-FP6	16,61	1,2	0,12–0,30	0,6–2,0		●	●																			
	VBMT110304-FK6	11,07	0,4	0,06–0,18	0,3–2,0													●	●								
	VBMT110308-FK6	11,07	0,8	0,10–0,20	0,5–2,0													●	●								
	VBMT160404-FK6	16,61	0,4	0,08–0,20	0,3–2,0													●	●								
	VBMT160406-FK6	16,61	0,6	0,10–0,25	0,4–2,0													●	●								
	VBMT160408-FK6	16,61	0,8	0,10–0,25	0,5–2,0													●	●								
	VBMT160412-FK6	16,61	1,2	0,12–0,30	0,6–2,0														●								

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 238 A 244 A 256 A 80 A 190

Positive rhombic 35°
VCGT / VCMT / VBGT / VBMT / VCMW
Tiger·tec® Silver

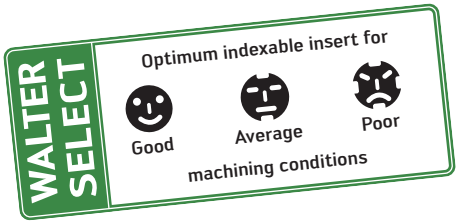


Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	VCGT110301-PM2	11,07	0,1	0,02–0,06	0,5–1,5															☺	☺						
	VCGT110302-PM2	11,07	0,2	0,05–0,12	0,5–2,0															☺	☺						
	VCGT110304-PM2	11,07	0,4	0,08–0,25	0,6–2,5															☺	☺						
	VCGT110308-PM2	11,07	0,8	0,10–0,35	0,8–3,0															☺	☺						
	VCGT130301-PM2	13,1	0,1	0,02–0,06	0,5–1,5															☺	☺						
	VCGT130302-PM2	13,1	0,2	0,05–0,12	0,5–2,0															☺	☺						
	VCGT130304-PM2	13,1	0,4	0,08–0,25	0,6–3,0															☺	☺						
	VCGT160404-PM2	16,61	0,4	0,08–0,25	0,6–3,5															☺	☺						
	VCGT160408-PM2	16,61	0,8	0,10–0,35	0,8–3,5															☺	☺						
	VCGT160412-PM2	16,61	1,2	0,10–0,45	1,0–3,5															☺	☺						
	VBMT110304-MM4	11,07	0,4	0,08–0,20	0,4–1,5					😐	😐		😐										😐				
	VBMT110308-MM4	11,07	0,8	0,12–0,25	0,5–1,5								😐										😐				
	VBMT160404-MM4	16,61	0,4	0,08–0,20	0,4–2,0					😐	😐	☺	😐									☺	😐				
	VBMT160408-MM4	16,61	0,8	0,12–0,30	0,5–2,0					😐	😐	☺	😐									☺	😐				
	VBMT160412-MM4	16,61	1,2	0,12–0,32	0,5–2,0							☺	😐									☺	😐				
	VBMT110304-MP4	11,07	0,4	0,08–0,20	0,4–1,5		☺	😐																			
	VBMT110308-MP4	11,07	0,8	0,12–0,25	0,5–1,5		☺	😐																			
	VBMT160404-MP4	16,61	0,4	0,08–0,20	0,4–2,0		☺	😐																			
	VBMT160406-MP4	16,61	0,6	0,12–0,25	0,5–2,0		☺	😐																			
	VBMT160408-MP4	16,61	0,8	0,12–0,30	0,5–2,0		☺	😐																			
	VBMT160412-MP4	16,61	1,2	0,12–0,32	0,5–2,0		☺	😐																			
	VBMT110304-MK4	11,07	0,4	0,08–0,20	0,4–1,5													☺	😐								
	VBMT110308-MK4	11,07	0,8	0,12–0,25	0,5–1,5													☺	😐								
	VBMT160404-MK4	16,61	0,4	0,08–0,20	0,4–2,0													☺	😐								
	VBMT160408-MK4	16,61	0,8	0,12–0,30	0,5–2,0													☺	😐								
	VBMT160412-MK4	16,61	1,2	0,12–0,32	0,5–2,0														😐								
	VCMT110304-RM4	11,07	0,4	0,12–0,20	0,4–2,5					😐	😐	☺	😐	😣								☺	😐	😣			
	VCMT110308-RM4	11,07	0,8	0,16–0,25	0,6–3,0								😐	😣									😐	😣			
	VCMT160404-RM4	16,61	0,4	0,12–0,25	0,4–2,5					😐	😐	☺	😐	😣								☺	😐	😣			
	VCMT160408-RM4	16,61	0,8	0,16–0,30	0,6–3,0					😐	😐	☺	😐	😣								☺	😐	😣			
	VCMT160412-RM4	16,61	1,2	0,20–0,35	0,8–4,0								😐	😣									😐	😣			
	VCMT110304-RP4	11,07	0,4	0,12–0,20	0,4–2,5		☺	😐	😣																		
	VCMT110308-RP4	11,07	0,8	0,16–0,25	0,6–3,0		☺	😐	😣																		
	VCMT160404-RP4	16,61	0,4	0,12–0,25	0,4–2,5		☺	😐	😣																		
	VCMT160406-RP4	16,61	0,6	0,15–0,25	0,6–3,0		☺	😐	😣																		
	VCMT160408-RP4	16,61	0,8	0,16–0,30	0,6–3,0		☺	😐	😣																		
	VCMT160412-RP4	16,61	1,2	0,20–0,35	0,8–3,0		☺	😐	😣																		

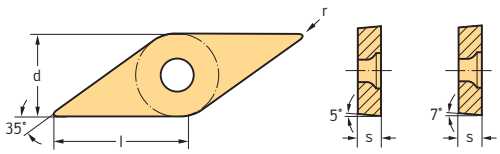
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide



A 238 A 244 A 256 A 80 A 190

Positive rhombic 35°
VCGT / VCMT / VBGT / VBMT / VCMW
Tiger·tec® Silver



Indexable inserts

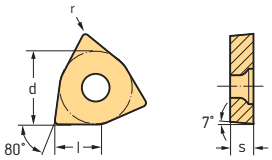
	Designation	l mm	r mm	f mm	a_p mm	P HC WPP01	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM10	S HC WSM20	S HC WSM30
	VCMT110304-RK4	11,07	0,4	0,12–0,20	0,4–2,5													☻	☻								
	VCMT110308-RK4	11,07	0,8	0,16–0,25	0,6–3,0													☻	☻								
	VCMT160404-RK4	16,61	0,4	0,12–0,25	0,4–2,5													☻	☻								
	VCMT160408-RK4	16,61	0,8	0,16–0,30	0,6–3,0													☻	☻								
	VCMT160412-RK4	16,61	1,2	0,20–0,35	0,8–3,0													☻	☻								
	VCMW160404-RK6	16,61	0,4	0,12–0,25	0,4–2,5													☻	☻								
	VCMW160408-RK6	16,61	0,8	0,16–0,30	0,6–3,0													☻	☻								
	VCMW160412-RK6	16,61	1,2	0,20–0,35	0,8–3,0													☻	☻								

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

A 238 A 244 A 256 A 80 A 190

Positive Trigon 80°
WCMT / WCGT
Tiger·tec® Silver



Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM20	M HC WSM21	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM20
	WCMT040204-PF	4,34	0,4	0,05–0,30	0,3–1,5		●							●									
	WCMT06T304-PF	6,52	0,4	0,07–0,30	0,3–2,0	●								●									●
	WCMT06T308-PF	6,52	0,8	0,07–0,35	0,3–2,0		●							●									●
	WCGT030202-PF2	3,91	0,2	0,05–0,12	0,2–2,0										●			●					
	WCGT030204-PF2	3,91	0,4	0,08–0,25	0,2–2,5										●			●					
	WCGT040202-PF2	4,34	0,2	0,05–0,12	0,2–2,0										●			●					
	WCGT040204-PF2	4,34	0,4	0,08–0,25	0,2–2,5										●			●					
	WCGT06T301-PF2	6,52	0,1	0,02–0,06	0,1–1,5													●					
	WCGT06T302-PF2	6,52	0,2	0,05–0,12	0,2–2,0													●					
	WCGT06T304-PF2	6,52	0,4	0,08–0,25	0,2–2,5													●					
	WCGT06T308-PF2	6,52	0,8	0,10–0,30	0,3–3,0													●					
	WCMT040202-FM4	4,34	0,2	0,04–0,12	0,1–1,0							●	●							●	●		
	WCMT040204-FM4	4,34	0,4	0,05–0,16	0,1–1,5							●	●							●	●		
	WCMT06T304-FM4	6,52	0,4	0,05–0,16	0,1–1,5							●	●							●	●		
	WCMT06T308-FM4	6,52	0,8	0,08–0,20	0,1–1,5							●	●							●	●		
	WCMT040202-FP4	4,34	0,2	0,04–0,12	0,1–1,0	●	●																
	WCMT040204-FP4	4,34	0,4	0,05–0,16	0,1–1,5	●	●																
	WCMT040208-FP4	4,34	0,8	0,08–0,20	0,1–1,5	●	●																
	WCMT06T302-FP4	6,52	0,2	0,04–0,12	0,1–1,0	●	●																
	WCMT06T304-FP4	6,52	0,4	0,05–0,16	0,1–1,5	●	●																
	WCMT06T308-FP4	6,52	0,8	0,08–0,20	0,1–1,5		●																
	WCMT080404-FP4	8,69	0,4	0,05–0,16	0,1–1,5		●																
	WCMT080408-FP4	8,69	0,8	0,08–0,20	0,1–1,5		●																
	WCMT040204-FP6	4,34	0,4	0,06–0,18	0,3–2,0		●																
	WCMT040208-FP6	4,34	0,8	0,10–0,20	0,5–2,0		●																
	WCMT06T308-FP6	6,52	0,8	0,10–0,25	0,5–2,0		●																
	WCMT040204-FK6	4,34	0,4	0,06–0,18	0,3–2,0												●						
	WCMT06T308-FK6	6,52	0,8	0,10–0,25	0,5–2,0												●						

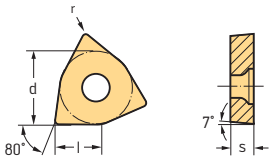
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
Good
Average
Poor
machining conditions

A 238 A 244 Ra/Rz A 256 A 80 A 190

Positive Trigon 80°
WCMT / WCGT
Tiger·tec® Silver



Indexable inserts

	Designation	l mm	r mm	f mm	a_p mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM20	M HC WSM21	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM20
	WCGT030202-PM2	3,91	0,2	0,05–0,12	0,5–1,5													●	●				
	WCGT030204-PM2	3,91	0,4	0,08–0,20	0,6–1,5													●	●				
	WCGT040202-PM2	4,34	0,2	0,05–0,12	0,5–2,0													●	●				
	WCGT040204-PM2	4,34	0,4	0,08–0,25	0,6–2,5													●	●				
	WCGT06T302-PM2	6,52	0,2	0,05–0,12	0,6–2,0													●	●				
	WCGT06T304-PM2	6,52	0,4	0,08–0,25	0,6–3,0													●	●				
	WCGT080404-PM2	8,69	0,4	0,08–0,25	0,6–4,0													●	●				
	WCGT080408-PM2	8,69	0,8	0,10–0,35	0,8–4,0													●	●				
	WCMT06T304-MM4	6,52	0,4	0,08–0,25	0,4–2,5							◐									◐		
	WCMT06T308-MM4	6,52	0,8	0,12–0,32	0,5–2,5							◐									◐		
	WCMT06T304-MP4	6,52	0,4	0,08–0,25	0,4–2,5		◐																
	WCMT06T308-MP4	6,52	0,8	0,12–0,32	0,5–2,5		◐																
	WCMT06T304-MK4	6,52	0,4	0,08–0,25	0,4–2,5												◐						
	WCMT06T308-MK4	6,52	0,8	0,12–0,32	0,5–2,5												◐						
	WCMT030202-RM4	3,91	0,2	0,08–0,12	0,2–1,5							◐									◐		
	WCMT040202-RM4	4,34	0,2	0,08–0,12	0,4–2,0							◐	◒								◐	◒	
	WCMT040204-RM4	4,34	0,4	0,12–0,25	0,4–2,5							◐	◒								◐	◒	
	WCMT06T304-RM4	6,52	0,4	0,12–0,25	0,4–3,0							◐	◒								◐	◒	
	WCMT06T308-RM4	6,52	0,8	0,16–0,35	0,6–3,0							◐	◒								◐	◒	
	WCMT080408-RM4	8,69	0,8	0,16–0,40	0,6–4,0							◐	◒								◐	◒	
	WCMT080412-RM4	8,69	1,2	0,20–0,45	0,8–4,0							◐	◒								◐	◒	
	WCMT030202-RP4	3,91	0,2	0,08–0,12	0,2–1,5	●	◐	◒															
	WCMT040204-RP4	4,34	0,4	0,12–0,25	0,4–2,5	●	◐	◒															
	WCMT06T304-RP4	6,52	0,4	0,12–0,25	0,4–3,0	●	◐	◒															
	WCMT06T308-RP4	6,52	0,8	0,16–0,35	0,6–3,0	●	◐	◒															
	WCMT080404-RP4	8,69	0,4	0,12–0,25	0,4–3,0	●	◐	◒															
	WCMT080408-RP4	8,69	0,8	0,16–0,40	0,6–4,0	●	◐	◒															
	WCMT080412-RP4	8,69	1,2	0,20–0,45	0,8–4,0	●	◐	◒															
	WCMT030202-RK4	3,91	0,2	0,08–0,12	0,2–1,5												◐						
	WCMT040204-RK4	4,34	0,4	0,12–0,25	0,4–2,5												◐						
	WCMT06T304-RK4	6,52	0,4	0,12–0,25	0,4–3,0											●	◐						
	WCMT06T308-RK4	6,52	0,8	0,16–0,35	0,6–3,0											●	◐						
	WCMT080404-RK4	8,69	0,4	0,12–0,25	0,4–3,0												◐						
	WCMT080408-RK4	8,69	0,8	0,16–0,40	0,6–4,0												◐						
	WCMT080412-RK4	8,69	1,2	0,20–0,45	0,8–4,0												◐						

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

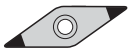
A 238 | A 244 | A 256 | A 80 | A 190

Product range overview of indexable inserts and cutting tool materials: ISO turning – CBN/PCD/ceramic

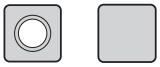




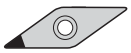
CBN indexable inserts

Insert shape		Description	Page
	C	Negative basic shape	A 64
		Positive basic shape 7°/11°	A 66
	D	Negative basic shape	A 64
		Positive basic shape 7°	A 67
	S	Negative basic shape	A 65
	T	Negative basic shape	A 65
		Positive basic shape 7°	A 67
	V	Positive basic shape 5°	A 68
	W	Positive basic shape 7°	A 68

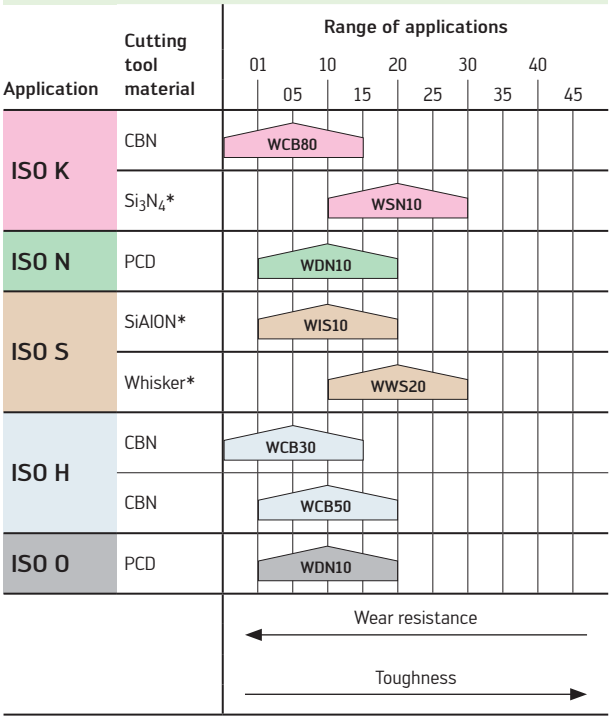
Ceramic indexable inserts

Insert shape		Description	Page
	C	Negative basic shape	A 73
	D	Negative basic shape	A 73
	R	Negative basic shape	A 74
		Positive basic shape 7°/11°	A 76
	S	Negative basic shape	A 74
	T	Negative basic shape	A 75

PCD indexable inserts

Insert shape		Description	Page
	C	Positive basic shape 7°	A 69
	D	Positive basic shape 7°	A 70
	S	Positive basic shape 7°	A 71
	T	Positive basic shape 7°	A 71
	V	Positive basic shape 7°	A 72

Cutting tool materials: CBN, PCD, ceramic



* Ceramic

Designation key for CBN/PCD/ceramic cutting tool materials – Turning

Example:

W	D	N	10
Walter	1	2	3

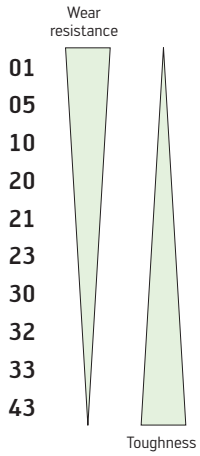
1 – Cutting tool material

D	Diamond
I	SiAlON ceramic
W	Whisker-reinforced ceramic
CB*	CBN
SN*	Si_3N_4 ceramic

2 – Primary application

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials

3 – ISO range of applications



Cutting tool materials for:

0	ISO turning
1	ISO turning
5	ISO turning
2	Thread turning
3	Grooving

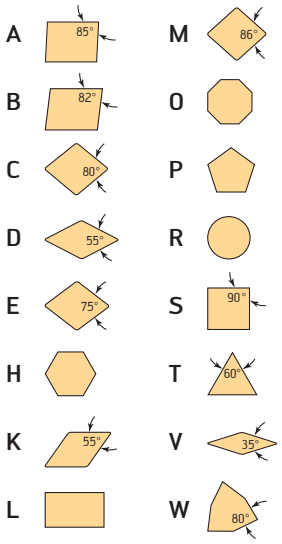
* Old designation key

Designation key in accordance with ISO 1832 for indexable inserts for turning

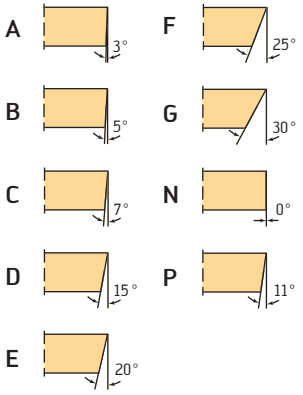
Example: Ceramic indexable inserts

R	N	G	N	12	07	00	T	010	20
1	2	3	4	5	6	7	8	11	12

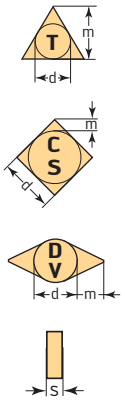
1 Insert shape



2 Clearance angle



3 Tolerances

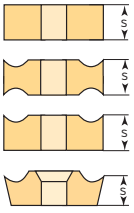


Permissible deviation in mm for

	d	m	s
A	± 0,025	± 0,005	± 0,025
C	± 0,025	± 0,013	± 0,025
E	± 0,025	± 0,025	± 0,025
F	± 0,013	± 0,005	± 0,025
G	± 0,025	± 0,025	± 0,130
H	± 0,013	± 0,013	± 0,025
J[1]	± 0,05–0,15[2]	± 0,005	± 0,025
K[1]	± 0,05–0,15[2]	± 0,013	± 0,025
L[1]	± 0,05–0,15[2]	± 0,025	± 0,025
M	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,130
N	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,025
U	± 0,08–0,25[2]	± 0,13–0,38[2]	± 0,130

[1] Inserts with ground planar cutting edges
[2] Depending on the insert size (see ISO standard 1832)

6 Insert thickness s [mm]



01	s = 1,59
T1	s = 1,98
02	s = 2,38
T2	s = 2,78
03	s = 3,18
T3	s = 3,97
04	s = 4,76
05	s = 5,56
06	s = 6,35
07	s = 7,94
09	s = 9,52

7 Corner radius r [mm]

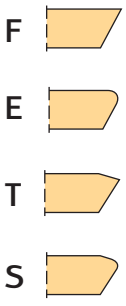


01	r = 0,1
02	r = 0,2
04	r = 0,4
08	r = 0,8
12	r = 1,2
16	r = 1,6
24	r = 2,4

R

M0	Metric version (diameter in [mm])
00	Inch version (diameter with inch units in [mm])

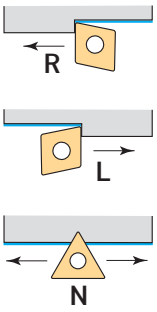
8 Edge formation



9 Cutting edge preparation

S Sharp

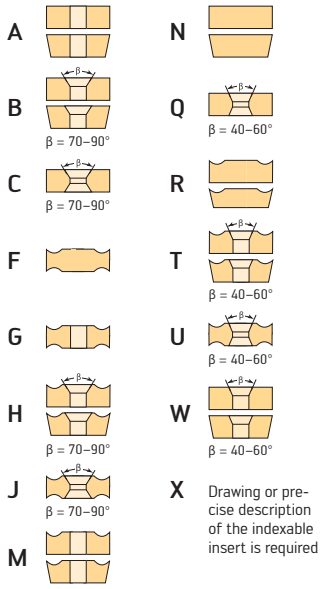
10 Cutting direction



Example: PCD indexable insert

C	C	G	W	09	T3	04	F	S	L	–	...	...	9
1	2	3	4	5	6	7	8	9	10		13	14	15

4 Machining and fastening features



5 Cutting edge length l [mm]

Inner circle diameter d		C		D		R	S		T		V		W	
mm	Inches	Size	l	Size	l	Size	Size	l	Size	l	Size	l	Size	l
3,97	5/32								**06**	6,9				
5	0,197					**05**							**03**	3,8
5,56	7/32								**09**	9				
6	0,236					**06**								
6,35	2/8	**06**	6,4	**07**	7,7	**06**[1]			**11**	11	**11**	11	**04**	4,3
8	0,315					**08**							**05**	5,2
9,525	3/8	**09**	9,6	**11**	11,6	**09**[1]	**09**	9,5	**16**	16,5	**16**	16,5	**06**	6,5
10	0,394					**10**								
12	0,472					**12**								
12,7	4/8	**12**	12,9	**15**	15,5	**12**[1]	**12**	12,7	**22**	22			**08**	8,7
15,875	5/8	**16**	16,1				**15**	15,8	**27**	27			**10**	10,8
16	0,63					**16**								
17,46	11/16												**12**	11,6
19,05	6/8	**19**	19,3			**19**[1]	**19**	19,0						
20	0,787					**20**								
25	0,984					**25**								
25,4	8/8	**25**	25,8			**25**[1]	**25**	25,4						
32	1,26					**32**								

[1] Inch version (00)

11 Chamfer width



010 = 0,10 mm
020 = 0,20 mm
025 = 0,25 mm
070 = 0,70 mm
150 = 1,50 mm
200 = 2,00 mm

12 Chamfer angle

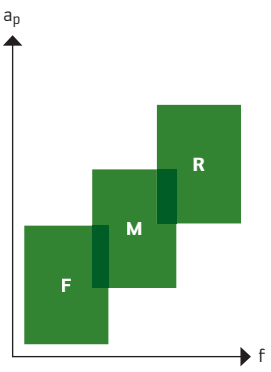


15 = 15°
20 = 20°

13 Wiper cutting edge

W **Wiper**

14 Chip breaking area



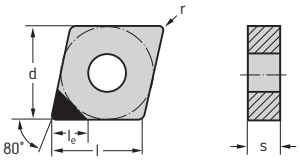
F Finishing operation
M Medium machining
R Roughing operation

15 Number of cutting edges/ version



1 single
2 double
3 triple
4 quadruple
⋮
9 strip
0 full-face
solid

CBN – Negative rhombic 80°
CNMA



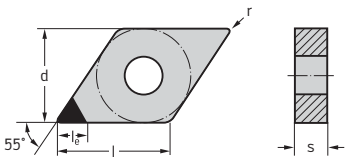
Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	CNMA120408	1	2,3	0,8	0,05–0,25	0,1–0,5						☻	☻	
	CNMA120404-2	2	2,4	0,4	0,05–0,20	0,1–0,3						☻	☻	
	CNMA120408-2	2	2,3	0,8	0,05–0,25	0,1–0,5						☻	☻	
	CNMA120412-2	2	2,2	1,2	0,05–0,30	0,1–0,5						☻	☻	

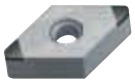
See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

CBN – Negative rhombic 55°
DNMA



Indexable inserts

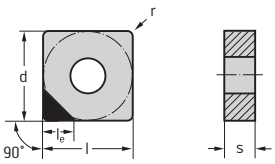
	Designation	Number of cutting edges	l_e mm	r mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	DNMA150604-2	2	2,5	0,4	0,05–0,20	0,1–0,3						☻	☻	
	DNMA150608-2	2	2	0,8	0,05–0,25	0,1–0,5						☻	☻	
	DNMA150612-2	2	2	1,2	0,05–0,30	0,1–0,5						☻	☻	

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

A 242 A 246 A 256 A 80 A 190

CBN – Negative square
SNMA



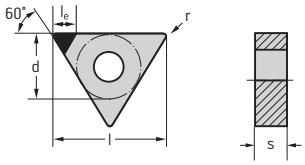
Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	SNMA120412	1	2,2	1,2	0,05–0,30	0,1–0,5							☹	

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

CBN – Negative triangular 60°
TNMA



Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	TNMA160404-3	3	2,2	0,4	0,05–0,20	0,1–0,3						☺	☹	
	TNMA160408-3	3	2	0,8	0,05–0,25	0,1–0,5						☺	☹	

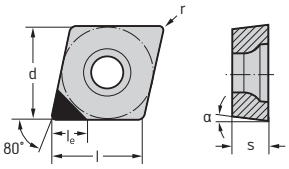
See the ISO 1832 designation key for dimensions

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BL = CBN with low CBN content

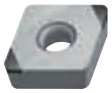
WALTER SELECT
Optimum indexable insert for
Good
Average
Poor
machining conditions

A 242 A 246 A 256 A 80 A 190

CBN – Positive rhombic 80°
CCMW



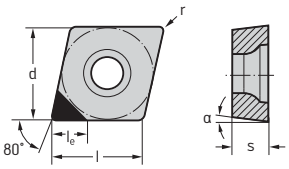
Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	CCMW060204	1	2,5	0,4	7°	0,05–0,20	0,1–0,3						☻	☻	
	CCMW060208	1	2,4	0,8	7°	0,05–0,25	0,1–0,5						☻	☻	
	CCMW09T308	1	2,3	0,8	7°	0,05–0,25	0,1–0,5							☻	
	CCMW060204-2	2	2,5	0,4	7°	0,05–0,20	0,1–0,3						☻	☻	
	CCMW060208-2	2	2,4	0,8	7°	0,05–0,25	0,1–0,5						☻	☻	
	CCMW09T304-2	2	2,4	0,4	7°	0,05–0,20	0,1–0,3						☻	☻	
	CCMW09T308-2	2	2,3	0,8	7°	0,05–0,25	0,1–0,5						☻	☻	

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

CBN – Positive rhombic 80°
CPGW



Indexable inserts

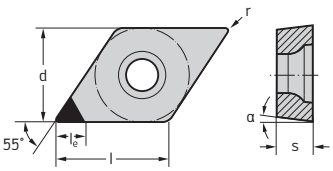
	Designation	Number of cutting edges	l_e mm	r mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	CPGW050202	1	2,4	0,2	11°	0,05–0,15	0,1–0,3							☻	
	CPGW050204	1	2,4	0,4	11°	0,05–0,20	0,1–0,3							☻	

See the ISO 1832 designation key for dimensions

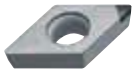
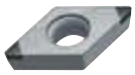
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BL = CBN with low CBN content

A 242 A 246 A 256 A 80 A 190

CBN – Positive rhombic 55°
DCMW



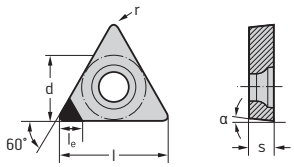
Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	DCMW11T302	1	2,6	0,2	7°	0,05–0,15	0,1–0,3						☺	😐	
	DCMW11T304	1	2,4	0,4	7°	0,05–0,20	0,1–0,3						☺	😐	
	DCMW11T304-2	2	2,4	0,4	7°	0,05–0,20	0,1–0,3						☺	😐	
	DCMW11T308-2	2	2,1	0,8	7°	0,05–0,25	0,1–0,5						☺	😐	

See the ISO 1832 designation key for dimensions

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CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

CBN – Positive triangular 60°
TCMW

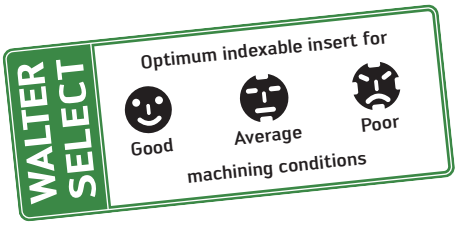


Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	TCMW110204	1	2,4	0,4	7°	0,05–0,20	0,1–0,3						☺	😐	
	TCMW110208	1	2,2	0,8	7°	0,05–0,25	0,1–0,5						☺	😐	

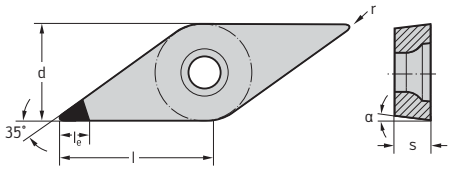
See the ISO 1832 designation key for dimensions

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DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content



A 242 A 246 A 256 A 80 A 190

CBN – Positive rhombic 35°
VBMW



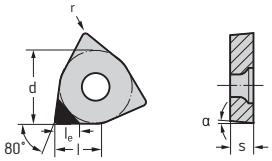
Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	VBMW160402	1	3,8	0,2	5°	0,05–0,15	0,1–0,3						☻	☻	
	VBMW160404	1	3,3	0,4	5°	0,05–0,20	0,1–0,3						☻	☻	
	VBMW160408	1	2,5	0,8	5°	0,05–0,25	0,1–0,5						☻	☻	
	VBMW160404-2	2	3,3	0,4	5°	0,05–0,20	0,1–0,3						☻	☻	
	VBMW160408-2	2	2,5	0,8	5°	0,05–0,25	0,1–0,5						☻	☻	

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

CBN – Positive Trigon 80°
WCMW



Indexable inserts

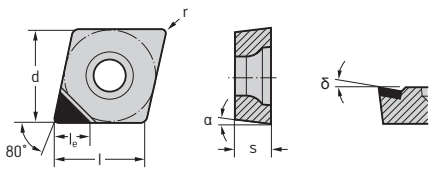
	Designation	Number of cutting edges	l_e mm	r mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	WCMW020102	1	1,4	0,2	7°	0,05–0,15	0,1–1,1	☻						☻	
	WCMW020104	1	1,4	0,4	7°	0,05–0,20	0,1–1,1	☻						☻	
	WCMW030204	1	2,4	0,4	7°	0,05–0,20	0,1–2,1	☻						☻	
	WCMW030202	1	2,4	0,2	7°	0,05–0,15	0,1–2,1	☻						☻	
	WCMW040204	1	2,4	0,4	7°	0,05–0,20	0,1–2,1	☻						☻	
	WCMW040202	1	2,4	0,2	7°	0,05–0,15	0,1–2,1	☻						☻	
	WCMW050304	1	2,4	0,4	7°	0,05–0,20	0,1–2,1	☻						☻	

See the ISO 1832 designation key for dimensions

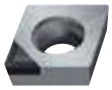
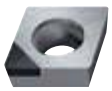
BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

A 242 A 246 A 256 A 80 A 190

PCD – Positive rhombic 80°
CCGT / CCGW

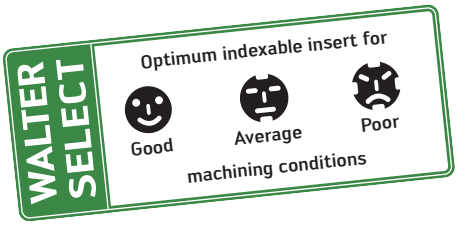


Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	α	δ	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	CCGT060204FS-M1	1	3,5	0,4	7°		0,08–0,20	0,1–2,0			☺					☺
	CCGT09T304FS-M1	1	4	0,4	7°		0,08–0,20	0,1–2,0			☺					☺
	CCGT060202FS-1	1	3,5	0,2	7°	7°	0,03–0,12	0,1–3,0			☺					☺
	CCGT060204FS-1	1	3,5	0,4	7°	7°	0,03–0,25	0,1–3,0			☺					☺
	CCGT060208FS-1	1	3,5	0,8	7°	7°	0,03–0,38	0,1–3,0			☺					☺
	CCGT09T304FS-1	1	4	0,4	7°	10°	0,03–0,25	0,1–3,5			☺					☺
	CCGT09T308FS-1	1	4	0,8	7°	10°	0,03–0,38	0,1–3,5			☺					☺
	CCGW060202FS-1	1	3,6	0,2	7°	0°	0,03–0,12	0,1–3,0			☺					☺
	CCGW060204FS-1	1	3,5	0,4	7°	0°	0,03–0,25	0,1–3,0			☺					☺
	CCGW060208FS-1	1	3,5	0,8	7°	0°	0,03–0,38	0,1–3,0			☺					☺
	CCGW09T302FS-1	1	4,1	0,2	7°	0°	0,03–0,12	0,1–3,5			☺					☺
	CCGW09T304FS-1	1	4,1	0,4	7°	0°	0,03–0,25	0,1–3,5			☺					☺
	CCGW09T308FS-1	1	4	0,8	7°	0°	0,03–0,38	0,1–3,5			☺					☺
	CCGW120404FS-1	1	4,1	0,4	7°	0°	0,03–0,25	0,1–3,5			☺					☺
	CCGW120408FS-1	1	4	0,8	7°	0°	0,03–0,38	0,1–3,5			☺					☺
	CCGW060204FSL-9	1	6,4	0,4	7°	0°	0,03–0,25	0,1–6,4			☺					☺
	CCGW09T304FSL-9	1	9,7	0,4	7°	0°	0,03–0,25	0,1–9,7			☺					☺
	CCGW09T308FSL-9	1	9,7	0,8	7°	0°	0,03–0,38	0,1–9,7			☺					☺
	CCGW060204FSR-9	1	6,4	0,4	7°	0°	0,03–0,25	0,1–6,4			☺					☺
	CCGW09T304FSR-9	1	9,7	0,4	7°	0°	0,03–0,25	0,1–9,7			☺					☺
	CCGW09T308FSR-9	1	9,7	0,8	7°	0°	0,03–0,38	0,1–9,7			☺					☺

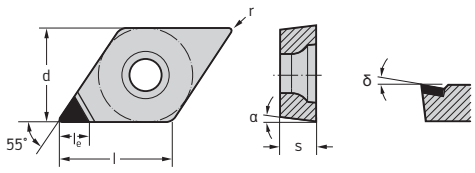
See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content



A 242 A 246 A 256 A 80 A 190

PCD – Positive rhombic 55°
DCGT / DCGW



Indexable inserts

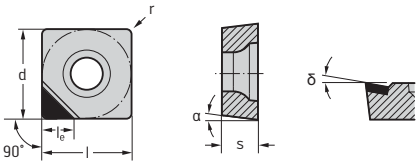
	Designation	Number of cutting edges	l_e mm	r mm	α	δ	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	DCGT070204FS-M1	1	3,5	0,4	7°		0,08–0,20	0,1–2,0			☺					☺
	DCGT11T304FS-M1	1	4	0,4	7°		0,08–0,20	0,1–2,0			☺					☺
	DCGT070202FS-1	1	3,7	0,2	7°	7°	0,03–0,12	0,1–3,0			☺					☺
	DCGT070204FS-1	1	3,5	0,4	7°	7°	0,03–0,25	0,1–3,0			☺					☺
	DCGT070208FS-1	1	3,5	0,8	7°	7°	0,03–0,38	0,1–3,0			☺					☺
	DCGT11T302FS-1	1	4,2	0,2	7°	10°	0,03–0,12	0,1–3,5			☺					☺
	DCGT11T304FS-1	1	4	0,4	7°	10°	0,03–0,25	0,1–3,0			☺					☺
	DCGT11T308FS-1	1	4	0,8	7°	10°	0,03–0,38	0,1–3,5			☺					☺
	DCGW070202FS-1	1	3,7	0,2	7°	0°	0,03–0,12	0,1–3,0			☺					☺
	DCGW070204FS-1	1	3,5	0,4	7°	0°	0,03–0,25	0,1–3,0			☺					☺
	DCGW070208FS-1	1	3,5	0,8	7°	0°	0,03–0,38	0,1–3,0			☺					☺
	DCGW11T302FS-1	1	4,2	0,2	7°	0°	0,03–0,12	0,1–3,5			☺					☺
	DCGW11T304FS-1	1	4	0,4	7°	0°	0,03–0,25	0,1–3,5			☺					☺
	DCGW11T308FS-1	1	4	0,8	7°	0°	0,03–0,38	0,1–3,5			☺					☺

See the ISO 1832 designation key for dimensions

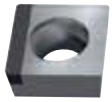
BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

A 242 A 246 A 256 A 80 A 190

PCD – Positive square
SCGW



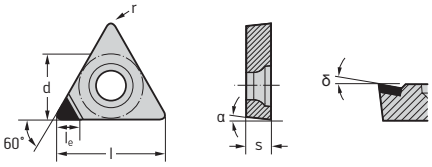
Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	α	δ	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	SCGW09T304FS-9	1	9,5	0,4	7°	0°	0,03–0,25	0,1–9,5			☺					☺

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

PCD – Positive triangular 60°
TCGW

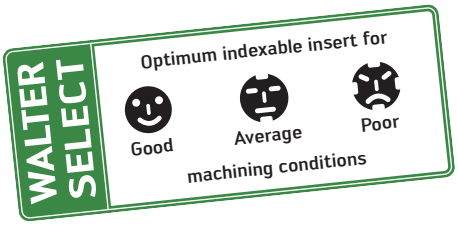


Indexable inserts

	Designation	Number of cutting edges	l_e mm	r mm	α	δ	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	TCGW090202FS-1	1	3,9	0,2	7°	0°	0,03–0,12	0,1–3,0			☺					☺
	TCGW090204FS-1	1	3,8	0,4	7°	0°	0,03–0,25	0,1–3,0			☺					☺
	TCGW110202FS-1	1	4,4	0,2	7°	0°	0,03–0,12	0,1–3,0			☺					☺
	TCGW110204FS-1	1	4,3	0,4	7°	0°	0,03–0,25	0,1–3,0			☺					☺
	TCGW110208FS-1	1	4	0,8	7°	0°	0,03–0,38	0,1–3,0			☺					☺
	TCGW16T304FS-1	1	4,3	0,4	7°	0°	0,03–0,25	0,1–3,5			☺					☺
	TCGW16T308FS-1	1	4	0,8	7°	0°	0,03–0,38	0,1–3,5			☺					☺
	TCGW090204FS-9	1	9	0,4	7°	0°	0,03–0,25	0,1–9,0			☺					☺
	TCGW110204FS-9	1	10,4	0,4	7°	0°	0,03–0,25	0,1–10,4			☺					☺
	TCGW16T308FS-9	1	15,3	0,8	7°	0°	0,03–0,38	0,1–15,3			☺					☺

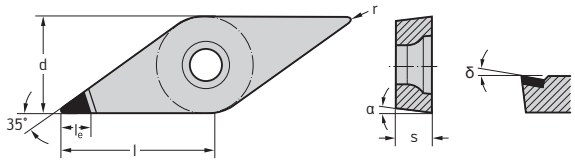
See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content



A 242 A 246 A 256 A 80 A 190

PCD – Positive rhombic 35°
VCGT / VCGW



Indexable inserts

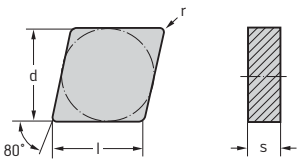
	Designation	Number of cutting edges	l_e mm	r mm	α	δ	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	VCGT110302FS-1	1	4,1	0,2	7°	10°	0,03–0,12	0,1–3,0			☺					☺
	VCGT110304FS-1	1	3,7	0,4	7°	10°	0,03–0,25	0,1–3,0			☺					☺
	VCGT160404FS-1	1	4,5	0,4	7°	10°	0,03–0,25	0,1–4,0			☺					☺
	VCGT160408FS-1	1	4,5	0,8	7°	10°	0,03–0,38	0,1–4,0			☺					☺
	VCGW110302FS-1	1	4,1	0,2	7°	0°	0,03–0,12	0,1–3,0			☺					☺
	VCGW110304FS-1	1	3,7	0,4	7°	0°	0,03–0,25	0,1–3,0			☺					☺
	VCGW110308FS-1	1	3,7	0,8	7°	0°	0,03–0,38	0,1–3,0			☺					☺
	VCGW160404FS-1	1	4,5	0,4	7°	0°	0,03–0,25	0,1–4,0			☺					☺
	VCGW160408FS-1	1	4,5	0,8	7°	0°	0,03–0,38	0,1–4,0			☺					☺

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

A 242 A 246 Ra/Rz A 256 A 80 A 190

Ceramic – Negative rhombic 80°
CNGN / CNMA



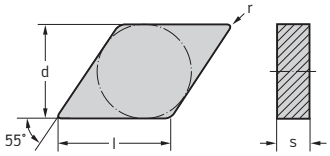
Indexable inserts

	Designation	r mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	CNGN120408T01020	0,8	0,10–0,22	0,1–3,6					☹			
	CNGN120412T01020	1,2	0,10–0,32	0,1–3,6					☹			
	CNGN120708T01020	0,8	0,10–0,22	0,1–3,6				☺	☹			
	CNGN120712T01020	1,2	0,10–0,32	0,1–3,6				☺	☹			
	CNGN120716T01020	1,6	0,10–0,42	0,1–3,6				☺	☹			
	CNMA120408T02020	0,8	0,10–0,36	0,1–6,0		☺						
	CNMA120412T02020	1,2	0,10–0,54	0,1–6,0		☺						
	CNMA120416T02020	1,6	0,10–0,60	0,1–6,0		☺						

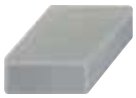
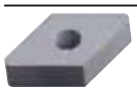
See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

Ceramic – Negative rhombic 55°
DNGN / DNMA

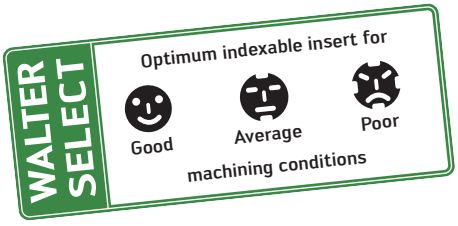


Indexable inserts

	Designation	r mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	DNGN150708T01020	0,8	0,10–0,20	0,1–2,5					☹			
	DNGN150712T01020	1,2	0,10–0,32	0,1–2,5					☹			
	DNMA150608T02020	0,8	0,10–0,36	0,1–7,5		☺						
	DNMA150612T02020	1,2	0,10–0,54	0,1–7,5		☺						

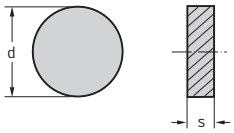
See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content



A 242 A 246 A 256 A 80 A 190

Ceramic – Negative round
RNGN



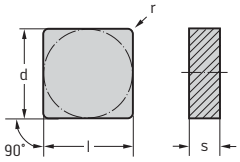
Indexable inserts

	Designation	d mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	RNGN120700E	12,7	0,10–0,32	0,1–3,6				☻	☻			
	RNGN250700E	25,4	0,10–0,50	0,2–7,5					☻			
	RNGN120700T01020	12,7	0,20–0,32	0,2–3,6				☻	☻			
	RNGN150700T01020	15,875	0,10–0,40	0,2–4,5					☻			
	RNGN190700T01020	19,05	0,10–0,45	0,2–5,7					☻			

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

Ceramic – Negative square
SNGN / SNMA



Indexable inserts

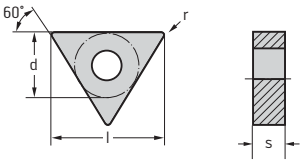
	Designation	r mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	SNGN120712E	1,2	0,10–0,32	0,1–3,6				☻				
	SNGN120708T01020	0,8	0,10–0,22	0,1–3,6					☻			
	SNGN120712T01020	1,2	0,10–0,32	0,1–3,6				☻	☻			
	SNGN120716T01020	1,6	0,10–0,42	0,1–3,6					☻			
	SNMA120408T02020	0,8	0,10–0,36	0,1–6,0		☻						
	SNMA120412T02020	1,2	0,10–0,54	0,1–6,0		☻						

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

A 242 A 246 Ra/Rz A 256 A 80 A 190

Ceramic – Negative triangular 60°
TNMA

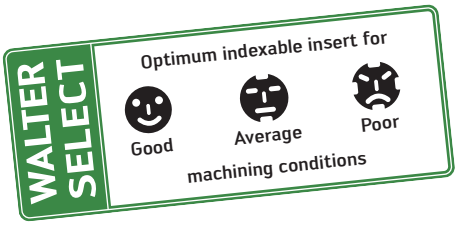


Indexable inserts

	Designation	r mm	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	TNMA160408T02020	0,8	0,05–0,36	0,1–8,0		☻						
	TNMA160412T02020	1,2	0,10–0,54	0,1–8,0		☻						

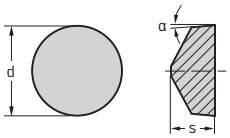
See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content



A 242 A 246 A 256 A 80 A 190

Ceramic – Positive round
RCGX



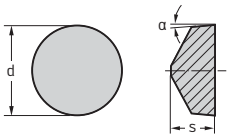
Indexable inserts

	Designation	d mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	RCGX090700E	9,53	7°	0,10–0,25	0,1–2,4				☻				
	RCGX120700E	12,7	7°	0,10–0,32	0,1–3,6				☻	☻			
	RCGX060600T01020	6,35	7°	0,10–0,20	0,2–1,8				☻	☻			
	RCGX090700T01020	9,53	7°	0,10–0,25	0,2–2,4				☻	☻			
	RCGX120700T01020	12,7	7°	0,10–0,32	0,2–3,6				☻	☻			

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

Ceramic – Positive round
RPGX



Indexable inserts

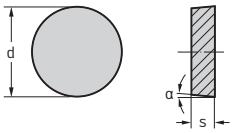
	Designation	d mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	RPGX090700E	9,53	11°	0,10–0,20	0,1–2,4				☻				
	RPGX120700E	12,7	11°	0,10–0,30	0,1–3,6				☻				
	RPGX090700T01020	9,53	11°	0,10–0,20	0,2–2,4				☻				
	RPGX120700T01020	12,7	11°	0,10–0,30	0,2–3,6				☻	☻			

See the ISO 1832 designation key for dimensions

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content

A 242 A 246 A 256 A 80 A 190

Ceramic – Positive round
RPGN

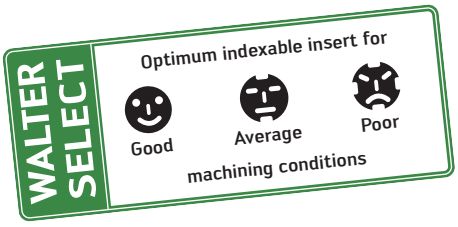


Indexable inserts

	Designation	d mm	α	f mm	a_p mm	K BH WCB80	K CN WSN10	N DP WDN10	S CN WIS10	S CR WWS20	H BL WCB30	H BH WCB50	O DP WDN10
	RPGN090300T01020	9,53	11°	0,10–0,25	0,2–2,4				☺				
	RPGN120400T01020	12,7	11°	0,10–0,32	0,2–3,6				☺				

See the ISO 1832 designation key for dimension

BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4
DP = Polycrystalline diamond
CR = Reinforced ceramic
BL = CBN with low CBN content



A 242 A 246 A 256 A 80 A 190

Walter Turn/Walter Capto™ product description – External machining

External turning toolholders for indexable inserts with a negative basic shape

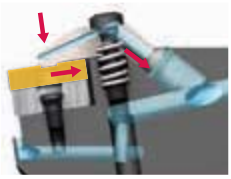


Walter Turn rigid clamping (D)
- The number one choice for machining short-chipping materials such as cast iron
- Functionality is maintained even in "dirty environments", e.g. grey cast iron machining
- The number one choice for interrupted cuts thanks to stable insert clamping
- The indexable insert and shim can be replaced using the same wrench
- Reinforced clamps with carbide shoe available for longer clamp tool life





Walter Turn rigid clamping with precision cooling (D. . . -P)
- Coolant supplied directly through the clamp and along the flank face
- Optimum cooling increases tool life by 30-150%
- The number one choice for machining stainless materials (ISO M) and high-temperature alloys (ISO S)
- Universal coolant connection: Direct coolant transfer between shank tool and tool adaptor (A2120-P/A2121-P) or via coolant hose set with G1/8" thread (K601)
- Can be used from 10 bar up to a maximum coolant pressure of 150 bar
- Improved chip breaking, especially at pressures above 40 bar





Walter Turn lever clamp (P)
- Universal system enabling easy replacement of indexable inserts
- The number one choice for single-sided negative indexable inserts, e.g. SNMM for heavy roughing
- Unobstructed chip evacuation and can be used as an alternative to rigid clamping



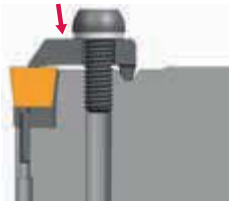


Walter Turn wedge-type clamping (M)
- For indexable inserts with a negative T basic shape
- Profiling is possible up to an angle of 22° with TNMG indexable inserts
- Frequently used when shaft machining with undercuts





Walter Turn rigid clamping for negative ceramic indexable inserts (C)
- Special system for ceramic indexable inserts without centre hole
- Rigid clamping with carbide shoe for a long service life
- The number one choice for machining high-temperature alloys and cast iron workpieces with ceramic inserts



External turning toolholders for indexable inserts with a positive basic shape



Walter Turn screw clamping (S)
- For indexable inserts with a positive basic shape with 5° and 7° clearance angle
- The number one choice for low cutting pressures/small diameter shafts
- Fewer assembly parts are required
- Torx Plus screw clamping for transmitting higher tightening torques
- The indexable insert and shim can be replaced using the same wrench





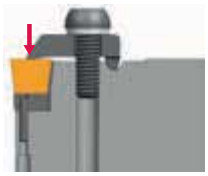
Walter Turn positive lever clamp (P)
- For indexable inserts with a positive V/R basic shape with 5° and 7° clearance angle
- High dimensional accuracy is achieved on the component via the high pre-tension applied by the lever with V indexable inserts
- Secure insert locking ensures round inserts are unable to twist during machining



External turning toolholders for indexable inserts with a positive basic shape



Walter Turn rigid clamping for positive ceramic indexable inserts (C)
– Special system for positive ceramic indexable inserts with 7° and 11° clearance angle (RC . X/RP . X)
– Very stable, prism-shaped contact surface designed to prevent twisting
– Rigid clamping for maximum clamping force and low-vibration machining of high-temperature alloys and cast iron workpieces



Tool adaptors for shank tools



A2120-P VDI axial adaptor for shank tools with precision cooling
– VDI 30/40/50 interface for star turrets
– Direct coolant transfer from the adaptor to the square shank at up to 80 bar
– For universal use in normal position or in an overhead position thanks to teeth on both sides of VDI shank
– Maximum clamping force due to robust wedge-type clamping
– External cooling, can be switched on as an option
– For shank sizes of 20 × 20 mm and 25 × 25 mm



A2121-P VDI radial adaptor for shank tools with precision cooling
– VDI 30/40/50 interface for disc turrets
– Direct coolant transfer from the adaptor to the square shank at up to 80 bar
– For universal use in normal position or in an overhead position thanks to teeth both sides of the VDI shank
– Maximum clamping force due to robust wedge-type clamping
– External cooling, can be switched on as an option
– For shank sizes of 20 × 20 mm and 25 × 25 mm

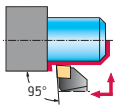
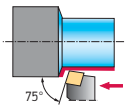
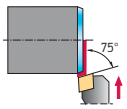


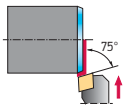
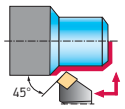
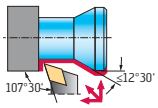
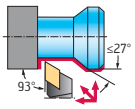
C . . . - ASH Walter Capto™ axial adaptor for shank tools
– Walter Capto™ C5-C8 interface
– For use on turn/mill centres or machines with star turrets
– Can be used up to a coolant pressure of 80 bar
– Various versions for 1, 2 or 3 shank tools
– Optimum power transmission via precision-ground polygon interface
– For shank sizes of 20 × 20 mm/25 × 25 mm/32 × 32 mm

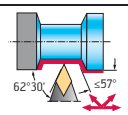
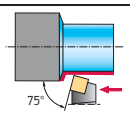
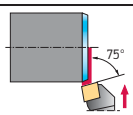


C . . . - ASHA Walter Capto™ radial adaptor for shank tools
– Walter Capto™ C5-C8 interface
– Coolant nozzle can be switched on to the left/right via a screw
– Neutral version
– For use on turn/mill centres or machines with disc turrets
– Can be used up to a coolant pressure of 80 bar
– Optimum power transmission via precision-ground polygon interface
– For shank sizes of 20 × 20 mm/25 × 25 mm/32 × 32 mm

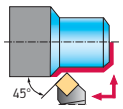
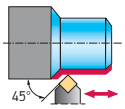
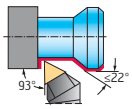
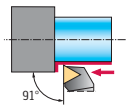
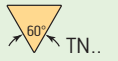
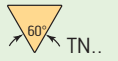
Walter Turn turning tools product range overview – External machining
Square-shank turning toolholders – Negative basic shape

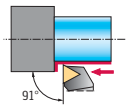
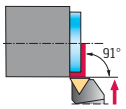
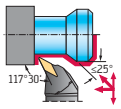
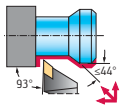
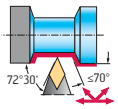
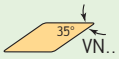
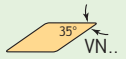
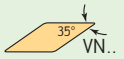
Machining						
Type						
Designation	**DCLN**	**DCLN...-P**	**PCLN**	**DCBN**	**PCBN**	**DCKN**
Approach angle κ	95°	95°	95°	75°	75°	75°
Clamping system	Clamp	Clamp	Lever	Clamp	Lever	Clamp
Coolant supply	external	Precision cooling	external	external	external	external
Shank size h [mm]	16–32	20–25	16–50	25–32	25–32	25–32
Insert size l [mm]	9–19	12	9–25	12–19	12–19	12–16
Page	A 93	A 94	A 95	A 96	A 97	A 98
						

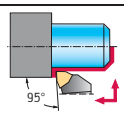
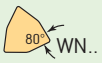
Machining						
Type						
Designation	**PCKN**	**PCSN**	**DDHN**	**DDJN**	**DDJN...-P**	**PDJN**
Approach angle κ	75°	45°	107,5°	93°	93°	93°
Clamping system	Lever	Lever	Clamp	Clamp	Clamp	Lever
Coolant supply	external	external	external	external	Precision cooling	external
Shank size h [mm]	25	25	20–25	20–32	20–25	16–32
Insert size l [mm]	12	12	15	11–15	11–15	11–15
Page	A 99	A 100	A 101	A 102	A 103	A 104
						

Machining						
Type						
Designation	**DDNN**	**DSBN**	**DSBN...-P**	**PSBN**	**DSKN**	**PSKN**
Approach angle κ	62,5°	75°	75°	75°	75°	75°
Clamping system	Clamp	Clamp	Clamp	Lever	Clamp	Lever
Coolant supply	external	external	Precision cooling	external	external	external
Shank size h [mm]	20–32	25–40	25	20–50	25–32	20–32
Insert size l [mm]	11–15	12–19	12	12–25	12–15	12–19
Page	A 105	A 106	A 107	A 108	A 109	A 110
						

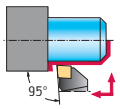
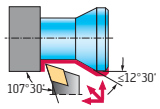
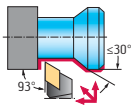
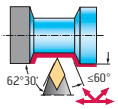
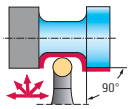
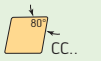
Walter Turn turning tools product range overview – External machining
Square-shank turning toolholders – Negative basic shape

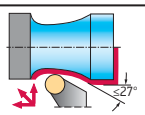
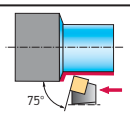
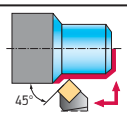
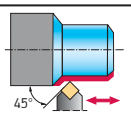
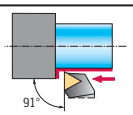
Machining						
Type						
Designation	**DSSN**	**PSSN**	**DSDN**	**PSDN**	**MTJN**	**DTGN**
Approach angle κ	45°	45°	45°	45°	93°	91°
Clamping system	Clamp	Lever	Clamp	Lever	Wedge	Clamp
Coolant supply	external	external	external	external	external	external
Shank size h [mm]	16–32	16–32	16–32	12–40	20–32	20–32
Insert size l [mm]	9–19	9–19	9–19	9–25	16–22	16–22
Page	A 111	A 112	A 113	A 114	A 115	A 116
						

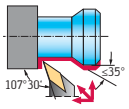
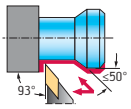
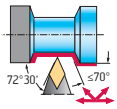
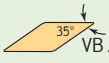
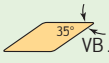
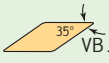
Machining						
Type						
Designation	**DTGN...-P**	**PTGN**	**PTFN**	**DVPN**	**DVJN**	**DVVN**
Approach angle κ	91°	91°	91°	117,5°	93°	72,5°
Clamping system	Clamp	Lever	Lever	Clamp	Clamp	Clamp
Coolant supply	Precision cooling	external	external	external	external	external
Shank size h [mm]	20–25	12–40	12–32	25–32	20–32	20–32
Insert size l [mm]	16	11–27	11–16	16	16	16
Page	A 117	A 118	A 119	A 120	A 121	A 122
						

Machining			
Type			
Designation	**DWLN**	**DWLN...-P**	**PWLN**
Approach angle κ	95°	95°	95°
Clamping system	Clamp	Clamp	Lever
Coolant supply	external	Precision cooling	external
Shank size h [mm]	16–32	20–25	16–32
Insert size l [mm]	6–10	8	6–10
Page	A 123	A 124	A 125
			

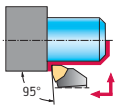
Walter Turn turning tools product range overview – External machining
Square-shank turning toolholders – Positive basic shape

Machining						
Type						
Designation	**SCLC**	**SDHC**	**SDJC**	**SDNC**	**SRDC**	**PRDC**
Approach angle κ	95°	107,5°	93°	62,5°	0°	0°
Clamping system	Screw	Screw	Screw	Screw	Screw	Lever
Coolant supply	external	external	external	external	external	external
Shank size h [mm]	10–25	12–25	10–25	10–25	12–32	20–50
Insert size l [mm]	6–12	7–11	7–11	7–11	6–16	10–32
Page	A 126	A 127	A 128	A 129	A 130	A 131
						

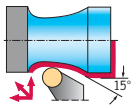
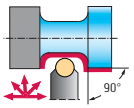
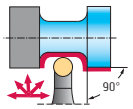
Machining						
Type						
Designation	**SRSC**	**PRGC**	**SSBC**	**SSDC**	**SSDCN**	**STGC**
Approach angle κ	0°	0°	75°	45°	45°	91°
Clamping system	Screw	Lever	Screw	Screw	Screw	Screw
Coolant supply	external	external	external	external	external	external
Shank size h [mm]	20–32	20–40	12–25	16–25	12–25	12–25
Insert size l [mm]	6–16	10–25	9–12	9–12	9–12	11–16
Page	A 132	A 133	A 134	A 135	A 136	A 137
						

Machining						
Type						
Designation	**SVHB**	**PVHB**	**SVJB**	**PVJB**	**SVVB**	**PVVB**
Approach angle κ	107,5°	107,5°	93°	93°	72,5°	72,5°
Clamping system	Screw	Lever	Screw	Lever	Screw	Lever
Coolant supply	external	external	external	external	external	external
Shank size h [mm]	16–32	16–32	12–32	16–32	12–32	16–32
Insert size l [mm]	11–16	11–16	11–16	11–16	11–16	11–16
Page	A 138	A 139	A 140	A 141	A 142	A 143
						

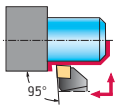
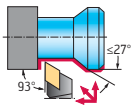
Walter Turn turning tools product range overview – External machining
Square-shank turning toolholders – Positive basic shape

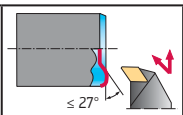
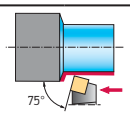
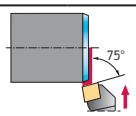
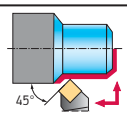
Machining	
Type	
Designation	**SWLC**
Approach angle κ	95°
Clamping system	Screw
Coolant supply	external
Shank size h [mm]	12–25
Insert size l [mm]	4–8
Page	A 144
	

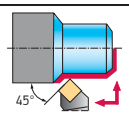
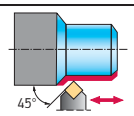
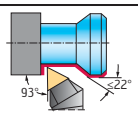
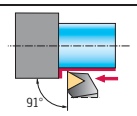
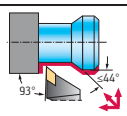
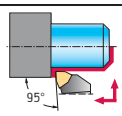
Walter Turn turning tools product range overview – External machining
Square-shank turning toolholders – Ceramic indexable inserts

Machining			
Type			
Designation	**CRSN**	**CRDN**	**CRDC**
Approach angle κ	0°	0°	0°
Clamping system	Clamp	Clamp	Clamp
Coolant supply	external	external	external
Shank size h [mm]	25–32	25–32	32
Insert size l [mm]	12–19	12	9–12
Page	A 145	A 146	A 147
			

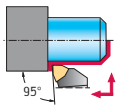
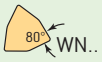
Walter Turn turning tools product range overview – External machining
Walter Capto™ turning toolholders – Negative basic shape

Machining						
Type						
Designation	**C...-DCLN**	**C...-DCLN...-P**	**C...-PCLN**	**C...-DDJN**	**C...-DDJN...-P**	**C...-PDJN**
Lead angle κ	95°	95°	95°	93°	93°	93°
Clamping system	Clamp	Clamp	Lever	Clamp	Clamp	Lever
Coolant supply	internal	Precision cooling	internal	internal	Precision cooling	internal
Walter Capto™ size	C4–C8	C4–C6	C3–C8	C4–C8	C4–C6	C3–C6
Insert size l [mm]	12–19	12	12–25	11–15	11–15	11–15
Page	A 148	A 149	A 150	A 151	A 152	A 153
						

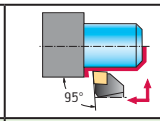
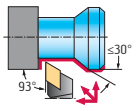
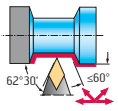
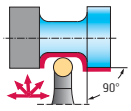
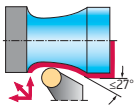
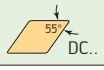
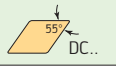
Machining						
Type						
Designation	**C...-DDUN**	**C...-DSRN**	**C...-PSRN**	**C...-DSKN**	**C...-PSKN**	**C...-DSSN**
Lead angle κ	93°	75°	75°	75°	75°	45°
Clamping system	Clamp	Clamp	Lever	Clamp	Lever	Clamp
Coolant supply	internal	internal	internal	internal	internal	internal
Walter Capto™ size	C4–C8	C4–C8	C3–C8	C4–C8	C4–C8	C4–C6
Insert size l [mm]	15	12–25	12–25	12–19	12–19	12–19
Page	A 154	A 155	A 156	A 157	A 158	A 159
						

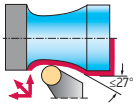
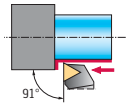
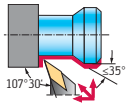
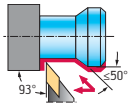
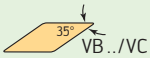
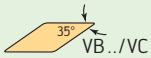
Machining						
Type						
Designation	**C...-PSSN**	**C...-DSDN**	**C...-MTJN**	**C...-DTGN...-P**	**C...-DVJN**	**C...-DWLN**
Lead angle κ	45°	45°	93°	91°	93°	95°
Clamping system	Lever	Clamp	Wedge	Clamp	Clamp	Clamp
Coolant supply	internal	internal	internal	Precision cooling	internal	internal
Walter Capto™ size	C4–C6	C4–C8	C3–C6	C4	C4–C8	C4–C6
Insert size l [mm]	12–19	12–25	16–22	16	16	6–10
Page	A 160	A 161	A 162	A 163	A 164	A 165
						

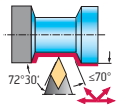
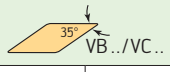
Walter Turn turning tools product range overview – External machining
Walter Capto™ turning toolholders – Negative basic shape

Machining		
Type		
Designation	**C...-DWLN...-P**	**C...-PWLN**
Lead angle κ	95°	95°
Clamping system	Clamp	Lever
Coolant supply	Precision cooling	internal
Walter Capto™ size	C4–C6	C3–C6
Insert size l [mm]	8	6–10
Page	A 166	A 167
		

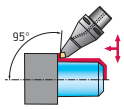
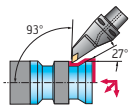
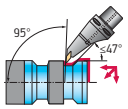
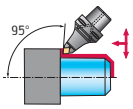
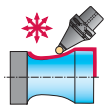
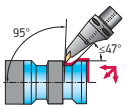
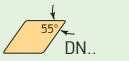
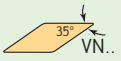
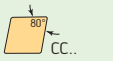
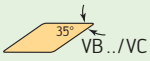
Walter Turn turning tools product range overview – External machining
Walter Capto™ turning toolholders – Positive basic shape

Machining						
Type						
Designation	**C...-SCLC**	**C...-SDJC**	**C...-SDNC**	**C...-SRDC**	**C...-PRDC**	**C...-SRSC**
Lead angle κ	95°	93°	62,5°	0°	0°	0°
Clamping system	Screw	Screw	Screw	Screw	Lever	Screw
Coolant supply	internal	internal	internal	internal	internal	internal
Walter Capto™ size	C3–C6	C3–C6	C3–C5	C3–C6	C5–C6	C3–C6
Insert size l [mm]	9–12	7–11	11	6–16	16–25	6–16
Page	A 168	A 169	A 170	A 171	A 172	A 173
						

Machining						
Type						
Designation	**C...-PRSC**	**C...-STGC**	**C...-SVHB**	**C...-PVHB**	**C...-SVJB**	**C...-PVJB**
Lead angle κ	0°	91°	107,5°	107,5°	93°	93°
Clamping system	Lever	Screw	Screw	Lever	Screw	Lever
Coolant supply	internal	internal	internal	internal	internal	internal
Walter Capto™ size	C5–C8	C3–C6	C3–C6	C4–C6	C3–C6	C4–C6
Insert size l [mm]	16–25	11–16	11–16	16	11–16	16
Page	A 174	A 175	A 176	A 177	A 178	A 179
						

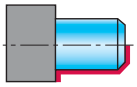
Machining		
Type		
Designation	**C...-SVVB**	**C...-PVVB**
Lead angle κ	72,5°	72,5°
Clamping system	Screw	Lever
Coolant supply	internal	internal
Walter Capto™ size	C3–C6	C4–C6
Insert size l [mm]	11–16	16
Page	A 180	A 181
		

Walter Turn turning tools product range overview – External machining
Walter Capto™ turning toolholders – Turning and milling centres

Machining						
Type						
Designation	**C...-DCMN**	**C...-DDMN**	**C...-DVMN**	**C...-SCMC**	**C...-SRDC**	**C...-SVMB**
Lead angle κ	95°	93°	95°	95°	0°	95°
Clamping system	Clamp	Clamp	Clamp	Screw	Screw	Screw
Coolant supply	internal	internal	internal	internal	internal	internal
Walter Capto™ size	C5–C8	C5–C8	C8	C6	C6	C5–C6
Insert size l [mm]	12–16	15	16	12	10–16	16
Page	A 182	A 183	A 184	A 185	A 186	A 187
						



Turning system overview – Walter Turn external machining



VDI adaptors for square shanks with precision cooling		Walter Capto™ adaptors for square shanks		Walter Capto™ turning tools	Walter Capto™ 45° turning tools for turn/ mill centres
A2120-VDI-P Page D 16	A2121-VDI-P Page D 17	C...-ASHR/L C...-ASHR/L3 Page D 11	C...-ASHA Page D 12	C ... Page A 84	C ... Page A 87



Shank tools



e.g. DLCN...-P
Page A 80



e.g. DLCN
Page A 80

= Precision cooling

ISO designation key for turning toolholders – External machining

Example: Walter Turn

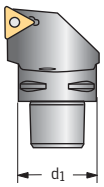
P	W	L	N	R	25	25	M	08	...
1	2	3	4	5	6	7	8	9	10

0

Coupling size d_1 [mm]

C = Walter Capto™ ISO 26623

- **C3** $d_1 = 32$
- **C4** $d_1 = 40$
- **C5** $d_1 = 50$
- **C6** $d_1 = 63$
- **C8** $d_1 = 80$



1

Insert mounting type

- **C** Top clamping 
- **D** Top and hole clamping 
- **M** Top and hole clamping 
- **P** Hole clamping 
- **S** Screw clamping 

2

Indexable insert basic shape

- **C** 

- **D** 

- **R** 
- **S** 

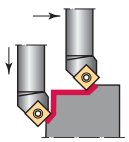
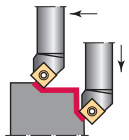
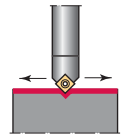
- **T** 

- **V** 

- **W** 

5

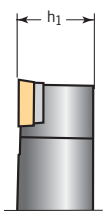
Turning toolholder design

- **R** 
- **L** 
- **N** 

6

Turning toolholder height h_1 [mm]

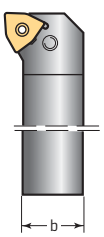
Height of the peripheral cutting edge h_1 in mm. Figures after the decimal point are ignored. Single-digit numbers are preceded by a "0", e.g h_1 = 8 mm = 08.

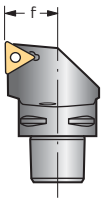


7

Toolholder width b or f dimension [mm]

Shank width b in mm. Figures after the decimal point are ignored. Single-digit numbers are preceded by a "0", e.g b = 8 mm = 08. For CA cartridges.

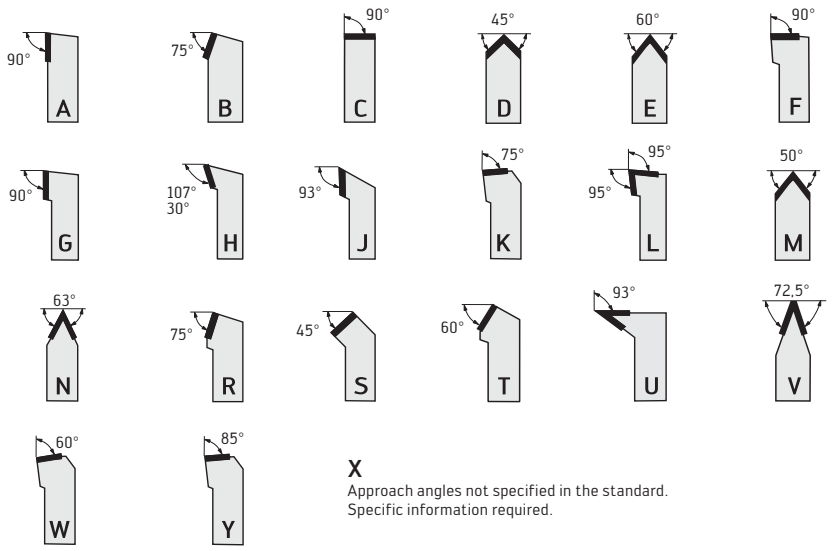




Example: Walter Capto™

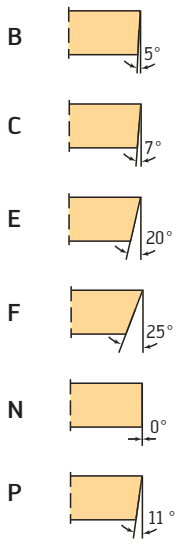
C5	–	P	W	L	N	R	–	22	110	–	08	...
0		1	2	3	4	5		7	8		9	10

3 Approach angle



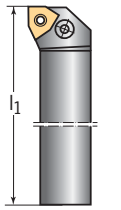
X
Approach angles not specified in the standard.
Specific information required.

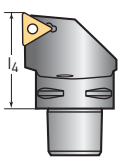
4 Indexable insert clearance angle



8 Turning toolholder length l_1/l_4 [mm]

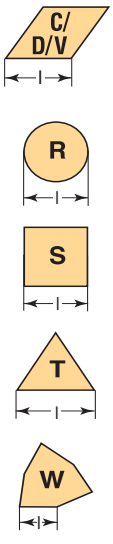
32 = A
40 = B
50 = C
60 = D
70 = E
80 = F
100 = H
110 = J
125 = K
140 = L
150 = M
160 = N
170 = P
180 = Q
200 = R
250 = S
300 = T
350 = U
400 = V
450 = W





Special = X
500 = Y

9 Length of cutting edge l [mm]



10 Manufacturer option

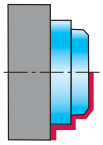
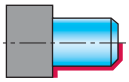
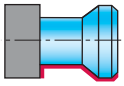
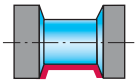
If necessary, an additional symbol comprising a maximum of three letters or figures can be added to the standard code.

This symbol must be separated from the standard designation with a hyphen.

–W = Wedge-type clamping
–P = Precision cooling



Walter Select – External machining

Workpiece characteristics	short, stable 				long, unstable 	
Basic shape	  **Negative basic shape**				 **Positive basic shape**	
Holder clamping system Walter Turn/Walter Capto™	**Rigid clamping** 	**Rigid clamping with precision cooling (-P)** 	**Lever clamp** 	**Wedge-type clamping** 	**Screw clamping** 	**Lever clamp** 
Product range overview	Page A 80	Page A 80	Page A 80	Page A 81	Page A 82	Page A 82
Step 1: Selecting the contour to be machined						
 Longitudinal turning/facing	●●	●●	●●	●	●●	●●
 Profile turning	●●	●●	●●	●●	●●	●●
 Facing	●●	●●	●●	—	●●	●●
 Necking	●●	●●	●	—	●	●●
 Interrupted cuts	●●	●●	●	●	●●	●
Step 2: Selecting the material to be machined						
P Steel	●●	●	●●	●●	●●	●●
M Stainless steel	●	●●	●●	●●	●●	●●
K Cast iron	●●	●	●	●	●●	●
N NF metals	—	—	●	—	●●	●●
S Materials with difficult cutting properties	●●	●●	●●	●	●●	●●
H Hard materials	●●	●	●	●	●	●
O Other	—	—	●	—	●	●

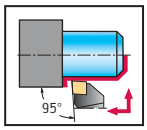
WALTER SELECT

●● Primary application

● Other application

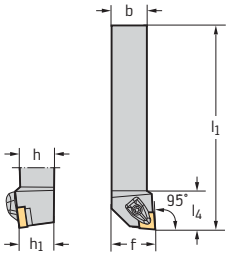
Shank tool – Rigid clamping
DCLN
Walter Turn





CN . . CN . .

Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DCLNR/L1616H09	9	16	16	20	100	24,8	-6°	-6°	CN .. 0903 ..
DCLNR/L2020K09	9	20	20	25	125	24,8	-6°	-6°	
DCLNR/L2525M09	9	25	25	32	150	24,8	-6°	-6°	
DCLNR/L1616H12	12	16	16	20	100	32,2	-6°	-6°	CN .. 1204 ..
DCLNR/L2020K12	12	20	20	25	125	32	-6°	-6°	
DCLNR/L2525M12	12	25	25	32	150	32	-6°	-6°	
DCLNR/L3225P12	12	32	25	32	170	32	-6°	-6°	
DCLNR/L2525M16	16	25	25	32	150	39	-6°	-6°	CN .. 1606 ..
DCLNR/L3225P16	16	32	25	32	170	39	-6°	-6°	
DCLNR/L3232P16	16	32	32	40	170	39	-6°	-6°	
DCLNR/L3232P19	19	32	32	40	170	43,2	-6°	-6°	CN .. 1906 ..

Measured with master insert: CN .. 090308 / CN .. 120408 / CN .. 160612 / CN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DCLNR1616H09/ordering example, left-hand tool: DCLNL1616H09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type h = h1 [mm]	CN .. 0903 .. 16–25	CN .. 1204 .. 16	CN .. 1204 .. 20–32	CN .. 1606 .. 25–32	CN .. 1906 .. 32
Shim	AP414-CN09	AP354-CN12	AP301-CN12	AP302-CN16	AP303-CN19
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK240	PK241	PK241	PK242	PK243
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1469	FS1470	FS1470	FS1471	FS1471
Pin	RS116	RS117	RS117	RS117	RS117
Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

Accessories

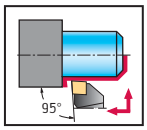
Type	CN .. 0903 ..	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET	PK242 SET	PK243 SET
Carbide clamp set Insert with hole		PK245 SET	PK246 SET	
Carbide clamp set Insert without hole		PK254 SET		
Shim for CN .. 1207 ..		AP411-CN1207		

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Shank tool – Rigid clamping
DCLN...-P
Walter Turn

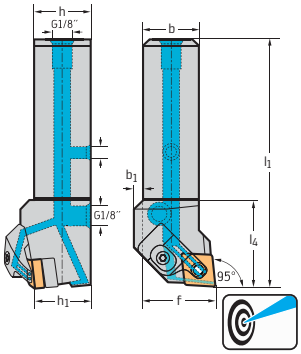


– Precision cooling



CN . .

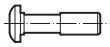
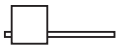
Tool



Designation		h = h1 mm	b mm	b1 mm	f mm	l1 mm	l4 mm	γ	λs	Type
DCLNR/L2020X12-P	12	20	20	10	25	115	38,5	-6°	-6°	CN .. 1204 ..
DCLNR/L2525X12-P	12	25	25	4	32	130	38,5	-6°	-6°	

Measured with master insert: CN .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For the connection set for coolant supply with G1/8" thread, see "Assembly parts and accessories"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: DCLNR2020X12-P/ordering example, left-hand tool: DCLNL2020X12-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	CN .. 1204 ..
	Shim	AP301-CN12
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm
	Left clamp	PK261L
	Right clamp	PK261R
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS2188
	G 1/8" threaded pin	FS2258 (SW 5)
	M6 threaded pin	FS2288 (SW 3)
	Torx key	FS1465 (Torx 15IP / SW 3,5)

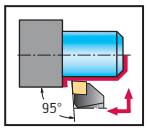
Accessories

	Type	CN .. 1204 ..
	Left-hand clamp set (standard assembly parts)	PK261L SET
	Right-hand clamp set (standard assembly parts)	PK261R SET

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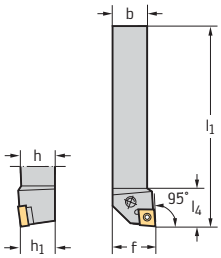
Shank tool – Lever clamp
PCLN
Walter Turn





CN . . CN . .

Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
PCLNR/L1616H09	9	16	16	20	100	24,2	-6°	-6°	CN .. 0903 ..
PCLNR/L2020K09	9	20	20	25	125	24,2	-6°	-6°	
PCLNR/L2525M09	9	25	25	32	150	24,2	-6°	-6°	
PCLNR/L1616H12	12	16	16	20	100	27,2	-6°	-6°	CN .. 1204 ..
PCLNR/L2020K12	12	20	20	25	125	27,2	-6°	-6°	
PCLNR/L2525M12	12	25	25	32	150	27,2	-6°	-6°	
PCLNR/L3225P12	12	32	25	32	170	27,2	-6°	-6°	
PCLNR/L2525M16	16	25	25	32	150	33,9	-6°	-6°	CN .. 1606 ..
PCLNR/L3225P16	16	32	25	32	170	33,9	-6°	-6°	
PCLNR/L3232P16	16	32	32	40	170	33,9	-6°	-6°	
PCLNR/L3232P19	19	32	32	40	170	37,9	-6°	-6°	CN .. 1906 ..
PCLNR/L4040S19	19	40	40	50	250	37,9	-6°	-6°	
PCLNR/L4040S25	25	40	40	50	250	50	-6°	-6°	CN .. 2509 ..
PCLNR/L5050T25	25	50	50	60	300	50	-6°	-6°	

Measured with master insert: CN .. 090308 / CN .. 120408 / CN .. 160612 / CN .. 190612 / CN .. 250924
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PCLNR1616H09/ordering example, left-hand tool: PCLNL1616H09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type h = h_1 [mm]	CN .. 0903 .. 16–25	CN .. 1204 .. 16	CN .. 1204 .. 20–32	CN .. 1606 .. 25–32	CN .. 1906 .. 32–40	CN .. 2509 .. 40–50
Shim for radius	AP408-CN0908 r ≤ 0,8 mm	AP134-CN1216 r ≤ 1,6 mm	AP134-CN1216 r ≤ 1,6 mm	AP135-CN1624 r ≤ 2,4 mm	AP136-CN1924 r ≤ 2,4 mm	AP192-CN2524 r ≤ 2,4 mm
Lever	KN101	KN121	KN102	KN104	KN106	KN107
Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS2129 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm	FS357 (SW 5) 14,0 Nm
Shim pin	RS120	RS102	RS102	RS103	RS104	RS105
Tapered assembly pin	MD101	MD101	MD101	MD102	MD102	MD103
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-5 (SW 5)

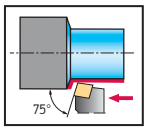
Accessories

Type	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
Shim for radius	AP134-CN1208 r ≤ 0,8 mm	AP135-CN1616 r ≤ 1,6 mm	AP136-CN1912 r ≤ 1,2 mm

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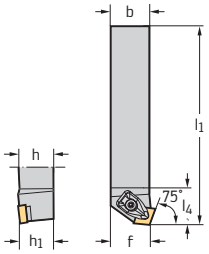
Shank tool – Rigid clamping
DCBN
Walter Turn





CN . . CN . .

Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DCBNR/L2525M12	12	25	25	22	150	34,6	-6°	-6°	CN .. 1204 ..
DCBNR/L3225P12	12	32	25	22	170	34,6	-6°	-6°	
DCBNR/L2525M16	16	25	25	22	150	41,5	-6°	-6°	CN .. 1606 ..
DCBNR/L3232P16	16	32	32	27	170	41,6	-6°	-6°	
DCBNR/L3232P19	19	32	32	27	170	46,1	-6°	-6°	CN .. 1906 ..

Measured with master insert: CN .. 120408 / CN .. 160612 / CN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DCBNR2525M12/ordering example, left-hand tool: DCBNL2525M12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
	Shim	AP301-CN12	AP302-CN16	AP303-CN19
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm
	Clamp	PK241	PK242	PK243
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm
	Pressure spring	FS1470	FS1471	FS1471
	Pin	RS117	RS117	RS117
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

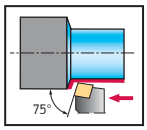
Accessories

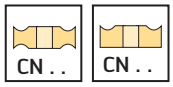
	Type	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
	Clamp set (standard assembly parts)	PK241 SET	PK242 SET	PK243 SET
	Carbide clamp set Insert with hole	PK245 SET	PK246 SET	
	Carbide clamp set Insert without hole	PK254 SET		
	Shim for CN .. 1207 ..	AP411-CN1207		

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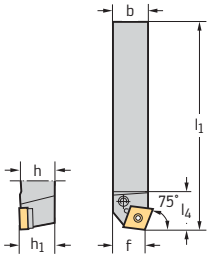
Shank tool – Lever clamp
PCBN
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PCBNR/L2525M12	12	25	25	22	150	26,9	-6°	-6°	CN .. 1204 ..
PCBNR/L2525M16	16	25	25	22	150	33,6	-6°	-6°	CN .. 1606 ..
PCBNR/L3232P16	16	32	32	27	170	33,6	-6°	-6°	
PCBNR/L3232P19	19	32	32	27	170	37,5	-6°	-6°	CN .. 1906 ..

Measured with master insert: CN .. 120408 / CN .. 160612 / CN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PCBNR2525M12/ordering example, left-hand tool: PCBNL2525M12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
	Shim for radius	AP134-CN1216 r ≤ 1,6 mm	AP135-CN1624 r ≤ 2,4 mm	AP136-CN1924 r ≤ 2,4 mm
	Lever	KN102	KN104	KN106
	Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm
	Shim pin	RS102	RS103	RS104
	Tapered assembly pin	MD101	MD102	MD102
	Allen key	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)

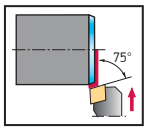
Accessories

	Type	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
	Shim for radius	AP134-CN1208 r ≤ 0,8 mm	AP135-CN1616 r ≤ 1,6 mm	AP136-CN1912 r ≤ 1,2 mm

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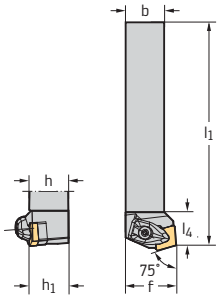
Shank tool – Rigid clamping
DCKN
Walter Turn





CN . . CN . .

Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DCKNR/L2525M12	12	25	25	32	150	21,1	-6°	-6°	CN .. 1204 ..
DCKNR/L3225P12	12	32	25	32	170	21,1	-6°	-6°	
DCKNR/L3232P16	16	32	32	40	170	26	-6°	-6°	CN .. 1606 ..

Measured with master insert: CN .. 120408 / CN .. 160612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DCKNR2525M12/ordering example, left-hand tool: DCKNL2525M12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	CN .. 1204 ..	CN .. 1606 ..
Shim	AP301-CN12	AP302-CN16
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK241	PK242
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1470	FS1471
Pin	RS117	RS117
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

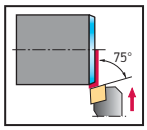
Accessories

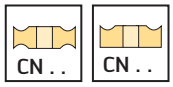
Type	CN .. 1204 ..	CN .. 1606 ..
Clamp set (standard assembly parts)	PK241 SET	PK242 SET
Carbide clamp set Insert with hole	PK245 SET	PK246 SET
Carbide clamp set Insert without hole	PK254 SET	
Shim for CN .. 1207 ..	AP411-CN1207	

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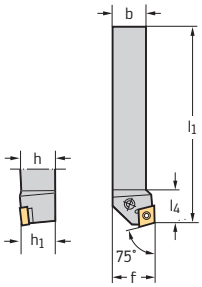
Shank tool – Lever clamp
PCKN
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PCKNR/L2525M12	12	25	25	32	150	22,9	-6°	-6°	CN .. 1204 ..

Measured with master insert: CN .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PCKNR2525M12/ordering example, left-hand tool: PCKNL2525M12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	CN .. 1204 ..
	Shim for radius	AP134-CN1216 r ≤ 1,6 mm
	Lever	KN102
	Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm
	Shim pin	RS102
	Tapered assembly pin	MD101
	Allen key	ISO2936-3 (SW 3)

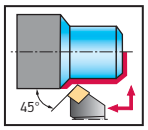
Accessories

	Type	CN .. 1204 ..
	Shim for radius	AP134-CN1208 r ≤ 0,8 mm

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Shank tool – Lever clamp
PCSN
Walter Turn

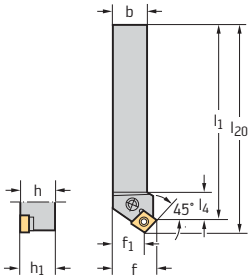








Tool



Designation		h = h1 mm	b mm	f mm	f1 mm	l1 mm	l4 mm	l20 mm	γ	λs	Type
PCSNR/L2525M12	12	25	25	32	23,9	150	19,7	160	-8°	-8°	CN .. 1204 ..

Measured with master insert: CN .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PCSNR2525M12/ordering example, left-hand tool: PCSNL2525M12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	CN .. 1204 ..
	Shim for radius	AP134-CN1216 r ≤ 1,6 mm
	Lever	KN102
	Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm
	Shim pin	RS102
	Tapered assembly pin	MD101
	Allen key	ISO2936-3 (SW 3)

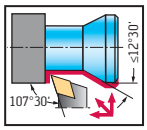
Accessories

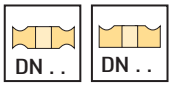
	Type	CN .. 1204 ..
	Shim for radius	AP134-CN1208 r ≤ 0,8 mm

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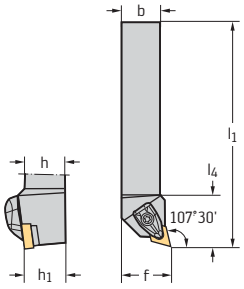
Shank tool – Rigid clamping
DDHN
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DDHNR/L2020K15	15	20	20	25	125	36,1	-6°	-7°	DN .. 1506 ..
DDHNR/L2525M15	15	25	25	32	150	36,1	-6°	-7°	

Measured with master insert: DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DDHNR2020K15/ordering example, left-hand tool: DDHNL2020K15
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	DN .. 1506 ..
Shim	AP304-DN15
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm
Clamp	PK241
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS1470
Pin	RS117
Torx key	FS1465 (Torx 15IP / SW 3,5)

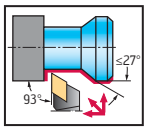
Accessories

Type	DN .. 1506 ..
Clamp set (standard assembly parts)	PK241 SET
Carbide clamp set Insert with hole	PK245 SET
Carbide clamp set Insert without hole	PK254 SET
Shim for DN .. 1504 ..	AP304-DN1504
Shim for DN .. 1507 ..	AP412-DN1507

A 24 D 1 A 93 A 93 A 93

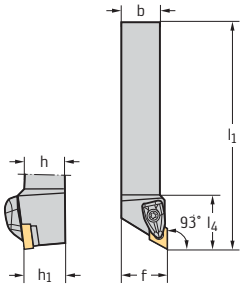
Shank tool – Rigid clamping
DDJN
Walter Turn





DN . . DN . .

Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
DDJNR/L2020K11	11	20	20	25	125	30,2	-6°	-7°	DN .. 1104 ..
DDJNR/L2525M11	11	25	25	32	150	30,2	-6°	-7°	
DDJNR/L3225P11	11	32	25	32	170	30,2	-6°	-7°	
DDJNR/L2020K15	15	20	20	25	125	39,4	-6°	-7°	DN .. 1506 ..
DDJNR/L2525M15	15	25	25	32	150	39,4	-6°	-7°	
DDJNR/L3225P15	15	32	25	32	170	39,4	-6°	-7°	
DDJNR/L3232P15	15	32	32	40	170	39,4	-6°	-7°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DDJNR2020K11/ordering example, left-hand tool: DDJNL2020K11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	DN .. 1104 ..	DN .. 1506 ..
Shim	AP305-DN11	AP304-DN15
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
Clamp	PK240	PK241
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS1469	FS1470
Pin	RS116	RS117
Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)

Accessories

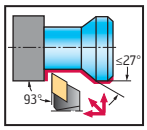
Type	DN .. 1104 ..	DN .. 1506 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET
Carbide clamp set Insert with hole		PK245 SET
Carbide clamp set Insert without hole		PK254 SET
Shim for DN .. 1504 ..		AP304-DN1504
Shim for DN .. 1507 ..		AP412-DN1507

A 24 D 1 A 93 A 93 A 93

Shank tool – Rigid clamping
DDJN...-P
Walter Turn

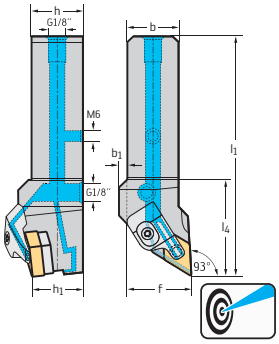


– Precision cooling



DN . .

Tool



Designation		h = h1 mm	b mm	b1 mm	f mm	l1 mm	l4 mm	γ	λs	Type
DDJNR/L2020X11-P	11	20	20	6	25	125	48,5	-6°	-7°	DN .. 1104 ..
DDJNR/L2020X15-P	15	20	20	7	25	125	48,5	-6°	-7°	DN .. 1506 ..
DDJNR/L2525X15-P	15	25	25	3	32	140	48,5	-6°	-7°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For the connection set for coolant supply with G1/8" thread, see "Assembly parts and accessories"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: DDJNR2020X11-P/ordering example, left-hand tool: DDJNL2020X11-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	DN .. 1104 ..	DN .. 1506 ..
Shim	AP305-DN11	AP304-DN15
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
Left clamp	PK261L	PK261L
Right clamp	PK261R	PK261R
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS2188	FS2188
G 1/8" screw	FS2258 (SW 5)	FS2258 (SW 5)
M6 threaded pin	FS2288 (SW 3)	FS2288 (SW 3)
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

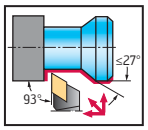
Accessories

Type	DN .. 1104 ..	DN .. 1506 ..
Left-hand clamp set (standard assembly parts)	PK261L SET	PK261L SET
Right-hand clamp set (standard assembly parts)	PK261R SET	PK261R SET
Shim for DN .. 1504 ..		AP304-DN1504

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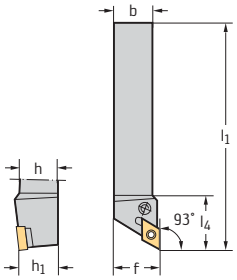
Shank tool – Lever clamp
PDJN
Walter Turn





DN . . DN . .

Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
PDJNR/L1616H11	11	16	16	20	100	29,7	-6°	-7°	DN .. 1104 ..
PDJNR/L2020K11	11	20	20	25	125	29,7	-6°	-7°	
PDJNR/L2525M11	11	25	25	32	150	29,7	-6°	-7°	
PDJNR/L3225P11	11	32	25	32	170	29,7	-6°	-7°	
PDJNR/L2020K15	15	20	20	25	125	36,2	-6°	-7°	DN .. 1506 ..
PDJNR/L2525M15	15	25	25	32	150	36,2	-6°	-7°	
PDJNR/L3225P15	15	32	25	32	170	36,2	-6°	-7°	
PDJNR/L3232P15	15	32	32	40	170	36,2	-6°	-7°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PDJNR1616H11/ordering example, left-hand tool: PDJNL1616H11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	DN .. 1104 ..	DN .. 1506 ..
Shim for radius	AP171-DN1112 r ≤ 1,2 mm	AP145-DN1516 r ≤ 1,6 mm
Lever	KN119	KN103
Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS355 (SW 3) 5,0 Nm
Shim pin	RS101	RS102
Tapered assembly pin	MD101	MD101
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)

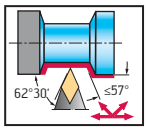
Accessories

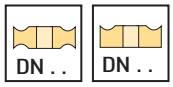
Type	DN .. 1104 ..	DN .. 1506 ..
Shim for radius	AP171-DN1108 r ≤ 0,8 mm	AP145-DN1508 r ≤ 0,8 mm
Shim for DN .. 1504 .. for radius		AP357-DN1508 r ≤ 0,8 mm
Shim for DN .. 1504 .. for radius		AP357-DN1516 r ≤ 1,6 mm

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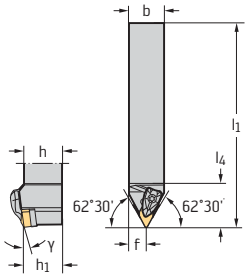
Shank tool – Rigid clamping
DDNN
Walter Turn







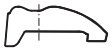
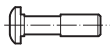
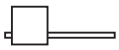
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DDNNN2020K11	11	20	20	10	125	31,2	-5°	-9°	DN .. 1104 ..
DDNNN2525M11	11	25	25	13	150	31,2	-5°	-9°	
DDNNN2525M15	15	25	25	13	150	40,8	-5°	-9°	DN .. 1506 ..
DDNNN3225P15	15	32	25	13	170	40,8	-5°	-9°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	DN .. 1104 ..	DN .. 1506 ..
	Shim	AP305-DN11	AP304-DN15
	Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
	Clamp	PK240	PK241
	Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS1469	FS1470
	Pin	RS116	RS117
	Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)

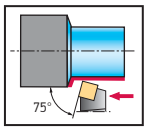
Accessories

	Type	DN .. 1104 ..	DN .. 1506 ..
	Clamp set (standard assembly parts)	PK240 SET	PK241 SET
	Carbide clamp set Insert with hole		PK245 SET
	Carbide clamp set Insert without hole		PK254 SET
	Shim for DN .. 1504 ..		AP304-DN1504
	Shim for DN .. 1507 ..		AP412-DN1507

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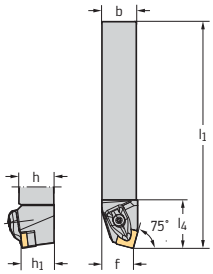
Shank tool – Rigid clamping
DSBN
Walter Turn





SN . . SN . .

Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DSBNR/L2525M12	12	25	25	22	150	34,3	-6°	-6°	SN .. 1204 ..
DSBNR/L3225P12	12	32	25	22	170	34,3	-6°	-6°	
DSBNR/L3232P15	15	32	32	27	170	41,5	-6°	-6°	SN .. 1506 ..
DSBNR/L3232P19	19	32	32	27	170	46,4	-6°	-6°	SN .. 1906 ..
DSBNR/L4040S19	19	40	40	35	250	46,5	-6°	-6°	

Measured with master insert: SN .. 120408 / SN .. 150612 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DSBNR2525M12/ordering example, left-hand tool: DSBNL2525M12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Shim	AP308-SN12	AP309-SN15	AP310-SN19
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK241	PK242	PK243
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1470	FS1471	FS1471
Pin	RS117	RS117	RS117
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

Accessories

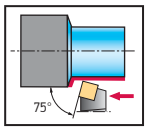
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Clamp set (standard assembly parts)	PK241 SET	PK242 SET	PK243 SET
Carbide clamp set Insert with hole	PK245 SET	PK246 SET	
Carbide clamp set Insert without hole	PK254 SET		
Shim for SN .. 1207 ..	AP413-SN1207		

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Shank tool – Rigid clamping
DSBN...-P
Walter Turn



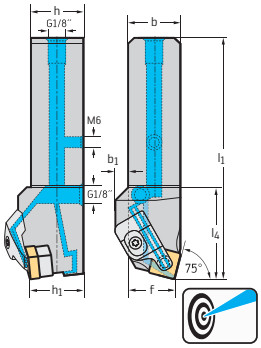
– Precision cooling



SN . .

Tool

Designation		h = h_1 mm	b mm	b_1 mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
DSBNR/L2525X12-P	12	25	25	7	22	135	43,5	-6°	-6°	SN .. 1204 ..



Measured with master insert: SN .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For the connection set for coolant supply with G1/8" thread, see "Assembly parts and accessories"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: DSBNR2525X12-P/ordering example, left-hand tool: DSBNL2525X12-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	SN .. 1204 ..
Shim	AP308-SN12
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm
Left clamp	PK261L
Right clamp	PK261R
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS2188
G 1/8" screw	FS2258 (SW 5)
M6 threaded pin	FS2288 (SW 3)
Torx key	FS1465 (Torx 15IP / SW 3,5)

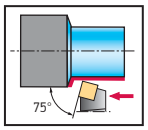
Accessories

Type	SN .. 1204 ..
Left-hand clamp set (standard assembly parts)	PK261L SET
Right-hand clamp set (standard assembly parts)	PK261R SET

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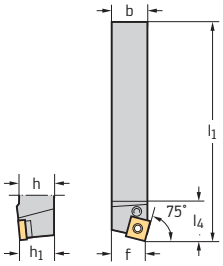
Shank tool – Lever clamp
PSBN
Walter Turn





SN . . SN . .

Tool



Designation	◎	h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PSBNR/L2020K12	12	20	20	17	125	27,5	-6°	-6°	SN .. 1204 ..
PSBNR/L2525M12	12	25	25	22	150	27,5	-6°	-6°	
PSBNR/L3225P12	12	32	25	22	170	27,5	-6°	-6°	
PSBNR/L2525M15	15	25	25	22	150	32	-6°	-6°	SN .. 1506 ..
PSBNR/L3232P15	15	32	32	27	170	32	-6°	-6°	
PSBNR/L3232P19	19	32	32	27	170	39,2	-6°	-6°	SN .. 1906 ..
PSBNR/L4040S19	19	40	40	35	250	41,5	-6°	-6°	
PSBNR/L4040S25	25	40	40	35	250	47,5	-6°	-6°	SN .. 2507 ..
PSBNR/L5050T25	25	50	50	43	300	47,5	-6°	-6°	

Measured with master insert: SN .. 120408 / SN .. 150612 / SN .. 190612 / SN .. 250724
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PSBNR2020K12/ordering example, left-hand tool: PSBNL2020K12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..	SN .. 2507 ..
Shim for radius	AP141-SN1216 r ≤ 1,6 mm	AP142-SN1524 r ≤ 2,4 mm	AP143-SN1924 r ≤ 2,4 mm	AP144-SN2524 r ≤ 2,4 mm
Lever	KN102	KN104	KN106	KN107
Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm	FS357 (SW 5) 14,0 Nm
Shim pin	RS102	RS103	RS104	RS105
Tapered assembly pin	MD101	MD102	MD102	MD103
Allen key	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-5 (SW 5)

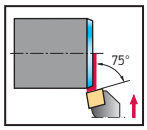
Accessories

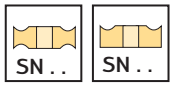
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..	SN .. 2507 ..
Shim for radius	AP141-SN1208 r ≤ 0,8 mm	AP142-SN1516 r ≤ 1,6 mm	AP143-SN1912 r ≤ 1,2 mm	
Shim for SN .. 2509 .. for radius				AP191-SN250924 r ≤ 2,4 mm

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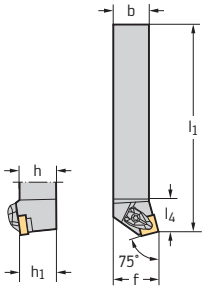
Shank tool – Rigid clamping
DSKN
Walter Turn







Tool



Designation	◎	h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DSKNR/L2525M12	12	25	25	32	150	23,6	-6°	-6°	SN .. 1204 ..
DSKNR/L3232P15	15	32	32	40	170	28,9	-6°	-6°	SN .. 1506 ..

Measured with master insert: SN .. 120408 / SN .. 150612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DSKNR2525M12/ordering example, left-hand tool: DSKNL2525M12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	SN .. 1204 ..	SN .. 1506 ..
	Shim	AP308-SN12	AP309-SN15
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
	Clamp	PK241	PK242
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
	Pressure spring	FS1470	FS1471
	Pin	RS117	RS117
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

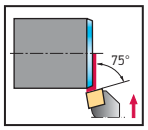
Accessories

	Type	SN .. 1204 ..	SN .. 1506 ..
	Clamp set (standard assembly parts)	PK241 SET	PK242 SET
	Carbide clamp set Insert with hole	PK245 SET	PK246 SET
	Carbide clamp set Insert without hole	PK254 SET	
	Shim for SN .. 1207 ..	AP413-SN1207	

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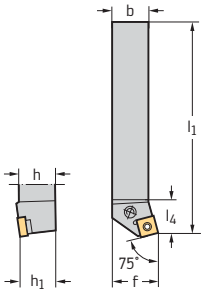
Shank tool – Lever clamp
PSKN
Walter Turn





SN . . SN . .

Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
PSKNR/L2020K12	12	20	20	25	125	23	-6°	-6°	SN .. 1204 ..
PSKNR/L2525M12	12	25	25	32	150	23	-6°	-6°	
PSKNR/L3232P19	19	32	32	40	170	32,4	-6°	-6°	SN .. 1906 ..

Measured with master insert: SN .. 120408 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PSKNR2020K12/ordering example, left-hand tool: PSKNL2020K12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	SN .. 1204 ..	SN .. 1906 ..
Shim for radius	AP141-SN1216 r ≤ 1,6 mm	AP143-SN1924 r ≤ 2,4 mm
Lever	KN102	KN106
Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm
Shim pin	RS102	RS104
Tapered assembly pin	MD101	MD102
Allen key	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)

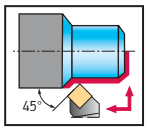
Accessories

Type	SN .. 1204 ..	SN .. 1906 ..
Shim for radius	AP141-SN1208 r ≤ 0,8 mm	AP143-SN1912 r ≤ 1,2 mm

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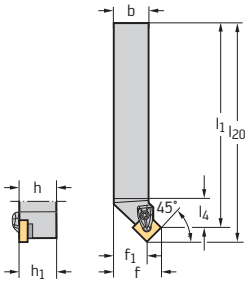
Shank tool – Rigid clamping
DSSN
Walter Turn





SN . . SN . .

Tool



Designation		h = h1 mm	b mm	f mm	f1 mm	l1 mm	l4 mm	l20 mm	γ	λs	Type
DSSNR/L1616H09	9	16	16	20,3	13,92	100	21,3	106,1	-8°	0°	SN .. 0903 ..
DSSNR/L2020K12	12	20	20	25	16,68	125	27,5	133,3	-8°	0°	
DSSNR/L2525M12	12	25	25	32	23,68	150	27,5	158,3	-8°	0°	SN .. 1204 ..
DSSNR/L3225P12	12	32	25	32	23,68	170	27,5	178,3	-8°	0°	
DSSNR/L2525M15	15	25	25	32	21,76	150	32	160,2	-8°	0°	
DSSNR/L3225P15	15	32	25	32	21,76	170	32	180,2	-8°	0°	SN .. 1506 ..
DSSNR/L3232P15	15	32	32	40	29,76	170	32	180,2	-8°	0°	
DSSNR/L3232P19	19	32	32	40	27,52	170	37	182,5	-8°	0°	SN .. 1906 ..

Measured with master insert: SN .. 090308 / SN .. 120408 / SN .. 150612 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DSSNR1616H09/ordering example, left-hand tool: DSSNL1616H09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	SN .. 0903 ..	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Shim	AP415-SN09	AP308-SN12	AP309-SN15	AP310-SN19
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK240	PK241	PK242	PK243
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1469	FS1470	FS1471	FS1471
Pin	RS116	RS117	RS117	RS117
Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

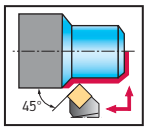
Accessories

Type	SN .. 0903 ..	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET	PK242 SET	PK243 SET
Carbide clamp set Insert with hole		PK245 SET	PK246 SET	
Carbide clamp set Insert without hole		PK254 SET		
Shim for SN .. 1207 ..		AP413-SN1207		

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Shank tool – Lever clamp
PSSN
Walter Turn

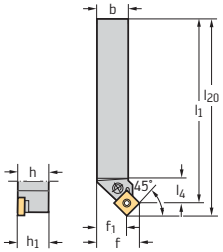




SN . . SN . .

Tool

Designation		h = h_1 mm	b mm	f mm	f_1 mm	l_1 mm	l_4 mm	l_{20} mm	γ	λ_s	Type
PSSNR/L1616H09	9	16	16	20,4	13,92	100	19	106,1	-8°	0°	SN .. 0903 ..
PSSNR/L2020K12	12	20	20	25	16,68	125	20,2	133,3	-8°	0°	
PSSNR/L2525M12	12	25	25	32	23,68	150	20,2	158,3	-8°	0°	SN .. 1204 ..
PSSNR/L3225P12	12	32	25	32	23,68	170	20,2	178,3	-8°	0°	
PSSNR/L2525M15	15	25	25	32	21,76	150	25,3	160,2	-8°	0°	
PSSNR/L3232P15	15	32	32	40	29,76	170	25,3	180,2	-8°	0°	SN .. 1506 ..
PSSNR/L3232P19	19	32	32	40	27,52	170	28	182,5	-8°	0°	SN .. 1906 ..



Measured with master insert: SN .. 090308 / SN .. 120408 / SN .. 150612 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PSSNR1616H09/ordering example, left-hand tool: PSSNL1616H09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	SN .. 0903 ..	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Shim for radius	AP409-SN0908 r ≤ 0,8 mm	AP141-SN1216 r ≤ 1,6 mm	AP142-SN1524 r ≤ 2,4 mm	AP143-SN1924 r ≤ 2,4 mm
Lever	KN101	KN102	KN104	KN106
Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm
Shim pin	RS120	RS102	RS103	RS104
Tapered assembly pin	MD101	MD101	MD102	MD102
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)

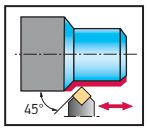
Accessories

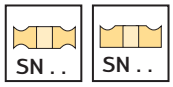
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Shim for radius	AP141-SN1208 r ≤ 0,8 mm	AP142-SN1516 r ≤ 1,6 mm	AP143-SN1912 r ≤ 1,2 mm

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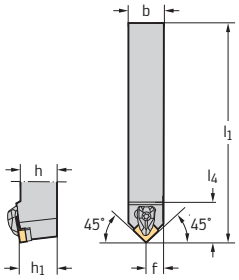
Shank tool – Rigid clamping
DSDN
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DSDNN1616H09	9	16	16	8	100	28,1	-6°	-6°	SN .. 0903 ..
DSDNN2020K12	12	20	20	10	125	36,5	-6°	-6°	SN .. 1204 ..
DSDNN2525M12	12	25	25	13	150	36,5	-6°	-6°	
DSDNN3225P12	12	32	25	13	170	36,5	-6°	-6°	
DSDNN2525M15	15	25	25	13	150	44,8	-6°	-6°	SN .. 1506 ..
DSDNN3225P19	19	32	25	13	170	49,5	-6°	-6°	SN .. 1906 ..

Measured with master insert: SN .. 090308 / SN .. 120408 / SN .. 150612 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	SN .. 0903 ..	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Shim	AP415-SN09	AP308-SN12	AP309-SN15	AP310-SN19
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK240	PK241	PK242	PK243
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1469	FS1470	FS1471	FS1471
Pin	RS116	RS117	RS117	RS117
Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

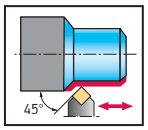
Accessories

Type	SN .. 0903 ..	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET	PK242 SET	PK243 SET
Carbide clamp set Insert with hole		PK245 SET	PK246 SET	
Carbide clamp set Insert without hole		PK254 SET		
Shim for SN .. 1207 ..		AP413-SN1207		

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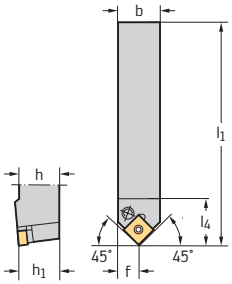
Shank tool – Lever clamp
PSDN
Walter Turn





SN . . SN . .

Tool



Designation	◎	h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PSDNN1212F09	9	12	12	6	80	20	-6°	-6°	SN .. 0903 ..
PSDNN1616H09	9	16	16	8	100	21	-6°	-6°	
PSDNN2020K12	12	20	20	10	125	27,6	-6°	-6°	SN .. 1204 ..
PSDNN2525M12	12	25	25	13	150	27,6	-6°	-6°	
PSDNN3225P12	12	32	25	13	170	27,6	-6°	-6°	
PSDNN3225P15	15	32	25	13	170	36	-6°	-6°	SN .. 1506 ..
PSDNN3232P19	19	32	32	16	170	40,4	-6°	-6°	SN .. 1906 ..
PSDNN4040S25	25	40	40	21	250	48,8	-6°	-6°	SN .. 2507 ..

Measured with master insert: SN .. 090308 / SN .. 120408 / SN .. 150612 / SN .. 190612 / SN .. 250724
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type h = h1 [mm]	SN .. 0903 .. 12	SN .. 0903 .. 16	SN .. 1204 .. 20–32	SN .. 1506 .. 32	SN .. 1906 .. 32	SN .. 2507 .. 40
Shim for radius		AP409-SN0908 r ≤ 0,8 mm	AP141-SN1216 r ≤ 1,6 mm	AP142-SN1524 r ≤ 2,4 mm	AP143-SN1924 r ≤ 2,4 mm	AP144-SN2524 r ≤ 2,4 mm
Lever	KN126	KN101	KN102	KN104	KN106	KN107
Clamping screw Tightening torque	FS2182 (SW 2) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm	FS357 (SW 5) 14,0 Nm
Shim pin		RS120	RS102	RS103	RS104	RS105
Tapered assembly pin		MD101	MD101	MD102	MD102	MD103
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-5 (SW 5)

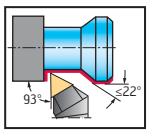
Accessories

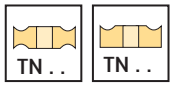
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..	SN .. 2507 ..
Shim for radius	AP141-SN1208 r ≤ 0,8 mm	AP142-SN1516 r ≤ 1,6 mm	AP143-SN1912 r ≤ 1,2 mm	AP191-SN250924 r ≤ 2,4 mm

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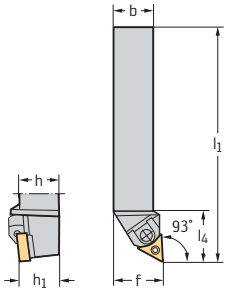
Shank tool – Wedge-type clamping
MTJN
Walter Turn







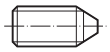
Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
MTJNR/L2020K16	16	20	20	25	125	30,8	-6°	-6°	TN .. 1604 ..
MTJNR/L2525M16	16	25	25	32	150	30,8	-6°	-6°	
MTJNR/L3225P16	16	32	25	32	170	30,8	-6°	-6°	
MTJNR/L2525M22	22	25	25	32	150	34,8	-6°	-6°	TN .. 2204 ..
MTJNR/L3225P22	22	32	25	32	170	34,8	-6°	-6°	

Measured with master insert: TN .. 160408 / TN .. 220408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: MTJNR2020K16/ordering example, left-hand tool: MTJNL2020K16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	TN .. 1604 ..	TN .. 2204 ..
	Clamping wedge set	FK303 (SW 2,5)	FK304 (SW 3)
	Shim for radius	AP147 r ≤ 1,6 mm	AP148 r ≤ 1,6 mm
	Pin	RS106	RS107
	Clamping screw Tightening torque	FS358 (SW 3) 5,0 Nm	FS358 (SW 3) 5,0 Nm
	Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)

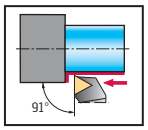
Accessories

	Type	TN .. 2204 ..
	Shim for radius	AP149 r ≤ 0,8 mm

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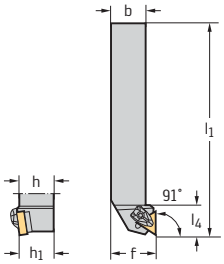
Shank tool – Rigid clamping
DTGN
Walter Turn





TN . . TN . .

Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DTGNR/L2020K16	16	20	20	25	125	25,4	-6°	-6°	TN .. 1604 ..
DTGNR/L2525M16	16	25	25	32	150	24,6	-6°	-6°	
DTGNR/L3225P16	16	32	25	32	170	25,3	-6°	-6°	
DTGNR/L2525M22	22	25	25	32	150	32,1	-6°	-6°	TN .. 2204 ..
DTGNR/L3225P22	22	32	25	32	170	33,1	-6°	-6°	

Measured with master insert: TN .. 160408 / TN .. 220408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DTGNR2020K16/ordering example, left-hand tool: DTGNL2020K16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	TN .. 1604 ..	TN .. 2204 ..
Shim	AP321-TN16	AP322-TN22
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
Clamp	PK240	PK241
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS1469	FS1470
Pin	RS116	RS117
Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)

Accessories

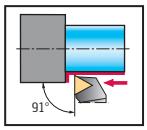
Type	TN .. 1604 ..	TN .. 2204 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET
Carbide clamp set Insert with hole		PK245 SET
Carbide clamp set Insert without hole		PK254 SET

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Shank tool – Rigid clamping
DTGN...-P
Walter Turn

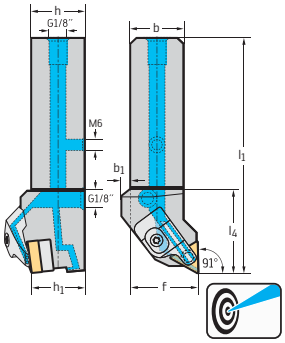


– Precision cooling



TN . .

Tool



Designation		h = h1 mm	b mm	b1 mm	f mm	l1 mm	l4 mm	γ	λs	Type
DTGNR/L2020X16-P	16	20	20	5	25	115	38,5	-6°	-6°	TN .. 1604 ..
DTGNR/L2525X16-P	16	25	25		32	130	38,5	-6°	-6°	

Measured with master insert: TN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For the connection set for coolant supply with G1/8" thread, see "Assembly parts and accessories"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: DTGNR2020X16-P/ordering example, left-hand tool: DTGNL2020X16-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	TN .. 1604 ..
Shim	AP321-TN16
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm
Left clamp	PK261L
Right clamp	PK261R
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS2188
G 1/8" screw	FS2258 (SW 5)
M6 threaded pin	FS2288 (SW 3)
Torx key	FS1465 (Torx 15IP / SW 3,5)

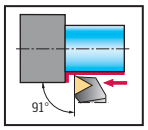
Accessories

Type	TN .. 1604 ..
Left-hand clamp set (standard assembly parts)	PK261L SET
Right-hand clamp set (standard assembly parts)	PK261R SET

A 30 D 1 A 93 A 93 A 93

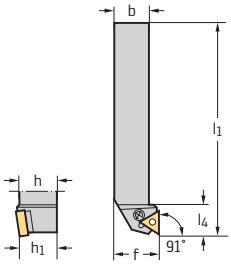
Shank tool – Lever clamp
PTGN
Walter Turn





TN . . TN . .

Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PTGNR/L1212F11	11	12	12	16	80	15,6	-6°	-6°	TN .. 1103 ..
PTGNR/L1616H11	11	16	16	20	100	18	-6°	-6°	
PTGNR/L1616H16	16	16	16	20	100	20,2	-6°	-6°	TN .. 1604 ..
PTGNR/L2020K16	16	20	20	25	125	20,2	-6°	-6°	
PTGNR/L2525M16	16	25	25	32	150	22,2	-6°	-6°	
PTGNR/L3225P16	16	32	25	32	170	22,2	-6°	-6°	
PTGNR/L3232P22	22	32	32	40	170	28,7	-6°	-6°	TN .. 2204 ..
PTGNR/L4040S27	27	40	40	50	250	34	-6°	-6°	TN .. 2706 ..

Measured with master insert: TN .. 110304 / TN .. 160408 / TN .. 220408 / TN .. 270612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PTGNR1212F11/ordering example, left-hand tool: PTGNL1212F11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	TN .. 1103 ..	TN .. 1604 ..	TN .. 2204 ..	TN .. 2706 ..
Shim for radius		AP137-TN1616 r ≤ 1,6 mm	AP138-TN2216 r ≤ 1,6 mm	AP193-TN2716 r ≤ 1,6 mm
Lever	KN127	KN101	KN102	KN125
Clamping screw Tightening torque	FS2182 (SW 2) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm	FS352 (SW 3) 5,0 Nm	FS2156 (SW 3) 5,0 Nm
Shim pin		RS101	RS102	RS103
Tapered assembly pin		MD101	MD101	MD102
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

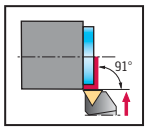
Accessories

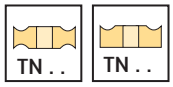
Type	TN .. 1604 ..	TN .. 2204 ..
Shim for radius	AP137-TN1608 r ≤ 0,8 mm	AP138-TN2208 r ≤ 0,8 mm

A 30 D 1 A 93 A 93

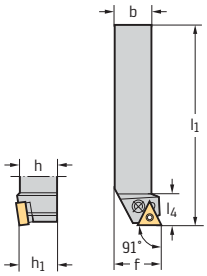
Shank tool – Lever clamp
PTFN
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PTFNR/L1212F11	11	12	12	16	80	15	-6°	-6°	TN .. 1103 ..
PTFNR/L1616H16	16	16	16	20	100	19,7	-6°	-6°	TN .. 1604 ..
PTFNR/L2020K16	16	20	20	25	125	20,2	-6°	-6°	
PTFNR/L2525M16	16	25	25	32	150	20,2	-6°	-6°	
PTFNR/L3225P16	16	32	25	32	170	20	-6°	-6°	

Measured with master insert: TN .. 110304 / TN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PTFNR1212F11/ordering example, left-hand tool: PTFNL1212F11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	TN .. 1103 ..	TN .. 1604 ..
Shim for radius		AP137-TN1616 r ≤ 1,6 mm
Lever	KN127	KN101
Clamping screw Tightening torque	FS2182 (SW 2) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm
Shim pin		RS101
Tapered assembly pin		MD101
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)

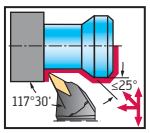
Accessories

Type	TN .. 1604 ..
Shim for radius	AP137-TN1608 r ≤ 0,8 mm

A 30 D 1 A 93 A 93

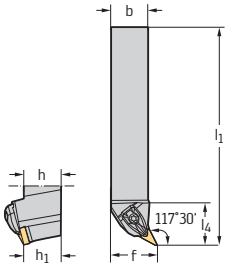
Shank tool – Rigid clamping
DVPN
Walter Turn







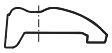
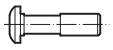
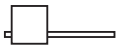
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DVPNR/L2525M16	16	25	25	32	150	39,2	-4°	-13°	VN .. 1604 ..
DVPNR/L3225P16	16	32	25	32	170	39,2	-4°	-13°	

Measured with master insert: VN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DVPNR2525M16/ordering example, left-hand tool: DVPNL2525M16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	VN .. 1604 ..
	Shim	AP312-VN16
	Screw for shim Tightening torque	FS1467 (Torx 15IP) 3,0 Nm
	Clamp	PK244
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 1,7 Nm
	Pressure spring	FS1470
	Pin	RS117
	Torx key	FS1465 (Torx 15IP / SW 3,5)

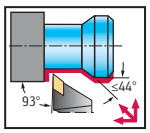
Accessories

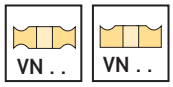
	Type	VN .. 1604 ..
	Clamp set (standard assembly parts)	PK244 SET

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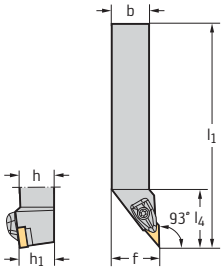
Shank tool – Rigid clamping
DVJN
Walter Turn







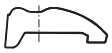
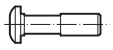
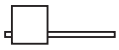
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DVJNR/L2020K16	16	20	20	25	125	46,6	-4°	-13°	
DVJNR/L2525M16	16	25	25	32	150	46,6	-4°	-13°	VN .. 1604 ..
DVJNR/L3225P16	16	32	25	32	170	46,6	-4°	-13°	

Measured with master insert: VN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DVJNR2020K16/ordering example, left-hand tool: DVJNL2020K16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	VN .. 1604 ..
	Shim	AP312-VN16
	Screw for shim Tightening torque	FS1467 (Torx 15IP) 3,0 Nm
	Clamp	PK244
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 1,7 Nm
	Pressure spring	FS1470
	Pin	RS117
	Torx key	FS1465 (Torx 15IP / SW 3,5)

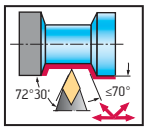
Accessories

	Type	VN .. 1604 ..
	Clamp set (standard assembly parts)	PK244 SET

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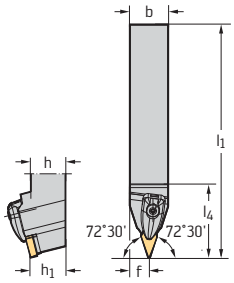
Shank tool – Rigid clamping
DVVN
Walter Turn







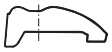
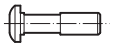
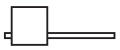
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
DVVNN2020K16	16	20	20	11	125	47,8	-4°	-13°	VN .. 1604 ..
DVVNN2525M16	16	25	25	13	150	47,8	-4°	-13°	
DVVNN3225P16	16	32	25	13	170	47,8	-4°	-13°	

Measured with master insert: VN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	VN .. 1604 ..
	Shim	AP312-VN16
	Screw for shim Tightening torque	FS1467 (Torx 15IP) 3,0 Nm
	Clamp	PK244
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 1,7 Nm
	Pressure spring	FS1470
	Pin	RS117
	Torx key	FS1465 (Torx 15IP / SW 3,5)

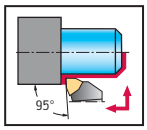
Accessories

	Type	VN .. 1604 ..
	Clamp set (standard assembly parts)	PK244 SET

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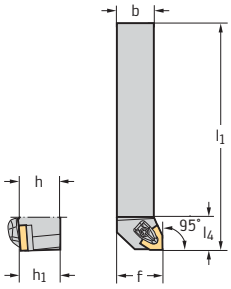
Shank tool – Rigid clamping
DWLN
Walter Turn





WN . . WN . .

Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
DWLNR/L1616H06	6	16	16	20	100	26,4	-6°	-6°	WN .. 0604 ..
DWLNR/L2020K06	6	20	20	25	125	27,1	-6°	-6°	
DWLNR/L2525M06	6	25	25	32	150	27,1	-6°	-6°	
DWLNR/L3225P06	6	32	25	32	170	27,1	-6°	-6°	
DWLNR/L2020K08	8	20	20	25	125	34,3	-6°	-6°	WN .. 0804 ..
DWLNR/L2525M08	8	25	25	32	150	35	-6°	-6°	
DWLNR/L3225P08	8	32	25	32	170	35	-6°	-6°	
DWLNR/L2525M10	10	25	25	32	150	40,3	-6°	-6°	WN .. 1006 ..
DWLNR/L3225P10	10	32	25	32	170	40,3	-6°	-6°	
DWLNR/L3232P10	10	32	32	40	170	41,8	-6°	-6°	

Measured with master insert: WN .. 060408 / WN .. 080408 / WN .. 100612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: DWLNR1616H06/ordering example, left-hand tool: DWLNL1616H06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	WN .. 0604 ..	WN .. 0804 ..	WN .. 1006 ..
Shim	AP306-WN06	AP307-WN08	AP311-WN10
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK240	PK241	PK242
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1469	FS1470	FS1471
Pin	RS116	RS117	RS117
Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

Accessories

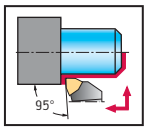
Type	WN .. 0604 ..	WN .. 0804 ..	WN .. 1006 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET	PK242 SET
Carbide clamp set Insert with hole		PK245 SET	PK246 SET
Carbide clamp set Insert without hole		PK254 SET	

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Shank tool – Rigid clamping
DWLN...-P
Walter Turn

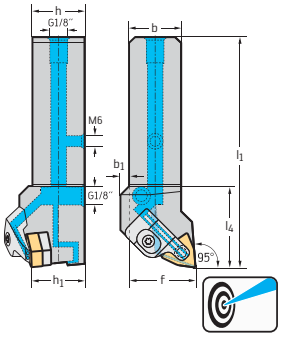


– Precision cooling



WN . .

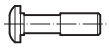
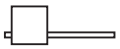
Tool



Designation		h = h1 mm	b mm	b1 mm	f mm	l1 mm	l4 mm	γ	λs	Type
DWLNR/L2020X08-P	8	20	20	10	25	115	38,5	-6°	-6°	WN .. 0804 ..
DWLNR/L2525X08-P	8	25	25	0	32	130	38,5	-6°	-6°	

Measured with master insert: WN .. 080408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For the connection set for coolant supply with G1/8" thread, see "Assembly parts and accessories"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: DWLNR2020X08-P/ordering example, left-hand tool: DWLNL2020X08-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	WN .. 0804 ..
	Shim	AP307-WN08
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm
	Left clamp	PK266L
	Right clamp	PK266R
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS2188
	G 1/8" screw	FS2258 (SW 5)
	M6 threaded pin	FS2288 (SW 3)
	Torx key	FS1465 (Torx 15IP / SW 3,5)

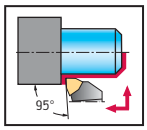
Accessories

	Type	WN .. 0804 ..
	Left-hand clamp set (standard assembly parts)	PK266L SET
	Right-hand clamp set (standard assembly parts)	PK266R SET

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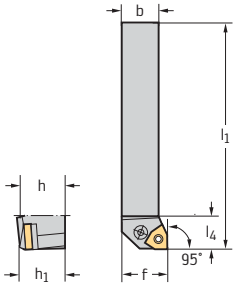
Shank tool – Lever clamp
PWLN
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PWLNR/L1616H06	6	16	16	20	100	18,5	-6°	-6°	
PWLNR/L2020K06	6	20	20	25	125	18,5	-6°	-6°	WN .. 0604 ..
PWLNR/L2525M06	6	25	25	32	150	18,5	-6°	-6°	
PWLNR/L2020K08	8	20	20	25	125	22	-6°	-6°	
PWLNR/L2525M08	8	25	25	32	150	22	-6°	-6°	WN .. 0804 ..
PWLNR/L3225P08	8	32	25	32	170	22	-6°	-6°	
PWLNR/L2525M10	10	25	25	32	150	22	-6°	-6°	
PWLNR/L3225P10	10	32	25	32	170	22	-6°	-6°	WN .. 1006 ..

Measured with master insert: WN .. 060408 / WN .. 080408 / WN .. 100612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PWLNR1616H06/ordering example, left-hand tool: PWLNL1616H06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	WN .. 0604 ..	WN .. 0804 ..	WN .. 1006 ..
	Shim for radius	AP172-WN0612 r ≤ 1,2 mm	AP170-WN0816 r ≤ 1,6 mm	AP174-WN1016 r ≤ 1,6 mm
	Lever	KN101	KN102	KN104
	Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm
	Shim pin	RS101	RS102	RS103
	Tapered assembly pin	MD101	MD101	MD102
	Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

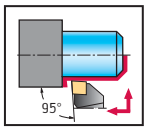
Accessories

	Type	WN .. 0804 ..
	Shim for radius	AP170-WN0808 r ≤ 0,8 mm



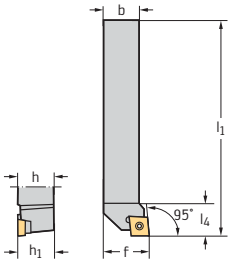
Shank tool – Screw clamping
SCLC
Walter Turn







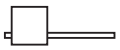
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
SCLCR/L1010E06	6	10	10	12	70	11	0°	0°	CC .. 0602 ..
SCLCR/L1212F06	6	12	12	16	80	10	0°	0°	
SCLCR/L1616H06	6	16	16	20	100	12	0°	0°	
SCLCR/L2020K06	6	20	20	25	125	12	0°	0°	
SCLCR/L1212F09	9	12	12	16	80	15,6	0°	0°	CC .. 09T3 ..
SCLCR/L1616H09	9	16	16	20	100	16,8	0°	0°	
SCLCR/L2020K09	9	20	20	25	125	17,8	0°	0°	
SCLCR/L2525M09	9	25	25	32	150	17	0°	0°	
SCLCR/L2020K12	12	20	20	25	125	21,7	0°	0°	CC .. 1204 ..
SCLCR/L2525M12	12	25	25	32	150	23,7	0°	0°	

Measured with master insert: CC .. 060204 / CC .. 09T308 / CC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SCLCR1010E06/ordering example, left-hand tool: SCLCL1010E06
Bodies and assembly parts are included in the scope of delivery.

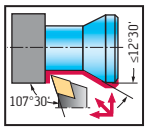
Assembly parts

	Type h = h1 [mm]	CC .. 0602 .. 10–20	CC .. 09T3 .. 12	CC .. 09T3 .. 16–25	CC .. 1204 .. 20–25
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
	Shim for radius			AP313-CC0908 r ≤ 0,8 mm	AP314-CC1212 r ≤ 1,2 mm
	Screw for shim			FS2068 (SW 3,5)	FS2069 (SW 4)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)

A 37 D 1 A 238 A 261

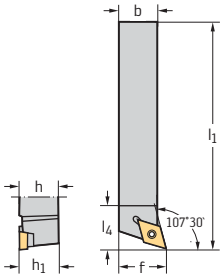
Shank tool – Screw clamping
SDHC
Walter Turn







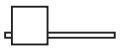
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
SDHCR/L1212F07	7	12	12	16	80	14,3	0°	0°	DC .. 0702 ..
SDHCR/L1616H11	11	12	12	20	100	17,9	0°	0°	
SDHCR/L2020K11	11	20	20	25	125	17,9	0°	0°	DC .. 11T3 ..
SDHCR/L2525M11	11	25	25	32	150	20	0°	0°	

Measured with master insert: DC .. 070204 / DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SDHCR1212F07/ordering example, left-hand tool: SDHCL1212F07
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	DC .. 0702 ..	DC .. 11T3 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP315-DC1108 r ≤ 0,8 mm
	Screw for shim		FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

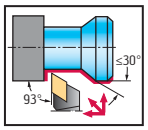
Accessories

	Type	DC .. 11T3 ..
	Shim for radius	AP329-DC1112 r ≤ 1,2 mm

A 42 D 1 A 238 A 261

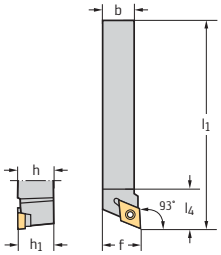
Shank tool – Screw clamping
SDJC
Walter Turn







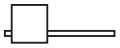
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
SDJCR/L1010E07	7	10	10	12	70	15,7	0°	0°	DC .. 0702 ..
SDJCR/L1212F07	7	12	12	16	80	15,5	0°	0°	
SDJCR/L1616H11	11	16	16	20	100	20,3	0°	0°	DC .. 11T3 ..
SDJCR/L2020K11	11	20	20	25	125	21,9	0°	0°	
SDJCR/L2525M11	11	25	25	32	150	24,4	0°	0°	

Measured with master insert: DC .. 070204 / DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SDJCR1010E07/ordering example, left-hand tool: SDJCL1010E07
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	DC .. 0702 ..	DC .. 11T3 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP315-DC1108 r ≤ 0,8 mm
	Screw for shim		FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

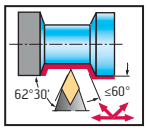
Accessories

	Type	DC .. 11T3 ..
	Shim for radius	AP329-DC1112 r ≤ 1,2 mm

A 42 D 1 A 238 A 261

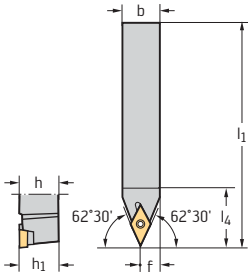
Shank tool – Screw clamping
SDNC
Walter Turn







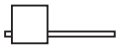
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
SDNCN1010E07	7	10	10	5	70	14,5	0°	0°	DC .. 0702 ..
SDNCN1212F07	7	12	12	6	80	14,5	0°	0°	
SDNCN1616H11	11	16	16	9	100	21,9	0°	0°	DC .. 11T3 ..
SDNCN2020K11	11	20	20	11	125	21,9	0°	0°	
SDNCN2525M11	11	25	25	13	150	22,2	0°	0°	

Measured with master insert: DC .. 070204 / DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	DC .. 0702 ..	DC .. 11T3 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP315-DC1108 r ≤ 0,8 mm
	Screw for shim		FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

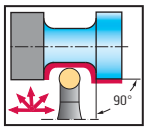
Accessories

	Type	DC .. 11T3 ..
	Shim for radius	AP329-DC1112 r ≤ 1,2 mm

A 42 D 1 A 238 A 261

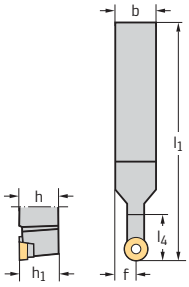
Shank tool – Screw clamping
SRDC
Walter Turn







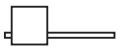
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
SRDCN1212F06	6	12	12	6	80	12	0°	0°	
SRDCN2020K06	6	20	20	10	125	24	0°	0°	RC . T0602M0 ..
SRDCN2525M06	6	25	25	12,5	150	25	0°	0°	
SRDCN1616H08	8	16	16	8	100	16	0°	0°	
SRDCN2020K08	8	20	20	10	125	24	0°	0°	RC . T0803M0 ..
SRDCN2525M08	8	25	25	12,5	150	25	0°	0°	
SRDCN2020K10	10	20	20	10	125	25	0°	0°	
SRDCN2525M10	10	25	25	12,5	150	25	0°	0°	RC . T10T3M0 ..
SRDCN2020K12	12	20	20	10	125	25	0°	0°	
SRDCN2525M12	12	25	25	12,5	150	28	0°	0°	RC . T1204M0 ..
SRDCN3225P12	12	32	25	12,5	170	28	0°	0°	
SRDCN3225P16	16	32	25	12,5	170	35	0°	0°	RC . T1606M0 ..

Measured with master insert: RC . T0602M0 / RC . T0803M0 / RC . T10T3M0 / RC . T1204M0 / RC . T1606M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

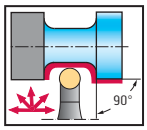
Assembly parts

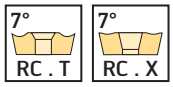
	Type	RC . T0602M0 ..	RC . T0803M0 ..	RC . T10T3M0 ..	RC . T1204M0 ..	RC . T1606M0 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS1462 (Torx 9IP) 1,5 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2090 (Torx 20IP) 6,4 Nm
	Shim			AP324-RC10T3	AP325-RC1204	AP326-RC1606
	Screw for shim			FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2091 (SW 5)
	Torx key	FS1490 (Torx 7IP)	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

A 46 D 1 A 238 A 261

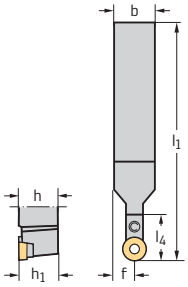
Shank tool – Lever clamp
PRDC
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PRDCN2020K10	10	20	20	10	125	25	0°	0°	RC .. 10T3M0 ..
PRDCN2525M10	10	25	25	12,5	150	25	0°	0°	
PRDCN2525M12	12	25	25	12,5	150	28	0°	0°	RC .. 1204M0 ..
PRDCN3225P12	12	32	25	12,5	170	28	0°	0°	
PRDCN3225P16	16	32	25	12,5	170	35	0°	0°	RC .. 1605M0 ..
PRDCN3232P20	20	32	32	16	170	40	0°	0°	RC .. 2006M0 ..
PRDCN4040S25	25	40	40	20	250	50	0°	0°	RC .. 2507M0 ..
PRDCN5050U32	32	50	50	25	350	55	0°	0°	RC .. 3209M0 ..

Measured with master insert: RC .. 10T3M0 / RC .. 1204M0 / RC .. 1605M0 / RC .. 2006M0 / RC .. 2507M0 / RC .. 3209M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	RC .. 10T3M0 ..	RC .. 1204M0 ..	RC .. 1605M0 ..	RC .. 2006M0 ..	RC .. 2507M0 ..	RC .. 3209M0 ..
	Shim	AP407-RC10T3	AP402-RC1204	AP403-RC1605	AP404-RC2006	AP405-RC2507	AP406-RC3209
	Lever	KN122	KN123	KN111	KN112	KN113	KN124
	Clamping screw Tightening torque	FS2155 (SW 2) 0,6 Nm	FS351 (SW 2,5) 2,0 Nm	FS344 (SW 2,5) 2,5 Nm	FS2156 (SW 3) 5,0 Nm	FS2145 (SW 4) 10,0 Nm	FS357 (SW 5) 14,0 Nm
	Shim pin	RS101	RS120	RS118	RS103	RS104	RS105
	Tapered assembly pin	MD101	MD101	MD101	MD102	MD102	MD103
	Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-5 (SW 5)

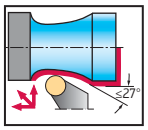
Accessories

	Type	RC .. 10T3M0 ..	RC .. 1605M0 ..
	Shim for RC .. 1003 ..	AP401-RC1003	
	Shim for RC .. 1606 ..		AP403-RC1606

A 46 D 1 A 238 A 261

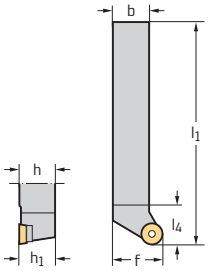
Shank tool – Screw clamping
SRSC
Walter Turn







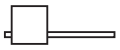
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
SRSCR/L2020K06	6	20	20	25	125	20	0°	0°	RC . T0602M0 ..
SRSCR/L2525M06	6	25	25	32	150	20	0°	0°	
SRSCR/L2020K08	8	20	20	25	125	20	0°	0°	RC . T0803M0 ..
SRSCR/L2525M08	8	25	25	32	150	20	0°	0°	
SRSCR/L2020K10	10	20	20	25	125	20	0°	0°	RC . T10T3M0 ..
SRSCR/L2525M10	10	25	25	32	150	28	0°	0°	
SRSCR/L2020K12	12	20	20	25	125	22	0°	0°	RC . T1204M0 ..
SRSCR/L2525M12	12	25	25	32	150	28	0°	0°	
SRSCR/L3225P12	12	32	25	32	170	32	0°	0°	
SRSCR/L3225P16	16	32	25	32	170	32	0°	0°	RC . T1606M0 ..

Measured with master insert: RC . T0602M0 / RC . T0803M0 / RC . T10T3M0 / RC . T1204M0 / RC . T1606M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SRSCR2020K06/ordering example, left-hand tool: SRSCL2020K06
Bodies and assembly parts are included in the scope of delivery.

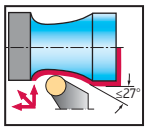
Assembly parts

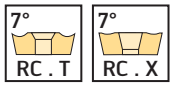
	Type	RC . T0602M0 ..	RC . T0803M0 ..	RC . T10T3M0 ..	RC . T1204M0 ..	RC . T1606M0 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS1462 (Torx 9IP) 1,5 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2090 (Torx 20IP) 6,4 Nm
	Shim			AP324-RC10T3	AP325-RC1204	AP326-RC1606
	Screw for shim			FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2091 (SW 5)
	Torx key	FS1490 (Torx 7IP)	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

A 46 D 1 A 238 A 261

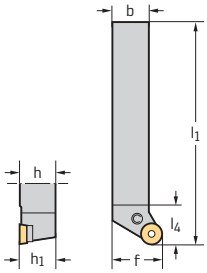
Shank tool – Lever clamp
PRGC
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PRGCL2020K10	10	20	20	25	125	20,8	0°	0°	RC .. 10T3M0 ..
PRGCR/L2525M10	10	25	25	32	150	27,2	0°	0°	
PRGCR/L2525M12	12	25	25	32	150	27,2	0°	0°	RC .. 1204M0 ..
PRGCR/L3225P12	12	32	25	32	170	32	0°	0°	
PRGCR/L3225P16	16	32	25	32	170	33,2	0°	0°	RC .. 1605M0 ..
PRGCR/L3232P20	20	32	32	40	170	38	0°	0°	RC .. 2006M0 ..
PRGCR/L4040S25	25	40	40	50	250	50,5	0°	0°	RC .. 2507M0 ..

Measured with master insert: RC .. 10T3M0 / RC .. 1204M0 / RC .. 1605M0 / RC .. 2006M0 / RC .. 2507M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PRGCR2525M10/ordering example, left-hand tool: PRGCL2525M10
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	RC .. 10T3M0 ..	RC .. 1204M0 ..	RC .. 1605M0 ..	RC .. 2006M0 ..	RC .. 2507M0 ..
Shim	AP407-RC10T3	AP402-RC1204	AP403-RC1605	AP404-RC2006	AP405-RC2507
Lever	KN122	KN123	KN111	KN112	KN113
Clamping screw Tightening torque	FS2155 (SW 2) 0,6 Nm	FS351 (SW 2,5) 2,0 Nm	FS344 (SW 2,5) 2,5 Nm	FS2156 (SW 3) 5,0 Nm	FS2145 (SW 4) 10,0 Nm
Shim pin	RS101	RS120	RS118	RS103	RS104
Tapered assembly pin	MD101	MD101	MD101	MD102	MD102
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)

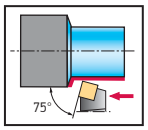
Accessories

Type	RC .. 10T3M0 ..	RC .. 1605M0 ..
Shim for RC .. 1003 ..	AP401-RC1003	
Shim for RC .. 1606 ..		AP403-RC1606

A 46 D 1 A 238 A 261

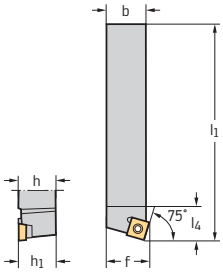
Shank tool – Screw clamping
SSBC
Walter Turn







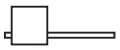
Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
SSRCR/L1212F09	9	12	12	14	80	15,5	0°	0°	SC .. 09T3 ..
SSBCR/L1616H09	9	16	16	13	100	15,3	0°	0°	
SSBCR/L2020K12	12	20	20	17	125	20,1	0°	0°	SC .. 1204 ..
SSBCR/L2525M12	12	25	25	22	150	20,1	0°	0°	

Measured with master insert: SC .. 09T308 / SC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SSRCR1212F09/ordering example, left-hand tool: SSRCL1212F09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type h = h_1 [mm]	SC .. 09T3 .. 12	SC .. 09T3 .. 16	SC .. 1204 .. 20–25
	Clamping screw for indexable insert Tightening torque	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
	Shim		AP328-SC0908	AP319-SC1212
	Screw for shim		FS2068 (SW 3,5)	FS2069 (SW 4)
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)


A 48

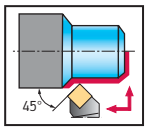
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A 238

A 261

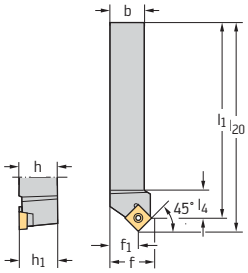
Shank tool – Screw clamping
SSDC
Walter Turn







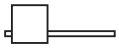
Tool



Designation		h = h1 mm	b mm	f mm	f1 mm	l1 mm	l4 mm	l20 mm	γ	λs	Type
SSDCR/L1616H09	9	16	16	17	10,92	93,9	9,1	100,0	0°	0°	SC .. 09T3 ..
SSDCR/L2020K09	9	20	20	22	15,92	118,9	12	125,0	0°	0°	
SSDCR/L2020K12	12	20	20	22	13,68	116,7	13,7	125,0	0°	0°	SC .. 1204 ..
SSDCR/L2525M12	12	25	25	27	18,68	141,7	13,7	150,0	0°	0°	

Measured with master insert: SC .. 09T308 / SC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SSDCR1616H09/ordering example, left-hand tool: SSDCL1616H09
Bodies and assembly parts are included in the scope of delivery.

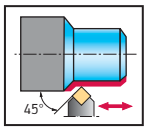
Assembly parts

	Type	SC .. 09T3 ..	SC .. 1204 ..
	Clamping screw for indexable insert Tightening torque	FS2060 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
	Shim	AP328-SC0908	AP319-SC1212
	Screw for shim	FS2068 (SW 3,5)	FS2069 (SW 4)
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)

A 48 D 1 A 238 A 261

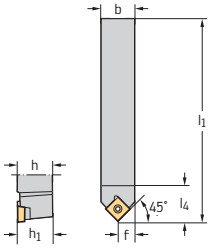
Shank tool – Screw clamping
SSDCN
Walter Turn







Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
SSDCN1212F09	9	12	12	6	80	15,1	0°	0°	SC .. 09T3 ..
SSDCN1616H09	9	16	16	8	100	15,1	0°	0°	
SSDCN2020K12	12	20	20	10	125	22	0°	0°	SC .. 1204 ..
SSDCN2525M12	12	25	25	13	150	22	0°	0°	

Measured with master insert: SC .. 09T308 / SC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

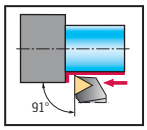
Assembly parts

Type h = h_1 [mm]	SC .. 09T3 .. 12	SC .. 09T3 .. 16	SC .. 1204 .. 20–25
Clamping screw for indexable insert Tightening torque	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
Shim		AP328-SC0908	AP319-SC1212
Screw for shim		FS2068 (SW 3,5)	FS2069 (SW 4)
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)

A 48 D 1 A 238 A 261

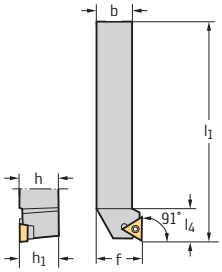
Shank tool – Screw clamping
STGC
Walter Turn







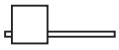
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
STGCR/L1212F11	11	12	12	16	80	14,1	0°	0°	TC .. 1102 ..
STGCR/L1616H16	16	16	16	20	100	20,1	0°	0°	
STGCR/L2020K16	16	20	20	25	125	20,4	0°	0°	TC .. 16T3 ..
STGCR/L2525M16	16	25	25	32	150	20,9	0°	0°	

Measured with master insert: TC .. 110204 / TC .. 16T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: STGCR1212F11/ordering example, left-hand tool: STGCL1212F11
Bodies and assembly parts are included in the scope of delivery.

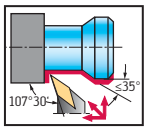
Assembly parts

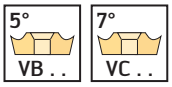
	Type	TC .. 1102 ..	TC .. 16T3 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP317-TC1612 r ≤ 1,2 mm
	Screw for shim		FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

A 51 D 1 A 238 A 261

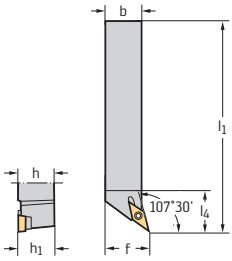
Shank tool – Screw clamping
SVHB
Walter Turn







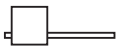
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
SVHBR/L1616H11	11	16	16	20	100	18	0°	0°	VB .. 1103 .. VC .. 1103 ..
SVHBR/L2020K11	11	20	20	25	125	19	0°	0°	
SVHBR/L2525M11	11	25	25	32	150	27	0°	0°	
SVHBR/L2020K16	16	20	20	25	125	27,6	0°	0°	VB .. 1604 .. VC .. 1604 ..
SVHBR/L2525M16	16	25	25	32	150	27,6	0°	0°	
SVHBR/L3225P16	16	32	25	32	170	27,6	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SVHBR1616H11/ordering example, left-hand tool: SVHBL1616H11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	VB .. 1103 .. VC .. 1103 ..	VB .. 1604 .. VC .. 1604 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP316-VB1608 r ≤ 0,8 mm
	Screw for shim		FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

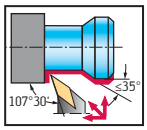
Accessories

	Type	VB .. 1604 .. VC .. 1604 ..
	Shim for radius	AP330-VB1612 r ≤ 1,2 mm

A 55 D 1 A 238 A 261

Shank tool – Lever clamp
PVHB
Walter Turn





5° VB . .

7° VC . .

Tool

Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
PVHBR/L1616H11	11	16	16	20	100	25	0°	0°	VB .. 1103 .. VC .. 1103 ..
PVHBR/L2020K11	11	20	20	25	125	25	0°	0°	
PVHBR/L2525M11	11	25	25	32	150	32	0°	0°	
PVHBR/L2020K16	16	20	20	25	125	28	0°	0°	VB .. 1604 .. VC .. 1604 ..
PVHBR/L2525M16	16	25	25	32	150	28	0°	0°	
PVHBR/L3225P16	16	32	25	32	170	28	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PVHBR1616H11/ordering example, left-hand tool: PVHBL1616H11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	VB .. 1103 .. VC .. 1103 ..	VB .. 1604 .. VC .. 1604 ..
Shim for radius		AP153 r ≤ 0,8 mm
Shim pin		RS101
Lever	KN118	KN110
Clamping screw Tightening torque	FS347 (SW 2) 0,6 Nm	FS351 (SW 2,5) 2,0 Nm
Tapered assembly pin		MD101
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)

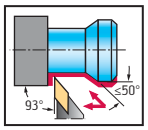
Accessories

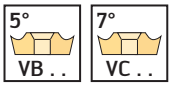
Type	VB .. 1604 .. VC .. 1604 ..
Shim for radius	AP154 r ≤ 1,2 mm

A 55 D 1 A 238 A 261

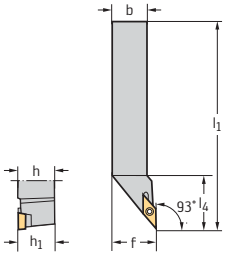
Shank tool – Screw clamping
SVJB
Walter Turn







Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
SVJBR/L1212F11	11	12	12	16	80	20,6	0°	0°	VB .. 1103 .. VC .. 1103 ..
SVJBR/L1616H11	11	16	16	20	100	21,2	0°	0°	
SVJBR/L2020K11	11	20	20	25	125	21,2	0°	0°	
SVJBR/L2525M11	11	25	25	32	150	21,2	0°	0°	
SVJBR/L1616H16	16	16	16	20	100	27	0°	0°	VB .. 1604 .. VC .. 1604 ..
SVJBR/L2020K16	16	20	20	25	125	31,1	0°	0°	
SVJBR/L2525M16	16	25	25	32	150	31,5	0°	0°	
SVJBR/L3225P16	16	32	25	32	170	31,5	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SVJBR1212F11/ordering example, left-hand tool: SVJBL1212F11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type $h = h_1$ [mm]	VB .. 1103 .. VC .. 1103 .. 12–25	VB .. 1604 .. VC .. 1604 .. 16	VB .. 1604 .. VC .. 1604 .. 20–32
Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
Shim for radius			AP316-VB1608 r ≤ 0,8 mm
Screw for shim			FS2068 (SW 3,5)
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

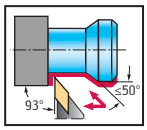
Accessories

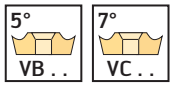
Type	VB .. 1604 .. VC .. 1604 ..
Shim for radius	AP330-VB1612 r ≤ 1,2 mm

A 55 D 1 A 238 A 261

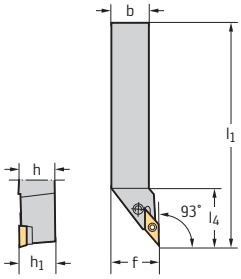
Shank tool – Lever clamp
PVJB
Walter Turn







Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PVJBR/L1616H11	11	16	16	20	100	25	0°	0°	VB .. 1103 .. VC .. 1103 ..
PVJBR/L2020K11	11	20	20	25	125	25	0°	0°	
PVJBR/L2525M11	11	25	25	32	150	32	0°	0°	
PVJBR/L1616H16	16	16	16	20	100	32	0°	0°	VB .. 1604 .. VC .. 1604 ..
PVJBR/L2020K16	16	20	20	25	125	34	0°	0°	
PVJBR/L2525M16	16	25	25	32	150	38	0°	0°	
PVJBR/L3225P16	16	32	25	32	170	38	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: PVJBR1616H11/ordering example, left-hand tool: PVJBL1616H11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type h = h1 [mm]	VB .. 1103 .. VC .. 1103 .. 16–25	VB .. 1604 .. VC .. 1604 .. 16	VB .. 1604 .. VC .. 1604 .. 20–32
Shim for radius		AP153 r ≤ 0,8 mm	AP153 r ≤ 0,8 mm
Shim pin		RS101	RS101
Lever	KN118	KN110	KN110
Clamping screw Tightening torque	FS347 (SW 2) 0,6 Nm	FS332 (SW 2,5) 2,5 Nm	FS351 (SW 2,5) 2,0 Nm
Tapered assembly pin		MD101	MD101
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)

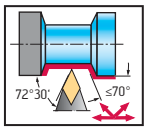
Accessories

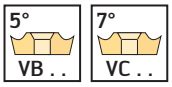
Type	VB .. 1604 .. VC .. 1604 ..
Shim for radius	AP154 r ≤ 1,2 mm

A 55 D 1 A 238 A 261

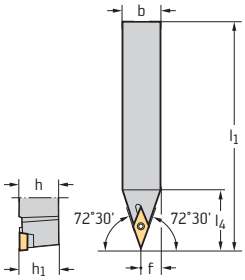
Shank tool – Screw clamping
SVVB
Walter Turn







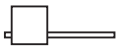
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
SVVBN1212F11	11	12	12	6	80	21,1	0°	0°	VB .. 1103 .. VC .. 1103 ..
SVVBN1616H11	11	16	16	8	100	21,1	0°	0°	
SVVBN2020K11	11	20	20	10	125	21,1	0°	0°	
SVVBN2525M11	11	25	25	13	150	21,1	0°	0°	
SVVBN2020K16	16	20	20	11	125	31,5	0°	0°	VB .. 1604 .. VC .. 1604 ..
SVVBN2525M16	16	25	25	13	150	31,5	0°	0°	
SVVBN3225P16	16	32	25	13	170	31,5	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	VB .. 1103 .. VC .. 1103 ..	VB .. 1604 .. VC .. 1604 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP316-VB1608 r ≤ 0,8 mm
	Screw for shim		FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

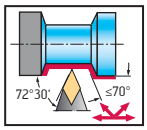
Accessories

	Type	VB .. 1604 .. VC .. 1604 ..
	Shim for radius	AP330-VB1612 r ≤ 1,2 mm

A 55 D 1 A 238 A 261

Shank tool – Lever clamp
PVVB
Walter Turn

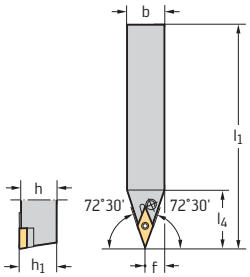




5° VB . .

7° VC . .

Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
PVVBN1616H11	11	16	16	8	100	25	0°	0°	VB .. 1103 .. VC .. 1103 ..
PVVBN2020K11	11	20	20	10	125	25	0°	0°	
PVVBN2525M11	11	25	25	13	150	25	0°	0°	
PVVBN2020K16	16	20	20	10	125	34	0°	0°	VB .. 1604 .. VC .. 1604 ..
PVVBN2525M16	16	25	25	13	150	34	0°	0°	
PVVBN3225P16	16	32	25	13	170	34	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	VB .. 1103 .. VC .. 1103 ..	VB .. 1604 .. VC .. 1604 ..
	Shim for radius		AP153 r ≤ 0,8 mm
	Lever	KN118	KN110
	Clamping screw Tightening torque	FS347 (SW 2) 0,6 Nm	FS351 (SW 2,5) 2,0 Nm
	Shim pin		RS101
	Tapered assembly pin		MD101
	Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)

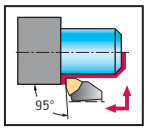
Accessories

	Type	VB .. 1604 .. VC .. 1604 ..
	Shim for radius	AP154 r ≤ 1,2 mm

A 55 D 1 A 238 A 261

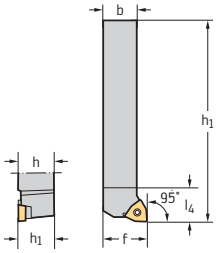
Shank tool – Screw clamping
SWLC
Walter Turn







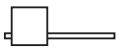
Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
SWLCR/L1212F04	4	12	12	16	80	11	0°	0°	WC .. 0402 ..
SWLCR/L1616H04	4	16	16	20	100	11	0°	0°	
SWLCR/L1616H06	6	16	16	20	100	15	0°	0°	WC .. 06T3 ..
SWLCR/L2020K06	6	20	20	25	125	15	0°	0°	
SWLCR/L2525M06	6	25	25	32	150	17	0°	0°	
SWLCR/L2020K08	8	20	20	25	125	20	0°	0°	WC .. 0804 ..
SWLCR/L2525M08	8	25	25	32	150	21	0°	0°	

Measured with master insert: WC .. 040204 / WC .. 06T308 / WC .. 080408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: SWLCR1212F04/ordering example, left-hand tool: SWLCL1212F04
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

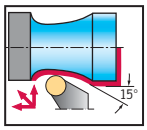
	Type	WC .. 0402 ..	WC .. 06T3 ..	WC .. 0804 ..
	Clamping screw for indexable insert Tightening torque	FS2067 (Torx 7IP) 0,9 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
	Shim		AP318-WC0608	AP320-WC0812
	Screw for shim		FS2068 (SW 3,5)	FS2069 (SW 4)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)

A 58 D 1 A 238 A 261

Shank tool – Rigid clamping
CRSN
Walter Turn

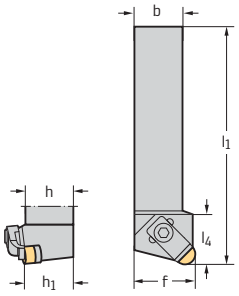


– For ceramic indexable inserts
– Rigid clamping with carbide shoe





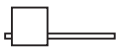
Tool



Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
CRSNR/L2525M12-ID	12	25	25	32	150	28	-6°	-6°	RN .. 1207 ..
CRSNR/L3225P12-ID	12	32	25	32	170	28	-6°	-6°	
CRSNR/L3232P15-ID	15	32	32	40	170	30	-6°	-6°	RN .. 1507 ..
CRSNR/L3232P19-ID	19	32	32	40	170	32	-6°	-6°	RN .. 1907 ..

Measured with master insert: RN .. 120700 / RN .. 150700 / RN .. 190700
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: CRSNR2525M12-ID/ordering example, left-hand tool: CRSNL2525M12-ID
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

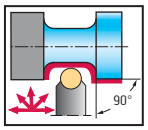
	Type	RN .. 1207 ..	RN .. 1507 ..	RN .. 1907 ..
	Shim	AP418-RN1207	AP419-RN1507	AP420-RN1907
	Screw for shim Tightening torque	FS2241 (Torx 20) 5,0 Nm	FS2242 (SW 2) 2,0 Nm	FS2243 (SW 2,5) 3,0 Nm
	Clamp with screw	PK258 SET (SW 4)	PK258 SET (SW 4)	PK258 SET (SW 4)
	Carbide clamping plate	FK380	FK380	FK380
	Allen key for clamp	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)
	Allen key for shim	FS256 (Torx 20)	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)

A 74 D 1 A 242 A 261 A 262

Shank tool – Rigid clamping
CRDN
Walter Turn

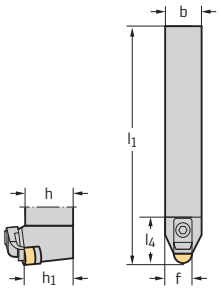


– For ceramic indexable inserts
– Rigid clamping with carbide shoe





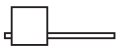
Tool

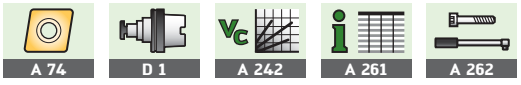


Designation		h = h1 mm	b mm	f mm	l1 mm	l4 mm	γ	λs	Type
CRDNN2525M12-ID	12	25	25	19	150	32	-8°	0°	RN .. 1207 ..
CRDNN3225P12-ID	12	32	25	19	170	32	-8°	0°	

Measured with master insert: RN .. 120700
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

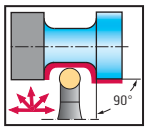
	Type	RN .. 1207 ..
	Shim	AP418-RN1207
	Screw for shim Tightening torque	FS2241 (Torx 20) 5,0 Nm
	Clamp with screw	PK258 SET (SW 4)
	Carbide clamping plate	FK380
	Allen key for clamp	ISO2936-4 (SW 4)
	Allen key for shim	FS256 (Torx 20)



Shank tool – Rigid clamping
CRDC
Walter Turn

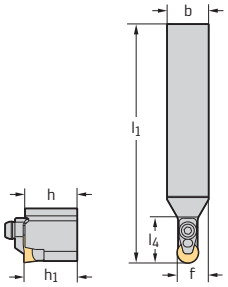


– For ceramic indexable inserts
– Rigid clamping with carbide shoe





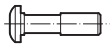
Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	γ	λ_s	Type
CRDCN3225P09-A	9	32	25	17	170	31	0°	0°	RC . X0907 .. RP . X0907 ..
CRDCN3225P12-A	12	32	25	19	170	40	0°	0°	RC . X1207 .. RP . X1207 ..

Measured with master insert: RC . X090700 / RC . X120700
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

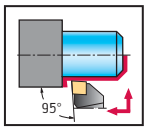
	Type	RC . X0907 .. RP . X0907 ..	RC . X1207 .. RP . X1207 ..
	Shim	AP416-RC0907	AP417-RC1207
	Clamping sleeve	RS121	RS122
	Clamp with screw	PK257 SET (SW 4)	PK257 SET (SW 4)
	Clamp screw Tightening torque	FS2240 (SW 4) 8,0 Nm	FS2240 (SW 4) 8,0 Nm
	Allen key for clamp	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)

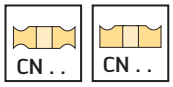
A 76 D 1 A 242 A 261 A 262

Turning toolholders – Rigid clamping
C...-DCLN
Walter Turn



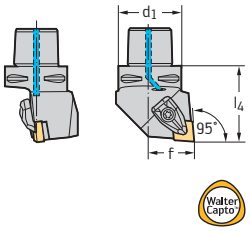
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C4-DCLNR/L-27050-12	12	C4	27	50	110	140	-6°	-6°	CN .. 1204 ..
C5-DCLNR/L-35060-12	12	C5	35	60	110	165	-6°	-6°	
C6-DCLNR/L-45065-12	12	C6	45	65	110	190	-6°	-6°	
C8-DCLNR/L-55080-12	12	C8	55	80	110	250	-6°	-6°	
C4-DCLNR/L-27055-16	16	C4	27	55	125	145	-6°	-6°	CN .. 1606 ..
C5-DCLNR/L-35060-16	16	C5	35	60	125	165	-6°	-6°	
C6-DCLNR/L-45065-16	16	C6	45	65	125	190	-6°	-6°	
C5-DCLNR/L-35060-19	19	C5	35	60	80	165	-6°	-6°	CN .. 1906 ..
C6-DCLNR/L-45065-19	19	C6	45	65	81	190	-6°	-6°	
C8-DCLNR/L-55080-19	19	C8	55	80	100	250	-6°	-6°	

Measured with master insert: CN .. 120408 / CN .. 160612 / CN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DCLNR-27050-12/ordering example, left-hand tool: C4-DCLNL-27050-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
Shim	AP301-CN12	AP302-CN16	AP303-CN19
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK241	PK242	PK243
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1470	FS1471	FS1471
Pin	RS117	RS117	RS117
Cooling lubricant nozzle	FS1475	FS1475	FS1475
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

Accessories

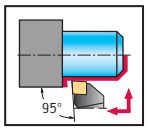
Type	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
Clamp set (standard assembly parts)	PK241 SET	PK242 SET	PK243 SET
Carbide clamp set Insert with hole	PK245 SET	PK246 SET	
Carbide clamp set Insert without hole	PK254 SET		
Shim for CN .. 1207 ..	AP411-CN1207		

A 20 D 1 A 234 A 261 A 262

Turning toolholders – Rigid clamping
C...-DCLN...-P
Walter Turn



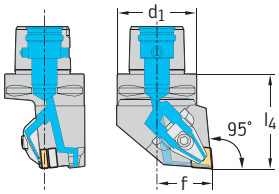
– Precision cooling
– Walter Capto™





Tool

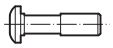
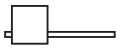
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C4-DCLNR/L-27050-12-P	12	C4	27	50	-6°	-6°	CN .. 1204 ..
C5-DCLNR/L-35060-12-P	12	C5	35	60	-6°	-6°	
C6-DCLNR/L-45065-12-P	12	C6	45	65	-6°	-6°	

Measured with master insert: CN .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: C4-DCLNR-27050-12-P/ordering example, left-hand tool: C4-DCLNL-27050-12-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	CN .. 1204 ..
	Shim	AP301-CN12
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm
	Clamp	PK255
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS2188
	Torx key	FS1465 (Torx 15IP / SW 3,5)

Accessories

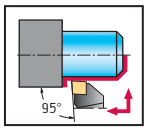
	Type	CN .. 1204 ..
	Clamp set (standard assembly parts)	PK255 SET

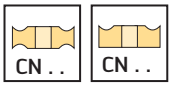
A 20 D 1 A 234 A 261 A 262

Turning toolholders – Lever clamp
C...-PCLN
Walter Turn



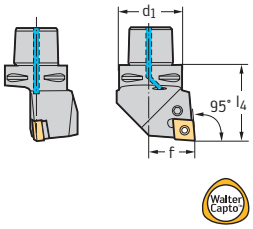
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Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-PCLNR/L-22040-12	12	C3	22	40	60	116	-6°	-6°	CN .. 1204 ..
C4-PCLNR/L-27050-12	12	C4	27	50	60	140	-6°	-6°	
C5-PCLNR/L-35060-12	12	C5	35	60	65	165	-6°	-6°	
C6-PCLNR/L-45065-12	12	C6	45	65	81	190	-6°	-6°	
C8-PCLNR/L-55080-12	12	C8	55	80	100	250	-6°	-6°	
C4-PCLNR/L-27050-16	16	C4	27	50	80	140	-6°	-6°	CN .. 1606 ..
C5-PCLNR/L-35060-16	16	C5	35	60	80	165	-6°	-6°	
C6-PCLNR/L-45065-16	16	C6	45	65	81	190	-6°	-6°	
C8-PCLNR/L-55080-16	16	C8	55	80	100	250	-6°	-6°	
C5-PCLNR/L-35060-19	19	C5	35	60	80	165	-6°	-6°	CN .. 1906 ..
C6-PCLNR/L-45065-19	19	C6	45	65	81	190	-6°	-6°	
C8-PCLNR/L-55080-19	19	C8	55	80	100	250	-6°	-6°	
C8-PCLNR/L-55080-25	25	C8	55	80	150	250	-6°	-6°	CN .. 2509 ..

Measured with master insert: CN .. 120408 / CN .. 160612 / CN .. 190612 / CN .. 250924
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-PCLNR-22040-12/ordering example, left-hand tool: C3-PCLNL-22040-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type / d_1	CN .. 1204 .. C3/C4	CN .. 1204 .. C5/C6	CN .. 1204 .. C8	CN .. 1606 .. C4	CN .. 1606 .. C5/C6	CN .. 1606 .. C8	CN .. 1906 .. C5/C6	CN .. 1906 .. C8	CN .. 2509 .. C8
Shim for radius	AP134-CN1216 r ≤ 1,6 mm	AP134-CN1216 r ≤ 1,6 mm	AP134-CN1216 r ≤ 1,6 mm	AP135-CN1624 r ≤ 2,4 mm	AP135-CN1624 r ≤ 2,4 mm	AP135-CN1624 r ≤ 2,4 mm	AP136-CN1924 r ≤ 2,4 mm	AP136-CN1924 r ≤ 2,4 mm	AP192-CN2524 r ≤ 2,4 mm
Lever	KN102	KN102	KN102	KN104	KN104	KN104	KN106	KN106	KN107
Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm	FS356 (SW 4) 10,0 Nm	FS357 (SW 5) 14,0 Nm
Shim pin	RS102	RS102	RS102	RS103	RS103	RS103	RS104	RS104	RS105
Tapered assembly pin	MD101	MD101	MD101	MD102	MD102	MD102	MD102	MD102	MD103
Cooling lubricant nozzle	FS1477	FS1476	FS1479	FS1477	FS1476	FS1479	FS1476	FS1479	FS1479
Allen key	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)	ISO2936-5 (SW 5)

Accessories

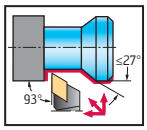
Type	CN .. 1204 ..	CN .. 1606 ..	CN .. 1906 ..
Shim for radius	AP134-CN1208 r ≤ 0,8 mm	AP135-CN1616 r ≤ 1,6 mm	AP136-CN1912 r ≤ 1,2 mm

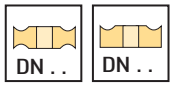
A 20 D 1 A 234 A 261

Turning toolholders – Rigid clamping
C...-DDJN
Walter Turn



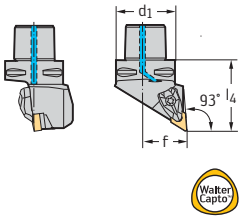
– Walter Capto™





Tool

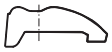
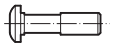
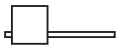
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C4-DDJNR/L-27050-11	11	C4	27	50	60	140	-6°	-7°	DN .. 1104 ..
C5-DDJNR/L-35060-11	11	C5	35	60	65	165	-6°	-7°	
C6-DDJNR/L-45065-11	11	C6	45	65	81	190	-6°	-7°	
C4-DDJNR/L-27055-15	15	C4	27	55	110	145	-6°	-7°	DN .. 1506 ..
C5-DDJNR/L-35060-15	15	C5	35	60	110	165	-6°	-7°	
C6-DDJNR/L-45065-15	15	C6	45	65	110	190	-6°	-7°	
C8-DDJNR/L-55080-15	15	C8	55	80	110	250	-6°	-7°	

Measured with master insert: DN .. 110408 / DN .. 150608
Ordering example, right-hand tool: C4-DDJNR-27050-11/ordering example, left-hand tool: C4-DDJNL-27050-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type d_1	DN .. 1104 .. C4	DN .. 1104 .. C5/C6	DN .. 1506 .. C4	DN .. 1506 .. C5	DN .. 1506 .. C6	DN .. 1506 .. C8
	Shim	AP305-DN11	AP305-DN11	AP304-DN15	AP304-DN15	AP304-DN15	AP304-DN15
	Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
	Clamp	PK240	PK240	PK241	PK241	PK241	PK241
	Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS1469	FS1469	FS1470	FS1470	FS1470	FS1470
	Pin	RS116	RS116	RS117	RS117	RS117	RS117
	Cooling lubricant nozzle	FS1477	FS1476	FS1477	FS1475	FS1476	FS1479
	Torx key	FS1466 (Torx 9IP)	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

Accessories

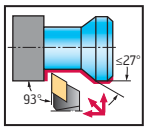
	Type	DN .. 1104 ..	DN .. 1506 ..
	Clamp set (standard assembly parts)	PK240 SET	PK241 SET
	Carbide clamp set Insert with hole		PK245 SET
	Carbide clamp set Insert without hole		PK254 SET
	Shim for DN .. 1504 ..		AP304-DN1504
	Shim for DN .. 1507 ..		AP412-DN1507

A 24 D 1 A 234 A 261 A 262

Turning toolholders – Rigid clamping
C...-DDJN...-P
Walter Turn



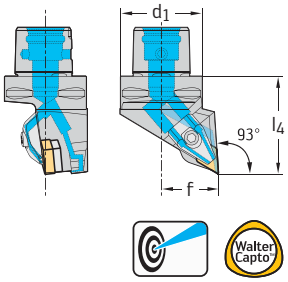
– Precision cooling
– Walter Capto™



DN . .

Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C4-DDJNR/L-27055-11-P	11	C4	27	55	-6°	-7°	DN .. 1104 ..
C5-DDJNR/L-35060-15-P	15	C5	35	60	-6°	-7°	DN .. 1506 ..
C6-DDJNR/L-45065-15-P	15	C6	45	65	-6°	-7°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: C4-DDJNR-27055-11-P/ordering example, left-hand tool: C4-DDJNL-27055-11-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	DN .. 1104 ..	DN .. 1506 ..
	Shim	AP305-DN11	AP304-DN15
	Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
	Clamp	PK255	PK256
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS2188	FS2188
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

Accessories

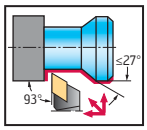
	Type	DN .. 1104 ..	DN .. 1506 ..
	Clamp set (standard assembly parts)	PK255 SET	PK256 SET

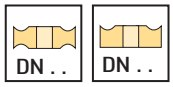
A 24 D 1 A 234 A 261 A 262

Turning toolholders – Lever clamp
C...-PDJN
Walter Turn



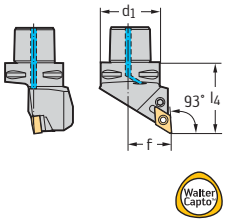
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-PDJNR/L-22045-11	11	C3	22	45	80	116	-6°	-7°	DN .. 1104 ..
C4-PDJNR/L-27050-11	11	C4	27	50	80	140	-6°	-7°	
C5-PDJNR/L-35060-11	11	C5	35	60	80	165	-6°	-7°	
C4-PDJNR/L-27050-15	15	C4	27	50	80	140	-6°	-7°	DN .. 1506 ..
C5-PDJNR/L-35060-15	15	C5	35	60	80	165	-6°	-7°	
C6-PDJNR/L-45065-15	15	C6	45	65	80	190	-6°	-7°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-PDJNR-22045-11/ordering example, left-hand tool: C3-PDJNL-22045-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type d_1	DN .. 1104 .. C3/C4	DN .. 1104 .. C5	DN .. 1506 .. C4	DN .. 1506 .. C5/C6
	Shim for radius	AP171-DN1112 r ≤ 1,2 mm	AP171-DN1112 r ≤ 1,2 mm	AP145-DN1516 r ≤ 1,6 mm	AP145-DN1516 r ≤ 1,6 mm
	Lever	KN119	KN119	KN103	KN103
	Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm	FS355 (SW 3) 5,0 Nm	FS355 (SW 3) 5,0 Nm
	Shim pin	RS101	RS101	RS102	RS102
	Tapered assembly pin	MD101	MD101	MD101	MD101
	Cooling lubricant nozzle	FS1477	FS1476	FS1477	FS1476
	Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

Accessories

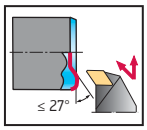
	Type	DN .. 1104 ..	DN .. 1506 ..
	Shim for radius	AP171-DN1108 r ≤ 0,8 mm	AP145-DN1508 r ≤ 0,8 mm
	Shim for DN .. 1504 .. for radius		AP357-DN1508 r ≤ 0,8 mm
	Shim for DN .. 1504 .. for radius		AP357-DN1516 r ≤ 1,6 mm

A 24 D 1 A 234 A 261

Turning toolholders – Rigid clamping
C...-DDUN
Walter Turn



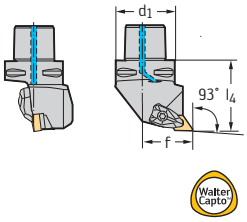
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C4-DDUNR/L-27050-15	15	C4	27	50	110	140	-6°	-7°	DN .. 1506 ..
C5-DDUNR/L-35060-15	15	C5	35	60	110	165	-6°	-7°	
C6-DDUNR/L-45065-15	15	C6	45	65	110	190	-6°	-7°	
C8-DDUNR/L-55080-15	15	C8	55	80	110	250	-6°	-7°	

Measured with master insert: DN .. 150608
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DDUNR-27050-15/ordering example, left-hand tool: C4-DDUNL-27050-15
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	DN .. 1506 .. C4	DN .. 1506 .. C5/C6	DN .. 1506 .. C8
Shim	AP304-DN15	AP304-DN15	AP304-DN15
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
Clamp	PK241	PK241	PK241
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS1471	FS1471	FS1471
Pin	RS117	RS117	RS117
Cooling lubricant nozzle	FS1477	FS1476	FS1479
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

Accessories

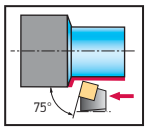
Type	DN .. 1506 ..
Clamp set (standard assembly parts)	PK241 SET
Carbide clamp set Insert with hole	PK245 SET
Carbide clamp set Insert without hole	PK254 SET
Shim for DN .. 1504 ..	AP304-DN1504
Shim for DN .. 1507 ..	AP412-DN1507

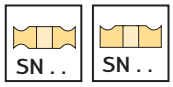
A 24 D 1 A 234 A 261 A 262

Turning toolholders – Rigid clamping
C...-DSRN
Walter Turn



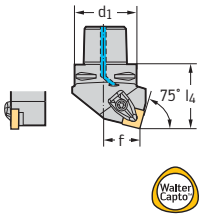
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
C4-DSRNR/L-22050-12	12	C4	22	50	140	-6°	-6°	SN .. 1204 ..
C5-DSRNR/L-27060-12	12	C5	27	60	165	-6°	-6°	
C6-DSRNR/L-35065-12	12	C6	35	65	190	-6°	-6°	
C5-DSRNR/L-27060-15	15	C5	27	60	165	-6°	-6°	SN .. 1506 ..
C6-DSRNR/L-35065-15	15	C6	35	65	190	-6°	-6°	
C6-DSRNR/L-35065-19	19	C6	35	65	190	-6°	-6°	SN .. 1906 ..
C8-DSRNR/L-45080-19	19	C8	45	80	250	-6°	-6°	
C8-DSRNR/L-45080-25	25	C8	45	80	250	-6°	-6°	SN .. 2507 ..

Measured with master insert: SN .. 120408 / SN .. 150612 / SN .. 190612 / SN .. 250724
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DSRNR-22050-12/ordering example, left-hand tool: C4-DSRNL-22050-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..	SN .. 2507 ..
Shim	AP308-SN12	AP309-SN15	AP310-SN19	AP351-SN25
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1589 (Torx 25IP) 9,5 Nm
Clamp	PK241	PK242	PK243	PK301
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1591 (Torx 25IP) 9,5 Nm
Pressure spring	FS1470	FS1471	FS1471	FS1471
Pin	RS117	RS117	RS117	RS117
Cooling lubricant nozzle	FS1475	FS1475	FS1475	FS1475
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)	FS1592 (Torx 25IP)

Accessories

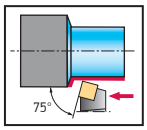
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..	SN .. 2507 ..
Clamp set (standard assembly parts)	PK241 SET	PK242 SET	PK243 SET	PK301 SET
Carbide clamp set Insert with hole	PK245 SET	PK246 SET		
Carbide clamp set Insert without hole	PK254 SET			
Shim for SN .. 1207 ..	AP413-SN1207			
Shim for SN .. 2509 ..				AP351-SN2509

A 27 D 1 A 234 A 261 A 262

Turning toolholders – Lever clamp
C...-PSRN
Walter Turn



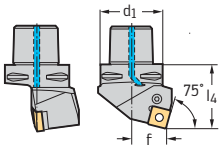
– Walter Capto™



SN . . SN . .

Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C3-PSRNR/L-17040-12	12	C3	17	40	-6°	-6°	SN .. 1204 ..
C4-PSRNR/L-22050-12	12	C4	22	50	-6°	-6°	
C5-PSRNR/L-27060-12	12	C5	27	60	-6°	-6°	
C6-PSRNR/L-35065-12	12	C6	35	65	-6°	-6°	
C5-PSRNR/L-27060-15	15	C5	27	60	-6°	-6°	SN .. 1506 ..
C6-PSRNR/L-35065-15	15	C6	35	65	-6°	-6°	
C5-PSRNR/L-27060-19	19	C5	27	60	-6°	-6°	SN .. 1906 ..
C6-PSRNR/L-35065-19	19	C6	35	65	-6°	-6°	
C8-PSRNR/L-45080-19	19	C8	45	80	-6°	-6°	
C8-PSRNR/L-45080-25	25	C8	45	80	-6°	-6°	SN .. 2507 ..

Measured with master insert: SN .. 120408 / SN .. 150612 / SN .. 190612 / SN .. 250724
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-PSRNR-17040-12/ordering example, left-hand tool: C3-PSRNL-17040-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	SN .. 1204 .. C3/C4	SN .. 1204 .. C5/C6	SN .. 1506 .. C5/C6	SN .. 1906 .. C5/C6	SN .. 1906 .. C8	SN .. 2507 .. C8
Shim for radius	AP141-SN1216 r ≤ 1,6 mm	AP141-SN1216 r ≤ 1,6 mm	AP142-SN1524 r ≤ 2,4 mm	AP143-SN1924 r ≤ 2,4 mm	AP143-SN1924 r ≤ 2,4 mm	AP144-SN2524 r ≤ 2,4 mm
Lever	KN102	KN102	KN104	KN106	KN106	KN107
Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm	FS356 (SW 4) 10,0 Nm	FS357 (SW 5) 14,0 Nm
Shim pin	RS102	RS102	RS103	RS104	RS104	RS105
Tapered assembly pin	MD101	MD101	MD102	MD102	MD102	MD103
Allen key	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)	ISO2936-5 (SW 5)
Cooling lubricant nozzle	FS1477	FS1476	FS1476	FS1476	FS1479	FS1479

Accessories

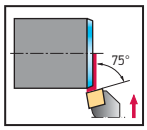
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..	SN .. 2507 ..
Shim for radius	AP141-SN1208 r ≤ 0,8 mm	AP142-SN1516 r ≤ 1,6 mm	AP143-SN1912 r ≤ 1,2 mm	
Shim for SN .. 2509 .. for radius				AP191-SN250924 r ≤ 2,4 mm

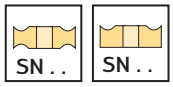
A 27 D 1 A 234 A 261

Turning toolholders – Rigid clamping
C...-DSKN
Walter Turn



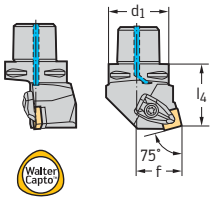
– Walter Capto™





Tool

Designation		d_1	f mm	l_4 mm	D_{min} mm	γ	λ_s	Type
Walter Capto™ in accordance with ISO 26623								
C4-DSKNR/L-27050-12	12	C4	27	50	110	-6°	-6°	SN .. 1204 ..
C5-DSKNR/L-35060-12	12	C5	35	60	110	-6°	-6°	
C6-DSKNR/L-45065-12	12	C6	45	65	110	-6°	-6°	
C5-DSKNR/L-35060-15	15	C5	35	60	125	-6°	-6°	SN .. 1506 ..
C6-DSKNR/L-45065-15	15	C6	45	65	125	-6°	-6°	
C6-DSKNR/L-45065-19	19	C6	45	65	125	-6°	-6°	SN .. 1906 ..
C8-DSKNR/L-55080-19	19	C8	55	80	125	-6°	-6°	



Measured with master insert: SN .. 120408 / SN .. 150612 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DSKNR-27050-12/ordering example, left-hand tool: C4-DSKNL-27050-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	SN .. 1204 .. C4	SN .. 1204 .. C5/C6	SN .. 1506 .. C5/C6	SN .. 1906 .. C6	SN .. 1906 .. C8
Shim	AP308-SN12	AP308-SN12	AP309-SN15	AP310-SN19	AP310-SN19
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK241	PK241	PK242	PK243	PK243
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1470	FS1470	FS1471	FS1471	FS1471
Pin	RS117	RS117	RS117	RS117	RS117
Cooling lubricant nozzle	FS1477	FS1476	FS1476	FS1476	FS1479
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

Accessories

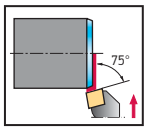
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Clamp set (standard assembly parts)	PK241 SET	PK242 SET	PK243 SET
Carbide clamp set Insert with hole	PK245 SET	PK246 SET	
Carbide clamp set Insert without hole	PK254 SET		
Shim for SN .. 1207 ..	AP413-SN1207		

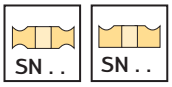
A 27 D 1 A 234 A 261 A 262

Turning toolholders – Lever clamp
C...-PSKN
Walter Turn



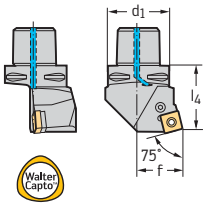
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C4-PSKNR/L-27050-12	12	C4	27	50	60	140	-6°	-6°	SN .. 1204 ..
C5-PSKNR/L-35060-12	12	C5	35	60	65	165	-6°	-6°	
C5-PSKNR/L-35060-15	15	C5	35	60	80	165	-6°	-6°	SN .. 1506 ..
C6-PSKNR/L-45065-15	15	C6	45	65	81	190	-6°	-6°	
C6-PSKNR/L-45065-19	19	C6	45	65	81	190	-6°	-6°	SN .. 1906 ..
C8-PSKNR/L-55080-19	19	C8	55	80	100	250	-6°	-6°	

Measured with master insert: SN .. 120408 / SN .. 150612 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-PSKNR-27050-12/ordering example, left-hand tool: C4-PSKNL-27050-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	SN .. 1204 .. C4	SN .. 1204 .. C5	SN .. 1506 .. C5/C6	SN .. 1906 .. C6	SN .. 1906 .. C8
Shim for radius	AP141-SN1216 r ≤ 1,6 mm	AP141-SN1216 r ≤ 1,6 mm	AP142-SN1524 r ≤ 2,4 mm	AP143-SN1924 r ≤ 2,4 mm	AP143-SN1924 r ≤ 2,4 mm
Lever	KN102	KN102	KN104	KN106	KN106
Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm	FS356 (SW 4) 10,0 Nm
Shim pin	RS102	RS102	RS103	RS104	RS104
Tapered assembly pin	MD101	MD101	MD102	MD102	MD102
Cooling lubricant nozzle	FS1477	FS1476	FS1476	FS1476	FS1479
Allen key	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)

Accessories

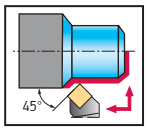
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Shim for radius	AP141-SN1208 r ≤ 0,8 mm	AP142-SN1516 r ≤ 1,6 mm	AP143-SN1912 r ≤ 1,2 mm

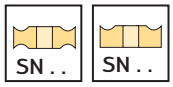
A 27 D 1 A 234 A 261

Turning toolholders – Rigid clamping
C...-DSSN
Walter Turn



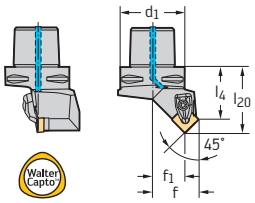
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	f_1 mm	l_4 mm	l_{20} mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C4-DSSNR/L-27042-12	12	C4	27	18,7	42	50,3	110	140	-8°	0°	
C5-DSSNR/L-35052-12	12	C5	35	26,7	52	60,3	110	165	-8°	0°	SN .. 1204 ..
C6-DSSNR/L-45056-12	12	C6	45	36,7	56	64,3	110	190	-8°	0°	
C4-DSSNR/L-27045-15	15	C4	27	16,8	45	55,2	125	145	-8°	0°	
C5-DSSNR/L-35050-15	15	C5	35	24,8	50	60,2	125	165	-8°	0°	SN .. 1506 ..
C6-DSSNR/L-45054-15	15	C6	45	34,8	54	60,2	125	190	-8°	0°	
C6-DSSNR/L-45052-19	19	C6	45	32,5	52	64,5	125	190	-8°	0°	SN .. 1906 ..

Measured with master insert: SN .. 120408 / SN .. 150612 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DSSNR-27042-12/ordering example, left-hand tool: C4-DSSNL-27042-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	SN .. 1204 .. C4	SN .. 1204 .. C5	SN .. 1204 .. C6	SN .. 1506 .. C4	SN .. 1506 .. C5	SN .. 1506 .. C6	SN .. 1906 .. C6
Shim	AP308-SN12	AP308-SN12	AP308-SN12	AP309-SN15	AP309-SN15	AP309-SN15	AP310-SN19
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK241	PK241	PK241	PK242	PK242	PK242	PK243
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1470	FS1470	FS1470	FS1471	FS1471	FS1471	FS1471
Pin	RS117	RS117	RS117	RS117	RS117	RS117	RS117
Cooling lubricant nozzle	FS1477	FS1476	FS1475	FS1477	FS1476	FS1475	FS1476
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

Accessories

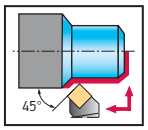
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Clamp set (standard assembly parts)	PK241 SET	PK242 SET	PK243 SET
Carbide clamp set Insert with hole	PK245 SET	PK246 SET	
Carbide clamp set Insert without hole	PK254 SET		
Shim for SN .. 1207 ..	AP413-SN1207		

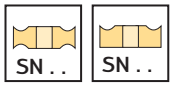
A 27 D 1 A 234 A 261 A 262

Turning toolholders – Lever clamp
C...-PSSN
Walter Turn



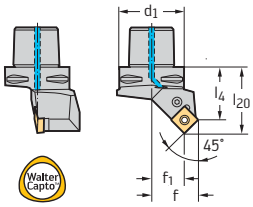
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	f_1 mm	l_4 mm	l_{20} mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C4-PSSNR/L-27042-12	12	C4	27	18,7	42	50,3	60	132	-8°	0°	
C5-PSSNR/L-35052-12	12	C5	35	26,7	52	60,3	65	157	-8°	0°	SN .. 1204 ..
C6-PSSNR/L-45056-12	12	C6	45	36,7	56	64,3	81	181	-8°	0°	
C6-PSSNR/L-45054-15	15	C6	45	34,8	54	64,2	100	179	-8°	0°	SN .. 1506 ..
C6-PSSNR/L-45052-19	19	C6	45	32,5	52	64,5	100	177	-8°	0°	SN .. 1906 ..

Measured with master insert: SN .. 120408 / SN .. 150612 / SN .. 190612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-PSSNR-27042-12/ordering example, left-hand tool: C4-PSSNL-27042-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	SN .. 1204 .. C4	SN .. 1204 .. C5/C6	SN .. 1506 .. C6	SN .. 1906 .. C6
Shim for radius	AP141-SN1216 r ≤ 1,6 mm	AP141-SN1216 r ≤ 1,6 mm	AP142-SN1524 r ≤ 2,4 mm	AP143-SN1924 r ≤ 2,4 mm
Lever	KN102	KN102	KN104	KN106
Clamping screw Tightening torque	FS352 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm	FS356 (SW 4) 10,0 Nm
Shim pin	RS102	RS102	RS103	RS104
Tapered assembly pin	MD101	MD101	MD102	MD102
Cooling lubricant nozzle	FS1477	FS1476	FS1476	FS1476
Allen key	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)

Accessories

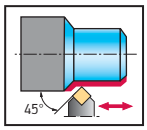
Type	SN .. 1204 ..	SN .. 1506 ..	SN .. 1906 ..
Shim for radius	AP141-SN1208 r ≤ 0,8 mm	AP142-SN1516 r ≤ 1,6 mm	AP143-SN1912 r ≤ 1,2 mm

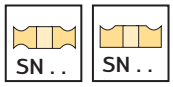
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Turning toolholders – Rigid clamping
C...-DSDN
Walter Turn



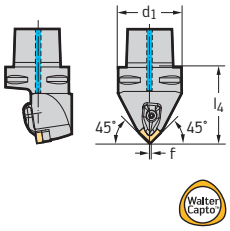
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
C4-DSDNN-00050-12	12	C4	0,3	50	140	-6°	-6°	SN .. 1204 ..
C5-DSDNN-00060-12	12	C5	0,3	60	165	-6°	-6°	
C6-DSDNN-00065-12	12	C6	0,3	65	190	-6°	-6°	
C6-DSDNN-00070-19	19	C6	0,5	70	195	-6°	-6°	SN .. 1906 ..
C8-DSDNN-00080-25	25	C8	1	80	250	-6°	-6°	SN .. 2507 ..

Measured with master insert: SN .. 120408 / SN .. 190612 / SN .. 250724
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type d_1	SN .. 1204 .. C4	SN .. 1204 .. C5/C6	SN .. 1906 .. C6	SN .. 2507 .. C8
	Shim	AP308-SN12	AP308-SN12	AP310-SN19	AP351-SN25
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm	FS1589 (Torx 25IP) 9,5 Nm
	Clamp	PK241	PK241	PK243	PK301
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm	FS1591 (Torx 25IP) 9,5 Nm
	Pressure spring	FS1470	FS1470	FS1471	FS1471
	Pin	RS117	RS117	RS117	RS117
	Cooling lubricant nozzle	FS1477	FS1475	FS1475	FS1475
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)	FS1592 (Torx 25IP)

Accessories

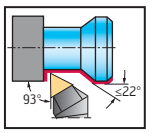
	Type	SN .. 1204 ..	SN .. 1906 ..	SN .. 2507 ..
	Clamp set (standard assembly parts)	PK241 SET	PK243 SET	PK301 SET
	Carbide clamp set Insert with hole	PK245 SET		
	Carbide clamp set Insert without hole	PK254 SET		
	Shim for SN .. 1207 ..	AP413-SN1207		
	Shim for SN .. 2509 ..			AP351-SN2509

A 27 D 1 A 234 A 261 A 262

Turning toolholders – Wedge-type clamping
C...-MTJN
Walter Turn



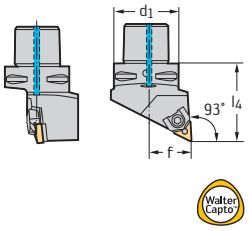
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C3-MTJNR/L-22040-16	16	C3	22	40	-6°	-6°	TN .. 1604 ..
C4-MTJNR/L-27050-16	16	C4	27	50	-6°	-6°	
C5-MTJNR/L-35060-16	16	C5	35	60	-6°	-6°	
C4-MTJNR/L-27050-22	22	C4	27	50	-6°	-6°	TN .. 2204 ..
C5-MTJNR/L-35060-22	22	C5	35	60	-6°	-6°	
C6-MTJNR/L-45065-22	22	C6	45	65	-6°	-6°	

Measured with master insert: TN .. 160408 / TN .. 220408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-MTJNR-22040-16/ordering example, left-hand tool: C3-MTJNL-22040-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	TN .. 1604 .. C3	TN .. 1604 .. C4	TN .. 1604 .. C5	TN .. 2204 .. C4	TN .. 2204 .. C5/C6
Shim for radius	AP147 r ≤ 1,6 mm	AP147 r ≤ 1,6 mm	AP147 r ≤ 1,6 mm	AP148 r ≤ 1,6 mm	AP148 r ≤ 1,6 mm
Clamping wedge set	FK303 (SW 2,5)	FK303 (SW 2,5)	FK303 (SW 2,5)	FK304 (SW 3)	FK304 (SW 3)
Pin	RS106	RS106	RS106	RS107	RS107
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)
Clamping screw Tightening torque	FS358 (SW 3) 5,0 Nm	FS358 (SW 3) 5,0 Nm	FS358 (SW 3) 5,0 Nm	FS358 (SW 3) 5,0 Nm	FS358 (SW 3) 5,0 Nm
Cooling lubricant nozzle	FS1230	FS1018	FS1019	FS1018	FS1019

Accessories

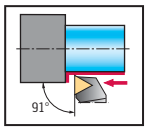
Type	TN .. 2204 ..
Shim for radius	AP149 r ≤ 0,8 mm

A 30 D 1 A 234 A 261

Turning toolholders – Rigid clamping
C...-DTGN...-P
Walter Turn



– Precision cooling
– Walter Capto™

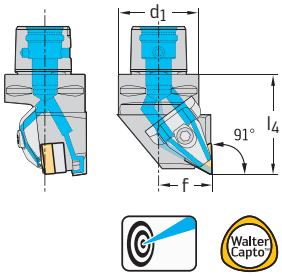




Tool

Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C4-DTGNR/L-27050-16-P	16	C4	27	50	-6°	-6°	TN .. 1604 ..

Walter Capto™ in accordance with ISO 26623



Measured with master insert: TN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: C4-DTGNR-27050-16-P/ordering example, left-hand tool: C4-DTGNL-27050-16-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	TN .. 1604 ..
Shim	AP321-TN16
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm
Clamp	PK255
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS2188
Torx key	FS1465 (Torx 15IP / SW 3,5)

Accessories

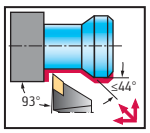
Type	TN .. 1604 ..
Clamp set (standard assembly parts)	PK255 SET

A 30 D 1 A 234 A 261 A 262

Turning toolholders – Rigid clamping
C...-DVJN
Walter Turn



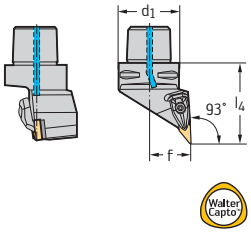
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C4-DVJNR/L-27062-16	16	C4	27	62	60	152	-4°	-13°	VN .. 1604 ..
C5-DVJNR/L-35065-16	16	C5	35	65	65	170	-4°	-13°	
C6-DVJNR/L-45065-16	16	C6	45	65	81	190	-4°	-13°	
C8-DVJNR/L-55080-16	16	C8	55	80	100	250	-4°	-13°	

Measured with master insert: VN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DVJNR-27062-16/ordering example, left-hand tool: C4-DVJNL-27062-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type d_1	VN .. 1604 .. C4	VN .. 1604 .. C5/C6	VN .. 1604 .. C8
	Shim	AP312-VN16	AP312-VN16	AP312-VN16
	Screw for shim Tightening torque	FS1467 (Torx 15IP) 3,0 Nm	FS1467 (Torx 15IP) 3,0 Nm	FS1467 (Torx 15IP) 3,0 Nm
	Clamp	PK244	PK244	PK244
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 1,7 Nm	FS1473 (Torx 15IP) 1,7 Nm	FS1473 (Torx 15IP) 1,7 Nm
	Pressure spring	FS1470	FS1470	FS1470
	Pin	RS117	RS117	RS117
	Cooling lubricant nozzle	FS1477	FS1476	FS1479
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

Accessories

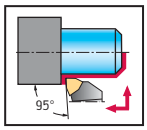
	Type	VN .. 1604 ..
	Clamp set (standard assembly parts)	PK244 SET

A 33 D 1 A 234 A 261 A 262

Turning toolholders – Rigid clamping
C...-DWLN
Walter Turn



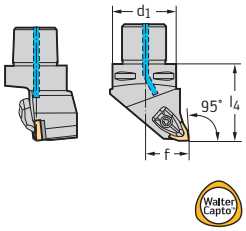
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C4-DWLNR/L-27050-06	6	C4	27	50	60	140	-6°	-6°	WN .. 0604 ..
C5-DWLNR/L-35060-06	6	C5	35	60	65	165	-6°	-6°	
C6-DWLNR/L-45065-06	6	C6	45	65	81	190	-6°	-6°	
C4-DWLNR/L-27050-08	8	C4	27	50	110	140	-6°	-6°	WN .. 0804 ..
C5-DWLNR/L-35060-08	8	C5	35	60	110	165	-6°	-6°	
C6-DWLNR/L-45065-08	8	C6	45	65	110	190	-6°	-6°	
C5-DWLNR/L-35060-10	10	C5	35	60	115	170	-6°	-6°	WN .. 1006 ..
C6-DWLNR/L-45065-10	10	C6	45	65	115	195	-6°	-6°	

Measured with master insert: WN .. 060408 / WN .. 080408 / WN .. 100612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DWLNR-27050-06/ordering example, left-hand tool: C4-DWLNL-27050-06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	WN .. 0604 .. C4	WN .. 0604 .. C5/C6	WN .. 0804 .. C4	WN .. 0804 .. C5/C6	WN .. 1006 .. C5/C6
Shim	AP306-WN06	AP306-WN06	AP307-WN08	AP307-WN08	AP311-WN10
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK240	PK240	PK241	PK241	PK242
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1469	FS1469	FS1470	FS1470	FS1471
Pin	RS116	RS116	RS117	RS117	RS117
Cooling lubricant nozzle	FS1477	FS1475	FS1477	FS1475	FS1475
Torx key	FS1466 (Torx 9IP)	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

Accessories

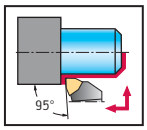
Type	WN .. 0604 ..	WN .. 0804 ..	WN .. 1006 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET	PK242 SET
Carbide clamp set Insert with hole		PK245 SET	PK246 SET
Carbide clamp set Insert without hole		PK254 SET	

A 34 D 1 A 234 A 261 A 262

Turning toolholders – Rigid clamping
C...-DWLN...-P
Walter Turn



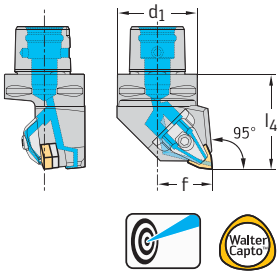
– Precision cooling
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C4-DWLNR/L-27050-08-P	8	C4	27	50	-6°	-6°	WN .. 0804 ..
C5-DWLNR/L-35060-08-P	8	C5	35	60	-6°	-6°	
C6-DWLNR/L-45065-08-P	8	C6	45	65	-6°	-6°	

Measured with master insert: WN .. 080408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: C4-DWLNR-27050-08-P/ordering example, left-hand tool: C4-DWLNL-27050-08-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	WN .. 0804 ..
	Shim	AP307-WN08
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm
	Clamp	PK255
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS2188
	Torx key	FS1465 (Torx 15IP / SW 3,5)

Accessories

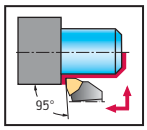
	Type	WN .. 0804 ..
	Clamp set (standard assembly parts)	PK255 SET

A 34 D 1 A 234 A 261 A 262

Turning toolholders – Lever clamp
C...-PWLN
Walter Turn



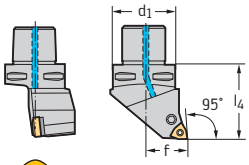
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-PWLNR/L-22040-06	6	C3	22	40	60	116	-6°	-6°	WN .. 0604 ..
C4-PWLNR/L-27050-06	6	C4	27	50	60	140	-6°	-6°	
C4-PWLNR/L-27050-08	8	C4	27	50	60	140	-6°	-6°	WN .. 0804 ..
C5-PWLNR/L-35060-08	8	C5	35	60	65	165	-6°	-6°	
C6-PWLNR/L-45065-08	8	C6	45	65	81	190	-6°	-6°	
C5-PWLNR/L-35060-10	10	C5	35	60	80	165	-6°	-6°	WN .. 1006 ..
C6-PWLNR/L-45065-10	10	C6	45	65	81	190	-6°	-6°	

Measured with master insert: WN .. 060408 / WN .. 080408 / WN .. 100612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-PWLNR-22040-06/ordering example, left-hand tool: C3-PWLNL-22040-06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	WN .. 0604 .. C3/C4	WN .. 0804 .. C4	WN .. 0804 .. C5/C6	WN .. 1006 .. C5/C6
Shim for radius	AP172-WN0612 r ≤ 1,2 mm	AP170-WN0816 r ≤ 1,6 mm	AP170-WN0816 r ≤ 1,6 mm	AP174-WN1016 r ≤ 1,6 mm
Lever	KN101	KN102	KN102	KN104
Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS352 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm
Shim pin	RS101	RS102	RS102	RS103
Tapered assembly pin	MD101	MD101	MD101	MD102
Cooling lubricant nozzle	FS1477	FS1477	FS1476	FS1476
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

Accessories

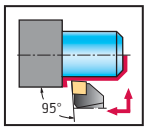
Type	WN .. 0804 ..
Shim for radius	AP170-WN0808 r ≤ 0,8 mm

A 34 D 1 A 234 A 261

Turning toolholders – Screw clamping
C...-SCLC
Walter Turn



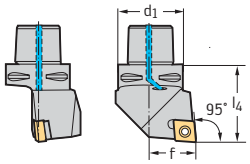
– Walter Capto™





Tool

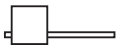
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-SCLCR/L-22040-09	9	C3	22	40	130	116	0°	0°	CC .. 09T3 ..
C4-SCLCR/L-27050-09	9	C4	27	50	130	140	0°	0°	
C5-SCLCR/L-35060-09	9	C5	35	60	130	165	0°	0°	
C6-SCLCR/L-45065-09	9	C6	45	65	130	190	0°	0°	
C4-SCLCR/L-27050-12	12	C4	27	50	125	140	0°	0°	CC .. 1204 ..
C5-SCLCR/L-35060-12	12	C5	35	60	125	165	0°	0°	
C6-SCLCR/L-45065-12	12	C6	45	65	125	190	0°	0°	

Measured with master insert: CC .. 09T308 / CC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-SCLCR-22040-09/ordering example, left-hand tool: C3-SCLCL-22040-09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

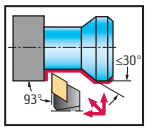
	Type d_1	CC .. 09T3 .. C3/C4	CC .. 09T3 .. C5/C6	CC .. 1204 .. C4	CC .. 1204 .. C5/C6
	Clamping screw for indexable insert Tightening torque	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
	Shim for radius	AP313-CC0908 r ≤ 0,8 mm	AP313-CC0908 r ≤ 0,8 mm	AP314-CC1212 r ≤ 1,2 mm	AP314-CC1212 r ≤ 1,2 mm
	Screw for shim	FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2069 (SW 4)	FS2069 (SW 4)
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)	FS1496 (Torx 15IP / SW 4)
	Cooling lubricant nozzle	FS1477	FS1476	FS1477	FS1476

A 37 D 1 A 238 A 261

Turning toolholders – Screw clamping
C...-SDJC
Walter Turn



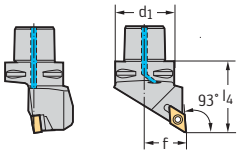
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-SDJCR/L-22040-07	7	C3	22	40	70	116	0°	0°	DC .. 0702 ..
C4-SDJCR/L-27050-07	7	C4	27	50	70	140	0°	0°	
C3-SDJCR/L-22040-11	11	C3	22	40	140	116	0°	0°	DC .. 11T3 ..
C4-SDJCR/L-27050-11	11	C4	27	50	140	140	0°	0°	
C5-SDJCR/L-35060-11	11	C5	35	60	140	190	0°	0°	
C6-SDJCR/L-45065-11	11	C6	45	65	140	165	0°	0°	

Measured with master insert: DC .. 070204 / DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-SDJCR-22040-07/ordering example, left-hand tool: C3-SDJCL-22040-07
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	DC .. 0702 .. C3/C4	DC .. 11T3 .. C3/C4	DC .. 11T3 .. C5/C6
Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
Shim for radius		AP315-DC1108 r ≤ 0,8 mm	AP315-DC1108 r ≤ 0,8 mm
Screw for shim		FS2068 (SW 3,5)	FS2068 (SW 3,5)
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)
Cooling lubricant nozzle	FS1477	FS1477	FS1476

Accessories

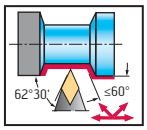
Type	DC .. 11T3 ..
Shim for radius	AP329-DC1112 r ≤ 1,2 mm

A 42 D 1 A 238 A 261

Turning toolholders – Screw clamping
C...-SDNC
Walter Turn



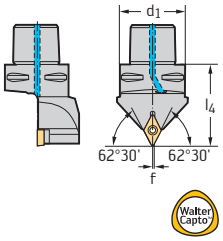
– Walter Capto™





Tool

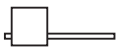
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-SDNCN-00040-11	11	C3	0,5	40		116	0°	0°	DC .. 11T3 ..
C4-SDNCN-00050-11	11	C4	0,5	50		140	0°	0°	
C5-SDNCN-00060-11	11	C5	0,5	60		165	0°	0°	

Measured with master insert: DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type d_1	DC .. 11T3 .. C3/C4	DC .. 11T3 .. C5
	Clamping screw for indexable insert Tightening torque	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius	AP315-DC1108 r ≤ 0,8 mm	AP315-DC1108 r ≤ 0,8 mm
	Screw for shim	FS2068 (SW 3,5)	FS2068 (SW 3,5)
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)
	Cooling lubricant nozzle	FS1477	FS1476

Accessories

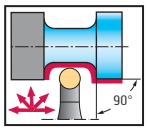
	Type	DC .. 11T3 ..
	Shim for radius	AP329-DC1112 r ≤ 1,2 mm

A 42 D 1 A 238 A 261

Turning toolholders – Screw clamping
C...-SRDC
Walter Turn



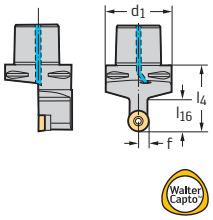
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Tool

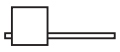
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C3-SRDCN-00040-06	6	C3	3	40	12	0°	0°	RC . T0602M0 ..
C4-SRDCN-00050-06	6	C4	3	50	12	0°	0°	
C5-SRDCN-00060-06	6	C5	3	60	12	0°	0°	
C3-SRDCN-00040-08	8	C3	4	40	16	0°	0°	RC . T0803M0 ..
C4-SRDCN-00050-08	8	C4	4	50	16	0°	0°	
C5-SRDCN-00060-08	8	C5	4	60	16	0°	0°	
C3-SRDCN-00040-10	10	C3	5	40	20	0°	0°	RC . T10T3M0 ..
C4-SRDCN-00050-10	10	C4	5	50	25	0°	0°	
C5-SRDCN-00060-10	10	C5	5	60	25	0°	0°	
C6-SRDCN-00065-10	10	C6	5	65	25	0°	0°	
C4-SRDCN-00050-12	12	C4	6	50	28	0°	0°	RC . T1204M0 ..
C5-SRDCN-00060-12	12	C5	6	60	28	0°	0°	
C6-SRDCN-00065-12	12	C6	6	65	28	0°	0°	
C5-SRDCN-00060-16	16	C5	8	60	35	0°	0°	RC . T1606M0 ..
C6-SRDCN-00065-16	16	C6	8	65	35	0°	0°	

Measured with master insert: RC . T0602M0 / RC . T0803M0 / RC . T10T3M0 / RC . T1204M0 / RC . T1606M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

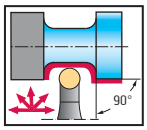
	Type d_1	RC . T0602M0 .. C3/C4	RC . T0602M0 .. C5	RC . T0803M0 .. C3/C4	RC . T0803M0 .. C5	RC . T10T3M0 .. C3/C4	RC . T10T3M0 .. C5/C6	RC . T1204M0 .. C4	RC . T1204M0 .. C5/C6	RC . T1606M0 .. C5/C6
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2061 (Torx 7IP) 0,9 Nm	FS1462 (Torx 9IP) 1,5 Nm	FS1462 (Torx 9IP) 1,5 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2090 (Torx 20IP) 6,4 Nm
	Shim					AP324-RC10T3	AP324-RC10T3	AP325-RC1204	AP325-RC1204	AP326-RC1606
	Screw for shim					FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2091 (SW 5)
	Torx key	FS1490 (Torx 7IP)	FS1490 (Torx 7IP)	FS1466 (Torx 9IP)	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)
	Cooling lubricant nozzle	FS1477	FS1476	FS1477	FS1476	FS1477	FS1476	FS1477	FS1476	FS1476

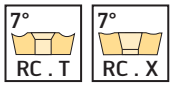
A 46 D 1 A 238 A 261

Turning toolholders – Lever clamp
C...-PRDC
Walter Turn



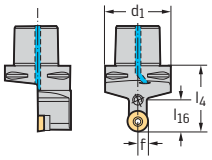
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C5-PRDCN-00060-16	16	C5	8	60	35	0°	0°	RC .. 1605M0 ..
C6-PRDCN-00065-16	16	C6	8	65	35	0°	0°	
C5-PRDCN-00060-20	20	C5	10	60	40	0°	0°	RC .. 2006M0 ..
C6-PRDCN-00065-20	20	C6	10	65	40	0°	0°	
C6-PRDCN-00065-25	25	C6	12,5	65	40	0°	0°	RC .. 2507M0 ..

Measured with master insert: RC .. 1605M0 / RC .. 2006M0 / RC .. 2507M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	RC .. 1605M0 ..	RC .. 2006M0 ..	RC .. 2507M0 ..
	Shim	AP157	AP158	AP405-RC2507
	Lever	KN111	KN112	KN113
	Shim pin	RS108	RS103	RS104
	Clamping screw Tightening torque	FS344 (SW 2,5) 2,5 Nm	FS354 (SW 3) 5,0 Nm	FS2145 (SW 4) 10,0 Nm
	Tapered assembly pin	MD102	MD102	MD102
	Torx key	FS1155 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)
	Cooling lubricant nozzle	FS1019	FS1019	FS1476

Accessories

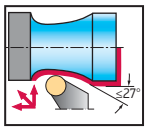
	Type	RC .. 1605M0 ..
	Shim for RC .. 1606 ..	AP403

A 46 D 1 A 238 A 261

Turning toolholders – Screw clamping
C...-SRSC
Walter Turn



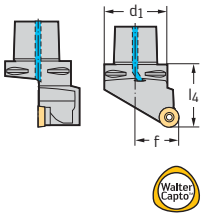
– Walter Capto™





Tool

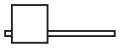
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-SRSCR/L-22040-06	6	C3	22	40	160	116	0°	0°	
C4-SRSCR/L-27050-06	6	C4	27	50	160	140	0°	0°	RC . T0602M0 ..
C5-SRSCR/L-35060-06	6	C5	35	60	160	165	0°	0°	
C3-SRSCR/L-22040-08	8	C3	22	40	110	116	0°	0°	
C4-SRSCR/L-27050-08	8	C4	27	50	110	140	0°	0°	RC . T0803M0 ..
C5-SRSCR/L-35060-08	8	C5	35	60	110	165	0°	0°	
C3-SRSCR/L-22040-10	10	C3	22	40	150	116	0°	0°	
C4-SRSCR/L-27050-10	10	C4	27	50	150	140	0°	0°	RC . T10T3M0 ..
C5-SRSCR/L-35060-10	10	C5	35	60	150	165	0°	0°	
C6-SRSCR/L-45065-10	10	C6	45	65	150	190	0°	0°	
C4-SRSCR/L-27050-12	12	C4	27	50	150	140	0°	0°	
C5-SRSCR/L-35060-12	12	C5	35	60	150	165	0°	0°	RC . T1204M0 ..
C6-SRSCR/L-45065-12	12	C6	45	65	175	190	0°	0°	
C5-SRSCR/L-35060-16	16	C5	35	60	175	165	0°	0°	RC . T1606M0 ..
C6-SRSCR/L-45065-16	16	C6	45	65	175	190	0°	0°	

Measured with master insert: RC . T0602M0 / RC . T0803M0 / RC . T10T3M0 / RC . T1204M0 / RC . T1606M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-SRSCR-22040-06/ordering example, left-hand tool: C3-SRSCL-22040-06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

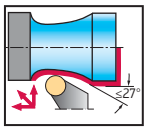
	Type d_1	RC . T0602M0 .. C3/C4	RC . T0602M0 .. C5	RC . T0803M0 .. C3/C4	RC . T0803M0 .. C5	RC . T10T3M0 .. C3/C4	RC . T10T3M0 .. C5/C6	RC . T1204M0 .. C4	RC . T1204M0 .. C5/C6	RC . T1606M0 .. C5/C6
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2061 (Torx 7IP) 0,9 Nm	FS1462 (Torx 9IP) 1,5 Nm	FS1462 (Torx 9IP) 1,5 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2090 (Torx 20IP) 6,4 Nm
	Shim					AP324-RC10T3	AP324-RC10T3	AP325-RC1204	AP325-RC1204	AP326-RC1606
	Screw for shim					FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2068 (SW 3,5)	FS2091 (SW 5)
	Torx key	FS1490 (Torx 7IP)	FS1490 (Torx 7IP)	FS1466 (Torx 9IP)	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)
	Cooling lubricant nozzle	FS1477	FS1476	FS1477	FS1476	FS1477	FS1476	FS1477	FS1476	FS1476

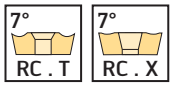
A 46 D 1 A 238 A 261

Turning toolholders – Lever clamp
C...-PRSC
Walter Turn



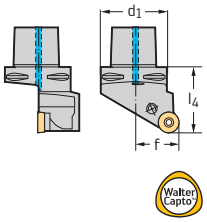
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C5-PRSCR/L-35060-16	16	C5	35	60			0°	0°	RC .. 1605M0 ..
C6-PRSCR/L-45065-16	16	C6	45	65			0°	0°	
C5-PRSCR/L-35060-20	20	C5	35	60			0°	0°	RC .. 2006M0 ..
C6-PRSCR/L-45065-20	20	C6	45	65			0°	0°	
C8-PRSCR/L-55080-20	20	C8	55	80	150	250	0°	0°	
C6-PRSCR/L-45065-25	25	C6	45	65	200	190	0°	0°	RC .. 2507M0 ..
C8-PRSCR/L-55080-25	25	C8	55	80	200	250	0°	0°	

Measured with master insert: RC .. 1605M0 / RC .. 2006M0 / RC .. 2507M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C5-PRSCR-35060-16/ordering example, left-hand tool: C5-PRSCL-35060-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	RC .. 1605M0 .. C5/C6	RC .. 2006M0 .. C5/C6	RC .. 2006M0 .. C8	RC .. 2507M0 .. C6	RC .. 2507M0 .. C8
Shim	AP157	AP158	AP404-RC2006	AP405-RC2507	AP405-RC2507
Lever	KN111	KN112	KN112	KN113	KN113
Clamping screw Tightening torque	FS344 (SW 2,5) 2,5 Nm	FS2156 (SW 3) 5,0 Nm	FS2156 (SW 3) 5,0 Nm	FS2145 (SW 4) 10,0 Nm	FS2145 (SW 4) 10,0 Nm
Shim pin	RS108	RS103	RS103	RS104	RS104
Tapered assembly pin	MD102	MD102	MD103	MD102	MD102
Cooling lubricant nozzle	FS1019	FS1019	FS1479	FS1476	FS1479
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)

Accessories

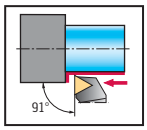
Type	RC .. 1605M0 ..
Shim for RC .. 1606 ..	AP403

A 46 D 1 A 238 A 261

Turning toolholders – Screw clamping
C...-STGC
Walter Turn



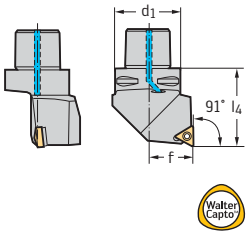
– Walter Capto™





Tool

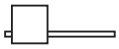
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-STGCR/L-22040-11	11	C3	22	40	90	116	0°	0°	TC .. 1102 ..
C4-STGCR/L-27050-11	11	C4	27	50	90	140	0°	0°	
C3-STGCR/L-22040-16	16	C3	22	40	90	116	0°	0°	TC .. 16T3 ..
C4-STGCR/L-27050-16	16	C4	27	50	140	140	0°	0°	
C5-STGCR/L-35060-16	16	C5	35	60	140	165	0°	0°	
C6-STGCR/L-45065-16	16	C6	45	65	140	190	0°	0°	

Measured with master insert: TC .. 110204 / TC .. 16T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-STGCR-22040-11/ordering example, left-hand tool: C3-STGCL-22040-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

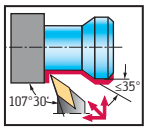
	Type d_1	TC .. 1102 .. C3/C4	TC .. 16T3 .. C3/C4	TC .. 16T3 .. C5/C6
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP317-TC1612 r ≤ 1,2 mm	AP317-TC1612 r ≤ 1,2 mm
	Screw for shim		FS2068 (SW 3,5)	FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)
	Cooling lubricant nozzle	FS1477	FS1477	FS1476

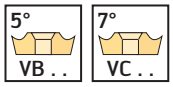
A 51 D 1 A 238 A 261

Turning toolholders – Screw clamping
C...-SVHB
Walter Turn



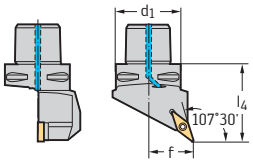
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-SVHBR/L-22040-11	11	C3	22	40	55	114	0°	0°	VB .. 1103 .. VC .. 1103 ..
C4-SVHBR/L-27050-11	11	C4	27	50	55	140	0°	0°	
C4-SVHBR/L-27050-16	16	C4	27	50	95	140	0°	0°	VB .. 1604 .. VC .. 1604 ..
C5-SVHBR/L-35060-16	16	C5	35	60	95	165	0°	0°	
C6-SVHBR/L-45065-16	16	C6	45	65	95	190	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-SVHBR-22040-11/ordering example, left-hand tool: C3-SVHBL-22040-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	VB .. 1103 .. VC .. 1103 .. C3/C4	VB .. 1604 .. VC .. 1604 .. C4	VB .. 1604 .. VC .. 1604 .. C5/C6
Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)
Shim for radius		AP316-VB1608 r ≤ 0,8 mm	AP316-VB1608 r ≤ 0,8 mm
Cooling lubricant nozzle	FS1477	FS1477	FS1476
Screw for shim		FS2068 (SW 3,5)	FS2068 (SW 3,5)

Accessories

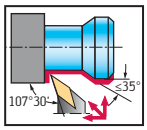
Type	VB .. 1604 .. VC .. 1604 ..
Shim for radius	AP330-VB1612 r ≤ 1,2 mm

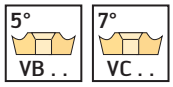
A 55 D 1 A 238 A 261

Turning toolholders – Lever clamp
C...-PVHB
Walter Turn



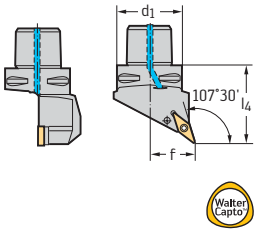
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C4-PVHBR/L-27050-16	16	C4	27	50	0°	0°	VB .. 1604 .. VC .. 1604 ..
C5-PVHBR/L-35060-16	16	C5	35	60	0°	0°	
C6-PVHBR/L-45065-16	16	C6	45	65	0°	0°	

Measured with master insert: VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-PVHBR-27050-16/ordering example, left-hand tool: C4-PVHBL-27050-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type d_1	VB .. 1604 .. VC .. 1604 .. C4	VB .. 1604 .. VC .. 1604 .. C5/C6
	Shim for radius	AP153 r ≤ 0,8 mm	AP153 r ≤ 0,8 mm
	Shim pin	RS101	RS101
	Lever	KN110	KN110
	Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm
	Tapered assembly pin	MD101	MD101
	Cooling lubricant nozzle	FS1018	FS1019
	Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)

Accessories

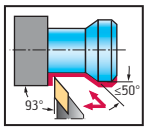
	Type	VB .. 1604 .. VC .. 1604 ..
	Shim for radius	AP154 r ≤ 1,2 mm

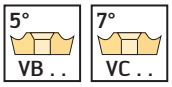
A 55 D 1 A 238 A 261

Turning toolholders – Screw clamping
C...-SVJB
Walter Turn



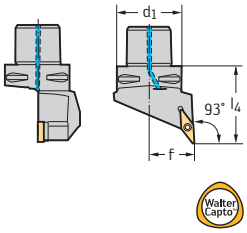
– Walter Capto™





Tool

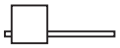
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min} mm	D_{min2} mm	γ	λ_s	Type
C3-SVJBR/L-22040-11	11	C3	22	40	55	116	0°	0°	VB .. 1103 .. VC .. 1103 ..
C4-SVJBR/L-27050-11	11	C4	27	50	55	150	0°	0°	
C4-SVJBR/L-27050-16	16	C4	27	50	155	140	0°	0°	VB .. 1604 .. VC .. 1604 ..
C5-SVJBR/L-35060-16	16	C5	35	60	155	165	0°	0°	
C6-SVJBR/L-45065-16	16	C6	45	65	155	190	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min} and D_{min2}, see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-SVJBR-22040-11/ordering example, left-hand tool: C3-SVJBL-22040-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	VB .. 1103 .. VC .. 1103 .. C3/C4	VB .. 1604 .. VC .. 1604 .. C4	VB .. 1604 .. VC .. 1604 .. C5/C6
 Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
 Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)
 Shim for radius		AP316-VB1608 r ≤ 0,8 mm	AP316-VB1608 r ≤ 0,8 mm
 Cooling lubricant nozzle	FS1477	FS1477	FS1476
 Screw for shim		FS2068 (SW 3,5)	FS2068 (SW 3,5)

Accessories

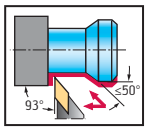
Type	VB .. 1604 .. VC .. 1604 ..
 Shim for radius	AP330-VB1612 r ≤ 1,2 mm

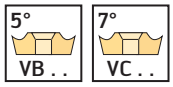
A 55 D 1 A 238 A 261

Turning toolholders – Lever clamp
C...-PVJB
Walter Turn



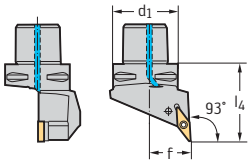
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C4-PVJBR/L-27050-16	16	C4	27	50	0°	0°	VB .. 1604 .. VC .. 1604 ..
C5-PVJBR/L-35060-16	16	C5	35	60	0°	0°	
C6-PVJBR/L-45065-16	16	C6	45	65	0°	0°	

Measured with master insert: VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-PVJBR-27050-16/ordering example, left-hand tool: C4-PVJBL-27050-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type d_1	VB .. 1604 .. VC .. 1604 .. C4	VB .. 1604 .. VC .. 1604 .. C5/C6
	Shim for radius	AP153 r ≤ 0,8 mm	AP153 r ≤ 0,8 mm
	Shim pin	RS101	RS101
	Lever	KN110	KN110
	Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm
	Tapered assembly pin	MD101	MD101
	Cooling lubricant nozzle	FS1018	FS1019
	Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)

Accessories

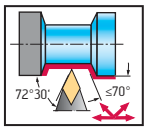
	Type	VB .. 1604 .. VC .. 1604 ..
	Shim for radius	AP154 r ≤ 1,2 mm

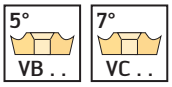
A 55 D 1 A 238 A 261

Turning toolholders – Screw clamping
C...-SVVB
Walter Turn



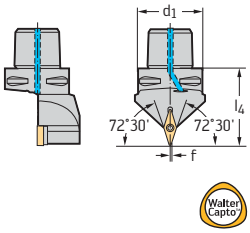
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
C3-SVVBN-00040-11	11	C3	0,3	40	116	0°	0°	VB .. 1103 .. VC .. 1103 ..
C4-SVVBN-00050-11	11	C4	0,3	50	140	0°	0°	
C4-SVVBN-00050-16	16	C4	0,6	50	140	0°	0°	VB .. 1604 .. VC .. 1604 ..
C5-SVVBN-00060-16	16	C5	0,6	60	165	0°	0°	
C6-SVVBN-00065-16	16	C6	0,6	65	190	0°	0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	VB .. 1103 .. VC .. 1103 .. C3/C4	VB .. 1604 .. VC .. 1604 .. C4	VB .. 1604 .. VC .. 1604 .. C5/C6
Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
Shim for radius		AP316-VB1608 r ≤ 0,8 mm	AP316-VB1608 r ≤ 0,8 mm
Screw for shim		FS2068 (SW 3,5)	FS2068 (SW 3,5)
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)
Cooling lubricant nozzle	FS1477	FS1477	FS1476

Accessories

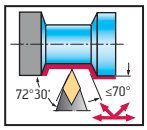
Type	VB .. 1604 .. VC .. 1604 ..
Shim for radius	AP330-VB1612 r ≤ 1,2 mm

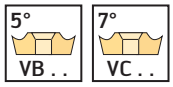
A 55 D 1 A 238 A 261

Turning toolholders – Lever clamp
C...-PVVB
Walter Turn



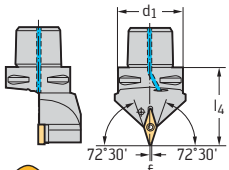
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	γ	λ_s	Type
C4-PVVBN-00050-16	16	C4	0,6	50	0°	0°	VB .. 1604 .. VC .. 1604 ..
C5-PVVBN-00060-16	16	C5	0,6	60	0°	0°	
C6-PVVBN-00065-16	16	C6	0,6	65	0°	0°	

Measured with master insert: VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	VB .. 1604 .. VC .. 1604 .. C4	VB .. 1604 .. VC .. 1604 .. C5/C6
Shim for radius	AP153 r ≤ 0,8 mm	AP153 r ≤ 0,8 mm
Shim pin	RS101	RS101
Lever	KN110	KN110
Clamping screw Tightening torque	FS351 (SW 2,5) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm
Tapered assembly pin	MD101	MD101
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)
Cooling lubricant nozzle	FS1018	FS1019

Accessories

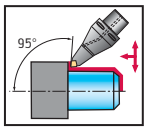
Type	VB .. 1604 .. VC .. 1604 ..
Shim for radius	AP154 r ≤ 1,2 mm

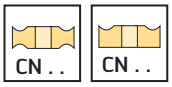
A 55 D 1 A 238 A 261

45° turning toolholders – Rigid clamping
C...-DCMN
Walter Turn



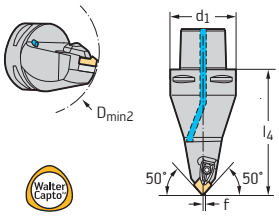
– Walter Capto™
– Toolholders for turning and milling centres





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
C5-DCMNN-00105-12	12	C5	0	105	110	-6°	-6°	CN .. 1204 ..
C6-DCMNN-00090-12	12	C6	0	90	110	-6°	-6°	
C6-DCMNN-00115-12	12	C6	0	115	110	-6°	-6°	
C6-DCMNN-00090-16	16	C6	0	90	110	-6°	-6°	CN .. 1606 ..
C8-DCMNN-00150-16	16	C8	0	150	115	-6°	-6°	

Measured with master insert: CN .. 120408 / CN .. 160612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type d_1	CN .. 1204 .. C5	CN .. 1204 .. C6	CN .. 1606 .. C6/C8
Shim	AP301-CN12	AP301-CN12	AP302-CN16
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK241	PK241	PK242
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1470	FS1470	FS1471
Pin	RS117	RS117	RS117
Cooling lubricant nozzle	FS1476	FS1479	FS1479
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

Accessories

Type	CN .. 1204 ..	CN .. 1606 ..
Clamp set (standard assembly parts)	PK241 SET	PK242 SET
Carbide clamp set Insert with hole	PK245 SET	PK246 SET
Carbide clamp set Insert without hole	PK254 SET	
Shim for CN .. 1207 ..	AP411-CN1207	

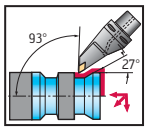
A 20 D 1 A 182 A 182 A 182

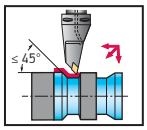
45° turning toolholders – Rigid clamping
C...-DDMN

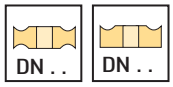
Walter Turn



– Walter Capto™
– Toolholders for turning and milling centres

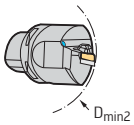


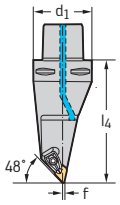




Tool

Walter Capto™ in accordance with ISO 26623

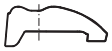
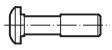
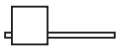




Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
C5-DDMNL-00115-15	15	C5	0	115	110	-5°	-6°	DN .. 1506 ..
C6-DDMNL-00130-15	15	C6	0	130	110	-5°	-6°	
C6-DDMNL-33120-15	15	C6	33	120	130	-5°	-6°	
C8-DDMNL-00160-15	15	C8	0	160	120	-5°	-6°	

Measured with master insert: DN .. 150608
For information on D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type d_1	DN .. 1506 .. C5	DN .. 1506 .. C6/C8
	Shim	AP304-DN15	AP304-DN15
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
	Clamp	PK241	PK241
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS1470	FS1470
	Pin	RS117	RS117
	Cooling lubricant nozzle	FS1476	FS1479
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

Accessories

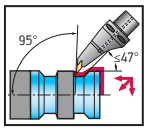
	Type	DN .. 1506 ..
	Clamp set (standard assembly parts)	PK241 SET
	Carbide clamp set Insert with hole	PK245 SET
	Carbide clamp set Insert without hole	PK254 SET
	Shim for DN .. 1504 ..	AP304-DN1504
	Shim for DN .. 1507 ..	AP412-DN1507

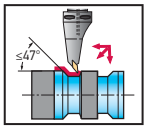
A 24 D 1 A 182 A 182 A 182

45° turning toolholders – Rigid clamping
C...-DVMN
Walter Turn



– Walter Capto™
– Toolholders for turning and milling centres



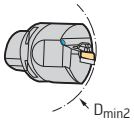


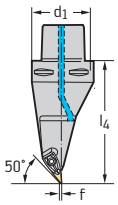




Tool

Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
Walter Capto™ in accordance with ISO 26623								
C8-DVMNL-00160-16	16	C8	0	160	110	-4°	-14°	VN .. 1604 ..





Measured with master insert: VN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	VN .. 1604 ..
Shim	AP312-VN16
Screw for shim Tightening torque	FS1467 (Torx 15IP) 3,0 Nm
Clamp	PK244
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS1470
Pin	RS117
Cooling lubricant nozzle	FS1479
Torx key	FS1465 (Torx 15IP / SW 3,5)

Accessories

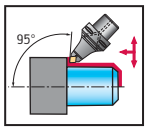
Type	VN .. 1604 ..
Clamp set (standard assembly parts)	PK244 SET

A 33 D 1 A 182 A 182 A 182

45° turning toolholders – Screw clamping
C...-SCMC
Walter Turn



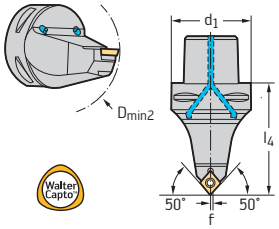
– Walter Capto™
– Toolholders for turning and milling centres





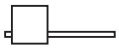
Tool

	Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
Walter Capto™ in accordance with ISO 26623	C6-SCMCN-00090-12	12	C6	0	90	100	0°	0°	CC .. 1204 ..



Measured with master insert: CC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	CC .. 1204 ..
	Clamping screw for indexable insert Tightening torque	FS2065 (Torx 15IP) 3,0 Nm
	Shim	AP319-SC1212
	Screw for shim	FS2069 (SW 4)
	Torx key	FS1496 (Torx 15IP / SW 4)

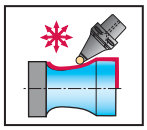
A 37 D 1 A 182 A 182

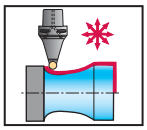
45° turning toolholders – Screw clamping
C...-SRDC

Walter Turn



– Walter Capto™
– Toolholders for turning and milling centres

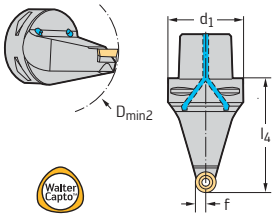




7°
RC . T

Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
C6-SRDCN-00100-10	10	C6	5	100	110	0°	0°	RC . T10T3M0 ..
C6-SRDCN-00100-16	16	C6	8	100	110	0°	0°	RC . T1606M0 ..

Measured with master insert: RC . T10T3M0 / RC . T1606M0
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

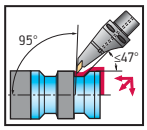
	Type	RC . T10T3M0 ..	RC . T1606M0 ..
	Clamping screw for indexable insert Tightening torque	FS2063 (Torx 15IP) 3,0 Nm	FS2090 (Torx 20IP) 6,4 Nm
	Shim	AP324-RC10T3	AP326-RC1606
	Screw for shim	FS2068 (SW 3,5)	FS2091 (SW 5)
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

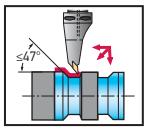
A 46 D 1 A 182 A 182

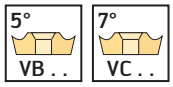
45° turning toolholders – Screw clamping
C...-SVMB
Walter Turn



– Walter Capto™
– Toolholders for turning and milling centres

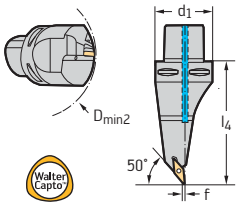






Tool

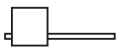
Walter Capto™ in accordance with ISO 26623



Designation		d_1	f mm	l_4 mm	D_{min2} mm	γ	λ_s	Type
C5-SVMBL-00115-16	16	C5	0	115	110	0°	0°	VB .. 1604 .. VC .. 1604 ..
C6-SVMBL-00130-16	16	C6	0	130	110	0°	0°	
C6-SVMBL-33120-16	16	C6	33	120	110	0°	0°	

Measured with master insert: VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
For information on D_{min2}, see "Technical information – ISO turning"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	VB .. 1604 .. VC .. 1604 ..
	Clamping screw for indexable insert Tightening torque	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius	AP316-VB1608 r ≤ 0,8 mm
	Screw for shim	FS2068 (SW 3,5)
	Cooling lubricant nozzle	FS1476
	Torx key	FS1465 (Torx 15IP / SW 3,5)

Accessories

	Type	VB .. 1604 .. VC .. 1604 ..
	Shim for radius	AP330-VB1612 r ≤ 1,2 mm

A 55 D 1 A 182 A 182


WALTER

Walter Turn/Walter Capto™ product description – Internal machining

Boring bars for indexable inserts with a negative basic shape



Walter Turn rigid clamping (D)
- The number one choice for machining short-chipping materials such as cast iron
- Functionality is maintained even in "dirty environments", e.g. grey cast iron machining
- The number one choice for interrupted cuts thanks to stable insert clamping
- The indexable insert or shim can be replaced using the same wrench
- Reinforced clamps with carbide shoe available for longer clamp tool life
- Internal coolant supply on all tools





Walter Turn lever clamp (P)
- Universal system enabling easy replacement of indexable inserts
- Number one choice for single-sided negative indexable inserts, e.g. CNMM
- Number one choice when machining small hole diameters with negative indexable inserts
- Unobstructed chip evacuation due to centre hole locking and therefore an alternative to rigid clamping
- Internal coolant supply on all tools



Boring bars for indexable inserts with a positive basic shape



Walter Turn screw clamping (S)
- For indexable inserts with a positive basic shape with 5° and 7° clearance angle
- Machining of small hole diameters
- For use with low cutting pressures/long projection lengths
- Few assembly parts
- Torx Plus screw clamping for transmitting higher tightening torques
- The indexable insert or shim can be replaced using the same wrench
- Unobstructed chip evacuation due to centre hole locking
- Internal coolant supply on all tools
- Versions with steel or solid carbide shank





Walter Turn positive lever clamp (P)
- For indexable inserts with a positive V basic shape with 5° and 7° clearance angle
- High dimensional accuracy on the component thanks to high pre-tension applied by the lever clamp
- For use with low cutting pressures/long projection lengths
- Unobstructed chip evacuation due to centre hole locking



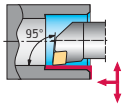
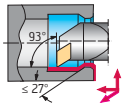
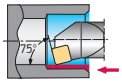
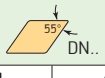
Retaining sleeves for boring bars with fully rounded shank

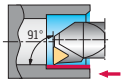
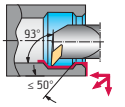
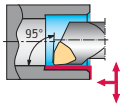
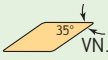


Walter Turn AK600 boring bar adaptor
- Easy handling due to automatic centre height location via spring-loaded ball to groove
- Fully rounded shank boring bars are completely enclosed for maximum stability
- Clamping of steel and solid carbide boring bars without clamping flat (-R)

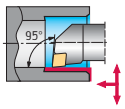
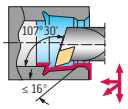
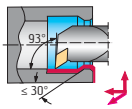
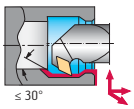
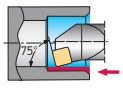
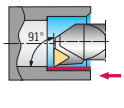
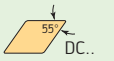
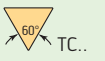


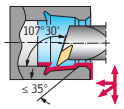
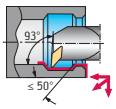
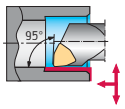
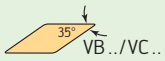
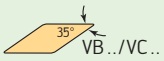
Walter Turn turning tools product range overview – Internal machining
Boring bars – Negative basic shape

Machining						
Type	 CN..		 DN..		 SN..	
Designation	**A...-DCLN**	**A...-PCLN**	**A...-DDUN**	**A...-PDUN**	**A...-DSKN**	**A...-PSKN**
Approach angle κ	95°	95°	93°	93°	75°	75°
Clamping system	Clamp	Lever	Clamp	Lever	Clamp	Lever
Coolant supply	internal	internal	internal	internal	internal	internal
Boring bar diameter d_1 [mm]	25–50	16–40	25–50	25–40	25–40	25–40
Insert size l [mm]	12–16	9–16	11–15	11–15	12–15	12
Page	A 199	A 200	A 201	A 202	A 203	A 204
						

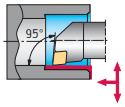
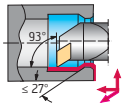
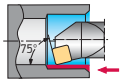
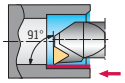
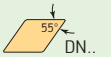
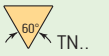
Machining						
Type	 TN..		 VN..		 WN..	
Designation	**A...-DTFN**	**A...-PTFN**	**A...-DVUN**	**A...-DWLN**	**A...-PWLN**	
Approach angle κ	91°	91°	93°	95°	95°	
Clamping system	Clamp	Lever	Clamp	Clamp	Lever	
Coolant supply	internal	internal	internal	internal	internal	
Boring bar diameter d_1 [mm]	25–50	16–40	40	25–50	20–32	
Insert size l [mm]	16–22	11–22	16	6–10	6–8	
Page	A 205	A 206	A 207	A 208	A 209	
						

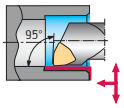
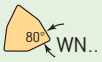
Walter Turn turning tools product range overview – Internal machining
Boring bars – Positive basic shape

Machining						
Type						
Designation	**A...-SCLC / E...-SCLC**	**A...-SDQC**	**A...-SDUC / E...-SDUC**	**A...-SDUC...-X**	**A...-SSKC**	**A...-STFC / E...-STFC**
Approach angle κ	95°	107,5°	93°	93°	75°	91°
Clamping system	Screw	Screw	Screw	Screw	Screw	Screw
Coolant supply	internal	internal	internal	internal	internal	internal
Boring bar diameter d_1 [mm]	8–32	12–25	10–32	16–32	16–32	6–32
Insert size l [mm]	6–12	7–11	7–11	7–11	9–12	6–16
Page	A 210	A 211	A 212	A 213	A 214	A 215
						

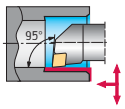
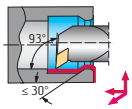
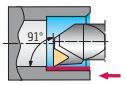
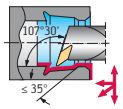
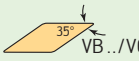
Machining				
Type				
Designation	**A...-SVQB**	**A...-PVQB**	**A...-SVUB**	**A...-PVUB**	**A...-SWLC**	**AK600**
Approach angle κ	107,5°	107,5°	93°	93°	95°	
Clamping system	Screw	Lever	Screw	Lever	Screw	
Coolant supply	internal	internal	internal	internal	internal	
Boring bar diameter d_1 [mm]	16–40	20–40	16–40	20–40	10–32	6–25
Insert size l [mm]	11–16	11–16	11–16	11–16	4–8	
Page	A 216	A 217	A 218	A 219	A 220	A 221
						

Walter Turn turning tools product range overview – Internal machining
Walter Capto™ boring bars – Negative basic shape

Machining						
Type						
Designation	**C...-DCLN**	**C...-PCLN**	**C...-DDUN**	**C...-PDUN**	**C...-PSKN**	**C...-PTFN**
Lead angle κ	95°	95°	93°	93°	75°	91°
Clamping system	Clamp	Lever	Clamp	Lever	Lever	Lever
Coolant supply	internal	internal	internal	internal	internal	internal
Walter Capto™ size	C4–C6	C3–C6	C4–C6	C3–C6	C4–C6	C4–C6
Insert size l [mm]	12–16	12–16	11–15	11–15	12–15	16–22
Page	A 222	A 223	A 224	A 225	A 226	A 227
						

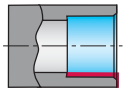
Machining		
Type		
Designation	**C...-DWLN**	**C...-PWLN**
Lead angle κ	95°	95°
Clamping system	Clamp	Lever
Coolant supply	internal	internal
Walter Capto™ size	C4–C6	C3–C6
Insert size l [mm]	6–10	6–8
Page	A 228	A 229
		

Walter Turn turning tools product range overview – Internal machining
Walter Capto™ boring bars – Positive basic shape

Machining				
Type				
Designation	**C...-SCLC**	**C...-SDUC**	**C...-STFC**	**C...-SVQB**
Lead angle κ	95°	93°	91°	107,5°
Clamping system	Screw	Screw	Screw	Screw
Coolant supply	internal	internal	internal	internal
Walter Capto™ size	C3–C5	C3–C5	C3–C5	C3–C6
Insert size l [mm]	9–12	7–11	11–16	11–16
Page	A 230	A 231	A 232	A 233
				



Turning system overview – Walter Turn internal machining



Retaining sleeves for boring bars with full cylindrical shank	Walter Capto™ adaptors for boring bars with flats		Walter Capto™ boring bars
AK600 . . .	C … -131	C … -391.20 C … -391.27	C …
Page A 221	Page D 65	Page D 66	Page A 192
			

Boring bar with full cylindrical shank (-R)	Boring bar with flats
	
e.g. E…-SCLC…-R	e.g. A…-DCLN
Page A 191	Page A 190

ISO designation key for turning toolholders – Internal machining

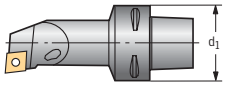
Example: Walter Turn

A	20	S	–	S	C	L	C	R	09	–	R
1	2	3		4	5	6	7	8	9		10

0 – Coupling size d_1 [mm]

C = Walter Capto™ ISO 26623

- **C3** d_1 = 32
- **C4** d_1 = 40
- **C5** d_1 = 50
- **C6** d_1 = 63
- **C8** d_1 = 80

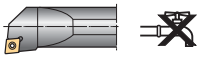


1 – Shank design

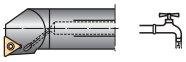
- **A** Solid steel design with internal coolant supply



- **S** Solid steel design without internal coolant supply



- **E** Carbide shank with steel head and internal coolant supply

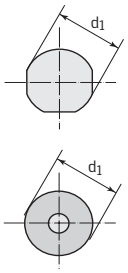


- **C** Carbide shank with steel head, without internal coolant supply



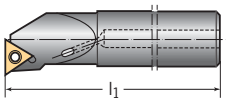
2 – Boring bar diameter d_1 [mm]

Shank diameter in mm. Figures after the decimal point are ignored. Single-digit numbers are preceded by a "0".



3 – Turning toolholder length l_1 [mm]

A	32	**M**	150
B	40	**N**	160
C	50	**P**	170
D	60	**Q**	180
E	70	**R**	200
F	80	**S**	250
G	90	**T**	300
H	100	**U**	350
J	110	**V**	400
K	125	**W**	450
L	140	**X**	Special
		Y	500

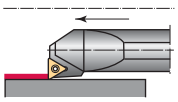


7 – Indexable insert clearance angle

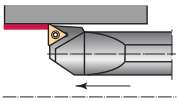
- **B** 5°
- **C** 7°
- **E** 20°
- **F** 25°
- **N** 0°
- **P** 11°

8 – Turning toolholder design

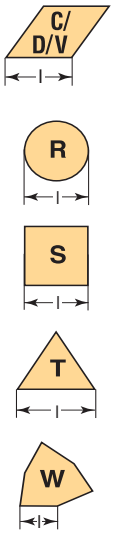
R = Right



L = Left



9 – Length of cutting edge l [mm]



10 – Manufacturer option

If necessary, an additional symbol comprising a maximum of three letters or figures can be added to the standard code.

This symbol must be separated from the standard designation with a hyphen.

The following versions:

- **–R** Boring bars with fully rounded shank
- **–X** Back copy boring bars
- **–W** Wedge-type clamping

Walter Capto™

Example: Walter Capto™

C4	–	S	C	L	C	R	–	27	080	–	12	...
0		4	5	6	7	8		11	12		9	10

4 – Insert mounting type

C	Top clamping
D	Top and hole clamping
M	Top and hole clamping
P	Hole clamping
S	Screw clamping

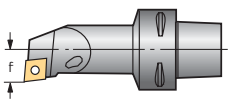
5 – Indexable insert basic shape

C	80°
D	55°
R	
S	90°
T	60°
V	35°
W	80°

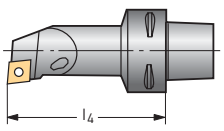
6 – Lead angle

90°	F	45°	S
75°	K	93°	U
95° / 95°	L	60°	W
107° / 30°	Q	85°	Y

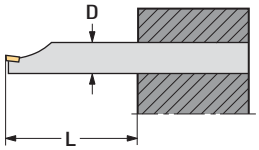
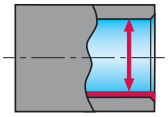
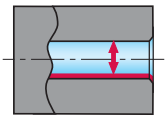
11 – f dimension [mm]

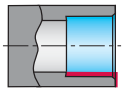
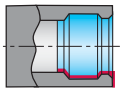
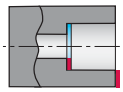


12 – Tool length l_4 [mm]



Walter Select – Internal machining

Workpiece characteristics	from diameters of 20 mm		from diameters of 8.5 mm	
	Steel boring bar: L/D_{max} = 3/1		Steel boring bar: L/D_{max} = 5/1 Solid carbide boring bar: L/D_{max} = 8/1	

Basic shape	  Negative basic shape		 Positive basic shape	
Holder clamping system Walter Turn/Walter Capto™	**Rigid clamping**	**Lever clamp**	**Screw clamping**	**Lever clamp**
				
Product range overview	Page A 190	Page A 190	Page A 191	Page A 191
Step 1: **Selecting the contour to be machined**				
 Longitudinal turning/facing	●●	●●	●●	●
 Profile turning	●●	●●	●●	●●
 Facing	●	●●	●●	●●
 Interrupted cuts	●●	●	●●	●
Step 2: **Selecting the material to be machined**				
P Steel	●●	●●	●●	●●
M Stainless steel	●	●●	●●	●●
K Cast iron	●●	●	●●	●
N NF metals	—	●	—	●●
S Materials with difficult cutting properties	●●	●●	●●	●●
H Hard materials	●●	●	●	●
O Other	●	●	●	●

WALTER SELECT

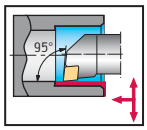
●● Primary application

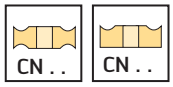
● Other application

Boring bar – Rigid clamping
A...-DCLN
Walter Turn

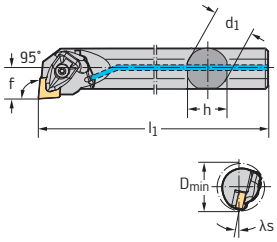


– A = Steel version with internal coolant supply





Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A25T-DCLNR/L12	12	32	25	17	23	300	-6°	-12°	CN .. 1204 ..
A32T-DCLNR/L12	12	40	32	22	30	300	-6°	-10°	
A40T-DCLNR/L12	12	50	40	27	37	300	-6°	-15°	
A40T-DCLNR/L16	16	50	40	27	37	300	-6°	-16°	CN .. 1606 ..
A50U-DCLNR/L16	16	63	50	35	47	350	-6°	-13°	

Measured with master insert: CN .. 120408 / CN .. 160612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A25T-DCLNR12/ordering example, left-hand tool: A25T-DCLNL12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_{min} [mm]	CN .. 1204 .. 32–40	CN .. 1204 .. 50	CN .. 1606 .. 50–63
	Shim	AP354-CN12	AP301-CN12	AP302-CN16
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
	Clamp	PK241	PK241	PK242
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
	Pressure spring	FS1470	FS1470	FS1471
	Pin	RS117	RS117	RS117
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

Accessories

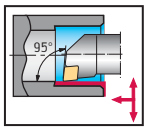
	Type	CN .. 1204 ..	CN .. 1606 ..
	Clamp set (standard assembly parts)	PK241 SET	PK242 SET
	Carbide clamp set Insert with hole	PK245 SET	PK246 SET
	Carbide clamp set Insert without hole	PK254 SET	

A 20 D 1 A 234 A 261 A 262

Boring bar – Lever clamp
A...-PCLN
Walter Turn

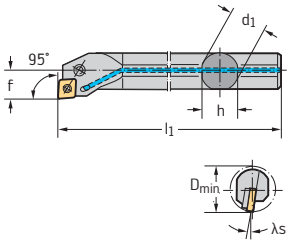


– A = Steel version with internal coolant supply



CN . . CN . .

Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A16R-PCLNR/L09	9	20	16	11	15	200	-6°	-13°	CN .. 0903 ..
A20S-PCLNR/L09	9	25	20	13	18	250	-6°	-11°	
A25T-PCLNR/L09	9	32	25	17	23	300	-6°	-10°	
A25T-PCLNR/L12	12	32	25	17	23	300	-6°	-10°	CN .. 1204 ..
A32T-PCLNR/L12	12	40	32	22	30	300	-6°	-11°	
A40T-PCLNR/L12	12	50	40	27	37	300	-6°	-10°	
A32T-PCLNR/L16	16	55	32	22	30	300	-6°	-10°	CN .. 1606 ..
A40T-PCLNR/L16	16	58	40	27	37	300	-6°	-10°	

Measured with master insert: CN .. 090308 / CN .. 120408 / CN .. 160612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A16R-PCLNR09/ordering example, left-hand tool: A16R-PCLNL09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_{min} [mm]	CN .. 0903 .. 20–32	CN .. 1204 .. 32	CN .. 1204 .. 40	CN .. 1204 .. 50	CN .. 1606 .. 55–58
	Shim for radius			AP134-CN1216 r ≤ 1,6 mm	AP134-CN1216 r ≤ 1,6 mm	AP135-CN1624 r ≤ 2,4 mm
	Lever	KN126	KN128	KN121	KN102	KN104
	Clamping screw Tightening torque	FS2182 (SW 2) 2,0 Nm	FS332 (SW 2,5) 2,5 Nm	FS2129 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm
	Shim pin			RS102	RS102	RS103
	Tapered assembly pin			MD101	MD101	MD102
	Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

Accessories

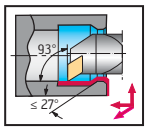
	Type	CN .. 1204 ..	CN .. 1606 ..
	Shim for radiused insert	AP134-CN1208 r ≤ 0,8 mm	AP135-CN1616 r ≤ 1,6 mm

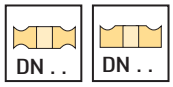
A 20 D 1 A 234 A 261

Boring bar – Rigid clamping
A...-DDUN
Walter Turn

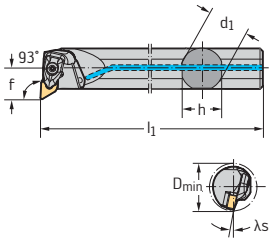


– A = Steel version with internal coolant supply





Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	$λ_s$	Type
A25T-DDUNR/L11	11	32	25	17	23	300	-6°	-12°	DN .. 1104 ..
A32T-DDUNR/L11	11	40	32	22	30	300	-6°	-10°	
A32T-DDUNR/L15	15	40	32	22	30	300	-6°	-14°	DN .. 1506 ..
A40T-DDUNR/L15	15	50	40	27	37	300	-6°	-11°	
A50U-DDUNR/L15	15	63	50	35	47	350	-6°	-8°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle $λ_s$ – see "Technical information – ISO turning"
Ordering example, right-hand tool: A25T-DDUNR11/ordering example, left-hand tool: A25T-DDUNL11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	DN .. 1104 ..	DN .. 1506 ..
Shim	AP305-DN11	AP304-DN15
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
Clamp	PK240	PK241
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm
Pressure spring	FS1469	FS1470
Pin	RS116	RS117
Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)

Accessories

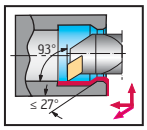
Type	DN .. 1104 ..	DN .. 1506 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET
Carbide clamp set Insert with hole		PK245 SET
Carbide clamp set Insert without hole		PK254 SET
Shim for DN .. 1504 ..		AP304-DN1504

A 24 D 1 A 234 A 261 A 262

Boring bar – Lever clamp
A...-PDUN
Walter Turn



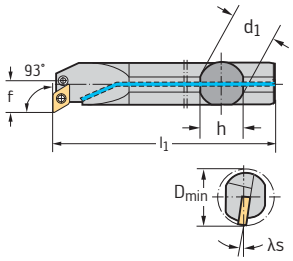
– A = Steel version with internal coolant supply



DN . .

DN . .

Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A25T-PDUNR/L11	11	32	25	17	23	300	-6°	-11°	DN .. 1104 ..
A32T-PDUNR/L11	11	40	32	22	30	300	-6°	-10°	
A40T-PDUNR/L11	11	50	40	27	37	300	-6°	-11°	
A32T-PDUNR/L15	15	40	32	22	30	300	-6°	-12°	DN .. 1506 ..
A40T-PDUNR/L15	15	50	40	27	37	300	-6°	-11°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A25T-PDUNR11/ordering example, left-hand tool: A25T-PDUNL11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	DN .. 1104 .. 32	DN .. 1104 .. 40–50	DN .. 1506 .. 40–50
Shim for radius		AP171-DN1112 r ≤ 1,2 mm	AP145-DN1516 r ≤ 1,6 mm
Lever	KN120	KN119	KN103
Clamping screw Tightening torque	FS905 (SW 2) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm	FS355 (SW 3) 5,0 Nm
Shim pin		RS101	RS102
Tapered assembly pin		MD101	MD101
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)

Accessories

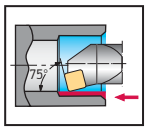
Type	DN .. 1104 ..	DN .. 1506 ..
Shim for radius	AP171-DN1108 r ≤ 0,8 mm	AP145-DN1508 r ≤ 0,8 mm
Shim for DN .. 1504 .. for radius		AP357-DN1508 r ≤ 0,8 mm
Shim for DN .. 1504 .. for radius		AP357-DN1516 r ≤ 1,6 mm

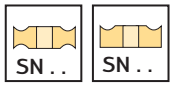
A 24 D 1 A 234 A 261

Boring bar – Rigid clamping
A...-DSKN
Walter Turn

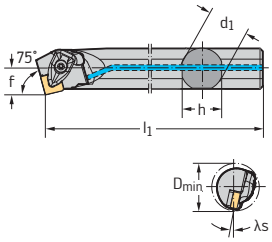


– A = Steel version with internal coolant supply





Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	$λ_s$	Type
A25T-DSKNR/L12	12	32	25	17	23	300	-6°	-11°	
A32T-DSKNR/L12	12	40	32	22	30	300	-6°	-9°	SN .. 1204 ..
A40T-DSKNR/L12	12	50	40	27	37	300	-6°	-13°	
A40T-DSKNR/L15	15	50	40	27	37	300	-6°	-14°	SN .. 1506 ..

Measured with master insert: SN .. 120408 / SN .. 150612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle $λ_s$ – see "Technical information – ISO turning"
Ordering example, right-hand tool: A25T-DSKNR12/ordering example, left-hand tool: A25T-DSKNL12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	SN .. 1204 .. 32–40	SN .. 1204 .. 50	SN .. 1506 .. 50
Shim	AP355-SN12	AP308-SN12	AP309-SN15
Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK241	PK241	PK242
Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1470	FS1470	FS1471
Pin	RS117	RS117	RS117
Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

Accessories

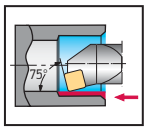
Type	SN .. 1204 ..	SN .. 1506 ..
Clamp set (standard assembly parts)	PK241 SET	PK242 SET
Carbide clamp set Insert with hole	PK245 SET	PK246 SET
Carbide clamp set Insert without hole	PK254 SET	

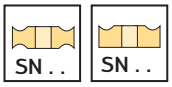
A 27 D 1 A 234 A 261 A 262

Boring bar – Lever clamp
A...-PSKN
Walter Turn

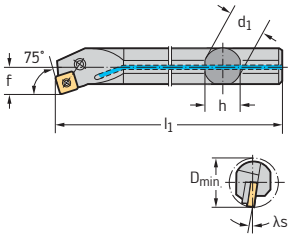


– A = Steel version with internal coolant supply





Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	$λ_s$	Type
A25T-PSKNR/L12	12	32	25	17	23	300	-6°	-11°	SN .. 1204 ..
A32T-PSKNR/L12	12	40	32	22	30	300	-6°	-10°	
A40T-PSKNR/L12	12	50	40	27	37	300	-6°	-10°	

Measured with master insert: SN .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle $λ_s$ – see "Technical information – ISO turning"
Ordering example, right-hand tool: A25T-PSKNR12/ordering example, left-hand tool: A25T-PSKNL12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	SN .. 1204 .. 32	SN .. 1204 .. 40	SN .. 1204 .. 50
Shim for radius		AP141-SN1216 r ≤ 1,6 mm	AP141-SN1216 r ≤ 1,6 mm
Lever	KN128	KN121	KN102
Clamping screw Tightening torque	FS332 (SW 2,5) 2,5 Nm	FS2129 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm
Shim pin		RS102	RS102
Tapered assembly pin		MD101	MD101
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

Accessories

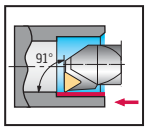
Type	SN .. 1204 ..
Shim for radiused insert	AP141-SN1208 r ≤ 0,8 mm

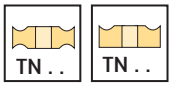
A 27 D 1 A 234 A 261

Boring bar – Rigid clamping
A...-DTFN
Walter Turn

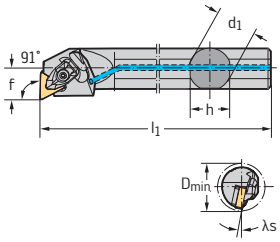


– A = Steel version with internal coolant supply





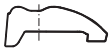
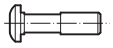
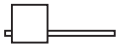
Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A25T-DTFNR/L16	16	32	25	17	23	300	-6°	-12°	TN .. 1604 ..
A32T-DTFNR/L16	16	40	32	22	30	300	-6°	-10°	
A40T-DTFNR/L16	16	50	40	27	37	300	-6°	-8°	
A40T-DTFNR/L22	22	50	40	27	37	300	-6°	-13°	TN .. 2204 ..
A50U-DTFNR/L22	22	63	50	35	47	350	-6°	-10°	

Measured with master insert: TN .. 160408 / TN .. 220408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A25T-DTFNR16/ordering example, left-hand tool: A25T-DTFNL16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	TN .. 1604 ..	TN .. 2204 ..
	Shim	AP356-TN16	AP322-TN22
	Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
	Clamp	PK240	PK241
	Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS1469	FS1470
	Pin	RS116	RS117
	Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)

Accessories

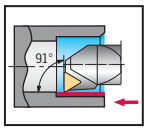
	Type	TN .. 1604 ..	TN .. 2204 ..
	Clamp set (standard assembly parts)	PK240 SET	PK241 SET
	Carbide clamp set Insert with hole		PK245 SET
	Carbide clamp set Insert without hole		PK254 SET

A 30 D 1 A 234 A 261 A 262

Boring bar – Lever clamp
A...-PTFN
Walter Turn

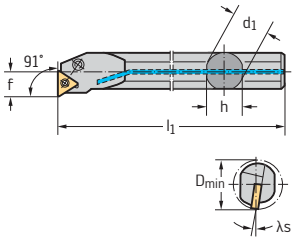


– A = Steel version with internal coolant supply





Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A16R-PTFNR/L11	11	20	16	11	15	200	-6°	-14°	TN .. 1103 ..
A20S-PTFNR/L11	11	25	20	13	18	250	-6°	-12°	
A25T-PTFNR/L11	11	32	25	17	23	300	-6°	-10°	
A25T-PTFNR/L16	16	32	25	17	23	300	-6°	-13°	TN .. 1604 ..
A32T-PTFNR/L16	16	50	32	22	30	300	-6°	-12°	
A40T-PTFNR/L22	22	50	40	27	37	300	-6°	-11°	TN .. 2204 ..

Measured with master insert: TN .. 110304 / TN .. 160408 / TN .. 220408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A16R-PTFNR11/ordering example, left-hand tool: A16R-PTFNL11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type	TN .. 1103 ..	TN .. 1604 ..	TN .. 2204 ..
Shim for radius		AP137-TN1616 r ≤ 1,6 mm	AP138-TN2216 r ≤ 1,6 mm
Lever	KN127	KN101	KN102
Clamping screw Tightening torque	FS2182 (SW 2) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm	FS352 (SW 3) 5,0 Nm
Shim pin		RS101	RS102
Tapered assembly pin		MD101	MD101
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)

Accessories

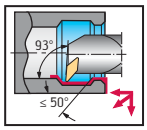
Type	TN .. 1604 ..	TN .. 2204 ..
Shim for radiused insert	AP137-TN1608 r ≤ 0,8 mm	AP138-TN2208 r ≤ 0,8 mm

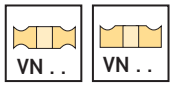
A 30 D 1 A 234 A 261

Boring bar – Rigid clamping
A...-DVUN
Walter Turn

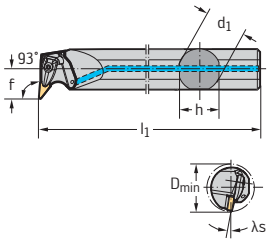


– A = Steel version with internal coolant supply





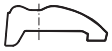
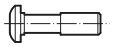
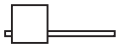
Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A40T-DVUNR/L16	16	50	40	27	37	300	-6°	-9°	VN .. 1604 ..

Measured with master insert: VN .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A40T-DVUNR16/ordering example, left-hand tool: A40T-DVUNL16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	VN .. 1604 ..
	Shim	AP312-VN16
	Screw for shim Tightening torque	FS1467 (Torx 15IP) 3,0 Nm
	Clamp	PK244
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS1470
	Pin	RS117
	Torx key	FS1465 (Torx 15IP / SW 3,5)

Accessories

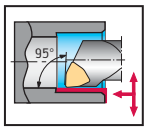
	Type	VN .. 1604 ..
	Clamp set (standard assembly parts)	PK244 SET

A 33 D 1 A 234 A 261 A 262

Boring bar – Rigid clamping
A...-DWLN
Walter Turn

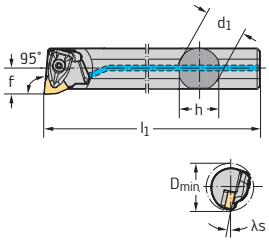


– A = Steel version with internal coolant supply



WN . . WN . .

Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A25T-DWLNR/L06	6	32	25	17	23	300	-6°	-14°	WN .. 0604 ..
A32T-DWLNR/L06	6	40	32	22	30	300	-6°	-11°	
A25T-DWLNR/L08	8	32	25	17	23	300	-6°	-12°	WN .. 0804 ..
A32T-DWLNR/L08	8	40	32	22	30	300	-6°	-10°	
A40T-DWLNR/L08	8	50	40	27	37	300	-6°	-13°	
A50U-DWLNR/L08	8	63	50	35	47	350	-6°	-11°	
A40T-DWLNR/L10	10	50	40	27	37	300	-6°	-16°	WN .. 1006 ..

Measured with master insert: WN .. 060408 / WN .. 080408 / WN .. 100612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A25T-DWLNR06/ordering example, left-hand tool: A25T-DWLNL06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	WN .. 0604 .. 32–40	WN .. 0804 .. 32–40	WN .. 0804 .. 50–63	WN .. 1006 .. 50
Shim	AP306-WN06	AP331-WN08	AP307-WN08	AP311-WN10
Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
Clamp	PK240	PK241	PK241	PK242
Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
Pressure spring	FS1469	FS1470	FS1470	FS1471
Pin	RS116	RS117	RS117	RS117
Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

Accessories

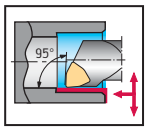
Type	WN .. 0604 ..	WN .. 0804 ..	WN .. 1006 ..
Clamp set (standard assembly parts)	PK240 SET	PK241 SET	PK242 SET
Carbide clamp set Insert with hole		PK245 SET	PK246 SET
Carbide clamp set Insert without hole		PK254 SET	

A 34 D 1 A 234 A 261 A 262

Boring bar – Lever clamp
A...-PWLN
Walter Turn

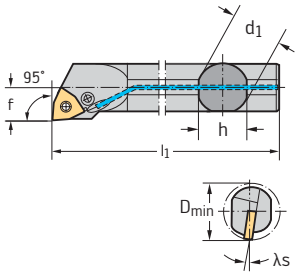


– A = Steel version with internal coolant supply





Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A20S-PWLNR/L06	6	25	20	13	18	250	-6°	-15°	WN .. 0604 ..
A25T-PWLNR/L06	6	32	25	17	23	300	-6°	-12°	
A32T-PWLNR/L06	6	40	32	22	30	300	-6°	-12°	
A25T-PWLNR/L08	8	32	25	17	23	300	-6°	-10°	WN .. 0804 ..
A32T-PWLNR/L08	8	40	32	22	30	300	-6°	-10°	

Measured with master insert: WN .. 060408 / WN .. 080408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A20S-PWLNR06/ordering example, left-hand tool: A20S-PWLNL06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	WN .. 0604 .. 25–32	WN .. 0604 .. 40	WN .. 0804 .. 32	WN .. 0804 .. 40
Shim for radius		AP172-WN0612 r ≤ 1,2 mm		AP170-WN0816 r ≤ 1,6 mm
Lever	KN108	KN101	KN128	KN102
Clamping screw Tightening torque	FS331 (SW 2) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm	FS332 (SW 2,5) 2,5 Nm	FS352 (SW 3) 5,0 Nm
Shim pin		RS101		RS102
Tapered assembly pin		MD101		MD101
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)

Accessories

Type	WN .. 0804 ..
Shim for radius	AP170-WN0808 r ≤ 0,8 mm

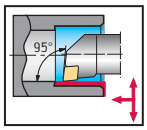
A 34 D 1 A 234 A 261

Boring bar – Screw clamping
A...-SCLC / E...-SCLC
Walter Turn



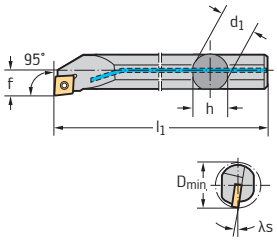


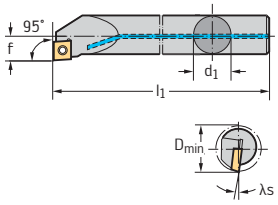
– A = Steel version with internal coolant supply
– E = Solid carbide version with internal coolant supply





Tool

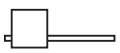


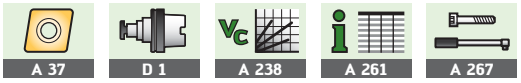


Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	$λ_s$	Type
A08H-SCLCR/L06	6	10	8	5	7	100	0°	-13,8°	CC .. 0602 ..
A10K-SCLCR/L06	6	12	10	6	9	125	0°	-10,9°	
A12M-SCLCR/L06	6	16	12	9	11	150	0°	-7,3°	
A16R-SCLCR/L09	9	20	16	11	15	200	0°	-8,4°	CC .. 09T3 ..
A20S-SCLCR/L09	9	25	20	13	18	250	0°	-5,7°	
A25T-SCLCR/L09	9	32	25	17	23	300	0°	-3,4°	
A25T-SCLCR/L12	12	32	25	17	23	300	0°	-4,6°	CC .. 1204 ..
A32T-SCLCR/L12	12	40	32	22	30	300	0°	-9,8°	
A08H-SCLCR/L06-R	6	10	8	5		100	0°	-13,8°	CC .. 0602 ..
E08K-SCLCR/L06-R	6	10	8	5		125	0°	-13,8°	
A10K-SCLCR/L06-R	6	12	10	6		125	0°	-10,9°	
E10M-SCLCR/L06-R	6	12	10	6		150	0°	-10,9°	
A12M-SCLCR/L06-R	6	16	12	9		150	0°	-7,3°	
E12Q-SCLCR/L06-R	6	16	12	9		180	0°	-7,3°	
A16R-SCLCR/L09-R	9	20	16	11		200	0°	-8,4°	CC .. 09T3 ..
E16R-SCLCR/L09-R	9	20	16	11		200	0°	-8,4°	
A20S-SCLCR/L09-R	9	25	20	13		250	0°	-5,7°	
E20S-SCLCR/L09-R	9	25	20	13		220	0°	-6°	
E25T-SCLCR/L09-R	9	32	25	17		270	0°	-3°	

Measured with master insert: CC .. 060204 / CC .. 09T308 / CC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle $λ_s$ – see "Technical information – ISO turning"
Ordering example, right-hand tool: A08H-SCLCR06/ordering example, left-hand tool: A08H-SCLCL06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	CC .. 0602 .. 10–16	CC .. 09T3 .. 20–25	CC .. 09T3 .. 32	CC .. 1204 .. 32	CC .. 1204 .. 40
 Clamping screw for indexable insert Tightening torque	FS2066 (Torx 7IP) 0,9 Nm	FS2062 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2064 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
 Shim for radius					AP314-CC1212 r ≤ 1,2 mm
 Screw for shim					FS2069 (SW 4)
 Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)	FS1496 (Torx 15IP / SW 4)

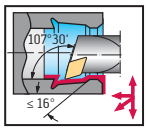


Boring bar – Screw clamping
A...-SDQC
Walter Turn



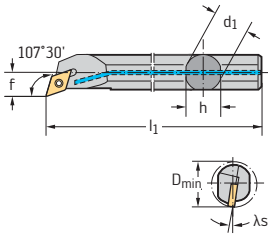


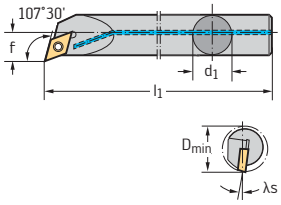
– A = Steel version with internal coolant supply





Tool





Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A12M-SDQCR/L07	7	16	12	9	11	150	0°	-7,1°	DC .. 0702 ..
A16R-SDQCR/L07	7	20	16	11	15	200	0°	-4,9°	
A20S-SDQCR/L11	11	25	20	13	18	250	0°	-5,9°	DC .. 11T3 ..
A25T-SDQCR/L11	11	32	25	17	23	300	0°	-3,5°	
A12M-SDQCR/L07-R	7	16	12	9		150	0°	-7,1°	DC .. 0702 ..
A16R-SDQCR/L07-R	7	20	16	11		200	0°	-4,9°	
A20S-SDQCR/L11-R	11	25	20	13		250	0°	-5,9°	DC .. 11T3 ..

Measured with master insert: DC .. 070204 / DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A12M-SDQCR07/ordering example, left-hand tool: A12M-SDQCL07
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

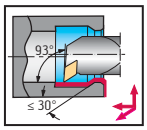
Type D_{min} [mm]	DC .. 0702 .. 16–20	DC .. 11T3 .. 25	DC .. 11T3 .. 32
Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2062 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

A 42 D 1 A 234 A 261 A 267

Boring bar – Screw clamping
A...-SDUC / E...-SDUC
Walter Turn

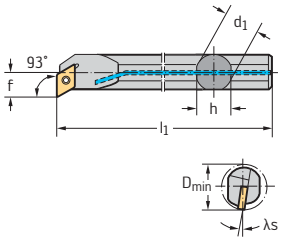


– A = Steel version with internal coolant supply
– E = Solid carbide version with internal coolant supply

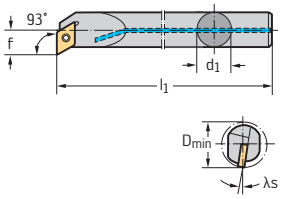




Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A10K-SDUCR/L07	7	13	10	7	9	125	0°	-9,0°	DC .. 0702 ..
A12M-SDUCR/L07	7	16	12	9	11	150	0°	-6,5°	
A16R-SDUCR/L07	7	20	16	11	15	200	0°	-4,3°	
A20S-SDUCR/L11	11	25	20	13	18	250	0°	-5,7°	DC .. 11T3 ..
A25T-SDUCR/L11	11	32	25	17	23	300	0°	-3,4°	
A32T-SDUCR/L11	11	40	32	22	30	300	0°	-3°	



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A10K-SDUCR/L07-R	7	15	10	7		125	0°	-7°	DC .. 0702 ..
E10M-SDUCR/L07-R	7	15	10	9		150	0°	-7,2°	
A12M-SDUCR/L07-R	7	18	12	9		150	0°	-5°	
E12Q-SDUCR/L07-R	7	18	12	11		180	0°	-5,3°	
A16R-SDUCR/L07-R	7	20	16	11		200	0°	-4,3°	
E16R-SDUCR/L07-R	7	22	16	13		200	0°	-3,6°	
A20S-SDUCR/L11-R	11	25	20	13		250	0°	-5,7°	DC .. 11T3 ..
E20S-SDUCR/L11-R	11	25	20	13		220	0°	-6°	
E25T-SDUCR/L11-R	11	32	25	17		270	0°	-3°	

Measured with master insert: DC .. 070204 / DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A10K-SDUCR07/ordering example, left-hand tool: A10K-SDUCL07
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

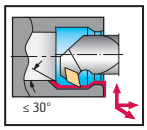
Type D_{min} [mm]	DC .. 0702 .. 13–22	DC .. 11T3 .. 25	DC .. 11T3 .. 32
Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2062 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

A 42 D 1 A 238 A 261 A 267

Boring bar – Screw clamping
A...-SDUC...-X
Walter Turn

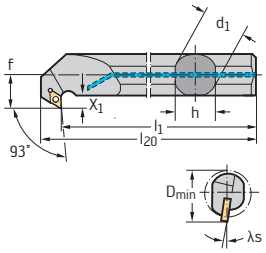


– A = Steel version with internal coolant supply
– Reverse copy boring bar





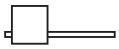
Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	l_{20} mm	γ	λ_s	Type
A16R-SDUCR/L07-X	7	22	16	13	15	200	212,2	0°	-4°	
A20S-SDUCR/L07-X	7	27	20	15	18	250	262,2	0°	-2°	DC .. 0702 ..
A25T-SDUCR/L07-X	7	33	25	18	23	300	312,2	0°	-1°	
A32T-SDUCR/L11-X	11	40	32	22	30	300	316,7	0°	-8°	DC .. 11T3 ..

Measured with master insert: DC .. 070204 / DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A16R-SDUCR07-X/ordering example, left-hand tool: A16R-SDUCL07-X
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

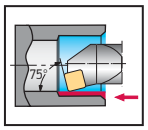
	Type	DC .. 0702 ..	DC .. 11T3 ..
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP315-DC1108 r ≤ 0,8 mm
	Screw for shim		FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

A 42 D 1 A 238 A 261 A 267

Boring bar – Screw clamping
A...-SSKC
Walter Turn

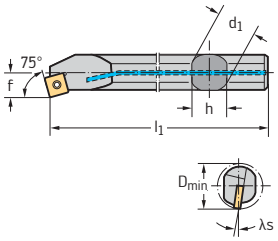


– A = Steel version with internal coolant supply





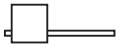
Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	$λ_s$	Type
A16R-SSKCR/L09	9	20	16	11	15	200	0°	-8,9°	SC .. 09T3 ..
A20S-SSKCR/L09	9	25	20	13	18	250	0°	-6,0°	
A25T-SSKCR/L12	12	32	25	17	23	300	0°	-4,7°	SC .. 1204 ..
A32T-SSKCR/L12	12	40	32	22	30	300	0°	-9,2°	

Measured with master insert: SC .. 09T308/SC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle $λ_s$ – see "Technical information – ISO turning"
Ordering example, right-hand tool: A16R-SSKCR09/ordering example, left-hand tool: A16R-SSKCL09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_{min} [mm]	SC .. 09T3 .. 20–25	SC .. 1204 .. 32	SC .. 1204 .. 40
	Clamping screw for indexable insert Tightening torque	FS2062 (Torx 15IP) 3,0 Nm	FS2064 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
	Shim			AP319-SC1212
	Screw for shim			FS2069 (SW 4)
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)	FS1496 (Torx 15IP / SW 4)









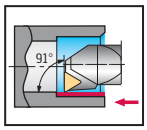


Boring bar – Screw clamping
A...-STFC / E...-STFC
Walter Turn



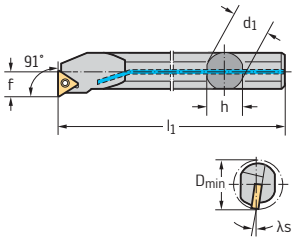


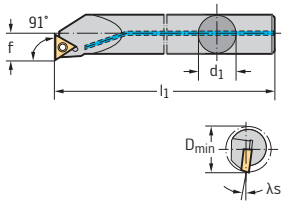
– A = Steel version with internal coolant supply
– E = Solid carbide version with internal coolant supply





Tool

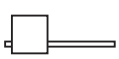


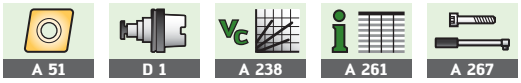


Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	$λ_s$	Type
A06F-STFCR/L06	6	8,5	6	4,5	5	80	0°	-12,2°	TC .. 06T1 ..
A08H-STFCR/L06	6	11	8	5,9	7	100	0°	-10,2°	
A10K-STFCR/L09	9	13	10	7	9	125	0°	-9,2°	TC .. 0902 ..
A12M-STFCR/L11	11	16	12	9	11	150	0°	-6,7°	TC .. 1102 ..
A16R-STFCR/L11	11	20	16	11	15	200	0°	-4,5°	
A20S-STFCR/L11	11	25	20	13	18	250	0°	-2,8°	
A25T-STFCR/L16	16	32	25	17	23	300	0°	-3,4°	TC .. 16T3 ..
A32T-STFCR/L16	16	40	32	22	30	300	0°	-7,9°	
A06F-STFCR/L06-R	6	8,5	6	4,5		80	0°	-12,2°	TC .. 06T1 ..
E06H-STFCR/L06-R	6	8,5	6	4,5		100	0°	-12,2°	
A08H-STFCR/L06-R	6	11	8	5,9		100	0°	-10,2°	
E08K-STFCR/L06-R	6	11	8	5,9		125	0°	-10,2°	
A10K-STFCR/L09-R	9	13	10	7		125	0°	-9,2°	TC .. 0902 ..
E10M-STFCR/L09-R	9	13	10	7		150	0°	-9,2°	
E12Q-STFCR/L09-R	9	16	12	9		180	0°	-6,7°	
A12M-STFCR/L11-R	11	16	12	9		150	0°	-6,5°	TC .. 1102 ..
A16R-STFCR/L11-R	11	20	16	11		200	0°	-4,5°	
E16R-STFCR/L11-R	11	20	16	11		200	0°	-4°	
E20S-STFCR/L11-R	11	25	20	13		220	0°	-3°	
E25T-STFCR/L16-R	16	32	25	17		270	0°	-3°	TC .. 16T3 ..

Measured with master insert: TC .. 06T102 / TC .. 090204 / TC .. 110204 / TC .. 16T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle $λ_s$ – see “Technical information – ISO turning”
Ordering example, right-hand tool: A06F-STFCR06/ordering example, left-hand tool: A06F-STFCL06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	TC .. 06T1 .. 8,5	TC .. 06T1 .. 11	TC .. 0902 .. 13–16	TC .. 1102 .. 16	TC .. 1102 .. 20–25	TC .. 16T3 .. 32	TC .. 16T3 .. 40
 Clamping screw for indexable insert Tightening torque	FS2147 (Torx 6IP) 0,5 Nm	FS2148 (Torx 6IP) 0,5 Nm	FS2149 (Torx 7IP) 0,9 Nm	FS2067 (Torx 7IP) 0,9 Nm	FS2061 (Torx 7IP) 0,9 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
 Shim for radius							AP317-TC1612 r ≤ 1,2 mm
 Screw for shim							FS2068 (SW 3,5)
 Torx key	FS2146 (Torx 6IP)	FS2146 (Torx 6IP)	FS1490 (Torx 7IP)	FS1490 (Torx 7IP)	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

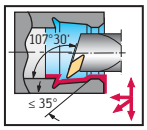


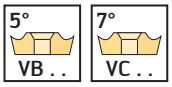
Boring bar – Screw clamping
A...-SVQB
Walter Turn





– A = Steel version with internal coolant supply





Tool

Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A16R-SVQBR/L11	11	22	16	13	15	200	0°	-6,9°	VB .. 1103 .. VC .. 1103 ..
A20S-SVQBR/L11	11	27	20	15	18	250	0°	-5°	
A25T-SVQBR/L11	11	33	25	18	23	300	0°	-3,5°	
A32T-SVQBR/L16	16	40	32	22	30	300	0°	-10,9°	VB .. 1604 .. VC .. 1604 ..
A40T-SVQBR/L16	16	50	40	27	37	300	0°	-7,9°	
A16R-SVQBR/L11-R	11	22	16	13		200	0°	-6,9°	VB .. 1103 .. VC .. 1103 ..
A20S-SVQBR/L11-R	11	27	20	15		250	0°	-5,0°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A16R-SVQBR11/ordering example, left-hand tool: A16R-SVQBL11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

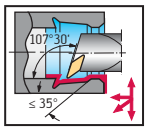
Type	VB .. 1103 .. VC .. 1103 ..	VB .. 1604 .. VC .. 1604 ..
Clamping screw for indexable insert Tightening torque	FS2172 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
Shim for radius		AP316-VB1608 r ≤ 0,8 mm
Screw for shim		FS2068 (SW 3,5)
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

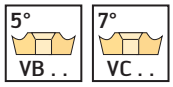
A 55 D 1 A 238 A 261 A 267

Boring bar – Lever clamp
A...-PVQB
Walter Turn

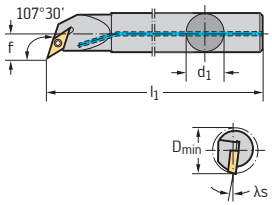


– A = Steel version with internal coolant supply





Tool



Designation		D_{min} mm	d_1 mm	f mm	l_1 mm	γ	λ_s	Type
A20Q-PVQBR/L11	11	25	20	13	180	0°	-6°	VB .. 1103 .. VC .. 1103 ..
A25R-PVQBR/L11	11	32	25	17	200	0°	-6°	
A32S-PVQBR/L16	16	40	32	22	250	0°	-8°	VB .. 1604 .. VC .. 1604 ..
A40T-PVQBR/L16	16	50	40	27	300	0°	-8°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A20Q-PVQBR11/ordering example, left-hand tool: A20Q-PVQBL11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_{min} [mm]	VB .. 1103 .. VC .. 1103 .. 25–32	VB .. 1604 .. VC .. 1604 .. 40	VB .. 1604 .. VC .. 1604 .. 50
	Shim for radius			AP153 r ≤ 0,8 mm
	Lever	KN118	KN114	KN110
	Clamping screw Tightening torque	FS347 (SW 2) 0,6 Nm	FS332 (SW 2,5) 2,5 Nm	FS351 (SW 2,5) 2,0 Nm
	Shim pin			RS101
	Tapered assembly pin			MD101
	Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)

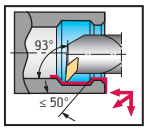
A 55 D 1 A 238 A 261 A 267

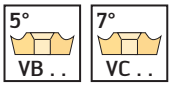
Boring bar – Screw clamping
A...-SVUB
Walter Turn





– A = Steel version with internal coolant supply





Tool

Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A16R-SVUBR/L11	11	22	16	13	15	200	0°	-6,5°	VB .. 1103 .. VC .. 1103 ..
A20S-SVUBR/L11	11	27	20	15	18	250	0°	-4,7°	
A25T-SVUBR/L11	11	33	25	18	23	300	0°	-3,3°	
A32T-SVUBR/L16	16	40	32	22	30	300	0°	-9,8°	VB .. 1604 .. VC .. 1604 ..
A40T-SVUBR/L16	16	50	40	27	37	300	0°	-6,9°	
A16R-SVUBR/L11-R	11	22	16	13		200	0°	-6,5°	VB .. 1103 .. VC .. 1103 ..
A20S-SVUBR/L11-R	11	27	20	15		250	0°	-4,6°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A16R-SVUBR11/ordering example, left-hand tool: A16R-SVUBL11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

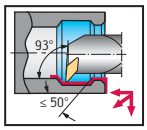
Type	VB .. 1103 .. VC .. 1103 ..	VB .. 1604 .. VC .. 1604 ..
Clamping screw for indexable insert Tightening torque	FS2172 (Torx 7IP) 0,9 Nm	FS2060 (Torx 15IP) 3,0 Nm
Shim for radius		AP316-VB1608 r ≤ 0,8 mm
Screw for shim		FS2068 (SW 3,5)
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)

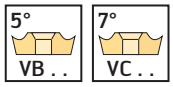
A 55 D 1 A 238 A 261 A 267

Boring bar – Lever clamp
A...-PVUB
Walter Turn

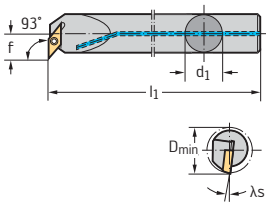


– A = Steel version with internal coolant supply





Tool



Designation		D_{min} mm	d_1 mm	f mm	l_1 mm	γ	λ_s	Type
A20Q-PVUBR/L11	11	25	20	13	180	0°	-6°	VB .. 1103 .. VC .. 1103 ..
A25R-PVUBR/L11	11	32	25	17	200	0°	-6°	
A32S-PVUBR/L16	16	40	32	22	250	0°	-8°	VB .. 1604 .. VC .. 1604 ..
A40T-PVUBR/L16	16	50	40	27	300	0°	-8°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A20Q-PVUBR11/ordering example, left-hand tool: A20Q-PVUBL11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_{min} [mm]	VB .. 1103 .. VC .. 1103 .. 25–32	VB .. 1604 .. VC .. 1604 .. 40	VB .. 1604 .. VC .. 1604 .. 50
	Shim for radius			AP153 r ≤ 0,8 mm
	Lever	KN118	KN114	KN110
	Clamping screw Tightening torque	FS347 (SW 2) 0,6 Nm	FS332 (SW 2,5) 2,5 Nm	FS351 (SW 2,5) 2,0 Nm
	Shim pin			RS101
	Tapered assembly pin			MD101
	Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)

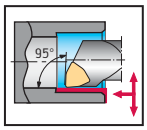
A 55 D 1 A 238 A 261 A 267

Boring bar – Screw clamping
A...-SWLC
Walter Turn





– A = Steel version with internal coolant supply





Tool

Designation	D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	γ	λ_s	Type
A10K-SWLCR/L04	4	12	10	7	9	125	0°	-10°	WC .. 0402 ..
A12M-SWLCR/L04	4	16	12	9	11	150	0°	-7°	
A16R-SWLCR/L04	4	20	16	11	15	200	0°	-5°	
A20S-SWLCR/L06	6	25	20	13	18	250	0°	-6°	WC .. 06T3 ..
A25T-SWLCR/L06	6	32	25	17	23	300	0°	-3,5°	
A32T-SWLCR/L06	6	40	32	22	30	300	0°	-5,5°	
A25T-SWLCR/L08	8	32	25	17	23	300	0°	-4°	WC .. 0804 ..
A32T-SWLCR/L08	8	40	32	22	30	300	0°	-9°	
A10K-SWLCR/L04-R	4	13	10	7		125	0°	-10°	WC .. 0402 ..
A12M-SWLCR/L04-R	4	16	12	9		150	0°	-7°	
A16R-SWLCR/L04-R	4	20	16	11		200	0°	-5°	
A20S-SWLCR/L06-R	6	25	20	13		250	0°	-6°	WC .. 06T3 ..

Measured with master insert: WC .. 040204 / WC .. 06T308 / WC .. 080408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: A10K-SWLCR04/ordering example, left-hand tool: A10K-SWLCL04
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	WC .. 0402 .. 12–20	WC .. 06T3 .. 25–32	WC .. 06T3 .. 40	WC .. 0804 .. 32	WC .. 0804 .. 40
Clamping screw for indexable insert Tightening torque	FS2067 (Torx 7IP) 0,9 Nm	FS2062 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2064 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
Shim			AP318-WC0608		AP320-WC0812
Screw for shim			FS2068 (SW 3,5)		FS2069 (SW 4)
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)	FS1496 (Torx 15IP / SW 4)

A 58 D 1 A 238 A 261 A 267

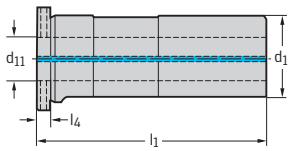
Boring bar adaptor
AK600

Walter Turn



– With Weldon shank in accordance with DIN 9766
– Self-centring for cylindrical round shank

Tool	Designation	d_1 mm	d_{11} mm	l_1 mm	l_4 mm	kg
Parallel shank with surface in accordance with ISO 9766	AK600.25.061.06	25	6	61	5	0,2
	AK600.25.061.08	25	8	61	5	0,2
	AK600.25.061.10	25	10	61	5	0,2
	AK600.25.061.12	25	12	61	5	0,1
	AK600.25.061.16	25	16	61	5	0,2
	AK600.32.085.06	32	6	85	5	0,6
	AK600.32.085.08	32	8	85	5	0,5
	AK600.32.085.10	32	10	85	5	0,5
	AK600.32.085.12	32	12	85	5	0,5
	AK600.32.085.16	32	16	85	5	0,4
	AK600.32.085.20	32	20	85	5	0,3
	AK600.40.105.06	40	6	105	5	1,0
	AK600.40.105.08	40	8	105	5	1,0
	AK600.40.105.10	40	10	105	5	0,9
	AK600.40.105.12	40	12	105	5	0,9
	AK600.40.105.16	40	16	105	5	0,9
	AK600.40.105.20	40	20	105	5	0,8
	AK600.40.105.25	40	25	105	5	0,7



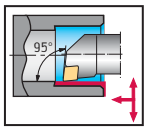
Note: Groove for self-centring is present on all Walter Turn boring bars with fully rounded shank (-R) dia. 6-25 mm.

D 1 A 267 A 191

Boring bar – Rigid clamping
C...-DCLN
Walter Turn

– Walter Capto™



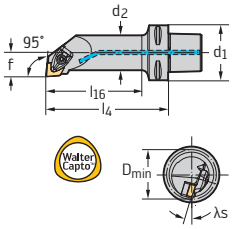






Tool

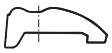
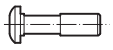
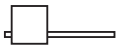
Walter Capto™ in accordance with ISO 26623



Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C4-DCLNR/L-17090-12	12	C4	32	25	17	90	68	-6°	-12°	
C5-DCLNR/L-17090-12	12	C5	32	25	17	90	66	-6°	-12°	CN .. 1204 ..
C6-DCLNR/L-17100-12	12	C6	32	25	17	100	72	-6°	-12°	
C6-DCLNR/L-27140-16	16	C6	50	40	27	140	114	-6°	-16°	CN .. 1606 ..

Measured with master insert: CN .. 120408 / CN .. 160612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DCLNR-17090-12/ordering example, left-hand tool: C4-DCLNL-17090-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	CN .. 1204 ..	CN .. 1606 ..
	Shim	AP354-CN12	AP302-CN16
	Screw for shim Tightening torque	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
	Clamp	PK241	PK242
	Clamp screw Tightening torque	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
	Pressure spring	FS1470	FS1471
	Pin	RS117	RS117
	Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

Accessories

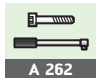
	Type	CN .. 1204 ..	CN .. 1606 ..
	Clamp set (standard assembly parts)	PK241 SET	PK242 SET
	Carbide clamp set Insert with hole	PK245 SET	PK246 SET
	Carbide clamp set Insert without hole	PK254 SET	







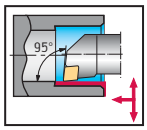




Boring bar – Lever clamp
C...-PCLN
Walter Turn

– Walter Capto™

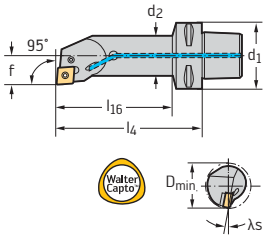




CN . . CN . .

Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C3-PCLNR/L-17090-12	12	C3	32	25	17	90	75	-6°	-11°	CN .. 1204 ..
C3-PCLNR/L-22096-12	12	C3	40	32	22	96	82	-6°	-11°	
C4-PCLNR/L-17090-12	12	C4	32	25	17	90	69	-6°	-11°	
C4-PCLNR/L-22110-12	12	C4	40	32	22	110	89	-6°	-11°	
C4-PCLNR/L-27080-12	12	C4	50	40	27	80	60	-6°	-10°	
C4-PCLNR/L-27120-12	12	C4	50	40	27	120	100	-6°	-11°	
C5-PCLNR/L-17090-12	12	C5	32	25	17	90	67	-6°	-11°	
C5-PCLNR/L-22110-12	12	C5	40	32	22	110	88	-6°	-11°	
C5-PCLNR/L-27140-12	12	C5	50	40	27	140	119	-6°	-10°	
C5-PCLNR/L-35100-12	12	C5	63	50	35	100	81	-6°	-7°	
C6-PCLNR/L-17100-12	12	C6	32	25	17	100	74	-6°	-11°	
C6-PCLNR/L-22110-12	12	C6	40	32	22	110	84	-6°	-11°	
C5-PCLNR/L-35150-16	16	C5	63	50	35	150	131	-6°	-11°	CN .. 1606 ..
C6-PCLNR/L-27140-16	16	C6	50	40	27	140	115	-6°	-11°	
C6-PCLNR/L-35175-16	16	C6	63	50	35	175	152	-6°	-11°	

Measured with master insert: CN .. 120408 / CN .. 160612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-PCLNR-17090-12/ordering example, left-hand tool: C3-PCLNL-17090-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	CN .. 1204 .. 32	CN .. 1204 .. 40–63	CN .. 1606 .. 50–63
Shim for radius		AP134-CN1216 r ≤ 1,6 mm	AP135-CN1624 r ≤ 2,4 mm
Lever	KN109	KN102	KN104
Clamping screw Tightening torque	FS332 (SW 2,5) 2,5 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm
Shim pin		RS102	RS103
Tapered assembly pin		MD101	MD102
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

Accessories

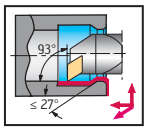
Type	CN .. 1204 ..	CN .. 1606 ..
Shim for radius	AP134-CN1208 r ≤ 0,8 mm	AP135-CN1616 r ≤ 1,6 mm

A 20 D 1 A 234 A 261

Boring bar – Rigid clamping
C...-DDUN
Walter Turn



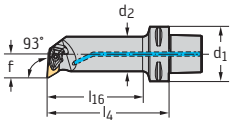
– Walter Capto™

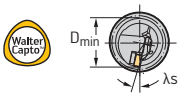


DN . .

Tool

Walter Capto™ in accordance with ISO 26623

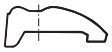
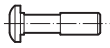
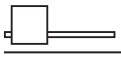




Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C4-DDUNR/L-17090-11	11	C4	32	25	17	90	68	-6°	-12°	DN .. 1104 ..
C5-DDUNR/L-17090-11	11	C5	32	25	17	90	66	-6°	-12°	
C4-DDUNR/L-27080-15	15	C4	50	40	27	80	59	-6°	-11°	DN .. 1506 ..
C5-DDUNR/L-27140-15	15	C5	50	40	27	140	118	-6°	-11°	
C6-DDUNR/L-27140-15	15	C6	50	40	27	140	114	-6°	-11°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DDUNR-17090-11/ordering example, left-hand tool: C4-DDUNL-17090-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	DN .. 1104 ..	DN .. 1506 ..
	Shim	AP305-DN11	AP304-DN15
	Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm
	Clamp	PK240	PK241
	Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm
	Pressure spring	FS1469	FS1470
	Pin	RS116	RS117
	Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)

Accessories

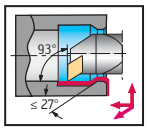
	Type	DN .. 1104 ..	DN .. 1506 ..
	Clamp set (standard assembly parts)	PK240 SET	PK241 SET
	Carbide clamp set Insert with hole		PK245 SET
	Carbide clamp set Insert without hole		PK254 SET
	Shim for DN .. 1504 ..		AP304-DN1504

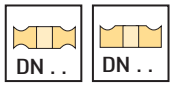
A 24 D 1 A 234 A 261 A 262

Boring bar – Lever clamp
C...-PDUN
Walter Turn



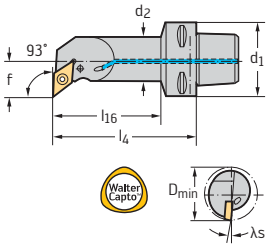
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Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C3-PDUNR/L-17090-11	11	C3	32	25	17	90	75	-6°	-11°	DN .. 1104 ..
C3-PDUNR/L-22064-11	11	C3	40	32	22	64	49	-6°	-10°	
C3-PDUNR/L-22096-11	11	C3	40	32	22	96	81	-6°	-10°	
C4-PDUNR/L-17090-11	11	C4	32	25	17	90	69	-6°	-11°	
C4-PDUNR/L-22110-11	11	C4	40	32	22	110	89	-6°	-10°	
C5-PDUNR/L-17090-11	11	C5	32	25	17	90	67	-6°	-11°	
C5-PDUNR/L-22110-11	11	C5	40	32	22	110	88	-6°	-10°	
C6-PDUNR/L-17100-11	11	C6	32	25	17	100	74	-6°	-11°	
C4-PDUNR/L-27080-15	15	C4	50	40	27	80	60	-6°	-11°	DN .. 1506 ..
C4-PDUNR/L-27120-15	15	C4	50	40	27	120	100	-6°	-11°	
C5-PDUNR/L-27140-15	15	C5	50	40	27	140	119	-6°	-11°	
C5-PDUNR/L-35100-15	15	C5	63	50	35	100	81	-6°	-10°	
C5-PDUNR/L-35150-15	15	C5	63	50	35	150	131	-6°	-10°	
C6-PDUNR/L-27140-15	15	C6	50	40	27	140	115	-6°	-11°	
C6-PDUNR/L-35175-15	15	C6	63	50	35	175	152	-6°	-10°	

Measured with master insert: DN .. 110408 / DN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-PDUNR-17090-11/ordering example, left-hand tool: C3-PDUNL-17090-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_{min} [mm]	DN .. 1104 .. 32	DN .. 1104 .. 40	DN .. 1506 .. 50–63
	Shim for radius		AP171-DN1112 r ≤ 1,2 mm	AP145-DN1516 r ≤ 1,6 mm
	Lever	KN120	KN119	KN103
	Clamping screw Tightening torque	FS905 (SW 2) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm	FS355 (SW 3) 5,0 Nm
	Shim pin		RS101	RS102
	Tapered assembly pin		MD101	MD101
	Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)

Accessories

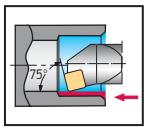
	Type	DN .. 1104 ..	DN .. 1506 ..
	Shim for radius	AP171-DN1108 r ≤ 0,8 mm	AP145-DN1508 r ≤ 0,8 mm
	Shim for DN .. 1504 .. for radius		AP357-DN1508 r ≤ 0,8 mm
	Shim for DN .. 1504 .. for radius		AP357-DN1516 r ≤ 1,6 mm

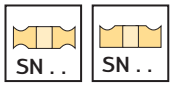
A 24 D 1 A 234 A 261

Boring bar – Lever clamp
C...-PSKN
Walter Turn



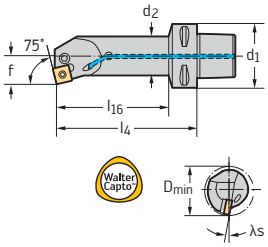
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C4-PSKNR/L-17090-12	12	C4	32	25	17	90	69	-6°	-11°	
C5-PSKNR/L-17090-12	12	C5	32	25	17	90	67	-6°	-11°	SN .. 1204 ..
C5-PSKNR/L-27140-12	12	C5	50	40	27	140	119	-6°	-10°	
C6-PSKNR/L-35175-15	15	C6	63	50	35	175	152	-6°	-9°	SN .. 1506 ..

Measured with master insert: SN .. 120408 / SN .. 150608
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-PSKNR-17090-12/ordering example, left-hand tool: C4-PSKNL-17090-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	SN .. 1204 .. 32	SN .. 1204 .. 50	SN .. 1506 .. 63
Shim for radius		AP141-SN1216 r ≤ 1,6 mm	AP142-SN1524 r ≤ 2,4 mm
Lever	KN109	KN102	KN104
Clamping screw Tightening torque	FS332 (SW 2,5) 2,5 Nm	FS352 (SW 3) 5,0 Nm	FS354 (SW 3) 5,0 Nm
Shim pin		RS102	RS103
Tapered assembly pin		MD101	MD102
Allen key	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

Accessories

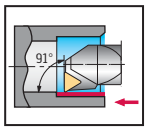
Type	SN .. 1204 ..	SN .. 1506 ..
Shim for radius	AP141-SN1208 r ≤ 0,8 mm	AP142-SN1516 r ≤ 1,6 mm

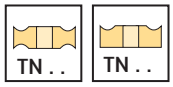
A 27 D 1 A 234 A 261

Boring bar – Lever clamp
C...-PTFN
Walter Turn



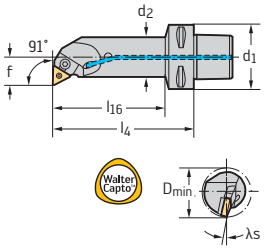
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C4-PTFNR/L-17090-16W	16	C4	32	25	17	90	69	-6°	-13°	
C4-PTFNR/L-22110-16W	16	C4	40	32	22	110	89	-6°	-12°	
C4-PTFNR/L-27120-16W	16	C4	50	40	27	120	100	-6°	-11°	
C5-PTFNR/L-17090-16W	16	C5	32	25	17	90	67	-6°	-13°	TN .. 1604 ..
C5-PTFNR/L-22110-16W	16	C5	40	32	22	110	88	-6°	-12°	
C5-PTFNR/L-27140-16W	16	C5	50	40	27	140	119	-6°	-11°	
C6-PTFNR/L-22110-16W	16	C6	40	32	22	110	84	-6°	-12°	
C5-PTFNR/L-35150-22W	22	C5	63	50	35	150	131	-6°	-11°	
C6-PTFNR/L-27140-22W	22	C6	50	40	27	140	115	-6°	-11°	TN .. 2204 ..
C6-PTFNR/L-35175-22W	22	C6	63	50	35	175	152	-6°	-10°	

Measured with master insert: TN .. 160408 / TN .. 220408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-PTFNR-17090-16W/ordering example, left-hand tool: C4-PTFNL-17090-16W
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

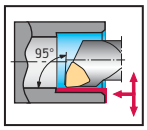
Type D_{min} [mm]	TN .. 1604 .. 32	TN .. 1604 .. 40–50	TN .. 2204 .. 50–63
Shim for radius		AP147 r ≤ 1,6 mm	AP148 r ≤ 1,6 mm
Wedge set	FK307 (SW 3)	FK308 (SW 3)	FK309 (SW 4)
Pin	RS113	RS114	RS115
Screw	FS1156 (Torx 9IP)	FS1156 (Torx 9IP)	FS1158 (Torx 15IP)
Allen key	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)

A 30 D 1 A 234 A 261

Boring bar – Rigid clamping
C...-DWLN
Walter Turn



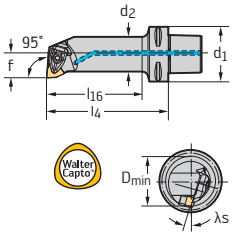
– Walter Capto™





Tool

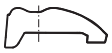
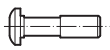
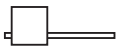
Walter Capto™ in accordance with ISO 26623



Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C4-DWLNR/L-13075-06	6	C4	27	20	13	75	52	-6°	-17°	WN .. 0604 ..
C4-DWLNR/L-17090-08	8	C4	33	25	17	90	68	-6°	-12°	WN .. 0804 ..
C5-DWLNR/L-17090-08	8	C5	33	25	17	90	66	-6°	-12°	
C6-DWLNR/L-27140-10	10	C6	50	40	27	140	114	-6°	-16°	WN .. 1006 ..

Measured with master insert: WN .. 060408 / WN .. 080408 / WN .. 100612
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C4-DWLNR-13075-06/ordering example, left-hand tool: C4-DWLNL-13075-06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	WN .. 0604 ..	WN .. 0804 ..	WN .. 1006 ..
	Shim	AP306-WN06	AP331-WN08	AP311-WN10
	Screw for shim Tightening torque	FS1462 (Torx 9IP) 1,5 Nm	FS1461 (Torx 15IP) 2,5 Nm	FS1463 (Torx 20IP) 5,0 Nm
	Clamp	PK240	PK241	PK242
	Clamp screw Tightening torque	FS1472 (Torx 9IP) 1,7 Nm	FS1473 (Torx 15IP) 3,9 Nm	FS1474 (Torx 20IP) 6,4 Nm
	Pressure spring	FS1469	FS1470	FS1471
	Pin	RS116	RS117	RS117
	Torx key	FS1466 (Torx 9IP)	FS1465 (Torx 15IP / SW 3,5)	FS1464 (Torx 20IP)

Accessories

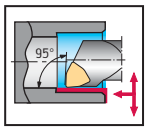
	Type	WN .. 0604 ..	WN .. 0804 ..	WN .. 1006 ..
	Clamp set (standard assembly parts)	PK240 SET	PK241 SET	PK242 SET
	Carbide clamp set Insert with hole		PK245 SET	PK246 SET
	Carbide clamp set Insert without hole		PK254 SET	

A 34 D 1 A 234 A 261 A 262

Boring bar – Lever clamp
C...-PWLN
Walter Turn



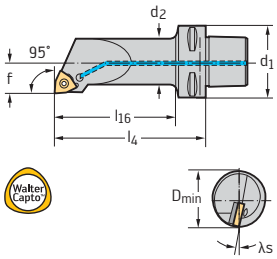
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C3-PWLNR/L-13075-06	6	C3	25	20	13	75	58	-6°	-15°	WN .. 0604 ..
C4-PWLNR/L-13075-06	6	C4	25	20	13	75	52	-6°	-15°	
C4-PWLNR/L-17090-06	6	C4	32	25	17	90	68	-6°	-10°	
C5-PWLNR/L-22110-06	6	C5	40	32	22	110	88	-6°	-12°	
C3-PWLNR/L-17090-08	8	C3	32	25	17	90	74	-6°	-10°	WN .. 0804 ..
C4-PWLNR/L-17090-08	8	C4	32	25	17	90	67	-6°	-10°	
C4-PWLNR/L-22110-08	8	C4	40	32	22	110	89	-6°	-10°	
C4-PWLNR/L-27120-08	8	C4	50	40	27	120	100	-6°	-10°	
C5-PWLNR/L-17090-08	8	C5	32	25	17	90	67	-6°	-10°	
C5-PWLNR/L-22110-08	8	C5	40	32	22	110	88	-6°	-14°	
C5-PWLNR/L-27140-08	8	C5	50	40	27	140	119	-6°	-10°	
C6-PWLNR/L-27140-08	8	C6	50	40	27	140	115	-6°	-10°	
C6-PWLNR/L-35175-08	8	C6	63	50	35	175	152	-6°	-10°	

Measured with master insert: WN .. 060408 / WN .. 080408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-PWLNR-13075-06/ordering example, left-hand tool: C3-PWLNL-13075-06
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_{min} [mm]	WN .. 0604 .. 25–32	WN .. 0604 .. 40	WN .. 0804 .. 32	WN .. 0804 .. 40	WN .. 0804 .. 50–63
Shim for radius		AP172-WN0612 r ≤ 1,2 mm		AP170-WN0816 r ≤ 1,6 mm	AP170-WN0816 r ≤ 1,6 mm
Lever	KN108	KN101	KN109	KN121	KN102
Clamping screw Tightening torque	FS331 (SW 2) 2,0 Nm	FS351 (SW 2,5) 2,0 Nm	FS332 (SW 2,5) 2,5 Nm	FS2129 (SW 3) 5,0 Nm	FS352 (SW 3) 5,0 Nm
Shim pin		RS101		RS102	RS102
Tapered assembly pin		MD101		MD101	MD101
Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)

Accessories

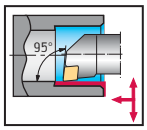
Type	WN .. 0804 ..
Shim for radius	AP170-WN0808 r ≤ 0,8 mm

A 34 D 1 A 234 A 261

Boring bar – Screw clamping
C...-SCLC
Walter Turn



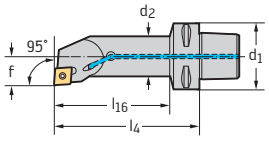
– Walter Capto™

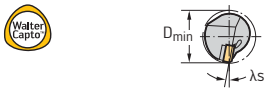




Tool

Walter Capto™ in accordance with ISO 26623

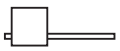




Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C3-SCLCR/L-11065-09	9	C3	20	16	11	65	48	0°	-8°	CC .. 09T3 ..
C3-SCLCR/L-13075-09	9	C3	25	20	13	75	58	0°	-6°	
C3-SCLCR/L-17090-09	9	C3	32	25	17	90	74	0°	-3°	
C4-SCLCR/L-11070-09	9	C4	20	16	11	70	47	0°	-8°	
C4-SCLCR/L-13080-09	9	C4	25	20	13	80	57	0°	-6°	
C4-SCLCR/L-17090-09	9	C4	32	25	17	90	68	0°	-3°	
C4-SCLCR/L-27080-09	9	C4	50	40	27	80	60	0°	-6°	
C5-SCLCR/L-11070-09	9	C5	20	16	11	70	46	0°	-8°	
C5-SCLCR/L-13080-09	9	C5	25	20	13	80	56	0°	-6°	
C5-SCLCR/L-17090-09	9	C5	32	25	17	90	67	0°	-3°	
C5-SCLCR/L-35100-09	9	C5	63	50	35	100	80	0°	-5°	
C4-SCLCR/L-17090-12	12	C4	32	25	17	90	68	0°	-5°	CC .. 1204 ..
C4-SCLCR/L-22110-12	12	C4	40	32	22	110	89	0°	-10°	
C4-SCLCR/L-27080-12	12	C4	50	40	27	80	60	0°	-7°	
C5-SCLCR/L-17090-12	12	C5	32	25	17	90	67	0°	-5°	
C5-SCLCR/L-22110-12	12	C5	40	32	22	110	88	0°	-10°	
C5-SCLCR/L-27140-12	12	C5	50	40	27	140	119	0°	-7°	

Measured with master insert: CC .. 09T308 / CC .. 120408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-SCLCR-11065-09/ordering example, left-hand tool: C3-SCLCL-11065-09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

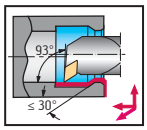
Type D_{min} [mm]	CC .. 09T3 .. 20–25	CC .. 09T3 .. 32	CC .. 09T3 .. 50–63	CC .. 1204 .. 32	CC .. 1204 .. 40–50
 Clamping screw for indexable insert Tightening torque	FS2062 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm	FS2064 (Torx 15IP) 3,0 Nm	FS2065 (Torx 15IP) 3,0 Nm
 Shim for radius			AP313-CC0908 r ≤ 0,8 mm		AP314-CC1212 r ≤ 1,2 mm
 Screw for shim			FS2068 (SW 3,5)		FS2069 (SW 4)
 Torx key	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1496 (Torx 15IP / SW 4)	FS1496 (Torx 15IP / SW 4)

A 37 D 1 A 238 A 261

Boring bar – Screw clamping
C...-SDUC
Walter Turn



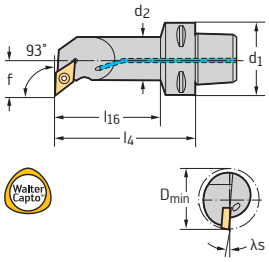
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Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C3-SDUCR/L-11065-07	7	C3	20	16	11	65	48	0°	-4°	
C4-SDUCR/L-11070-07	7	C4	20	16	11	70	47	0°	-4°	DC .. 0702 ..
C5-SDUCR/L-11070-07	7	C5	20	16	11	70	46	0°	-4°	
C3-SDUCR/L-13075-11	11	C3	25	20	13	75	58	0°	-6°	
C3-SDUCR/L-17090-11	11	C3	32	25	17	90	73	0°	-3°	
C4-SDUCR/L-13080-11	11	C4	25	20	13	80	57	0°	-6°	
C4-SDUCR/L-17090-11	11	C4	32	25	17	90	68	0°	-3°	
C4-SDUCR/L-22110-11	11	C4	40	32	22	110	89	0°	-8°	DC .. 11T3 ..
C4-SDUCR/L-27080-11	11	C4	50	40	27	80	60	0°	-5°	
C5-SDUCR/L-13080-11	11	C5	25	20	13	80	56	0°	-6°	
C5-SDUCR/L-17090-11	11	C5	32	25	17	90	67	0°	-3°	
C5-SDUCR/L-22110-11	11	C5	40	32	22	110	88	0°	-8°	

Measured with master insert: DC .. 070204 / DC .. 11T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-SDUCR-11065-07/ordering example, left-hand tool: C3-SDUCL-11065-07
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

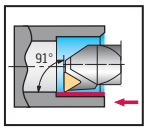
Type D_{min} [mm]	DC .. 0702 .. 20	DC .. 11T3 .. 25	DC .. 11T3 .. 32	DC .. 11T3 .. 40–50
Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2062 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
Shim for radius				AP315-DC1108 r ≤ 0,8 mm
Screw for shim				FS2068 (SW 3,5)
Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

A 42 D 1 A 238 A 261

Boring bar – Screw clamping
C...-STFC
Walter Turn



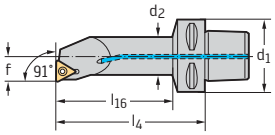
– Walter Capto™

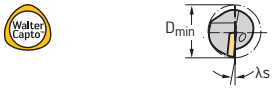




Tool

Walter Capto™ in accordance with ISO 26623

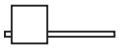




Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C3-STFCR/L-11065-11	11	C3	20	16	11	65	48	0°	-12°	TC .. 1102 ..
C4-STFCR/L-11070-11	11	C4	20	16	11	70	47	0°	-12°	
C4-STFCR/L-13080-11	11	C4	25	20	13	80	57	0°	-10°	
C5-STFCR/L-11070-11	11	C5	20	16	11	70	46	0°	-12°	
C5-STFCR/L-13080-11	11	C5	25	20	13	80	56	0°	-3°	
C4-STFCR/L-17090-16	16	C4	32	25	17	90	68	0°	-3°	TC .. 16T3 ..
C4-STFCR/L-22110-16	16	C4	40	32	22	110	89	0°	-8°	
C5-STFCR/L-17090-16	16	C5	32	25	17	90	67	0°	-3°	
C5-STFCR/L-22110-16	16	C5	40	32	22	110	88	0°	-8°	

Measured with master insert: TC .. 110204 / TC .. 16T308
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-STFCR-11065-11/ordering example, left-hand tool: C3-STFCL-11065-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

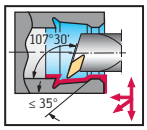
	Type D_{min} [mm]	TC .. 1102 .. 20–25	TC .. 16T3 .. 32	TC .. 16T3 .. 40
	Clamping screw for indexable insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius			AP317-TC1612 r ≤ 1,2 mm
	Screw for shim			FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

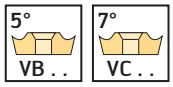
A 51 D 1 A 238 A 261

Boring bar – Screw clamping
C...-SVQB
Walter Turn



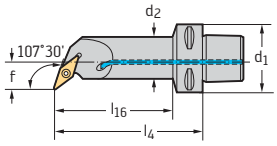
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623

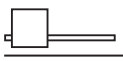




Designation		d_1	D_{min} mm	d_2 mm	f mm	l_4 mm	l_{16} mm	γ	λ_s	Type
C3-SVQBR/L-13070-11	11	C3	22	16	13	70	53	0°	-7°	
C3-SVQBR/L-15080-11	11	C3	27	20	15	80	63	0°	-5°	
C4-SVQBR/L-13070-11	11	C4	25	20	13	70	47	0°	-6°	VB .. 1103 .. VC .. 1103 ..
C4-SVQBR/L-15080-11	11	C4	27	20	15	80	57	0°	-5°	
C5-SVQBR/L-15080-11	11	C5	27	20	15	80	56	0°	-5°	
C3-SVQBR/L-18090-16	16	C3	33	25	18	90	74	0°	-7°	
C3-SVQBR/L-22096-16	16	C3	40	32	22	96	81	0°	-11°	
C4-SVQBR/L-18090-16	16	C4	33	25	18	90	68	0°	-7°	
C4-SVQBR/L-22110-16	16	C4	40	32	22	110	89	0°	-11°	
C4-SVQBR/L-27080-16	16	C4	50	40	27	80	60	0°	-8°	
C4-SVQBR/L-27120-16	16	C4	50	40	27	120	100	0°	-8°	
C5-SVQBR/L-18090-16	16	C5	33	25	18	90	67	0°	-7°	VB .. 1604 .. VC .. 1604 ..
C5-SVQBR/L-22110-16	16	C5	40	32	22	110	88	0°	-11°	
C5-SVQBR/L-27140-16	16	C5	50	40	27	140	119	0°	-8°	
C5-SVQBR/L-35100-16	16	C5	63	50	35	100	80	0°	-5°	
C5-SVQBR/L-35150-16	16	C5	63	50	35	150	130	0°	-5°	
C6-SVQBR/L-22120-16	16	C6	40	32	22	120	94	0°	-11°	
C6-SVQBR/L-27145-16	16	C6	50	40	27	145	120	0°	-8°	
C6-SVQBR/L-35175-16	16	C6	63	50	35	175	151	0°	-5°	

Measured with master insert: VB .. 110304 / VB .. 160408
For information regarding the rake angle γ (for indexable inserts without chip groove) and regarding the inclination angle λ_s – see "Technical information – ISO turning"
Ordering example, right-hand tool: C3-SVQBR-13070-11/ordering example, left-hand tool: C3-SVQBL-13070-11
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_{min} [mm]	VB .. 1103 .. VC .. 1103 .. 22–27	VB .. 1604 .. VC .. 1604 .. 33	VB .. 1604 .. VC .. 1604 .. 40–63
	Clamping screw for indexable insert Tightening torque	FS2172 (Torx 7IP) 0,9 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2060 (Torx 15IP) 3,0 Nm
	Shim for radius		AP316-VB1608 r ≤ 0,8 mm	AP316-VB1608 r ≤ 0,8 mm
	Screw for shim		FS2068 (SW 3,5)	FS2068 (SW 3,5)
	Torx key	FS1490 (Torx 7IP)	FS1465 (Torx 15IP / SW 3,5)	FS1465 (Torx 15IP / SW 3,5)

Accessories

	Type	VB .. 1604 .. VC .. 1604 ..
	Shim for radius	AP330-VB1612 r ≤ 1,2 mm

A 55 D 1 A 238 A 261

Cutting data for turning inserts – Negative basic shape
Carbide grades

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades: Starting values for cutting speed v_c [m/min] HC WPP01 0,10	0,20	0,30
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●	●	530	510	480
		C > 0.25 to ≤ 0.55%	Annealed	190	640	P2	●●	●	420	400	380
		C > 0.25 to ≤ 0.55%	Heat-treated	210	710	P3	●●	●	320	300	290
		C > 0.55%	Annealed	190	640	P4	●●	●	360	340	320
		C > 0.55%	Heat-treated	300	1010	P5	●●	●	270	250	220
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●	500	480	460
	Low-alloyed steel	Annealed		175	590	P7	●●	●	380	370	350
		Heat-treated		285	960	P8	●●	●	240	220	210
		Heat-treated		380	1280	P9	●●	●	180	170	150
		Heat-treated		430	1480	P10	●●	●	100	90	80
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●	●	340	330	320
		Hardened and tempered		300	1010	P12	●●	●	250	240	230
		Hardened and tempered		380	1280	P13	●●	●	90	80	70
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●	●			
		Martensitic, heat-treated		330	1110	P15	●●	●			
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●			
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●			
		Austenitic/ferritic, duplex		230	780	M3	●●	●			
K	Malleable cast iron	Ferritic		200	400	K1	●●	●	300	270	250
		Pearlitic		260	700	K2	●●	●	260	230	210
	Grey cast iron	Low tensile strength		180	200	K3	●●	●	550	490	440
		High tensile strength/austenitic		245	350	K4	●●	●	300	270	250
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●	320	290	260
		Pearlitic		265	700	K6	●●	●	230	210	190
	GGV (CGI)			230	400	K7	●●	●			
N	Wrought aluminium alloys	Not hardenable		30	–	N1					
		Hardenable, hardened		100	340	N2					
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3					
		≤ 12% Si, hardenable, hardened		90	310	N4					
		> 12% Si, not hardenable		130	450	N5					
	Magnesium-based alloys			70	250	N6					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7					
		Brass, bronze, red brass		90	310	N8					
		Cu-alloys, short-chipping		110	380	N9					
		High-tensile, Ampco		300	1010	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●	●			
			Hardened	280	940	S2	●●	●			
		Ni or Co base	Annealed	250	840	S3	●●	●			
			Hardened	350	1180	S4	●●	●			
			Cast	320	1080	S5	●●	●			
	Titanium alloys	Pure titanium		200	680	S6	●●	●			
		α and β alloys, hardened		375	1260	S7	●●	●			
		β alloys		410	1400	S8	●●	●			
	Tungsten alloys			300	1010	S9					
	Molybdenum alloys			300	1010	S10					
H	Hardened steel	Hardened and tempered		50 HRC		H1	●	●●			
		Hardened and tempered		55 HRC		H2	●	●●			
		Hardened and tempered		60 HRC		H3	●	●●			
	Hardened cast iron	Hardened and tempered		55 HRC		H4	●	●●			
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application

Note:
If dry machining is possible, the tool life is reduced by 20-30% on average.

[1] The classification of the machining groups can be found from page A 468 onwards.



The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grades														
	Starting values for cutting speed v_c [m/min]														
	HC														
	WPP05S			WPP10S			WPP20S			WPP30S			WMP20S		
	f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]		
	0,10	0,40	0,60	0,10	0,40	0,60	0,10	0,40	0,60	0,10	0,40	0,60	0,10	0,30	0,50
	540	420	310	530	400	310	450	330	270	380	260	220	290	200	170
	430	310	250	420	300	240	350	250	190	300	200	160	230	150	120
	330	250	220	320	250	210	260	210	170	220	180	130	170	140	110
	370	260	210	350	250	200	300	210	160	250	160	130	190	120	100
	270	210	200	270	200	190	220	160	150	180	120	100	140	100	80
	510	360	290	490	350	280	410	290	220	350	230	180	270	180	140
	400	280	250	380	280	240	320	240	190	260	190	170	200	140	130
	240	190	170	230	180	160	190	140	120	150	100	80	130	80	60
	180	120	100	170	120	100	140	100	80	100	70	50	80	60	40
	90	80		80	60										
	360	220	170	340	240	160	290	200	120	220	160	90	170	120	80
	260	140	110	240	140	120	190	120	90	120	90	70	100	70	60
	80	70		70	60										
				280	220	200	230	190	150	180	150	110	210	180	150
				200	140	120	160	110	80	120	80	70	140	110	100
										260	210	130	250	190	120
										160	140		150	130	
										170	150	110	160	140	100
				320	210	160	280	220	160						
				270	170	120	240	180	110						
				580	340	240	510	260	190						
				320	220	150	240	180	110						
				340	240	180	260	190	140						
				240	180	150	190	140	110						
	320	200		290	190	160									
													90	60	
													70	50	
													70	50	
													60	40	
													50	30	
													70	45	40
													40	30	25

HC = Coated carbide

Cutting data for turning inserts – Negative basic shape
Carbide grades

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	= Cutting data for wet machining	= Dry machining is possible	Cutting material grades Starting values for cutting speed v_c [m/min] HC WSM10 / WSM10S f [mm/rev] 0,10	0,30	0,50
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●	●	270	250	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	●●	●	210	190	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	●●	●	180	160	
		C > 0.55%	Annealed	190	640	P4	●●	●	180	160	
		C > 0.55%	Heat-treated	300	1010	P5	●●	●			
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●	240	220	
	Low-alloyed steel	Annealed		175	590	P7	●●	●	170	150	
		Heat-treated		285	960	P8	●●	●			
		Heat-treated		380	1280	P9	●●	●			
		Heat-treated		430	1480	P10	●●	●			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●	●	170	150	
		Hardened and tempered		300	1010	P12	●●	●			
		Hardened and tempered		380	1280	P13	●●	●			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●	●	200	180	150
		Martensitic, heat-treated		330	1110	P15	●●	●	170	120	110
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●	260	210	130
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●	160	140	
		Austenitic/ferritic, duplex		230	780	M3	●●	●	170	150	110
K	Malleable cast iron	Ferritic		200	400	K1	●●	●			
		Pearlitic		260	700	K2	●●	●			
	Grey cast iron	Low tensile strength		180	200	K3	●●	●			
		High tensile strength/austenitic		245	350	K4	●●	●			
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●			
		Pearlitic		265	700	K6	●●	●			
	GGV (CGI)			230	400	K7	●●	●			
N	Wrought aluminium alloys	Not hardenable		30	–	N1					
		Hardenable, hardened		100	340	N2					
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3					
		≤ 12% Si, hardenable, hardened		90	310	N4					
		> 12% Si, not hardenable		130	450	N5					
	Magnesium-based alloys			70	250	N6					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7					
		Brass, bronze, red brass		90	310	N8					
		Cu-alloys, short-chipping		110	380	N9					
		High-tensile, Ampco		300	1010	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●	●	100	65	
			Hardened	280	940	S2	●●	●	80	55	
		Ni or Co base	Annealed	250	840	S3	●●	●	80	55	
			Hardened	350	1180	S4	●●	●	70	45	
			Cast	320	1080	S5	●●	●	60	35	
	Titanium alloys	Pure titanium		200	680	S6	●●	●			
		α and β alloys, hardened		375	1260	S7	●●	●			
		β alloys		410	1400	S8	●●	●			
	Tungsten alloys			300	1010	S9					
	Molybdenum alloys			300	1010	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●	●●			
		Hardened and tempered		55 HRC	–	H2	●	●●			
		Hardened and tempered		60 HRC	–	H3	●	●●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●	●●			
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application

Note:
If dry machining is possible, the tool life is reduced by 20-30% on average.

[1] The classification of the machining groups can be found from page A 468 onwards.



The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Cutting material grades																						
Starting values for cutting speed v_c [m/min]																						
HC																				HW		
WSM20 / WSM20S			WSM30 / WSM30S			WKK10S			WKK20S			WKP30S			WAK30			WS10				
f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]				
0,10	0,30	0,50	0,10	0,30	0,50	0,10	0,40	0,60	0,10	0,40	0,60	0,10	0,40	0,60	0,10	0,40	0,60	0,10	0,30	0,50		
230	220		220	200					530	400	310	290	200	170	290	200	170					
180	160		160	150					420	300	250	230	150	120	230	150	120					
150	130		130	110					320	250	210	170	140	110	170	140	110					
140	130		130	120					360	250	210	190	120	100	190	120	100					
									270	200	190	140	100	80	140	100	80					
200	180		180	160																		
140	120		120	100					260	200	180	200	140	130								
									230	180	160	130	80	60	130	80	60					
									150	120	100	80	60	40	80	60	40					
									70	60												
130	110		110	90					270	220	170	170	120	80	170	120	80					
									170	140	130	100	70	60	100	70	60					
									80	70												
190	170	140	170	150	120																	
140	110	100	110	100	80																	
240	170	110	200	140	90							200	140	90								
140	120		110	90								110	90									
150	130	90	130	110	70							130	110	70								
						370	260	180	300	200	150	240	160	130	240	160	130					
						330	220	140	260	160	110	200	120	90	200	120	90					
						620	410	300	550	320	230	490	250	180	490	250	180					
						390	260	180	300	210	140	230	170	110	230	170	110					
						410	300	230	320	230	170	250	180	130	250	180	130					
						300	230	180	230	170	140	180	130	110	180	130	110					
						320	200															
90	60		80	50														90				
70	50		60	40														70				
70	50		60	30														70				
60	40		50	30														60				
50	30		40	20														50				
																		200	180	140		
70	45	40																90	55	45		
40	30	25																55	35	30		
	220																					
						55																
						45																
						35																
						45																

HC = Coated carbide
HW = Uncoated carbide

Cutting data for turning inserts – Positive basic shape
Carbide grades

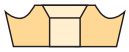
= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades Starting values for cutting speed v_c [m/min] HC WPP01 f [mm/rev]		
									0,10	0,20	0,30
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●	●	490	460	430
		C > 0.25 to ≤ 0.55%	Annealed	190	640	P2	●●	●	400	370	350
		C > 0.25 to ≤ 0.55%	Heat-treated	210	710	P3	●●	●	290	260	250
		C > 0.55%	Annealed	190	640	P4	●●	●	350	330	320
		C > 0.55%	Heat-treated	300	1010	P5	●●	●	240	210	190
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●	460	430	420
	Low-alloyed steel	Annealed		175	590	P7	●●	●	360	330	320
		Heat-treated		285	960	P8	●●	●	210	180	170
		Heat-treated		380	1280	P9	●●	●	130	120	100
		Heat-treated		430	1480	P10	●●	●	90	80	60
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●	●	340	310	300
		Hardened and tempered		300	1010	P12	●●	●	230	200	180
		Hardened and tempered		380	1280	P13	●●	●	80	70	60
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●	●			
		Martensitic, heat-treated		330	1110	P15	●●	●			
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●			
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●			
		Austenitic/ferritic, duplex		230	780	M3	●●	●			
K	Malleable cast iron	Ferritic		200	400	K1	●●	●	270	240	220
		Pearlitic		260	700	K2	●●	●	230	200	180
	Grey cast iron	Low tensile strength		180	200	K3	●●	●	520	490	470
		High tensile strength/austenitic		245	350	K4	●●	●	270	240	220
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●	290	260	240
		Pearlitic		265	700	K6	●●	●	200	170	150
	GGV (CGI)			230	400	K7	●●	●			
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●	●			
		Hardenable, hardened		100	340	N2	●●	●			
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●	●			
		≤ 12% Si, hardenable, hardened		90	310	N4	●●	●			
		> 12% Si, not hardenable		130	450	N5					
	Magnesium-based alloys			70	250	N6					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●	●			
		Brass, bronze, red brass		90	310	N8	●●	●			
		Cu-alloys, short-chipping		110	380	N9	●●	●			
		High-tensile, Ampco		300	1010	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●	●			
			Hardened	280	940	S2	●●	●			
		Ni or Co base	Annealed	250	840	S3	●●	●			
			Hardened	350	1180	S4	●●	●			
			Cast	320	1080	S5	●●	●			
	Titanium alloys	Pure titanium		200	680	S6	●●	●			
		α and β alloys, hardened		375	1260	S7	●●	●			
		β alloys		410	1400	S8	●●	●			
	Tungsten alloys			300	1010	S9					
	Molybdenum alloys			300	1010	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●	●●			
		Hardened and tempered		55 HRC	–	H2	●	●●			
		Hardened and tempered		60 HRC	–	H3	●	●●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●	●●			
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application

Note:
If dry machining is possible, the tool life is reduced by 20-30% on average.

[1] The classification of the machining groups can be found from page A 468 onwards.



The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grades																				
	Starting values for cutting speed v_c [m/min]																				
	HC																				
	WPP10S			WPP20S			WPP30S			WMP20S			WSM10S			WSM20S			WSM30S		
	f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]		
	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40
	490	430	370	410	370	310	390	360	260	300	200	170	250	240		230	210		200	190	
	390	350	280	330	300	230	310	280	210	240	160	130	200	180		170	150		150	140	
	290	260	240	230	210	190	190	160	150	170	140	110	160	150		130	120		120	100	
	350	320	310	290	270	250	240	210	200	210	130	100	170	150		140	120		120	110	
	230	200	190	190	160	150	150	120	100	140	100	80									
	450	420	410	380	350	330	320	280	260	240	220	200	220	200		180	160		160	140	
	360	330	320	310	280	260	230	210	190	210	150	130	160	130		120	100		110	80	
	200	170	160	160	140	120	120	100	70	130	80	60									
	120	100	90	100	80	60	80	50	40	80	50	40									
	80	60		60	50																
	340	310	300	280	250	230	210	190	170	190	130	80	160	140		130	100		100	80	
	210	190	170	170	140	120	140	110	80	100	70	60									
	70	60		60	50																
	300	270	260	210	190	170	160	140	120	220	190	160									
	120	100	90	100	90	70	90	60	50	120	100	90									
							220	200	130	210	190	120	220	200	130	200	180	110	180	140	90
							160	140		150	130		160	140		140	120		110	90	
							170	150	110	160	140	100	170	150	110	150	130	80	130	110	70
	280	250	230	250	220	200															
	240	210	190	210	180	160															
	530	490	450	480	450	430															
	280	250	230	210	180	160															
	300	270	250	230	200	180															
	210	180	160	160	130	110															
	280	230	210																		
										90	70		100	70		90	70		70	50	
										70	60		80	60		70	60		50	40	
										70	60		80	60		70	60		50	30	
										60	50		70	50		60	50		40	30	
										50	40		60	40		50	40		30	20	
										70	50	40				70	50	40			
										40	30	25				40	30	25			

HC = Coated carbide

Cutting data for turning inserts – Positive basic shape
Carbide grades

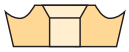
= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades Starting values for cutting speed v_c [m/min] HC WSM10 f [mm/rev]		
									0,10	0,20	0,40
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●	●	250	240	
		C > 0.25 to ≤ 0.55%	Annealed	190	640	P2	●●	●	200	180	
		C > 0.25 to ≤ 0.55%	Heat-treated	210	710	P3	●●	●	160	150	
		C > 0.55%	Annealed	190	640	P4	●●	●	170	150	
		C > 0.55%	Heat-treated	300	1010	P5	●●	●			
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●	220	200	
	Low-alloyed steel	Annealed		175	590	P7	●●	●	160	130	
		Heat-treated		285	960	P8	●●	●			
		Heat-treated		380	1280	P9	●●	●			
		Heat-treated		430	1480	P10	●●	●			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●	●	160	140	
		Hardened and tempered		300	1010	P12	●●	●			
		Hardened and tempered		380	1280	P13	●●	●			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●	●			
		Martensitic, heat-treated		330	1110	P15	●●	●			
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●	220	200	130
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●	160	140	
		Austenitic/ferritic, duplex		230	780	M3	●●	●	170	150	110
K	Malleable cast iron	Ferritic		200	400	K1	●●	●			
		Pearlitic		260	700	K2	●●	●			
	Grey cast iron	Low tensile strength		180	200	K3	●●	●			
		High tensile strength/austenitic		245	350	K4	●●	●			
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●			
		Pearlitic		265	700	K6	●●	●			
	GGV (CGI)			230	400	K7	●●	●			
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●	●			
		Hardenable, hardened		100	340	N2	●●	●			
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●	●			
		≤ 12% Si, hardenable, hardened		90	310	N4	●●	●			
		> 12% Si, not hardenable		130	450	N5					
	Magnesium-based alloys			70	250	N6					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●	●			
		Brass, bronze, red brass		90	310	N8	●●	●			
		Cu-alloys, short-chipping		110	380	N9	●●	●			
		High-tensile, Ampco		300	1010	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●	●	100	70	
			Hardened	280	940	S2	●●	●	80	60	
		Ni or Co base	Annealed	250	840	S3	●●	●	80	60	
			Hardened	350	1180	S4	●●	●	70	50	
			Cast	320	1080	S5	●●	●	60	40	
	Titanium alloys	Pure titanium		200	680	S6	●●	●			
		α and β alloys, hardened		375	1260	S7	●●	●			
		β alloys		410	1400	S8	●●	●			
	Tungsten alloys			300	1010	S9					
	Molybdenum alloys			300	1010	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●	●●			
		Hardened and tempered		55 HRC	–	H2	●	●●			
		Hardened and tempered		60 HRC	–	H3	●	●●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●	●●			
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application

Note:
If dry machining is possible, the tool life is reduced by 20-30% on average.

[1] The classification of the machining groups can be found from page A 468 onwards.



The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grades																								
	Starting values for cutting speed v_c [m/min]																								
	HC																		HW						
	WSM20			WSM21			WSM30			WKK10S			WKK20S			WXN10			WK1			WS10		
	f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]			f [mm/rev]		
	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40	0,10	0,20	0,40
	230	210		200	190		200	190					490	430	370									
	170	150		150	140		150	140					400	350	280									
	130	120		120	100		120	100					270	240	210									
	140	120		120	110		120	110					330	300	240									
													250	220	190									
	180	160		160	140		160	140					360	330	280									
	120	100					110	80					240	200	150									
													210	190	160									
													140	130	90									
													80	60										
	130	100					100	80					240	200	140									
													150	130	60									
													70	60										
													270	240	220									
													160	140	120									
	200	180	110	180	140	90	180	140	90							220	200								
	140	120		110	90		110	90								100	80								
	150	130	80	130	110	70	130	110	70							170	130								
										310	280	210	240	220	170										
										290	260	190	220	200	150										
										560	500	370	500	450	290										
										350	320	240	270	240	190										
										370	330	270	290	260	210										
										270	240	210	210	190	160										
										310	260	210													
																3000	2400	1800	2400	1800	1300				
																900	720	360	750	600	300				
																960	540	360	800	450	300				
																600	360	240	500	300	200				
																720	480	320	600	400	270				
																480	360	300	400	300	250				
																340	240	160	280	200	130				
	90	70		70	50		70	50								110	90					90			
	70	60		50	40		50	40								80	70					70			
	70	60		50	30		50	30								60	50					70			
	60	50		40	30		40	30								60	25					60			
	50	40		30	20		30	20								50	25					50			
																220	200	160				200	180	140	
	70	50	40													100	70	60				90	60	45	
	40	30	25																			55	35	30	
										50															
										40															
										30															
										40															

HC = Coated carbide
HW = Uncoated carbide

Cutting data for turning inserts – Negative and positive basic shape
CBN/PCD/ceramic

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Cutting material grades: Starting values for cutting speed v_c [m/min] CBN: BL WCB30 f [mm/rev]				
									0,05	0,15	0,20
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1					
		C > 0.25 to ≤ 0.55%	Annealed	190	640	P2					
		C > 0.25 to ≤ 0.55%	Heat-treated	210	710	P3					
		C > 0.55%	Annealed	190	640	P4					
		C > 0.55%	Heat-treated	300	1010	P5					
		Free cutting steel (short-chipping)	Annealed	220	750	P6					
	Low-alloyed steel	Annealed		175	590	P7					
		Heat-treated		285	960	P8					
		Heat-treated		380	1280	P9					
		Heat-treated		430	1480	P10					
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11					
		Hardened and tempered		300	1010	P12					
		Hardened and tempered		380	1280	P13					
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14					
		Martensitic, heat-treated		330	1110	P15					
M	Stainless steel	Austenitic, quench hardened		200	680	M1					
		Austenitic, precipitation hardened (PH)		300	1010	M2					
		Austenitic/ferritic, duplex		230	780	M3					
K	Malleable cast iron	Ferritic		200	400	K1	●●	●			
		Pearlitic		260	700	K2	●●	●			
	Grey cast iron	Low tensile strength		180	200	K3	●●	●			
		High tensile strength/austenitic		245	350	K4	●●	●			
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●			
		Pearlitic		265	700	K6	●●	●			
	GGV (CGI)			230	400	K7					
N	Wrought aluminium alloys	Not hardenable		30	–	N1					
		Hardenable, hardened		100	340	N2					
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3					
		≤ 12% Si, hardenable, hardened		90	310	N4					
		> 12% Si, not hardenable		130	450	N5					
	Magnesium-based alloys			70	250	N6					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7					
		Brass, bronze, red brass		90	310	N8					
		Cu-alloys, short-chipping		110	380	N9					
		High-tensile, Ampco		300	1010	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1					
			Hardened	280	940	S2					
		Ni or Co base	Annealed	250	840	S3	●●	●			
			Hardened	350	1180	S4	●●	●			
			Cast	320	1080	S5	●●	●			
	Titanium alloys	Pure titanium		200	680	S6					
		α and β alloys, hardened		375	1260	S7					
		β alloys		410	1400	S8					
	Tungsten alloys			300	1010	S9					
	Molybdenum alloys			300	1010	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●	●●	220	180	160
		Hardened and tempered		55 HRC	–	H2	●	●●	200	160	110
		Hardened and tempered		60 HRC	–	H3	●	●●	170	150	90
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●	●●	220	170	120
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application

[1] The classification of the machining groups can be found from page A 468 onwards.



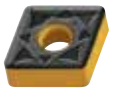
The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grades																					
	Starting values for cutting speed v_c [m/min]																					
	CBN						PCD					Ceramic										
	BH WCB50			BH WCB80					DP WDN10					CN WSN10			CN WIS10			CR WWS20		
	f [mm/rev]			f [mm/rev]					f [mm/rev]					f [mm/rev]			f [mm/rev]			f [mm/rev]		
	0,05	0,15	0,20	0,05	0,15	0,20			0,10	0,20	0,40			0,20	0,40	0,60	0,10	0,20	0,30	0,10	0,20	0,30
	350	300	250	1500	1300	1000							●●	750	600	500						
	350	300	250	1300	1100	900							●●	650	500	400						
	350	300	200	1400	1200	800							●●	850	600	500						
	150	120	90	600	500	400							●●	650	500	400						
				400	300	200							●●	550	450	350						
				300	200								●●	550	450	350						
							●●		3000	2800	2200											
							●●		2000	1800	1400											
							●●		2200	2000	1600											
							●●		1800	1600	1200											
							●●		500	450	300											
							●●		1800	1600	1200											
							●●		1000	900	700											
							●●		700	650	500											
							●●		650	550	400											
							●●		400	300	150											
	140											●	●●				410	340	280	390	320	240
	140											●	●●				320	250	190	320	250	190
	140											●	●●				250	220	180	250	220	180
							●●		300	220	200											
							●●	●	30	25	15											
	200	170	130									●	●●							170	150	120
	180	150	100									●	●●							150	120	100
	150	130	80									●	●●							130	110	90
	190	160	110									●	●●							150	120	100
								●●	1500	1200	800											
								●●	1500	1200	800											
								●●	1000	900	700											
								●●	800	700	500											
								●●	800	700	500											
								●●	400	300	150											

BH = CBN with high CBN content
BL = CBN with low CBN content
CN = Silicon nitride Si_3N_4
CR = Reinforced ceramic
DP = Polycrystalline diamond

Cutting tool material application charts – Turning

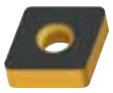
Carbide

Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating process	Coating composition	Indexable inserts example
WPP01	HC – P 01	●●								CVD	TiCN + Al_2O_3 (+ TiN)	
	HC – K 10			●								
WPP05S	HC – P 05	●●								CVD	TiCN + Al_2O_3 (+ TiCN)	
WPP10S	HC – P 10	●●								CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – K 20			●								
WPP20S	HC – P 20	●●								CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – K 30			●								
WPP30S	HC – P 30	●●								CVD	TiCN + Al_2O_3 (+ TiCN)	
WMP20S	HC – M 20		●●							CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – P 25	●●										
	HC – S 20					●						
WSM10S	HC – M 10		●●							PVD	TiAlN + Al_2O_3 (Al)	
	HC – S 10					●●						
	HC – P 10	●										
WSM20S	HC – M 20		●●							PVD	TiAlN + Al_2O_3 (Al)	
	HC – S 20					●●						
	HC – P 20	●										
WSM30S	HC – M 30		●●							PVD	TiAlN + Al_2O_3 (Al)	
	HC – S 30					●●						
	HC – P 30	●										
WSM10	HC – M 10		●●							PVD	TiAlN + Al_2O_3 (ZrCN)	
	HC – S 10					●●						
	HC – P 10	●										
WSM20	HC – M 20		●●							PVD	TiAlN + Al_2O_3 (ZrCN)	
	HC – S 20					●●						
	HC – P 20	●										
WSM30	HC – M 30		●●							PVD	TiAlN + Al_2O_3 (ZrCN)	
	HC – S 30					●●						
	HC – P 30	●										
WSM21	HC – M 20		●●							PVD	TiAlN	
	HC – S 20					●●						
	HC – P 20	●●										
WS10	HW – S 10					●●				–	–	

HC = Coated carbide
HW = Uncoated carbide

●● Primary application
● Additional application

Carbide

Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating process	Coating composition	Indexable inserts example
WKK10S	HC – K 10			●●						CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – H 30						●					
WKK20S	HC – K 20			●●						CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – P 10	●										
WKP30S	HC – K 30			●●						CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – P 35	●●										
	HC – M 30		●									
WAK30	HC – K 30			●●						CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – P 40	●										
WXN10	HC – N 10				●●					PVD	TiCN[plus]	
	HC – P 01	●										
	HC – M 01		●									
WK1	HW – N 10				●●					–	–	
	HW – S 10					●						

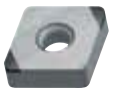
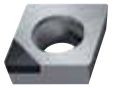
HC = Coated carbide
HW = Uncoated carbide

●● Primary application
● Additional application

Cutting tool material application charts – Turning

(continued)

CBN/PCD/ceramic

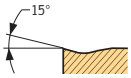
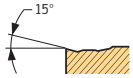
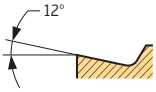
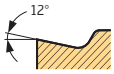
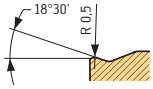
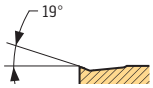
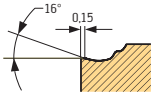
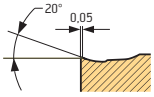
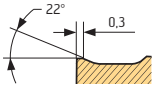
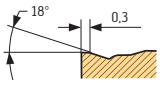
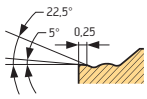
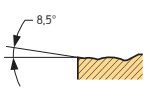
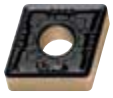
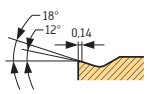
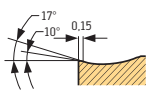
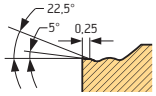
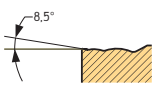
Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating method	Cutting tool material	Indexable inserts example
WCB30	BL – H 05						●●			–	CBN	
WCB50	BH – H 10						●●			–	CBN	
	BH – K 10			●								
WCB80	BH – K 05			●●						–	CBN	
WDN10	DP – N 20				●●					–	PCD	
	DP – O 20							●●				
WSN10	CN – K 20			●●						–	Si_3N_4 ceramic	
WIS10	CN – S 10					●●				–	SiAlON ceramic	
WWS20	CR – S 20					●●				–	Whisker ceramic	
	CR – H 20						●					

BH = CBN with high CBN content
BL = CBN with low CBN content
CN = Silicon nitride Si_3N_4
CR = Reinforced ceramic
DP = Polycrystalline diamond

●● Primary application
● Additional application

Geometry overview of turning inserts – Negative basic shape

Finishing operation

Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	**NF** – Finishing with Wiper technology – High surface quality – High feeds	••	••	••		•					0,4–3,0	0,10–0,55
	**NFT** – Finishing titanium materials – Sharp cutting edges with circumference fully ground, first choice – 100° corner with NRT roughing geometry implemented with CNMG basic shape		•		•	••					0,1–2,0	0,05–0,20
	**NF4** – Finishing stainless materials – Finishing alloys with difficult cutting properties – Finishing long-chipping steel materials – Curved cutting edge for cutting pressure reduction	•	••			••					0,2–1,6	0,05–0,20
	**FP5** – Finishing steel materials – Can also be used in semi-finishing as an alternative to MP3 – Curved cutting edge for low cutting forces	••									0,1–2,5	0,04–0,25
Medium machining												
	**NM** – Medium machining with Wiper technology – High surface quality – High feeds	••	•	••		•					0,8–4,0	0,15–0,70
	**NMT** – Medium machining of titanium materials – Low cutting forces – Machining long-chipping steel materials – Machining forged parts with low material removal	••				••					0,6–4,0	0,12–0,32
	**NMS** – Medium machining especially for high-temperature alloys (Ni, Co and Fe-based alloys) – Sharp cutting edge design – Alternative to NM4 stainless geometry		•			••					0,5–4,0	0,10–0,40
	**MP3** – Medium machining of long-chipping steel materials – Low cutting forces due to curved cutting edge – Machining forged parts with low material removal	••									0,3–4,0	0,06–0,40

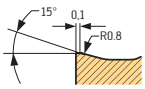
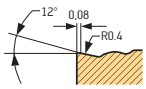
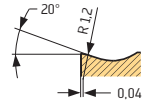
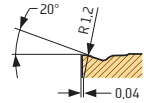
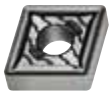
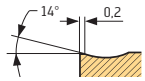
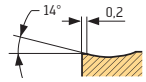
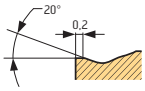
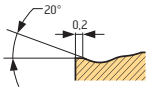
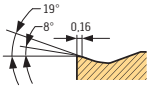
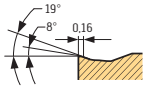
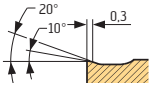
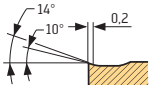
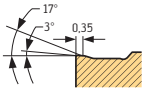
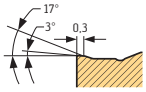
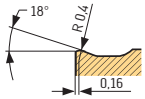
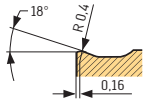
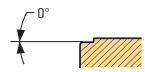
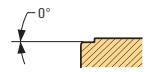
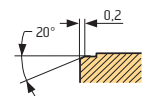
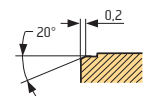
•• Primary application
• Additional application

Note: Sectional views show CNMG120408 . .

Geometry overview of turning inserts – Negative basic shape

(continued)

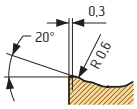
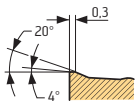
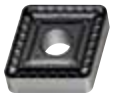
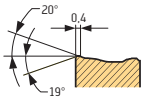
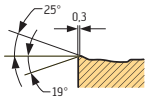
Medium machining (continued)

Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	**MP5** – Universal geometry for steel materials – Reinforced chip breaker blades – Extremely wide range of applications	••									0,5–8,0	0,16–0,55
	**NM4 Stainless** – Universal geometry for stainless materials and for high-temperature alloys – Machining long-chipping steels	•	••			••					0,5–4,5	0,10–0,40
	**MK5** – Universal geometry for cast iron workpieces – Machining steel materials with higher strength	•		••							0,6–8,0	0,15–0,90
Roughing operations – Double-sided indexable inserts												
	**NRT** – Roughing titanium materials – Stable cutting edge with protective chamfer					••					0,8–9,0	0,18–0,80
	**NRS** – Roughing operations especially for high-temperature alloys (Ni, Co and Fe-based alloys) – Sharp cutting edge design – Alternative to NR4 geometry		•			••					1,0–6,0	0,15–0,70
	**NR4** – Roughing operations in stainless materials and high-temperature alloys		••			••					1,2–8,5	0,22–0,80
	**RP5** – Roughing steel materials – Stable, positive cutting edge – Open chip groove for a low cutting temperature	••		•							0,8–12,0	0,2–1,20
	**RP7** – Interrupted cuts – Cast skins/forged skins – Stable cutting edge	••		••							0,8–8,0	0,16–0,70
	**RK5** – Universal geometry for cast iron workpieces – First choice for grey cast iron			••			•				0,6–8,0	0,16–0,80
	**RK7** – Cast iron machining with hard crust – Interrupted cuts – Hard machining of steel materials			••			••				0,8–8,0	0,25–0,80

•• Primary application
• Additional application

Note: Sectional views show CNMG120408 . .

Roughing operations – Single-sided indexable inserts

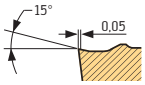
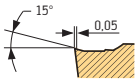
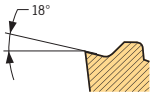
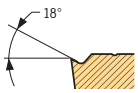
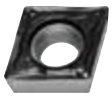
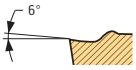
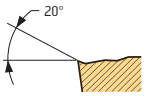
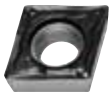
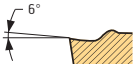
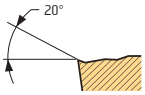
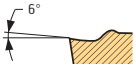
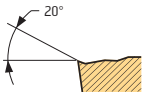
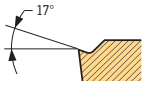
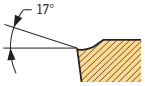
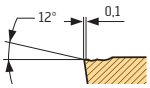
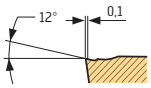
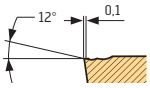
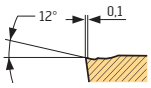
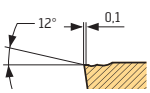
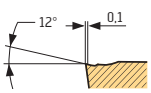
Geometry Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
 **NRF** – Universal single-sided roughing insert – Forged parts with uneven material removal – Low power consumption – Easy-cutting geometry	●●	●	●							0,8–12,0	0,25–1,20
 **NRR** – Heavy roughing – Machining of cast skins/forged parts – Interrupted cuts – Maximum depths of cut and feeds	●●		●							2,0–17,0	0,50–1,80

●● Primary application
● Additional application

Note: Sectional views show SNMM190616 . .

Geometry overview of turning inserts – Positive basic shape

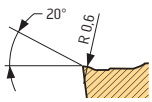
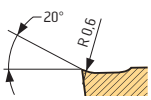
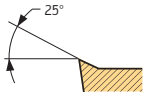
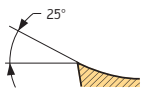
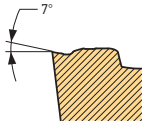
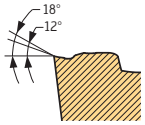
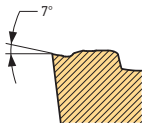
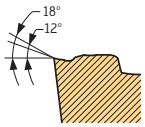
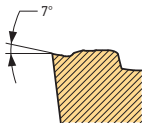
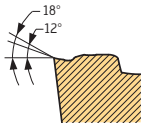
Finishing operation

Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	**PF** – Finishing with Wiper technology – High surface quality – High feeds	●●	●●	●●		●					0,3–3,0	0,12–0,60
	**PF2** – Finishing insert with circumference fully ground – Long, small diameter shafts with a tendency to vibrate – Low cutting forces	●●	●●	●	●●	●●					0,12–4,5	0,02–0,45
	**FM4** – Finishing insert – Excellent chip control – Can also be used for precision boring	●	●●			●●					0,1–2,5	0,04–0,20
	**FP4** – Finishing insert – Excellent chip control – Can also be used for precision boring	●●	●	●		●					0,1–2,5	0,04–0,20
	**PF4** – Finishing insert – Excellent chip control – Can also be used for precision boring	●●	●●			●●					0,1–2,5	0,04–0,20
	**PF5** – Finishing insert with circumference fully ground – Can also be used for precision boring – Extremely narrow chip breaker groove	●●	●●			●					0,1–4,0	0,04–0,35
	**PS5** – Universal insert for operations from finishing to medium machining – Can also be used for counterboring	●	●●	●		●					0,3–2,5	0,08–0,32
	**FP6** – Universal insert for operations from finishing to medium machining – Can also be used for counterboring	●●	●	●		●					0,3–2,5	0,08–0,32
	**FK6** – Universal insert for operations from finishing to medium machining – Can also be used for counterboring	●	●	●●		●					0,3–2,5	0,08–0,32

●● Primary application
● Additional application

Note: Sectional views show CCMT09T308 . . or CCGT09T308 . .

Medium machining

Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
 Wiper	**PM** – Finishing with Wiper technology – High surface quality – High feeds	●●	●	●●		●					0,5–4,0	0,12–0,60
	**PM2** – Universal insert for non-ferrous materials – Sharp cutting edge with circumference fully ground – Polished rake face – Precision finishing on steel and stainless materials	●	●		●●	●					0,5–6,0	0,02–0,80
	**MM4** – Machining long-chipping materials – Can be used universally in a wide range of applications – Circumference precision-ground – Circumference precision-sintered – Straight cutting edge for C, S and T basic shapes, for use as a chamfer insert in boring tools	●	●●	●		●●					0,4–3,0	0,08–0,32
	**MP4** – Machining long-chipping materials – Can be used universally in a wide range of applications – Circumference precision-ground – Circumference precision-sintered – Straight cutting edge for C, S and T basic shapes, for use as a chamfer insert in boring tools	●●	●	●		●					0,4–3,5	0,08–0,32
	**MK4** – Machining unstable components, internal machining – Additional version with circumference fully ground available for maximum precision – Straight cutting edge for C, S and T basic shapes, for use as a chamfer insert in boring tools	●	●	●●		●					0,4–3,5	0,08–0,32

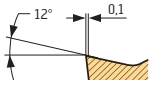
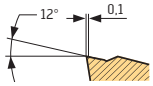
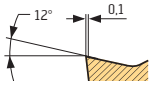
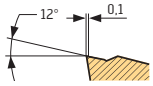
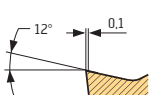
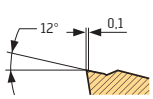
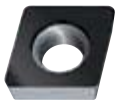
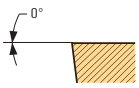
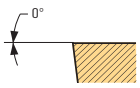
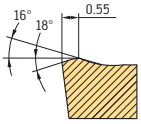
●● Primary application
● Additional application

Note: Sectional views show CCMT09T308 . . or CCGT09T308 . .

Geometry overview of turning inserts – Positive basic shape

(continued)

Roughing operation

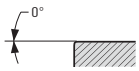
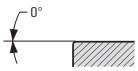
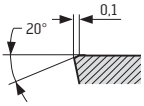
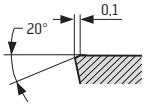
Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	**RM4** – Universal geometry for roughing operations to medium machining – Extremely large chip breaking area – Maximum machining volume and tool life	•	••	•		••					0,6–5,0	0,12–0,50
	**RP4** – Universal geometry for roughing operations to medium machining – Extremely large chip breaking area – Maximum machining volume and tool life	••	•	•		•					0,6–5,0	0,12–0,50
	**RK4** – First choice for grey cast iron and ductile cast iron – Universal geometry for roughing operations to medium machining – Extremely large chip breaking area	•	•	••		•					0,6–5,0	0,12–0,50
	**RK6** – Cast iron machining with hard crust – Interrupted cuts – Stable cutting edge design			••				•			0,2–0,6	0,12–0,50
Heavy cutting												
	**HU6** – Heavy roughing – Excellent chip breaking – Machining forged parts – For use in train wheel machining	••		••							1,0–15,0	0,12–1,7

•• Primary application
• Additional application

Note: Sectional views show CCMT09T308 . . , CCGT09T308 . . , CCMW09T308 . . or RCMX2006 . . .

Geometry overview of turning inserts – Negative basic shape CBN/PCD/ceramic

Ceramic

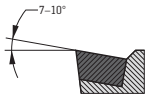
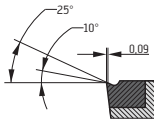
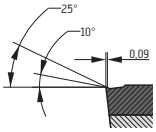
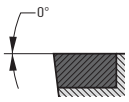
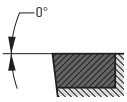
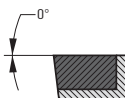
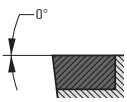
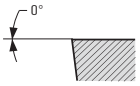
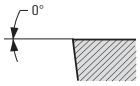
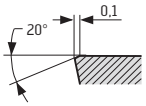
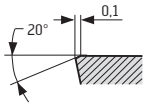
Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	. . . E – Ceramic indexable insert with circumference fully ground – Rounded cutting edge for minimum cutting forces – Machining high-temperature alloys					••					0,1–7,5	0,1–0,5
	. . . T01020 – Ceramic indexable insert with circumference fully ground – Chamfered cutting edge for maximum stability for medium machining to roughing operations – Machining high-temperature alloys					••	•				0,1–5,0	0,1–0,45

•• Primary application
• Additional application

Note: Sectional views show RNGN120700 . . .

Geometry overview of turning inserts – Positive basic shape CBN/PCD/ceramic

PCD/ceramic cutting tool materials

Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	**. CGT . . . FS-1** – PCD finishing insert with circumference fully ground in G tolerance – Extremely low cutting forces due to 7°-10° rake angle – Extremely high surface quality				●●	●		●●	—		0,05–1,5	0,03–0,38
	**. CGT . . . FS-M1** – PCD indexable insert with circumference fully ground in G tolerance – Excellent chip control thanks to laser-generated chip-breaker geometry – Finishing to medium machining				●●	●		●●			0,1–3,0	0,08–0,2
	**. CGW . . . FS-1** – PCD indexable insert with circumference fully ground in G tolerance – Universal PCD indexable insert with 0° rake angle – Maximum repeat accuracy				●●	●		●●			0,05–3,5	0,03–0,38
	**. CGW . . . FSL/R-9** – PCD indexable insert with circumference fully ground in G tolerance – Cutting edge with guide pad – Maximum depth of cut and shoulder machining				●●	●		●●			0,05–9,0	0,03–0,38
	**. . . E** – Ceramic indexable insert with circumference fully ground – Rounded cutting edge for minimum cutting forces – Machining high-temperature alloys					●●					0,1–3,6	0,1–0,32
	**. . . T01020** – Ceramic indexable insert with circumference fully ground – Chamfered cutting edge for maximum stability for medium machining to roughing operations – Machining high-temperature alloys					●●	●				0,1–3,6	0,1–0,32

●● Primary application
● Additional application

Note: Sectional views show CCGT09T304 . .,
CCGW09T304 . . or RCGX090700 . . .

Application information for Wiper indexable inserts

1. Achievable surface quality with Wiper indexable inserts

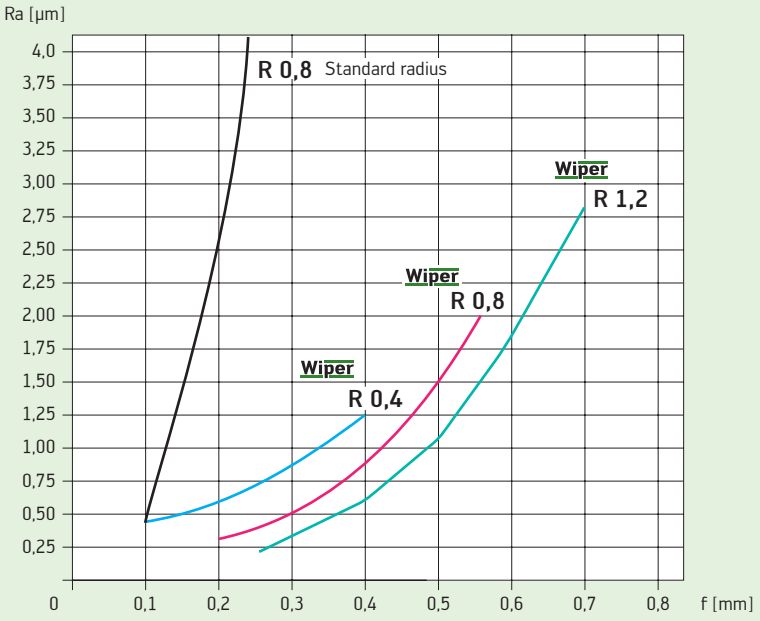
Wiper

A single geometry for two applications.

– Same surface quality with double the feed rate

– Double the surface quality with the same feed rate

A table containing the achievable surface qualities with the standard radius can be found on the next page.

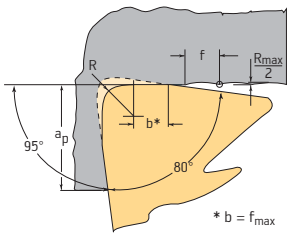


2. Edge formation: Comparison between Wiper indexable inserts and standard indexable inserts

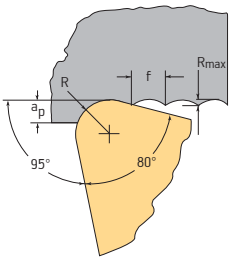
The specified maximum feeds may not be exceeded with Wiper geometries:

R	f_{max} [mm]
0,4	≤ 0,4
0,8	≤ 0,55
1,2	≤ 0,7

Wiper geometry: NF/NM and PF/PM



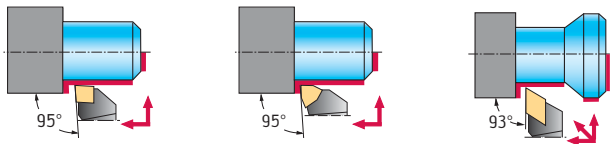
Standard geometry with corner radius



3. Usage recommendations

Use turning toolholders with a lead angle of κ = 95° for CNMG/CCMT and WNMG/WCMT Wiper indexable inserts, and a lead angle of κ = 93° for DNMG/DCMT Wiper indexable inserts, for example:

CNMG120408–NM → DCLNR2525M12
WNMG080408–NM → DWLNR2525M08
DNMG150608–NM → DDJNR2525M15



= Wiper effect

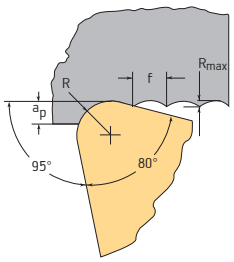
The Wiper effect is achieved during longitudinal turning and facing.
The Wiper effect is not achieved with inclined surfaces and radii.
Please note that radius compensation is required in the area of radii and inclined surfaces; otherwise contour distortion will occur.

Application information: Surface quality

Achievable surface quality with standard radius

Select the largest possible corner radius permitted by the workpiece contour, system rigidity and chip control.
The larger the corner radius, the better the surface quality that can be achieved.

		Theoretical Ra/Rz values depending on the feed and corner radius						Feed ranges depending on the corner radius and type of machining	
Corner radius	Round indexable insert diameter	Ra/Rz in µm						Medium machining to roughing operations	Finishing operations to medium machining
		0,4/1,6	1,6/6,3	3,2/12,5	6,3/25	8/32	32/100		
mm	mm	Feed f in mm						Feed f in mm	
0,2		0,05	0,08	0,13					0,04–0,15
0,4		0,07	0,11	0,17	0,22				0,07–0,22
0,8		0,10	0,15	0,24	0,30	0,38		0,25–0,60	0,10–0,30
1,2			0,19	0,29	0,37	0,47		0,35–0,85	0,20–0,40
1,6				0,34	0,43	0,54	1,08	0,40–1,00	
2,4				0,42	0,53	0,66	1,32	0,50–1,20	
	6	0,20	0,31	0,49	0,62				0,20–0,60
	8	0,23	0,36	0,56	0,72				0,23–0,70
	10	0,25	0,40	0,63	0,80	1,00			0,25–0,80
	12		0,44	0,69	0,88	1,10		0,40–0,80	
	16		0,51	0,80	1,01	1,26	2,54	0,50–1,00	
	20			0,89	1,13	1,42	2,94	0,60–1,25	
	25				1,26	1,58	3,33	0,70–1,50	



$$R_{max} = \frac{f^2}{8 \times r} \times 1000 \quad [\mu m]$$

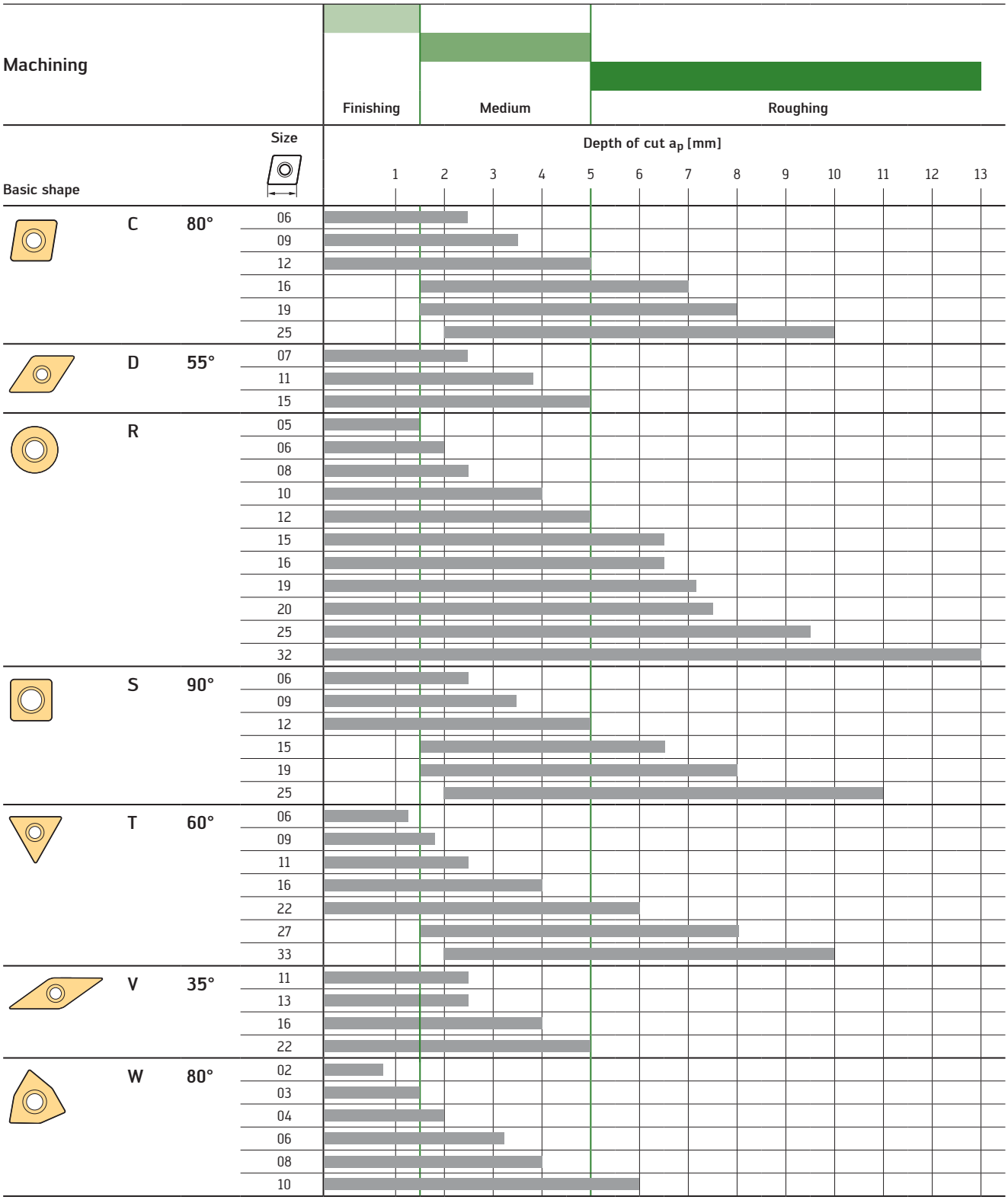
R_{max}	Roughness profile depth	[µm]
f	Feed per revolution	[mm]
r	Corner radius of the indexable insert	[mm]

Application information:
The indexable insert size is selected depending on the depth of cut a_p

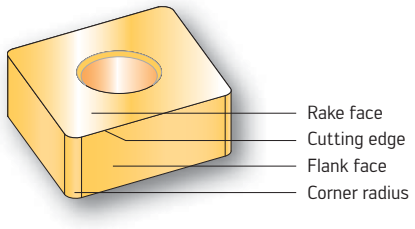
Finishing
Applications with low depths of cut and feeds
f = 0.1-0.3 mm

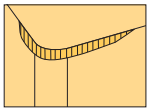
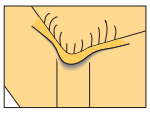
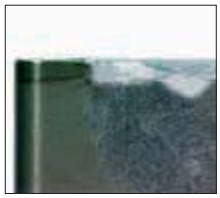
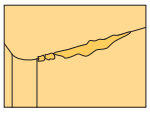
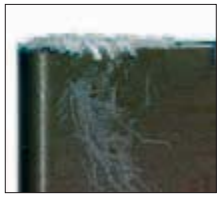
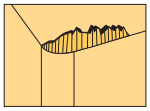
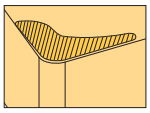
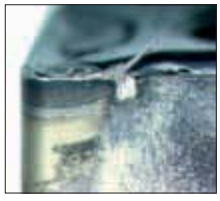
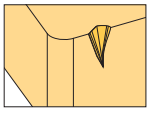
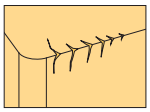
Medium
Applications with average depths of cut and feeds
f = 0.2-0.5 mm

Roughing
Applications with high machining volume and feed rates
f = 0.4-1.5 mm

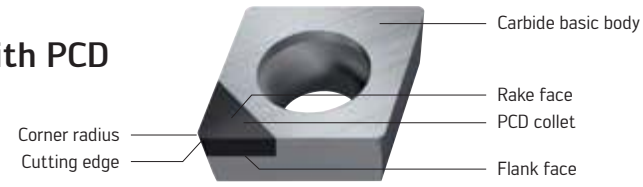


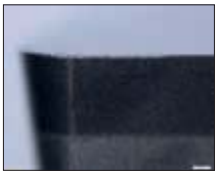
Application information: Wear patterns from turning



Wear patterns			Characteristics	Measures
Flank face wear			Abrasion on the flank face of the indexable insert	– Use a more wear-resistant grade – Increase the feed – Reduce the cutting speed – Optimise the cooling
Plastic deformation			Deformation of the cutting edge due to thermal overload and high cutting forces	– Use a more wear-resistant grade – Reduce the feed – Reduce the depth of cut – Optimise the cooling – Reduce the cutting speed
Fractures			Fractures along the cutting edge	– Use a tougher carbide grade – Use a more stable tool and reduce the projection length – Use a more stable geometry – Reduce the cutting speed
Build-up on the cutting edge			Adhesion of material along the cutting edge on the rake face	– Increase the cutting speed – Use a sharper geometry with a larger rake angle – Optimise the cooling – Use an indexable insert with a treated surface (Tiger·tec® Silver)
Crater wear			Crater-shaped cavities on the rake face of the indexable insert	– Reduce the cutting speed – Use a geometry with a larger rake angle – Use a grade that is more wear-resistant with a high Al_2O_3 content – Optimise the cooling – Use a more open geometry
Notch or oxidation wear			Notching around the depth of cut on the indexable insert	– Vary the depth of cut – Use a tougher grade (PVD-coated) – Reduce the cutting speed – Use a more open geometry – Optimise the cooling – Use a tool with a leading cutting edge ($\kappa = 45°/75°$) – With notch wear, select a smaller corner radius
Hairline cracks			Multiple cracks running vertical to the cutting edge, caused by thermal shock	– Possibly work the interrupted cut without coolant – Reduce the cutting speed – Reduce the feed – Use a tougher grade – Use a more stable geometry

Application information: Wear patterns in turning applications with PCD



Wear patterns with PCD		Cause	Measures
Abrasion		– Due to hard inclusions (e.g. silicon grains) or alloying elements, small parts of the cutting edge are gradually worn away (abrasion)	– Use a coarser PCD grain size – Reduce the cutting speed – Reduce the feed – Implement a more stable cutting edge – Optimise the coolant/increase the pressure – Increase the clearance angle
Build-up on the cutting edge		– The material to be machined adheres to the tool cutting edge (adhesion) – When it is stripped away, small particles are torn from the cutting edge	– Check for wear – Increase the cutting speed v_c – Use a finer PCD grain size – Use an insert with a sharper wedge angle/chip breaker – Optimise the coolant/increase the pressure – Check the lubricant concentration
Fractures		– When machining very hard materials or performing interrupted cuts – Flaking, cracks or fractures can occur along the cutting edge	– Grade with a higher breakage resistance – Review the machining strategy – Adjust the cutting edge preparation (more stable cutting edge) – Reduce the clearance angle – Check for chip impacts
Apparent chip		– When machining extremely tough and freshly cast aluminium without cooling lubricant or with only minimum quantity lubrication – Insufficient lateral clearance angle or projection	– Optimise the cooling or use a coolant with a higher concentration of lubricant – Use chip breaker geometry – Increase the minor clearance angle – Increase the projection of the PCD insert or the PCD blank beyond the basic body
Layer flaking		– Often occurs when machining sintered materials and irregular surfaces – Potentially excessively sharp cutting edge design – Vibrating, unstable components	– Select a more stable edge design – Select a coarser PCD grain size – Reduce the cutting speed – Reduce the clearance angle
Overload fracture		– Sudden overloading of the cutting edge	– Analyse the machining strategy – It may even be necessary to select a negative chamfer

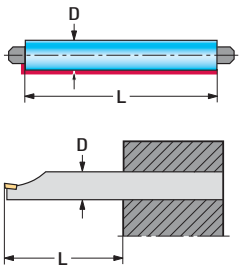
Important:
Avoid machining temperatures of above 730 °C at all times.

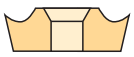
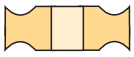
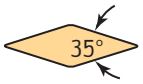
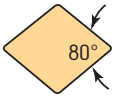
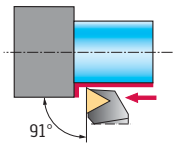
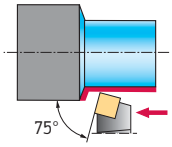
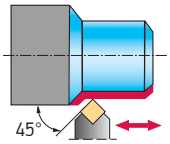
Consequences of excessive machining temperatures:
– The solder joint loses adhesion
– The PCD grain reaches reaction temperature → microstructure transforms into graphite

Application information: Vibration tendency

Vibration occurs when machining long, small diameter components or during internal machining using boring bars with a long projection length. This is particularly the case if L/D > 4.

When selecting a tool, the following parameters must be taken into account in order to reduce the risk of vibration:



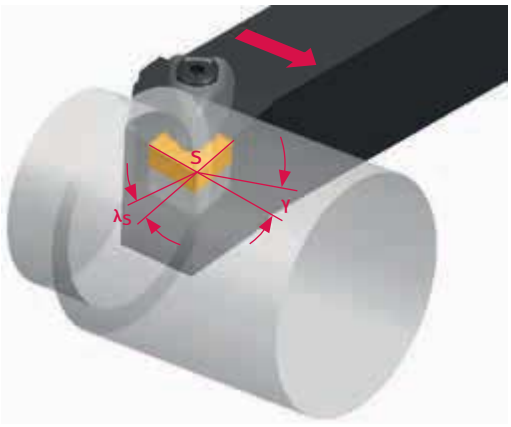
	– Vibration tendency +		
1. Basic insert shape	 Positive	 Negative, double-sided	 Negative, single-sided
2. Insert shape	 35°	 80°	
3. Approach angle	 91°	 75°	 45°
4. Corner radius	 r = 0,2 mm	 r = 0,4 mm	 r = 0,8–1,2 mm
5. Effective rake angle			
6. Coating	 Uncoated	 PVD	 CVD

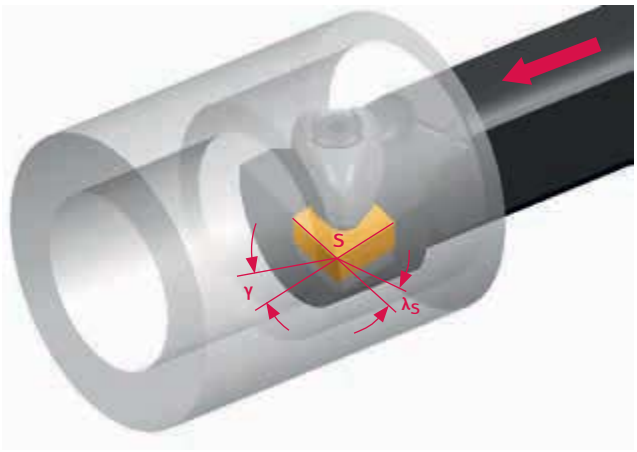
Following selection of the tool/indexable insert, there are other factors that play an important role in reducing vibration:

1. Clamp tools and boring bars at the shortest length possible
2. Select a depth of cut 0.1 mm greater than the corner radius of the indexable insert
3. If vibration occurs, reduce the cutting speed by 50-70% in comparison to the specified catalogue values
4. Check the clamping pressure at the tail stock spindle during external machining

Application information:
Walter Turn turning tools – Effective rake angle

The effective rake angle of a tooling system is determined by the indexable insert geometry and the inclination of the indexable insert in the tool holder.



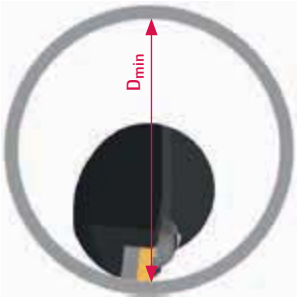


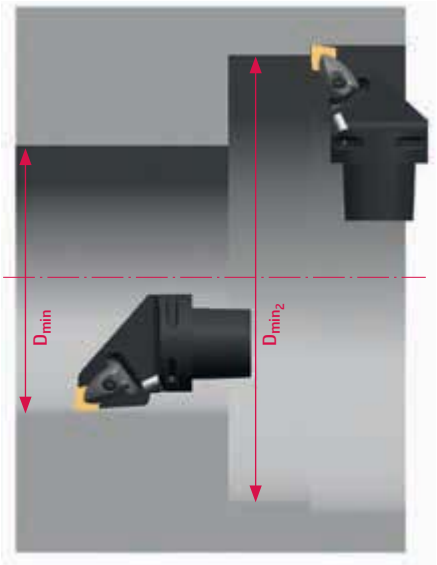
λ_S (inclination angle) The angle is tilted around the peripheral cutting edge (S) parallel to the main cutting edge.

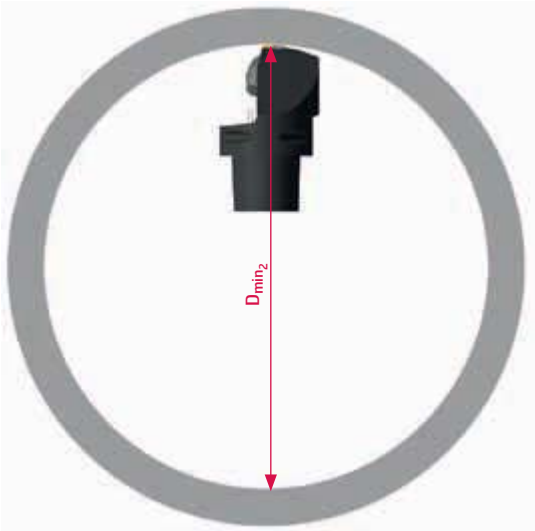
γ (rake angle) This is the angle at right angles to the main cutting edge, measured with a smooth indexable insert without chip breaker groove.
In order to obtain the effective rake angle of the tooling system, the rake angle of the indexable insert must also be taken into consideration.

Walter Capto™ – Boring operations with turning toolholders for external machining

Walter Capto™ tools for external machining can also be used for internal machining of large diameters.
This often takes place on turn/mill centres or vertical turret lathes.



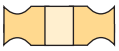


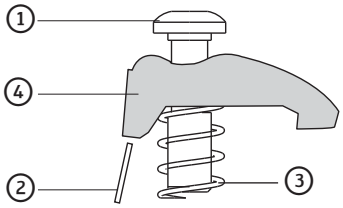


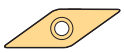
D_{min} = Minimum internal machining diameter. Toolholder parallel to the axis of rotation.
D_{min_2} = Minimum internal machining diameter. Toolholder angled at 90° in relation to the axis of rotation.

Assembly parts and accessories for Walter Turn rigid clamping

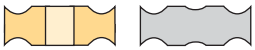
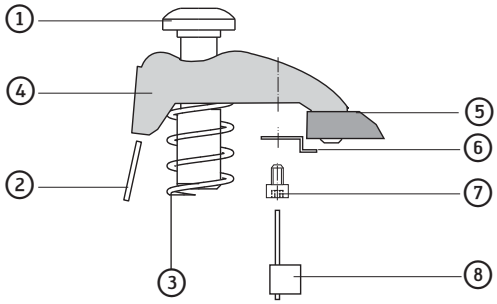
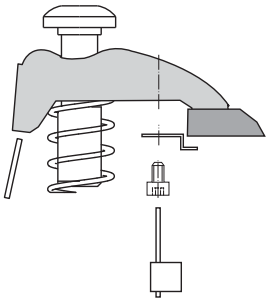
Standard clamps

Application	 for indexable inserts with drilled hole

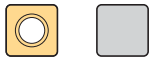
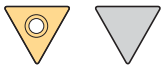
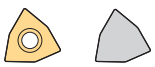


Set	PK240 set	PK244 set	PK241 set	PK242 set	PK243 set	PK301 set
1 Clamp screw	FS1472 (Torx 9IP)	FS1473 (Torx 15IP)	FS1473 (Torx 15IP)	FS1474 (Torx 20IP)	FS1474 (Torx 20IP)	FS1589 (Torx 25IP)
2 Pin (fitted in the toolholder)	RS116	RS117	RS117	RS117	RS117	RS117
3 Pressure spring	FS1469	FS1470	FS1470	FS1471	FS1471	FS1590
4 Clamp	PK240	PK244	PK241	PK242	PK243	PK301
Type	**Size**					
	CN . . 09 . .		CN . . 12 . .	CN . . 16 . .	CN . . 19 . .	
	DN . . 11 . .		DN . . 15 . .	DN . . 15 . .		
	SN . . 09 . .		SN . . 12 . .	SN . . 15 . .	SN . . 19 . .	SN . . 25 . .
	TN . . 16 . .		TN . . 22 . .			
		VN . . 16 . .				
	WN . . 06 . .		WN . . 08 . .	WN . . 10. .		

Reinforced clamps with carbide shoe

Application	 for indexable inserts with hole* or dimple	 for indexable inserts without hole
		

Set	PK245 set	PK246 set	PK254 set
① Clamp screw	FS1473 (Torx 15IP)	FS1474 (Torx 20IP)	FS1473 (Torx 15IP)
② Pin (fitted in the toolholder)	RS117	RS117	RS117
③ Pressure spring	FS1470	FS1471	FS1470
④ Clamp	PK245	PK246	PK254
⑤ Carbide clamping plate	FK371	FK372	FK 371
⑥ Clip for clamping plate	FK373	FK373	FK 373
⑦ Screw for clamping plate	FS1492	FS1492	FS1492
⑧ Key for clip screw	FS1490 (Torx 7IP)	FS1490 (Torx 7IP)	FS1490 (Torx 7IP)
Shim for basic shape CN . . 1207 . .			AP411–CN1207
Shim for basic shape DN . . 1507 . .			AP412–DN1507
Shim for basic shape SN . . 1207 . .			AP413–SN1207

Type	Size		
	CN . . 12 . .	CN . . 16 . .	CN . . 12 . .
	DN . . 15 . .		DN . . 15 . .
	SN . . 12 . .	SN . . 15 . .	SN . . 12 . .
	TN . . 22 . .		TN . . 22 . .
	WN . . 08 . .	WN . . 10. .	WN . . 08 . .

Walter Turn clamp holders are fitted as standard with the PK241 set. By using the PK254 set, they can be used to clamp the following ceramic inserts without hole: CN . . 12 . . / DN . . 15 . . /SN . . 12 . . → For this, separate shims must be ordered (see table).

* Alternatively in the event of erosion on the standard clamp

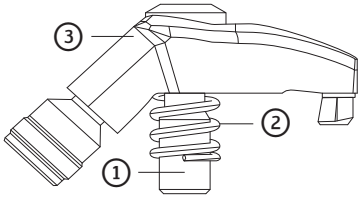
Assembly parts and accessories for Walter Turn rigid clamping with precision cooling

Standard clamps for tools with precision cooling

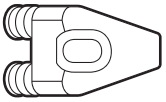
Application



for indexable inserts with hole



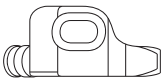
Version



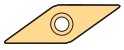
Walter Capto™



Right



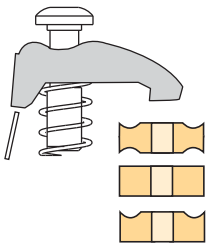
Left

Set	PK255 set	PK256 set	PK261R/L set	PK266R/L set
① Clamp screw	FS1473 (Torx 15IP)	FS1473 (Torx 15IP)	FS1473 (Torx 15IP)	FS1473 (Torx 15IP)
② Pressure spring	FS2188	FS2188	FS2188	FS2188
③ Clamp	PK255	PK256	PK261R/L	PK266R/L
Type	**Size**			
	CN . . 12 . .		CN . . 12 . .	
	DN . . 11 . .	DN . . 15 . .	DN . . 11 . . DN . . 15 . .	
	SN . . 12 . .		SN . . 12 . .	
	TN . . 16 . . TC . . 16T3 . .		TN . . 16 . . TC . . 16T3 . .	
	VB . . 1604 . .		VB . . 1604 . .	
	WN . . 08 . .			WN . . 08 . .

Shims for Walter Turn clamp holders – External and internal machining

Standard clamps

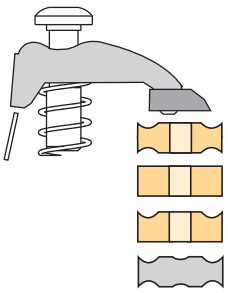
for indexable inserts with hole
PK240 set/PK244 set
PK241 set/PK242 set
PK243 set/PK301 set



Reinforced clamps with carbide shoe

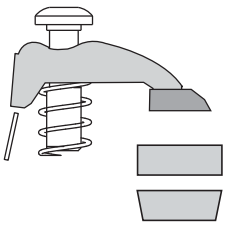
for indexable inserts with hole* or dimple

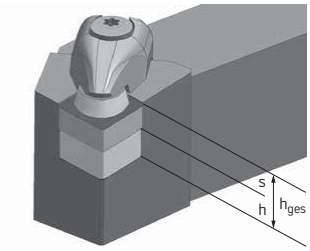
PK245 set
PK246 set



for indexable inserts without hole

PK254 set



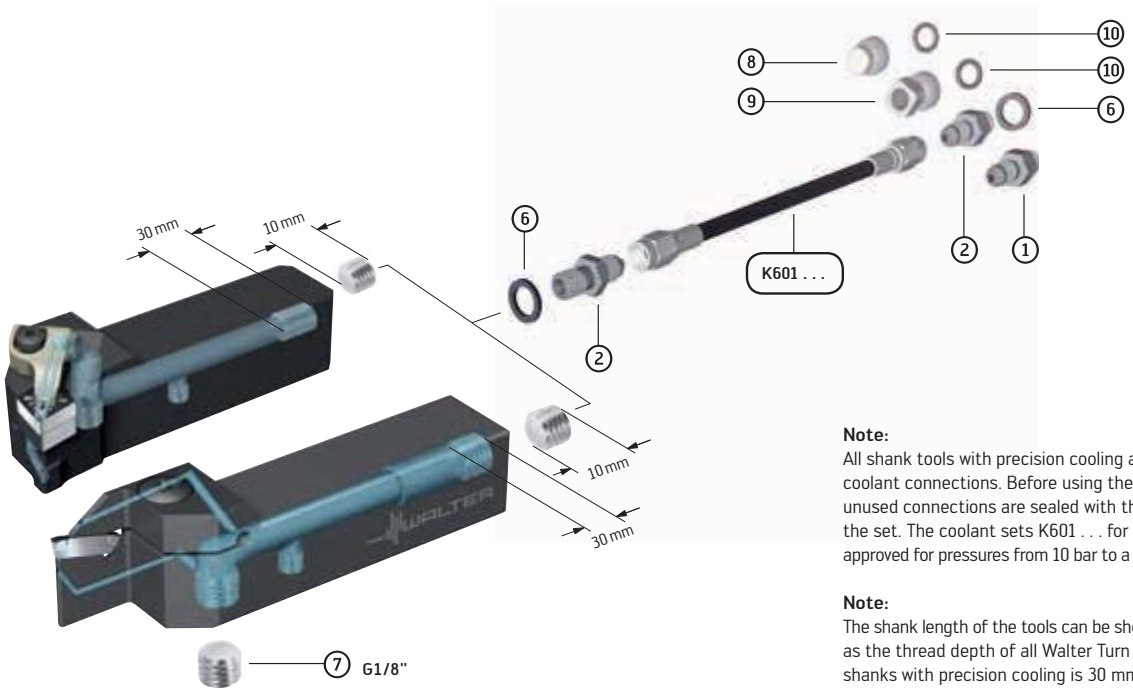


s = Insert thickness

Indexable insert			Shim					
Insert seat	for insert	Insert thickness s mm	Type	Designation	Status	Height h mm	Clearance angle	Centre height h_{ges} mm
CN . . 09 . .	CN . . 0903 . .	3,18		AP414–CN09	Assembly part	3,18	7°	6,36
CN . . 12 . .	CN . . 1204 . .	4,76		AP301–CN12	Assembly part	6,35	0°	11,11
	CN . . 1204 . .	4,76		AP354–CN12	Assembly part	3,175	12°	7,935
	CN . . 1207 . .	7,94		AP411–CN1207	Accessories	3,175	0°	11,11
CN . . 16 . .	CN . . 1606 . .	6,35		AP302–CN16	Assembly part	6,35	0°	12,7
CN . . 19 . .	CN . . 1906 . .	6,35		AP303–CN19	Assembly part	4,76	8°	11,11
DN . . 11 . .	DN . . 1104 . .	4,76		AP305–DN11	Assembly part	3,18	8°	7,94
DN . . 15 . .	DN . . 1504 . .	4,76		AP304–DN1504	Accessories	6,35	0°	11,11
	DN . . 1506 . .	6,35		AP304–DN15	Assembly part	4,76	0°	11,11
	DN . . 1507 . .	7,94		AP412–DN1507	Accessories	3,17	0°	11,11
RC/P . . 09 . .	RC/P . . 0907 . .	7,74	h	AP416–RC0907	Assembly part	4	0°	11,74
RC/P . . 12 . .	RC/P . . 1207 . .	7,74	h	AP417–RC1207	Assembly part	4	0°	11,74
RN . . 12 . .	RN . . 1207 . .	7,94		AP418–RN1207	Assembly part	4,76	0°	12,7
RN . . 15 . .	RN . . 1507 . .	7,94		AP419–RN1507	Assembly part	4	0°	11,94
RN . . 19 . .	RN . . 1907 . .	7,94		AP420–RN1907	Assembly part	6	0°	13,94
SN . . 09 . .	SN . . 0903 . .	3,18		AP415–SN09	Assembly part	3,175	7°	6,355
SN . . 12 . .	SN . . 1204 . .	4,76		AP308–SN12	Assembly part	6,35	0°	11,11
	SN . . 1204 . .	4,76		AP355–SN12	Assembly part	3,175	12°	7,935
	SN . . 1207 . .	7,94		AP413–SN1207	Accessories	3,17	0°	11,11
SN . . 15 . .	SN . . 1506 . .	6,35		AP309–SN15	Assembly part	6,35	0°	12,7
SN . . 19 . .	SN . . 1906 . .	6,35		AP310–SN19	Assembly part	6,35	0°	12,7
TN . . 16 . .	TN . . 1604 . .	4,76		AP321–TN16	Assembly part	6,35	0°	11,11
	TN . . 1604 . .	4,76		AP356–TN16	Assembly part	3,175	12°	7,935
TN . . 22 . .	TN . . 2204 . .	4,76		AP322–TN22	Assembly part	6,35	0°	11,11
VN . . 16 . .	VN . . 1604 . .	4,76		AP312–VN16	Assembly part	3,175	7°	7,935
WN . . 06 . .	WN . . 0604 . .	4,76		AP306–WN06	Assembly part	3,175	7°	7,935
WN . . 08 . .	WN . . 0804 . .	4,76		AP331–WN08	Assembly part	3,175	10°	7,935
	WN . . 0804 . .	4,76		AP307–WN08	Assembly part	4,76	0°	9,52
WN . . 10 . .	WN . . 1006 . .	6,35		AP311–WN10	Assembly part	6,35	0°	12,7

Assembly parts and accessories
Coolant hose set for shank tools with precision cooling (-P)

Shank tools -P



Note:
All shank tools with precision cooling are equipped with three coolant connections. Before using the tools, ensure that the unused connections are sealed with the screws provided in the set. The coolant sets K601 . . . for shank tool holders are approved for pressures from 10 bar to a maximum of 275 bar.

Note:
The shank length of the tools can be shortened by up to 20 mm, as the thread depth of all Walter Turn and Walter Cut square shanks with precision cooling is 30 mm.

Walter coolant hose set -P

				Length			
				150 mm	K601.01.150 SET	K601.02.150 SET	K601.03.150 SET
				250 mm	K601.01.250 SET	K601.02.250 SET	K601.03.250 SET
Individual components			Designation	300 mm	K601.01.300 SET	K601.02.300 SET	K601.03.300 SET
					Set contents		
①		M10 connection element	FS2252		1 ×	—	—
②		G1/8" double connection element	FS2253		2 ×	1 ×	—
③		G1/8" angle connection	FS2254		—	1 ×	2 ×
④		M10 angle connection	FS2255		—	1 ×	1 ×
⑤		G1/4"-G1/8" reducer	FS2256		—	1 ×	1 ×
⑥		Copper gasket	FS2257		2 ×	3 ×	4 ×
⑦		G1/8" screw	FS2258		1 ×	1 ×	1 ×
⑧		Brass blanking plug	FS2259		1 ×	1 ×	1 ×
⑨		G1/8" brass nozzle	FS2260		1 ×	1 ×	1 ×
⑩		O-ring	FS2261		2 ×	2 ×	2 ×

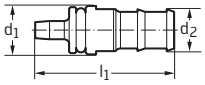
Assembly parts and accessories
Coolant nozzles and coolant adaptors

Coolant nozzles – Walter Capto™

		Walter Capto™ size		
		C3 + C4	C5 + C6	C6 + C 8
	Standard brass coolant nozzle up to 80 bar	FS1477	FS1476	FS1479
	Plug-in inserts for changing the nozzles	FS1477HEX (SW5)	FS1476HEX (SW5)	FS1479HEX (SW5)
	Key for plug-in insert	FS2158 (SW5)	FS2158 (SW5)	FS2158 (SW5)

Please note:
A different coolant nozzle is installed in certain Walter Capto™ tools (C3-C8) from the one specified in the table above.
This detailed information can be found on the relevant tool page.

K600 coolant adaptor for Walter Turn boring bars with rigid, lever or screw clamping

	Designation	d_1 mm	l_1 mm	d_2 mm
	K600.06.25.054	6	25	5,4
	K600.08.28.066	8	28	6,6
	K600.10.28.086	10	28	8,6
	K600.12.38.086	12	38	8,6
	K600.16.40.137	16	40	13,7
	K600.20.40.137	20	40	13,7
	K600.25.44.137	25	44	13,7
	K600.32.44.137	32	44	13,7
	K600.40.46.137	40	46	13,7
	K600.50.46.137	50	46	13,7

Note: d_1 corresponds to the shank diameter of the boring bar

Please note:
Coolant adaptors can be cut off approx. 3 mm after the O-ring if necessary. This enables shorter clamping when using the boring bar and coolant adaptor in a Walter Capto™ or VDI boring bar adaptor. This prevents coolant escaping via the clamping surface and also provides a higher pressure for the internal coolant supply.



		Page
Cutting inserts	Product range overview	A 271
	Designation key	A 272
	Walter Select – Cutting inserts	A 275
	Double-edged cutting inserts – GX	A 278
	Single-edged cutting inserts – SX	A 286
Walter Cut grooving tools	Product description	A 290
	Product range overview	A 294
	System overview	A 298
	Designation key	A 300
	Walter Select – Grooving tools	A 304
	Shank tools/parting blades/boring bars	A 308
	Walter Capto™ groove turning holders	A 368
Technical information – Grooving	Cutting data	A 394
	Cutting tool material application charts	A 396
	Geometry overview – Cutting inserts	A 397
	Application information	A 400
Assembly parts and accessories	Coolant hose set for groove turning holders with precision cooling	A 420

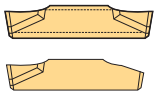


Product range overview of cutting inserts and cutting tool materials: Grooving

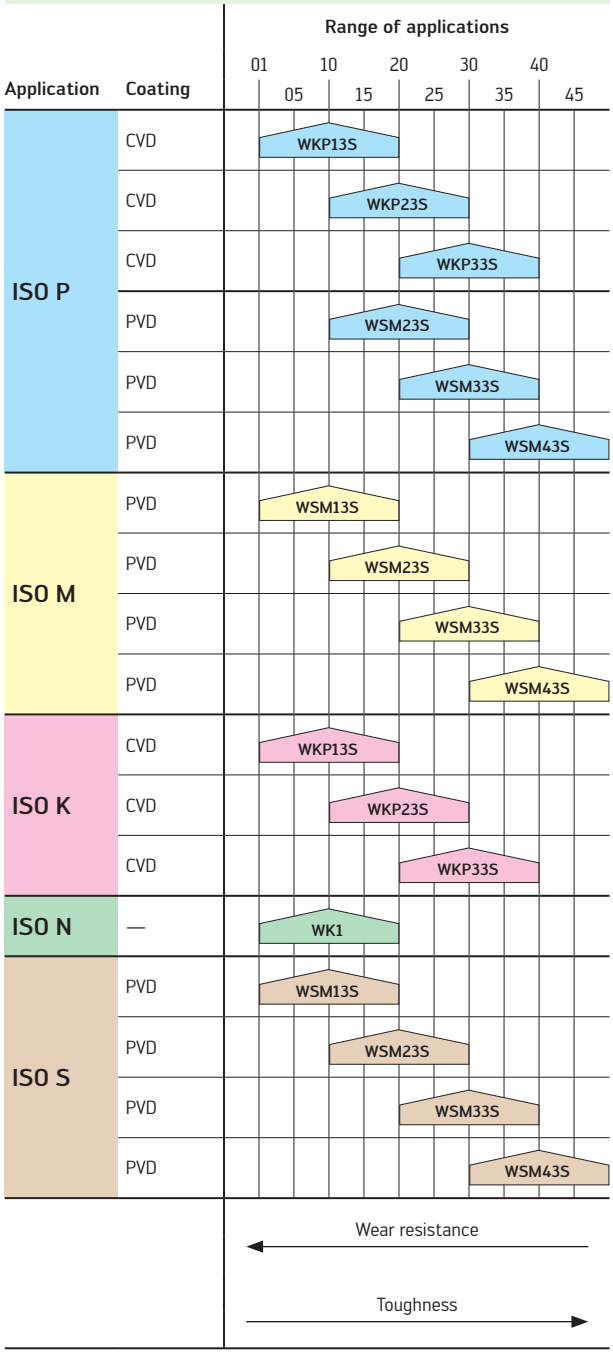





Cutting inserts

Insert shape	Description	Page
Parting off/grooving		
 **GX**	Walter Cut GX grooving inserts, double-edged/ single-edged	A 278
 **SX**	Walter Cut SX grooving inserts, single-edged	A 286
Recessing		
 **GX**	Walter Cut GX grooving inserts, double-edged	A 282
Circlip grooves		
 **GX-S**	Walter Cut GX grooving inserts, double-edged	A 281
Semi-finished parts/blanks		
 **GX**	Walter Cut GX grooving inserts, double-edged	A 285
 **SX**	Walter Cut SX grooving inserts, single-edged	A 288

Cutting tool materials: Carbide



Designation key for Walter Cut cutting inserts

A2

Example:

GX	24	–	2	E	300	N	03	–	U	F	4
1	2		3	4	5	6	7		8	9	10

1 Insert type

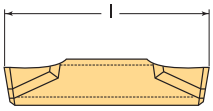
GX



SX

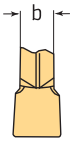


2 Insert length l [mm]



09	l = 9
16	l = 16
24	l = 24
30	l = 30

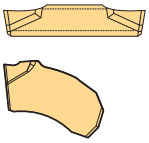
3 Width category



0
1
2
3
4
5

4 Basic shape

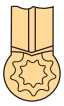
E



F



R



S



8 Application

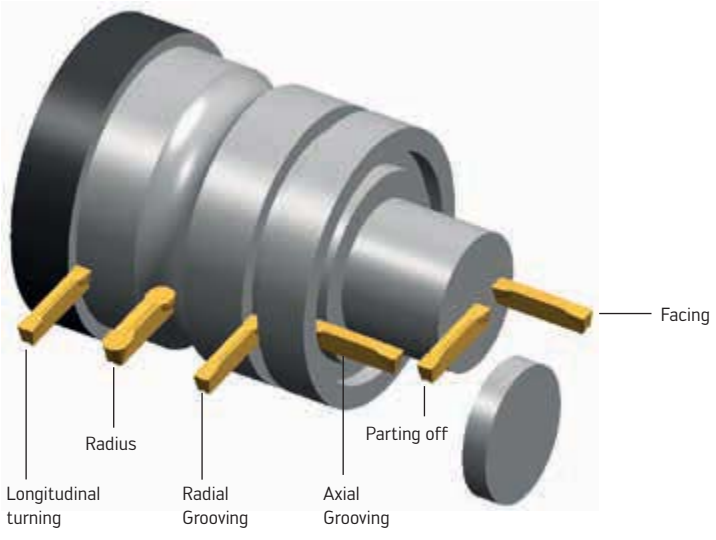
C **"Cut off"**
- Parting off
- Radial grooving

G **"Grooving"**
- Radial grooving
- Axial grooving
- Parting off

R **Full radius**
- Radial grooving
- Axial grooving
- Longitudinal turning
- Facing

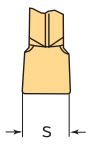
S **"Slitting"**
- Slitting
- Slot milling

U **Universal**
- Longitudinal turning
- Radial grooving
- Axial grooving
- Facing
- Parting off



5

Insert width s [mm]



For example:

200	s = 2,0
220	s = 2,2
250	s = 2,5
300	s = 3,0
310	s = 3,1

etc.

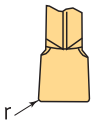
6

Version

Grooving:	**R**		Right
	L		Left
	N		Neutral
Parting off:	**R**		Right
	L		Left

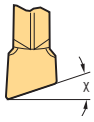
7

Corner radius r [mm]/ approach angle χ [°]



02	r = 0,2
03	r = 0,3
04	r = 0,4
05	r = 0,5

etc.

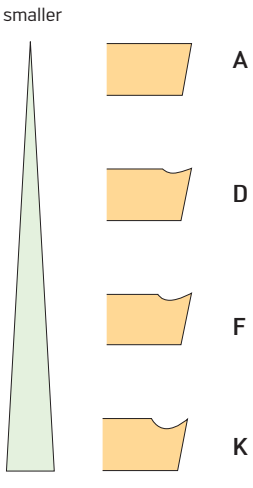


6	χ = 6°
7	χ = 7°
15	χ = 15°

etc.

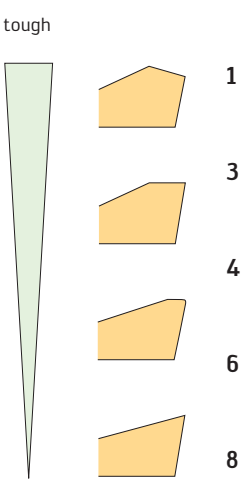
9

Rake angle



10

Cutting edge



Designation key for carbide cutting tool materials – Grooving

Example:

W	S	M	33	S
Walter	1	2	3	4

1

1. Primary application or coating type

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials
A	CVD aluminium oxide coating
X	PVD coating

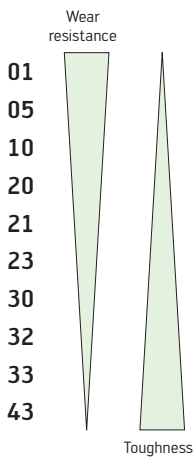
2

2. Primary application

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials

3

ISO range of applications



Cutting tool materials for:

0	ISO turning
1	ISO turning
5	ISO turning
2	Thread turning
3	Grooving

4

Generation

S	Tiger·tec® Silver

Walter Select for grooving cutting inserts

Step by step to the right cutting insert

STEP 1

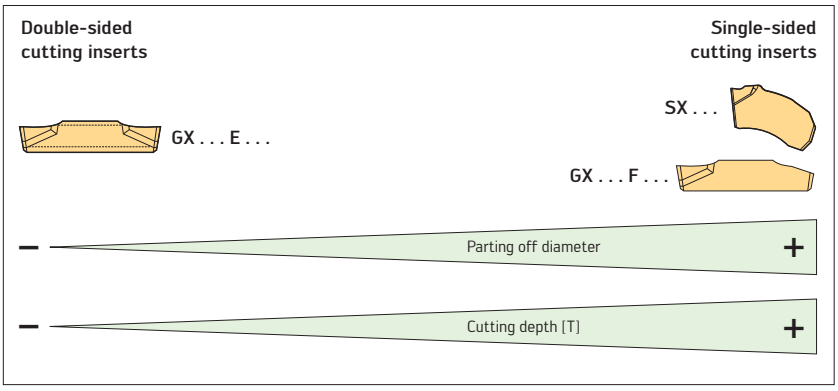
Determine the **material** to be machined from page A 468 onwards.

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Determine the **basic shape** of the cutting insert:



STEP 3

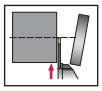
Select the **machining conditions:**

Type of cutting action	Machine stability, clamping system and workpiece		
	very good	good	moderate
Smooth cut, premachined surface	☺	☺	😐
Cast or forged skin, variable depths of cut	☺	😐	☹
Interrupted cuts	😐	☹	☹

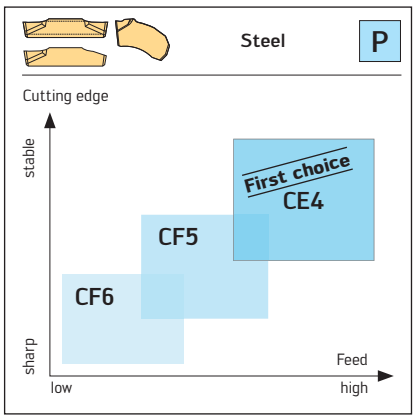
A2

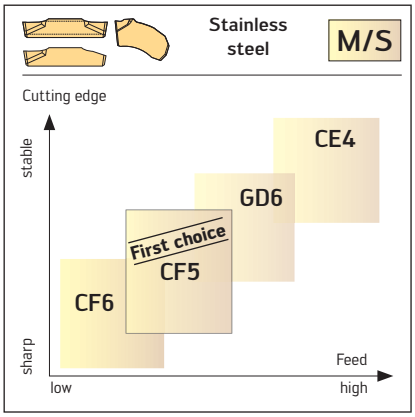
STEP 4

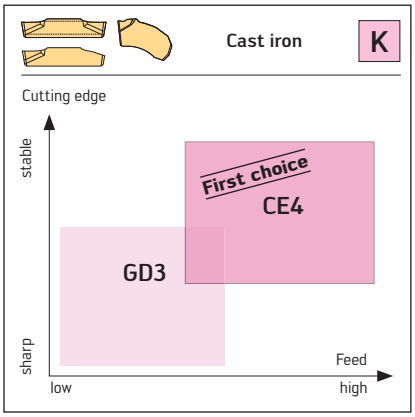
Determine the **indexable insert geometry** via the cutting edge stability and feed.

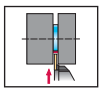


GX and SX cutting inserts for parting off from page A 278 onwards

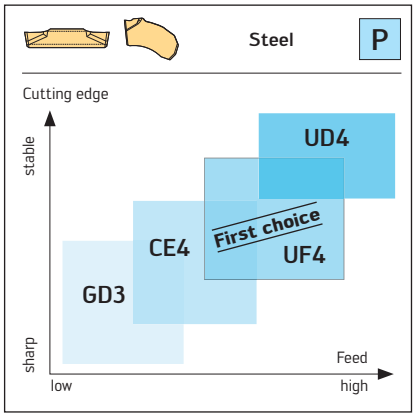


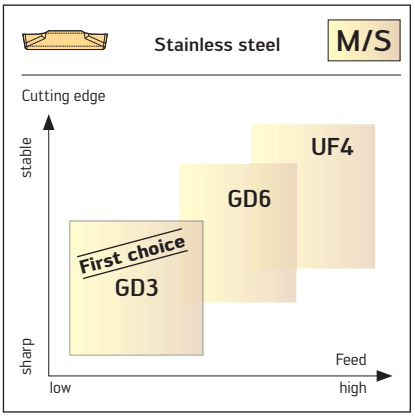


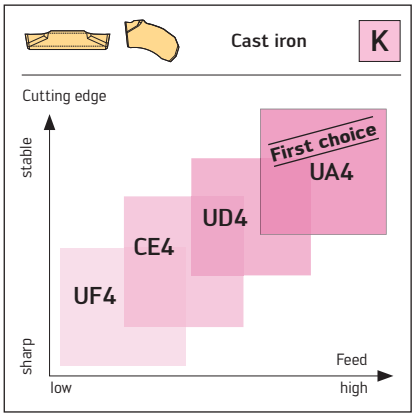


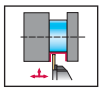


GX and SX cutting inserts for grooving from page A 278 onwards

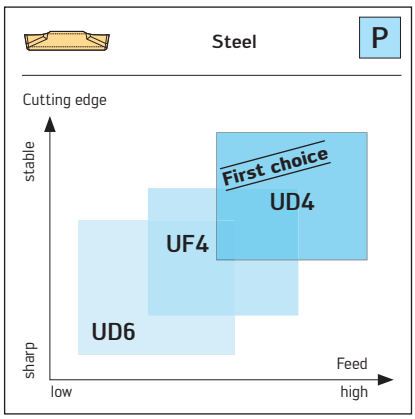


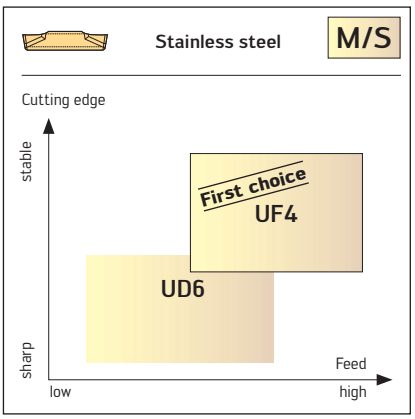


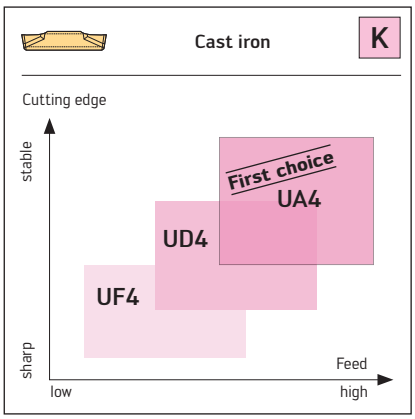




GX cutting inserts for recessing from page A 282 onwards

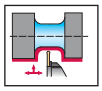




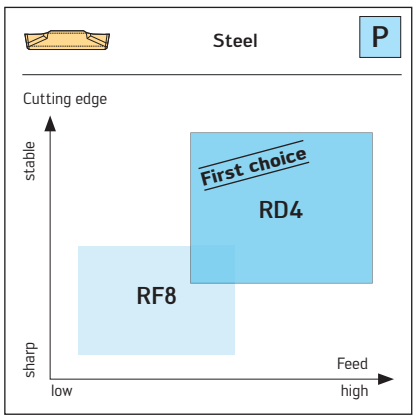


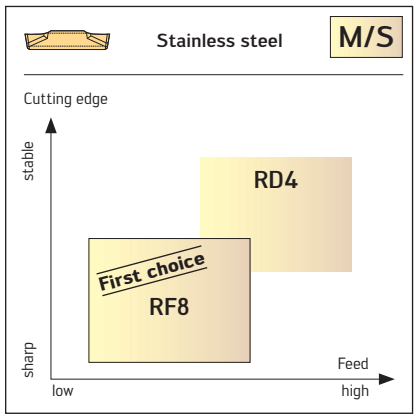
STEP 4 – Continued

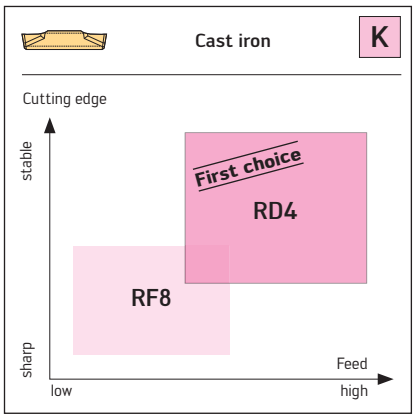
Determine the **indexable insert geometry** via the cutting edge stability and feed.

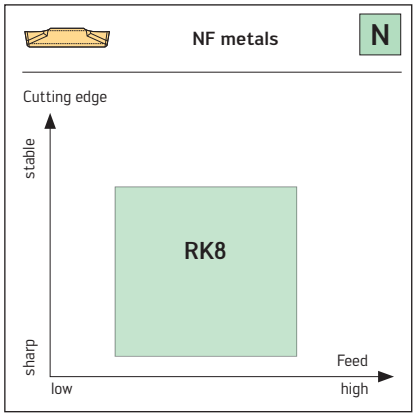


GX full radius cutting inserts for copy turning from page A 284 onwards



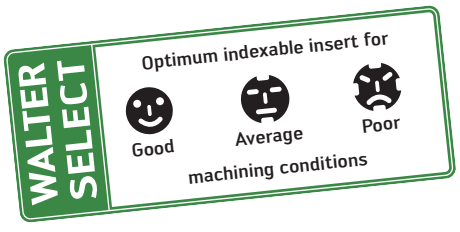


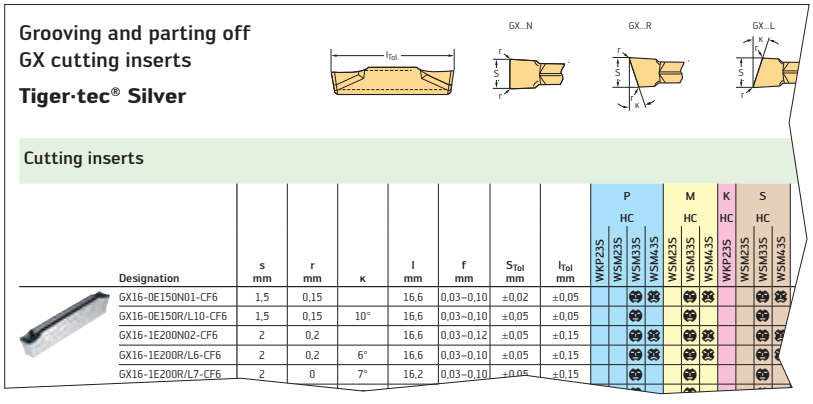




STEP 5

You will find the cutting tool material recommendation and the feed value (f) on the specified catalogue page.





Grooving and parting off
GX cutting inserts
Tiger·tec® Silver

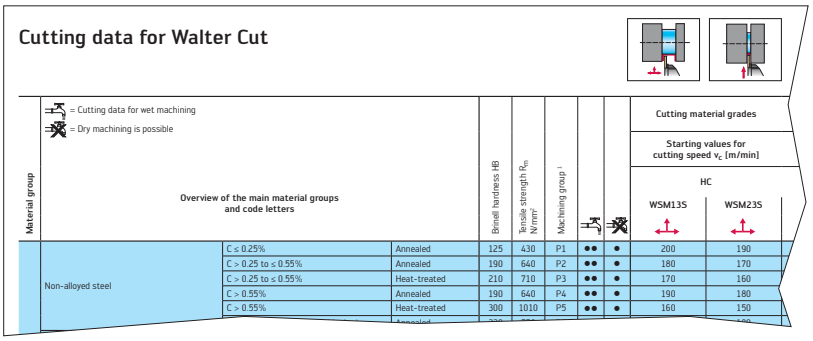
GX...N GX...R GX...L

Cutting inserts

Designation	s mm	r mm	κ	l mm	f mm	S_{Tol} mm	l_{Tol} mm	P HC WKP23S	P HC WSM23S	P HC WSM33S	P HC WSM43S	M HC WSM23S	M HC WSM33S	M HC WSM43S	K HC WKP23S	S HC WSM23S	S HC WSM33S	S HC WSM43S
GX16-0E150N01-CF6	1,5	0,15		16,6	0,03–0,10	±0,02	±0,05			●●	●●		●●	●●			●●	●●
GX16-0E150R/L10-CF6	1,5	0,15	10°	16,6	0,03–0,10	±0,05	±0,05			●●			●●				●●	
GX16-1E200N02-CF6	2	0,2		16,6	0,03–0,12	±0,05	±0,15			●●	●●		●●	●●			●●	●●
GX16-1E200R/L6-CF6	2	0,2	6°	16,6	0,03–0,10	±0,05	±0,15			●●	●●		●●	●●			●●	●●
GX16-1E200R/L7-CF6	2	0	7°	16,2	0,03–0,10	±0,05	±0,15			●●			●●				●●	

STEP 6

Choose the **cutting data** for your selected cutting insert in the technical information from page A 394 onwards.

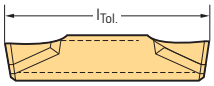


Cutting data for Walter Cut

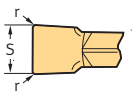
= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Cutting material grades HC WSM13S	Cutting material grades HC WSM23S
						Starting values for cutting speed v_c [m/min]	
Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	200	190
	C > 0.25 to ≤ 0.55%	Annealed	190	640	P2	180	170
	C > 0.25 to ≤ 0.55%	Heat-treated	210	710	P3	170	160
	C > 0.55%	Annealed	190	640	P4	190	180
	C > 0.55%	Heat-treated	300	1010	P5	160	150

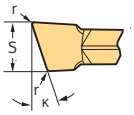
Grooving and parting off
GX cutting inserts
Tiger·tec® Silver



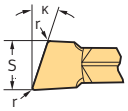
GX...N



GX...R



GX...L



A2

Cutting inserts

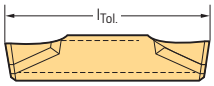
	Designation	s mm	r mm	κ	l mm	f mm	S_{Tol} mm	l_{Tol} mm	P HC WKP23S	P HC WSM23S	P HC WSM33S	P HC WSM43S	M HC WSM23S	M HC WSM33S	M HC WSM43S	K HC WKP23S	S HC WSM23S	S HC WSM33S	S HC WSM43S
	GX16-0E150N01-CF6	1,5	0,15		16,6	0,03–0,10	±0,02	±0,05			●	●		●	●			●	●
	GX16-0E150R/L10-CF6	1,5	0,15	10°	16,6	0,03–0,10	±0,05	±0,05			●			●				●	
	GX16-1E200N02-CF6	2	0,2		16,6	0,03–0,12	±0,05	±0,15			●	●		●	●			●	●
	GX16-1E200R/L6-CF6	2	0,2	6°	16,6	0,03–0,10	±0,05	±0,15			●	●		●	●			●	●
	GX16-1E200R/L7-CF6	2	0	7°	16,2	0,03–0,10	±0,05	±0,15			●			●				●	
	GX16-1E200R/L15-CF6	2	0	15°	16,2	0,03–0,10	±0,05	±0,15			●			●				●	
	GX16-1E250N02-CF6	2,5	0,2		16,6	0,03–0,15	±0,05	±0,15			●	●		●	●			●	●
	GX16-1E250R/L6-CF6	2,5	0,2	6°	16,6	0,03–0,12	±0,05	±0,15			●	●		●	●			●	●
	GX16-2E300N02-CF6	3	0,2		16,6	0,04–0,20	±0,05	±0,15			●	●		●	●			●	●
	GX16-2E300R/L6-CF6	3	0,2	6°	16,6	0,04–0,16	±0,05	±0,15			●	●		●	●			●	●
	GX16-2E300R/L7-CF6	3	0	7°	16,2	0,04–0,13	±0,05	±0,15			●			●				●	
	GX16-2E300R/L15-CF6	3	0	15°	16,2	0,04–0,13	±0,05	±0,15			●			●				●	
	GX24-1E200N02-CF6	2	0,2		24	0,03–0,12	±0,05	±0,15			●	●		●	●			●	●
	GX24-2E300N02-CF6	3	0,2		24,6	0,04–0,20	±0,05	±0,15			●	●		●	●			●	●
	GX24-2E300R/L6-CF6	3	0,2	6°	24,6	0,04–0,16	±0,05	±0,15			●	●		●	●			●	●
	GX24-2F300N02-CF6	3	0,2		24	0,04–0,20	±0,05	±0,15			●	●		●	●			●	●
	GX16-1E200N00-CF5	2	0		16,6	0,03–0,10	±0,02	±0,05			●	●		●	●			●	●
	GX16-1E200N02-CF5	2	0,2		16,6	0,04–0,12	±0,05	±0,15		☻	●	●	☻	●	●		☻	●	●
	GX16-1E200R/L6-CF5	2	0,2	6°	16,6	0,03–0,10	±0,05	±0,15			●	●		●	●			●	●
	GX16-1E200R/L7-CF5	2	0	7°	16,4	0,03–0,10	±0,05	±0,15			●			●				●	
	GX16-1E200R/L15-CF5	2	0	15°	16,4	0,03–0,10	±0,05	±0,15			●			●				●	
	GX16-1E250N02-CF5	2,5	0,2		16,6	0,05–0,15	±0,05	±0,15			●	●		●	●			●	●
	GX16-1E250R/L6-CF5	2,5	0,2	6°	16,6	0,03–0,12	±0,05	±0,15			●	●		●	●			●	●
	GX16-2E300N02-CF5	3	0,2		16,6	0,08–0,20	±0,05	±0,15		☻	●	●	☻	●	●		☻	●	●
	GX16-2E300R/L6-CF5	3	0,2	6°	16,6	0,04–0,16	±0,05	±0,15			●	●		●	●			●	●
	GX16-2E300R/L7-CF5	3	0	7°	16,6	0,04–0,13	±0,05	±0,15			●			●				●	
	GX16-2E300R/L15-CF5	3	0	15°	16,6	0,04–0,13	±0,05	±0,15			●			●				●	
	GX24-1E200N02-CF5	2	0,2		24	0,04–0,12	±0,05	±0,15		☻	●	●	☻	●	●		☻	●	●
	GX24-1E250N02-CF5	2,5	0,2		24	0,05–0,15	±0,05	±0,15			●	●		●	●			●	●
	GX24-2E300N00-CF5	3	0		24,6	0,04–0,16	±0,02	±0,05			●	●		●	●			●	●
	GX24-2E300N02-CF5	3	0,2		24	0,08–0,20	±0,05	±0,15		☻	●	●	☻	●	●		☻	●	●
	GX24-2E300R/L6-CF5	3	0,2	6°	24,6	0,04–0,16	±0,05	±0,15			●	●		●	●			●	●
	GX24-3E400N02-CF5	4	0,2		24	0,10–0,22	±0,05	±0,15		☻	●	●	☻	●	●		☻	●	●
	GX24-3E400R/L6-CF5	4	0,2	6°	24,6	0,10–0,18	±0,05	±0,15			●	●		●	●			●	●
	GX24-3E500N03-CF5	5	0,3		24	0,10–0,25	±0,05	±0,15			●	●		●	●			●	●
	GX24-2F300N02-CF5	3	0,2		23,7	0,08–0,20	±0,05	±0,15			●	●		●	●			●	●
	GX24-3F400N02-CF5	4	0,2		23,7	0,10–0,22	±0,05	±0,15			●	●		●	●			●	●
	GX24-3F500N03-CF5	5	0,3		23,7	0,10–0,25	±0,05	±0,15			●	●		●	●			●	●

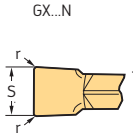
l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm
Parting off with diameters up to 32 mm is possible with GX16 inserts (l = 16.6 mm)

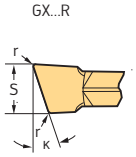
HC = Coated carbide

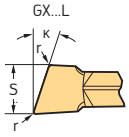
A 394 A 396 A 294 A 296

Grooving and parting off
GX cutting inserts
Tiger·tec® Silver







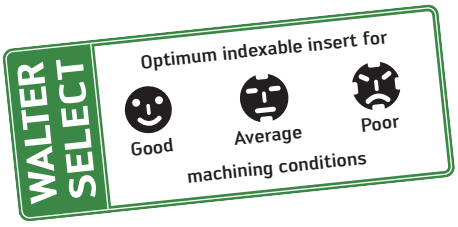


Cutting inserts

	Designation	s mm	r mm	κ	l mm	f mm	S_{Tol} mm	l_{Tol} mm	P HC WKP23S	P HC WSM23S	P HC WSM33S	P HC WSM43S	M HC WSM23S	M HC WSM33S	M HC WSM43S	K HC WKP23S	S HC WSM23S	S HC WSM33S	S HC WSM43S
	GX16-1E200N02-CE4	2	0,2		16,6	0,06–0,15	±0,05	±0,15		☺	😐	☹	☺	😐	☹		☺	😐	☹
	GX16-1E200R/L6-CE4	2	0,2	6°	16,6	0,04–0,10	±0,05	±0,15			😐	☹		😐	☹			😐	☹
	GX16-1E250N02-CE4	2,5	0,2		16,6	0,07–0,18	±0,05	±0,15			😐	☹		😐	☹			😐	☹
	GX16-1E250R/L6-CE4	2,5	0,2	6°	16,6	0,05–0,12	±0,05	±0,15			😐	☹		😐	☹			😐	☹
	GX16-2E300N02-CE4	3	0,2		16,6	0,09–0,30	±0,05	±0,15		☺	😐	☹	☺	😐	☹		☺	😐	☹
	GX16-2E300R/L6-CE4	3	0,2	6°	16,6	0,09–0,24	±0,05	±0,15			😐	☹		😐	☹			😐	☹
	GX24-1E200N02-CE4	2	0,2		24	0,06–0,15	±0,05	±0,15	☺	☺	😐	☹	☺	😐	☹	😐	☺	😐	☹
	GX24-1E250N02-CE4	2,5	0,2		24	0,07–0,18	±0,05	±0,15	☺		😐	☹		😐	☹	😐		😐	☹
	GX24-2E300N02-CE4	3	0,2		24	0,09–0,30	±0,05	±0,15	☺	☺	😐	☹	☺	😐	☹	😐	☺	😐	☹
	GX24-2E300R/L6-CE4	3	0,2	6°	24,6	0,09–0,24	±0,05	±0,15	☺		😐	☹		😐	☹	😐		😐	☹
	GX24-3E400N03-CE4	4	0,3		24	0,10–0,32	±0,05	±0,15	☺	☺	😐	☹	☺	😐	☹	😐	☺	😐	☹
	GX24-3E400R/L6-CE4	4	0,2	6°	24,6	0,10–0,26	±0,05	±0,15			😐	☹		😐	☹			😐	☹
	GX24-3E500N03-CE4	5	0,3		24	0,12–0,35	±0,05	±0,15	☺		😐	☹		😐	☹	😐		😐	☹
	GX24-4E600N03-CE4	6	0,3		24	0,12–0,40	±0,05	±0,15	☺		😐	☹		😐	☹	😐		😐	☹
	GX24-2F300N02-CE4	3	0,2		24	0,09–0,30	±0,05	±0,15			😐	☹		😐	☹			😐	☹
	GX24-3F400N03-CE4	4	0,3		24	0,10–0,32	±0,05	±0,15			😐	☹		😐	☹			😐	☹
	GX09-1E200N02-GD3	2	0,2		9	0,04–0,12	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX09-1E250N02-GD3	2,5	0,2		9	0,04–0,14	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX09-2E300N03-GD3	3	0,3		9	0,06–0,18	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX09-2E350N03-GD3	3,5	0,3		9	0,06–0,18	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX16-1E200N02-GD3	2	0,2		16	0,04–0,12	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX16-1E250N02-GD3	2,5	0,2		16	0,04–0,14	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX16-2E300N03-GD3	3	0,3		16	0,06–0,18	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX16-3E400N04-GD3	4	0,4		16	0,10–0,20	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX16-3E500N04-GD3	5	0,4		16	0,12–0,25	±0,02	±0,02	☺		😐	☹		😐	☹	😐		😐	☹
	GX16-4E600N05-GD3	6	0,5		16	0,14–0,28	±0,02	±0,02			😐	☹		😐	☹			😐	☹
	GX24-2E300N03-GD3	3	0,3		24	0,06–0,18	±0,05	±0,15	☺		😐	☹		😐	☹	😐		😐	☹
	GX24-3E400N04-GD3	4	0,4		24	0,10–0,20	±0,05	±0,15	☺		😐	☹		😐	☹	😐		😐	☹
	GX24-3E500N04-GD3	5	0,4		24	0,12–0,25	±0,05	±0,15	☺		😐	☹		😐	☹	😐		😐	☹
	GX24-4E600N05-GD3	6	0,5		24	0,14–0,28	±0,05	±0,15	☺		😐	☹		😐	☹	😐		😐	☹

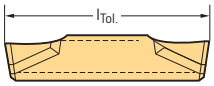
l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm
Parting off with diameters up to 32 mm is possible with GX16 inserts (l = 16.6 mm)

HC = Coated carbide

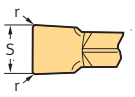


A 394 A 396 A 294 A 296

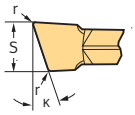
Grooving and parting off
GX cutting inserts
Tiger·tec® Silver



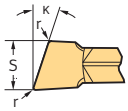
GX...N



GX...R



GX...L



A2

Cutting inserts

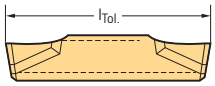
	Designation	s mm	r mm	κ	l mm	f mm	S_{Tol} mm	l_{Tol} mm	P HC WKP23S	P HC WSM23S	P HC WSM33S	P HC WSM43S	M HC WSM23S	M HC WSM33S	M HC WSM43S	K HC WKP23S	S HC WSM23S	S HC WSM33S	S HC WSM43S
	GX16-1E200N02-GD6	2	0,2		16	0,04–0,12	±0,05	±0,15		●	●		●	●			●	●	
	GX16-1E250N02-GD6	2,5	0,2		16	0,06–0,17	±0,05	±0,15		●	●		●	●			●	●	
	GX16-2E300N03-GD6	3	0,3		16	0,08–0,18	±0,05	±0,15		●	●		●	●			●	●	
	GX16-3E400N04-GD6	4	0,4		16	0,10–0,22	±0,05	±0,15		●	●		●	●			●	●	
	GX16-3E500N04-GD6	5	0,4		16	0,12–0,24	±0,05	±0,15		●	●		●	●			●	●	
	GX16-4E600N05-GD6	6	0,5		16	0,14–0,30	±0,05	±0,15		●	●		●	●			●	●	
	GX24-2E300N03-GD6	3	0,3		24	0,08–0,18	±0,05	±0,15		●	●		●	●			●	●	
	GX24-3E400N04-GD6	4	0,4		24	0,10–0,22	±0,05	±0,15		●	●		●	●			●	●	
	GX24-3E500N04-GD6	5	0,4		24	0,12–0,24	±0,05	±0,15		●	●		●	●			●	●	
	GX24-4E600N05-GD6	6	0,5		24	0,14–0,30	±0,05	±0,15		●	●		●	●			●	●	

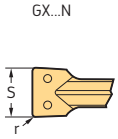
l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm
Parting off with diameters up to 32 mm is possible with GX16 inserts (l = 16.6 mm)

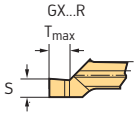
HC = Coated carbide

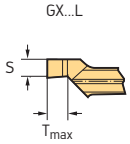
A 394 A 396 A 294 A 296

Grooving of circlip grooves
GX cutting inserts







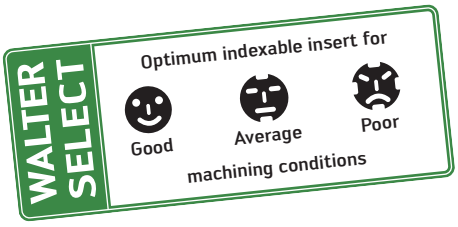


Cutting inserts

	Designation	s mm	r mm	T_{max} mm	l mm	f mm	S_{Tol} mm	l_{Tol} mm	P HC WKP23S	P HC WSM33S	P HC WSM43S	P HC WTA33	M HC WSM33S	M HC WSM43S	K HC WKP23S	K HC WTA33	S HC WSM33S	S HC WSM43S
	GX09-1S1.00R/L	1	0	1,14	9	0,05–0,10	±0,02	±0,02				☹				☹		
	GX09-1S1.20R/L	1,2	0	1,34	9	0,05–0,10	±0,02	±0,02				☹				☹		
	GX09-1S1.40R/L	1,4	0	1,53	9	0,05–0,10	±0,02	±0,02				☹				☹		
	GX09-1S1.70R/L	1,7	0	1,82	9	0,05–0,10	±0,02	±0,02				☹				☹		
	GX09-1S1.95N	1,95	0,1		9	0,05–0,10	±0,02	±0,02				☹				☹		
	GX09-1S2.25N	2,25	0,1		9	0,05–0,12	±0,02	±0,02				☹				☹		
	GX09-2S2.75N	2,75	0,1		9	0,05–0,12	±0,02	±0,02				☹				☹		
	GX09-2S3.25N	3,25	0,1		9	0,05–0,12	±0,02	±0,02				☹				☹		
	GX16-2S0.60R/L	0,6	0	0,75	16	0,05–0,10	±0,02	±0,02				☹				☹		
	GX16-2S0.80R/L	0,8	0	0,94	16	0,05–0,10	±0,02	±0,02				☹				☹		
	GX16-2S1.00R/L	1	0	1,14	16	0,05–0,10	±0,02	±0,02				☹				☹		
	GX16-2S1.20R/L	1,2	0	1,34	16	0,05–0,10	±0,02	±0,02				☹				☹		
	GX16-2S1.40R/L	1,4	0	1,53	16	0,05–0,10	±0,02	±0,02				☹				☹		
	GX16-2S1.70R/L	1,7	0	1,82	16	0,05–0,10	±0,02	±0,02				☹				☹		
	GX16-2S1.95R/L	1,95	0	2,07	16	0,05–0,10	±0,02	±0,02				☹				☹		
	GX16-2S2.25R/L	2,25	0	2,36	16	0,05–0,12	±0,02	±0,02				☹				☹		
	GX16-2S2.75N	2,75	0,1		16	0,05–0,12	±0,02	±0,02				☹				☹		
	GX16-2S3.25N	3,25	0,1		16	0,07–0,14	±0,02	±0,02				☹				☹		
	GX16-3S4.25N	4,25	0,2		16	0,07–0,20	±0,02	±0,02				☹				☹		
	GX16-4S5.25N	5,25	0,2		16	0,08–0,20	±0,02	±0,02				☹				☹		

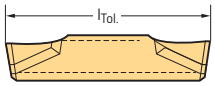
l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm

HC = Coated carbide

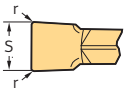


A 394 A 396 A 294 A 296

Grooving and recessing
GX cutting inserts
Tiger·tec® Silver



GX...N



A2

Cutting inserts

	Designation	s mm	r mm	l mm	f mm	a_p mm	S_{Tol} mm	l_{Tol} mm	P HC WKP13S	P HC WKP23S	P HC WKP33S	P HC WSM23S	P HC WSM33S	P HC WSM43S	M HC WSM23S	M HC WSM33S	M HC WSM43S	K HC WKP13S	K HC WKP23S	K HC WKP33S	S HC WSM23S	S HC WSM33S	S HC WSM43S	H HC WKP13S
	GX09-1E200N02-UF4	2	0,2	9	0,10–0,15	0,3–1,0	±0,05	±0,15					●	●		●	●					●	●	
	GX09-2E300N03-UF4	3	0,3	9	0,10–0,20	0,4–1,5	±0,05	±0,15					●	●		●	●					●	●	
	GX16-1E200N02-UF4	2	0,2	16	0,10–0,15	0,3–1,2	±0,05	±0,15		●		●	●	●	●	●	●		●		●	●	●	
	GX16-1E239N02-UF4	2,39	0,2	16	0,10–0,15	0,3–1,3	±0,05	±0,15					●	●		●	●					●	●	
	GX16-1E250N02-UF4	2,5	0,2	16	0,10–0,18	0,3–1,3	±0,05	±0,15		●		●	●	●	●	●	●		●		●	●	●	
	GX16-2E300N03-UF4	3	0,3	16	0,10–0,20	0,4–2,0	±0,05	±0,15		●		●	●	●	●	●	●		●		●	●	●	
	GX16-3E400N04-UF4	4	0,4	16	0,10–0,30	0,5–2,8	±0,05	±0,15		●			●	●		●	●		●			●	●	
	GX16-3E500N04-UF4	5	0,4	16	0,12–0,35	0,5–3,0	±0,05	±0,15		●			●	●		●	●		●			●	●	
	GX16-4E600N05-UF4	6	0,5	16	0,14–0,40	0,6–3,5	±0,05	±0,15		●			●	●		●	●		●			●	●	
	GX24-2E300N03-UF4	3	0,3	24	0,10–0,20	0,4–2,0	±0,05	±0,15		●		●	●	●	●	●	●		●		●	●	●	
	GX24-2E318N03-UF4	3,18	0,3	24	0,10–0,20	0,4–2,0	±0,05	±0,15					●	●		●	●					●	●	
	GX24-3E400N04-UF4	4	0,4	24	0,10–0,30	0,5–2,8	±0,05	±0,15		●		●	●	●	●	●	●		●		●	●	●	
	GX24-3E400N08-UF4	4	0,8	24	0,10–0,30	0,9–2,8	±0,05	±0,15		●			●			●			●			●		
	GX24-3E475N04-UF4	4,75	0,4	24	0,12–0,35	0,5–3,0	±0,05	±0,15		●			●	●		●	●		●			●	●	
	GX24-3E500N04-UF4	5	0,4	24	0,12–0,35	0,5–3,0	±0,05	±0,15		●		●	●	●	●	●	●		●		●	●	●	
	GX24-3E500N08-UF4	5	0,8	24	0,12–0,35	0,9–3,0	±0,05	±0,15		●			●			●			●			●		
	GX24-4E600N05-UF4	6	0,5	24	0,14–0,40	0,6–3,5	±0,05	±0,15		●		●	●	●	●	●	●		●		●	●	●	
	GX24-4E600N08-UF4	6	0,8	24	0,14–0,40	0,9–3,5	±0,05	±0,15		●			●			●			●			●		
	GX24-4E635N05-UF4	6,35	0,5	24	0,14–0,40	0,6–3,5	±0,05	±0,15		●			●	●		●	●		●			●	●	
	GX30-5E800N08-UF4	8	0,8	30	0,18–0,55	0,9–4,0	±0,05	±0,15		●		●	●		●	●			●		●	●		
	GX30-5E800N12-UF4	8	1,2	30	0,18–0,55	1,3–4,0	±0,05	±0,15		●		●	●		●	●			●		●	●		
	GX16-1E200N02-UD6	2	0,2	16	0,06–0,15	0,3–1,2	±0,05	±0,15				●	●		●	●					●	●		
	GX16-1E250N02-UD6	2,5	0,2	16	0,06–0,18	0,3–1,3	±0,05	±0,15				●	●		●	●					●	●		
	GX16-2E300N03-UD6	3	0,3	16	0,10–0,20	0,4–2,0	±0,05	±0,15				●	●		●	●					●	●		
	GX16-3E400N04-UD6	4	0,4	16	0,12–0,25	0,5–2,8	±0,05	±0,15				●	●		●	●					●	●		
	GX16-3E500N04-UD6	5	0,4	16	0,12–0,30	0,5–3,0	±0,05	±0,15				●	●		●	●					●	●		
	GX16-4E600N05-UD6	6	0,5	16	0,14–0,35	0,6–3,5	±0,05	±0,15				●	●		●	●					●	●		
	GX24-2E300N03-UD6	3	0,3	24	0,10–0,20	0,4–2,0	±0,05	±0,15				●	●		●	●					●	●		
	GX24-3E400N04-UD6	4	0,4	24	0,12–0,25	0,5–2,8	±0,05	±0,15				●	●		●	●					●	●		
	GX24-3E500N04-UD6	5	0,4	24	0,12–0,30	0,5–3,0	±0,05	±0,15				●	●		●	●					●	●		
	GX24-4E600N05-UD6	6	0,5	24	0,14–0,35	0,6–3,5	±0,05	±0,15				●	●		●	●					●	●		

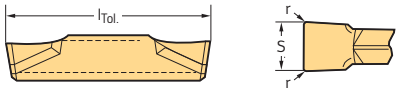
l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm

HC = Coated carbide

A 394 A 396 A 294 A 296

Grooving and recessing
GX cutting inserts
Tiger·tec® Silver

GX...N



Cutting inserts

	Designation	s mm	r mm	l mm	f mm	a_p mm	S_{Tol} mm	l_{Tol} mm	P WKP13S	P HC WKP23S	P HC WKP33S	P HC WSM23S	P HC WSM33S	P HC WSM43S	M WSM23S	M HC WSM33S	M HC WSM43S	K WKP13S	K HC WKP23S	K HC WKP33S	S WSM23S	S HC WSM33S	S HC WSM43S	H HC WKP13S
	GX16-1E200N02-UD4	2	0,2	16	0,10–0,15	0,3–1,2	±0,05	±0,15		☺			☺			☺			☺			☺		
	GX16-2E300N03-UD4	3	0,3	16	0,10–0,20	0,4–2,0	±0,05	±0,15		☺			☺			☺			☺			☺		
	GX16-3E400N04-UD4	4	0,4	16	0,10–0,30	0,5–2,8	±0,05	±0,15		☺			☺			☺			☺			☺		
	GX16-3E500N04-UD4	5	0,4	16	0,12–0,35	0,5–3,0	±0,05	±0,15		☺			☺			☺			☺			☺		
	GX24-2E300N03-UD4	3	0,3	24	0,10–0,20	0,4–2,0	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX24-2E318N03-UD4	3,18	0,3	24	0,10–0,20	0,4–2,0	±0,05	±0,15		☺									☺					
	GX24-3E400N04-UD4	4	0,4	24	0,10–0,30	0,5–2,8	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX24-3E400N08-UD4	4	0,8	24	0,10–0,30	0,9–2,8	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX24-3E500N04-UD4	5	0,4	24	0,12–0,35	0,5–3,0	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX24-3E500N08-UD4	5	0,8	24	0,12–0,35	0,9–3,0	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX24-4E600N05-UD4	6	0,5	24	0,14–0,40	0,6–3,5	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX24-4E600N08-UD4	6	0,8	24	0,14–0,40	0,9–3,5	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX30-5E800N08-UD4	8	0,8	30	0,14–0,40	0,9–4,0	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX30-5E800N12-UD4	8	1,2	30	0,14–0,40	1,3–4,0	±0,05	±0,15	☺	☺	😐		☺			☺		☺	☺	😣		☺		
	GX16-1E200N02-UA4	2	0,2	16	0,08–0,15	0,3–1,2	±0,05	±0,15	☺									☺						
	GX16-2E300N03-UA4	3	0,3	16	0,10–0,22	0,4–2,0	±0,05	±0,15	☺		😐							☺		😣				
	GX16-3E400N04-UA4	4	0,4	16	0,10–0,35	0,5–2,8	±0,05	±0,15	☺		😐							☺		😣				
	GX16-3E500N04-UA4	5	0,4	16	0,12–0,35	0,5–3,0	±0,05	±0,15	☺		😐							☺		😣				
	GX16-4E600N05-UA4	6	0,5	16	0,14–0,40	0,6–3,5	±0,05	±0,15	☺		😐							☺		😣				
	GX24-2E300N03-UA4	3	0,3	24	0,10–0,22	0,4–2,0	±0,05	±0,15	☺		😐							☺		😣				
	GX24-3E400N04-UA4	4	0,4	24	0,10–0,35	0,5–2,8	±0,05	±0,15	☺		😐							☺		😣				
	GX24-3E500N04-UA4	5	0,4	24	0,12–0,35	0,5–3,0	±0,05	±0,15	☺		😐							☺		😣				
	GX24-4E600N05-UA4	6	0,5	24	0,14–0,40	0,6–3,5	±0,05	±0,15	☺		😐							☺		😣				

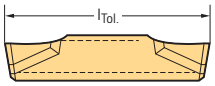
l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm

HC = Coated carbide

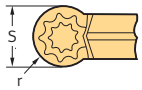
WALTER SELECT
Optimum indexable insert for
Good ☺ Average 😐 Poor ☹
machining conditions

A 394 A 396 A 294 A 296

Grooving and copy turning
GX cutting inserts
Tiger·tec® Silver



GX...N



A2

Cutting inserts

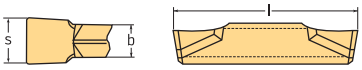
	Designation	s mm	r mm	l mm	f mm	a_p mm	S_{Tol} mm	l_{Tol} mm	P HC WKP23S	P HC WSM13S	P HC WSM23S	P HC WSM33S	P HC WSM43S	M HC WSM13S	M HC WSM23S	M HC WSM33S	M HC WSM43S	K HC WKP23S	N HW WK1	S HC WSM13S	S HC WSM23S	S HC WSM33S	S HC WSM43S
	GX24-4R300N-RK8	6	3	25,4	0,10–0,60	0,1–4,0	±0,02	±0,05											●				
	GX24-5R400N-RK8	8	4	25,4	0,10–0,80	0,1–5,0	±0,02	±0,05											●				
	GX16-1E200N10-RF8	2	1	16	0,08–0,25	0,1–1,0	±0,02	±0,02		●	●			●	●					●	●		
	GX16-2E300N15-RF8	3	1,5	16	0,10–0,30	0,1–1,5	±0,02	±0,02		●	●			●	●					●	●		
	GX24-2E300N15-RF8	3	1,5	24	0,10–0,30	0,1–1,5	±0,02	±0,02		●	●			●	●					●	●		
	GX24-2E318N16-RF8	3,18	1,59	24	0,10–0,30	0,1–1,5	±0,02	±0,02			●				●						●		
	GX24-3E400N20-RF8	4	2	24	0,12–0,45	0,1–2,0	±0,02	±0,02		●	●			●	●					●	●		
	GX24-3E475N24-RF8	4,75	2,38	24	0,15–0,50	0,1–2,3	±0,02	±0,02			●				●						●		
	GX24-3E500N25-RF8	5	2,5	24	0,15–0,50	0,1–2,5	±0,02	±0,02		●	●			●	●					●	●		
	GX24-4E600N30-RF8	6	3	24	0,15–0,55	0,1–3,0	±0,02	±0,02		●	●			●	●					●	●		
	GX24-4E635N32-RF8	6,35	3,18	24	0,15–0,55	0,1–3,0	±0,02	±0,02			●				●						●		
	GX30-5E800N40-RF8	8	4	30	0,18–0,60	0,2–4,0	±0,02	±0,02		●	●			●	●					●	●		
	GX16-1E200N10-RD4	2	1	16	0,08–0,25	0,2–1,0	±0,05	±0,15	●		●	●			●	●		●			●	●	
	GX16-1E239N12-RD4	2,39	1,2	16	0,08–0,25	0,2–1,0	±0,05	±0,15				●				●						●	
	GX16-2E300N15-RD4	3	1,5	16	0,10–0,35	0,5–1,5	±0,05	±0,15			●	●			●	●					●	●	
	GX24-2E300N15-RD4	3	1,5	24	0,10–0,35	0,5–1,5	±0,05	±0,15	●			●				●		●				●	
	GX24-2E318N16-RD4	3,18	1,59	24	0,10–0,35	0,5–1,5	±0,05	±0,15	●			●				●		●				●	
	GX24-3E400N20-RD4	4	2	24	0,15–0,50	0,5–2,0	±0,05	±0,15	●			●				●		●				●	
	GX24-3E475N24-RD4	4,75	2,38	24	0,17–0,60	0,5–2,3	±0,05	±0,15	●			●				●		●				●	
	GX24-3E500N25-RD4	5	2,5	24	0,17–0,60	0,5–2,5	±0,05	±0,15	●			●				●		●				●	
	GX24-4E600N30-RD4	6	3	24	0,17–0,70	0,5–3,0	±0,05	±0,15	●			●				●		●				●	
	GX24-4E635N32-RD4	6,35	3,18	24	0,17–0,70	0,5–3,0	±0,05	±0,15	●			●				●		●				●	
	GX30-5E800N40-RD4	8	4	30	0,20–0,80	0,6–4,0	±0,05	±0,15	●			●				●		●				●	

l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm

HC = Coated carbide
HW = Uncoated carbide

A 394 A 396 A 294 A 296

Semi-finished blanks for special profiles
GX cutting inserts



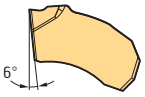
Blanks for special profiles

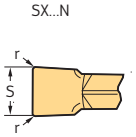
	Designation	s mm	b mm	l mm	P HC WKP23S	P HC WSM33S	P HC WSM43S	P HF WMG40	M HC WSM33S	M HC WSM43S	M HF WMG40	K HC WKP23S	S HC WSM33S	S HC WSM43S	S HF WMG40
	GX16-1E3.30N	3,3	1,4	16,6				●			●				●
	GX16-2E4.30N	4,3	2,1	16,6				●			●				●
	GX16-3E6.30N	6,3	3,05	16,6				●			●				●
	GX16-4E8.30N	8,3	4,3	16,6				●			●				●
	GX24-2E4.80N	4,8	2,1	24,6				●			●				●
	GX24-3E6.30N	6,3	3,05	24,6				●			●				●
	GX24-4E8.30N	8,3	4,3	24,6				●			●				●
	GX24-5E10.30N	10,3	6,2	24,6				●			●				●

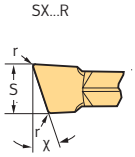
Grade WMG40 has the ISO ranges of applications P30, M30 and S30

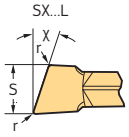
HC = Coated carbide
HF = Uncoated fine-grained carbide

Grooving and parting off
SX cutting inserts
Tiger·tec® Silver









A2

Cutting inserts

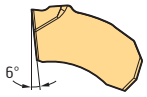
	Designation	s mm	r mm	κ	f mm	S_{Tol} mm	l_{Tol} mm	P HC WKP23S	P HC WSM23S	P HC WSM33S	P HC WSM43S	M HC WSM23S	M HC WSM33S	M HC WSM43S	K HC WKP23S	S HC WSM23S	S HC WSM33S	S HC WSM43S
	SX-1E150N01-CF6	1,5	0,15		0,03–0,10	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-2E200N02-CF6	2	0,2		0,03–0,12	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-3E300N02-CF6	3	0,2		0,04–0,20	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-1E150N01-CF5	1,5	0,15		0,03–0,10	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-1E150R/L6-CF5	1,5	0,15	6°	0,03–0,08	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-1E150R/L7-CF5	1,5	0	7°	0,03–0,08	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-1E150R/L15-CF5	1,5	0	15°	0,03–0,08	±0,05	±0,1			☺			☺				☺	
	SX-2E200N02-CF5	2	0,2		0,04–0,12	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-2E200R/L6-CF5	2	0,2	6°	0,04–0,10	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-2E200R/L7-CF5	2	0	7°	0,04–0,10	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-2E200R/L15-CF5	2	0	15°	0,03–0,08	±0,05	±0,1			☺			☺				☺	
	SX-3E300N02-CF5	3	0,2		0,08–0,20	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-3E300R/L6-CF5	3	0,2	6°	0,08–0,17	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-3E300R/L7-CF5	3	0	7°	0,08–0,17	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-3E300R/L15-CF5	3	0	15°	0,05–0,15	±0,05	±0,1			☺			☺				☺	
	SX-3E310N03-CF5	3,1	0,3		0,08–0,20	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-4E400N02-CF5	4	0,2		0,10–0,22	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-4E400R/L6-CF5	4	0,2	6°	0,10–0,20	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-5E500N04-CF5	5	0,4		0,10–0,25	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-5E500R/L6-CF5	5	0,4	6°	0,10–0,20	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-6E600N04-CF5	6	0,4		0,10–0,30	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-1E150N01-CE4	1,5	0,15		0,03–0,12	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-1E150R/L6-CE4	1,5	0,15	6°	0,03–0,08	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-2E200N02-CE4	2	0,2		0,06–0,15	±0,05	±0,1	☻	☻	☺	☹	☻	☺	☹	☺	☻	☺	☹
	SX-2E200R/L6-CE4	2	0,2	6°	0,06–0,10	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-2E260N03-CE4	2,6	0,3		0,06–0,18	±0,05	±0,1		☻	☺	☹	☻	☺	☹		☻	☺	☹
	SX-3E300N02-CE4	3	0,2		0,09–0,30	±0,05	±0,1	☻	☻	☺	☹	☻	☺	☹	☺	☻	☺	☹
	SX-3E300R/L6-CE4	3	0,2	6°	0,09–0,20	±0,05	±0,1	☻		☺	☹		☺	☹	☺		☺	☹
	SX-3E310N03-CE4	3,1	0,3		0,09–0,30	±0,05	±0,1	☻		☺	☹		☺	☹	☺		☺	☹
	SX-4E400N02-CE4	4	0,2		0,10–0,32	±0,05	±0,1	☻	☻	☺	☹	☻	☺	☹	☺	☻	☺	☹
	SX-4E400R/L6-CE4	4	0,2	6°	0,10–0,22	±0,05	±0,1	☻		☺	☹		☺	☹	☺		☺	☹
	SX-4E410N03-CE4	4,1	0,3		0,10–0,32	±0,05	±0,1	☻		☺	☹		☺	☹	☺		☺	☹
	SX-4E480N03-CE4	4,8	0,3		0,12–0,35	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-5E500N04-CE4	5	0,4		0,12–0,35	±0,05	±0,1	☻	☻	☺	☹	☻	☺	☹	☺	☻	☺	☹
	SX-5E500R/L6-CE4	5	0,4	6°	0,12–0,25	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-6E600N04-CE4	6	0,4		0,12–0,40	±0,05	±0,1	☻		☺	☹		☺	☹	☺		☺	☹
	SX-6E600R/L6-CE4	6	0,4	6°	0,12–0,30	±0,05	±0,1			☺	☹		☺	☹			☺	☹
	SX-8E800N08-CE4	8	0,8		0,20–0,55	±0,05	±0,1	☻		☺	☹		☺	☹	☺		☺	☹
	SX-10E1000N08-CE4	10	0,8		0,25–0,60	±0,05	±0,1	☻		☺	☹		☺	☹	☺		☺	☹

l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm

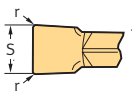
HC = Coated carbide

A 394 A 396 A 294

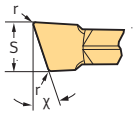
Slitting
SX cutting inserts
Tiger·tec® Silver



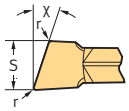
SX...N



SX...R



SX...L

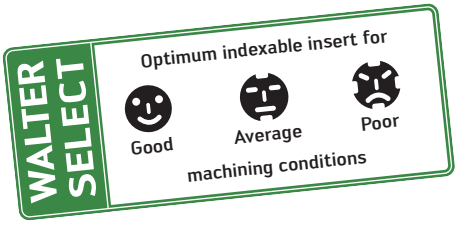


Cutting inserts

	Designation	s mm	r mm	κ	f mm	S_{Tol} mm	l_{Tol} mm	P HC WKP23S	P HC WSM33S	P HC WSM43S	M HC WSM33S	M HC WSM43S	K HC WKP23S	S HC WSM33S	S HC WSM43S
	SX-1E150N01-SF5	1,5	0,15		0,03–0,10	±0,05	±0,1		☺	☹	☺	☹		☺	☹
	SX-2E200N02-SF5	2	0,2		0,06–0,15	±0,05	±0,1		☺	☹	☺	☹		☺	☹
	SX-3E300N02-SF5	3	0,2		0,08–0,20	±0,05	±0,1		☺	☹	☺	☹		☺	☹
	SX-4E400N02-SF5	4	0,2		0,10–0,22	±0,05	±0,1		☺	☹	☺	☹		☺	☹
	SX-5E500N04-SF5	5	0,4		0,10–0,25	±0,05	±0,1		☺	☹	☺	☹		☺	☹

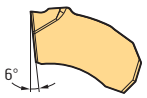
l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm

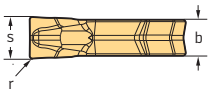
HC = Coated carbide



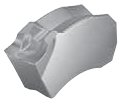
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Semi-finished parts for special profiles
SX cutting inserts





Blanks for special profiles

	Designation	s mm	b mm	P						M				K		S			
				HC			HF			HC			HF	HC		HC			HF
				WKP23S	WSM33S	WSM43S	WMG40	WSM33S	WSM43S	WMG40	WKP23S	WSM33S	WSM43S	WMG40
	SX-2E320N00-SF5	3,2	2,2				●			●				●
	SX-3E420N00-SF5	4,2	2,6				●			●				●
	SX-4E520N00-SF5	5,2	3,6				●			●				●
	SX-5E620N00-SF5	6,2	4,5				●			●				●
	SX-6E820N00-SF5	8,2	5,5				●			●				●

Grade WMG40 has the ISO ranges of applications P30, M30 and S30

HC = Coated carbide
HF = Uncoated fine-grained carbide


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WALTER

Walter Cut product description

Tool families for grooving – GX



G1011 monoblock tool
– For GX cutting inserts
– For grooving, parting off and longitudinal turning
– For all types of lathe
– Access to the screw from above and below; extremely easy tool handling – even in overhead use
– Excellent chip evacuation thanks to low clamp profile
– Grooving up to a maximum cutting depth of 32 mm
– Insert widths from 2-8 mm
– Shank sizes: 10 × 10 mm, 12 × 12 mm, 16 × 16 mm, 20 × 20 mm, 25 × 25 mm and 32 × 32 mm



G1011-P monoblock tool with precision cooling
– Precision cooling on the rake face and flank face
– Can be used from 10 bar up to a maximum coolant pressure of 150 bar
– Longer tool life and higher productivity thanks to optimum cooling directly in the cutting zone starting from a coolant pressure as low as 10 bar
– Shank sizes: 12 × 12 mm, 16 × 16 mm, 20 × 20 mm, 25 × 25 mm and 32 × 25 mm

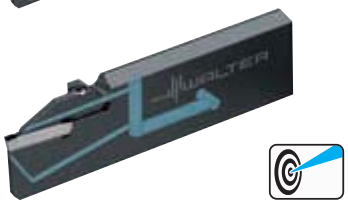


XLDE monoblock tool for parting off
– Simple tool handling thanks to angular access to clamping screw
– Quick insert replacement time thanks to insert replacement in the machine
– For parting off diameters of up to 32 mm
– Insert widths 1.5-3 mm
– Shank sizes: 10 × 10 mm, 12 × 12 mm, 16 × 16 mm and 20 × 20 mm for use on long centre lathes and multi-spindle machines



G1042 deep parting blade
– Stable four-point clamping
– Simple tool handling
– Defined clamping force
– One tooling system for single and double-edged cutting inserts
– Cost-effective, double-edged parting off solution with cutting depth of up to 23 mm
– Single-edged parting off solution with cutting depth of up to 60 mm
– Insert widths 2-6 mm
– Blade heights of 26 and 32 mm





G1041 parting blade, reinforced design
– Maximum process reliability thanks to stable tool design
– Maximum cost efficiency thanks to double-sided cutting inserts for parting off operations
– Optimum cutting insert retention thanks to Torx Plus screw clamping and insert seat design
– Little tool deflection due to reinforced tool body
– Longer tool life due to reduction in micro vibration
– Insert widths 1.5-4 mm
– Grooving to a cutting depth of 33 mm and parting off up to a diameter of 65 mm
– Available in right-hand, left-hand and contra versions
– Blade heights of 26 and 32 mm

G1041-P parting blade, reinforced design with precision cooling
– Precision cooling on the rake face and flank face
– Can be used from 10 bar up to a maximum coolant pressure of 80 bar
– Longer tool life and higher productivity thanks to optimum cooling directly in the cutting zone starting from a coolant pressure as low as 10 bar

Tool families for grooving – GX



Walter Cut Modular
– Two different grooving systems can be used
– For GX and SX cutting inserts
– Maximum grooving flexibility
– Low inventory requirements
– Short set-up times
– Insert widths of 0.6-8 mm
– Grooving to a cutting depth of 45 mm and parting off up to a diameter of 90 mm
– In Walter Capto™ C3, C4, C5 and C6
– Shank sizes: 12 × 12 mm, 16 × 16 mm, 20 × 20 mm, 25 × 25 mm and 32 × 32 mm



G1111 monoblock tool for axial grooving
– For GX24 cutting inserts
– For grooving and recessing
– Excellent chip evacuation thanks to low clamp profile
– Access to the screw from above and below; extremely easy tool handling – even in overhead use
– Insert widths 3-6 mm
– Grooving to a cutting depth of up to 25 mm
– Shank size 25 × 25 mm





G15 . . monoblock tool for shallow cutting depths
– For GX cutting inserts
– For grooving, recessing and relief turning
– Excellent chip evacuation thanks to low clamp profile
– Access to the screw from above and below; extremely easy tool handling – even in overhead use
– Grooving to a cutting depth of up to 6 mm
– Insert widths of 2-6 mm with a single tool
– Shank sizes: 12 × 12 mm, 16 × 16 mm, 20 × 20 mm and 25 × 25 mm

G1511-P monoblock tool for shallow cutting depths with precision cooling
– Precision cooling on the rake face
– Can be used from 10 bar up to a maximum coolant pressure of 150 bar
– Longer tool life and higher productivity thanks to optimum cooling directly in the cutting zone starting from a coolant pressure as low as 10 bar
– Shank sizes: 16 × 16 mm, 20 × 20 mm and 25 × 25 mm

Walter Cut product description

(continued)

Tool families for grooving – SX



G2012 monoblock tool
– For SX cutting inserts
– For grooving and parting off
– For all types of lathe
– Stable self-clamping system using top clamp
– Shank sizes: 16 × 16 mm, 20 × 20 mm and 25 × 25 mm

G2012-P monoblock tool with precision cooling
– Precision cooling on the rake face and flank face
– Can be used from 10 bar up to a maximum coolant pressure of 150 bar
– Longer tool life and higher productivity thanks to optimum cooling directly in the cutting zone starting from a coolant pressure as low as 10 bar
– Insert widths 2-10 mm
– Grooving to a cutting depth of 45 mm and parting off up to a diameter of 90 mm
– Shank sizes: 12 × 12 mm, 16 × 16 mm, 20 × 20 mm, 25 × 25 mm and 32 × 25 mm



G2042-N deep parting blade
– For SX cutting inserts
– Two insert seats on one tool
– Stable self-clamping system using top clamp
– Simple tool handling
– Insert widths 2-6 mm
– Cost-effective, single-edged parting off solution for a cutting depth of up to 80 mm/a parting-off diameter of up to 160 mm
– Blade heights: 26 mm, 32 mm and 46 mm



G2042-N-P deep parting blades with precision cooling
– Precision cooling on the rake face and flank face
– Coolant transfer with no external protrusion
– Can be used from 10 bar up to a maximum coolant pressure of 80 bar
– Longer tool life and higher productivity thanks to optimum cooling directly in the cutting zone starting from a coolant pressure as low as 10 bar
– Insert widths 3-10 mm
– Cost-effective, single-edged parting off solution for a cutting depth of up to 100 mm/a parting-off diameter of up to 200 mm
– Blade heights: 26 mm, 32 mm and 52 mm



G2042-R/L parting blade, reinforced design
– For SX cutting inserts
– Maximum process reliability thanks to stable tool design
– Little tool deflection due to reinforced tool body
– Longer tool life due to reduction in micro vibration
– Insert widths 2-4 mm
– Available in right-hand/left-hand and contra version
– Blade heights of 26 mm and 32 mm

G2042-R/L-P parting blade, reinforced design with precision cooling
– Precision cooling on the rake face and flank face
– Can be used from 10 bar up to a maximum coolant pressure of 80 bar
– Longer tool life and higher productivity thanks to optimum cooling directly in the cutting zone starting from a coolant pressure as low as 10 bar

Tool adaptors for parting blades



SBN clamping block
– One-piece clamp
– Left-hand/right-hand variant in one block
– Blade heights: 26 mm, 32 mm and 46 mm
– Shank dimensions: 20 × 20 mm, 25 × 20 mm, 32 × 29 mm and 40 × 37 mm



G2661-P clamping block for parting blades with precision cooling
– Easy clamping block handling thanks to inclined clamping screw and split clamp
– Left-hand/right-hand variant in one block
– Clamping blocks with direct coolant transfer for precision-cooled parting blades
– No vibration thanks to stable toolholder design with rigid clamping
– Can be used from 10 bar up to a maximum coolant pressure of 80 bar
– Blade heights: 26 mm, 32 mm and 52 mm
– Shank dimensions: 20 × 20 mm, 25 × 25 mm, 32 × 25 mm and 40 × 32 mm



A2110-P VDI axial adaptor for parting blades with precision cooling
– VDI25/30/40 for star turrets
– For grooving and parting off with internal cooling
– Transfer of the coolant directly through the VDI interface into the precision-cooled parting blade
– Flexibility: One toolholder for standard and overhead installation positions
– Short chips, meaning no downtime for removing accumulated chips
– O-ring seal for reliable coolant transfer in the 10-80 bar range with no loss of pressure
– Precise centre position thanks to easily adjustable centre height in a range of ±0.5 mm
– Blade heights of 26 mm and 32 mm



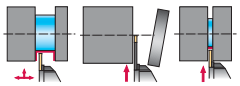
A2111-P VDI radial adaptor for parting blades with precision cooling
– VDI30/40 for disc turrets
– For grooving and parting off with internal cooling
– Transfer of the coolant directly through the VDI interface into the precision-cooled parting blade
– O-ring seal for reliable coolant transfer in the 10-80 bar range with no loss of pressure
– No vibration thanks to stable toolholder design, adjustable to every machining position
– Flexibility: One toolholder for standard and overhead installation positions
– Precise centre position thanks to easily adjustable centre height in a range of ±0.5 mm
– Blade heights of 26 mm and 32 mm

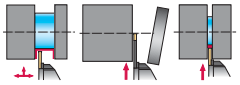


A2110-P BMT/Doosan axial adaptors for parting blades with precision cooling
– BMT45/55/65 and Doosan interface for bolt-on turrets
– For grooving and parting off with internal cooling
– Transfer of the coolant directly through the adaptor into the precision-cooled parting blade
– Flexibility: One toolholder for standard and overhead installation positions
– O-ring seal for reliable coolant transfer in the 10-80 bar range with no loss of pressure
– Precise centre position thanks to easily adjustable centre height in the ±0.5 mm range
– Blade heights of 26 mm and 32 mm
– Additional machine-specific interfaces are available on request

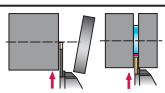
Walter Cut grooving tools product range overview
Shank tools/parting blades/boring bars

Shank tools for grooving, parting off and recessing

Machining						
Type						
Designation	**G1011**	**G1011...-P**	**G1511**	**G1511...-P**	**G1521**	**G1551**
Insert width s [mm]	2–8	2–8	2–6	2–6	2–6	2–6
Cutting depth T_{max} [mm]	8–32	12–32	4–6	4–6	4–6	6
Coolant supply	external	Precision cooling	external	Precision cooling	external	external
Shank size h [mm]	12–32	16–32	12–25	16–25	16–25	20–25
						
Page	A 308	A 310	A 314	A 316	A 315	A 317

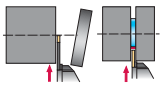
Machining				
Type				
Designation	**NCAE/NCBE**	**NCLE**	**NCCE**	**NCNE**
Insert width s [mm]	2–8	2–8	0,6–2,3	0,6–2,3
Cutting depth T_{max} [mm]	7–21	12–21	2–3	3
Coolant supply	external	external	external	external
Shank size h [mm]	16–32	20–32	12–32	20–32
				
Page	A 338	A 340	A 342	A 344

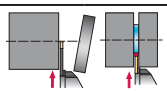
Shank tools for grooving and parting off

Machining						
Type						
Designation	**XLDE**	**XLDE...C**	**G2012**	**G2012...-P**	**G2612**	**G2622**
Insert width s [mm]	1,5–3	1,5–3	1,5	2–10	2–8	2–8
Cutting depth T_{max} [mm]	5–16	5–16	15	16–45	20–45	20–45
Coolant supply	external	external	external	Precision cooling	external	external
Shank size h [mm]	10–20	10–20	12–20	12–32	20–32	20–32
						
Page	A 312	A 313	A 326	A 328	A 348	A 350

Walter Cut grooving tools product range overview
Shank tools/parting blades/boring bars

Parting blades for grooving and parting off

Machining						
Type						
Designation	**G1041**	**G1041...C**	**G1041...C-P**	**XLCFN**	**G1042**	**G1332**
Insert width s [mm]	1,5–4	1,5–4	2–4	3–6	2–6	1,5–3
Cutting depth T_{max} [mm]	16–32	16–32	16–32	21	25–60	15
Coolant supply	external	external	Precision cooling	external	external	external
Shank size h4 [mm]	26–32	26–32	26–32	32	26–32	
						
Page	A 321	A 322	A 323	A 324	A 320	A 347

Machining						
Type						
Designation	**G2042...R/L**	**G2042...R/L...-P**	**G2042...R/L...C**	**G2042...R/L...C-P**	**G2042...N**	**G2042...N...-P**
Insert width s [mm]	1,5–4	2–3	2–4	2–4	2–6	3–10
Cutting depth T_{max} [mm]	20–33	26–33	26–33	26–33	30–80	38–100
Coolant supply	external	Precision cooling	external	Precision cooling	external	Precision cooling
Shank size h4 [mm]	26–32	26–32	26–32	26–32	26–46	26–52
						
Page	A 332	A 334	A 333	A 335	A 330	A 331

Clamping blocks

Type		
Designation	**SBN**	**G2661...-P**
Blade height h4 [mm]	26–32	26–52
Coolant supply	external	Precision cooling
Shank size h [mm]	20–32	16–40
		
Page	A 336	A 337

For more adaptors with VDI, BMT, etc. interfaces, see the Adaptors catalogue.

Walter Cut grooving tools product range overview
Shank tools/parting blades/boring bars

Shank tools for axial grooving

Machining						
Type						
Designation	**G1111**	**NCEE**	**NCHE**	**NCFE**	**NCFE...C**	**NCOE**
Insert width s [mm]	3–6	3–6	3–6	4–6	4–6	4–6
Cutting depth T_{max} [mm]	12–25	14–15	14–15	21–25	21–25	21–25
Coolant supply	external	external	external	external	external	external
Shank size h [mm]	25	20–32	20–32	25	25	25
						
Page	A 318	A 352	A 354	A 356	A 358	A 360

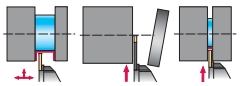
Machining	
Type	
Designation	**NCOE...C**
Insert width s [mm]	4–6
Cutting depth T_{max} [mm]	21–25
Coolant supply	external
Shank size h [mm]	25
	
Page	A 362

Boring bars for internal grooving

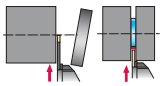
Machining			
Type			
Designation	**I12**	**NCAI**	**NCCI**
Insert width s [mm]	2–2,5	2–6	0,6–2,3
Cutting depth T_{max} [mm]	3	4–19	2–5
Coolant supply	internal	internal	internal
Shank size d_1 [mm]	16	20–50	20–50
			
Page	A 325	A 364	A 366

Walter Cut grooving tools product range overview
Walter Capto™ groove turning holders

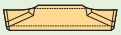
Grooving, parting off and recessing

Machining				
Type				
Designation	**C...-NCAE/ C...-NCBE**	**C...-NCLE**	**C...-NCCE**	**C...-NCNE**
Insert width s [mm]	2–8	2–8	0,6–2,3	0,6–2,3
Cutting depth T_{max} [mm]	7–21	12–21	2–3	3
Coolant supply	internal	internal	internal	internal
Walter Capto™ size	C3–C6	C3–C6	C3–C6	C3–C6
				
Page	A 368	A 372	A 374	A 376

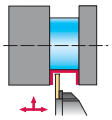
Grooving and parting off

Machining		
Type		
Designation	**C...-G2612**	**C...-G2622**
Insert width s [mm]	2–8	2–8
Cutting depth T_{max} [mm]	20–45	20–45
Coolant supply	internal	internal
Walter Capto™ size	C3–C6	C3–C6
		
Page	A 378	A 380

Axial grooving

Machining						
Type						
Designation	**C...-NCEE**	**C...-NCHE**	**C...-NCFE**	**C...-NCFE...C**	**C...-NCOE**	**C...-NCOE...C**
Insert width s [mm]	3–6	3–6	4–6	4–6	4–6	4–6
Cutting depth T_{max} [mm]	14–15	14–15	21–25	21–25	21–25	21–25
Coolant supply	internal	internal	internal	internal	internal	internal
Walter Capto™ size	C3–C6	C4–C6	C4–C5	C4–C5	C4–C5	C4–C5
						
Page	A 382	A 384	A 386	A 388	A 390	A 392

Grooving system overview – Walter Cut external machining



A2

VDI adaptors for square shanks with precision cooling

Walter Capto™ adaptors for square shanks

Walter Capto™ adaptors for grooving modules

A2120-VDI-P
Page D 16



A2121-VDI-P
Page D 17



C...-ASHR/L
C...-ASHR/L3
Page D 11



C...-ASHA
Page D 12



C ....MSS...00
Page A 368



C ....MSS...90
Page A 372



One-piece shank tools

Shank tools for grooving modules



e.g. G1011...-P
from page A 294



e.g. G2012
from page A 294



MSS...00
from page A 338



MSS...90
from page A 340

Grooving modules



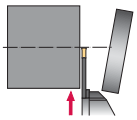
SX:
G2632
from page A 348



GX:
MSS-E...GX
from page A 338

= Precision cooling

Grooving system overview – Walter Cut parting blades



VDI adaptors for parting blades with precision cooling

BMT or Doosan adaptors for parting blades with precision cooling

Clamping blocks for parting blades

A2

A2110...-P
Page D 18



A2111...-P
Page D 19



A2110-BT...-P
Page D 20



A2110-DO...-P
Page D 21



SBN
Page A 336



G2661...-P
Page A 337



Neutral parting blades

Reinforced parting blades



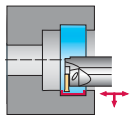
e.g. G1042
Page A 295



e.g. G2042...N...-P
Page A 295



e.g. G2042...R/L...-P
Page A 295



Grooving system overview – Walter Cut internal machining

Adaptors for boring bars

C ... -131
Page D 65



C ... -391.20 / C ... -391.27
Page D 66



One-piece boring bars

Boring bars with grooving module



e.g. I12
Page A 296



e.g. NCAI
Page A 296

GX grooving modules

MSS-I...GX
from page A 364

Designation key for Walter Cut grooving tools

A2

Example:

G	1	1	11	–	2020	R	–	3	T33	–	090	GX24	–	C	–	P
1	2	3	4		5	6		7	8		9	10		11		12

1 – Tool group

G	Grooving

2 – Generation

1	GX
2	SX

3 – Tool type

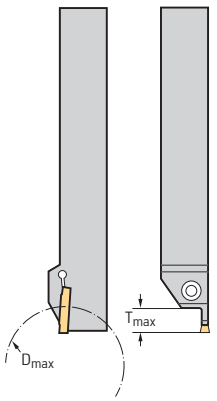
0	Radial grooving tool
1	Axial grooving tool
5	Universal – Shallow Depth
6	Modular external radial grooving

4 – Tool type

11	Angled at 0°, straight clamping screw
12	Angled at 0°, self-clamping system
21	Angled at 90°, straight clamping screw
22	Angled at 90°, self-clamping system
32	Grooving module, self-clamping system
41	Parting blade, clamping screw
42	Parting blade, self-clamping system
51	Angled at 45°, straight clamping screw
61	Clamping block/split

8 – Cutting depth/parting off diameter

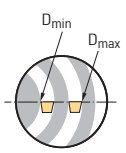
T06	6 mm
T12	12 mm
T21	21 mm
T32	32 mm
T33	33 mm
T35	35 mm
D16	Ø 16 mm
D32	Ø 32 mm



9 – Minimum axial grooving diameter/ blade height

Minimum axial grooving diameter

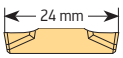
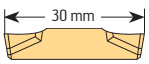
034	Ø 34 mm
042	Ø 42 mm
054	Ø 54 mm
067	Ø 67 mm
090	Ø 90 mm
130	Ø 130 mm
220	Ø 220 mm



Blade height

26	26 mm
32	32 mm
52	52 mm

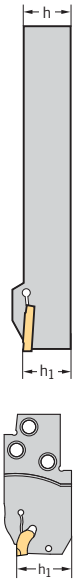
10 – Indexable insert type

GX09	
GX16	
GX24	
GX30	
SX	

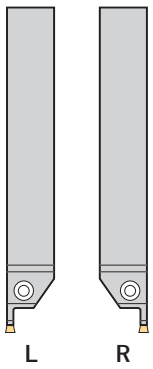
5 Shank size

Square shank	
1010	10 × 10 mm
1212	12 × 12 mm
1616	16 × 16 mm
2020	20 × 20 mm
2525	25 × 25 mm
3225	32 × 25 mm
3232	32 × 32 mm
4032	40 × 32 mm

Module size h_1	
E12	12 mm
E16	16 mm
E20	20 mm
E25	25 mm
E32	32 mm



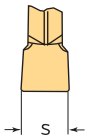
6 Toolholder design



R	Right
L	Left
N	Neutral

7 Cutting edge width

1,5	1,5 mm
2	2 mm
3	3 mm
4	4 mm
5	5 mm
6	6 mm
8	8 mm
10	10 mm



11 Version

– C	Contra

12 Cooling

– P	Precision cooling



Designation key for Walter Cut – Modular grooving tools (used up to 09/2012)

Example for axial grooving 0°:

NC	E	E	25	-	2525	R	-	GX	24	-	3	-	2	-	C
1	2	3	4		5	6		7	8		9		10		11

1
Tool range
NC Walter Cut

2	
Machining method	
A 0° radial grooving and turning GX	**H** 90° axial grooving and facing GX
B 0° radial grooving and turning GX	**L** 90° radial grooving and turning GX
C 0° circlip and O-ring grooves GX	**N** 90° circlip and O-ring grooves GX
E 0° axial grooving and facing GX	**O** 90° deep axial grooving and facing GX
F 0° deep axial grooving and facing GX	

3
Machining
E External machining
I Internal machining

6
Toolholder design
R Right
L Left
N Neutral

7
Grooving system
GX Grooving, double-edged

8
Insert length GX [mm]
09
16
24

9
Width category GX
1
2
3
4
5

4
Module size
12
16
20
25
32
40

5				
Shank dimensions [mm]/Walter Capto™				
External toolholder		**Walter Capto™**	**Boring bar**	
Height	**Width**	**External**	**d_1**	**d / l**
12	12	C3 00 = C3	20	1/1,5 = 15
16	16	C4 00 = C4	25	1/2,5 = 25
20	20	C5 00 = C5	32	
25	25	C6 00 = C6	40	
32	25			

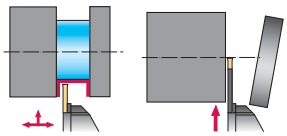
10	
Axial diameter range [mm]	
1	50–70
2	70–100
3	100–150
4	150–300
5	300–900

11	
Version	
C	Contra

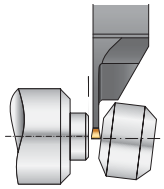
Walter Select – Groove turning holder for parting off/grooving/recessing

External machining – Radial

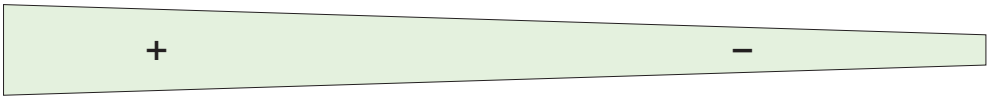
Application



Access restrictions in the machine



Stability of the tool

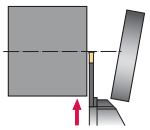


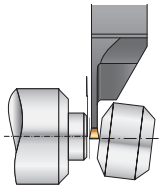
Tools



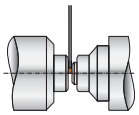
Designation		G1011 G1011…-P	G1511 G1511…-P	G1521	G1551	C…-NCAE C…-NCBE	NCAE NCBE
Page		A 308	A 314	A 315	A 317	A 368	A 338
max. parting off diameter D_{max} [mm]	max. cutting depth T_{max} [mm]						
Ø 8	4	●●	●●	●●	●●	●●	●●
Ø 10	5	●●	●●	●●	●●	●●	●●
Ø 12	6	●●	●●	●●	●●	●●	●●
Ø 16	8	●●				●●	●●
Ø 24	12	●●				●●	●●
Ø 32	16	●●				●●	●●
Ø 42	21	●●				●●	●●
Ø 52	26	●●					
Ø 65	33	●●					
Ø 80	40						
Ø 90	45						
Ø 120	60						
Ø 200	100						
Insert width s [mm]		2,0–8,0	2,0–6,0			0,6–6,0	0,6–8,0
Shank height h [mm]		12–32	12–25	16–25	20–25	–	20–25
Blade height h_4 [mm]		–	–	–	–	–	–
Walter Capto™ size d_1		–	–	–	–	C3–C6	–
Cutting insert type				GX . . . E GX . . . F			

* -P = Precision cooling (first choice)

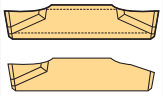
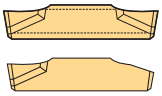




– Deep grooves
– Long tool/counter spindle projection



+ −

	XLDE	G2012 G2012...-P	C...-G2612 C...-G2622	G2612 G2622	G1041...R/L G1041...R/L...-P	G1042...N	G2042...R/L G2042...R/L...-P	G2042...N G2042...N...-P
	A 312	A 326	A 378	A 348	A 321	A 320	A 332	A 330
								
	●●	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●	●●
		●●	●●	●●	●	●	●●	●●
		●●	●●	●●	●	●	●●	●●
		●●	●●	●●	●	●	●●	●●
		●●	●●	●●		●		●●
		●●	●●	●●		●		●●
						●		●●
								●●
	1,5–3,0	1,5–10,0	2,0–8,0	1,5–8,0	1,5–4,0	3,0–6,0	2,0–4,0	2,0–10,0
	10–20	12–32	–	20–25	–	–	–	–
	–	–	–	–	26–32	26–32	26–32	26–52
	–	–	C3–C6	–	–	–	–	–
		 SX . . .			 GX . . . E GX . . . F		 SX . . .	

WALTER SELECT

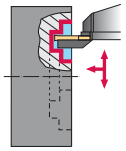
●● Primary application

● Other application

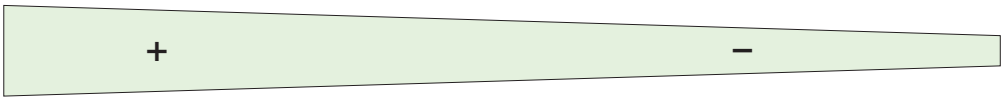
Walter Select – Groove turning holder for axial grooving/recessing

External machining – Axial

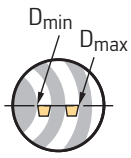
Application



Stability of the tool



Tools













Designation	G1111	G1511 G1511...-P	G1521	C...-NCEE C...-NCFE	NCEE NCFE
Page	A 318	A 314	A 315	A 386	A 356
max. cutting depth T_{max} [mm]					
6	●●	●●	●●	●●	●●
12	●●			●●	●●
15	●●			●●	●●
21	●●			●●	●●
25	●				
Insert width s [mm]	3,0–6,0	2,0–6,0		3,0–6,0	
Smallest D_{min} [mm]	34	43	43	50	50
Shank height h [mm]	25	12–25	16–25	–	20–32
Walter Capto™ size d_1	–	–	–	C3–C6	–
Cutting insert type			 GX . . . E  GX . . . F		

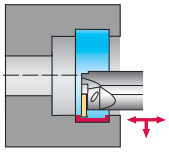
* -P = Precision cooling (first choice)

For detailed information regarding the D_{min} and D_{max}, see page A 318/A 410

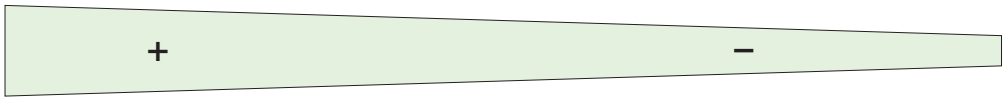
Walter Select – Internal grooving and recessing

Internal machining – Radial

Application



Stability of the tool



Tools



			1,5 × D	2,5 × D
				
Designation		**I12**	**NCAI**	**NCCI**
Page		A 325	A 364	A 366
D_{min} [mm]	max. cutting depth T_{max} [mm]			
Ø 16	3	●●		
Ø 20	4		●●	●●
Ø 25	5		●●	●●
Ø 32	6		●●	●●
Ø 40	9		●●	●●
Ø 50	10		●●	●●
Ø 60	19		●●	●●
Insert width s [mm]		2,0–2,5	2,0–6,0	2,0–6,0
Shank diameter d_1 [mm]		16	20–40	20–50
Cutting insert type			 GX . . . E	

WALTER SELECT

●● Primary application

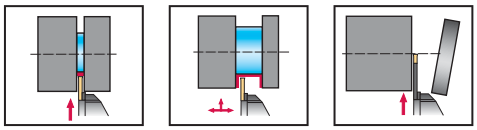
● Other application

Shank tool – Radial grooving
G1011
Walter Cut

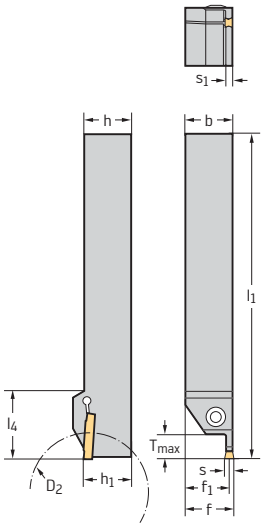


– Screw clamping

A2



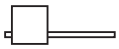


Tool	Designation	s mm	T_{max} mm	D_2 mm	h = h_1 mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
	G1011.1212R/L-2T8GX16	2	8		12	12	11,2	122	31,5	1,6	GX16-1E2 ..
	G1011.1212R/L-2T12GX16		12		12	12	11,2	122	31,5	1,6	
	G1011.1616R/L-2T8GX16		8		16	16	15,2	132	35,5	1,6	
	G1011.1616R/L-2T15GX16		15		16	16	15,2	136	35,5	1,6	
	G1011.2020R/L-2T8GX16		8		20	20	19,2	142	31,5	1,6	
	G1011.2020R/L-2T15GX16		15		20	20	19,2	146	35,5	1,6	
	G1011.2525R/L-2T8GX16		8		25	25	24,2	142	31,5	1,6	
	G1011.2525R/L-2T15GX16		15		25	25	24,2	146	35,5	1,6	
	G1011.1616R/L-2T21GX24		21		16	16	15,3	150	40	1,6	GX24-1E2 ..
	G1011.2020R/L-2T21GX24		21		20	20	19,2	150	40	1,6	
	G1011.1616R/L-3T12GX24	3	12		16	16	14,8	135	35	2,4	GX24-2E3 .. GX24-2F3 ..
	G1011.1616R/L-3T21GX24		21	80	16	16	14,8	150	40	2,4	
	G1011.2012R/L-3T21GX24		21	80	20	12	10,8	150	40	2,4	
	G1011.2020R/L-3T12GX24		12		20	20	18,8	145	35	2,4	
	G1011.2020R/L-3T21GX24		21	80	20	20	18,8	150	40	2,4	
	G1011.2525R/L-3T12GX24		12		25	25	23,8	145	35	2,4	
	G1011.2525R/L-3T21GX24		21	80	25	25	23,8	150	40	2,4	
	G1011.1616R/L-4T12GX24	4	12		16	16	14,3	135	35	3,4	GX24-3E4 .. GX24-3F4 ..
	G1011.1616R/L-4T21GX24		21	80	16	16	14,3	150	40	3,4	
	G1011.2012R/L-4T21GX24		21	80	20	12	10,3	150	40	3,4	
	G1011.2020R/L-4T12GX24		12		20	20	18,3	145	35	3,4	
	G1011.2020R/L-4T21GX24		21	80	20	20	18,3	150	40	3,4	
	G1011.2525R/L-4T12GX24		12		25	25	23,3	145	35	3,4	
	G1011.2525R/L-4T21GX24		21	80	25	25	23,3	150	40	3,4	
	G1011.2525R/L-4T32GX24		32		25	25	23,3	165	55	3,4	
	G1011.2020R/L-5T12GX24	5	12		20	20	17,9	145	35	4,2	GX24-3E5 .. GX24-3F5 ..
	G1011.2020R/L-5T21GX24		21	80	20	20	17,9	150	40	4,2	
	G1011.2525R/L-5T12GX24		12		25	25	22,9	145	35	4,2	
	G1011.2525R/L-5T21GX24		21	80	25	25	22,9	150	40	4,2	
	G1011.2525R/L-5T32GX24		32	120	25	25	22,9	165	55	4,2	
	G1011.2020R/L-6T12GX24	6	12		20	20	17,4	145	35	5,2	GX24-4E6 ..
	G1011.2020R/L-6T21GX24		21	80	20	20	17,4	150	40	5,2	
	G1011.2525R/L-6T12GX24		12		25	25	22,4	145	35	5,2	
	G1011.2525R/L-6T21GX24		21	80	25	25	22,4	150	40	5,2	
	G1011.2525R/L-6T32GX24		32	120	25	25	22,4	165	55	5,2	
	G1011.2525R/L-8T28GX30	8	28	120	25	25	22	165	55	6,1	GX30-5E8 ..
	G1011.3232R/L-8T28GX30		28	120	32	32	29	165	55	6,1	

For information on T_{max} with diameters larger than D_2, see "Technical information – Grooving"
$f = f_1 + s/2$
Ordering example, right-hand tool: G1011.1212R-2T8GX16/ordering example, left-hand tool: G1011.1212L-2T8GX16
Bodies and assembly parts are included in the scope of delivery.

A 278 D 1 A 394 A 308

Assembly parts

	$h = h_1$ [mm]	12-32
	Clamping screw for grooving insert Tightening torque	FS2118 (Torx 20IP) 5,0 Nm
	Torx key	FS1464 (Torx 20IP)

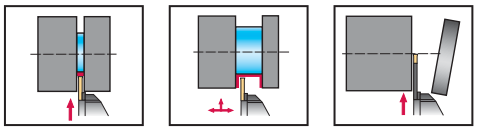
A 278 D 1 A 394 A 308

Shank tool – Radial grooving
G1011...-P

Walter Cut

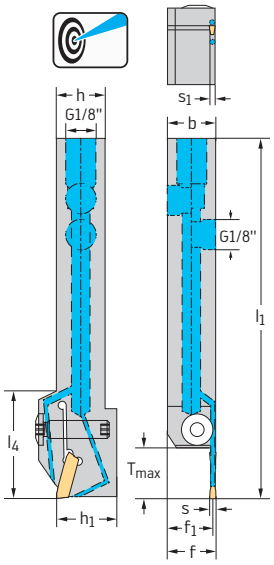
– Screw clamping
– Precision cooling



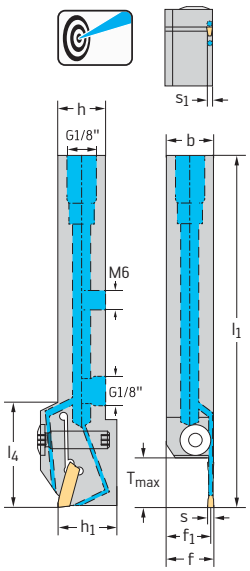




Tool



Designation	s mm	T_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
G1011.1616R/L-2T15GX16-P	2	15	16	16	15,2	120	35,5	1,6	GX16-1E2 ..
G1011.1616R/L-2T21GX24-P		21	16	16	15,3	120	40	1,6	GX24-1E2 ..
G1011.1616R/L-3T21GX24-P	3	21	16	16	14,8	120	40	2,4	GX24-2E3 .. GX24-2F3 ..

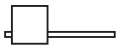


Designation	s mm	T_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
G1011.2020R/L-2T15GX16-P	2	15	20	20	19,2	120	35,5	1,6	GX16-1E2 ..
G1011.2020R/L-2T21GX24-P		21	20	20	19,2	125	40	1,6	GX24-1E2 ..
G1011.2020R/L-3T21GX24-P	3	21	20	20	18,8	125	40	2,4	GX24-2E3 .. GX24-2F3 ..
G1011.2525R/L-3T21GX24-P		21	25	25	23,8	130	40	2,4	
G1011.2020R/L-4T12GX24-P	4	12	20	20	18,3	120	35	3,4	GX24-3E4 .. GX24-3F4 ..
G1011.2020R/L-4T21GX24-P		21	20	20	18,3	125	40	3,4	
G1011.2525R/L-4T12GX24-P		12	25	25	23,3	125	35	3,4	
G1011.2525R/L-4T21GX24-P		21	25	25	23,3	130	40	3,4	
G1011.2525R/L-4T32GX24-P		32	25	25	23,3	145	55	3,4	
G1011.2020R/L-5T12GX24-P	5	12	20	20	17,9	120	35	4,2	GX24-3E5 .. GX24-3F5 ..
G1011.2020R/L-5T21GX24-P		21	20	20	17,9	125	40	4,2	
G1011.2525R/L-5T12GX24-P		12	25	25	22,9	125	35	4,2	
G1011.2525R/L-5T21GX24-P		21	25	25	22,9	130	40	4,2	
G1011.2525R/L-5T32GX24-P		32	25	25	22,9	145	55	4,2	
G1011.2525R/L-6T12GX24-P	6	12	25	25	22,4	125	35	5,2	GX24-4E6 ..
G1011.2525R/L-6T21GX24-P		21	25	25	22,4	130	40	5,2	
G1011.2525R/L-6T32GX24-P		32	25	25	22,4	145	55	5,2	
G1011.2525R/L-8T28GX30-P	8	28	25	25	22	145	55	6,1	GX30-5E8 ..
G1011.3225R/L-8T28GX30-P		28	32	25	22	145	55	6,1	

$f = f_1 + s/2$
For the connection set for coolant supply with G1/8" thread, see "Assembly parts and accessories"
The maximum recommended coolant pressure is 150 bar (2175 psi)
Ordering example, right-hand tool: G1011.1616R-2T15GX16-P/ordering example, left-hand tool: G1011.1616L-2T15GX16-P
Bodies and assembly parts are included in the scope of delivery.

A 278 D 1 A 394 A 308 A 420

Assembly parts

	$h = h_1$ [mm]	16	20-32
	Clamping screw for grooving insert Tightening torque	FS2118 (Torx 20IP) 5,0 Nm	FS2118 (Torx 20IP) 5,0 Nm
	G 1/8" screw	FS2258 (SW 5)	FS2258 (SW 5)
	M6 screw		FS2288 (SW 3)
	Torx key	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

A 278 D 1 A 394 A 308 A 420

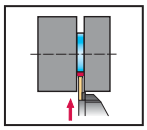
Shank tool – Radial
XLDE

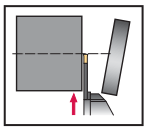
Walter Cut





– Screw clamping
– Angular access to clamping screw

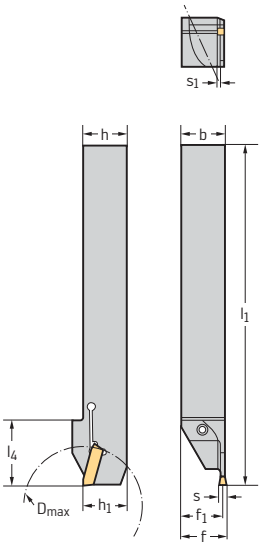








Tool



Designation	s mm	D_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
XLDER/L1010K-GX16-0	1,5	20	10	10	9,4	125	19	1,2	GX16-0E1 ..
XLDER/L1212K-GX16-0		24	12	12	11,4	125	19	1,2	
XLDER/L1616K-GX16-0		32	16	16	15,4	125	24	1,2	
XLDER/L1010K-GX16-1	2–2,5	20	10	10	9,2	125	19	1,6	GX16-1E2 ..
XLDER/L1212K-GX16-1		24	12	12	11,2	125	19	1,6	
XLDER/L1616K-GX16-1		32	16	16	15,2	125	24	1,6	
XLDER/L2020K-GX16-1		32	20	20	19,2	125	24	1,6	
XLDER/L1212K-GX16-2	3	24	12	12	10,8	125	19	2,4	GX16-2E3 ..
XLDER/L1616K-GX16-2		32	16	16	14,8	125	24	2,4	
XLDER/L2020K-GX16-2		32	20	20	18,8	125	24	2,4	

$f = f_1 + s/2$
Ordering example, right-hand tool: XLDER1010K-GX16-0/ordering example, left-hand tool: XLDEL1010K-GX16-0
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	$h = h_1$ [mm]	10-20
	Clamping screw for grooving insert Tightening torque	FS2164 (Torx 15IP) 3,5 Nm
	Screwdriver for grooving insert	FS1485 (Torx 15IP)

A 278 D 1 A 394 A 308

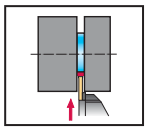
Shank tool – Radial/contra
XLDE...C

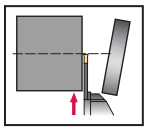
Walter Cut





– Screw clamping
– Angular access to clamping screw

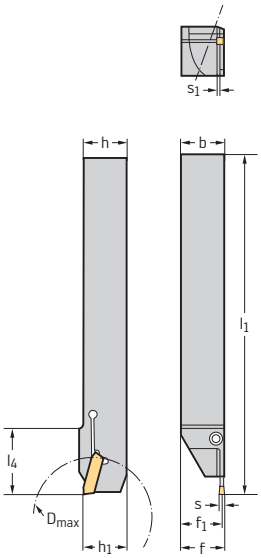








Tool



Designation	s mm	D_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
XLDER/L1010K-GX16-0C	1,5	20	10	10	9,4	125	19	1,2	GX16-0E1 ..
XLDER/L1212K-GX16-0C		24	12	12	11,4	125	19	1,2	
XLDER/L1616K-GX16-0C		32	16	16	15,4	125	24	1,2	
XLDER/L1010K-GX16-1C	2–2,5	20	10	10	9,2	125	19	1,6	GX16-1E2 ..
XLDER/L1212K-GX16-1C		24	12	12	11,2	125	19	1,6	
XLDER/L1616K-GX16-1C		32	16	16	15,2	125	24	1,6	
XLDER/L1212K-GX16-2C	3	24	12	12	10,8	125	19	2,4	GX16-2E3 ..
XLDER/L1616K-GX16-2C		32	16	16	14,8	125	24	2,4	

$f = f_1 + s/2$
Ordering example, right-hand tool: XLDER1010K-GX16-0C/ordering example, left-hand tool: XLDEL1010K-GX16-0C
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	$h = h_1$ [mm]	10-16
	Clamping screw for grooving insert Tightening torque	FS2164 (Torx 15IP) 3,5 Nm
	Screwdriver for grooving insert	FS1485 (Torx 15IP)

A 278 D 1 A 394 A 308

Shank tool – Universal
G1511

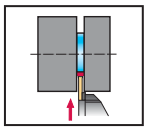
Walter Cut

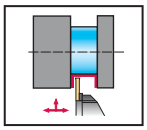


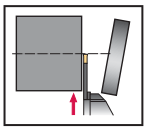


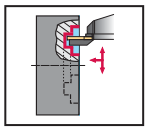
– Screw clamping

A2





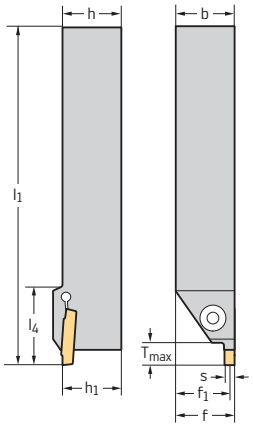








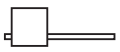
Tool



Designation	s mm	T_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	Type
G1511.1212R/L-T4GX16	2–6	4	12	12	9,9	132	31,5	GX16- ..
G1511.1616R/L-T4GX16		4	16	16	13,9	142	31,5	
G1511.2020R/L-T4GX16		4	20	20	17,9	142	31,5	
G1511.2525R/L-T4GX16		4	25	25	22,9	142	31,5	
G1511.1616R/L-T6GX24		6	16	16	13,9	144	33,5	GX24- ..
G1511.2020R/L-T6GX24		6	20	20	17,9	144	33,5	
G1511.2525R/L-T6GX24		6	25	25	22,9	144	33,5	

$f = f_1 + s/2$
For information on the smallest possible axial groove [D_{min}], see "Technical information"
Ordering example, right-hand tool: G1511.1212R-T4GX16/ordering example, left-hand tool: G1511.1212L-T4GX16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	$h = h_1$ [mm]	12-25
	Clamping screw for grooving insert Tightening torque	FS2118 (Torx 20IP) 5,0 Nm
	Torx key	FS1464 (Torx 20IP)

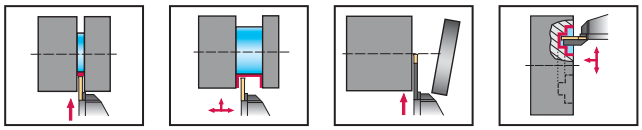
A 278 D 1 A 394 A 308

Shank tool – 90° Universal
G1521

Walter Cut

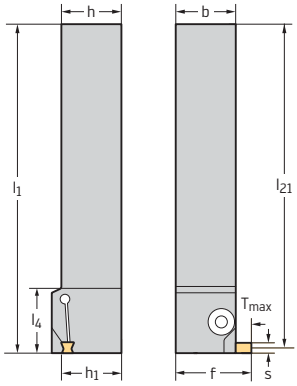
– Screw clamping







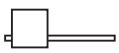
Tool



Designation	s mm	T_{max} mm	$h = h_1$ mm	b mm	f mm	l_4 mm	l_{21} mm	Type
G1521.1616R/L-T4GX16	2–6	4	16	16	20,5	27	134,8	GX16- ..
G1521.2020R/L-T4GX16		4	20	20	24,5	27	134,8	
G1521.2525R/L-T4GX16		4	25	25	29,5	27	134,8	
G1521.2020R/L-T6GX24		6	20	20	26,5	27	134,8	GX24- ..
G1521.2525R/L-T6GX24		6	25	25	31,5	27	134,8	

$l_1 = l_{21} + s/2$
For information on the smallest possible axial groove [D_{min}], see "Technical information"
Ordering example, right-hand tool: G1521.1616R-T4GX16/ordering example, left-hand tool: G1521.1616L-T4GX16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	$h = h_1$ [mm]	16-25
	Clamping screw for grooving insert Tightening torque	FS2118 (Torx 20IP) 5,0 Nm
	Torx key	FS1464 (Torx 20IP)

A 278 D 1 A 394 A 308

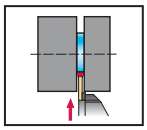
Shank tool – Universal
G1511...-P

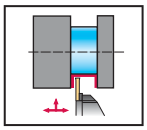
Walter Cut

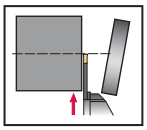
– Screw clamping
– Precision cooling

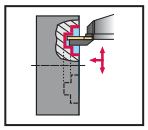








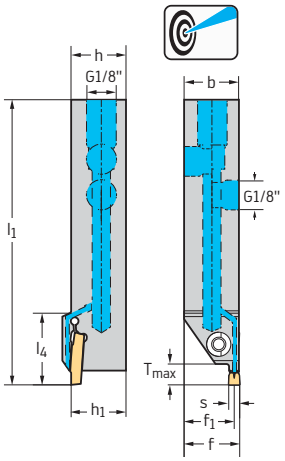




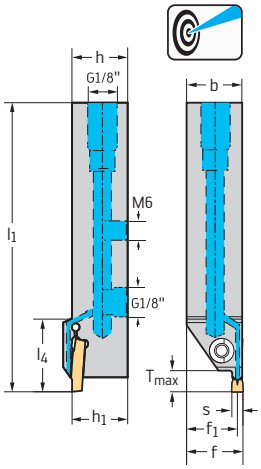




Tool



Designation	s mm	T_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	Type
G1511.1616R/L-T4GX16-P	2–6	4	16	16	13,9	120	31,5	GX16- ..
G1511.1616R/L-T6GX24-P		6	16	16	13,9	120	33	GX24- ..



Designation	s mm	T_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	Type
G1511.2020R/L-T4GX16-P	2–6	4	20	20	17,9	120	31,1	GX16- ..
G1511.2525R/L-T4GX16-P		4	25	25	22,9	130	31,2	
G1511.2020R/L-T6GX24-P		6	20	20	17,9	120	33,5	GX24- ..
G1511.2525R/L-T6GX24-P		6	25	25	22,9	130	32,9	

$f = f_1 + s/2$
For information on the smallest possible axial groove [D_{min}], see "Technical information"
Ordering example, right-hand tool: G1511.1616R-T4GX16-P/ordering example, left-hand tool: G1511.1616L-T4GX16-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

$h = h_1$ [mm]	16	20-25
Clamping screw for grooving insert Tightening torque	FS2118 (Torx 20IP) 5,0 Nm	FS2118 (Torx 20IP) 5,0 Nm
G 1/8" screw	FS2258 (SW 5)	FS2258 (SW 5)
M6 screw		FS2288 (SW 3)
Torx key	FS1464 (Torx 20IP)	FS1464 (Torx 20IP)

A 278 D 1 A 394 A 308 A 420

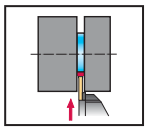
Shank tool – 45° Universal
G1551

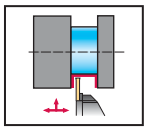
Walter Cut

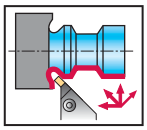




– Screw clamping





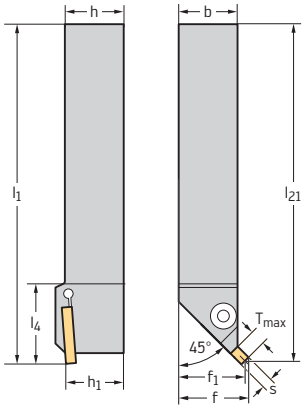






A 2

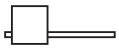
Tool



Designation	s mm	T_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_{21} mm	l_4 mm	Type
G1551.2020R/L-T4GX16	2–6	4	20	20	21,7	141,6	31,6	GX16- ..
G1551.2525R/L-T4GX16		4	25	25	26,7	141,6	31,6	
G1551.2020R/L-T6GX24		6	20	20	23,2	143,1	33,1	GX24- ..
G1551.2525R/L-T6GX24		6	25	25	28,2	143,1	33,1	

$f = f_1 + 0.707 \times s/2$
$l_1 = l_{21} + 0.707 \times s/2$
Ordering example, right-hand tool: G1551.2020R-T4GX16/ordering example, left-hand tool: G1551.2020L-T4GX16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

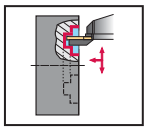
	$h = h_1$ [mm]	20-25
	Clamping screw for grooving insert Tightening torque	FS2118 (Torx 20IP) 5,0 Nm
	Torx key	FS1464 (Torx 20IP)

A 278 D 1 A 394 A 308

Shank tool – Axial grooving
G1111
Walter Cut

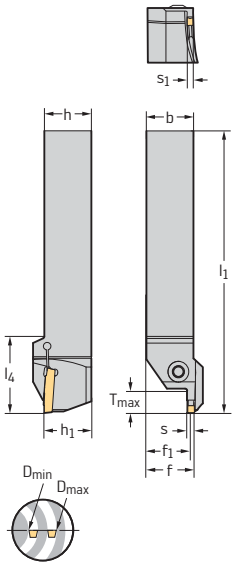


– Screw clamping



GX..E.. GX..F..

Tool



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
G1111.2525R/L-3T12-034GX24	3	12	34	44	25	25	24,7	150	40	2,4	GX24-2E3 .. GX24-2F3 ..
G1111.2525R/L-3T12-042GX24		12	42	60	25	25	24,7	150	40	2,4	
G1111.2525R/L-3T12-054GX24		12	54	75	25	25	24,6	150	40	2,4	
G1111.2525R/L-3T12-067GX24		12	67	100	25	25	24,6	150	40	2,4	
G1111.2525R/L-3T12-090GX24		12	90	160	25	25	24,6	150	40	2,4	
G1111.2525R/L-3T12-130GX24		12	130	300	25	25	24,6	150	40	2,4	
G1111.2525R/L-3T19-054GX24		19	54	75	25	25	24,7	152	42	2,4	
G1111.2525R/L-3T22-067GX24		22	67	100	25	25	24,7	154	44	2,3	
G1111.2525R/L-3T22-090GX24		22	90	160	25	25	24,6	154	44	2,3	
G1111.2525R/L-3T22-130GX24		22	130	300	25	25	24,6	154	44	2,3	
G1111.2525R/L-4T12-040GX24	4	12	40	60	25	25	24,1	150	40	3,3	GX24-3E4 .. GX24-3F4 ..
G1111.2525R/L-4T12-052GX24		12	52	72	25	25	24,1	150	40	3,3	
G1111.2525R/L-4T12-064GX24		12	64	100	25	25	24,1	150	40	3,3	
G1111.2525R/L-4T12-092GX24		12	92	140	25	25	24,1	150	40	3,3	
G1111.2525R/L-4T12-132GX24		12	132	230	25	25	24,1	150	40	3,3	
G1111.2525R/L-4T12-220GX24		12	220	500	25	25	24,1	150	40	3,3	
G1111.2525R/L-4T20-040GX24		20	40	60	25	25	24,3	152	42	3,3	
G1111.2525R/L-4T20-052GX24		20	52	72	25	25	24,2	152	42	3,3	
G1111.2525R/L-4T25-064GX24		25	64	100	25	25	24,1	156	46	3,3	
G1111.2525R/L-4T25-092GX24		25	92	140	25	25	24,1	156	46	3,3	
G1111.2525R/L-4T25-132GX24		25	132	230	25	25	24,1	156	46	3,3	
G1111.2525R/L-4T25-220GX24		25	220	500	25	25	24,1	156	46	3,3	
G1111.2525R/L-5T12-040GX24	5	12	40	70	25	25	23,7	150	40	4,2	GX24-3E5 .. GX24-3F5 ..
G1111.2525R/L-5T12-060GX24		12	60	95	25	25	23,7	150	40	4,2	
G1111.2525R/L-5T12-085GX24		12	85	130	25	25	23,7	150	40	4,2	
G1111.2525R/L-5T12-120GX24		12	120	180	25	25	23,7	150	40	4,2	
G1111.2525R/L-5T12-175GX24		12	175	500	25	25	23,6	150	40	4,1	
G1111.2525R/L-5T20-040GX24		20	40	70	25	25	23,8	152	42	4,2	
G1111.2525R/L-5T20-060GX24		20	60	95	25	25	23,7	152	42	4,2	
G1111.2525R/L-5T25-085GX24		25	85	130	25	25	23,7	156	46	4,2	
G1111.2525R/L-5T25-120GX24		25	120	180	25	25	23,7	156	46	4,2	
G1111.2525R/L-5T25-175GX24		25	175	500	25	25	23,7	156	46	4,2	
G1111.2525R/L-6T12-040GX24	6	12	40	70	25	25	23,2	150	40	5	GX24-4E6 ..
G1111.2525R/L-6T12-058GX24		12	58	100	25	25	23,2	150	40	5	
G1111.2525R/L-6T12-088GX24		12	88	180	25	25	23,2	150	40	5	
G1111.2525R/L-6T12-168GX24		12	168	400	25	25	23,2	150	40	5	
G1111.2525R/L-6T20-040GX24		20	40	70	25	25	23,3	152	42	5	
G1111.2525R/L-6T25-058GX24		25	58	100	25	25	23,2	156	46	5	
G1111.2525R/L-6T25-088GX24		25	88	180	25	25	23,2	156	46	5	
G1111.2525R/L-6T25-168GX24		25	168	400	25	25	23,2	156	46	5	

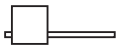
$f = f_1 + s/2$

Ordering example, right-hand tool: G1111.2525R-3T12-034GX24/ordering example, left-hand tool: G1111.2525L-3T12-034GX24

Bodies and assembly parts are included in the scope of delivery.

A 278 D 1 A 394 A 308

Assembly parts

	$h = h_1$ [mm]	25
	Clamping screw for grooving insert Tightening torque	FS2118 (Torx 20IP) 5,0 Nm
	Torx key	FS1464 (Torx 20IP)

A 278 D 1 A 394 A 308

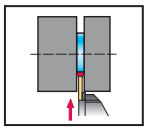
Deep parting blade G1042

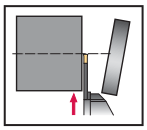
Walter Cut



– Self-clamping system

A2

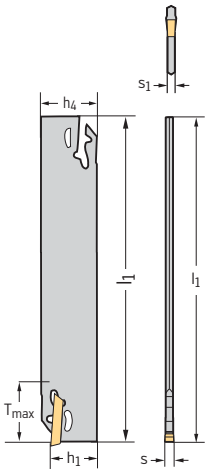




GX..E..

GX..F..

Tool



Designation	s mm	T_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G1042.26N-2T25GX16	2	25	26	108	21,1	1,5	GX16-1E2 ..
G1042.32N-2T25GX16		25	32	149	24,8	1,5	
G1042.26N-2T40GX24		40	26	108	21,1	1,5	GX24-1E2 ..
G1042.32N-2T50GX24		50	32	149	24,8	1,5	
G1042.26N-3T40GX24	3	40	26	108	21	2,3	GX24-2E3 ..
G1042.32N-3T50GX24		50	32	149	24,7	2,3	GX24-2F3 ..
G1042.26N-4T40GX24	4	40	26	108	20,9	3,2	GX24-3E4 ..
G1042.32N-4T50GX24		50	32	149	24,6	3,2	GX24-3F4 ..
G1042.32N-5T60GX24	5	60	32	149	24,5	3,9	GX24-3E5 .. GX24-3F5 ..
G1042.32N-6T60GX24	6	60	32	149	24,4	4,7	GX24-4E6 ..

Accessories



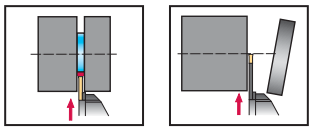
h_4 [mm]	26-32
Mounting wrench for grooving insert	FS1494

A 278 D 1 A 394 A 308 A 308

Reinforced parting blade G1041

Walter Cut

– Screw clamping

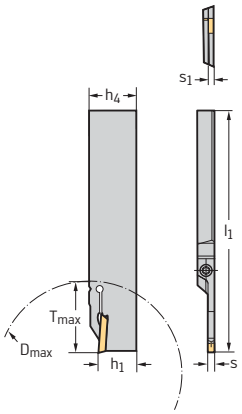






A 2

Tool



Designation	s mm	T_{max} mm	D_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G1041.26R/L-1.5T16GX16	1,5	16	32	26	110	21	1,3	GX16-0E1 ..
G1041.26R/L-2T16GX16	2	16	32	26	110	21	1,5	GX16-1E2 ..
G1041.32R/L-2T23GX16		23	46	32	110	24,6	1,5	
G1041.26R/L-2T23GX24		23	46	26	110	21	1,5	GX24-1E2 ..
G1041.32R/L-2T23GX24		23	46	32	110	24,6	1,5	
G1041.32R/L-2T32GX24		32	65	32	110	24,6	1,5	
G1041.26R/L-3T16GX16	3	16	32	26	110	21	2,2	GX16-2E3 ..
G1041.26R/L-3T23GX24		23	46	26	110	21	2,2	GX24-2E3 .. GX24-2F3 ..
G1041.32R/L-3T23GX24		23	46	32	110	24,6	2,2	
G1041.32R/L-3T32GX24		32	65	32	110	24,6	2,2	
G1041.32R/L-4T32GX24	4	32	65	32	110	24,6	3,1	GX24-3E4 .. GX24-3F4 ..

Ordering example, right-hand tool: G1041.26R-1.5T16GX16/ordering example, left-hand tool: G1041.26L-1.5T16GX16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	h_4 [mm]	26-32
	Clamping screw for grooving insert	FS2164 (Torx 15IP)
	Tightening torque	3,5 Nm

Accessories

	h_4 [mm]	26-32
	Screwdriver for grooving insert	FS1485 (Torx 15IP)

A 278 D 1 A 394 A 308

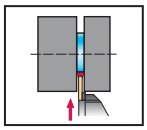
Reinforced parting blade – Contra G1041...C

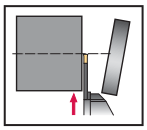
Walter Cut





– Screw clamping

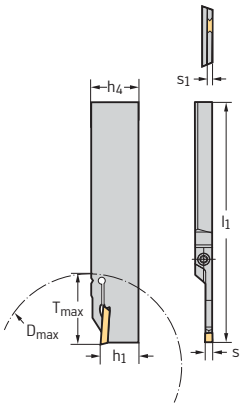








Tool



Designation	s mm	T_{max} mm	D_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G1041.26R/L-1.5T16GX16C	1,5	16	32	26	110	21	1,3	GX16-0E1 ..
G1041.26R/L-2T16GX16C	2	16	32	26	110	21	1,5	GX16-1E2 ..
G1041.32R/L-2T23GX16C		23	46	32	110	24,6	1,5	
G1041.26R/L-2T23GX24C		23	46	26	110	21	1,5	GX24-1E2 ..
G1041.32R/L-2T23GX24C		23	46	32	110	24,6	1,5	
G1041.32R/L-2T32GX24C		32	65	32	110	24,6	1,5	
G1041.26R/L-3T16GX16C	3	16	32	26	110	21	2,2	GX16-2E3 ..
G1041.26R/L-3T23GX24C		23	46	26	110	21	2,2	GX24-2E3 .. GX24-2F3 ..
G1041.32R/L-3T23GX24C		23	46	32	110	24,6	2,2	
G1041.32R/L-3T32GX24C		32	65	32	110	24,6	2,2	
G1041.32R/L-4T32GX24C	4	32	65	32	110	24,6	3,1	GX24-3E4 .. GX24-3F4 ..

Ordering example, right-hand tool: G1041.26R-1.5T16GX16C/ordering example, left-hand tool: G1041.26L-1.5T16GX16C
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	h_4 [mm]	26-32
	Clamping screw for grooving insert	FS2164 (Torx 15IP)
	Tightening torque	3,5 Nm

Accessories

	h_4 [mm]	26-32
	Screwdriver for grooving insert	FS1485 (Torx 15IP)

A 278 D 1 A 394 A 308

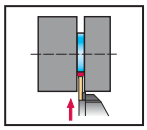
Reinforced parting blade – Contra G1041...C-P

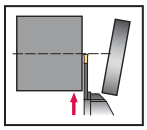
Walter Cut

– Screw clamping
– Precision cooling







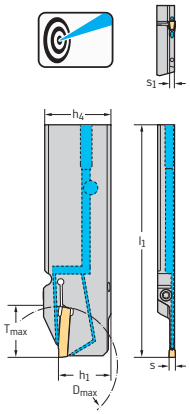






A 2

Tool



Designation	s mm	T_{max} mm	D_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G1041.26R/L-2T16GX16C-P	2	16	32	26	110	21	1,5	GX16-1E2 ..
G1041.32R/L-2T23GX24C-P		23	46	32	110	24,6	1,5	GX24-1E2 ..
G1041.32R/L-3T23GX24C-P	3	23	46	32	110	24,6	2,2	GX24-2E3 ..
G1041.32R/L-3T32GX24C-P		32	65	32	110	24,6	2,2	GX24-2F3 ..
G1041.32R/L-4T32GX24C-P	4	32	65	32	110	24,6	3,1	GX24-3E4 .. GX24-3F4 ..

Ordering example, right-hand tool: G1041.26R-2T16GX16C-P/ordering example, left-hand tool: G1041.26L-2T16GX16C-P
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	h_4 [mm]	26-32
	Clamping screw for grooving insert	FS2164 (Torx 15IP)
	Tightening torque	3,5 Nm

Accessories

	h_4 [mm]	26-32
	Screwdriver for grooving insert	FS1485 (Torx 15IP)

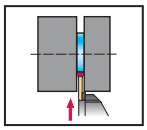
A 278 D 1 A 394 A 308 A 308

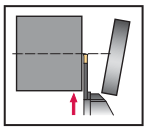
Deep parting blade
XLCFN
Walter Cut



– Screw clamping

A2

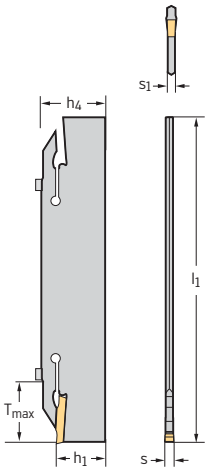








Tool



Designation	s mm	T_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
XLCFN3203-GX24-2S	3	21	32	179	24,2	2,1	GX24-2E3 .. GX24-2F3 ..
XLCFN3204-GX24-3S	4	21	32	179	24,2	3,0	GX24-3E4 .. GX24-3F4 ..
XLCFN3206-GX24-4S	6	21	32	179	24,2	4,2	GX24-4E6 ..

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	h_4 [mm]	32
	Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm

Accessories

	h_4 [mm]	32
	Handle key for grooving insert	FS1047 (Torx 15)

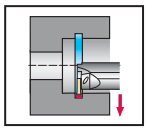
A 278 D 1 A 394 A 308

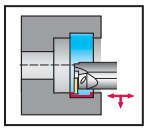
Boring bar – Internal grooving
I12

Walter Cut



– Screw clamping

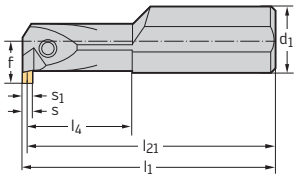


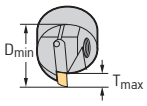






Tool





Designation	s mm	T_{max} mm	D_{min} mm	d_1 mm	f mm	l_4 mm	l_{21} mm	s_1 mm	Type
I12R/L90-2,5D-GX09	2–2,5	3	16	16	11	30	149,3	1,3	GX09-1E2 ..

$l_1 = l_{21} + s/2$
Ordering example, right-hand tool: I12R90-2.5D-GX09/ordering example, left-hand tool: I12L90-2.5D-GX09
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	s [mm]	2–2,5
	Clamping screw for grooving insert Tightening torque	FS2139 (Torx 20IP) 5,0 Nm
	Screwdriver for grooving insert	FS1486 (Torx 20IP)

A 278 D 1 A 394 A 308

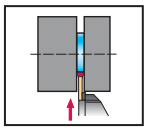
Shank tool – Radial grooving
G2012

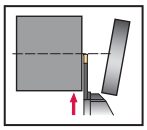
Walter Cut



– Self-clamping system

A2

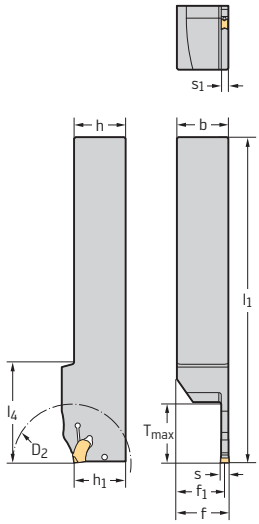




SX

Tool

Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
G2012.1212R/L-1.5T15SX	1,5	15	38	12	12	11,4	120	25	1,2	SX-1E1 ..
G2012.1616R/L-1.5T15SX		15	38	16	16	15,4	120	25	1,2	
G2012.2020R/L-1.5T15SX		15	38	20	20	19,4	120	25	1,2	



$f = f_1 + s/2$

Ordering example, right-hand tool: G2012.1212R-1.5T15SX/ordering example, left-hand tool: G2012.1212L-1.5T15SX

Accessories

	$h = h_1$ [mm]	12-20
	Mounting wrench for grooving insert	FS2249

A 286 D 1 A 394 A 308 A 308

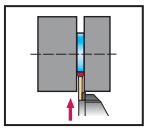
Shank tool – Radial grooving
G2012...-P

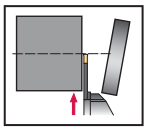
Walter Cut



– Self-clamping system
– Precision cooling

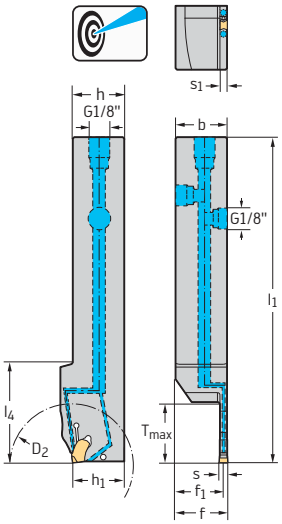
A2



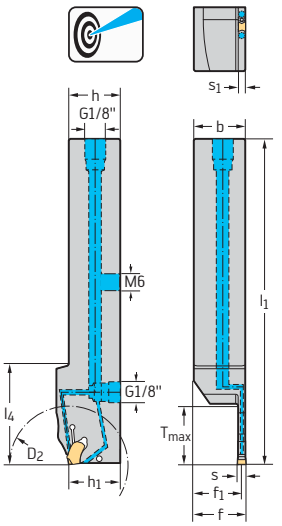




Tool



Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
G2012.1212R/L-2T16SX-P	2	16	38	12	12	11,2	120	25	1,6	SX-2E2 ..
G2012.1616R/L-2T16SX-P		16	38	16	16	15,2	120	25	1,6	
G2012.1212R/L-3T16SX-P	3	16	38	12	12	10,8	120	25	2,5	SX-3E3 ..
G2012.1616R/L-3T16SX-P		16	38	16	16	14,8	120	25	2,5	
G2012.1616R/L-3T26SX-P		26	68	16	16	14,8	120	25	2,5	



Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm	f_1 mm	l_1 mm	l_4 mm	s_1 mm	Type
G2012.2020R/L-2T20SX-P	2	20	68	20	20	19,2	125	36	1,6	SX-2E2 ..
G2012.2020R/L-3T22SX-P	3	22	68	20	20	18,8	125	38	2,5	SX-3E3 ..
G2012.2020R/L-3T33SX-P		33	68	20	20	18,8	125	38	2,5	
G2012.2525R/L-3T33SX-P		33	68	25	25	23,8	130	45	2,5	
G2012.2020R/L-4T33SX-P	4	33		20	20	18,3	130	48	3,4	SX-4E4 ..
G2012.2525R/L-4T33SX-P		33		25	25	23,3	130	48	3,4	
G2012.2020R/L-5T33SX-P	5	33		20	20	17,9	130	48	4,3	SX-5E5 ..
G2012.2525R/L-5T40SX-P		40		25	25	22,9	145	52	4,3	
G2012.2525R/L-6T40SX-P	6	40		25	25	22,4	145	52	5,3	SX-6E6 ..
G2012.2525R/L-8T40SX-P	8	40		25	25	21,6	145	55	6,8	SX-8E8 ..
G2012.3225R/L-8T45SX-P		45		32	25	21,6	145	60	6,8	
G2012.2525R/L-10T40SX-P	10	40		25	25	20,6	145	55	8,8	SX-10E10 ..
G2012.3225R/L-10T45SX-P		45		32	25	20,6	145	60	8,8	

$f = f_1 + s/2$
The maximum recommended coolant pressure is 150 bar (2175 psi)
For information on T_{max} with diameters larger than D_2, see "Technical information – Grooving"
Ordering example, right-hand tool: G2012.1212R-2T16SX-P/ordering example, left-hand tool: G2012.1212L-2T16SX-P
Bodies and assembly parts are included in the scope of delivery.

A 286 D 1 A 394 A 308 A 420 A 308

Assembly parts

	$h = h_1$ [mm]	12-16	20-32
	G 1/8" screw	FS2258 (SW 5)	FS2258 (SW 5)
	M6 screw		FS2288 (SW 3)

Accessories

	$h = h_1$ [mm] s [mm]	12-16 2–3	20 2–5	25 3–6	25-32 8–10
	Mounting wrench for grooving insert	FS2249	FS1494	FS1494	FS2274

A2

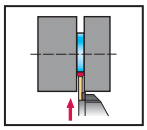
A 286 D 1 A 394 A 308 A 420 A 308

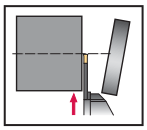
Deep parting blade
G2042...N
Walter Cut



– Self-clamping system

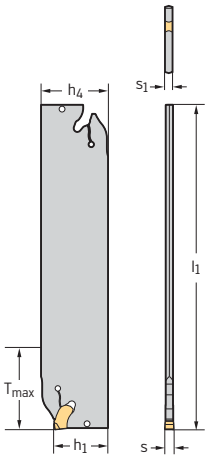
A2





SX

Tool



Designation	s mm	T_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G2042.26N-2T30SX	2	30	26	110	21,1	1,6	SX-2E2 ..
G2042.32N-2T30SX		30	32	151	24,8	1,6	
G2042.26N-3T38SX	3	38	26	110	21	2,4	SX-3E3 ..
G2042.32N-3T50SX		50	32	151	24,7	2,4	
G2042.26N-4T40SX	4	40	26	110	20,9	3,4	SX-4E4 ..
G2042.32N-4T50SX		50	32	151	24,5	3,4	
G2042.32N-5T60SX	5	60	32	151	24,4	4,3	SX-5E5 ..
G2042.46N-5T80SX		80	46	251	37,4	4,3	
G2042.32N-6T60SX	6	60	32	151	24,3	5,3	SX-6E6 ..
G2042.46N-6T80SX		80	46	251	37,3	5,3	

Accessories



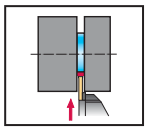
	h_4 [mm]	26-46
	Mounting wrench for grooving insert	FS1494

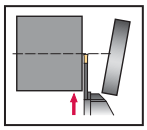
A 286 D 1 A 394 A 308 A 308

Deep parting blade
G2042...N...-P
Walter Cut



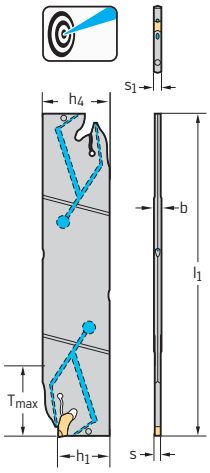
– Self-clamping system
– Precision cooling



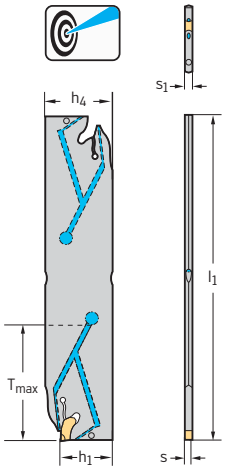


SX

Tool



Designation	s mm	T_{max} mm	h_4 mm	b mm	l_1 mm	h_1 mm	s_1 mm	Type
G2042.26N-3T38SX-P	3	38	26	3,5	131	20,8	2,4	SX-3E3 ..
G2042.32N-3T45SX-P		45	32	3,5	151	24,5	2,4	



Designation	s mm	T_{max} mm	h_4 mm	b mm	l_1 mm	h_1 mm	s_1 mm	Type
G2042.26N-4T40SX-P	4	40	26		131	20,8	3,5	SX-4E4 ..
G2042.32N-4T50SX-P		50	32		151	24,5	3,5	
G2042.32N-5T60SX-P	5	60	32		151	24,4	4,3	SX-5E5 ..
G2042.32N-6T60SX-P	6	60	32		151	24,3	5,3	SX-6E6 ..
G2042.52N-8T100SX-P	8	100	52		251	44,3	6,8	SX-8E8 ..
G2042.52N-10T100SX-P	10	100	52		251	44	8,8	SX-10E10 ..

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

h_4 [mm] s [mm]	26-32 3–4	32 5	32 6	52 8	52 10
Coolant transfer insert	FS2282	FS2283	FS2284	FS2285	FS2286

Accessories

h_4 [mm]	26-32	52
Mounting wrench for grooving insert	FS1494	FS2274

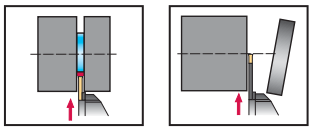
A 286 D 1 A 394 A 308 A 308

Reinforced parting blade G2042...R/L

Walter Cut



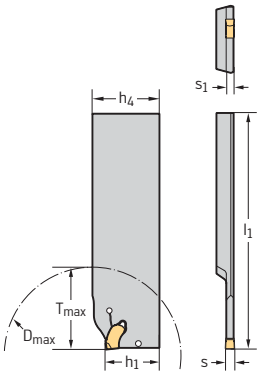
– Self-clamping system





A2

Tool



Designation	s mm	T_{max} mm	D_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G2042.26R/L-1.5T20SX	1,5	20	40	26	110	21	1,2	SX-1E1 ..
G2042.32R/L-1.5T20SX		20	40	32	110	24,7	1,2	
G2042.26R/L-2T26SX	2	26	52	26	110	21	1,6	SX-2E2 ..
G2042.32R/L-2T26SX		26	52	32	110	24,7	1,6	
G2042.26R/L-3T33SX	3	33	65	26	110	21	2,4	SX-3E3 ..
G2042.32R/L-3T33SX		33	65	32	110	24,7	2,4	
G2042.32R/L-4T33SX	4	33	65	32	110	24,7	3,4	SX-4E4 ..

Ordering example, right-hand tool: G2042.26R-1.5T20SX/ordering example, left-hand tool: G2042.26L-1.5T20SX

Accessories

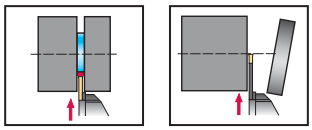
	h_4 [mm] s [mm]	26-32 1,5	26 2–3	32 2–4
	Mounting wrench for grooving insert	FS2249	FS1494	FS1494

A 286 D 1 A 394 A 308 A 308

Reinforced parting blade – Contra G2042...R/L...C

Walter Cut

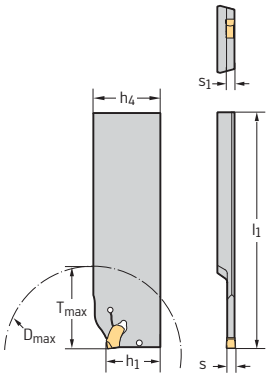
– Self-clamping system





SX

Tool



Designation	s mm	T_{max} mm	D_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G2042.26R/L-2T26SX-C	2	26	52	26	110	21	1,6	SX-2E2 ..
G2042.32R/L-2T26SX-C		26	52	32	110	24,6	1,6	
G2042.26R/L-3T33SX-C	3	33	65	26	110	21,0	2,4	SX-3E3 ..
G2042.32R/L-3T33SX-C		33	65	32	110	24,7	2,4	
G2042.32R/L-4T33SX-C	4	33	65	32	110	24,7	3,4	SX-4E4 ..

Ordering example, right-hand tool: G2042.26R-2T26SX-C/ordering example, left-hand tool: G2042.26L-2T26SX-C

Accessories

	h_4 [mm]	26-32
	Mounting wrench for grooving insert	FS1494

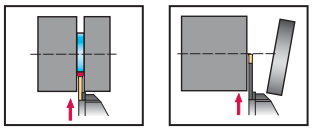
A 286 D 1 A 394 A 308 A 308

Reinforced parting blade G2042...R/L...-P

Walter Cut

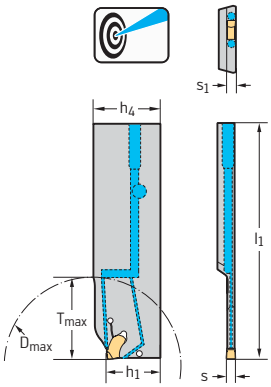
– Self-clamping system
– Precision cooling





SX

Tool



Designation	s mm	T_{max} mm	D_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G2042.32R/L-2T26SX-P	2	26	52	32	110	24,7	1,6	SX-2E2 ..
G2042.26R/L-3T33SX-P	3	33	65	26	110	21	2,4	SX-3E3 ..
G2042.32R/L-3T33SX-P		33	65	32	110	24,7	2,4	

Ordering example, right-hand tool: G2042.32R-2T26SX-P/ordering example, left-hand tool: G2042.32L-2T26SX-P

Accessories

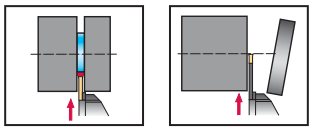
	h_4 [mm]	26-32
	Mounting wrench for grooving insert	FS1494

A 286 D 1 A 394 A 308 A 308

Reinforced parting blade – Contra G2042...R/L...C-P

Walter Cut

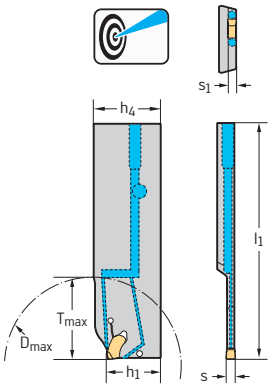
– Self-clamping system
– Precision cooling







Tool



Designation	s mm	T_{max} mm	D_{max} mm	h_4 mm	l_1 mm	h_1 mm	s_1 mm	Type
G2042.26R/L-2T26SX-C-P	2	26	52	26	110	21,0	1,6	SX-2E2 ..
G2042.32R/L-2T26SX-C-P		26	52	32	110	24,7	1,6	
G2042.26R/L-3T33SX-C-P	3	33	65	26	110	21,0	2,4	SX-3E3 ..
G2042.32R/L-3T33SX-C-P		33	65	32	110	24,7	2,4	
G2042.32R/L-4T33SX-C-P	4	33	65	32	110	24,7	3,5	SX-4E4 ..

Ordering example, right-hand tool: G2042.26R-2T26SX-C-P/ordering example, left-hand tool: G2042.26L-2T26SX-C-P

Accessories



h_4 [mm]	26-32
Mounting wrench for grooving insert	FS1494

A 286 D 1 A 394 A 308 A 308

Clamping block SBN

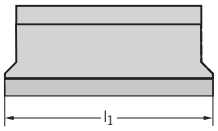
Walter Cut

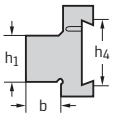


A2

– Clamping block for parting blades

Tool





Designation	h_4 mm	h_1 mm	b mm	l_1 mm
SBN2020-26-K	26	20	20	90
SBN2520-32-K	32	25	20	110
SBN3229-32-K	32	32	29	120
SBN3229-46-K	46	32	29	150
SBN4037-46-K	46	40	37	150

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	h_4 [mm]	26–32	46
	Clamping screw	M06X025 ISO4762 12.9 (SW 5)	M08X035 ISO4762 12.9 (SW 6)

A 295 D 1 A 308

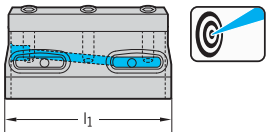
Clamping block with internal coolant G2661...-P

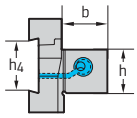
Walter Cut



– Precision cooling
– Clamping block for parting blades

Tool





Designation	h_4 mm	h mm	b mm	l_1 mm
G2661-1616N-26-P	26	16	16	95
G2661-2020N-26-P	26	20	20	95
G2661-2020N-32-P	32	20	20	95
G2661-2525N-32-P	32	25	25	95
G2661-3225N-32-P	32	32	25	95
G2661-3225N-52-P	52	32	25	140
G2661-4032N-52-P	52	40	32	140

For the connection set for coolant supply with G1/8" thread, see "Assembly parts and accessories"
The maximum recommended coolant pressure is 80 bar (1160 psi)
Bodies and assembly parts are included in the scope of delivery.

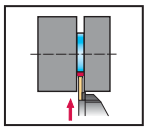
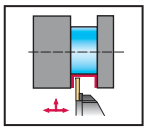
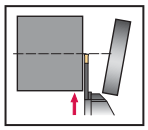
Assembly parts

h_4 [mm]	26–32	52
Clamping wedge	PK260	PK263
Clamping screw	M06X020 ISO4762 12.9 (SW 5)	M8X025 ISO4762 12.9 (SW 6)
O-ring	O-RING 20X2	O-RING 27X2 70/80
G 1/8" screw	FS2258 (SW 5)	FS2258 (SW 5)
ISO 2936 key	ISO2936-5 (SW 5)	ISO2936-6 (SW 6)

A 295 D 1 A 308

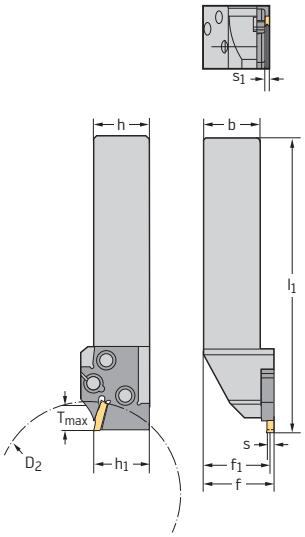
Shank tool – Radial grooving
NCAE / NCBE
Walter Cut

– Screw clamping

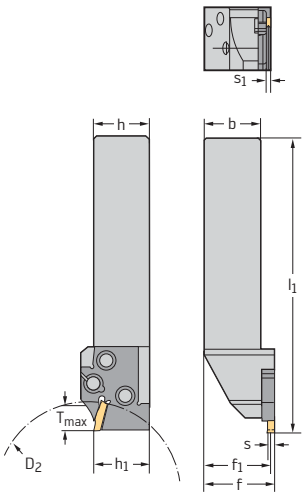




Tool

Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm
NCAE16-1616R/L-GX09-1	2–2,5	7	52	16	16
NCAE16-1616R/L-GX09-2	3	7	52	16	16
NCAE20-2020R/L-GX16-1	2–2,5	12	63	20	20
NCAE25-2525R/L-GX16-1		12	79	25	25
NCAE20-2020R/L-GX16-2	3	12	63	20	20
NCAE25-2525R/L-GX16-2		12	79	25	25
NCAE32-3225R/L-GX16-2		12	100	32	25
NCAE20-2020R/L-GX16-3	4–5	12	63	20	20
NCAE25-2525R/L-GX16-3		12	79	25	25
NCAE32-3225R/L-GX16-3		12	100	32	25
NCAE25-2525R/L-GX16-4	6	12	79	25	25



Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm
NCBE20-2020R/L-GX24-2-21	3	21	63	20	20
NCBE25-2525R/L-GX24-2-21		21	79	25	25
NCBE25-2525R/L-GX24-3-21	4–5	21	79	25	25
NCBE32-3225R/L-GX24-3-21		21	100	32	25
NCBE25-2525R/L-GX24-4-21	6	21	79	25	25
NCBE32-3225R/L-GX24-4-21		21	100	32	25
NCBE25-2525R/L-GX24-5-21	8	21	79	25	25



$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
For information on T_{max} with diameters larger than D_2, see "Technical information – Grooving"
Ordering example, right-hand tool: NCAE16-1616R-GX09-1/ordering example, left-hand tool: NCAE16-1616L-GX09-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Module size	E16	E20	E25	E32
Screw for grooving module Tightening torque	FS1052 (Torx 15) 2,0 Nm	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
Handle key	FS1047 (Torx 15)	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)





A2

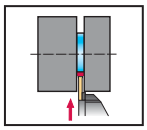
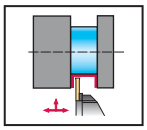
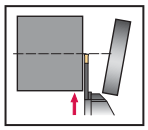
GX..E.. GX..F..

	f_1 mm	l_1 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	18,9	98	1,3	E16	GX09-1E2 ..	MSS-E16R/L07-GX09-1	MSS-E16R/L00-1616G
	18,6	98	2	E16	GX09-2E3 ..	MSS-E16R/L07-GX09-2	MSS-E16R/L00-1616G
	23,9	123	1,3	E20	GX16-1E2 ..	MSS-E20R/L12-GX16-1	MSS-E20R/L00-2020J
	30,8	153	1,3	E25		MSS-E25R/L12-GX16-1	MSS-E25R/L00-2525L
	23,6	123	2	E20	GX16-2E3 ..	MSS-E20R/L12-GX16-2	MSS-E20R/L00-2020J
	30,4	153	2	E25		MSS-E25R/L12-GX16-2	MSS-E25R/L00-2525L
	30,4	173	2	E32		MSS-E32R/L12-GX16-2	MSS-E32R/L00-3225N
	23,1	123	3,0	E20	GX16-3E ..	MSS-E20R/L12-GX16-3	MSS-E20R/L00-2020J
	29,9	153	3,0	E25		MSS-E25R/L12-GX16-3	MSS-E25R/L00-2525L
	29,9	173	3,0	E32		MSS-E32R/L12-GX16-3	MSS-E32R/L00-3225N
	29,3	153	4,2	E25	GX16-4E6 ..	MSS-E25R/L12-GX16-4	MSS-E25R/L00-2525L
	23,6	132	2	E20	GX24-2E3 .. GX24-2F3 ..	MSS-E20R/L21-GX24-2	MSS-E20R/L00-2020J
	30,4	162	2	E25		MSS-E25R/L21-GX24-2	MSS-E25R/L00-2525L
	29,9	162	3,0	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3	MSS-E25R/L00-2525L
	29,9	182	3,0	E32		MSS-E32R/L21-GX24-3	MSS-E32R/L00-3225N
	29,3	162	4,2	E25	GX24-4E6 ..	MSS-E25R/L21-GX24-4	MSS-E25R/L00-2525L
	29,3	182	4,2	E32		MSS-E32R/L21-GX24-4	MSS-E32R/L00-3225N
	28,5	162	5,9	E25	GX24-5R ..	MSS-E25R/L21-GX24-5	MSS-E25R/L00-2525L

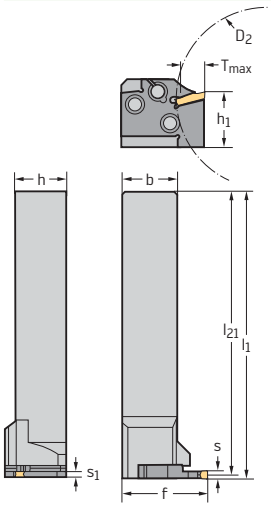
A 278 D 1 A 394 A 308 A 400

Shank tool – 90° radial grooving
NCLE
Walter Cut

– Screw clamping

Tool



Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm
NCLE20-2020R/L-GX16-1	2–2,5	12	63	20	20
NCLE25-2525R/L-GX16-1		12	79	25	25
NCLE20-2020R/L-GX16-2	3	12	63	20	20
NCLE25-2525R/L-GX16-2		12	79	25	25
NCLE32-3225R/L-GX16-2		12	100	32	25
NCLE20-2020R/L-GX16-3	4–5	12	63	20	20
NCLE25-2525R/L-GX16-3		12	79	25	25
NCLE32-3225R/L-GX16-3		12	100	32	25
NCLE25-2525R/L-GX16-4	6	12	79	25	25
NCLE20-2020R/L-GX24-2-21	3	21	63	20	20
NCLE25-2525R/L-GX24-2-21		21	79	25	25
NCLE25-2525R/L-GX24-3-21	4–5	21	79	25	25
NCLE32-3225R/L-GX24-3-21		21	100	32	25
NCLE25-2525R/L-GX24-4-21	6	21	79	25	25
NCLE32-3225R/L-GX24-4-21		21	100	32	25
NCLE25-2525R/L-GX24-5-21	8	21	79	25	25

$l_1 = l_{21} + s/2$
For information on T_{max} with diameters larger than D_2, see "Technical information – Grooving"
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCLE20-2020R-GX16-1/ordering example, left-hand tool: NCLE20-2020L-GX16-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)





A2





	f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	33	109,8	1,3	E20	GX16-1E2 ..	MSS-E20R/L12-GX16-1	MSS-E20R/L90-2020J
	38	139,8	1,3	E25		MSS-E25R/L12-GX16-1	MSS-E25R/L90-2525L
	33	109,3	2	E20	GX16-2E3 ..	MSS-E20R/L12-GX16-2	MSS-E20R/L90-2020J
	38	139,4	2	E25		MSS-E25R/L12-GX16-2	MSS-E25R/L90-2525L
	45	159,4	2	E32		MSS-E32R/L12-GX16-2	MSS-E32R/L90-3225N
	33	108,8	3,0	E20	GX16-3E ..	MSS-E20R/L12-GX16-3	MSS-E20R/L90-2020J
	38	138,9	3,0	E25		MSS-E25R/L12-GX16-3	MSS-E25R/L90-2525L
	45	158,9	3,0	E32		MSS-E32R/L12-GX16-3	MSS-E32R/L90-3225N
	38	138,3	4,2	E25	GX16-4E6 ..	MSS-E25R/L12-GX16-4	MSS-E25R/L90-2525L
	42	109,4	2	E20	GX24-2E3 .. GX24-2F3 ..	MSS-E20R/L21-GX24-2	MSS-E20R/L90-2020J
	47	139,4	2	E25		MSS-E25R/L21-GX24-2	MSS-E25R/L90-2525L
	47	138,9	3,0	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3	MSS-E25R/L90-2525L
	54	158,9	3,0	E32		MSS-E32R/L21-GX24-3	MSS-E32R/L90-3225N
	47	138,3	4,2	E25	GX24-4E6 ..	MSS-E25R/L21-GX24-4	MSS-E25R/L90-2525L
	54	158,3	4,2	E32		MSS-E32R/L21-GX24-4	MSS-E32R/L90-3225N
	47	137,5	5,9	E25	GX24-5R ..	MSS-E25R/L21-GX24-5	MSS-E25R/L90-2525L

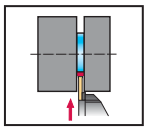
A 278 D 1 A 394 A 308 A 400

Shank tool – Radial grooving
NCCE

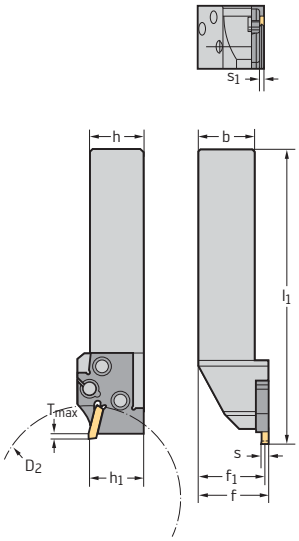
Walter Cut

– Screw clamping
– Circlip grooves

A2



Tool



Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm
NCCE16-1616R/L-GX09-1	0,6–1,7	2	52	16	16
NCCE20-2020R/L-GX16-2	0,6–2,3	3	63	20	20
NCCE25-2525R/L-GX16-2		3	79	25	25
NCCE32-3225R/L-GX16-2		3	100	32	25

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCCE16-1616R-GX09-1/ordering example, left-hand tool: NCCE16-1616L-GX09-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E16	E20	E25	E32
	Screw for grooving module Tightening torque	FS1052 (Torx 15) 2,0 Nm	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)





GX..E.. GX..F..

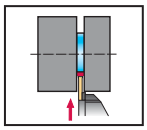
	f_1 mm	l_1 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	18,9	98	1,3	E16	GX09-1S ..	MSS-E16R/L02-GX09-1	MSS-E16R/L00-1616G
	23,6	123	2	E20	GX16-2S ..	MSS-E20R/L03-GX16-2	MSS-E20R/L00-2020J
	30,4	153	2	E25		MSS-E25R/L03-GX16-2	MSS-E25R/L00-2525L
	30,4	173	2	E32		MSS-E32R/L03-GX16-2	MSS-E32R/L00-3225N

A 281 D 1 A 394 A 308 A 400

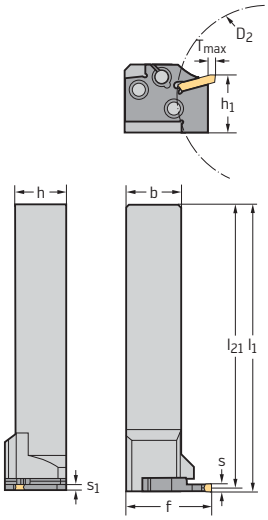
Shank tool – 90° radial grooving
NCNE
Walter Cut

– Screw clamping
– Circlip grooves

A2



Tool



Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm
NCNE20-2020R/L-GX16-2	0,6–2,3	3	63	20	20
NCNE25-2525R/L-GX16-2		3	79	25	25
NCNE32-3225R/L-GX16-2		3	100	32	25

$l_1 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCNE20-2020R-GX16-2/ordering example, left-hand tool: NCNE20-2020L-GX16-2
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)





GX..E.. GX..F..

	f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	33	109,3	2	E20	GX16-2S ..	MSS-E20R/L03-GX16-2	MSS-E20R/L90-2020J
	38	139,4	2	E25		MSS-E25R/L03-GX16-2	MSS-E25R/L90-2525L
	45	159,4	2	E32		MSS-E32R/L03-GX16-2	MSS-E32R/L90-3225N

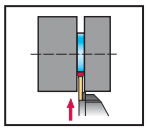
A 281 D 1 A 394 A 308 A 400

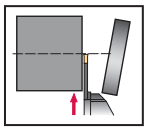
Grooving module – Radial grooving
G1332

Walter Cut



– Self-clamping system
– Replacement module

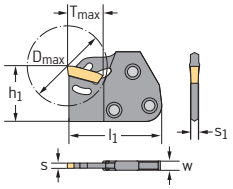






A 2

Tool



Designation	s mm	T_{max} mm	D_{max} mm	h_1 mm	W mm	l_1 mm	s_1 mm	Type
G1332.IMR-GAD1.5N-GX16	1,5	15	32	24	4	41	1,3	GX16-0E1 ..
G1332.IMR-GAD2N-GX16	2	15	32	24	4	41	1,5	GX16-1E2 ..
G1332.IMR-GAD3N-GX16	3	15	32	24	4	41	2,2	GX16-2E3 ..
G1332.IMR-GAD3N-GX24		15	32	24	4	52	2,2	GX24-2E3 .. GX24-2F3 ..

Accessories



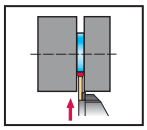
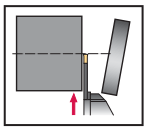
s [mm]	1,5–3
Mounting wrench for grooving insert	FS1494

A 278 D 1 A 394 A 308

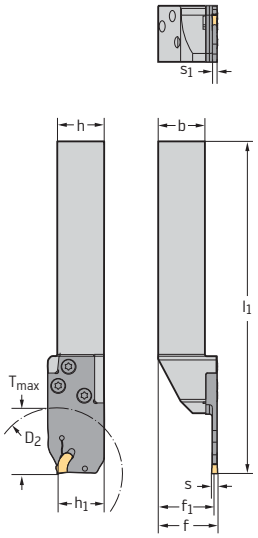
Shank tool – Radial grooving
G2612

Walter Cut

– Self-clamping system

Tool



Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm
G2612-2020R/L-2T20SX	2	20	66	20	20
G2612-2525R/L-2T20SX		20	90	25	25
G2612-2020R/L-3T20SX	3	20	66	20	20
G2612-2525R/L-3T25SX		25	90	25	25
G2612-2525R/L-3T35SX		35	90	25	25
G2612-3225R/L-3T45SX		45	100	32	25
G2612-2020R/L-4T20SX	4	20	66	20	20
G2612-2525R/L-4T35SX		35	90	25	25
G2612-3225R/L-4T45SX		45	100	32	25
G2612-2525R/L-5T35SX	5	35	90	25	25
G2612-3225R/L-5T45SX		45	100	32	25
G2612-2525R/L-6T35SX	6	35	90	25	25
G2612-3225R/L-6T45SX		45	100	32	25
G2612-3225R/L-8T45SX	8	45	100	32	25

For information on T_{max} with diameters larger than D_2, see "Technical information – Grooving"
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: G2612-2020R-2T20SX/ordering example, left-hand tool: G2612-2020L-2T20SX
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)



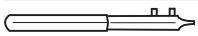


A2

SX

	f_1 mm	l_1 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	23,8	132	1,6	E20	SX-2E2 ..	G2632-E20R/L-2T20SX	MSS-E20R/L00-2020J
	30,6	163	1,6	E25		G2632-E25R/L-2T20SX	MSS-E25R/L00-2525L
	23,4	132	2,4	E20	SX-3E3 ..	G2632-E20R/L-3T20SX	MSS-E20R/L00-2020J
	30,2	170	2,4	E25		G2632-E25R/L-3T25SX	MSS-E25R/L00-2525L
	30,2	178	2,4	E25		G2632-E25R/L-3T35SX	MSS-E25R/L00-2525L
	30,2	208	2,4	E32		G2632-E32R/L-3T45SX	MSS-E32R/L00-3225N
	22,5	132	3,4	E20	SX-4E4 ..	G2632-E20R/L-4T20SX	MSS-E20R/L00-2020J
	29,7	178	3,4	E25		G2632-E25R/L-4T35SX	MSS-E25R/L00-2525L
	29,7	208	3,4	E32		G2632-E32R/L-4T45SX	MSS-E32R/L00-3225N
	29,3	178	4,3	E25	SX-5E5 ..	G2632-E25R/L-5T35SX	MSS-E25R/L00-2525L
	29,3	208	4,3	E32		G2632-E32R/L-5T45SX	MSS-E32R/L00-3225N
	28,3	178	5,3	E25	SX-6E6 ..	G2632-E25R/L-6T35SX	MSS-E25R/L00-2525L
	28,8	208	5,3	E32		G2632-E32R/L-6T45SX	MSS-E32R/L00-3225N
	28,9	208	6,8	E32	SX-8E8 ..	G2632-E32N-8T45SX	MSS-E32R/L00-3225N

Accessories

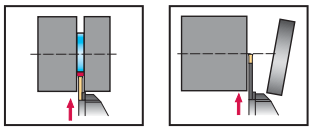
	Module size s [mm]	E20 2–4	E25 2–6	E32 3–6	E32 8
	Mounting wrench for grooving insert	FS1494	FS1494	FS1494	FS2274

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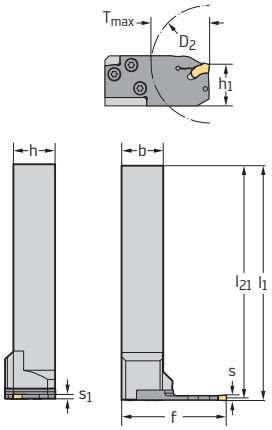
Shank tool – 90° radial grooving
G2622

Walter Cut

– Self-clamping system



Tool



Designation	s mm	T_{max} mm	D_2 mm	$h = h_1$ mm	b mm
G2622-2020R/L-2T20SX	2	20	66	20	20
G2622-2525R/L-2T20SX		20	90	25	25
G2622-2020R/L-3T20SX	3	20	66	20	20
G2622-2525R/L-3T25SX		25	90	25	25
G2622-2525R/L-3T35SX		35	90	25	25
G2622-3225R/L-3T45SX		45	100	32	25
G2622-2020R/L-4T20SX	4	20	66	20	20
G2622-2525R/L-4T35SX		35	90	25	25
G2622-3225R/L-4T45SX		45	100	32	25
G2622-2525R/L-5T35SX	5	32	90	25	25
G2622-3225R/L-5T45SX		45	100	32	25
G2622-2525R/L-6T35SX	6	35	90	25	25
G2622-3225R/L-6T45SX		45	100	32	25
G2622-3225R/L-8T45SX	8	45	100	32	25

$l_1 = l_{21} + s/2$
For information on T_{max} with diameters larger than D_2, see "Technical information – Grooving"
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: G2622-2020R-2T20SX/ordering example, left-hand tool: G2622-2020L-2T20SX
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)



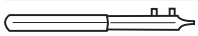


A2

SX

	f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	42	109,5	1,6	E20	SX-2E2 ..	G2632-E20R/L-2T20SX	MSS-E20R/L90-2020J
	48	139,6	1,6	E25		G2632-E25R/L-2T20SX	MSS-E25R/L90-2525L
	42	109,1	2,4	E20	SX-3E3 ..	G2632-E20R/L-3T20SX	MSS-E20R/L90-2020J
	53	139,2	2,4	E25		G2632-E25R/L-3T25SX	MSS-E25R/L90-2525L
	63	139,2	2,4	E25		G2632-E25R/L-3T35SX	MSS-E25R/L90-2525L
	80	159,2	2,4	E32		G2632-E32R/L-3T45SX	MSS-E32R/L90-3225N
	42	108,6	3,4	E20	SX-4E4 ..	G2632-E20R/L-4T20SX	MSS-E20R/L90-2020J
	63	138,8	3,4	E25		G2632-E25R/L-4T35SX	MSS-E25R/L90-2525L
	80	158,7	3,4	E32		G2632-E32R/L-4T45SX	MSS-E32R/L90-3225N
	63	138,3	4,3	E25	SX-5E5 ..	G2632-E25R/L-5T35SX	MSS-E25R/L90-2525L
	80	158,3	4,3	E32		G2632-E32R/L-5T45SX	MSS-E32R/L90-3225N
	63	137,8	5,3	E25	SX-6E6 ..	G2632-E25R/L-6T35SX	MSS-E25R/L90-2525L
	80	157,8	5,3	E32		G2632-E32R/L-6T45SX	MSS-E32R/L90-3225N
	80	163,8	6,8	E32	SX-8E8 ..	G2632-E32N-8T45SX	MSS-E32R/L90-3225N

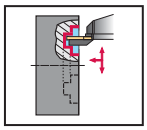
Accessories

	Module size s [mm]	E20 2–4	E25 2–6	E32 3–6	E32 8
	Mounting wrench for grooving insert	FS1494	FS1494	FS1494	FS2274

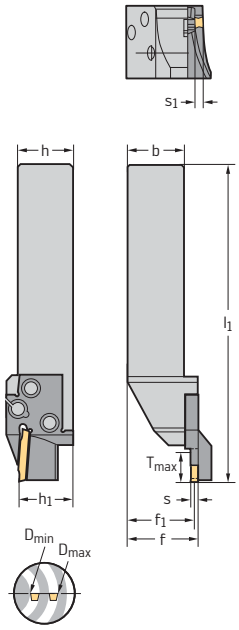
A 286 D 1 A 394 A 308 A 400

Shank tool – Axial grooving
NCEE
Walter Cut

– Screw clamping



Tool



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	$h = h_1$ mm
NCEE20-2020R/L-GX24-2-1	3	14	50	70	20
NCEE20-2020R/L-GX24-2-2		14	70	100	20
NCEE20-2020R/L-GX24-2-3		14	100	150	20
NCEE25-2525R/L-GX24-2-1		15	50	70	25
NCEE25-2525R/L-GX24-2-2		15	70	100	25
NCEE25-2525R/L-GX24-2-3		15	100	150	25
NCEE25-2525R/L-GX24-3-1	4–5	15	50	70	25
NCEE25-2525R/L-GX24-3-2		15	70	100	25
NCEE32-3225R/L-GX24-3-2		15	70	100	32
NCEE25-2525R/L-GX24-3-3		15	100	150	25
NCEE32-3225R/L-GX24-3-3		15	100	150	32
NCEE25-2525R/L-GX24-3-4		15	150	300	25
NCEE32-3225R/L-GX24-3-4		15	150	300	32
NCEE25-2525R/L-GX24-4-1	6	15	50	70	25
NCEE25-2525R/L-GX24-4-2		15	70	100	25
NCEE32-3225R/L-GX24-4-2		15	70	100	32
NCEE25-2525R/L-GX24-4-3		15	100	150	25
NCEE32-3225R/L-GX24-4-3		15	100	150	32
NCEE25-2525R/L-GX24-4-4		15	150	300	25
NCEE32-3225R/L-GX24-4-4		15	150	300	32
NCEE32-3225R/L-GX24-4-5		15	300	900	32

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCEE20-2020R-GX24-2-1/ordering example, left-hand tool: NCEE20-2020L-GX24-2-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)





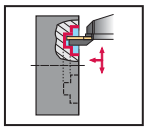
GX..E.. GX..F..

b mm	f_1 mm	l_1 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
20	23,6	132	2	E20	GX24-2E3 .. GX24-2F3 ..	MSS-E20R/L14-GX24-2A5070	MSS-E20R/L00-2020J
20	23,6	132	2	E20		MSS-E20R/L14-GX24-2A70100	MSS-E20R/L00-2020J
20	23,6	132	2	E20		MSS-E20R/L14-GX24-2A100150	MSS-E20R/L00-2020J
25	30,4	162	2	E25		MSS-E25R/L15-GX24-2A5070	MSS-E25R/L00-2525L
25	30,4	162	2	E25		MSS-E25R/L15-GX24-2A70100	MSS-E25R/L00-2525L
25	30,4	162	2	E25		MSS-E25R/L15-GX24-2A100150	MSS-E25R/L00-2525L
25	29,9	162	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L15-GX24-3A5070	MSS-E25R/L00-2525L
25	29,9	162	3	E25		MSS-E25R/L15-GX24-3A70100	MSS-E25R/L00-2525L
25	29,9	182	3	E32		MSS-E32R/L15-GX24-3A70100	MSS-E32R/L00-3225N
25	29,9	162	3	E25		MSS-E25R/L15-GX24-3A100150	MSS-E25R/L00-2525L
25	29,9	182	3	E32		MSS-E32R/L15-GX24-3A100150	MSS-E32R/L00-3225N
25	29,9	162	3	E25		MSS-E25R/L15-GX24-3A150300	MSS-E25R/L00-2525L
25	29,9	182	3	E32		MSS-E32R/L15-GX24-3A150300	MSS-E32R/L00-3225N
25	29,3	162	4,2	E25	GX24-4E6 ..	MSS-E25R/L15-GX24-4A5070	MSS-E25R/L00-2525L
25	29,3	162	4,2	E25		MSS-E25R/L15-GX24-4A70100	MSS-E25R/L00-2525L
25	29,3	182	4,2	E32		MSS-E32R/L15-GX24-4A70100	MSS-E32R/L00-3225N
25	29,3	162	4,2	E25		MSS-E25R/L15-GX24-4A100150	MSS-E25R/L00-2525L
25	29,3	182	4,2	E32		MSS-E32R/L15-GX24-4A100150	MSS-E32R/L00-3225N
25	29,3	162	4,2	E25		MSS-E25R/L15-GX24-4A150300	MSS-E25R/L00-2525L
25	29,3	182	4,2	E32		MSS-E32R/L15-GX24-4A150300	MSS-E32R/L00-3225N
25	29,3	182	4,2	E32		MSS-E32R/L15-GX24-4A300900	MSS-E32R/L00-3225N

A 278 D 1 A 394 A 308 A 400

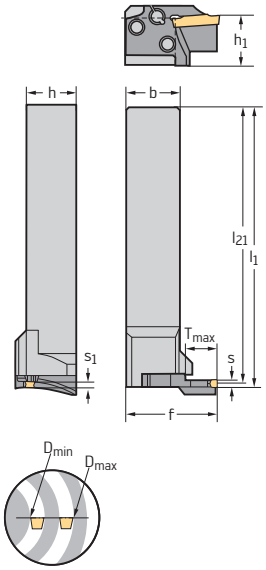
Shank tool – 90° axial grooving
NCHE
Walter Cut

– Screw clamping



A2

Tool



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	$h = h_1$ mm
NCHE20-2020R/L-GX24-2-1	3	14	50	70	20
NCHE20-2020R/L-GX24-2-2		14	70	100	20
NCHE20-2020R/L-GX24-2-3		14	100	150	20
NCHE25-2525R/L-GX24-2-1		15	50	70	25
NCHE25-2525R/L-GX24-2-2		15	70	100	25
NCHE25-2525R/L-GX24-2-3		15	100	150	25
NCHE25-2525R/L-GX24-3-1	4–5	15	50	70	25
NCHE25-2525R/L-GX24-3-2		15	70	100	25
NCHE32-3225R/L-GX24-3-2		15	70	100	32
NCHE25-2525R/L-GX24-3-3		15	100	150	25
NCHE32-3225R/L-GX24-3-3		15	100	150	32
NCHE25-2525R/L-GX24-3-4		15	150	300	25
NCHE32-3225R/L-GX24-3-4		15	150	300	32
NCHE25-2525R/L-GX24-4-1	6	15	50	70	25
NCHE25-2525R/L-GX24-4-2		15	70	100	25
NCHE32-3225R/L-GX24-4-2		15	70	100	32
NCHE25-2525R/L-GX24-4-3		15	100	150	25
NCHE32-3225R/L-GX24-4-3		15	100	150	32
NCHE25-2525R/L-GX24-4-4		15	150	300	25
NCHE32-3225R/L-GX24-4-4		15	150	300	32
NCHE32-3225R/L-GX24-4-5		15	300	900	32

$l_1 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCHE20-2020R-GX24-2-1/ordering example, left-hand tool: NCHE20-2020L-GX24-2-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)





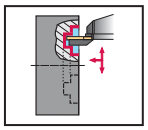
GX..E.. GX..F..

b mm	f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
20	42	109,4	2	E20	GX24-2E3 .. GX24-2F3 ..	MSS-E20R/L14-GX24-2A5070	MSS-E20R/L90-2020J
20	42	109,4	2	E20		MSS-E20R/L14-GX24-2A70100	MSS-E20R/L90-2020J
20	42	109,4	2	E20		MSS-E20R/L14-GX24-2A100150	MSS-E20R/L90-2020J
25	47	139,4	2	E25		MSS-E25R/L15-GX24-2A5070	MSS-E25R/L90-2525L
25	47	139,4	2	E25		MSS-E25R/L15-GX24-2A70100	MSS-E25R/L90-2525L
25	47	139,4	2	E25		MSS-E25R/L15-GX24-2A100150	MSS-E25R/L90-2525L
25	47	138,9	3,0	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L15-GX24-3A5070	MSS-E25R/L90-2525L
25	47	138,9	3,0	E25		MSS-E25R/L15-GX24-3A70100	MSS-E25R/L90-2525L
25	54	158,9	3,0	E32		MSS-E32R/L15-GX24-3A70100	MSS-E32R/L90-3225N
25	47	138,9	3,0	E25		MSS-E25R/L15-GX24-3A100150	MSS-E25R/L90-2525L
25	54	158,9	3,0	E32		MSS-E32R/L15-GX24-3A100150	MSS-E32R/L90-3225N
25	47	138,9	3,0	E25		MSS-E25R/L15-GX24-3A150300	MSS-E25R/L90-2525L
25	54	158,9	3,0	E32		MSS-E32R/L15-GX24-3A150300	MSS-E32R/L90-3225N
25	47	138,3	4,2	E25	GX24-4E6 ..	MSS-E25R/L15-GX24-4A5070	MSS-E25R/L90-2525L
25	47	138,3	4,2	E25		MSS-E25R/L15-GX24-4A70100	MSS-E25R/L90-2525L
25	54	158,3	4,2	E32		MSS-E32R/L15-GX24-4A70100	MSS-E32R/L90-3225N
25	47	138,3	4,2	E25		MSS-E25R/L15-GX24-4A100150	MSS-E25R/L90-2525L
25	54	158,3	4,2	E32		MSS-E32R/L15-GX24-4A100150	MSS-E32R/L90-3225N
25	47	138,3	4,2	E25		MSS-E25R/L15-GX24-4A150300	MSS-E25R/L90-2525L
25	54	158,3	4,2	E32		MSS-E32R/L15-GX24-4A150300	MSS-E32R/L90-3225N
25	54	158,3	4,2	E32		MSS-E32R/L15-GX24-4A300900	MSS-E32R/L90-3225N

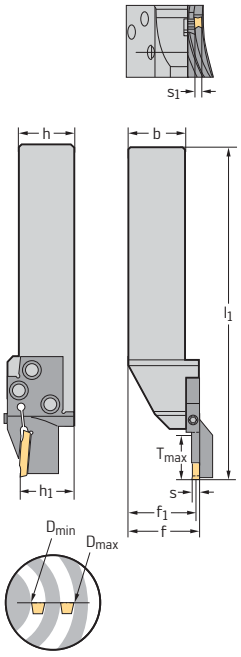
A 278 D 1 A 394 A 308 A 400

Shank tool – Axial grooving
NCFE
Walter Cut

– Screw clamping



Tool



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	$h = h_1$ mm
NCFE25-2525R/L-GX24-3-1	4–5	21	50	70	25
NCFE25-2525R/L-GX24-3-2		21	70	100	25
NCFE25-2525R/L-GX24-3-3		21	100	150	25
NCFE25-2525R/L-GX24-3-4		21	150	300	25
NCFE25-2525R/L-GX24-4-1	6	25	50	70	25
NCFE25-2525R/L-GX24-4-2		25	70	100	25
NCFE25-2525R/L-GX24-4-3		25	100	150	25
NCFE25-2525R/L-GX24-4-4		25	150	300	25

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCFE25-2525R-GX24-3-1/ordering example, left-hand tool: NCFE25-2525L-GX24-3-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E25
	Screw for grooving module Tightening torque	FS1054 (Torx 20) 3,0 Nm
	Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm
	Handle key for module	FS1048 (Torx 20)
	Handle key for grooving insert	FS1047 (Torx 15)





GX..E.. GX..F..

b mm	f_1 mm	l_1 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
25	29,9	175	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3C5070	MSS-E25R/L00-2525L
25	29,9	175	3	E25		MSS-E25R/L21-GX24-3C70100	MSS-E25R/L00-2525L
25	29,9	175	3	E25		MSS-E25R/L21-GX24-3C100150	MSS-E25R/L00-2525L
25	29,9	175	3	E25		MSS-E25R/L21-GX24-3C150300	MSS-E25R/L00-2525L
25	29,3	175	4,2	E25	GX24-4E6 ..	MSS-E25R/L25-GX24-4C5070	MSS-E25R/L00-2525L
25	29,3	175	4,2	E25		MSS-E25R/L25-GX24-4C70100	MSS-E25R/L00-2525L
25	29,3	175	4,2	E25		MSS-E25R/L25-GX24-4C100150	MSS-E25R/L00-2525L
25	29,3	175	4,2	E25		MSS-E25R/L25-GX24-4C150300	MSS-E25R/L00-2525L

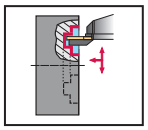
A 278 D 1 A 394 A 308 A 400

Shank tool – Axial/contra
NCFE...C

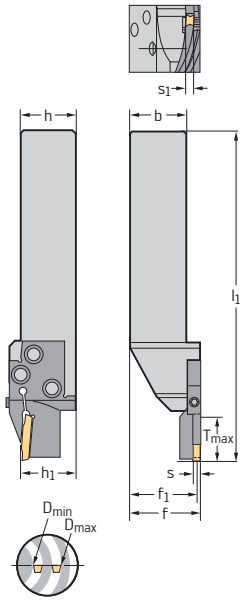
Walter Cut

– Screw clamping
– Contra design

A2



Tool



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	$h = h_1$ mm
NCFE25-2525R/L-GX24-3-1C	4–5	21	50	70	25
NCFE25-2525R/L-GX24-3-2C		21	70	100	25
NCFE25-2525R/L-GX24-3-3C		21	100	150	25
NCFE25-2525R/L-GX24-3-4C		21	150	300	25
NCFE25-2525R/L-GX24-4-1C	6	25	50	70	25
NCFE25-2525R/L-GX24-4-2C		25	70	100	25
NCFE25-2525R/L-GX24-4-3C		25	100	150	25
NCFE25-2525R/L-GX24-4-4C		25	150	300	25

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCFE25-2525R-GX24-3-1C/ordering example, left-hand tool: NCFE25-2525L-GX24-3-1C
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Module size	E25
Screw for grooving module Tightening torque	FS1054 (Torx 20) 3,0 Nm
Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm
Handle key for module	FS1048 (Torx 20)
Handle key for grooving insert	FS1047 (Torx 15)





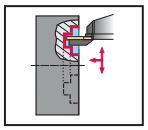
GX..E.. GX..F..

	b mm	f_1 mm	l_1 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	25	27,2	175	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3C5070	MSS-E25R/L00-2525L
	25	27,2	175	3	E25		MSS-E25R/L21-GX24-3C70100	MSS-E25R/L00-2525L
	25	27,2	175	3	E25		MSS-E25R/L21-GX24-3C100150	MSS-E25R/L00-2525L
	25	27,2	175	3	E25		MSS-E25R/L21-GX24-3C150300	MSS-E25R/L00-2525L
	25	27,7	175	4,2	E25	GX24-4E6 ..	MSS-E25R/L25-GX24-4C5070	MSS-E25R/L00-2525L
	25	27,7	175	4,2	E25		MSS-E25R/L25-GX24-4C70100	MSS-E25R/L00-2525L
	25	27,7	175	4,2	E25		MSS-E25R/L25-GX24-4C100150	MSS-E25R/L00-2525L
	25	27,7	175	4,2	E25		MSS-E25R/L25-GX24-4C150300	MSS-E25R/L00-2525L

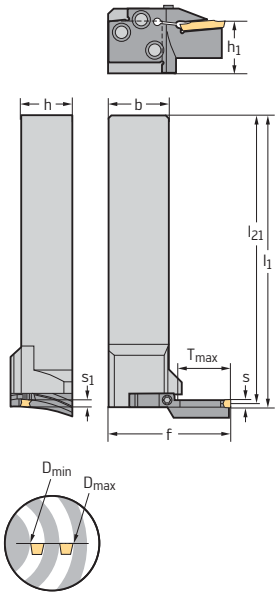
A 278 D 1 A 394 A 308 A 400

Shank tool – 90° axial grooving
NCOE
Walter Cut

– Screw clamping



Tool



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	$h = h_1$ mm
NCOE25-2525R/L-GX24-3-1	4–5	21	50	70	25
NCOE25-2525R/L-GX24-3-2		21	70	100	25
NCOE25-2525R/L-GX24-3-3		21	100	150	25
NCOE25-2525R/L-GX24-3-4		21	150	300	25
NCOE25-2525R/L-GX24-4-1	6	25	50	70	25
NCOE25-2525R/L-GX24-4-2		25	70	100	25
NCOE25-2525R/L-GX24-4-3		25	100	150	25
NCOE25-2525R/L-GX24-4-4		25	150	300	25

$l_1 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCOE25-2525R-GX24-3-1/ordering example, left-hand tool: NCOE25-2525L-GX24-3-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Module size	E25
Screw for grooving module Tightening torque	FS1054 (Torx 20) 3,0 Nm
Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm
Handle key for module	FS1048 (Torx 20)
Handle key for grooving insert	FS1047 (Torx 15)





A2

GX..E.. GX..F..

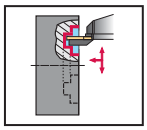
	b mm	f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	25	60	138,9	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3C5070	MSS-E25R/L90-2525L
	25	60	138,9	3	E25		MSS-E25R/L21-GX24-3C70100	MSS-E25R/L90-2525L
	25	60	138,9	3	E25		MSS-E25R/L21-GX24-3C100150	MSS-E25R/L90-2525L
	25	60	138,9	3	E25		MSS-E25R/L21-GX24-3C150300	MSS-E25R/L90-2525L
	25	60	138,3	4,2	E25	GX24-4E6 ..	MSS-E25R/L25-GX24-4C5070	MSS-E25R/L90-2525L
	25	60	138,3	4,2	E25		MSS-E25R/L25-GX24-4C70100	MSS-E25R/L90-2525L
	25	60	138,3	4,2	E25		MSS-E25R/L25-GX24-4C100150	MSS-E25R/L90-2525L
	25	60	138,3	4,2	E25		MSS-E25R/L25-GX24-4C150300	MSS-E25R/L90-2525L

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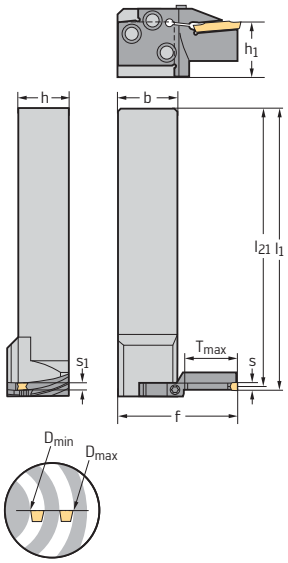
Shank tool – 90° axial/contra
NCOE...C

Walter Cut

– Screw clamping
– Contra design



Tool



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	$h = h_1$ mm	
NCOE25-2525R/L-GX24-3-1C	4–5	21	50	70	25	
NCOE25-2525R/L-GX24-3-2C		21	70	100	25	
NCOE25-2525R/L-GX24-3-3C		21	100	150	25	
NCOE25-2525R/L-GX24-3-4C		21	150	300	25	
NCOE25-2525R/L-GX24-4-1C	6	25	50	70	25	
NCOE25-2525R/L-GX24-4-2C		25	70	100	25	
NCOE25-2525R/L-GX24-4-3C		25	100	150	25	
NCOE25-2525R/L-GX24-4-4C		25	150	300	25	

$l_1 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCOE25-2525R-GX24-3-1C/ordering example, left-hand tool: NCOE25-2525L-GX24-3-1C
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E25
	Screw for grooving module Tightening torque	FS1054 (Torx 20) 3,0 Nm
	Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm
	Handle key for module	FS1048 (Torx 20)
	Handle key for grooving insert	FS1047 (Torx 15)





A2

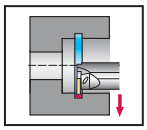
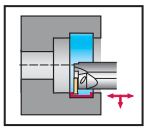
GX..E.. GX..F..

	b mm	f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	25	60	136,2	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3C5070	MSS-E25R/L90-2525L
	25	60	136,2	3	E25		MSS-E25R/L21-GX24-3C70100	MSS-E25R/L90-2525L
	25	60	136,2	3	E25		MSS-E25R/L21-GX24-3C100150	MSS-E25R/L90-2525L
	25	60	136,2	3	E25		MSS-E25R/L21-GX24-3C150300	MSS-E25R/L90-2525L
	25	60	136,8	4,2	E25	GX24-4E6 ..	MSS-E25R/L25-GX24-4C5070	MSS-E25R/L90-2525L
	25	60	136,8	4,2	E25		MSS-E25R/L25-GX24-4C70100	MSS-E25R/L90-2525L
	25	60	136,8	4,2	E25		MSS-E25R/L25-GX24-4C100150	MSS-E25R/L90-2525L
	25	60	136,8	4,2	E25		MSS-E25R/L25-GX24-4C150300	MSS-E25R/L90-2525L

A 278 D 1 A 394 A 308 A 400

Boring bar – Internal grooving
NCAI
Walter Cut

– Screw clamping

Tool

	Designation	s mm	T_{max} mm	D_{min} mm	d_1 mm	d_4 mm	f mm
1.5 × D	NCAI16-2015R/L-GX09-1	2–2,5	4	20	20	25	11
	NCAI20-2015R/L-GX09-1		5	25	20	25	13
	NCAI25-2515R/L-GX09-1		6	32	25	32	17
	NCAI32-3215R/L-GX16-1		9	40	32	40	22
	NCAI40-4015R/L-GX16-1		10	50	40	50	27
	NCAI16-2015R/L-GX09-2	3	4	20	20	25	11
	NCAI20-2015R/L-GX09-2		5	25	20	25	13
	NCAI25-2515R/L-GX09-2		6	32	25	32	17
	NCAI32-3215R/L-GX16-2		9	40	32	40	22
	NCAI40-4015R/L-GX16-2		10	50	40	50	27
	NCAI32-3215R/L-GX16-3	4–5	9	40	32	40	22
	NCAI40-4015R/L-GX16-3		10	50	40	50	27
	NCAI40-4015R/L-GX24-3		19	60	40	50	36
	NCAI32-3215R/L-GX16-4	6	9	40	32	40	22
	NCAI40-4015R/L-GX16-4		10	50	40	50	27
	NCAI40-4015R/L-GX24-4		19	60	40	50	36
2.5 × D	NCAI16-2025R/L-GX09-1	2–2,5	4	20	20		14,5
	NCAI20-2525R/L-GX09-1		5	25	25		18
	NCAI25-3225R/L-GX09-1		6	32	32		22,5
	NCAI32-4025R/L-GX16-1		9	40	40		29,5
	NCAI40-5025R/L-GX16-1		10	50	50		35,5
	NCAI16-2025R/L-GX09-2	3	4	20	20		14,5
	NCAI20-2525R/L-GX09-2		5	25	25		18
	NCAI25-3225R/L-GX09-2		6	32	32		22,5
	NCAI32-4025R/L-GX16-2		9	40	40		29,5
	NCAI40-5025R/L-GX16-2		10	50	50		35,5
	NCAI32-4025R/L-GX16-3	4–5	9	40	40		29,5
	NCAI40-5025R/L-GX16-3		10	50	50		35,5
	NCAI40-5025R/L-GX24-3		19	60	50		44,5
	NCAI32-4025R/L-GX16-4	6	9	40	40		29,5
	NCAI40-5025R/L-GX16-4		10	50	50		35,5
	NCAI40-5025R/L-GX24-4		19	60	50		44,5

1.5 × D: $l_4 = l_{21} + s/2$
2.5 × D: $l_1 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCAI16-2015R-GX09-1/ordering example, left-hand tool: NCAI16-2015L-GX09-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	I16	I20	I25	I32	I40
	Screw for grooving module Tightening torque	FS1051 (Torx 8) 2,0 Nm	FS1056 (Torx 10) 2,0 Nm	FS1052 (Torx 15) 2,0 Nm	FS1057 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm
	Handle key	FS257 (Torx 8)	FS1050 (Torx 10)	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1048 (Torx 20)





A2

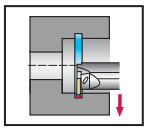
GX..E.. GX..F..

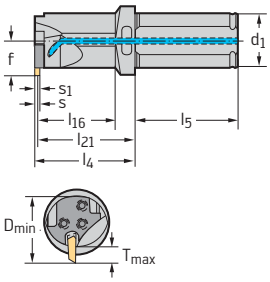
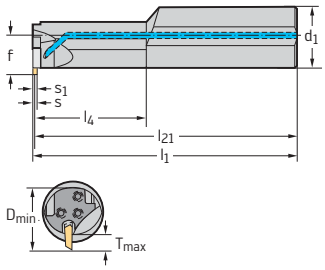
l_5 mm	l_4 mm	l_{21} mm	l_{16} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
50		31,4	31,4	1,3	I16	GX09-1E2 ..	MSS-I16R/L04-GX09-1	MSS-I16R/L90-1,5D-N
50		36,4	36,4	1,3	I20		MSS-I20R/L05-GX09-1	MSS-I20R/L90-1,5D-N
56		45,4	45,4	1,3	I25		MSS-I25R/L06-GX09-1	MSS-I25R/L90-1,5D-N
60		58,4	58,4	1,3	I32	GX16-1E2 ..	MSS-I32R/L09-GX16-1	MSS-I32R/L90-1,5D-N
70		71,4	71,4	1,3	I40		MSS-I40R/L10-GX16-1	MSS-I40R/L90-1,5D-N
50		31,4	31,4	2	I16	GX09-2E3 ..	MSS-I16R/L04-GX09-2	MSS-I16R/L90-1,5D-N
50		36,4	36,4	2	I20		MSS-I20R/L05-GX09-2	MSS-I20R/L90-1,5D-N
56		45,4	45,4	2	I25		MSS-I25R/L06-GX09-2	MSS-I25R/L90-1,5D-N
60		58	58	2	I32	GX16-2E3 ..	MSS-I32R/L09-GX16-2	MSS-I32R/L90-1,5D-N
70		71	71	2	I40		MSS-I40R/L10-GX16-2	MSS-I40R/L90-1,5D-N
60		57,5	57,5	3,0	I32	GX16-3E ..	MSS-I32R/L09-GX16-3	MSS-I32R/L90-1,5D-N
70		70,5	70,5	3,0	I40		MSS-I40R/L10-GX16-3	MSS-I40R/L90-1,5D-N
70		70,8	70,5	3,0	I40	GX24-3E .. GX24-3F ..	MSS-I40N19-GX24-3	MSS-I40R/L90-1,5D-N
60		56,9	56,9	4,2	I32	GX16-4E6 ..	MSS-I32R/L09-GX16-4	MSS-I32R/L90-1,5D-N
70		69,9	69,9	4,2	I40		MSS-I40R/L10-GX16-4	MSS-I40R/L90-1,5D-N
70		70,2	69,9	4,2	I40	GX24-4E6 ..	MSS-I40N19-GX24-4	MSS-I40R/L90-1,5D-N
	39,4	179,3		1,3	I16	GX09-1E2 ..	MSS-I16R/L04-GX09-1	MSS-I16R/L90-2,5D-N
	49,4	199,3		1,3	I20		MSS-I20R/L05-GX09-1	MSS-I20R/L90-2,5D-N
	62,4	249,3		1,3	I25		MSS-I25R/L06-GX09-1	MSS-I25R/L90-2,5D-N
	79,4	299,4		1,3	I32	GX16-1E2 ..	MSS-I32R/L09-GX16-1	MSS-I32R/L90-2,5D-N
	99,4	349,4		1,3	I40		MSS-I40R/L10-GX16-1	MSS-I40R/L90-2,5D-N
	39	179		2	I16	GX09-2E3 ..	MSS-I16R/L04-GX09-2	MSS-I16R/L90-2,5D-N
	49	199		2	I20		MSS-I20R/L05-GX09-2	MSS-I20R/L90-2,5D-N
	62	249		2	I25		MSS-I25R/L06-GX09-2	MSS-I25R/L90-2,5D-N
	79	299		2	I32	GX16-2E3 ..	MSS-I32R/L09-GX16-2	MSS-I32R/L90-2,5D-N
	99	349		2	I40		MSS-I40R/L10-GX16-2	MSS-I40R/L90-2,5D-N
	78,5	298,5		3,0	I32	GX16-3E ..	MSS-I32R/L09-GX16-3	MSS-I32R/L90-2,5D-N
	98,5	348,5		3,0	I40		MSS-I40R/L10-GX16-3	MSS-I40R/L90-2,5D-N
	100	348,8		3,0	I40	GX24-3E .. GX24-3F ..	MSS-I40N19-GX24-3	MSS-I40R/L90-2,5D-N
	77,9	297,9		4,2	I32	GX16-4E6 ..	MSS-I32R/L09-GX16-4	MSS-I32R/L90-2,5D-N
	97,9	347,9		4,2	I40		MSS-I40R/L10-GX16-4	MSS-I40R/L90-2,5D-N
	100	348,2		4,2	I40	GX24-4E6 ..	MSS-I40N19-GX24-4	MSS-I40R/L90-2,5D-N

A 278 D 1 A 394 A 308 A 400

Boring bar – Internal grooving
NCCI
Walter Cut

– Screw clamping
– Circlip grooves



Tool	Designation	s mm	T_{max} mm	D_{min} mm	d_1 mm	d_4 mm	f mm
1.5 × D 	NCCI16-2015R/L-GX09-1	0,6–1,7	2	20	20	25	11
	NCCI20-2015R/L-GX09-1		2	25	20	25	13
	NCCI25-2515R/L-GX09-1		2	32	25	32	17
	NCCI32-3215R/L-GX16-2	0,6–2,3	3	40	32	40	22
	NCCI40-4015R/L-GX16-2		3	50	40	50	27
2.5 × D 	NCCI16-2025R/L-GX09-1	0,6–1,7	2	20	20		14,5
	NCCI20-2525R/L-GX09-1		2	25	25		18
	NCCI25-3225R/L-GX09-1		2	32	32		22,5
	NCCI32-4025R/L-GX16-2	0,6–2,3	3	40	40		29,5
	NCCI40-5025R/L-GX16-2		3	50	50		35,5

1.5 × D: $l_4 = l_{21} + s/2$
2.5 × D: $l_1 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCCI16-2015R-GX09-1/ordering example, left-hand tool: NCCI16-2015L-GX09-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	l16	l20	l25	l32	l40
	Screw for grooving module Tightening torque	FS1051 (Torx 8) 2,0 Nm	FS1056 (Torx 10) 2,0 Nm	FS1052 (Torx 15) 2,0 Nm	FS1057 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm
	Handle key	FS257 (Torx 8)	FS1050 (Torx 10)	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1048 (Torx 20)





A2

GX..E.. GX..F..

	l_5 mm	l_4 mm	l_{21} mm	l_{16} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	50		31,4	31,4	1,3	I16	GX09-1S ..	MSS-I16R/L02-GX09-1	MSS-I16R/L90-1,5D-N
	50		36,4	36,4	1,3	I20		MSS-I20R/L02-GX09-1	MSS-I20R/L90-1,5D-N
	56		45,4	45,4	1,3	I25		MSS-I25R/L02-GX09-1	MSS-I25R/L90-1,5D-N
	60		58	58	2	I32	GX16-2S ..	MSS-I32R/L03-GX16-2	MSS-I32R/L90-1,5D-N
	70		71	71	2	I40		MSS-I40R/L03-GX16-2	MSS-I40R/L90-1,5D-N
		39,4	179,3		1,3	I16	GX09-1S ..	MSS-I16R/L02-GX09-1	MSS-I16R/L90-2,5D-N
		49,4	199,3		1,3	I20		MSS-I20R/L02-GX09-1	MSS-I20R/L90-2,5D-N
		62,4	249,3		1,3	I25		MSS-I25R/L02-GX09-1	MSS-I25R/L90-2,5D-N
		79	299		2	I32	GX16-2S ..	MSS-I32R/L03-GX16-2	MSS-I32R/L90-2,5D-N
		99	349		2	I40		MSS-I40R/L03-GX16-2	MSS-I40R/L90-2,5D-N

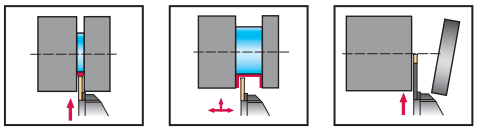
A 281 D 1 A 394 A 308 A 400

Groove turning holders – Radial grooving
C...-NCAE

Walter Cut

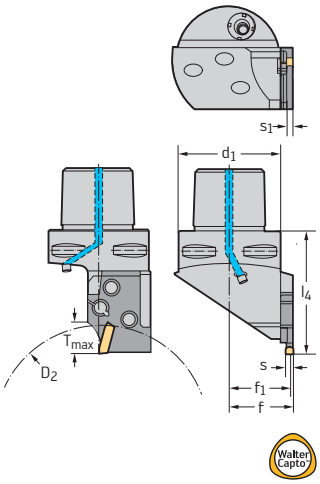
– Walter Capto™
– Screw clamping

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_2 mm	d_1
NCAE16-C300R/L-GX09-1	2–2,5	7	52	C3
NCAE16-C300R/L-GX09-2	3	7	52	C3
NCAE20-C300R/L-GX16-1	2–2,5	12	63	C3
NCAE25-C400R/L-GX16-1		12	79	C4
NCAE25-C500R/L-GX16-1		12	79	C5
NCAE20-C300R/L-GX16-2	3	12	63	C3
NCAE25-C400R/L-GX16-2		12	79	C4
NCAE25-C500R/L-GX16-2		12	79	C5
NCAE32-C600R/L-GX16-2		12	100	C6
NCAE20-C300R/L-GX16-3	4–5	12	63	C3
NCAE25-C400R/L-GX16-3		12	79	C4
NCAE25-C500R/L-GX16-3		12	79	C5
NCAE32-C600R/L-GX16-3		12	100	C6
NCAE25-C400R/L-GX16-4	6	12	79	C4
NCAE25-C500R/L-GX16-4		12	79	C5

$f = f_1 + s/2$
For T_{max} with diameters greater than D_2, see "Technical information – Grooving"
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCAE16-C300R-GX09-1/ordering example, left-hand tool: NCAE16-C300L-GX09-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size d_1	E16 C3	E20 C3	E25 C4	E25 C5	E32 C6
	Cooling lubricant nozzle	FS1477	FS1477	FS1477	FS1476	FS1476
	Handle key	FS1047 (Torx 15)	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1048 (Torx 20)	FS1049 (Torx 25)
	Screw for grooving module Tightening torque	FS1052 (Torx 15) 2,0 Nm	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm





A2

GX..E.. GX..F..

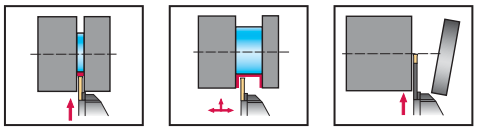
	f_1 mm	l_4 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	19,8	41	1,3	E16	GX09-1E2 ..	MSS-E16R/L07-GX09-1	C3-MSS-E16R/L00
	19,4	41	2	E16	GX09-2E3 ..	MSS-E16R/L07-GX09-2	C3-MSS-E16R/L00
	19,8	50	1,3	E20	GX16-1E2 ..	MSS-E20R/L12-GX16-1	C3-MSS-E20R/L00
	25,8	61	1,3	E25		MSS-E25R/L12-GX16-1	C4-MSS-E25R/L00
	30,8	61	1,3	E25		MSS-E25R/L12-GX16-1	C5-MSS-E25R/L00
	19,4	50	2	E20	GX16-2E3 ..	MSS-E20R/L12-GX16-2	C3-MSS-E20R/L00
	25,4	61	2	E25		MSS-E25R/L12-GX16-2	C4-MSS-E25R/L00
	30,4	61	2	E25		MSS-E25R/L12-GX16-2	C5-MSS-E25R/L00
	36,4	67	2	E32		MSS-E32R/L12-GX16-2	C6-MSS-E32R/L00
	18,9	50	3,0	E20	GX16-3E ..	MSS-E20R/L12-GX16-3	C3-MSS-E20R/L00
	24,9	61	3,0	E25		MSS-E25R/L12-GX16-3	C4-MSS-E25R/L00
	29,9	61	3,0	E25		MSS-E25R/L12-GX16-3	C5-MSS-E25R/L00
	35,9	67	3,0	E32		MSS-E32R/L12-GX16-3	C6-MSS-E32R/L00
	24,3	61	4,2	E25	GX16-4E6 ..	MSS-E25R/L12-GX16-4	C4-MSS-E25R/L00
	29,3	61	4,2	E25		MSS-E25R/L12-GX16-4	C5-MSS-E25R/L00

A 278 D 1 A 394 A 402 A 400

Groove turning holders – Radial grooving
C...-NCBE
Walter Cut

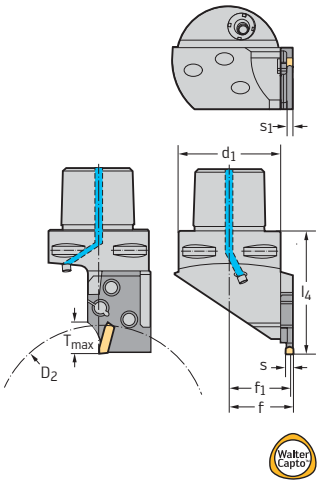
– Walter Capto™
– Screw clamping

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_2 mm	d_1	
NCBE20-C300R/L-GX24-2-21	3	21	63	C3	
NCBE25-C400R/L-GX24-2-21		21	79	C4	
NCBE25-C500R/L-GX24-2-21		21	79	C5	
NCBE25-C400R/L-GX24-3-21	4–5	21	79	C4	
NCBE25-C500R/L-GX24-3-21		21	79	C5	
NCBE32-C600R/L-GX24-3-21		21	100	C6	
NCBE25-C400R/L-GX24-4-21	6	21	79	C4	
NCBE25-C500R/L-GX24-4-21		21	79	C5	
NCBE32-C600R/L-GX24-4-21		21	100	C6	
NCBE25-C400R/L-GX24-5-21	8	21	79	C4	
NCBE25-C500R/L-GX24-5-21		21	79	C5	

$f = f_1 + s/2$
For T_{max} with diameters greater than D_2, see "Technical information – Grooving"
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCBE20-C300R-GX24-2-21/ordering example, left-hand tool: NCBE20-C300L-GX24-2-21
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size d_1	E20 C3	E25 C4	E25 C5	E32 C6
	Cooling lubricant nozzle	FS1477	FS1477	FS1476	FS1476
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1048 (Torx 20)	FS1049 (Torx 25)
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm



GX..E.. GX..F..

	f_1 mm	l_4 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	19,4	59	2	E20	GX24-2E3 .. GX24-2F3 ..	MSS-E20R/L21-GX24-2	C3-MSS-E20R/L00
	25,4	70	2	E25		MSS-E25R/L21-GX24-2	C4-MSS-E25R/L00
	30,4	70	2	E25		MSS-E25R/L21-GX24-2	C5-MSS-E25R/L00
	24,9	70	3,0	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3	C4-MSS-E25R/L00
	29,9	70	3,0	E25		MSS-E25R/L21-GX24-3	C5-MSS-E25R/L00
	35,9	76	3,0	E32		MSS-E32R/L21-GX24-3	C6-MSS-E32R/L00
	24,3	70	5,9	E25	GX24-4E6 ..	MSS-E25R/L21-GX24-4	C4-MSS-E25R/L00
	29,3	70	5,9	E25		MSS-E25R/L21-GX24-4	C5-MSS-E25R/L00
	35,3	76	5,9	E32		MSS-E32R/L21-GX24-4	C6-MSS-E32R/L00
	23,5	70	5,9	E25	GX24-5R4 ..	MSS-E25R/L21-GX24-5	C4-MSS-E25R/L00
	28,5	70	5,9	E25		MSS-E25R/L21-GX24-5	C5-MSS-E25R/L00

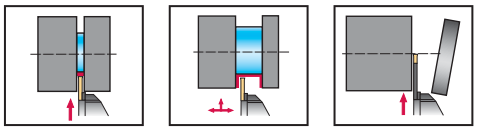
A 278 D 1 A 394 A 402 A 400

Groove turning holders – 90° radial grooving
C...-NCLE

Walter Cut

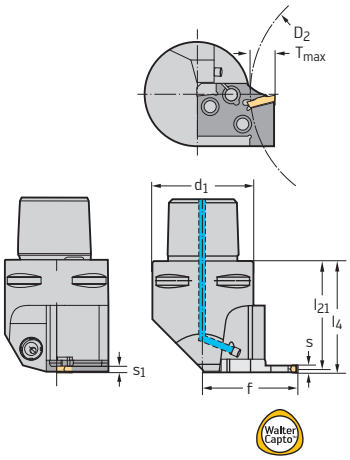
– Walter Capto™
– Screw clamping

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_2 mm	d_1	
NCLE20-C300R/L-GX16-1	2–2,5	12	63	C3	
NCLE25-C400R/L-GX16-1		12	79	C4	
NCLE25-C500R/L-GX16-1		12	79	C5	
NCLE20-C300R/L-GX16-2	3	12	63	C3	
NCLE25-C400R/L-GX16-2		12	79	C4	
NCLE25-C500R/L-GX16-2		12	79	C5	
NCLE32-C600R/L-GX16-2		12	100	C6	
NCLE20-C300R/L-GX16-3	4–5	12	63	C3	
NCLE25-C400R/L-GX16-3		12	79	C4	
NCLE25-C500R/L-GX16-3		12	79	C5	
NCLE32-C600R/L-GX16-3		12	100	C6	
NCLE25-C400R/L-GX16-4	6	12	79	C4	
NCLE25-C500R/L-GX16-4		12	79	C5	
NCLE20-C300R/L-GX24-2-21	3	21	63	C3	
NCLE25-C400R/L-GX24-2-21		21	79	C4	
NCLE25-C500R/L-GX24-2-21		21	79	C5	
NCLE25-C400R/L-GX24-3-21	4–5	21	79	C4	
NCLE25-C500R/L-GX24-3-21		21	79	C5	
NCLE32-C600R/L-GX24-3-21		21	100	C6	
NCLE25-C400R/L-GX24-4-21	6	21	79	C4	
NCLE25-C500R/L-GX24-4-21		21	79	C5	
NCLE32-C600R/L-GX24-4-21		21	100	C6	
NCLE25-C400R/L-GX24-5-21	8	21	79	C4	
NCLE25-C500R/L-GX24-5-21		21	79	C5	

$l_4 = l_{21} + s/2$
For T_{max} with diameters greater than D_2, see "Technical information – Grooving"
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCLE20-C300R-GX16-1/ordering example, left-hand tool: NCLE20-C300L-GX16-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Cooling lubricant nozzle	FS1477	FS1477	FS1476
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm



GX..E.. GX..F..

f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
33	35,8	1,3	E20	GX16-1E2 ..	MSS-E20R/L12-GX16-1	C3-MSS-E20R/L90
33	53,8	1,3	E25		MSS-E25R/L12-GX16-1	C4-MSS-E25R/L90
38	53,8	1,3	E25		MSS-E25R/L12-GX16-1	C5-MSS-E25R/L90
33	35,4	2	E20	GX16-2E3 ..	MSS-E20R/L12-GX16-2	C3-MSS-E20R/L90
33	53,4	2	E25		MSS-E25R/L12-GX16-2	C4-MSS-E25R/L90
38	53,4	2	E25		MSS-E25R/L12-GX16-2	C5-MSS-E25R/L90
40	61,9	2	E32		MSS-E32R/L12-GX16-2	C6-MSS-E32R/L90
33	34,9	3,0	E20	GX16-3E ..	MSS-E20R/L12-GX16-3	C3-MSS-E20R/L90
33	52,9	3,0	E25		MSS-E25R/L12-GX16-3	C4-MSS-E25R/L90
38	52,9	3,0	E25		MSS-E25R/L12-GX16-3	C5-MSS-E25R/L90
40	61,4	3,0	E32		MSS-E32R/L12-GX16-3	C6-MSS-E32R/L90
33	52,3	4,2	E25	GX16-4E6 ..	MSS-E25R/L12-GX16-4	C4-MSS-E25R/L90
38	52,3	4,2	E25		MSS-E25R/L12-GX16-4	C5-MSS-E25R/L90
42	35,4	2	E20	GX24-2E3 .. GX24-2F3 ..	MSS-E20R/L21-GX24-2	C3-MSS-E20R/L90
42	53,4	2	E25		MSS-E25R/L21-GX24-2	C4-MSS-E25R/L90
47	53,4	2	E25		MSS-E25R/L21-GX24-2	C5-MSS-E25R/L90
42	52,9	3,0	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3	C4-MSS-E25R/L90
47	52,9	3,0	E25		MSS-E25R/L21-GX24-3	C5-MSS-E25R/L90
49	61,4	3,0	E32		MSS-E32R/L21-GX24-3	C6-MSS-E32R/L90
42	52,3	4,2	E25	GX24-4E6 ..	MSS-E25R/L21-GX24-4	C4-MSS-E25R/L90
47	52,3	4,2	E25		MSS-E25R/L21-GX24-4	C5-MSS-E25R/L90
49	60,8	4,2	E32		MSS-E32R/L21-GX24-4	C6-MSS-E32R/L90
42	51,5	5,9	E25	GX24-5R4 ..	MSS-E25R/L21-GX24-5	C4-MSS-E25R/L90
47	51,5	5,9	E25		MSS-E25R/L21-GX24-5	C5-MSS-E25R/L90

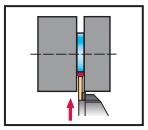
A 278 D 1 A 394 A 402 A 400

Groove turning holders – Radial grooving
C...-NCCE

Walter Cut

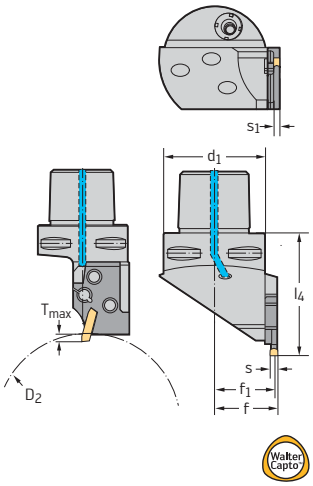
– Walter Capto™
– Screw clamping/circlip grooves

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_2 mm	d_1
NCCE16-C300R/L-GX09-1	0,6–1,7	2	52	C3
NCCE20-C300R/L-GX16-2	0,6–2,3	3	52	C3
NCCE25-C400R/L-GX16-2		3	63	C4
NCCE25-C500R/L-GX16-2		3	79	C5
NCCE32-C600R/L-GX16-2		3	100	C6

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCCE16-C300R-GX09-1/ordering example, left-hand tool: NCCE16-C300L-GX09-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size d_1	E16 C3	E20 C3	E25 C4	E25 C5	E32 C6
	Cooling lubricant nozzle	FS1477	FS1477	FS1477	FS1476	FS1476
	Handle key	FS1047 (Torx 15)	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1048 (Torx 20)	FS1049 (Torx 25)
	Screw for grooving module Tightening torque	FS1052 (Torx 15) 2,0 Nm	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm





A2

GX..E.. GX..F..

	f_1 mm	l_4 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	19,8	41	1,3	E16	GX09-1S ..	MSS-E16R/L02-GX09-1	C3-MSS-E16R/L00
	19,4	50	2	E20	GX16-2S ..	MSS-E20R/L03-GX16-2	C3-MSS-E20R/L00
	25,4	61	2	E25		MSS-E25R/L03-GX16-2	C4-MSS-E25R/L00
	30,4	61	2	E25		MSS-E25R/L03-GX16-2	C5-MSS-E25R/L00
	36,4	67	2	E32		MSS-E32R/L03-GX16-2	C6-MSS-E32R/L00

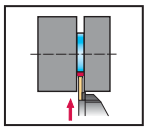
A 281 D 1 A 394 A 402 A 400

Groove turning holders – 90° radial grooving
C...-NCNE

Walter Cut

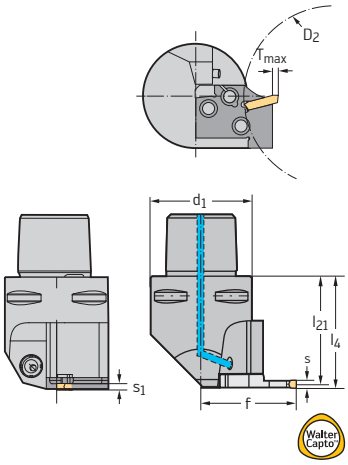
– Walter Capto™
– Screw clamping/circlip grooves

A2



Tool

Designation	s mm	T_{max} mm	D_2 mm	d_1
Walter Capto™ in accordance with ISO 26623				
NCNE20-C300R/L-GX16-2	0,6–2,3	3	63	C3
NCNE25-C400R/L-GX16-2		3	79	C4
NCNE25-C500R/L-GX16-2		3	79	C5
NCNE32-C600R/L-GX16-2		3	100	C6



$l_4 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCNE20-C300R-GX16-2/ordering example, left-hand tool: NCNE20-C300L-GX16-2
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Cooling lubricant nozzle	FS1477	FS1477	FS1476
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm



A2

GX..E.. GX..F..

	f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	33	35,4	2	E20	GX16-2S ..	MSS-E20R/L03-GX16-2	C3-MSS-E20R/L90
	33	53,4	2	E25		MSS-E25R/L03-GX16-2	C4-MSS-E25R/L90
	38	53,4	2	E25		MSS-E25R/L03-GX16-2	C5-MSS-E25R/L90
	40	61,9	2	E32		MSS-E32R/L03-GX16-2	C6-MSS-E32R/L90

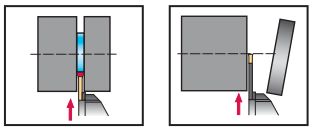
A 281 D 1 A 394 A 402 A 400

Groove turning holders – Radial grooving
C...-G2612

Walter Cut

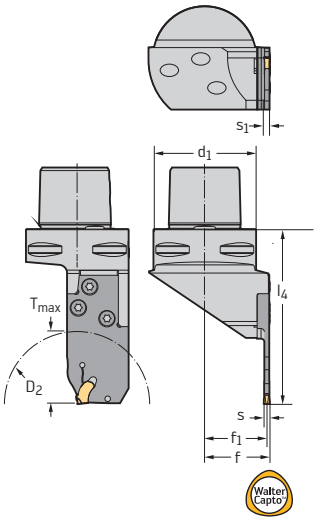
– Walter Capto™
– Self-clamping system

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_2 mm	d_1	
G2612-C3R/L-2T20SX	2	20	66	C3	
G2612-C4R/L-2T20SX		20	90	C4	
G2612-C5R/L-2T20SX		20	90	C5	
G2612-C3R/L-3T20SX	3	20	66	C3	
G2612-C4R/L-3T25SX		25	90	C4	
G2612-C5R/L-3T25SX		25	90	C5	
G2612-C4R/L-3T35SX		35	90	C4	
G2612-C5R/L-3T35SX		35	90	C5	
G2612-C6R/L-3T35SX		35	100	C6	
G2612-C6R/L-3T45SX		45	100	C6	
G2612-C3R/L-4T20SX	4	20	66	C3	
G2612-C4R/L-4T35SX		35	90	C4	
G2612-C5R/L-4T35SX		35	90	C5	
G2612-C6R/L-4T35SX		35	100	C6	
G2612-C6R/L-4T45SX		45	100	C6	
G2612-C4R/L-5T35SX	5	35	90	C4	
G2612-C5R/L-5T35SX		35	100	C5	
G2612-C6R/L-5T35SX		35	100	C6	
G2612-C6R/L-5T45SX		45	100	C6	
G2612-C4R/L-6T35SX	6	35	90	C4	
G2612-C5R/L-6T35SX		35	100	C5	
G2612-C6R/L-6T35SX		35	100	C6	
G2612-C6R/L-6T45SX		45	100	C6	
G2612-C6R/L-8T45SX	8	45	100	C6	

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: G2612-C3R-2T20SX/ordering example, left-hand tool: G2612-C3L-2T20SX
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size d_1	E20 C3	E25 C4	E25 C5/C6	E32 C6
	Cooling lubricant nozzle	FS1477	FS1477	FS1476	FS1476
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1048 (Torx 20)	FS1049 (Torx 25)







	f_1 mm	l_4 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	19,6	59	1,6	E20	SX-2E2 ..	G2632-E20R/L-2T20SX	C3-MSS-E20R/L00
	25,6	71	1,6	E25		G2632-E25R/L-2T20SX	C4-MSS-E25R/L00
	30,6	71	1,6	E25		G2632-E25R/L-2T20SX	C5-MSS-E25R/L00
	19,2	59	2,4	E20	SX-3E3 ..	G2632-E20R/L-3T20SX	C3-MSS-E20R/L00
	25,2	76	2,4	E25		G2632-E25R/L-3T25SX	C4-MSS-E25R/L00
	30,2	76	2,4	E25		G2632-E25R/L-3T25SX	C5-MSS-E25R/L00
	25,2	86	2,4	E25		G2632-E25R/L-3T35SX	C4-MSS-E25R/L00
	30,2	86	2,4	E25		G2632-E25R/L-3T35SX	C5-MSS-E25R/L00
	36,2	92	2,4	E25		G2632-E25R/L-3T35SX	C6-MSS-E25R/L00
	36,2	102	2,4	E32		G2632-E32R/L-3T45SX	C6-MSS-E32R/L00
	18,7	59	3,4	E20	SX-4E4 ..	G2632-E20R/L-4T20SX	C3-MSS-E20R/L00
	24,7	86	3,4	E25		G2632-E25R/L-4T35SX	C4-MSS-E25R/L00
	29,7	86	3,4	E25		G2632-E25R/L-4T35SX	C5-MSS-E25R/L00
	35,7	92	3,4	E25		G2632-E25R/L-4T35SX	C6-MSS-E25R/L00
	35,7	102	3,4	E32		G2632-E32R/L-4T45SX	C6-MSS-E32R/L00
	24,3	86	4,3	E25	SX-5E5 ..	G2632-E25R/L-5T35SX	C4-MSS-E25R/L00
	29,3	86	4,3	E25		G2632-E25R/L-5T35SX	C5-MSS-E25R/L00
	35,3	92	4,3	E25		G2632-E25R/L-5T35SX	C6-MSS-E25R/L00
	35,3	102	4,3	E32		G2632-E32R/L-5T45SX	C6-MSS-E32R/L00
	23,8	86	5,3	E25	SX-6E6 ..	G2632-E25R/L-6T35SX	C4-MSS-E25R/L00
	28,8	86	5,3	E25		G2632-E25R/L-6T35SX	C5-MSS-E25R/L00
	34,8	92	5,3	E25		G2632-E25R/L-6T35SX	C6-MSS-E25R/L00
	34,8	102	5,3	E32		G2632-E32R/L-6T45SX	C6-MSS-E32R/L00
	34,9	102	6,8	E32	SX-8E8 ..	G2632-E32N-8T45SX	C6-MSS-E32R/L00

Accessories

	Module size s [mm]	E20 2–4	E25 2–6	E32 3–6	E32 8
	Mounting wrench for grooving insert	FS1494	FS1494	FS1494	FS2274

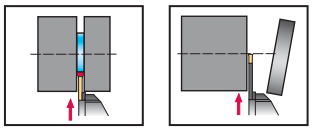
A 286 D 1 A 394 A 402 A 400

Groove turning holders – 90° radial grooving
C...-G2622

Walter Cut

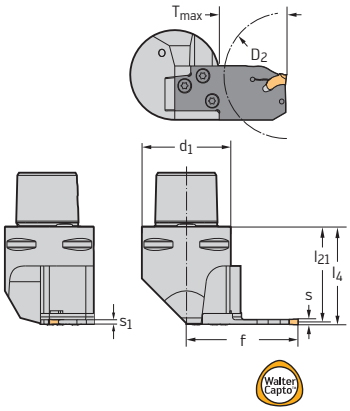
– Walter Capto™
– Self-clamping system

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_2 mm	d_1
G2622-C3R/L-2T20SX	2	20	66	C3
G2622-C4R/L-2T20SX		20	90	C4
G2622-C5R/L-2T20SX		20	90	C5
G2622-C3R/L-3T20SX	3	20	66	C3
G2622-C4R/L-3T25SX		25	90	C4
G2622-C5R/L-3T25SX		25	90	C5
G2622-C4R/L-3T35SX		35	90	C4
G2622-C5R/L-3T35SX		35	90	C5
G2622-C6R/L-3T45SX		45	100	C6
G2622-C3R/L-4T20SX	4	20	66	C3
G2622-C4R/L-4T35SX		35	90	C4
G2622-C5R/L-4T35SX		35	90	C5
G2622-C6R/L-4T45SX		45	100	C6
G2622-C4R/L-5T35SX	5	35	90	C4
G2622-C5R/L-5T35SX		35	90	C5
G2622-C6R/L-5T45SX		45	100	C6
G2622-C4R/L-6T35SX	6	35	90	C4
G2622-C5R/L-6T35SX		35	90	C5
G2622-C6R/L-6T45SX		45	100	C6
G2622-C6R/L-8T45SX	8	45	100	C6

$l_4 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: G2622-C3R-2T20SX/ordering example, left-hand tool: G2622-C3L-2T20SX
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size d_1	E20 C3	E25 C4	E25 C5	E32 C6
	Cooling lubricant nozzle	FS1477	FS1477	FS1476	FS1476
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1048 (Torx 20)	FS1049 (Torx 25)





A2

SX

f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
42	35,6	1,6	E20	SX-2E2 ..	G2632-E20R/L-2T20SX	C3-MSS-E20R/L90
42	53,6	1,6	E25		G2632-E25R/L-2T20SX	C4-MSS-E25R/L90
48	53,6	1,6	E25		G2632-E25R/L-2T20SX	C5-MSS-E25R/L90
42	35,2	2,4	E20	SX-3E3 ..	G2632-E20R/L-3T20SX	C3-MSS-E20R/L90
53	52,2	2,4	E25		G2632-E25R/L-3T25SX	C4-MSS-E25R/L90
53	53,2	2,4	E25		G2632-E25R/L-3T25SX	C5-MSS-E25R/L90
63	52,2	2,4	E25		G2632-E25R/L-3T35SX	C4-MSS-E25R/L90
63	53,2	2,4	E25		G2632-E25R/L-3T35SX	C5-MSS-E25R/L90
80	61,7	2,4	E32		G2632-E32R/L-3T45SX	C6-MSS-E32R/L90
42	34,7	3,4	E20	SX-4E4 ..	G2632-E20R/L-4T20SX	C3-MSS-E20R/L90
63	52,7	3,4	E25		G2632-E25R/L-4T35SX	C4-MSS-E25R/L90
63	52,7	3,4	E25		G2632-E25R/L-4T35SX	C5-MSS-E25R/L90
80	61,2	3,4	E32		G2632-E32R/L-4T45SX	C6-MSS-E32R/L90
63	52,3	4,3	E25	SX-5E5 ..	G2632-E25R/L-5T35SX	C4-MSS-E25R/L90
63	52,3	4,3	E25		G2632-E25R/L-5T35SX	C5-MSS-E25R/L90
80	60,8	4,3	E32		G2632-E32R/L-5T45SX	C6-MSS-E32R/L90
63	51,8	5,3	E25	SX-6E6 ..	G2632-E25R/L-6T35SX	C4-MSS-E25R/L90
63	51,8	5,3	E25		G2632-E25R/L-6T35SX	C5-MSS-E25R/L90
80	60,3	5,3	E32		G2632-E32R/L-6T45SX	C6-MSS-E32R/L90
80	60,4	6,8	E32	SX-8E8 ..	G2632-E32N-8T45SX	C6-MSS-E32R/L90

Accessories

	Module size s [mm]	E20 2–4	E25 2–6	E32 3–6	E32 8
	Mounting wrench for grooving insert	FS1494	FS1494	FS1494	FS2274

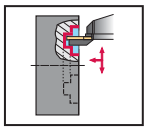
A 286 D 1 A 394 A 402 A 400

Groove turning holders – Axial grooving
C...-NCEE

Walter Cut

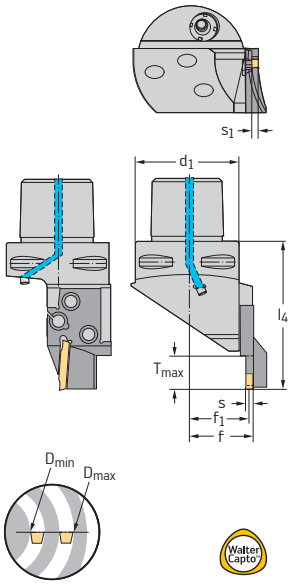
– Walter Capto™
– Screw clamping

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	d_1
NCEE20-C300R/L-GX24-2-1	3	14	50	70	C3
NCEE20-C300R/L-GX24-2-2		14	70	100	C3
NCEE20-C300R/L-GX24-2-3		14	100	150	C3
NCEE25-C400R/L-GX24-2-1		15	50	70	C4
NCEE25-C500R/L-GX24-2-1		15	50	70	C5
NCEE25-C400R/L-GX24-2-2		15	70	100	C4
NCEE25-C500R/L-GX24-2-2		15	70	100	C5
NCEE25-C400R/L-GX24-2-3		15	100	150	C4
NCEE25-C500R/L-GX24-2-3		15	100	150	C5
NCEE25-C400R/L-GX24-3-1	4–5	15	50	70	C4
NCEE25-C500R/L-GX24-3-1		15	50	70	C5
NCEE25-C400R/L-GX24-3-2		15	70	100	C4
NCEE25-C500R/L-GX24-3-2		15	70	100	C5
NCEE32-C600R/L-GX24-3-2		15	70	100	C6
NCEE25-C400R/L-GX24-3-3		15	100	150	C4
NCEE25-C500R/L-GX24-3-3		15	100	150	C5
NCEE32-C600R/L-GX24-3-3		15	100	150	C6
NCEE25-C400R/L-GX24-3-4		15	150	300	C4
NCEE25-C500R/L-GX24-3-4		15	150	300	C5
NCEE32-C600R/L-GX24-3-4		15	150	300	C6
NCEE25-C400R/L-GX24-4-1	6	15	50	70	C4
NCEE25-C500R/L-GX24-4-1		15	50	70	C5
NCEE25-C400R/L-GX24-4-2		15	70	100	C4
NCEE25-C500R/L-GX24-4-2		15	70	100	C5
NCEE32-C600R/L-GX24-4-2		15	70	100	C6
NCEE25-C400R/L-GX24-4-3		15	100	150	C4
NCEE25-C500R/L-GX24-4-3		15	100	150	C5
NCEE32-C600R/L-GX24-4-3		15	100	150	C6
NCEE25-C400R/L-GX24-4-4		15	150	300	C4
NCEE25-C500R/L-GX24-4-4		15	150	300	C5
NCEE32-C600R/L-GX24-4-4		15	150	300	C6
NCEE32-C600R/L-GX24-4-5		15	300	900	C6

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCEE20-C300R-GX24-2-1/ordering example, left-hand tool: NCEE20-C300L-GX24-2-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size d_1	E20 C3	E25 C4	E25 C5	E32 C6
	Cooling lubricant nozzle	FS1477	FS1477	FS1476	FS1476
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1048 (Torx 20)	FS1049 (Torx 25)
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm





GX..E.. GX..F..

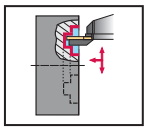
f_1 mm	l_4 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
19,4	59	2	E20	GX24-2E3 .. GX24-2F3 ..	MSS-E20R/L14-GX24-2A5070	C3-MSS-E20R/L00
19,4	59	2	E20		MSS-E20R/L14-GX24-2A70100	C3-MSS-E20R/L00
19,4	59	2	E20		MSS-E20R/L14-GX24-2A100150	C3-MSS-E20R/L00
26,4	70	2	E25		MSS-E25R/L15-GX24-2A5070	C4-MSS-E25R/L00
31,4	70	2	E25		MSS-E25R/L15-GX24-2A5070	C5-MSS-E25R/L00
26,4	70	2	E25		MSS-E25R/L15-GX24-2A70100	C4-MSS-E25R/L00
31,4	70	2	E25		MSS-E25R/L15-GX24-2A70100	C5-MSS-E25R/L00
26,4	70	2	E25		MSS-E25R/L15-GX24-2A100150	C4-MSS-E25R/L00
31,4	70	2	E25		MSS-E25R/L15-GX24-2A100150	C5-MSS-E25R/L00
26,4	70	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L15-GX24-3A5070	C4-MSS-E25R/L00
31,4	70	3	E25		MSS-E25R/L15-GX24-3A5070	C5-MSS-E25R/L00
26,4	70	3	E25		MSS-E25R/L15-GX24-3A70100	C4-MSS-E25R/L00
31,4	70	3	E25		MSS-E25R/L15-GX24-3A70100	C5-MSS-E25R/L00
37,4	76	3	E32		MSS-E32R/L15-GX24-3A70100	C6-MSS-E32R/L00
26,4	70	3	E25		MSS-E25R/L15-GX24-3A100150	C4-MSS-E25R/L00
31,4	70	3	E25		MSS-E25R/L15-GX24-3A100150	C5-MSS-E25R/L00
37,4	76	3	E32		MSS-E32R/L15-GX24-3A100150	C6-MSS-E32R/L00
26,4	70	3	E25		MSS-E25R/L15-GX24-3A150300	C4-MSS-E25R/L00
31,4	70	3	E25		MSS-E25R/L15-GX24-3A150300	C5-MSS-E25R/L00
37,4	76	3	E32		MSS-E32R/L15-GX24-3A150300	C6-MSS-E32R/L00
26,4	70	4,2	E25	GX24-4E6 ..	MSS-E25R/L15-GX24-4A5070	C4-MSS-E25R/L00
31,4	70	4,2	E25		MSS-E25R/L15-GX24-4A5070	C5-MSS-E25R/L00
26,4	70	4,2	E25		MSS-E25R/L15-GX24-4A70100	C4-MSS-E25R/L00
31,4	70	4,2	E25		MSS-E25R/L15-GX24-4A70100	C5-MSS-E25R/L00
37,4	76	4,2	E32		MSS-E32R/L15-GX24-4A70100	C6-MSS-E32R/L00
26,4	70	4,2	E25		MSS-E25R/L15-GX24-4A100150	C4-MSS-E25R/L00
31,4	70	4,2	E25		MSS-E25R/L15-GX24-4A100150	C5-MSS-E25R/L00
37,4	76	4,2	E32		MSS-E32R/L15-GX24-4A100150	C6-MSS-E32R/L00
26,4	70	4,2	E25		MSS-E25R/L15-GX24-4A150300	C4-MSS-E25R/L00
31,4	70	4,2	E25		MSS-E25R/L15-GX24-4A150300	C5-MSS-E25R/L00
37,4	76	4,2	E32		MSS-E32R/L15-GX24-4A150300	C6-MSS-E32R/L00
37,4	76	4,2	E32		MSS-E32R/L15-GX24-4A300900	C6-MSS-E32R/L00

A 278 D 1 A 394 A 402 A 400

Groove turning holders – 90° axial grooving
C...-NCHE
Walter Cut

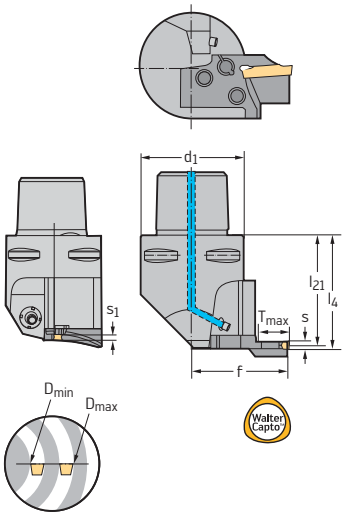
– Walter Capto™
– Screw clamping

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	d_1
NCHE20-C300R/L-GX24-2-1	3	14	50	70	C3
NCHE20-C300R/L-GX24-2-2		14	70	100	C3
NCHE20-C300R/L-GX24-2-3		14	100	150	C3
NCHE25-C400R/L-GX24-2-1		15	50	70	C4
NCHE25-C500R/L-GX24-2-1		15	50	70	C5
NCHE25-C400R/L-GX24-2-2		15	70	100	C4
NCHE25-C500R/L-GX24-2-2		15	70	100	C5
NCHE25-C400R/L-GX24-2-3		15	100	150	C4
NCHE25-C500R/L-GX24-2-3		15	100	150	C5
NCHE25-C400R/L-GX24-3-1	4–5	15	50	70	C4
NCHE25-C500R/L-GX24-3-1		15	50	70	C5
NCHE25-C400R/L-GX24-3-2		15	70	100	C4
NCHE25-C500R/L-GX24-3-2		15	70	100	C5
NCHE32-C600R/L-GX24-3-2		15	70	100	C6
NCHE25-C400R/L-GX24-3-3		15	100	150	C4
NCHE25-C500R/L-GX24-3-3		15	100	150	C5
NCHE32-C600R/L-GX24-3-3		15	100	150	C6
NCHE25-C400R/L-GX24-3-4		15	150	300	C4
NCHE25-C500R/L-GX24-3-4		15	150	300	C5
NCHE32-C600R/L-GX24-3-4		15	150	300	C6
NCHE25-C400R/L-GX24-4-1	6	15	50	70	C4
NCHE25-C500R/L-GX24-4-1		15	50	70	C5
NCHE25-C400R/L-GX24-4-2		15	70	100	C4
NCHE25-C500R/L-GX24-4-2		15	70	100	C5
NCHE32-C600R/L-GX24-4-2		15	70	100	C6
NCHE25-C400R/L-GX24-4-3		15	100	150	C4
NCHE25-C500R/L-GX24-4-3		15	100	150	C5
NCHE32-C600R/L-GX24-4-3		15	100	150	C6
NCHE25-C400R/L-GX24-4-4		15	150	300	C4
NCHE25-C500R/L-GX24-4-4		15	150	300	C5
NCHE32-C600R/L-GX24-4-4		15	150	300	C6
NCHE32-C600R/L-GX24-4-5		15	300	900	C6

$l_4 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCHE20-C300R-GX24-2-1/ordering example, left-hand tool: NCHE20-C300L-GX24-2-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E20	E25	E32
	Cooling lubricant nozzle	FS1477	FS1477	FS1476
	Handle key	FS1047 (Torx 15)	FS1048 (Torx 20)	FS1049 (Torx 25)
	Screw for grooving module Tightening torque	FS1053 (Torx 15) 2,0 Nm	FS1054 (Torx 20) 3,0 Nm	FS1055 (Torx 25) 3,0 Nm



A2

GX..E.. GX..F..

f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
42	35,4	2	E20	GX24-2E3 .. GX24-2F3 ..	MSS-E20R/L14-GX24-2A5070	C3-MSS-E20R/L90
42	35,4	2	E20		MSS-E20R/L14-GX24-2A70100	C3-MSS-E20R/L90
42	35,4	2	E20		MSS-E20R/L14-GX24-2A100150	C3-MSS-E20R/L90
42	53,4	2	E25		MSS-E25R/L15-GX24-2A5070	C4-MSS-E25R/L90
47	53,4	2	E25		MSS-E25R/L15-GX24-2A5070	C5-MSS-E25R/L90
42	53,4	2	E25		MSS-E25R/L15-GX24-2A70100	C4-MSS-E25R/L90
47	53,4	2	E25		MSS-E25R/L15-GX24-2A70100	C5-MSS-E25R/L90
42	53,4	2	E25		MSS-E25R/L15-GX24-2A100150	C4-MSS-E25R/L90
47	53,4	2	E25		MSS-E25R/L15-GX24-2A100150	C5-MSS-E25R/L90
42	52,9	3,0	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L15-GX24-3A5070	C4-MSS-E25R/L90
47	52,9	3,0	E25		MSS-E25R/L15-GX24-3A5070	C5-MSS-E25R/L90
42	52,9	3,0	E25		MSS-E25R/L15-GX24-3A70100	C4-MSS-E25R/L90
47	52,9	3,0	E25		MSS-E25R/L15-GX24-3A70100	C5-MSS-E25R/L90
49	61,4	3,0	E32		MSS-E32R/L15-GX24-3A70100	C6-MSS-E32R/L90
42	52,9	3,0	E25		MSS-E25R/L15-GX24-3A100150	C4-MSS-E25R/L90
47	52,9	3,0	E25		MSS-E25R/L15-GX24-3A100150	C5-MSS-E25R/L90
49	61,4	3,0	E32		MSS-E32R/L15-GX24-3A100150	C6-MSS-E32R/L90
42	52,9	3,0	E25		MSS-E25R/L15-GX24-3A150300	C4-MSS-E25R/L90
47	52,9	3,0	E25		MSS-E25R/L15-GX24-3A150300	C5-MSS-E25R/L90
49	61,4	3,0	E32		MSS-E32R/L15-GX24-3A150300	C6-MSS-E32R/L90
42	52,3	4,2	E25	GX24-4E6 ..	MSS-E25R/L15-GX24-4A5070	C4-MSS-E25R/L90
47	52,3	4,2	E25		MSS-E25R/L15-GX24-4A5070	C5-MSS-E25R/L90
42	52,3	4,2	E25		MSS-E25R/L15-GX24-4A70100	C4-MSS-E25R/L90
47	52,3	4,2	E25		MSS-E25R/L15-GX24-4A70100	C5-MSS-E25R/L90
49	60,8	4,2	E32		MSS-E32R/L15-GX24-4A70100	C6-MSS-E32R/L90
42	52,3	4,2	E25		MSS-E25R/L15-GX24-4A100150	C4-MSS-E25R/L90
47	52,3	4,2	E25		MSS-E25R/L15-GX24-4A100150	C5-MSS-E25R/L90
49	60,8	4,2	E32		MSS-E32R/L15-GX24-4A100150	C6-MSS-E32R/L90
42	52,3	4,2	E25		MSS-E25R/L15-GX24-4A150300	C4-MSS-E25R/L90
47	52,3	4,2	E25		MSS-E25R/L15-GX24-4A150300	C5-MSS-E25R/L90
49	60,8	4,2	E32		MSS-E32R/L15-GX24-4A150300	C6-MSS-E32R/L90
49	60,8	4,2	E32		MSS-E32R/L15-GX24-4A300900	C6-MSS-E32R/L90

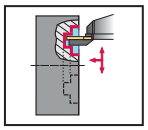
A 278 D 1 A 394 A 402 A 400

Groove turning holders – Axial grooving
C...-NCFE

Walter Cut

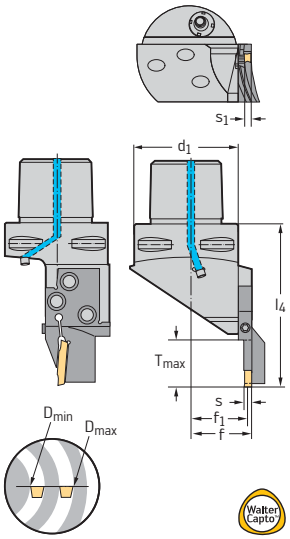
– Walter Capto™
– Screw clamping

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	d_1	
NCFE25-C400R/L-GX24-3-1	4–5	21	50	70	C4	
NCFE25-C500R/L-GX24-3-1		21	50	70	C5	
NCFE25-C400R/L-GX24-3-2		21	70	100	C4	
NCFE25-C500R/L-GX24-3-2		21	70	100	C5	
NCFE25-C400R/L-GX24-3-3		21	100	150	C4	
NCFE25-C500R/L-GX24-3-3		21	100	150	C5	
NCFE25-C400R/L-GX24-3-4		21	150	300	C4	
NCFE25-C500R/L-GX24-3-4		21	150	300	C5	
NCFE25-C400R/L-GX24-4-1	6	25	50	70	C4	
NCFE25-C500R/L-GX24-4-1		25	50	70	C5	
NCFE25-C400R/L-GX24-4-2		25	70	100	C4	
NCFE25-C500R/L-GX24-4-2		25	70	100	C5	
NCFE25-C400R/L-GX24-4-3		25	100	150	C4	
NCFE25-C500R/L-GX24-4-3		25	100	150	C5	
NCFE25-C400R/L-GX24-4-4		25	150	300	C4	
NCFE25-C500R/L-GX24-4-4		25	150	300	C5	

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCFE25-C400R-GX24-3-1/ordering example, left-hand tool: NCFE25-C400L-GX24-3-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size d_1	E25 C4	E25 C5
	Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm	FS1342 (Torx 15) 2,0 Nm
	Cooling lubricant nozzle	FS1477	FS1476
	Handle key	FS1048 (Torx 20)	FS1048 (Torx 20)
	Handle key for grooving insert	FS1047 (Torx 15)	FS1047 (Torx 15)
	Screw for grooving module Tightening torque	FS1054 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm





GX..E.. GX..F..

	f_1 mm	l_4 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	24,9	83	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3C5070	C4-MSS-E25R/L00
	29,9	83	3	E25		MSS-E25R/L21-GX24-3C5070	C5-MSS-E25R/L00
	24,9	83	3	E25		MSS-E25R/L21-GX24-3C70100	C4-MSS-E25R/L00
	29,9	83	3	E25		MSS-E25R/L21-GX24-3C70100	C5-MSS-E25R/L00
	24,9	83	3	E25		MSS-E25R/L21-GX24-3C100150	C4-MSS-E25R/L00
	29,9	83	3	E25		MSS-E25R/L21-GX24-3C100150	C5-MSS-E25R/L00
	24,9	83	3	E25		MSS-E25R/L21-GX24-3C150300	C4-MSS-E25R/L00
	29,9	83	3	E25		MSS-E25R/L21-GX24-3C150300	C5-MSS-E25R/L00
	24,3	83	4,2	E25	GX24-4E6 ..	MSS-E25R/L25-GX24-4C5070	C4-MSS-E25R/L00
	29,3	83	4,2	E25		MSS-E25R/L25-GX24-4C5070	C5-MSS-E25R/L00
	24,3	83	4,2	E25		MSS-E25R/L25-GX24-4C70100	C4-MSS-E25R/L00
	29,3	83	4,2	E25		MSS-E25R/L25-GX24-4C70100	C5-MSS-E25R/L00
	24,3	83	4,2	E25		MSS-E25R/L25-GX24-4C100150	C4-MSS-E25R/L00
	29,3	83	4,2	E25		MSS-E25R/L25-GX24-4C100150	C5-MSS-E25R/L00
	24,3	83	4,2	E25		MSS-E25R/L25-GX24-4C150300	C4-MSS-E25R/L00
	29,3	83	4,2	E25		MSS-E25R/L25-GX24-4C150300	C5-MSS-E25R/L00

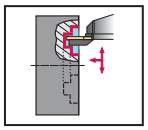
A 278 D 1 A 394 A 402 A 400

Groove turning holders – Axial grooving/contra
C...-NCFE...C

Walter Cut

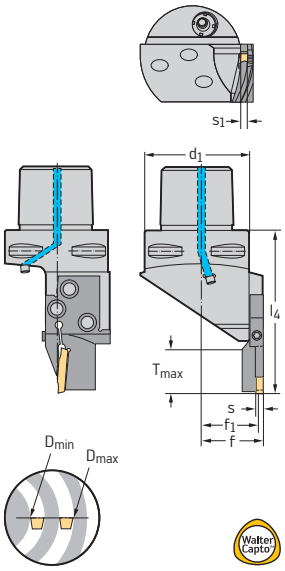
– Walter Capto™
– Screw clamping/contra design

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	d_1
NCFE25-C400R/L-GX24-3-1C	4–5	21	50	70	C4
NCFE25-C500R/L-GX24-3-1C		21	50	70	C5
NCFE25-C400R/L-GX24-3-2C		21	70	100	C4
NCFE25-C500R/L-GX24-3-2C		21	70	100	C5
NCFE25-C400R/L-GX24-3-3C		21	100	150	C4
NCFE25-C500R/L-GX24-3-3C		21	100	150	C5
NCFE25-C400R/L-GX24-3-4C		21	150	300	C4
NCFE25-C500R/L-GX24-3-4C		21	150	300	C5
NCFE25-C400R/L-GX24-4-1C	6	25	50	70	C4
NCFE25-C500R/L-GX24-4-1C		25	50	70	C5
NCFE25-C400R/L-GX24-4-2C		25	70	100	C4
NCFE25-C500R/L-GX24-4-2C		25	70	100	C5
NCFE25-C400R/L-GX24-4-3C		25	100	150	C4
NCFE25-C500R/L-GX24-4-3C		25	100	150	C5
NCFE25-C400R/L-GX24-4-4C		25	150	300	C4
NCFE25-C500R/L-GX24-4-4C		25	150	300	C5

$f = f_1 + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCFE25-C400R-GX24-3-1C/ordering example, left-hand tool: NCFE25-C400L-GX24-3-1C
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size d_1	E25 C4	E25 C5
	Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm	FS1342 (Torx 15) 2,0 Nm
	Cooling lubricant nozzle	FS1477	FS1476
	Handle key	FS1048 (Torx 20)	FS1048 (Torx 20)
	Handle key for grooving insert	FS1047 (Torx 15)	FS1047 (Torx 15)
	Screw for grooving module Tightening torque	FS1054 (Torx 20) 3,0 Nm	FS1054 (Torx 20) 3,0 Nm





GX..E.. GX..F..

	f_1 mm	l_4 mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	22,2	83	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3C5070	C4-MSS-E25R/L00
	27,2	83	3	E25		MSS-E25R/L21-GX24-3C5070	C5-MSS-E25R/L00
	22,2	83	3	E25		MSS-E25R/L21-GX24-3C70100	C4-MSS-E25R/L00
	27,2	83	3	E25		MSS-E25R/L21-GX24-3C70100	C5-MSS-E25R/L00
	22,2	83	3	E25		MSS-E25R/L21-GX24-3C100150	C4-MSS-E25R/L00
	27,2	83	3	E25		MSS-E25R/L21-GX24-3C100150	C5-MSS-E25R/L00
	22,2	83	3	E25		MSS-E25R/L21-GX24-3C150300	C4-MSS-E25R/L00
	27,2	83	3	E25		MSS-E25R/L21-GX24-3C150300	C5-MSS-E25R/L00
	22,7	83	4,2	E25	GX24-4E6 ..	MSS-E25R/L25-GX24-4C5070	C4-MSS-E25R/L00
	27,8	83	4,2	E25		MSS-E25R/L25-GX24-4C5070	C5-MSS-E25R/L00
	22,7	83	4,2	E25		MSS-E25R/L25-GX24-4C70100	C4-MSS-E25R/L00
	27,8	83	4,2	E25		MSS-E25R/L25-GX24-4C70100	C5-MSS-E25R/L00
	22,7	83	4,2	E25		MSS-E25R/L25-GX24-4C100150	C4-MSS-E25R/L00
	27,8	83	4,2	E25		MSS-E25R/L25-GX24-4C100150	C5-MSS-E25R/L00
	22,7	83	4,2	E25		MSS-E25R/L25-GX24-4C150300	C4-MSS-E25R/L00
	27,8	83	4,2	E25		MSS-E25R/L25-GX24-4C150300	C5-MSS-E25R/L00

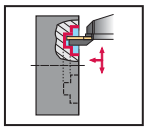
A 278 D 1 A 394 A 402 A 400

Groove turning holders – 90° axial grooving
C...-NCOE

Walter Cut

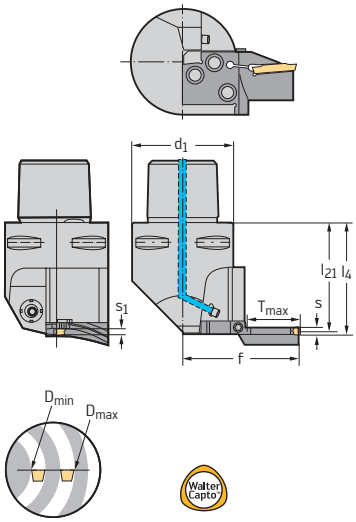
– Walter Capto™
– Screw clamping

A2



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	d_1
NCOE25-C400R/L-GX24-3-1	4–5	21	50	70	C4
NCOE25-C500R/L-GX24-3-1		21	50	70	C5
NCOE25-C400R/L-GX24-3-2		21	70	100	C4
NCOE25-C500R/L-GX24-3-2		21	70	100	C5
NCOE25-C400R/L-GX24-3-3		21	100	150	C4
NCOE25-C500R/L-GX24-3-3		21	100	150	C5
NCOE25-C400R/L-GX24-3-4		21	150	300	C4
NCOE25-C500R/L-GX24-3-4		21	150	300	C5
NCOE25-C400R/L-GX24-4-1	6	25	50	70	C4
NCOE25-C500R/L-GX24-4-1		25	50	70	C5
NCOE25-C400R/L-GX24-4-2		25	70	100	C4
NCOE25-C500R/L-GX24-4-2		25	70	100	C5
NCOE25-C400R/L-GX24-4-3		25	100	150	C4
NCOE25-C500R/L-GX24-4-3		25	100	150	C5
NCOE25-C400R/L-GX24-4-4		25	150	300	C4
NCOE25-C500R/L-GX24-4-4		25	150	300	C5

$l_4 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + left-hand module/left-hand tool = left-hand toolholder + right-hand module
Ordering example, right-hand tool: NCOE25-C400R-GX24-3-1/ordering example, left-hand tool: NCOE25-C400L-GX24-3-1
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E25
	Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm
	Cooling lubricant nozzle	FS1477
	Handle key	FS1048 (Torx 20)
	Handle key for grooving insert	FS1047 (Torx 15)
	Screw for grooving module Tightening torque	FS1054 (Torx 20) 3,0 Nm



A2

GX..E.. GX..F..

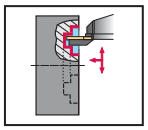
	f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
	55	52,9	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3C5070	C4-MSS-E25R/L90
	60	52,9	3	E25		MSS-E25R/L21-GX24-3C5070	C5-MSS-E25R/L90
	55	52,9	3	E25		MSS-E25R/L21-GX24-3C70100	C4-MSS-E25R/L90
	60	52,9	3	E25		MSS-E25R/L21-GX24-3C70100	C5-MSS-E25R/L90
	55	52,9	3	E25		MSS-E25R/L21-GX24-3C100150	C4-MSS-E25R/L90
	60	52,9	3	E25		MSS-E25R/L21-GX24-3C100150	C5-MSS-E25R/L90
	55	52,9	3	E25		MSS-E25R/L21-GX24-3C150300	C4-MSS-E25R/L90
	60	52,9	3	E25		MSS-E25R/L21-GX24-3C150300	C5-MSS-E25R/L90
	55	52,3	4,2	E25	GX24-4E6 ..	MSS-E25R/L25-GX24-4C5070	C4-MSS-E25R/L90
	60	52,3	4,2	E25		MSS-E25R/L25-GX24-4C5070	C5-MSS-E25R/L90
	55	52,3	4,2	E25		MSS-E25R/L25-GX24-4C70100	C4-MSS-E25R/L90
	60	52,3	4,2	E25		MSS-E25R/L25-GX24-4C70100	C5-MSS-E25R/L90
	55	52,3	4,2	E25		MSS-E25R/L25-GX24-4C100150	C4-MSS-E25R/L90
	60	52,3	4,2	E25		MSS-E25R/L25-GX24-4C100150	C5-MSS-E25R/L90
	55	52,3	4,2	E25		MSS-E25R/L25-GX24-4C150300	C4-MSS-E25R/L90
	60	52,3	4,2	E25		MSS-E25R/L25-GX24-4C150300	C5-MSS-E25R/L90

A 278 D 1 A 394 A 402 A 400

Groove turning holders – 90° axial/contra
C...-NCOE...C

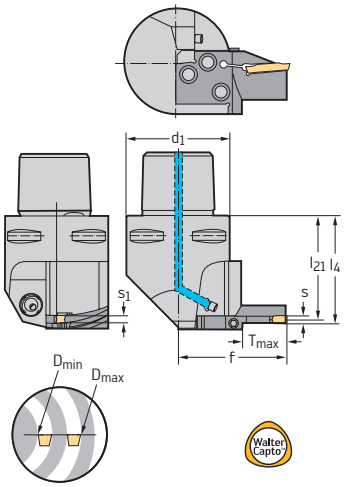
Walter Cut

– Walter Capto™
– Screw clamping/contra design



Tool

Walter Capto™ in accordance with ISO 26623



Designation	s mm	T_{max} mm	D_{min} mm	D_{max} mm	d_1
NCOE25-C400R/L-GX24-3-1C	4–5	21	50	70	C4
NCOE25-C500R/L-GX24-3-1C		21	50	70	C5
NCOE25-C400R/L-GX24-3-2C		21	70	100	C4
NCOE25-C500R/L-GX24-3-2C		21	70	100	C5
NCOE25-C400R/L-GX24-3-3C		21	100	150	C4
NCOE25-C500R/L-GX24-3-3C		21	100	150	C5
NCOE25-C400R/L-GX24-3-4C		21	150	300	C4
NCOE25-C500R/L-GX24-3-4C		21	150	300	C5
NCOE25-C400R/L-GX24-4-1C	6	25	50	70	C4
NCOE25-C500R/L-GX24-4-1C		25	50	70	C5
NCOE25-C400R/L-GX24-4-2C		25	70	100	C4
NCOE25-C500R/L-GX24-4-2C		25	70	100	C5
NCOE25-C400R/L-GX24-4-3C		25	100	150	C4
NCOE25-C500R/L-GX24-4-3C		25	100	150	C5
NCOE25-C400R/L-GX24-4-4C		25	150	300	C4
NCOE25-C500R/L-GX24-4-4C		25	150	300	C5

$l_4 = l_{21} + s/2$
Right-hand tool = right-hand toolholder + right-hand module/left-hand tool = left-hand toolholder + left-hand module
Ordering example, right-hand tool: NCOE25-C400R-GX24-3-1C/ordering example, left-hand tool: NCOE25-C400L-GX24-3-1C
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Module size	E25
	Clamping screw for grooving insert Tightening torque	FS1342 (Torx 15) 2,0 Nm
	Cooling lubricant nozzle	FS1477
	Handle key	FS1048 (Torx 20)
	Handle key for grooving insert	FS1047 (Torx 15)
	Screw for grooving module Tightening torque	FS1054 (Torx 20) 3,0 Nm



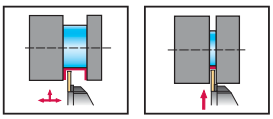
A2

GX..E.. GX..F..

f mm	l_{21} mm	s_1 mm	Module size	Type	Grooving module	Toolholder
55	50,2	3	E25	GX24-3E .. GX24-3F ..	MSS-E25R/L21-GX24-3C5070	C4-MSS-E25R/L90
60	50,2	3	E25		MSS-E25R/L21-GX24-3C5070	C5-MSS-E25R/L90
55	50,2	3	E25		MSS-E25R/L21-GX24-3C70100	C4-MSS-E25R/L90
60	50,2	3	E25		MSS-E25R/L21-GX24-3C70100	C5-MSS-E25R/L90
55	50,2	3	E25		MSS-E25R/L21-GX24-3C100150	C4-MSS-E25R/L90
60	50,2	3	E25		MSS-E25R/L21-GX24-3C100150	C5-MSS-E25R/L90
55	50,2	3	E25		MSS-E25R/L21-GX24-3C150300	C4-MSS-E25R/L90
60	50,2	3	E25		MSS-E25R/L21-GX24-3C150300	C5-MSS-E25R/L90
55	50,8	4,2	E25	GX24-4E6 ..	MSS-E25R/L25-GX24-4C5070	C4-MSS-E25R/L90
60	50,8	4,2	E25		MSS-E25R/L25-GX24-4C5070	C5-MSS-E25R/L90
55	50,8	4,2	E25		MSS-E25R/L25-GX24-4C70100	C4-MSS-E25R/L90
60	50,8	4,2	E25		MSS-E25R/L25-GX24-4C70100	C5-MSS-E25R/L90
55	50,8	4,2	E25		MSS-E25R/L25-GX24-4C100150	C4-MSS-E25R/L90
60	50,8	4,2	E25		MSS-E25R/L25-GX24-4C100150	C5-MSS-E25R/L90
55	50,8	4,2	E25		MSS-E25R/L25-GX24-4C150300	C4-MSS-E25R/L90
60	50,8	4,2	E25		MSS-E25R/L25-GX24-4C150300	C5-MSS-E25R/L90

A 278 D 1 A 394 A 402 A 400

Cutting data for Walter Cut



Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	= Cutting data for wet machining	= Dry machining is possible	Cutting material grades: HC WSM13S	HC WSM23S
									Starting values for cutting speed v_c [m/min]	
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●	●	200	190
		C > 0.25 to ≤ 0.55%	Annealed	190	640	P2	●●	●	180	170
		C > 0.25 to ≤ 0.55%	Heat-treated	210	710	P3	●●	●	170	160
		C > 0.55%	Annealed	190	640	P4	●●	●	190	180
		C > 0.55%	Heat-treated	300	1010	P5	●●	●	160	150
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●	190	180
	Low-alloyed steel	Annealed		175	590	P7	●●	●	190	180
		Heat-treated		285	960	P8	●●	●	160	150
		Heat-treated		380	1280	P9	●●	●	160	150
		Heat-treated		430	1480	P10	●●	●		
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●	●	140	130
		Hardened and tempered		300	1010	P12	●●	●	120	110
		Hardened and tempered		380	1280	P13	●●	●		
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●	●	190	180
		Martensitic, heat-treated		330	1110	P15	●●	●	120	100
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●	190	170
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●	120	100
		Austenitic/ferritic, duplex		230	780	M3	●●	●	170	150
K	Malleable cast iron	Ferritic		200	400	K1	●●	●	190	180
		Pearlitic		260	700	K2	●●	●	170	160
	Grey cast iron	Low tensile strength		180	200	K3	●●	●	220	210
		High tensile strength/austenitic		245	350	K4	●●	●	180	170
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●	220	210
		Pearlitic		265	700	K6	●●	●	180	170
	GGV (CGI)			230	400	K7	●●	●		
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●	●		
		Hardenable, hardened		100	340	N2	●●	●		
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●	●		
		≤ 12% Si, hardenable, hardened		90	310	N4	●●	●		
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●	●		
		Brass, bronze, red brass		90	310	N8	●●	●		
		Cu-alloys, short-chipping		110	380	N9	●●	●		
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●	●	110	100
			Hardened	280	940	S2	●●	●	60	50
		Ni or Co base	Annealed	250	840	S3	●●	●	90	80
			Hardened	350	1180	S4	●●	●	80	70
			Cast	320	1080	S5	●●	●	80	70
	Titanium alloys	Pure titanium		200	680	S6	●●	●	160	150
		α and β alloys, hardened		375	1260	S7	●●	●	45	40
		β alloys		410	1400	S8	●●	●	35	30
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

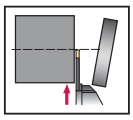
●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application

Note:
– The specified cutting data indicates standard values. For special applications, adjustment is recommended.
– If dry machining is possible, the tool life is reduced by 20-30% on average.

[1] The classification of the machining groups can be found from page A 468 onwards.

A2

1. Grooving and recessing



2. Parting off

Cutting material grades												
Starting values for cutting speed v_c [m/min]												
	HC						HC					HW
	WSM33S	WSM43S	WKP13S	WKP23S	WKP33S	WTA33	WSM13S	WSM23S	WSM33S	WSM43S	WKP23S	WK1
	180	170	220	200	180	190	190	180	170	160	190	
	170	160	200	180	170	180	180	170	160	150	170	
	150	140	190	170	160	160	160	150	140	130	160	
	170	160	200	180	170	180	180	170	160	150	170	
	140	130	170	150	150	120	150	140	130	120	140	
	170	160	200	180	170	180	180	170	160	150	170	
	160	150	200	180	160	180	180	170	150	140	170	
	110	100	170	150	150	150	150	140	100	90	140	
	100	100	170	150	130	130	150	140	90	90	140	
			100	80	60							
	120	110	180	170	160	180	130	120	110	100	120	
	90	80	160	150	140	140	110	100	80	70	100	
			100	80	60							
	160	140	200	180	160	180	180	170	150	130		
	80	60	130	120	110	100	100	90	70	50		
	150	130				150	170	160	140	120		
	80	60	130	120	110	100	100	90	70	50		
	130	110				130	150	140	120	100		
	170		190	160	140	100	180	170	160		180	
	150		170	130	100	60	160	150	140		160	
	200		350	330	250	260	230	220	210		230	
	160		310	300	290	210	190	180	170		190	
	200		300	290	280	240	210	200	190		210	
	160		260	250	240	190	170	160	150		170	
			220	200	180						190	
												900
												600
												350
												250
												400
												300
												200
	90	80					100	90	80	70		
	40	30					50	40	30	25		
	70	60					80	70	60	50		
	60	50					70	60	50	40		
	60	50					70	60	50	40		
	130	120					150	140	130	110		
	35	30					50	40	30	25		
	25						40	30	25			

HC = Coated carbide
HW = Uncoated carbide

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Cutting tool material application charts – Grooving

Carbide

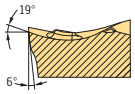
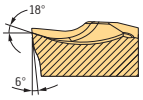
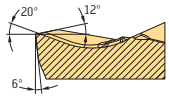
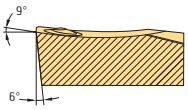
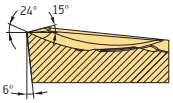
Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating method	Coating composition	Indexable inserts example
WSM13S	HC – M 10		●●							PVD	TiAlN + Al_2O_3 (Al)	
	HC – S 10					●●						
	HC – P 10	●										
WSM23S	HC – M 20		●●							PVD	TiAlN + Al_2O_3 (Al)	
	HC – S 20					●●						
	HC – P 20	●●										
WSM33S	HC – S 30					●●				PVD	TiAlN + Al_2O_3 (Al)	
	HC – M 30		●●									
	HC – P 30	●●										
WSM43S	HC – S 45					●●				PVD	TiAlN + Al_2O_3 (Al)	
	HC – M 45		●●									
	HC – P 45	●●										
WKP13S	HC – P 10	●●								CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – K 20			●●								
	HC – H 10						●					
WKP23S	HC – P 20	●●								CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – K 25			●●								
WKP33S	HC – P 30	●●								CVD	TiCN + Al_2O_3 (+ TiCN)	
	HC – K 30			●●								
WK1	HW – N 10				●●					–	–	
	HW – S 10					●						
WTA33	HC – P 10	●●								CVD	TiAlN + Al_2O_3	
	HC – K 10			●								

HC = Coated carbide
HW = Uncoated carbide

●● Primary application
● Additional application

Geometry overview of cutting inserts

GX system: Grooving and parting off

Geometry	Remarks/ field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	View Main cutting edge	s [mm]	f [mm]
	**CF6** – Low feeds – Low burr/centre pip formation – Low cutting force	••	••		••	••		•			1,5	0,03–0,10
											2	0,03–0,12
											2,5	0,03–0,15
											3	0,04–0,20
	**CF5** – Grooving and parting off operations – Light to moderate feeds – Good chip control – Low burr/centre pip formation	••	••	•	••	••		•			2	0,04–0,15
											2,5	0,05–0,15
											3	0,08–0,20
											4	0,10–0,22
											5	0,10–0,25
	**CE4** – Grooving and parting off operations – Moderate to high feeds – Good chip constriction – Stable cutting edge	••	•	••	•	•	•				2	0,06–0,15
											2,5	0,07–0,18
											3	0,09–0,30
											4	0,10–0,32
											5	0,12–0,35
											6	0,12–0,40
	**GD3** – Extremely soft cutting action – Light to moderate feeds – General parting off and grooving operations	••	••	•	•	•		•			2	0,04–0,12
											2,5	0,06–0,14
											3	0,06–0,18
											4	0,10–0,20
											5	0,12–0,25
											6	0,14–0,28
	**GD6** – Medium feeds – Long-chipping materials – Average machining conditions	••	••	•	•	••					2	0,04–0,12
											2,5	0,06–0,17
											3	0,08–0,18
											4	0,10–0,22
											5	0,12–0,24
											6	0,14–0,30

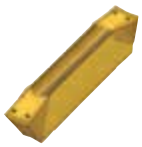
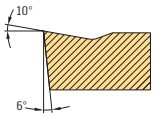
•• Primary application
• Additional application

Geometry overview of cutting inserts

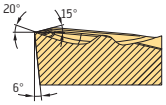
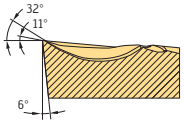
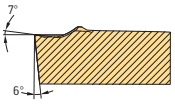
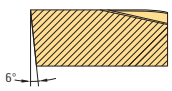
(continued)

A2

GX system: Grooving of circlip grooves

Geometry	Remarks/ field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	View Main cutting edge	s [mm]	f [mm]
	**Cutting insert for circlip grooves** – Excellent surface quality – All common circlip types – Low burr formation	●●	●	●●							0,6–1,99 2–2,99 3–3,99 4–4,99 5–5,99	0,05–0,10 0,05–0,12 0,07–0,14 0,07–0,20 0,08–0,20

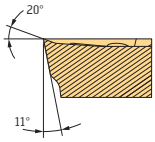
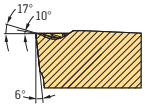
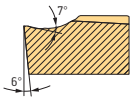
GX system: Grooving, parting off and recessing

Geometry	Remarks/ field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	View Main cutting edge	s [mm]	a_p [mm]	f [mm]
	**UD6** – Grooving in rust-resistant steel – Average feed range – Soft cutting action	●	●●		●						2 2,5 3 4 5 6	0,3–2,5 0,3–2,5 0,4–3,0 0,5–3,5 0,5–3,0 0,6–3,5	0,06–0,15 0,08–0,14 0,10–0,20 0,12–0,25 0,12–0,30 0,14–0,35
	**UF4** – All grooving operations – Good chip control – Average feed range – Positive cut	●●	●●	●●	●	●					2 2,5 3 4 5 6	0,3–2,5 0,3–2,5 0,4–3,0 0,5–3,5 0,5–3,5 0,6–4,0	0,10–0,15 0,10–0,18 0,10–0,20 0,10–0,30 0,12–0,35 0,14–0,40
	**UD4** – Large chip breaking area – Optimum chip breaking when machining forged parts – Stable cutting edge – For moderate to high feeds	●●	●	●●							3 4 5 6 8	0,4–2,0 0,5–2,8 0,5–3,0 0,6–3,5 0,9–4,0	0,08–0,20 0,10–0,30 0,12–0,35 0,14–0,40 0,14–0,40
	**UA4** – For cast iron machining – For middle to high machining parameters – For maximum process reliability in cast iron machining			●●			●				2 2,5 3 4 5 6	0,3–2,5 0,3–2,5 0,4–3,0 0,5–3,5 0,5–3,0 0,6–3,5	0,08–0,15 0,10–0,20 0,10–0,22 0,10–0,35 0,12–0,35 0,14–0,40

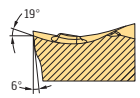
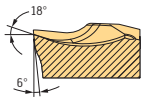
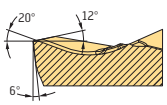
●● Primary application
● Additional application

A2

GX system: Full radius cutting inserts for grooving and copy turning

Geometry	Remarks/ field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	View Main cutting edge	s [mm]	a_p [mm]	f [mm]
	**RK8** – Polished rake face – Sharp cutting edge – Circumference fully ground – Extremely positive				••			•			6	4,0	0,10–0,30
											8	5,0	0,10–0,35
	**RF8** – For copy and relief turning – Circumference fully ground – High surface quality – Stable cutting edge	••	••	•	•	••					2	0,1–1,0	0,08–0,25
											3	0,1–1,5	0,10–0,30
											4	0,1–2,0	0,12–0,45
											5	0,1–2,5	0,15–0,50
											6	0,1–3,0	0,15–0,55
											8	0,2–4,0	0,18–0,60
	**RD4** – For copy turning – Outstanding chip control during grooving – For moderate to high feeds – Circumference-sintered	••	•	••		•					2	0,2–1,0	0,08–0,25
											3	0,5–1,5	0,10–0,35
											4	0,5–2,0	0,15–0,50
											5	0,5–2,5	0,17–0,70
											6	0,5–3,0	0,17–0,70
											8	0,6–4,5	0,17–0,70

SX system: Grooving and parting off

Geometry	Remarks/ field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	View Main cutting edge	s [mm]	f [mm]
	**CF6** – Low feeds – Low burr/centre pip formation – Low cutting force	••	••		••	••		•			1,5	0,03–0,10
											2	0,03–0,12
											3	0,04–0,20
	**CF5** – Grooving and parting off operations – Light to moderate feeds – Good chip control – Low burr/centre pip formation	••	••	•	••	••		•			1,5	0,03–0,13
											2	0,04–0,15
											3	0,08–0,20
											4	0,10–0,20
											5	0,10–0,25
											6	0,12–0,28
	**CE4** – Grooving and parting off operations – Moderate to high feeds – Good chip constriction – Stable cutting edge	••	•	••	•	•	•				1,5	0,05–0,13
											2	0,06–0,15
											3	0,09–0,30
											4	0,10–0,32
											5	0,12–0,35
											6	0,12–0,40
											8	0,20–0,50
											10	0,25–0,55

•• Primary application
• Additional application

Application information: Assembly instructions for Walter Cut

A2

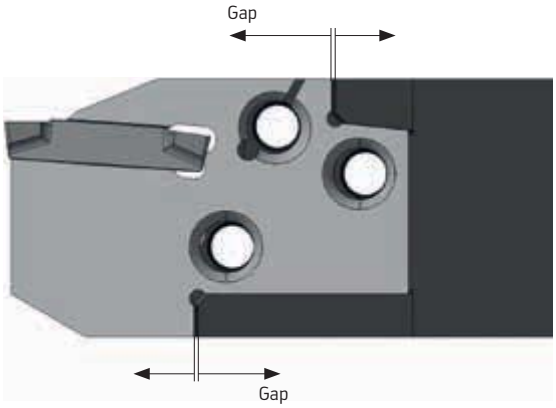
Walter Cut – The strong connection

The axial clamping to the location face that occurs between the module and the basic holder when the clamping screws are tightened provides a backlash-free connection that ensures maximum stability.

The graphics show the module when unclamped and clamped, and the forces acting between the module and the tool.

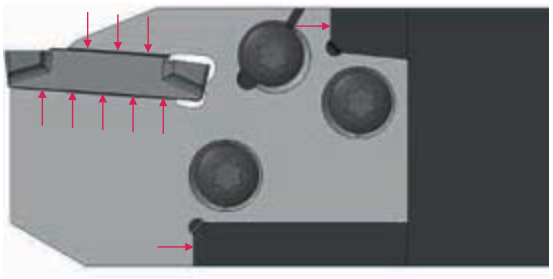
Unclamped module

Gap between the module and the location face for axial clamping



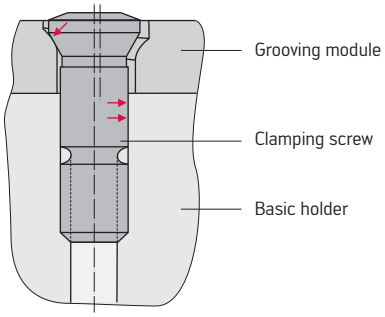
Clamped module

Axial clamping to the location face
Backlash-free connection ensuring maximum stability

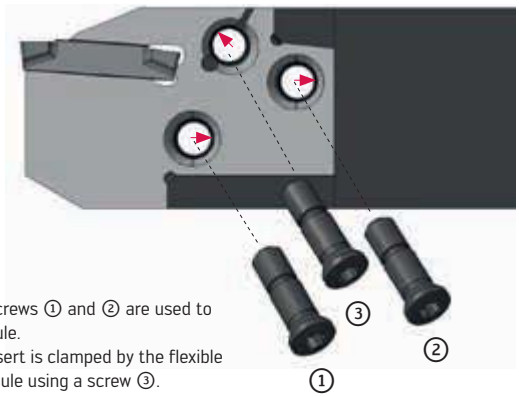


Clamping screw

Section A–A:
Clamping screw with high clamping force



GX: For grooving and turning

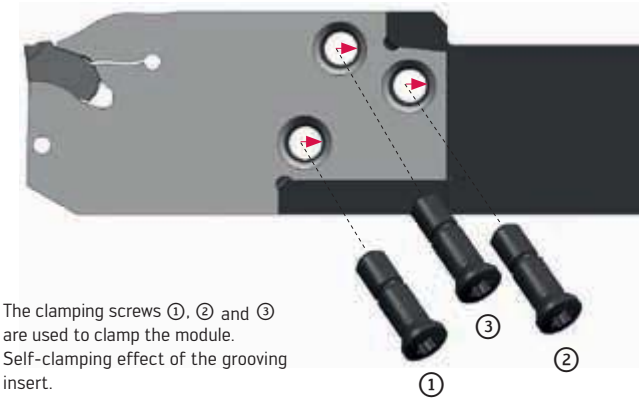


The clamping screws ① and ② are used to clamp the module.
The grooving insert is clamped by the flexible part of the module using a screw ③.

Important:
Follow the sequence for clamping the module.

Step	Operation	Screw no.
A	Pre-tension the module	① – ② (② – ①)
B	Re-tension the module	① – ② (② – ①)
C	Clamp the GX grooving insert	③

SX: For parting off and deep grooving



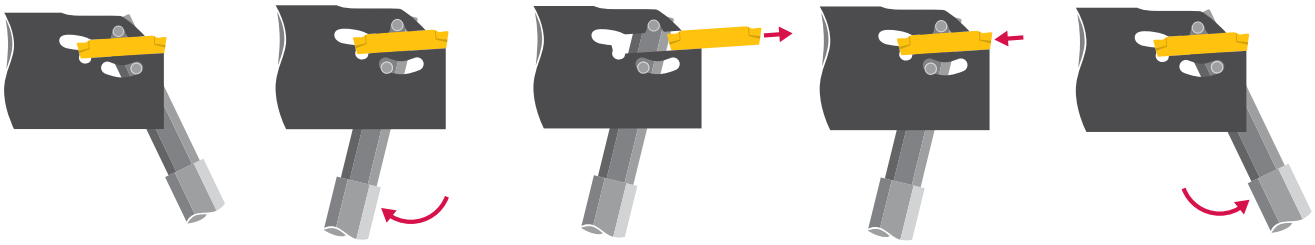
The clamping screws ①, ② and ③ are used to clamp the module.
Self-clamping effect of the grooving insert.

Important:
Follow the sequence for clamping the module.

Step	Operation	Screw no.
A	Pre-tension the module	① – ② – ③
B	Re-tension the module	① – ② – ③
C	Clamp the SX grooving insert	Mounting wrench

Application information:
Replacing the cutting edge on Walter Cut tools with self-clamping system

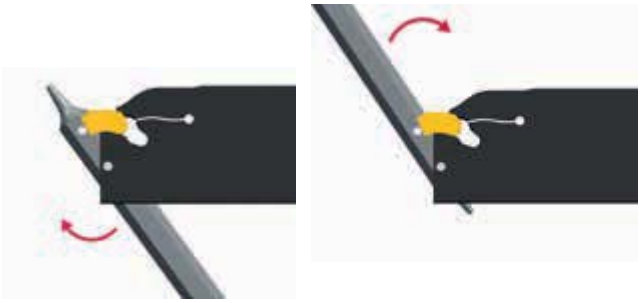
Installing GX cutting inserts



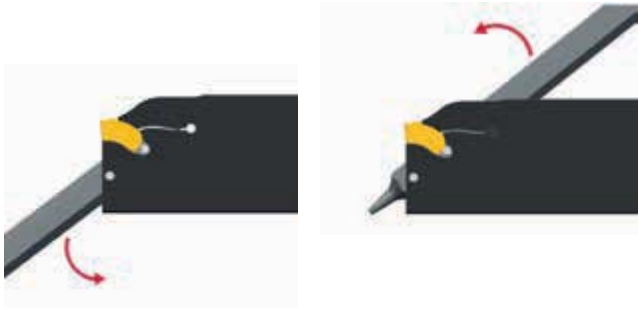
1. Insert the wrench
2. Open the clamp
3. Remove the old cutting insert
4. Insert the new cutting insert
5. Close the clamp

Installing SX cutting inserts

Inserting the cutting insert



Removing the cutting insert



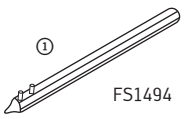
Mounting wrench for GX/SX self-clamping system

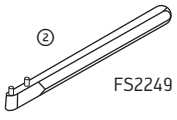


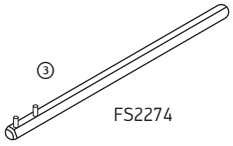




Family	Insert width s [mm]	Shank/blade $h = h_1$ [mm]	Mounting wrench
G1042	2–6	26–32	FS1494 ①
G2012	1,5	12–20	FS2249 ②
	2–3	12–16	FS2249 ②
	2–6	20–25	FS1494 ①
	8–10	25–32	FS2274 ③
G2042-N G2042-R/L G2042-R/L-C	1,5	26–32	FS2249 ②
	2–6	26–32	FS1494 ①
	8–10	52	FS2274 ③







Note:
The same wrench is used for the precision cooled tools (-P).

Application information:
Walter Cut tool standard/contra version

G1041R/L . . . / G1041R/L . . . C G2042R/L . . . / G2042R/L . . . C

Right-hand version



Standard
Example: G1041 . 32R–3T32GX24



Contra
Example: G1041 . 32R–3T32GX24C

Left-hand version



Standard
Example: G1041 . 32L–3T32GX24



Contra
Example: G1041 . 32L–3T32GX24

XLDE / XLDE . . . –C

Right-hand version



Standard
Example: XLDER1616K–GX16–2



Contra
Example: XLDER1616K–GX16–2C

Left-hand version



Standard
Example: XLDEL1616K–GX16–2



Contra
Example: XLDEL1616K–GX16–2C

NCFE / NCFE . . . –C G1111

Right-hand version



Standard
Example: NCFE25–2525R–GX24–4–3
G1111 . 2525R3T22–067GX24



Contra
Example: NCFE25–2525R–GX24–4–3C

Left-hand version



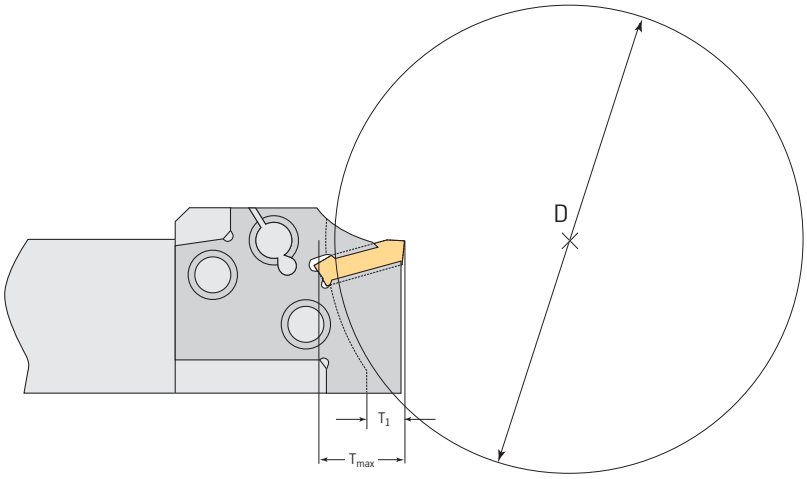
Standard
Example: NCFE25–2525L–GX24–4–3
G1111 . 2525L3T22–067GX24



Contra
Example: NCFE25–2525L–GX24–4–3C

A2

Application information:
Cutting depths depending on turning diameter



T_{max} = Maximum cutting depth **depending** on turning diameter D

T_1 = Groove depth **independent** of turning diameter D

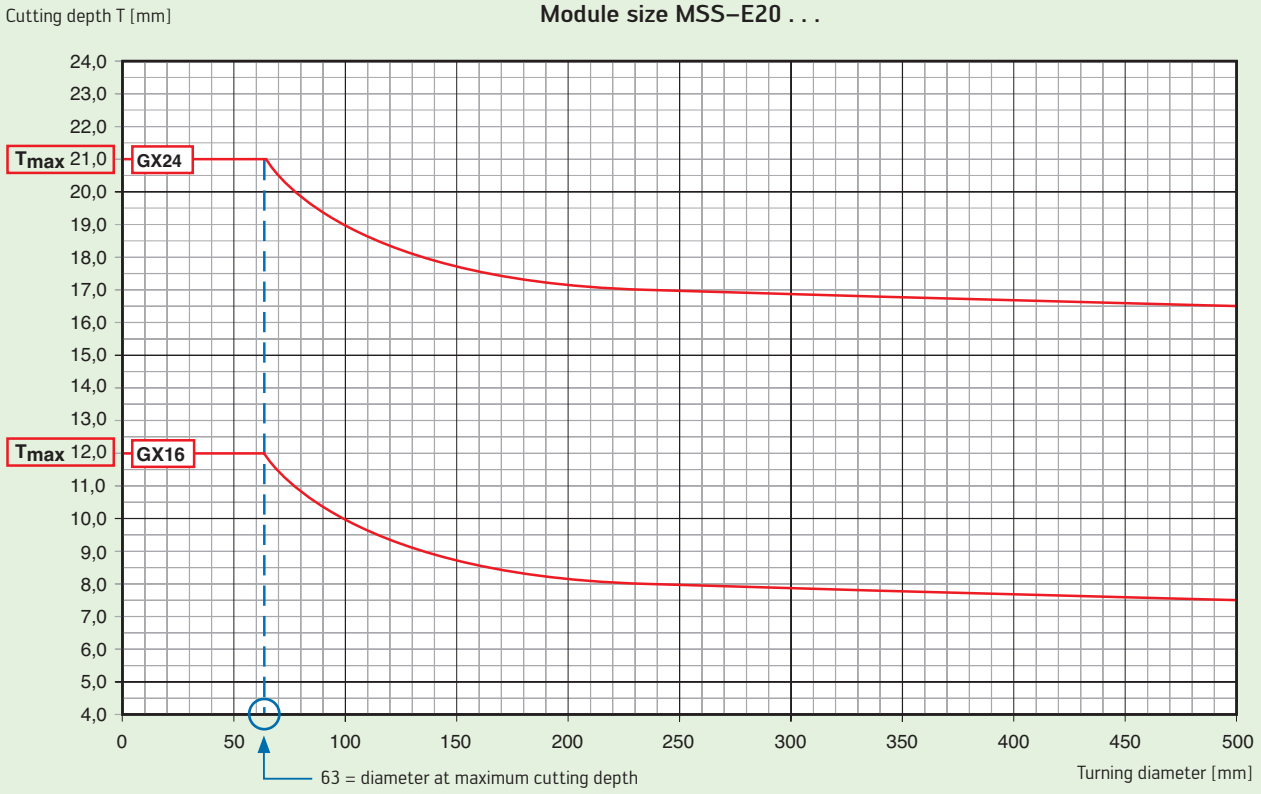
Module size MSS–E12 . . .

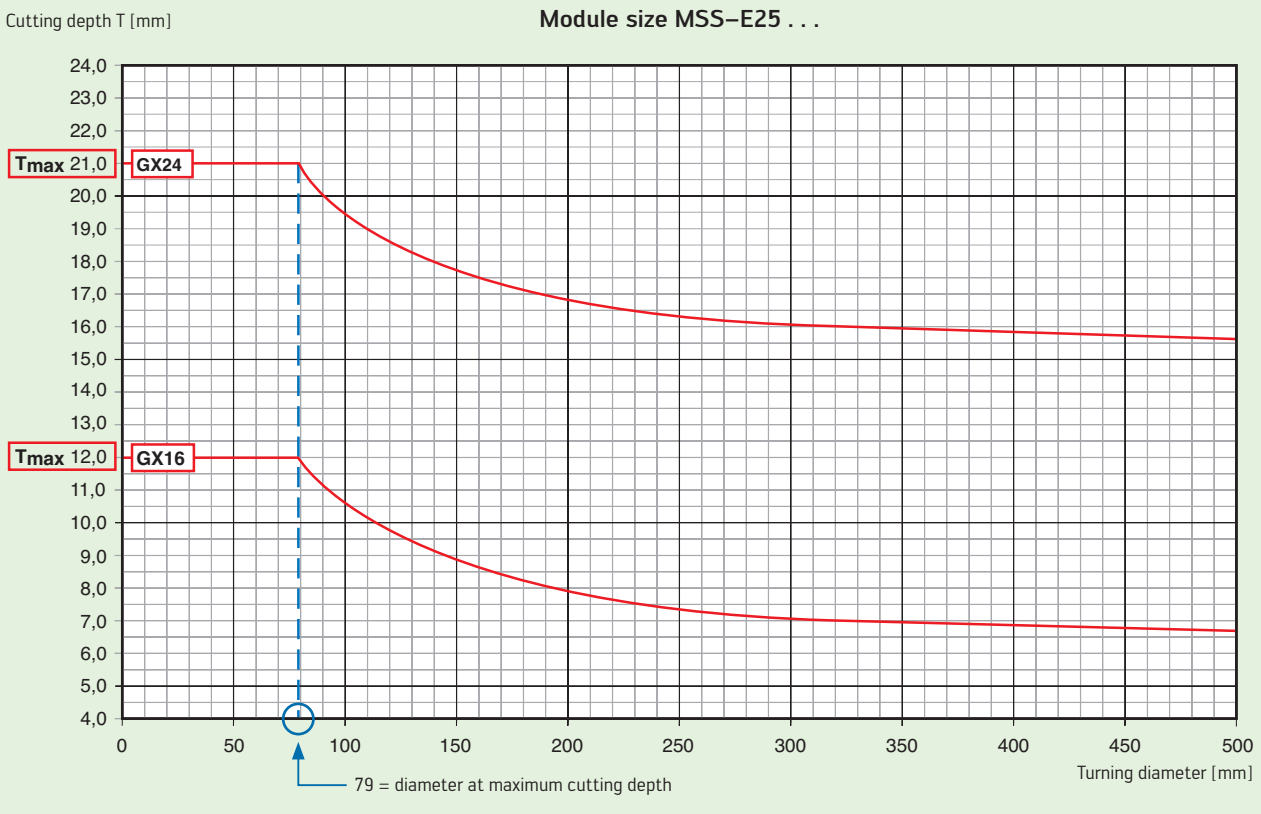


Module size MSS–E16 . . .

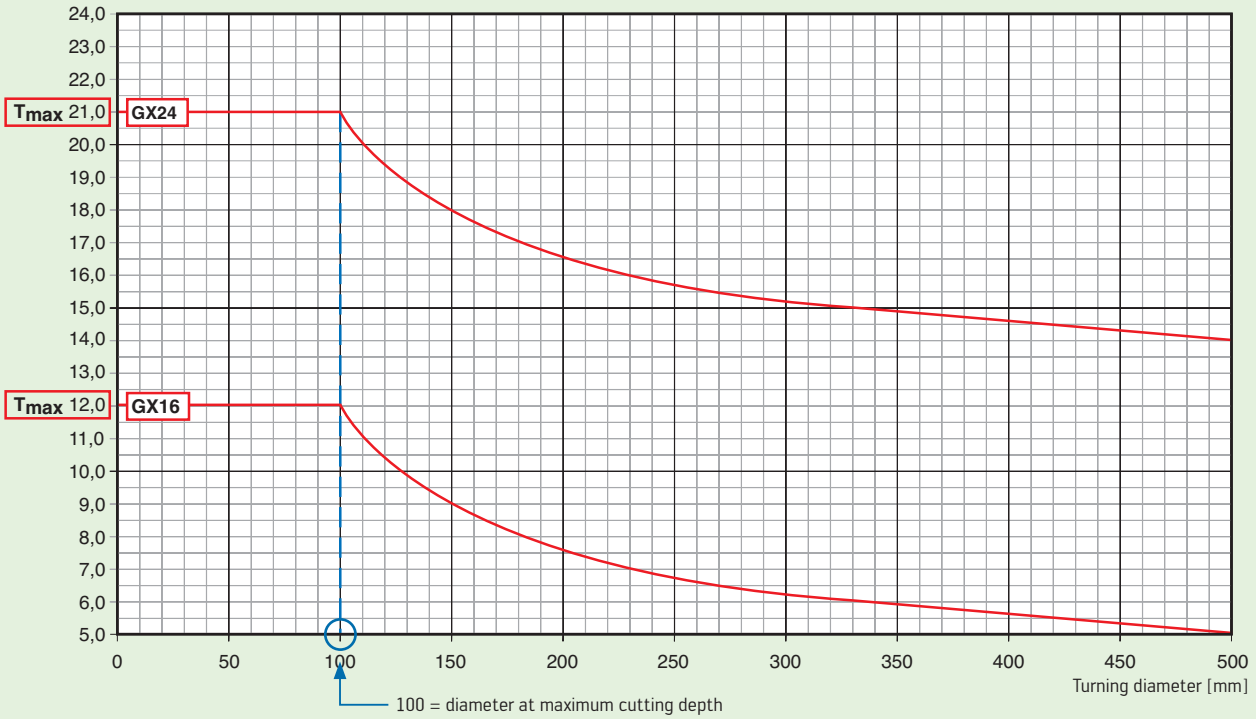


Application information:
Cutting depths depending on turning diameter (continued)

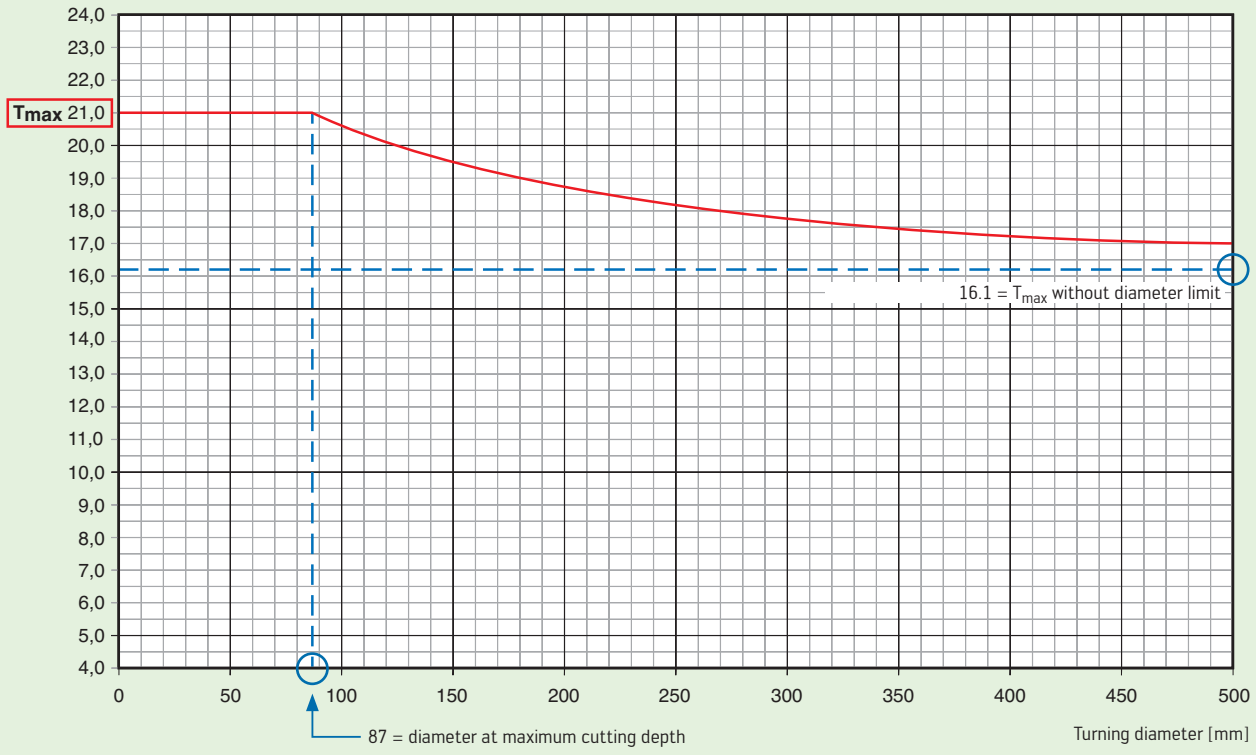




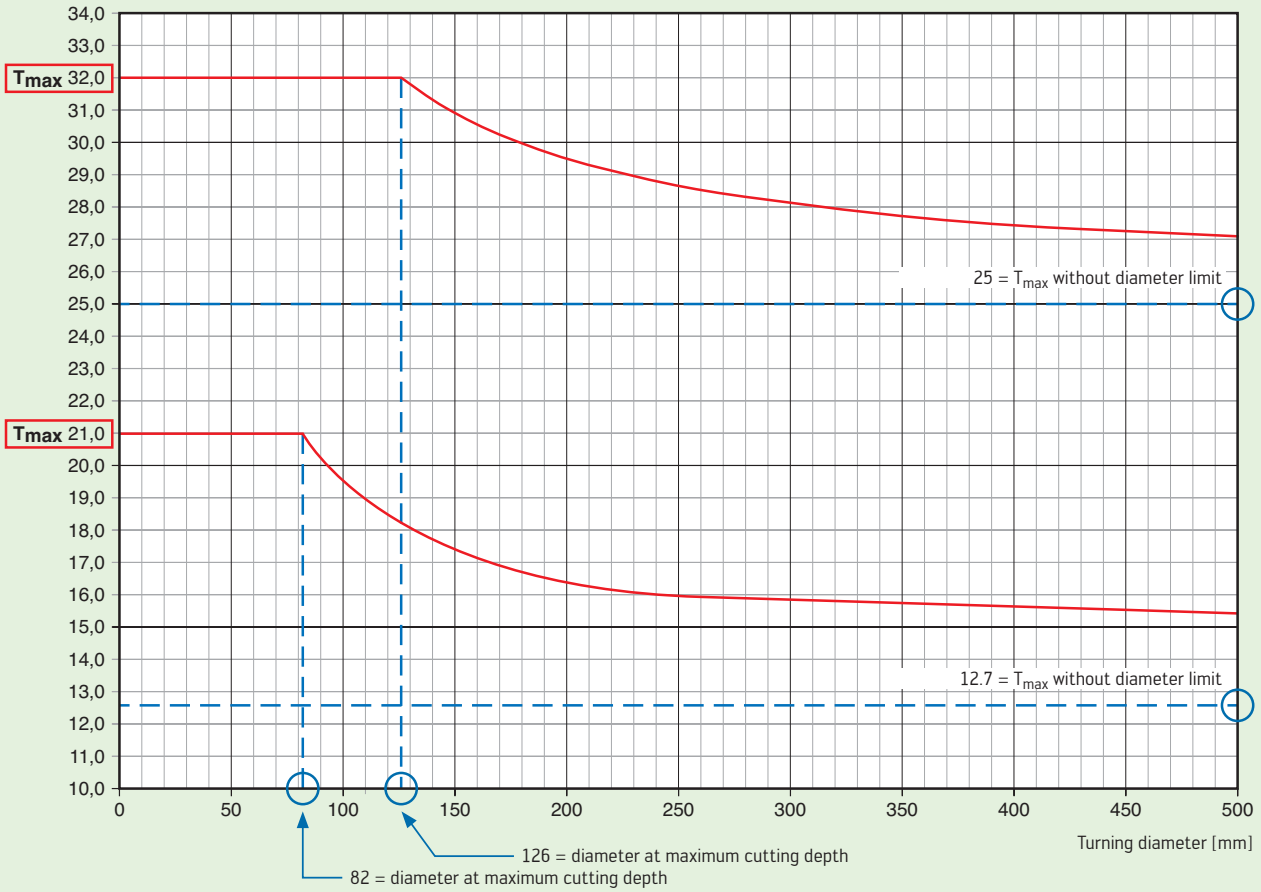
Module size MSS–E32 . . .

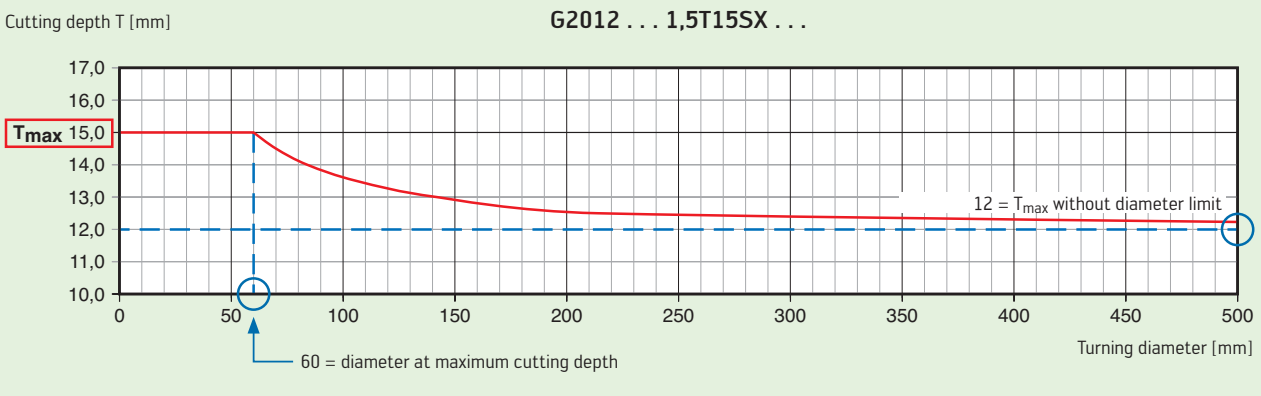


G1011-1616 . . . T21GX24 G1011-2020 . . . T21GX24

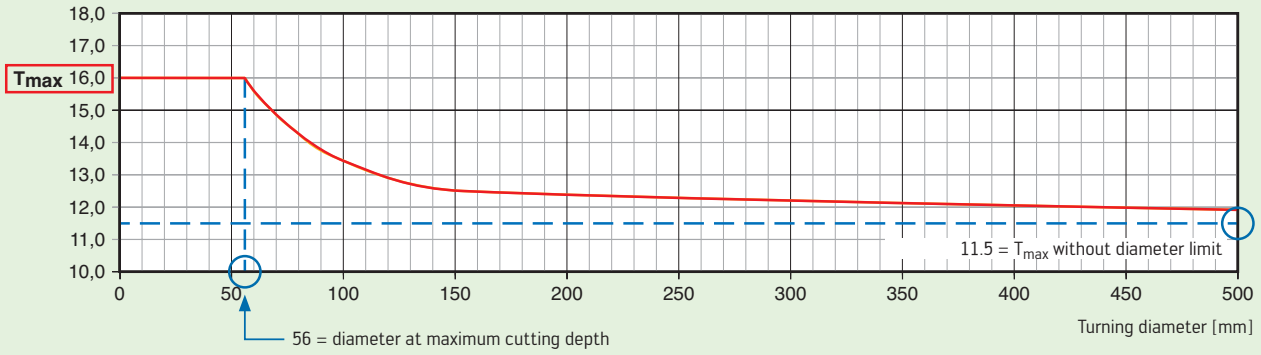


Application information:
Cutting depths depending on turning diameter (continued)

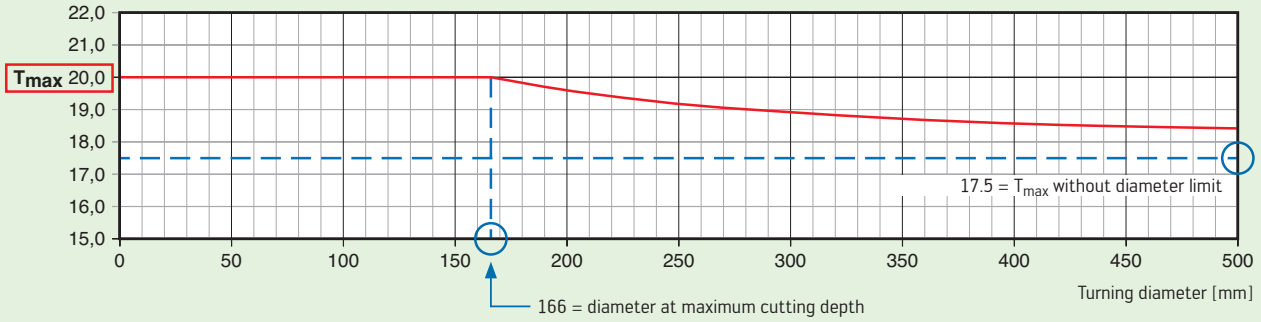




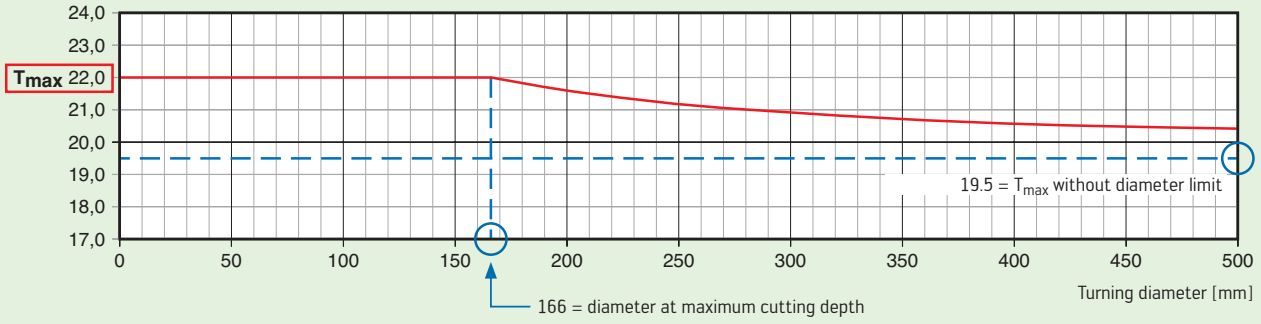
G2012 . . . T16SX . . .



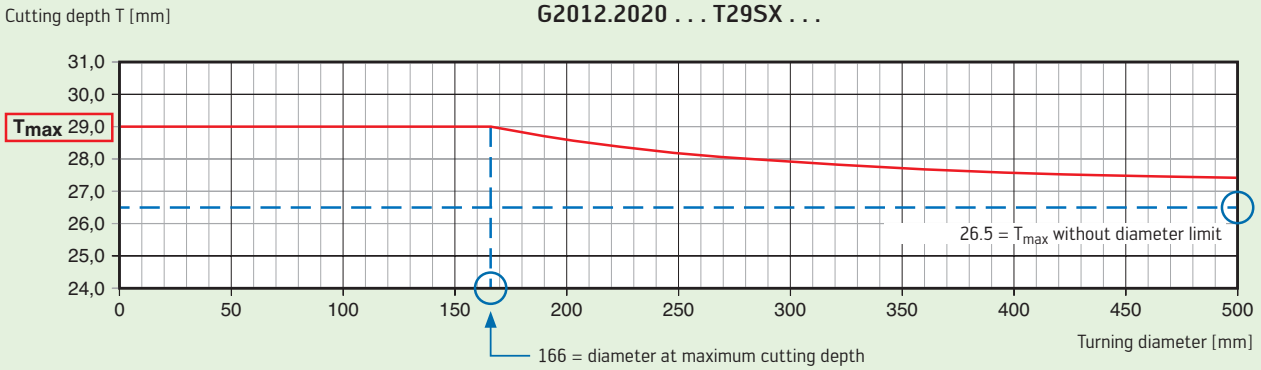
G2012.2020 . . . T20SX . . .

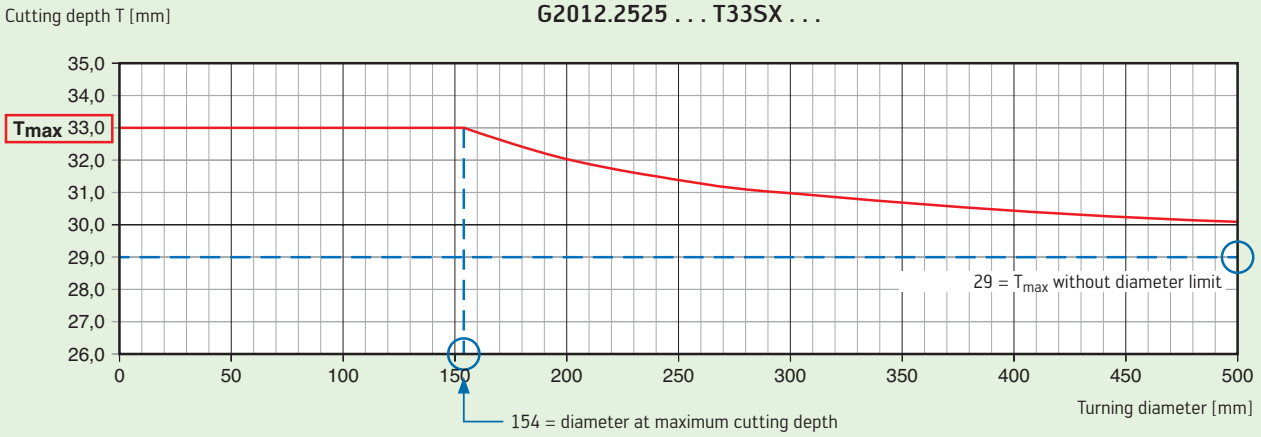


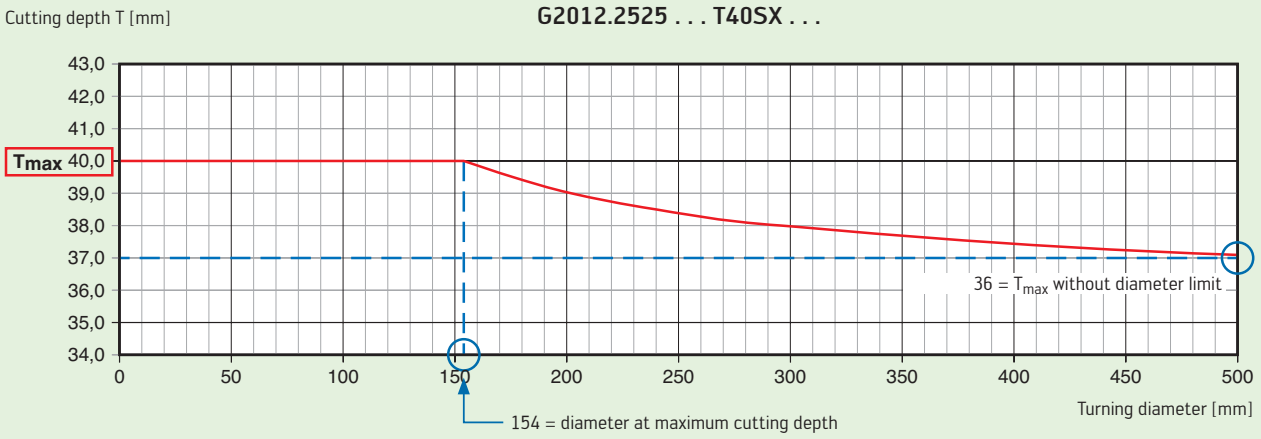
G2012.2020 . . . T22SX . . .



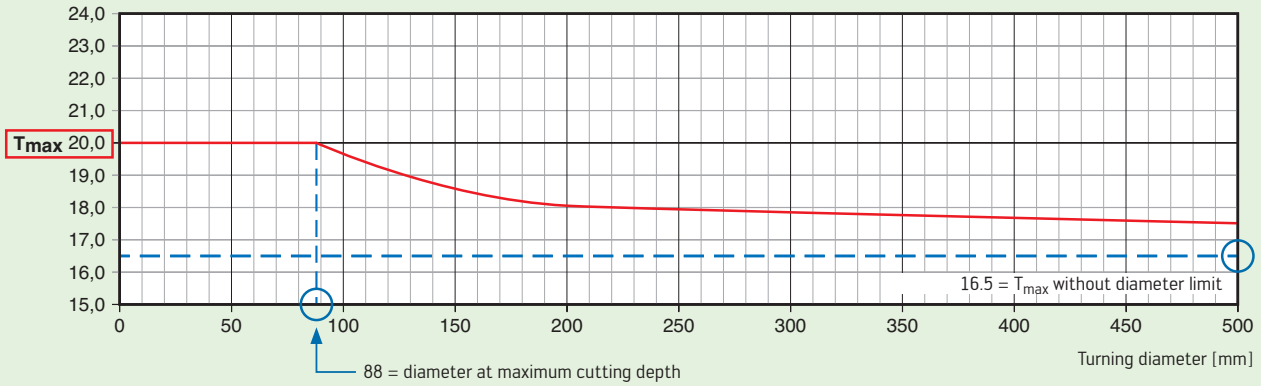
Application information:
Cutting depths depending on turning diameter (continued)



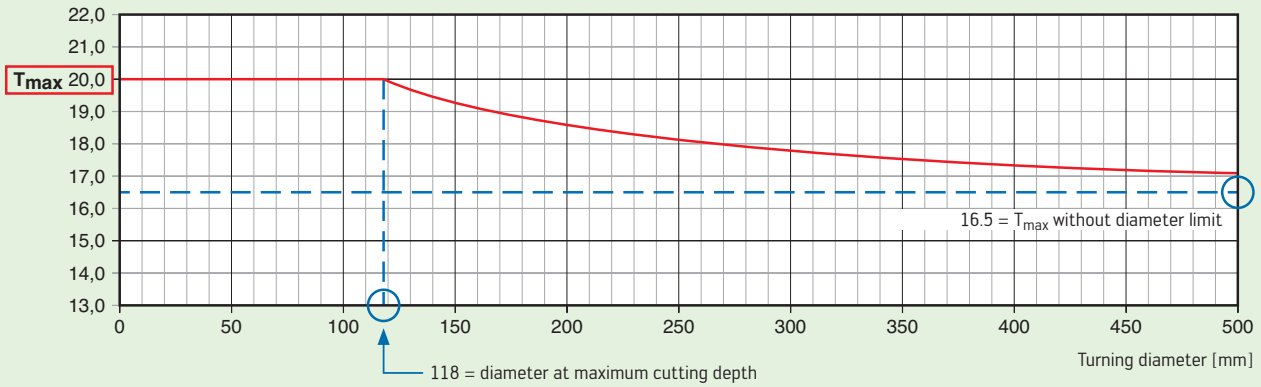




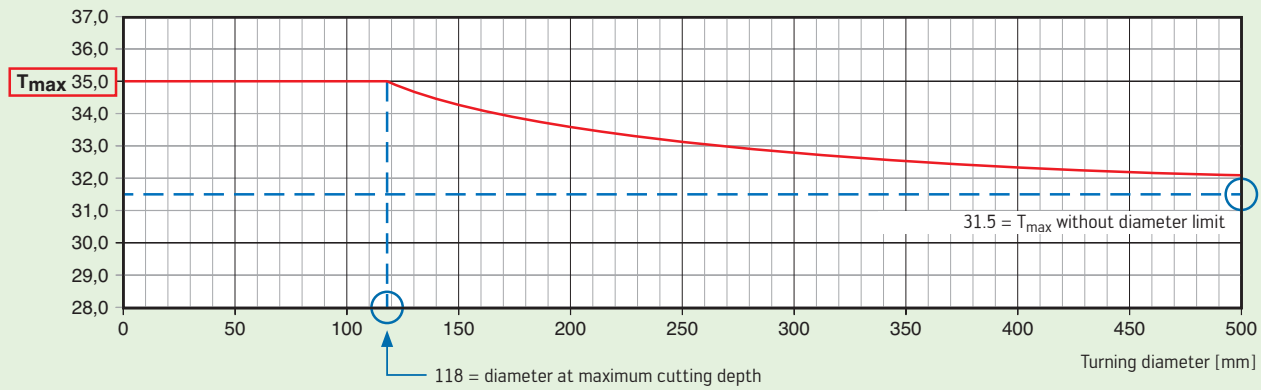
G2632-E20 . . . T20SX . . .



G2632-E25 . . . T20SX . . .

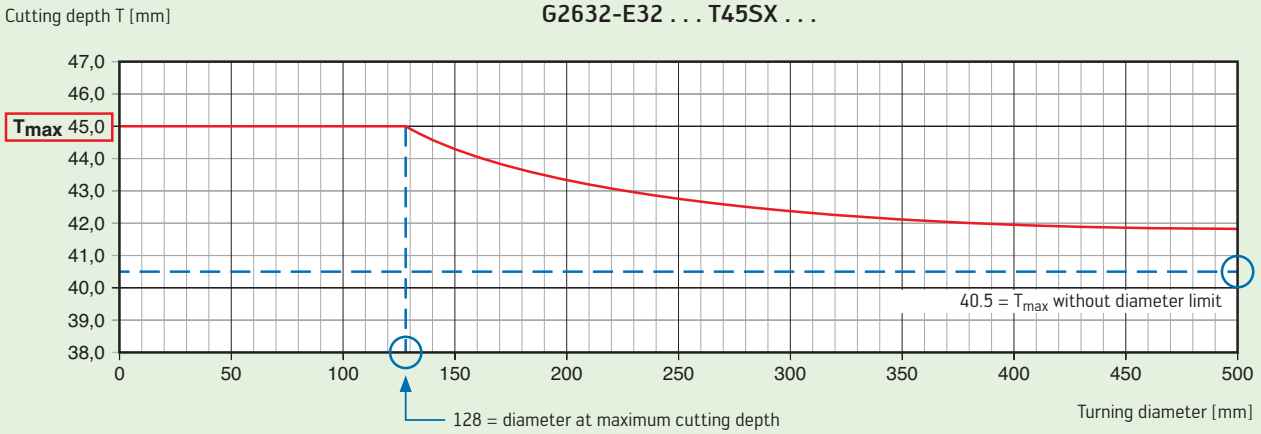


G2632-E25 . . . T35SX . . .



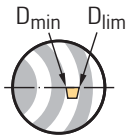
A2

Application information:
Cutting depths depending on turning diameter (continued)



Application information:
Diameter range when using the G1511/G1521 tools for axial grooving

Diameter range



Grooving insert width s [mm]	Minimum axial groove D_{lim} [mm]	
	GX16	GX24
2	112	120
2,5	92	240
3	81	65
4	75	62
5	63	51
6	53	43

$D_{min} = D_{lim} - 2 \times s$

Application information – Parting off

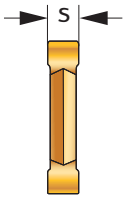
1. Basic principles

General

The most stable tool possible should always be selected. This prevents vibration and increases the tool life.

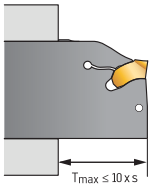
Insert width

The insert width selected should be as narrow as possible, but as wide as necessary.
Reducing the insert width reduces the cutting force and saves material.

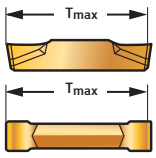


Cutting depth

1. The maximum cutting depth [T_{max}] of the tool and the maximum clamping length of the insert holder should not exceed 10 × cutting edge width [s].
   The smallest possible cutting depth should always be selected.

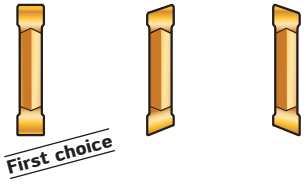


2. Double-edged Walter Cut GX indexable inserts are the most efficient option when the maximum cutting depth does not exceed the second cutting edge. At deeper cutting depths, single-edged Walter Cut SX cutting inserts are the first choice.



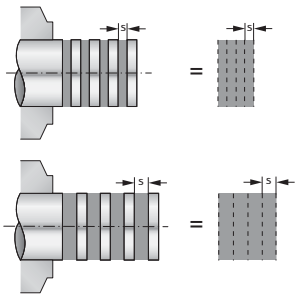
1. Use a neutral cutting edge where possible

- Improved chip formation
- Lower resultant cutting forces
- Longer tool life



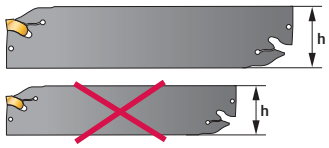
2. Use the smallest insert width possible

- Lower cutting force
- Reduced material consumption



3. Use the largest tool possible – in relation to the height of the support [h]

- Higher tool rigidity
- Reduced vibration
- Longer tool life



Effect of the approach angle on machining

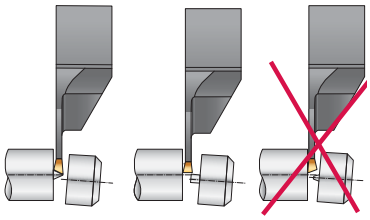
The design of the cutting inserts (right/left) can be determined by viewing the cutting edge from above, unlike the tools, which are viewed from the front instead.



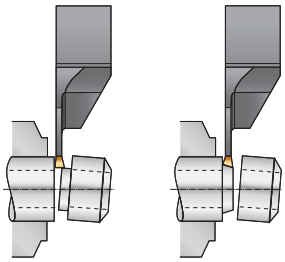
The following rule always applies:

Direction of rotation of the machine spindle:	
Clockwise	→ right cutting insert
Anticlockwise	→ left cutting insert

When parting off solid material, the use of inclined cutting inserts reduces the formation of residual pips on the component that has been parted off.



When parting off tubular material, the use of inclined cutting inserts prevents rings from forming. These rings could remain on the parted off component and interfere with the rest of the manufacturing process. It also leads to reduced burr formation.



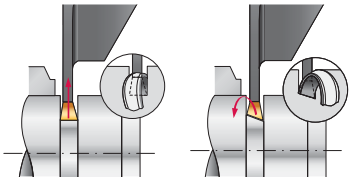
Note:
The use of inclined cutting inserts always has a negative effect on the cutting insert tool life. If possible, neutral cutting inserts should be used.

Application information – Parting off

1. Basic principles (continued)

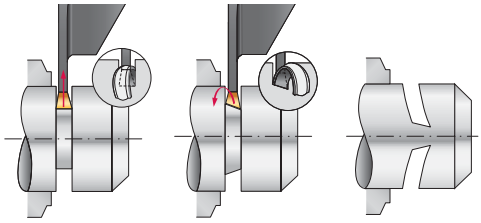
When inclined cutting inserts are used for parting off, the lead angle is likely to be detrimental to chip formation.

The chip rolls at 90° to the main cutting edge, preventing it from forming a watch spring shape (as with a neutral cutting insert), and instead causing it to form a helical shape.



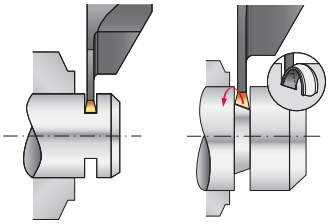
One option for guiding the chip is to interrupt cutting briefly once a cutting depth of 1-2 × s is reached.
Once cutting resumes, the chip flows in the existing groove.

The feed values must be reduced by approximately 30%, because the tool tends to run off-centre as a result of the axial force generated [F_n]. This can lead to vibration and convex parted off surfaces.



Effects on machining

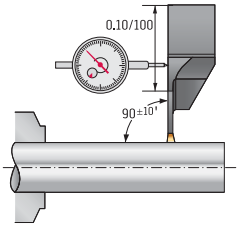
	Neutral cutting insert	Inclined cutting insert
Stability and tool life	good	poor
Radial cutting forces (positive)	high	low
Axial cutting forces (negative)	low	high
Residual pip/burr formation	large	small
Risk of vibration	low	high
Surface quality and flatness	good	poor
Chip flow	good	poor



2. User tips

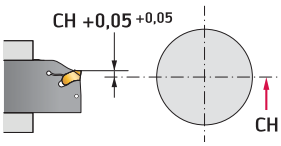
The tool must be aligned 90° to the axis of rotation

- Better face flatness
- Reduced vibration tendency



Checking the centre height

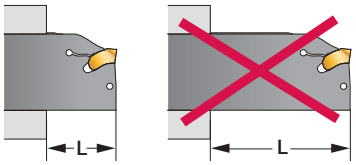
- Longer/more consistent tool life
- Reduced pip/burr formation



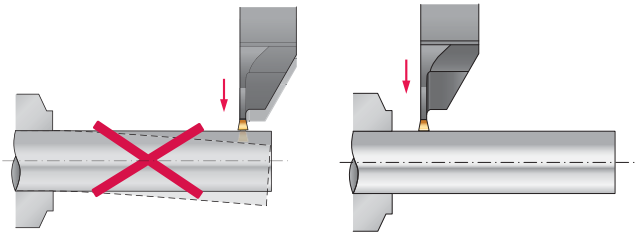
Note:
If the tool is positioned over or under centre, the effective cutting angles change during machining.

Mount the tool in the machine with the shortest possible overhang

- Better face flatness
- Reduced vibration tendency
- Improved tool life

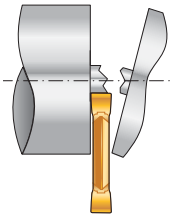


Clamp the workpiece at the shortest length possible



Reducing the feed

At a diameter of 1.5 × s mm or above, reduce the feed [f] by 75%, as the cutting speed directly in the centre is 0 m/min.
Do not groove past the centre, as there is a risk of fracture.
It is possible to groove past the centre to a maximum of corner radius +0.1 mm.



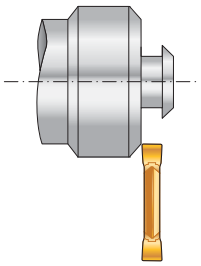
Example:
Corner radius 0.3 mm → x = -0.4 mm

Maintain a constant cutting speed with speed limitation (max. bar feeder speed).

2. User tips (continued)

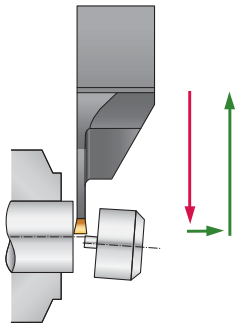
Grooving on inclined surfaces

When grooving on inclined surfaces, the feed over the inclined section must be reduced by approx. 20-50 % and a sharper geometry must be used (e.g. CF5).

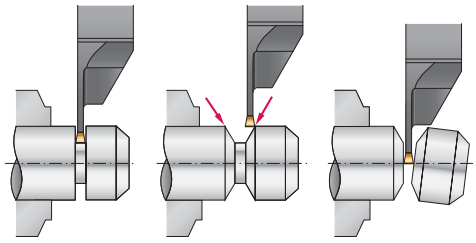


Retracting the tool

After parting off, do not retract the tool immediately. First, retract in the axial direction and then retract radially.



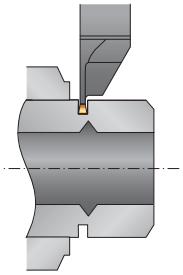
Chamfering and parting off



1. Pre-grooving 2. Chamfering 3. Parting off

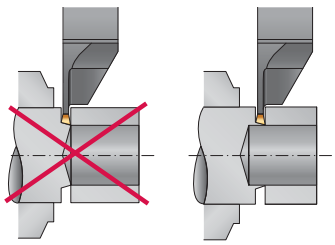
Internal chamfering before parting off

The peripheral cutting edges of the previous chamfering tool and then the parting off tool must be precisely aligned to achieve the most burr-free result possible.



Parting off to a drilled hole

The hole must be pre-drilled to be deep enough for the entire cutting edge width of the parting off tool to exit in the cylindrical section of the drilled hole.

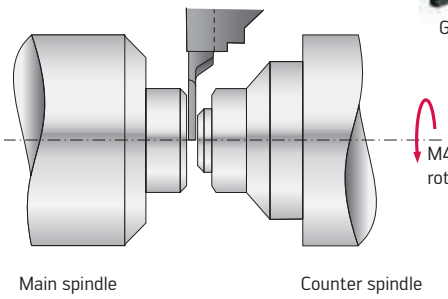


Application conditions: Reinforced blades

"Overhead" installation position Contra blade



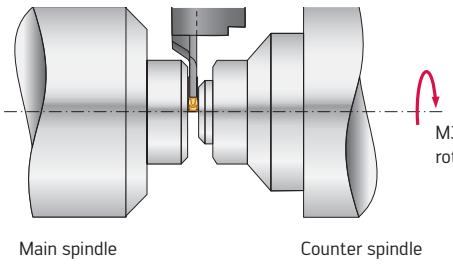
G2042 . 32 . R-3T33SX-C



"Normal" installation position



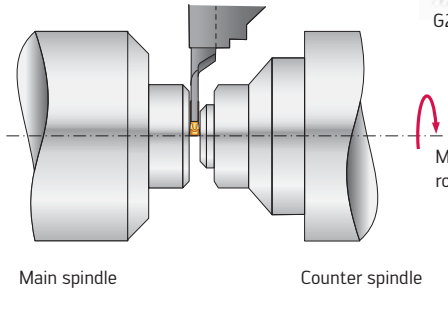
G2042 . 32 . R–3T33SX



"Normal" installation position Contra blade



G2042 . 32 . L–3T33SX–C



Application information – Parting off

3. Parting off fault analysis

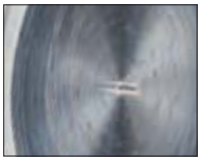
Large residual pip/burr
- Reduce the feed value by 50-75% at a diameter of 1.5 × s or above (s = cutting edge width)
- Use a cutting insert with a lead angle
- Use a narrower insert (reduction of cutting forces)
- Use a smaller corner radius
- Use a more positive geometry
- Check the centre height



Poor surface/vibration
- Use a more stable tool
- Clamp the tool at a shorter length
- Check whether the insert seat is damaged
- Use a more positive geometry
- Increase the feed



Damage caused by chips
- Use a chip formation with greater chip constriction
- Reduce the cutting speed
- Use a straight cutting insert
- Optimise the cooling
- Increase the feed



Poor chip formation
- Reduce the cutting speed
- Improve the cooling
- Check the chip formation
- Increase the feed



Poor face flatness
- Use a cutting insert with as small a lead angle as possible or no lead angle at all
- Use a tool with the shortest possible cutting depth
- Reduce the feed for cutting inserts with a lead angle
- Use a smaller corner radius
- Use a more positive geometry
- Align the tool

Chip formation when parting off
- Chip constriction prevents friction on the side walls of the tools and reduces chip accumulation
- Enables higher feed values
- No damage to parted off surfaces
- Chips are rolled up in a spiral shape and broken short, so that they can exit the groove more easily

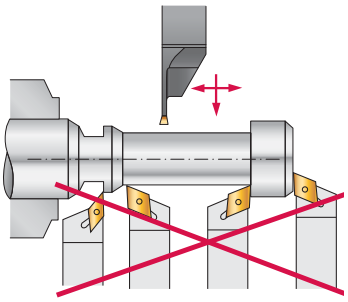
Application information – Grooving

1. Basic principles

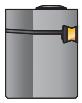
General

Using recessing tools enables machining steps to be consolidated and reduces the number of tools required.

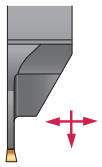
These tools are used in particular for machining between shoulders or when a limited number of tool spaces are available.



A precise positive-locking connection between the cutting insert and the insert seat enables both radial and axial forces to be absorbed.



This enables grooving and longitudinal turning operations when using special chip forming geometries.
The universal geometries are perfectly suited for this, e.g. UD4, UF4.



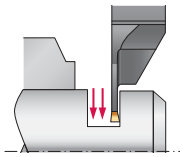
Production strategy

There are two different basic production strategies:
Grooving and recessing.

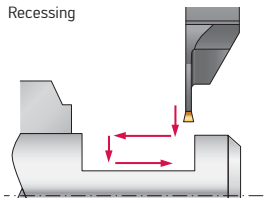
For **grooving**, the feed moves in only one direction.
Longitudinal turning with low material removal (approx. 0.1-0.3 mm) can only be carried out as a finishing operation.

Recessing is a combination of grooving and longitudinal turning movements.

Grooving



Recessing



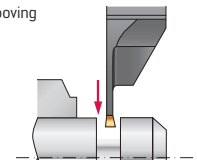
Grooving or recessing?

The machining strategy should be selected based on the shape and size of the groove to be produced. As a rule of thumb, the following criteria can be used to make a decision:

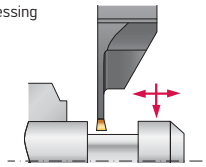
Grooving:
The groove depth is 1.5 times greater than the groove width.

Recessing:
The groove width is 1.5 times greater than the groove depth.

Grooving



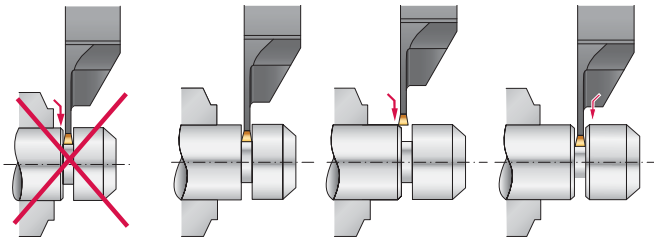
Recessing



2. User tips

Note:
For grooving, only one cutting edge is used.
This process also requires users to adhere to certain machining sequences, depending on the machining operation, to achieve an optimum result.

Producing a narrow groove with chamfer

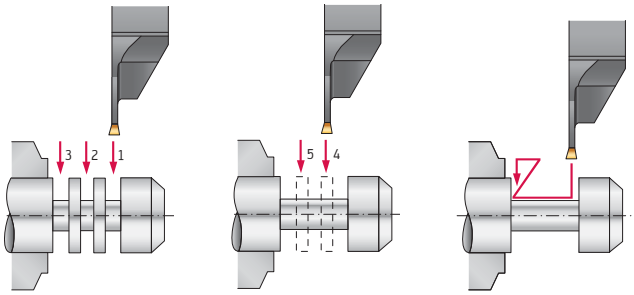


Grooving with 0.1 mm material removal on the diameter

Turn the chamfer and finish the first flank

Turn the chamfer and finish the second flank

Producing a wide groove by grooving



Pre-grooving
Web width = s - 2 × r

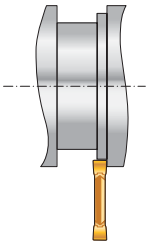
Pre-grooving

Finishing
$a_{p\ max}$ = r

s = cutting edge width/r = corner radius/$a_{p\ max}$ = max. depth of cut

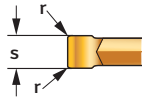
Lateral offset [s] – [r]

For laterally offset grooving, a universal "U" geometry should be used if possible. When doing so, it is important to ensure that the insert width is at least between $^{s}/_{2}$ and the cutting edge width of s – 1 × r.



$a_{p\ min}$: 0.5 × s
$a_{p\ max}$: s – r

Example:
s = 3.0 mm; r = 0.2 mm → $a_{p\ min}$: 1.5 mm
$a_{p\ max}$: 2.8 mm



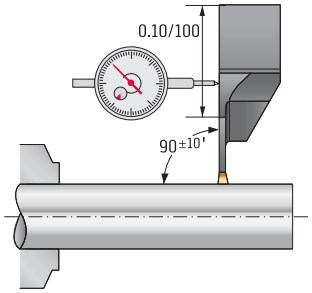
Application information – Recessing

1. Basic principles

A2

The tool must be aligned 90° to the axis of rotation.

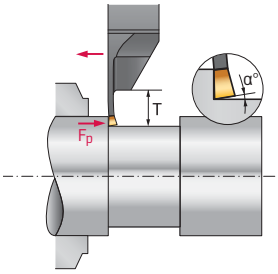
This is the only way to ensure that a clearance angle can be created when the tool is turned in both directions.
Poor tool alignment generates vibration and can lead to tool breakage.



Deflection

Deflection means the deformation of the cutting insert support caused by a force [F_p]. This deflection is required in order to generate an adjacent clearance angle [α] during the longitudinal turning operation.

The degree of deflection is influenced by multiple factors:
- Depth of cut [a_p]
- Feed [f]
- Cutting speed [v_c]
- Corner radius [r]
- Material to be machined
- Cutting depth of the tool [T]
- Width of the cutting insert support



Diameter compensation

The deflection produces different longitudinal ratios on the tool. In order to create an even diameter during a finishing operation, diameter compensation must take place when transitioning from the grooving movement to the longitudinal turning movement.

1 Pre-machine the component up to the finishing operation
2. Groove to the final diameter
3. Retract by 0.1 mm
4. Turn longitudinally
5. Measure the grooving diameter and longitudinal turning diameter and correct the retraction dimension (0.1 mm) by the difference in diameter.

Surface quality produced by recessing in comparison to ISO turning

A "Wiper effect" is generated by deflecting the cutting insert when recessing (see figure A).

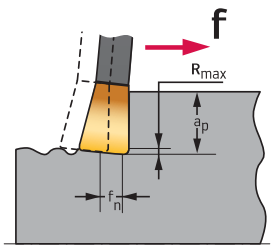


Fig. A

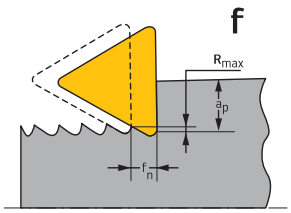
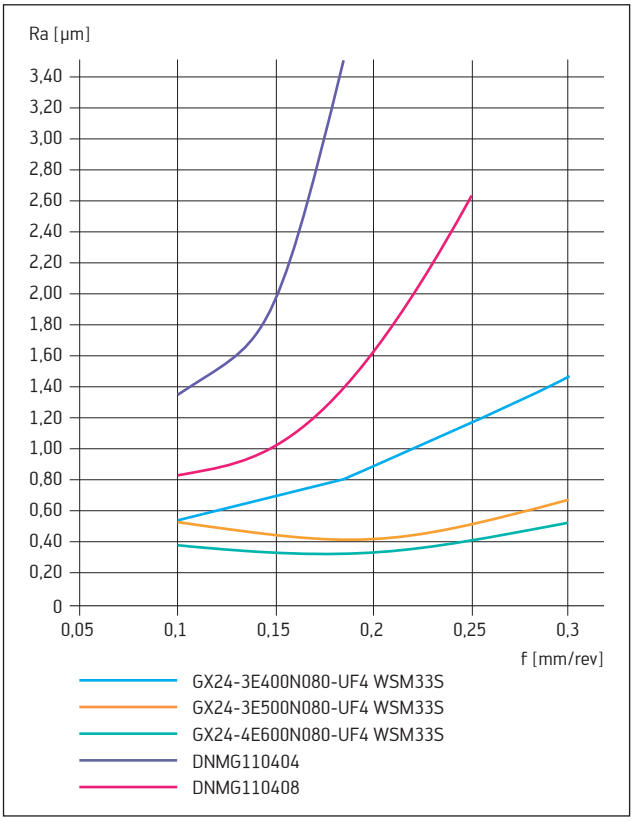


Fig. B

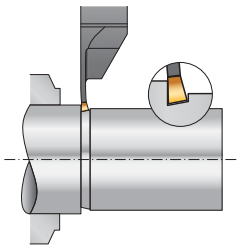
Comparison of surface quality produced by recessing and by ISO turning



2. User tips

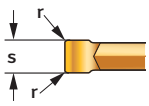
Recessing

In order to ensure a reliable machining process, certain movements must be adhered to.
For instance, a tool must not be subjected to strain in two directions at the same time. At all times, ensure that the strain on the cutting edge is relieved after grooving before starting the longitudinal turning operation. Transition from longitudinal turning to grooving applications requires the strain on the cutting edge to be relieved in the same way.



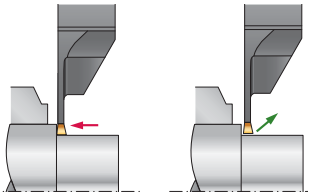
Rule of thumb for recessing:

f_{start}	$0.05 \times s$
f_{max}	$0.07 \times s$
$a_{p\ min}$	$r + 0.1$ mm
$a_{p\ max}$	$0.7 \times s$

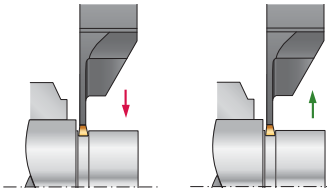


Machining sequence

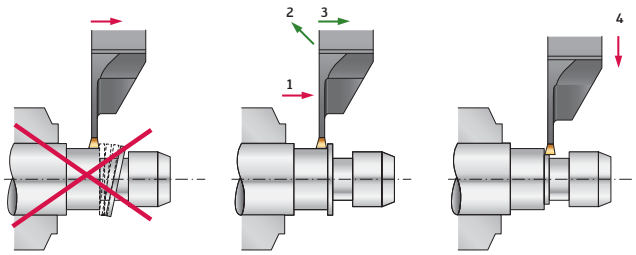
At the end of the longitudinal turning operation, retract in the opposite direction to the direction of feed and away from the machined diameter by at least 0.1 mm.
This enables the cutting edge to return to its original position.



The next grooving operation can now take place.
Before transitioning to the longitudinal turning operation at this point, it is necessary to retract again by approx. 0.1 mm.



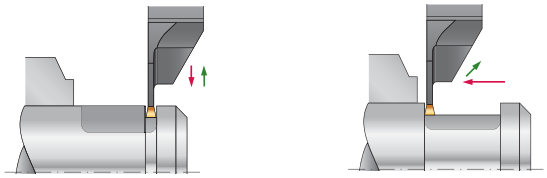
Preventing ring formation



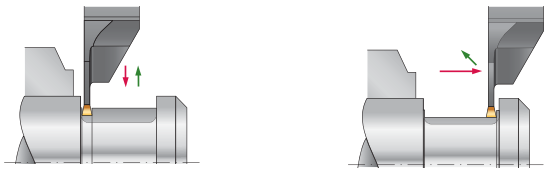
1. Turn longitudinally up to approx. 0.5-1.5 mm in front of the tool exit
2. Retract at an angle away from the corner
3. Position the tool above the ring
4. Remove the ring in the grooving operation

Producing a recess:

1. Roughing

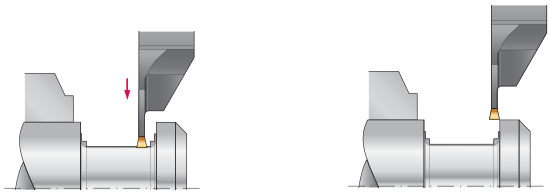


1. Grooving (a_p longitudinal turning)
2. Retract by 0.1 mm
3. Turn longitudinally
4. Retract by 0.1 mm in two directions

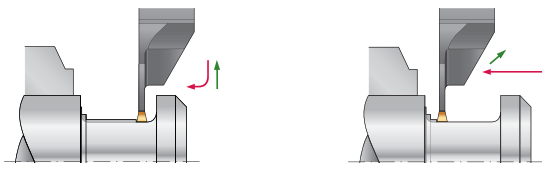


5. Grooving
6. Retract by 0.1 mm
7. Turn longitudinally to approximately 0.5 mm before the shoulder
8. Retract by 0.1 mm in two directions

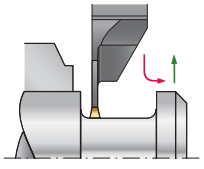
2. Finishing



1. Pre-groove at the radius tangent point to the required finished diameter



2. Finish the first shoulder and copy the radius
3. Retract by the diameter compensation dimension
4. Turn longitudinally up to the radius tangent point
5. Retract by 0.1 mm in two directions



6. Finish the second shoulder and copy the radius

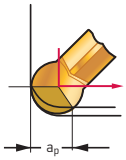
Application information – Recessing

A2

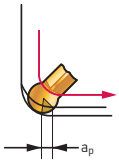
2. User tips (continued)

Preventing vibration during copy turning
- The radius of the indexable insert should always be smaller than the workpiece radius.
- Reduce the feed in the workpiece radius range by 50% in comparison to the longitudinal cut.

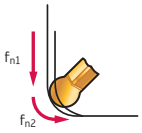
Insert radius = workpiece radius
Not recommended.

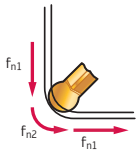


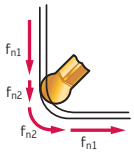
Insert radius < workpiece radius
Recommended.



f_{n1} = longitudinal cuts – max. chip thickness 0.15-0.40 mm
f_{n2} = radius machining – 50% max. chip thickness

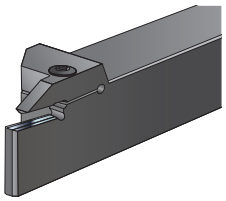




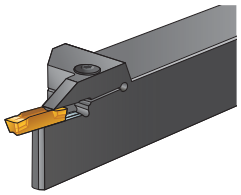


Tool use

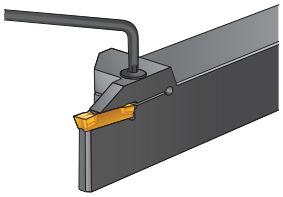
– Before inserting the cutting insert, it is important to check to ensure that the insert seat is free from dirt and damage.



– Insert the cutting insert along the prismatic surfaces and into the insert seat, and watch out for resistance.



– To tighten the clamping screw, use the screwdriver provided. We recommend using a **torque wrench**. The following values are recommended for this:

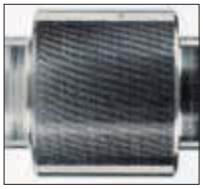


Torque wrench values

Tool	Tightening torque
G15 . .	5,0 Nm
G1011	5,0 Nm
G1111	4,0 Nm
G1041	3,5 Nm
XLDE	3,5 Nm

3. Recessing fault analysis

Vibration during turning
- Check tool alignment (see page A 416)
- Deflection of the cutting insert is too low (see page A 416)
- Use a narrower insert (deflects more sharply)
- Use a smaller corner radius
- Clamp the workpiece at a shorter length



Step in turning diameter
- Correct the retraction dimension before the finishing cut
- Ensure even material removal
- Check whether the insert seat is damaged
- Increase the cutting speed
- Use a more positive geometry



Damage caused by chips
- Use a chip formation with greater chip constriction
- Reduce the cutting speed
- Optimise the cooling



Ring formation
- Check the program sequence (see page A 417)



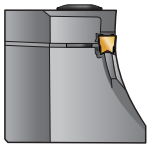
Poor chip formation
- Reduce the cutting speed
- Increase the feed
- Improve the cooling
- Check the chip formation



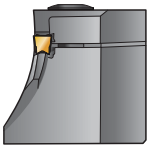
Application information – Axial grooving

Basic principles

Selecting a tool design



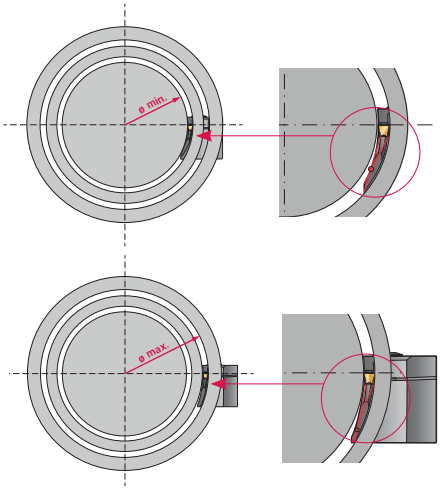
Right-hand tool



Left-hand tool

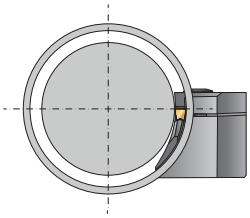
Select the largest possible diameter range for the first groove

Note:
The larger the diameter range of the first groove, the better the chip evacuation.

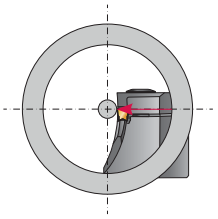


Expanding an axial groove

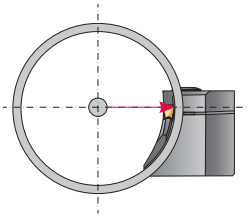
1. First groove on the largest possible diameter



2. Expanding inwards



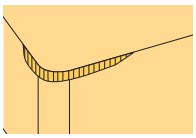
3. Expanding outwards



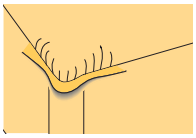
Grooving in general

Wear analysis

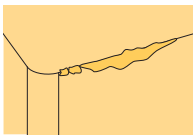
Flank face wear
– Use a more wear-resistant grade
– Reduce the cutting speed
– Improve the cooling



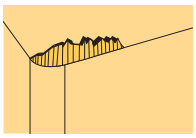
Plastic deformation
– Use a more wear-resistant grade
– Reduce the feed
– Optimise the cooling
– Reduce the cutting speed



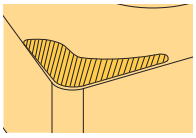
Fractures
– Use a tougher carbide grade
– Use a more stable tool
– Use a more stable geometry
– Use a wider cutting edge if necessary



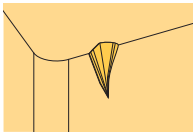
Built-up edge
– Increase the cutting speed
– Use a more positive geometry
– Optimise the cooling



Crater wear
– Reduce the cutting speed
– Use a more positive geometry
– Use a more wear-resistant grade
– Optimise the cooling



Notch or oxidation wear
– Reduce the cutting speed
– Reduce the feed

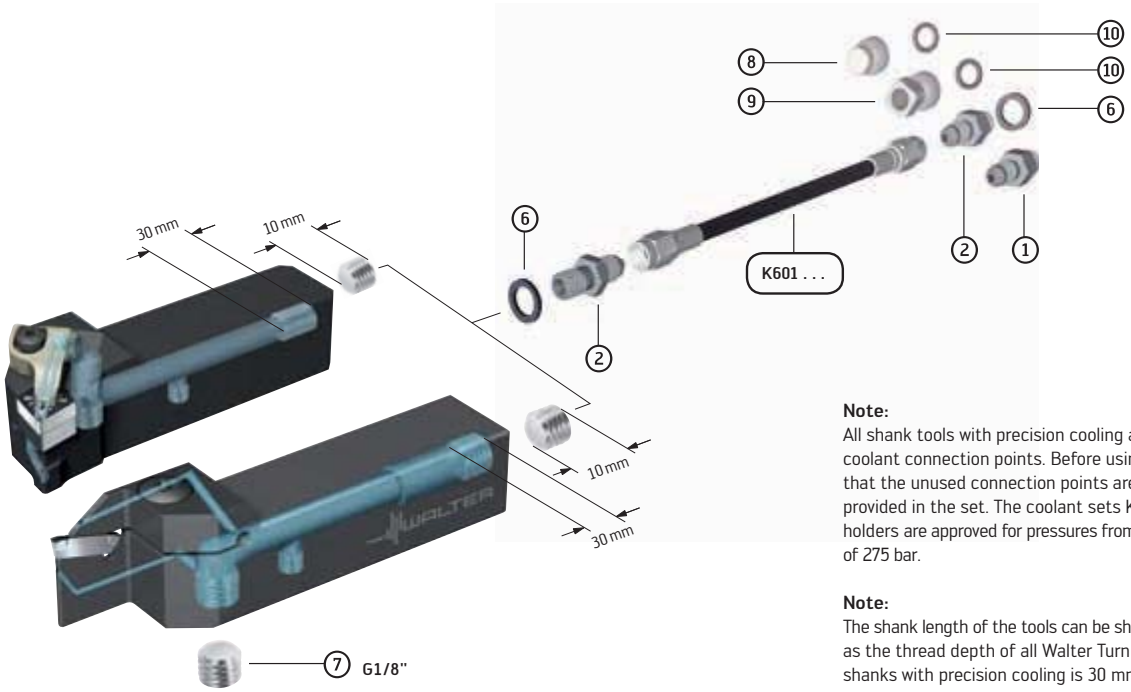


A2

Assembly parts and accessories
Coolant hose set for shank tools with precision cooling (-P)

Shank tools -P

A2



Note:
All shank tools with precision cooling are equipped with three coolant connection points. Before using the tools, ensure that the unused connection points are sealed with the screws provided in the set. The coolant sets K601 . . . for shank tool holders are approved for pressures from 10 bar to a maximum of 275 bar.

Note:
The shank length of the tools can be shortened by up to 20 mm, as the thread depth of all Walter Turn and Walter Cut square shanks with precision cooling is 30 mm.

Walter coolant hose set -P

Individual components			Designation	Length			
				150 mm	K601.01.150 SET	K601.02.150 SET	K601.03.150 SET
				250 mm	K601.01.250 SET	K601.02.250 SET	K601.03.250 SET
				300 mm	K601.01.300 SET	K601.02.300 SET	K601.03.300 SET
					Set contents		
①		M10 connection element	FS2252		1 ×	—	—
②		G1/8" double connection element	FS2253		2 ×	1 ×	—
③		G1/8" angle connection	FS2254		—	1 ×	2 ×
④		M10 angle connection	FS2255		—	1 ×	1 ×
⑤		G1/4"-G1/8" reducer	FS2256		—	1 ×	1 ×
⑥		Copper gasket	FS2257		2 ×	3 ×	4 ×
⑦		G1/8" screw	FS2258		1 ×	1 ×	1 ×
⑧		Brass blanking plug	FS2259		1 ×	1 ×	1 ×
⑨		G1/8" brass nozzle	FS2260		1 ×	1 ×	1 ×
⑩		O-ring	FS2261		2 ×	2 ×	2 ×

		Page
Indexable inserts	Product range overview	A 423
	Designation key	A 424
	Thread turning inserts – Partial profile	A 426
	Thread turning inserts – Full profile	A 428
Walter NTS threading tools	Product description	A 444
	Product range overview	A 445
	System overview	A 446
	Designation key	A 448
	Thread turning tools	A 450
Technical information	Cutting data	A 456
	Cutting tool material application charts	A 458
	Application information	A 459



Product range overview of indexable inserts and cutting tool materials: Thread turning

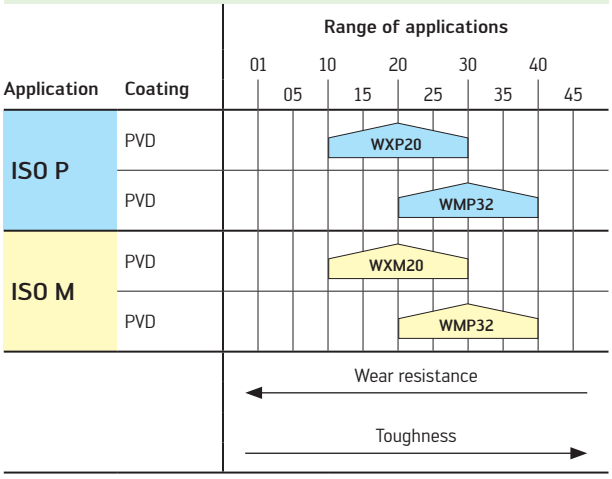





Indexable inserts

Application		Thread type	Machining	Page
Partial profile				
	General machining	55° partial profile	Internal thread	A 427
		60° partial profile	External thread Internal thread	A 426 A 426
Full profile				
	General machining	ISO metric 60°	External thread Internal thread	A 428 A 429
		American UN 60°	External thread Internal thread	A 430 A 431
	Aerospace	American UNJ 60°	External thread Internal thread	A 432 A 433
		Whitworth	External thread Internal thread	A 434 A 435
	Steam, gas and water lines	American NPTF	External thread Internal thread	A 436 A 437
		American NPT	External thread Internal thread	A 438 A 439
	Transmission thread with trapezoidal cross section	ACME	External thread Internal thread	A 440 A 441
		Stub ACME	External thread Internal thread	A 442 A 443

Cutting tool materials: Carbide



A 3

Designation key for thread turning inserts

Example:

NTS	–	E	R	–	16	0.50	ISO
Walter Thread System		1	2		3	4	5

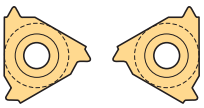
1 Machining

E	External thread
I	Internal thread

2 Insert design

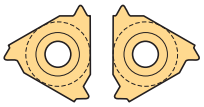
External thread

R L

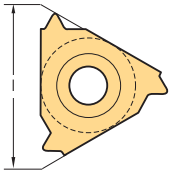


Internal thread

R L



3 Cutting edge length l



4 Pitch P



Full profile pitch range		
	[mm]	[Threads/ inch]
	0,35–12,0	72–2

Partial profile pitch range		
	[mm]	[Threads/ inch]
A	0,5–1,5	48–16
AG	0,5–3,0	48– 8
G	1,75–3,0	14–8
N	3,5–5,0	7–5
U	5,5–8,0	4½–3½
Q	5,5–6,0	4½–4
U	6,5–9,0	4–2¾
V	6,0–10,0	4–2½

5 Standard

55	Partial profile 55°
60	Partial profile 60°
ISO	ISO metric 60°
UN	American UN 60°
UNJ	American UNJ 60°
W	Whitworth
NPTF	NPTF
NPT	NPT
ACME	ACME
STACME	Stub ACME

Designation key
for carbide cutting tool materials – Thread turning

Example:

W	M	P	32
Walter	1	2	3

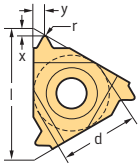
1
1. Primary application or coating type
P Steel
M Stainless steel
K Cast iron
N NF metals
S Materials with difficult cutting properties
H Hard materials
A CVD aluminium oxide coating
X PVD coating

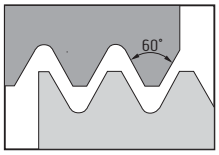
2
2. Primary application
P Steel
M Stainless steel
K Cast iron
N NF metals
S Materials with difficult cutting properties
H Hard materials

3		
ISO range of applications		
	Wear resistance	Cutting tool materials for:
01		**0** ISO turning
05		**1** ISO turning
10		**5** ISO turning
20		**2** Thread turning
21		**3** Grooving
23		
30		
32		
33		
43	Toughness	

A 3

External thread – Partial profile 60°
NTS thread turning inserts





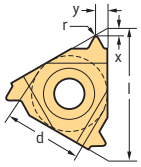
Thread turning inserts

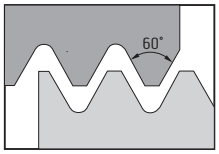
	Designation	Pitch (P) mm	Pitch (TPI) inches	l mm	d mm	r mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 AG60	0,50–3,0	48–8	16	9,525	0,08	1,2	1,7	●		●	
	NTS-ER/L-16 G60	1,75–3,0	14–8	16	9,525	0,27	1,2	1,7	●		●	
	NTS-ER/L-22 N60	3,50–5,0	7–5	22	12,7	0,53	1,7	2,5	●		●	

HC = Coated carbide

A3

Internal thread – Partial profile 60°
NTS thread turning inserts





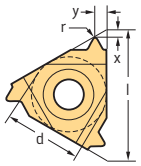
Thread turning inserts

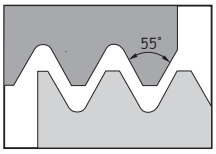
	Designation	Pitch (P) mm	Pitch (TPI) inches	l mm	d mm	r mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-11 A60	0,50–1,5	48–16	11	6,35	0,05	0,8	0,9		●		●
	NTS-IR/L-16 AG60	0,50–3,0	48–8	16	9,525	0,05	1,2	1,7	●		●	
	NTS-IR/L-16 G60	1,75–3,0	14–8	16	9,525	0,16	1,2	1,7	●		●	
	NTS-IR/L-22 N60	3,50–5,0	7–5	22	12,7	0,53	1,7	2,5	●		●	

HC = Coated carbide

A 456 A 458 A 445 A 445

Internal thread – Partial profile 55°
NTS thread turning inserts





Thread turning inserts

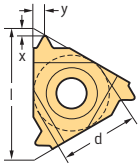
	Designation	Pitch (P) mm	Pitch (TPI) inches	l mm	d mm	r mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-11 A55	0,50–1,5	48–16	11	6,35	0,05	0,8	0,9		●		●

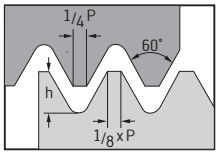
HC = Coated carbide

A 3

A 456 A 458 A 445 A 445

External – Full profile, ISO metric 60°
NTS thread turning inserts





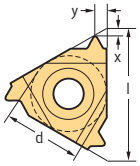
Thread turning inserts

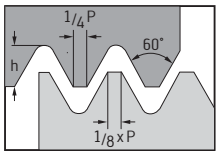
	Designation	Pitch (P) mm	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 0.50ISO	0,5	16	9,525	0,31	0,6	0,4	●		●	
	NTS-ER/L-16 0.60ISO	0,6	16	9,525	0,37	0,6	0,6	●		●	
	NTS-ER/L-16 0.70ISO	0,7	16	9,525	0,43	0,6	0,6	●		●	
	NTS-ER/L-16 0.75ISO	0,75	16	9,525	0,46	0,6	0,6	●		●	
	NTS-ER/L-16 0.80ISO	0,8	16	9,525	0,49	0,6	0,6	●		●	
	NTS-ER/L-16 1.00ISO	1	16	9,525	0,61	0,7	0,7	●		●	
	NTS-ER/L-16 1.25ISO	1,25	16	9,525	0,77	0,8	0,9	●		●	
	NTS-ER/L-16 1.50ISO	1,5	16	9,525	0,92	0,8	1	●		●	
	NTS-ER/L-16 1.75ISO	1,75	16	9,525	1,07	0,9	1,2	●		●	
	NTS-ER/L-16 2.00ISO	2	16	9,525	1,23	1	1,3	●		●	
	NTS-ER/L-16 2.50ISO	2,5	16	9,525	1,53	1,1	1,5	●		●	
	NTS-ER/L-16 3.00ISO	3	16	9,525	1,84	1,2	1,6	●		●	
	NTS-ER/L-22 3.50ISO	3,5	22	12,7	2,15	1,6	2,3	●		●	
	NTS-ER/L-22 4.00ISO	4	22	12,7	2,45	1,6	2,3	●		●	
	NTS-ER/L-22 4.50ISO	4,5	22	12,7	2,76	1,7	2,4	●		●	
	NTS-ER/L-22 5.00ISO	5	22	12,7	3,07	1,7	2,5	●		●	

HC = Coated carbide

A 456 A 458 A 445 A 445

Internal – Full profile, ISO metric 60°
NTS thread turning inserts





Thread turning inserts

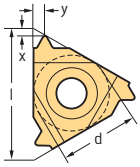
	Designation	Pitch (P) mm	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-11 0.75ISO	0,75	11	6,35	0,43	0,6	0,6		●		●
	NTS-IR/L-11 0.80ISO	0,8	11	6,35	0,46	0,6	0,6		●		●
	NTS-IR/L-11 1.00ISO	1	11	6,35	0,58	0,6	0,7		●		●
	NTS-IR/L-11 1.25ISO	1,25	11	6,35	0,72	0,8	0,9		●		●
	NTS-IR/L-11 1.50ISO	1,5	11	6,35	0,87	0,8	1		●		●
	NTS-IR/L-11 1.75ISO	1,75	11	6,35	1,01	0,9	1,1		●		●
	NTS-IR/L-11 2.00ISO	2	11	6,35	1,15	0,9	1,1		●		●
	NTS-IR/L-11 2.50ISO	2,5	11	6,35	1,44	0,8	1,1		●		●
	NTS-IR/L-16 0.50ISO	0,5	16	9,525	0,29	0,6	0,4	●		●	
	NTS-IR/L-16 0.60ISO	0,6	16	9,525	0,35	0,6	0,6	●		●	
	NTS-IR/L-16 0.70ISO	0,7	16	9,525	0,4	0,6	0,6	●		●	
	NTS-IR/L-16 0.75ISO	0,75	16	9,525	0,43	0,6	0,6	●		●	
	NTS-IR/L-16 0.80ISO	0,8	16	9,525	0,46	0,6	0,6	●		●	
	NTS-IR/L-16 1.00ISO	1	16	9,525	0,58	0,6	0,7	●		●	
	NTS-IR/L-16 1.25ISO	1,25	16	9,525	0,72	0,8	0,9	●		●	
	NTS-IR/L-16 1.50ISO	1,5	16	9,525	0,87	0,8	1	●		●	
	NTS-IR/L-16 1.75ISO	1,75	16	9,525	1,01	0,9	1,2	●		●	
	NTS-IR/L-16 2.00ISO	2	16	9,525	1,15	1	1,3	●		●	
	NTS-IR/L-16 2.50ISO	2,5	16	9,525	1,44	1,1	1,5	●		●	
	NTS-IR/L-16 3.00ISO	3	16	9,525	1,73	1,1	1,5	●		●	
	NTS-IR/L-22 3.50ISO	3,5	22	12,7	2,02	1,6	2,3	●		●	
	NTS-IR/L-22 4.00ISO	4	22	12,7	2,31	1,6	2,3	●		●	
	NTS-IR/L-22 4.50ISO	4,5	22	12,7	2,6	1,6	2,4	●		●	
	NTS-IR/L-22 5.00ISO	5	22	12,7	2,89	1,6	2,4	●		●	

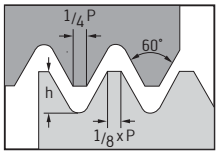
HC = Coated carbide

A3

A 456 A 458 A 445 A 445

External – Full profile, American UN 60°
NTS thread turning inserts





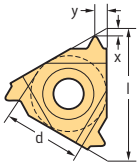
Thread turning inserts

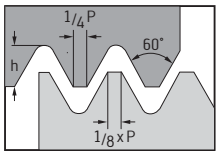
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 048UN	48	16	9,525	0,32	0,6	0,6	☺		☺	
	NTS-ER/L-16 044UN	44	16	9,525	0,35	0,6	0,6	☺		☺	
	NTS-ER/L-16 040UN	40	16	9,525	0,39	0,6	0,6	☺		☺	
	NTS-ER/L-16 036UN	36	16	9,525	0,43	0,6	0,6	☺		☺	
	NTS-ER/L-16 032UN	32	16	9,525	0,49	0,6	0,6	☺		☺	
	NTS-ER/L-16 028UN	28	16	9,525	0,56	0,6	0,7	☺		☺	
	NTS-ER/L-16 027UN	27	16	9,525	0,58	0,7	0,8	☺		☺	
	NTS-ER/L-16 024UN	24	16	9,525	0,65	0,7	0,8	☺		☺	
	NTS-ER/L-16 020UN	20	16	9,525	0,78	0,8	0,9	☺		☺	
	NTS-ER/L-16 018UN	18	16	9,525	0,87	0,8	1	☺		☺	
	NTS-ER/L-16 016UN	16	16	9,525	0,97	0,9	1,1	☺		☺	
	NTS-ER/L-16 014UN	14	16	9,525	1,11	1	1,2	☺		☺	
	NTS-ER/L-16 013UN	13	16	9,525	1,2	1	1,3	☺		☺	
	NTS-ER/L-16 012UN	12	16	9,525	1,3	1,1	1,4	☺		☺	
	NTS-ER/L-16 011UN	11	16	9,525	1,42	1,1	1,5	☺		☺	
	NTS-ER/L-16 010UN	10	16	9,525	1,56	1,1	1,5	☺		☺	
	NTS-ER/L-16 009UN	9	16	9,525	1,73	1,2	1,7	☺		☺	
	NTS-ER/L-16 008UN	8	16	9,525	1,95	1,2	1,6	☺		☺	
	NTS-ER/L-22 007UN	7	22	12,7	2,22	1,6	2,3	☺		☺	
	NTS-ER/L-22 006UN	6	22	12,7	2,6	1,6	2,3	☺		☺	
	NTS-ER/L-22 005UN	5	22	12,7	3,12	1,7	2,5	☺		☺	

HC = Coated carbide

A 456 A 458 A 445 A 445

Internal – Full profile, American UN 60°
NTS thread turning inserts





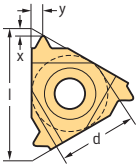
Thread turning inserts

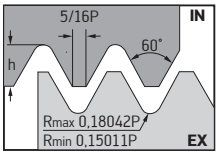
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-11 64UN	64	11	6,35	0,23	0,8	0,4		●		●
	NTS-IR/L-11 56UN	56	11	6,35	0,26	0,7	0,4		●		●
	NTS-IR/L-11 40UN	40	11	6,35	0,37	0,6	0,6		●		●
	NTS-IR/L-11 36UN	36	11	6,35	0,41	0,6	0,6		●		●
	NTS-IR/L-11 32UN	32	11	6,35	0,46	0,6	0,6		●		●
	NTS-IR/L-11 28UN	28	11	6,35	0,52	0,6	0,7		●		●
	NTS-IR/L-11 27UN	27	11	6,35	0,54	0,7	0,8		●		●
	NTS-IR/L-11 24UN	24	11	6,35	0,61	0,7	0,8		●		●
	NTS-IR/L-11 20UN	20	11	6,35	0,73	0,8	0,9		●		●
	NTS-IR/L-11 18UN	18	11	6,35	0,81	0,8	1		●		●
	NTS-IR/L-11 16UN	16	11	6,35	0,92	0,9	1,1		●		●
	NTS-IR/L-11 14UN	14	11	6,35	1,05	0,9	1,1		●		●
	NTS-IR/L-11 12UN	12	11	6,35	1,22	0,8	1,1		●		●
	NTS-IR/L-11 11UN	11	11	6,35	1,33	0,8	1,1		●		●
	NTS-IR/L-16 048UN	48	16	9,525	0,31	0,6	0,6	●		●	
	NTS-IR/L-16 044UN	44	16	9,525	0,33	0,6	0,6	●		●	
	NTS-IR/L-16 040UN	40	16	9,525	0,37	0,6	0,6	●		●	
	NTS-IR/L-16 036UN	36	16	9,525	0,41	0,6	0,6	●		●	
	NTS-IR/L-16 032UN	32	16	9,525	0,51	0,6	0,6	●		●	
	NTS-IR/L-16 028UN	28	16	9,525	0,52	0,6	0,7	●		●	
	NTS-IR/L-16 027UN	27	16	9,525	0,54	0,7	0,8	●		●	
	NTS-IR/L-16 024UN	24	16	9,525	0,61	0,7	0,8	●		●	
	NTS-IR/L-16 020UN	20	16	9,525	0,73	0,8	0,9	●		●	
	NTS-IR/L-16 018UN	18	16	9,525	0,81	0,8	1	●		●	
	NTS-IR/L-16 016UN	16	16	9,525	0,92	0,9	1,1	●		●	
	NTS-IR/L-16 014UN	14	16	9,525	1,05	0,9	1,2	●		●	
	NTS-IR/L-16 013UN	13	16	9,525	1,13	1	1,3	●		●	
	NTS-IR/L-16 012UN	12	16	9,525	1,22	1,1	1,4	●		●	
	NTS-IR/L-16 011UN	11	16	9,525	1,33	1,1	1,5	●		●	
	NTS-IR/L-16 010UN	10	16	9,525	1,47	1,1	1,5	●		●	
	NTS-IR/L-16 009UN	9	16	9,525	1,63	1,2	1,7	●		●	
	NTS-IR/L-16 008UN	8	16	9,525	1,83	1,1	1,5	●		●	
	NTS-IR/L-22 007UN	7	22	12,7	2,09	1,6	2,3	●		●	
	NTS-IR/L-22 006UN	6	22	12,7	2,44	1,6	2,3	●		●	
	NTS-IR/L-22 005UN	5	22	12,7	2,93	1,6	2,3	●		●	

HC = Coated carbide

A 456 A 458 A 445 A 445

External – Full profile, American UNJ 60°
NTS thread turning inserts





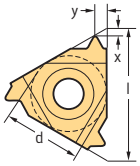
Thread turning inserts

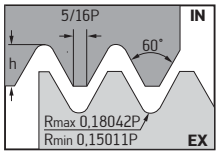
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 48UNJ	48	16	9,525	0,31	0,6	0,5	●		●	
	NTS-ER/L-16 44UNJ	44	16	9,525	0,33	0,6	0,6	●		●	
	NTS-ER/L-16 40UNJ	40	16	9,525	0,37	0,6	0,6	●		●	
	NTS-ER/L-16 36UNJ	36	16	9,525	0,41	0,6	0,6	●		●	
	NTS-ER/L-16 32UNJ	32	16	9,525	0,46	0,6	0,7	●		●	
	NTS-ER/L-16 28UNJ	28	16	9,525	0,52	0,7	0,7	●		●	
	NTS-ER/L-16 24UNJ	24	16	9,525	0,61	0,7	0,8	●		●	
	NTS-ER/L-16 20UNJ	20	16	9,525	0,73	0,8	0,9	●		●	
	NTS-ER/L-16 18UNJ	18	16	9,525	0,81	0,8	1	●		●	
	NTS-ER/L-16 16UNJ	16	16	9,525	0,92	0,9	1,1	●		●	
	NTS-ER/L-16 14UNJ	14	16	9,525	1,05	1	1,2	●		●	
	NTS-ER/L-16 13UNJ	13	16	9,525	1,13	1	1,3	●		●	
	NTS-ER/L-16 12UNJ	12	16	9,525	1,22	1,1	1,3	●		●	
	NTS-ER/L-16 11UNJ	11	16	9,525	1,33	1,2	1,5	●		●	
	NTS-ER/L-16 10UNJ	10	16	9,525	1,47	1,2	1,5	●		●	
	NTS-ER/L-16 9UNJ	9	16	9,525	1,63	1,3	1,7	●		●	
	NTS-ER/L-16 8UNJ	8	16	9,525	1,83	1,2	1,6	●		●	
	NTS-ER/L-22 7UNJ	7	22	12,7	2,09	1,7	2,3	●		●	
	NTS-ER/L-22 6UNJ	6	22	12,7	2,44	1,7	2,3	●		●	
	NTS-ER/L-22 5UNJ	5	22	12,7	2,93	1,8	2,5	●		●	

HC = Coated carbide

A 456 A 458 A 445 A 445

Internal – Full profile, American UNJ 60°
NTS thread turning inserts





Thread turning inserts

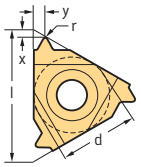
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-11 28UNJ	28	11	6,35	0,47	0,7	0,7		☺		☺
	NTS-IR/L-11 24UNJ	24	11	6,35	0,55	0,7	0,8		☺		☺
	NTS-IR/L-11 20UNJ	20	11	6,35	0,66	0,8	0,9		☺		☺
	NTS-IR/L-11 18UNJ	18	11	6,35	0,74	0,8	1		☺		☺
	NTS-IR/L-11 16UNJ	16	11	6,35	0,83	0,9	0,1		☺		☺
	NTS-IR/L-11 14UNJ	14	11	6,35	0,95	1	1,2		☺		☺
	NTS-IR/L-16 48UNJ	48	16	9,525	0,28	0,6	0,5	☺		☺	
	NTS-IR/L-16 44UNJ	44	16	9,525	0,3	0,6	0,6	☺		☺	
	NTS-IR/L-16 40UNJ	40	16	9,525	0,33	0,6	0,6	☺		☺	
	NTS-IR/L-16 36UNJ	36	16	9,525	0,37	0,6	0,6	☺		☺	
	NTS-IR/L-16 32UNJ	32	16	9,525	0,42	0,6	0,7	☺		☺	
	NTS-IR/L-16 28UNJ	28	16	9,525	0,47	0,7	0,7	☺		☺	
	NTS-IR/L-16 24UNJ	24	16	9,525	0,55	0,7	0,8	☺		☺	
	NTS-IR/L-16 20UNJ	20	16	9,525	0,66	0,8	0,9	☺		☺	
	NTS-IR/L-16 18UNJ	18	16	9,525	0,74	0,8	1	☺		☺	
	NTS-IR/L-16 16UNJ	16	16	9,525	0,83	0,9	1,1	☺		☺	
	NTS-IR/L-16 14UNJ	14	16	9,525	0,95	1	1,2	☺		☺	
	NTS-IR/L-16 13UNJ	13	16	9,525	1,02	1	1,3	☺		☺	
	NTS-IR/L-16 12UNJ	12	16	9,525	1,11	1,1	1,3	☺		☺	
	NTS-IR/L-16 11UNJ	11	16	9,525	1,21	1,2	1,5	☺		☺	
	NTS-IR/L-16 10UNJ	10	16	9,525	1,33	1,2	1,5	☺		☺	
	NTS-IR/L-16 9UNJ	9	16	9,525	1,48	1,3	1,7	☺		☺	
	NTS-IR/L-16 8UNJ	8	16	9,525	1,66	1,2	1,6	☺		☺	
	NTS-IR/L-22 7UNJ	7	22	12,7	1,9	1,7	2,3	☺		☺	
	NTS-IR/L-22 6UNJ	6	22	12,7	2,21	1,7	2,3	☺		☺	
	NTS-IR/L-22 5UNJ	5	22	12,7	2,66	1,8	2,5	☺		☺	

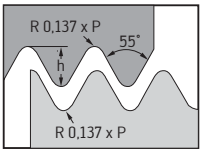
HC = Coated carbide

A3

A 456 A 458 A 445 A 445

External – Full profile, Whitworth
NTS thread turning inserts





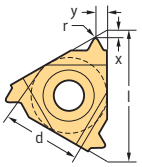
Thread turning inserts

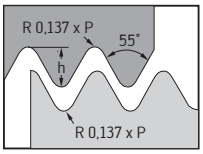
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 048W	48	16	9,525	0,34	0,6	0,6	☺		☺	
	NTS-ER/L-16 040W	40	16	9,525	0,41	0,6	0,6	☺		☺	
	NTS-ER/L-16 036W	36	16	9,525	0,45	0,6	0,6	☺		☺	
	NTS-ER/L-16 032W	32	16	9,525	0,51	0,6	0,6	☺		☺	
	NTS-ER/L-16 028W	28	16	9,525	0,58	0,6	0,7	☺		☺	
	NTS-ER/L-16 026W	26	16	9,525	0,63	0,7	0,8	☺		☺	
	NTS-ER/L-16 024W	24	16	9,525	0,68	0,7	0,8	☺		☺	
	NTS-ER/L-16 022W	22	16	9,525	0,74	0,8	0,9	☺		☺	
	NTS-ER/L-16 020W	20	16	9,525	0,81	0,8	0,9	☺		☺	
	NTS-ER/L-16 019W	19	16	9,525	0,86	0,8	1	☺		☺	
	NTS-ER/L-16 018W	18	16	9,525	0,9	0,8	1	☺		☺	
	NTS-ER/L-16 016W	16	16	9,525	1,02	0,9	1,1	☺		☺	
	NTS-ER/L-16 014W	14	16	9,525	1,16	1	1,2	☺		☺	
	NTS-ER/L-16 012W	12	16	9,525	1,36	1,1	1,4	☺		☺	
	NTS-ER/L-16 011W	11	16	9,525	1,48	1,1	1,5	☺		☺	
	NTS-ER/L-16 010W	10	16	9,525	1,63	1,1	1,5	☺		☺	
	NTS-ER/L-16 009W	9	16	9,525	1,81	1,2	1,7	☺		☺	
	NTS-ER/L-16 008W	8	16	9,525	2,03	1,2	1,5	☺		☺	
	NTS-ER/L-22 007W	7	22	12,7	2,32	1,6	2,3	☺		☺	
	NTS-ER/L-22 006W	6	22	12,7	2,71	1,6	2,3	☺		☺	
	NTS-ER/L-22 005W	5	22	12,7	3,25	1,7	2,4	☺		☺	

HC = Coated carbide

A 456 A 458 A 445 A 445

Internal – Full profile, Whitworth
NTS thread turning inserts





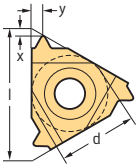
Thread turning inserts

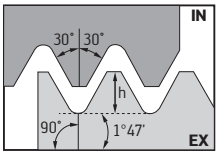
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-11 48W	48	11	6,35	0,34	0,6	0,6		☺		☺
	NTS-IR/L-11 36W	36	11	6,35	0,45	0,6	0,6		☺		☺
	NTS-IR/L-11 32W	32	11	6,35	0,51	0,6	0,6		☺		☺
	NTS-IR/L-11 26W	26	11	6,35	0,63	0,7	0,8		☺		☺
	NTS-IR/L-11 24W	24	11	6,35	0,68	0,7	0,8		☺		☺
	NTS-IR/L-11 22W	22	11	6,35	0,74	0,8	0,9		☺		☺
	NTS-IR/L-11 20W	20	11	6,35	0,81	0,8	0,9		☺		☺
	NTS-IR/L-11 19W	19	11	6,35	0,86	0,8	1		☺		☺
	NTS-IR/L-11 18W	18	11	6,35	0,9	0,8	1		☺		☺
	NTS-IR/L-11 16W	16	11	6,35	1,02	0,9	1,1		☺		☺
	NTS-IR/L-11 14W	14	11	6,35	1,16	0,9	1,1		☺		☺
	NTS-IR/L-11 12W	12	11	6,35	1,32	0,9	1,2		☺		☺
	NTS-IR/L-16 048W	48	16	9,525	0,34	0,6	0,6	☺		☺	
	NTS-IR/L-16 040W	40	16	9,525	0,41	0,6	0,6	☺		☺	
	NTS-IR/L-16 036W	36	16	9,525	0,45	0,6	0,6	☺		☺	
	NTS-IR/L-16 032W	32	16	9,525	0,51	0,6	0,6	☺		☺	
	NTS-IR/L-16 028W	28	16	9,525	0,58	0,6	0,7	☺		☺	
	NTS-IR/L-16 026W	26	16	9,525	0,63	0,7	0,8	☺		☺	
	NTS-IR/L-16 024W	24	16	9,525	0,68	0,7	0,8	☺		☺	
	NTS-IR/L-16 022W	22	16	9,525	0,74	0,8	0,9	☺		☺	
	NTS-IR/L-16 020W	20	16	9,525	0,81	0,8	0,9	☺		☺	
	NTS-IR/L-16 019W	19	16	9,525	0,86	0,8	1	☺		☺	
	NTS-IR/L-16 018W	18	16	9,525	0,9	0,8	1	☺		☺	
	NTS-IR/L-16 016W	16	16	9,525	1,02	0,9	1,1	☺		☺	
	NTS-IR/L-16 014W	14	16	9,525	1,16	1	1,2	☺		☺	
	NTS-IR/L-16 012W	12	16	9,525	1,36	1,1	1,4	☺		☺	
	NTS-IR/L-16 011W	11	16	9,525	1,48	1,1	1,5	☺		☺	
	NTS-IR/L-16 010W	10	16	9,525	1,63	1,1	1,5	☺		☺	
	NTS-IR/L-16 009W	9	16	9,525	1,81	1,2	1,7	☺		☺	
	NTS-IR/L-16 008W	8	16	9,525	2,03	1,2	1,5	☺		☺	
	NTS-IR/L-22 007W	7	22	12,7	2,32	1,6	2,3	☺		☺	
	NTS-IR/L-22 006W	6	22	12,7	2,71	1,6	2,3	☺		☺	
	NTS-IR/L-22 005W	5	22	12,7	3,25	1,7	2,4	☺		☺	

HC = Coated carbide

A 456 A 458 A 445 A 445

External – Full profile, American NPTF
NTS thread turning inserts inch





Thread turning inserts

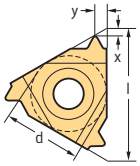
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 27NPTF	27	16	9,525	0,64	0,7	0,8	●		●	
	NTS-ER/L-16 18NPTF	18	16	9,525	1	0,8	1	●		●	
	NTS-ER/L-16 14NPTF	14	16	9,525	1,35	0,9	1,2	●		●	
	NTS-ER/L-16 11.5NPTF	11,5	16	9,525	1,63	1,1	1,5	●		●	
	NTS-ER/L-16 08NPTF	8	16	9,525	2,38	1,3	1,8	●		●	

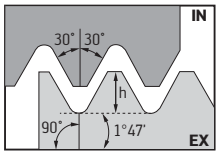
HC = Coated carbide

A 3

A 456 A 458 A 445 A 445

Internal – Full profile, American NPTF
NTS thread turning inserts inch





Thread turning inserts

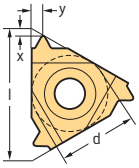
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-16 27NPTF	27	16	9,525	0,64	0,7	0,8	●		●	
	NTS-IR/L-16 18NPTF	18	16	9,525	1	0,8	1	●		●	
	NTS-IR/L-16 14NPTF	14	16	9,525	1,35	0,9	1,2	●		●	
	NTS-IR/L-16 11.5NPTF	11,5	16	9,525	1,63	1,1	1,5	●		●	
	NTS-IR/L-16 08NPTF	8	16	9,525	2,38	1,3	1,8	●		●	

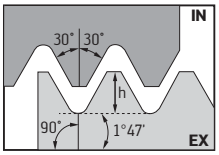
HC = Coated carbide

A3

A 456 A 458 A 445 A 445

External – Full profile, American NPT
NTS thread turning inserts inch





Thread turning inserts

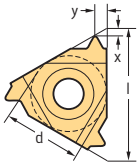
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 27NPT	27	16	9,525	0,66	0,7	0,8	●		●	
	NTS-ER/L-16 18NPT	18	16	9,525	1,01	0,8	1	●		●	
	NTS-ER/L-16 14NPT	14	16	9,525	1,33	0,9	1,2	●		●	
	NTS-ER/L-16 11.5NPT	11,5	16	9,525	1,64	1,1	1,5	●		●	
	NTS-ER/L-16 08NPT	8	16	9,525	2,42	1,3	1,8	●		●	

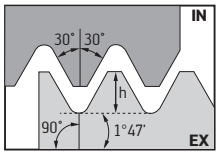
HC = Coated carbide

A 3

A 456 A 458 A 445 A 445

Internal – Full profile, American NPT
NTS thread turning inserts inch





Thread turning inserts

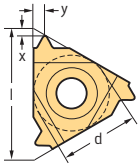
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-16 27NPT	27	16	9,525	0,66	0,7	0,8	☺		☹	
	NTS-IR/L-16 18NPT	18	16	9,525	1,01	0,8	1	☺		☹	
	NTS-IR/L-16 14NPT	14	16	9,525	1,33	0,9	1,2	☺		☹	
	NTS-IR/L-16 11.5NPT	11,5	16	9,525	1,64	1,1	1,5	☺		☹	
	NTS-IR/L-16 08NPT	8	16	9,525	2,42	1,3	1,8	☺		☹	

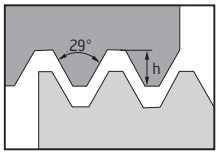
HC = Coated carbide

A3

A 456 A 458 A 445 A 445

External – Full profile, ACME
NTS thread turning inserts inch





Thread turning inserts

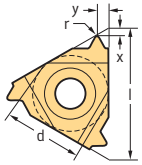
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 16ACME	16	16	9,525	0,92	1	1,1	☺		☺	
	NTS-ER/L-16 14ACME	14	16	9,525	1,03	1	1,2	☺		☺	
	NTS-ER/L-16 12ACME	12	16	9,525	1,19	1,1	1,2	☺		☺	
	NTS-ER/L-16 10ACME	10	16	9,525	1,52	1,3	1,4	☺		☺	
	NTS-ER/L-16 8ACME	8	16	9,525	1,84	1,4	1,5	☺		☺	
	NTS-ER/L-22 6ACME	6	22	12,7	2,37	1,8	2,1	☺		☺	
	NTS-ER/L-22 5ACME	5	22	12,7	2,79	2	2,3	☺		☺	

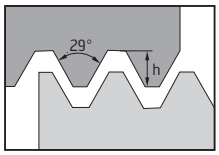
HC = Coated carbide

A 3

A 456 A 458 A 445 A 445

Internal – Full profile, ACME
NTS thread turning inserts inch





Thread turning inserts

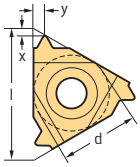
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-16 16ACME	16	16	9,525	0,92	1	1,1	●		●	
	NTS-IR/L-16 14ACME	14	16	9,525	1,03	1,1	1,2	●		●	
	NTS-IR/L-16 12ACME	12	16	9,525	1,19	1,2	1,3	●		●	
	NTS-IR/L-16 10ACME	10	16	9,525	1,52	1,2	1,3	●		●	
	NTS-IR/L-16 8ACME	8	16	9,525	1,84	1,4	1,5	●		●	
	NTS-IR/L-22 6ACME	6	22	12,7	2,37	1,8	2,1	●		●	
	NTS-IR/L-22 5ACME	5	22	12,7	2,79	2	2,3	●		●	

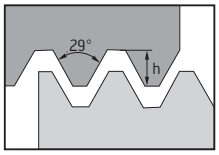
HC = Coated carbide

A3

A 456 A 458 A 445 A 445

External – Full profile, stub ACME
NTS thread turning inserts inch





Thread turning inserts

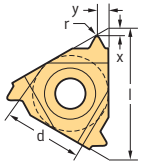
	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-ER/L-16 16STACME	16	16	9,525	0,6	1	1	☺		☺	
	NTS-ER/L-16 14STACME	14	16	9,525	0,67	1,1	1,1	☺		☺	
	NTS-ER/L-16 12STACME	12	16	9,525	0,76	1,2	1,2	☺		☺	
	NTS-ER/L-16 10STACME	10	16	9,525	1,02	1,2	1,3	☺		☺	
	NTS-ER/L-16 8STACME	8	16	9,525	1,21	1,4	1,5	☺		☺	
	NTS-ER/L-16 6STACME	6	16	9,525	1,52	1,7	1,8	☺		☺	
	NTS-ER/L-22 5STACME	5	22	12,7	1,78	2,1	2,3	☺		☺	

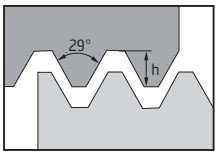
HC = Coated carbide

A 3

A 456 A 458 A 445 A 445

Internal – Full profile, stub ACME
NTS thread turning inserts inch





Thread turning inserts

	Designation	Pitch (TPI) inches	l mm	d mm	h_{min} mm	X mm	Y mm	P HC WXP20	P HC WMP32	M HC WXM20	M HC WMP32
	NTS-IR/L-16 16STACME	16	16	9,525	0,6	1	1	☺		☹	
	NTS-IR/L-16 14STACME	14	16	9,525	0,67	1,1	1,1	☺		☹	
	NTS-IR/L-16 12STACME	12	16	9,525	0,76	1,1	1,2	☺		☹	
	NTS-IR/L-16 10STACME	10	16	9,525	1,02	1,2	1,3	☺		☹	
	NTS-IR/L-16 8STACME	8	16	9,525	1,21	1,4	1,5	☺		☹	
	NTS-IR/L-16 6STACME	6	16	9,525	1,52	1,7	1,8	☺		☹	
	NTS-IR/L-22 5STACME	5	22	12,7	1,78	2,1	2,3	☺		☹	

HC = Coated carbide

A3

A 456 A 458 A 445 A 445

Walter NTS product description

Thread turning tool families – External machining



NTS-SE external thread holder
– Standard position
– Standard inclination angle 1.5°
– Insert sizes: NTS-ER/L-16 . . ., NTS-ER/L-22 . . .



C . . . -NTS-SE Walter Capto™ external thread holder
– Standard position
– Standard inclination angle 1.5°
– Insert sizes: NTS-ER/L-16 . . ., NTS-ER/L-22 . . .



C . . . -NTS-OE Walter Capto™ external thread holder, overhead
– Overhead position
– The Walter Capto™ polygon is rotated through 180°
– Standard inclination angle 1.5°
– Insert sizes: NTS-ER/L-16 . . ., NTS-ER/L-22 . . .

Thread turning tool family – Internal machining



A . . . -NTS-I/S . . . -NTS-I internal thread boring bar
– Standard position
– Standard inclination angle 1.5°
– Insert sizes: NTS-IR/L-11 . . ., NTS-IR/L-16 . . ., NTS-IR/L-22 . . .

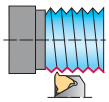
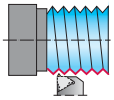


C . . . -NTS-SI Walter Capto™ internal thread boring bar
– Standard position
– For NTS-I . . . -16, . . . -22 threading inserts
– Standard inclination angle 1.5°
– Insert sizes: NTS-IR/L-16 . . ., NTS-IR/L-22 . . .

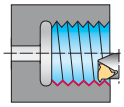
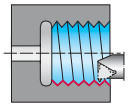


C . . . -NTS-OI Walter Capto™ internal thread boring bar, overhead
– Overhead position
– The Walter Capto™ polygon is rotated through 180°
– Standard inclination angle 1.5°
– Insert sizes: NTS-IR/L-16 . . ., NTS-IR/L-22 . . .

Walter NTS threading tools product range overview
Thread turning tools – External machining

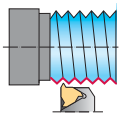
			
Type	 NTS..		 NTS..
	NTS-SE	**C...-NTS-SE**	**C...-NTS-OE**
Shank size h [mm]	12–40	C3–C6	
Walter Capto™ size		C3–C6	C3–C6
Insert size l [mm]	16–22	16–22	16–22
Page	A 450	A 451	A 452
			

Walter NTS threading tools product range overview
Thread turning tools – Internal machining

				
Type		 NTS..		 NTS..
	A...-NTS-I	**S...-NTS-I**	**C...-NTS-SI**	**C...-NTS-OI**
Shank size h [mm]	20	16–40		
Walter Capto™ size			C3–C6	C3–C6
Insert size l [mm]	11–16	16–22	16–22	16–22
Page	A 453	A 453	A 454	A 455
				

A3

Thread turning system overview – Walter NTS external machining



VDI adaptors for square shanks with precision cooling

A2120-VDI-P

Page D 16



A2121-VDI-P

Page D 17



Walter Capto™ adaptors for square shanks

C...-ASHR/L
C...-ASHR/L3

Page D 11



C...-ASHA

Page D 12



Walter Capto™ thread turning tools

C ...NTS-SE
C...NTS-OE

Page A 451



Shank tools

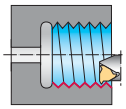


e.g. NTS-SE

Page A 450

= Precision cooling

Thread turning system overview – Walter NTS internal machining



Adaptors for boring bars

C … -131

Page D 65



C … -391.20
C … -391.27

Page D 66



Boring bars



e.g.

A…NTS-I
S…NTS-I

Page A 453

Walter Capto™ boring bars for thread turning

C…NTS-SI
C…NTS-OI

Page A 454



A3

Designation key for Walter NTS

Example for external machining:

NTS	S	E	L	–	16	16	–	16
1	2	3	4		5	6		7

Example for internal machining:

S	32	S	–	NTS	I	R	–	16	–	16
11	12	13		1	3	4		7		10

1 – Tool range

NTS = Walter Thread System

2 – Tool position

S Standard position

O Overhead position

3 – Version Tool

E External

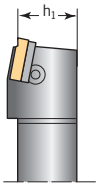
I Internal

4 – Version Shank

R Right

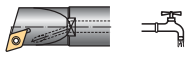
L Left

5 – Toolholder height h_1 [mm]

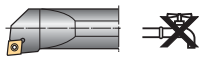


11 – Shank design

A Solid steel design **with** internal coolant supply

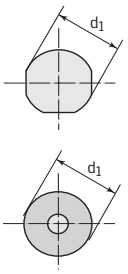


S Solid steel design **without** internal coolant supply



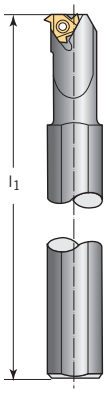
12 – Boring bar diameter d_1 [mm]

Shank diameter in mm.
Figures after the decimal point are ignored.
Single-digit numbers are preceded by a "0".



13 – Tool length l_1 [mm]

A	32	**P**	170
B	40	**Q**	180
C	50	**R**	200
D	60	**S**	250
E	70	**T**	300
F	80	**U**	350
G	90	**V**	400
H	100	**W**	450
J	110	**X**	Special
K	125	**Y**	500
L	140		
M	150		
N	160		



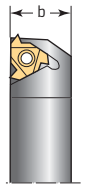
Walter Capto™

Example: Walter Capto™

C4	–	NTS	S	E	R	–	27	050	–	16
14		1	2	3	4		8	9		7

6

Toolholder width b [mm]



7

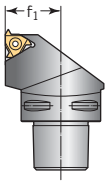
Cutting edge length l [mm]



l = 11
l = 16
l = 22

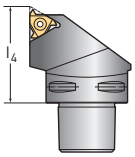
8

f_1 dimension [mm]



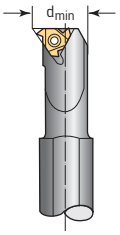
9

Tool length l_4 [mm]



10

d_{min} dimension [mm]



14

Coupling size d_1 [mm]

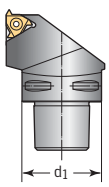
C = Walter Capto™
ISO 26623

C3 $d_1 = 32$

C4 $d_1 = 40$

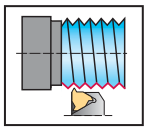
C5 $d_1 = 50$

C6 $d_1 = 63$



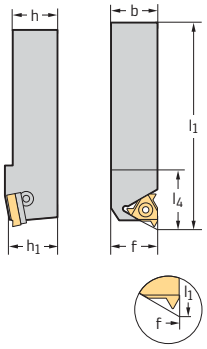
Shank tool – External thread
NTS-SE
Walter NTS





NTS-E . .

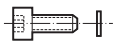
Tool



Designation		h = h_1 mm	b mm	f mm	l_1 mm	l_4 mm	Type
NTS-SER/L1212-16	16	12	12	16	83,2	22	
NTS-SER/L1616-16	16	16	16	16	100	22	
NTS-SER/L2020-16	16	20	20	20	128,6	30	NTS-E . -16 ..
NTS-SER/L2525-16	16	25	25	25	153,6	30	
NTS-SER/L3232-16	16	32	32	32	173,6	34	
NTS-SER/L2525-22	22	25	25	25	155,7	36	
NTS-SER/L3232-22	22	32	32	32	175,7	36	NTS-E . -22 ..
NTS-SER/L4040-22	22	40	40	40	205,7	36	

The toolholders listed are designed for an inclination angle of 1.5°
Ordering example, right-hand tool: NTS-SER1212-16/ordering example, left-hand tool: NTS-SEL1212-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

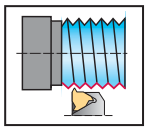
	Type	NTS-E . -16 ..	NTS-E . -22 ..
	Left shim	YI3	YI4
	Right shim	YE3	YE4
	Clamping screw for threading insert Tightening torque	FS2177 (Torx 10) 1,7 Nm	FS2178 (Torx 20) 3,8 Nm
	Clamping screw and washer for shim	FS2179 (Torx 10)	FS2180 (Torx 20)
	Torx key	FS1050 (Torx 10)	FS256 (Torx 20)

A 426 D 1 A 456 A 459

Turning toolholders – External thread
C...-NTS-SE
Walter NTS



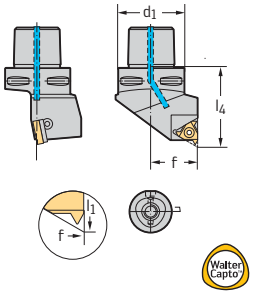
– Standard position
– Walter Capto™





Tool

Walter Capto™ in accordance with ISO 26623



Designation		d_1 mm	f mm	l_4 mm	Type
C3-NTS-SER/L22040-16	16	C3	22	40	NTS-E . -16 ..
C4-NTS-SER/L27050-16	16	C4	27	50	
C5-NTS-SER/L35060-16	16	C5	35	60	
C6-NTS-SER/L45065-16	16	C6	45	65	
C4-NTS-SER/L27050-22	22	C4	27	50	NTS-E . -22 ..
C5-NTS-SER/L35060-22	22	C5	35	60	
C6-NTS-SER/L45065-22	22	C6	45	65	

The toolholders listed are designed for an inclination angle of 1.5°
Ordering example, right-hand tool: C3-NTS-SER22040-16/ordering example, left-hand tool: C3-NTS-SEL22040-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

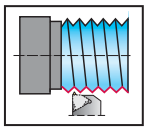
	Type d_1 [mm]	NTS-E . -16 .. C3	NTS-E . -16 .. C4	NTS-E . -16 .. C5/C6	NTS-E . -22 .. C4	NTS-E . -22 .. C5/C6
	Left shim	YI3	YI3	YI3	YI4	YI4
	Right shim	YE3	YE3	YE3	YE4	YE4
	Clamping screw for threading insert Tightening torque	FS2177 (Torx 10) 1,7 Nm	FS2177 (Torx 10) 1,7 Nm	FS2177 (Torx 10) 1,7 Nm	FS2178 (Torx 20) 3,8 Nm	FS2178 (Torx 20) 3,8 Nm
	Clamping screw and washer for shim	FS2179 (Torx 10)	FS2179 (Torx 10)	FS2179 (Torx 10)	FS2180 (Torx 20)	FS2180 (Torx 20)
	Torx key	FS1050 (Torx 10)	FS1050 (Torx 10)	FS1050 (Torx 10)	FS256 (Torx 20)	FS256 (Torx 20)
	Cooling lubricant nozzle	FS1230	FS1018	FS1019	FS1018	FS1019

A 426 D 1 A 456 A 459

Turning toolholders – External thread
C...-NTS-OE
Walter NTS



– Overhead position
– Walter Capto™

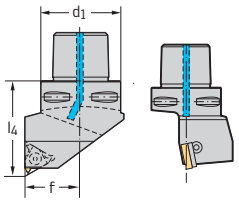


NTS-E . .

A3

Tool

Walter Capto™ in accordance with ISO 26623





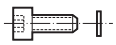


Walter Capto

Designation		d_1 mm	f mm	l_4 mm	Type
C3-NTS-OER/L22040-16	16	C3	22	40	NTS-E . -16 ..
C4-NTS-OER/L27050-16	16	C4	27	50	
C5-NTS-OER/L35060-16	16	C5	35	60	
C6-NTS-OER/L45065-16	16	C6	45	65	
C4-NTS-OER/L27050-22	22	C4	27	50	NTS-E . -22 ..
C5-NTS-OER/L35060-22	22	C5	35	60	
C6-NTS-OER/L45065-22	22	C6	45	65	

The toolholders listed are designed for an inclination angle of 1.5°
Ordering example, right-hand tool: C3-NTS-OER22040-16/ordering example, left-hand tool: C3-NTS-OEL22040-16
Bodies and assembly parts are included in the scope of delivery.

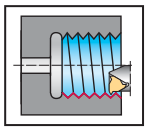
Assembly parts

	Type	NTS-E . -16 ..	NTS-E . -22 ..
	Left shim	YI3	YI4
	Right shim	YE3	YE4
	Clamping screw for threading insert Tightening torque	FS2177 (Torx 10) 1,7 Nm	FS2178 (Torx 20) 3,8 Nm
	Clamping screw and washer for shim	FS2179 (Torx 10)	FS2180 (Torx 20)
	Torx key	FS1050 (Torx 10)	FS256 (Torx 20)
	Cooling lubricant nozzle	FS1230	FS1230

A 426 D 1 A 456 A 459

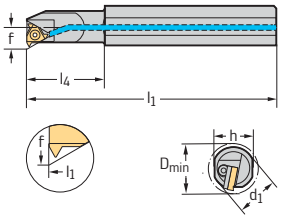
Boring bar – Internal thread
A...-NTS-I / S...-NTS-I
Walter NTS





NTS-I . .

Tool



Designation		D_{min} mm	d_1 mm	f mm	h mm	l_1 mm	l_4 mm	β	Type
A20Q-NTS-IR/L11-12	11	12	20	7,3	18	180	25	3°	
A20Q-NTS-IR/L11-13	11	13	20	7,4	18	180	25	1,5°	NTS-I . -11 ..
A20Q-NTS-IR/L11-16	11	16	20	8,9	18	180	32	1,5°	
A20Q-NTS-IR/L16-16	16	16	20	10,2	18	180	34	2,5°	NTS-I . -16 ..
S20Q-NTS-IR/L16-17	16	17	20	10,3	18	180	32	1,5°	
S16M-NTS-IR/L16-20	16	20	16	11,3	15,2	150	32	1,5°	
S20Q-NTS-IR/L16-20	16	20	20	11,5	18	180	40	1,5°	
S20Q-NTS-IR/L16-24	16	24	20	13,4	18	180	40	1,5°	
S25R-NTS-IR/L16-29	16	29	25	16,1	22,6	200	45	1,5°	NTS-I . -16 ..
S32S-NTS-IR/L16-29	16	29	32	16,3	29	250	60	1,5°	
S32S-NTS-IR/L16-36	16	36	32	19,6	29	250	60	1,5°	
S40T-NTS-IR/L16-44	16	44	40	23,8	25,8	300	60	1,5°	
S20Q-NTS-IR/L22-27	22	27	20	15,6	18	180	50	1,5°	
S25R-NTS-IR/L22-32	22	32	25	17,2	22,6	200	45	1,5°	
S32S-NTS-IR/L22-32	22	32	32	17,4	29	250	60	1,5°	NTS-I . -22 ..
S32S-NTS-IR/L22-39	22	39	32	21,5	29	250	60	1,5°	
S40T-NTS-IR/L22-47	22	47	40	25,8	32	300	60	1,5°	

For information on the inclination angle β, see "Technical information – Thread turning"
Ordering example, right-hand tool: A20Q-NTS-IR11-12/ordering example, left-hand tool: A20Q-NTS-IL11-12
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

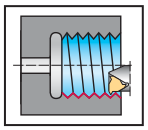
Type D_{min} [mm]	NTS-I . -11 .. 12–16	NTS-I . -16 .. 16–20	NTS-I . -16 .. 24–44	NTS-I . -22 .. 27	NTS-I . -22 .. 32–47
Left shim			YI3		YI4
Right shim			YE3		YE4
Clamping screw for threading insert Tightening torque	FS2174 (Torx 8IP) 0,9 Nm	FS2175 (Torx 10) 1,7 Nm	FS2177 (Torx 10) 1,7 Nm	FS2176 (Torx 20) 3,8 Nm	FS2178 (Torx 20) 3,8 Nm
Clamping screw and washer for shim			FS2179 (Torx 10)		FS2180 (Torx 20)
Torx key	FS257 (Torx 8)	FS1050 (Torx 10)	FS1050 (Torx 10)	FS256 (Torx 20)	FS256 (Torx 20)

A 427 D 1 A 456 A 459

Boring bar – Internal thread
C...-NTS-SI
Walter NTS



– Standard position
– Walter Capto™

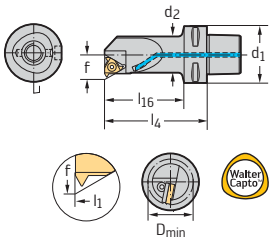


NTS-I . .

A3

Tool

Walter Capto™ in accordance with ISO 26623



Designation		D_{min} mm	d_2 mm	d_1	f mm	l_4 mm	l_{16} mm	Type
C3-NTS-SIR/L22085-16	16	40	32	C3	22	85	70	NTS-I . -16 ..
C4-NTS-SIR/L22090-16	16	40	32	C4	22	90	69	
C4-NTS-SIR/L27080-16	16	50	39,5	C4	27	80	60	
C5-NTS-SIR/L22090-16	16	40	32	C5	22	90	68	
C5-NTS-SIR/L27105-16	16	50	40	C5	27	105	84	
C6-NTS-SIR/L22090-16	16	40	32	C6	22	90	64	
C6-NTS-SIR/L27105-16	16	50	40	C6	27	105	80	
C4-NTS-SIR/L22090-22	22	40	31,5	C4	22	90	69	NTS-I . -22 ..
C4-NTS-SIR/L27080-22	22	50	39,5	C4	27	80	60	
C5-NTS-SIR/L22090-22	22	40	31,5	C5	22	90	68	
C5-NTS-SIR/L27105-22	22	50	40	C5	27	105	84	
C6-NTS-SIR/L22090-22	22	40	31,5	C6	22	90	64	
C6-NTS-SIR/L27105-22	22	50	40	C6	27	105	80	

The toolholders listed are designed for an inclination angle of 1.5°
Ordering example, right-hand tool: C3-NTS-SIR22085-16/ordering example, left-hand tool: C3-NTS-SIL22085-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

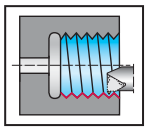
	Type	NTS-I . -16 ..	NTS-I . -22 ..
	Left shim	YI3	YI4
	Right shim	YE3	YE4
	Clamping screw for threading insert Tightening torque	FS2177 (Torx 10) 1,7 Nm	FS2178 (Torx 20) 3,8 Nm
	Clamping screw and washer for shim	FS2179 (Torx 10)	FS2180 (Torx 20)
	Torx key	FS1050 (Torx 10)	FS256 (Torx 20)

A 426 D 1 A 456 A 459

Boring bar – Internal thread
C...-NTS-OI
Walter NTS



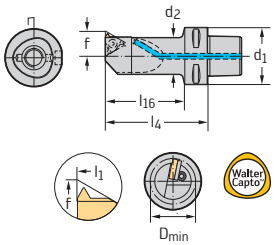
– Overhead position
– Walter Capto™



NTS-I . .

Tool

Walter Capto™ in accordance with ISO 26623



Designation		D_{min} mm	d_2 mm	d_1	f mm	l_4 mm	l_{16} mm	Type
C3-NTS-OIR/L22085-16	16	40	32	C3	22	85	70	NTS-I . -16 ..
C4-NTS-OIR/L22090-16	16	40	32	C4	22	90	69	
C4-NTS-OIR/L27080-16	16	50	39,5	C4	27	80	60	
C5-NTS-OIR/L22090-16	16	40	32	C5	22	90	68	
C5-NTS-OIR/L27105-16	16	50	40	C5	27	105	84	
C6-NTS-OIR/L22090-16	16	40	32	C6	22	90	64	
C6-NTS-OIR/L27105-16	16	50	40	C6	27	105	80	
C4-NTS-OIR/L22090-22	22	40	31,5	C4	22	90	69	NTS-I . -22 ..
C4-NTS-OIR/L27080-22	22	50	39,5	C4	27	80	60	
C5-NTS-OIR/L22090-22	22	40	31,5	C5	22	90	68	
C5-NTS-OIR/L27105-22	22	50	40	C5	27	105	84	
C6-NTS-OIR/L22090-22	22	40	31,5	C6	22	90	64	
C6-NTS-OIR/L27105-22	22	50	40	C6	27	105	80	

The toolholders listed are designed for an inclination angle of 1.5°
Ordering example, right-hand tool: C3-NTS-OIR22085-16/ordering example, left-hand tool: C3-NTS-OIL22085-16
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	NTS-I . -16 ..	NTS-I . -22 ..
	Left shim	YI3	YI4
	Right shim	YE3	YE4
	Clamping screw for threading insert Tightening torque	FS2177 (Torx 10) 1,7 Nm	FS2178 (Torx 20) 3,8 Nm
	Clamping screw and washer for shim	FS2179 (Torx 10)	FS2180 (Torx 20)
	Torx key	FS1050 (Torx 10)	FS256 (Torx 20)

A 426 D 1 A 456 A 459

Cutting data for thread turning
Carbide grades

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●		
		C > 0.25 to ≤ 0.55%	Annealed	190	640	P2	●●		
		C > 0.25 to ≤ 0.55%	Heat-treated	210	710	P3	●●		
		C > 0.55%	Annealed	190	640	P4	●●		
		C > 0.55%	Heat-treated	300	1010	P5	●●		
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●		
	Low-alloyed steel	Annealed		175	590	P7	●●		
		Heat-treated		285	960	P8	●●		
		Heat-treated		380	1280	P9	●●		
		Heat-treated		430	1480	P10	●●		
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●		
		Hardened and tempered		300	1010	P12	●●		
		Hardened and tempered		380	1280	P13	●●		
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●		
		Martensitic, heat-treated		330	1110	P15	●●		
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●		
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●		
		Austenitic/ferritic, duplex		230	780	M3	●●		
K	Malleable cast iron	Ferritic		200	400	K1	●●		
		Pearlitic		260	700	K2	●●		
	Grey cast iron	Low tensile strength		180	200	K3	●●		
		High tensile strength/austenitic		245	350	K4	●●		
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●		
		Pearlitic		265	700	K6	●●		
	GGV (CGI)			230	400	K7			
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●		
		Hardenable, hardened		100	340	N2	●●		
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●		
		≤ 12% Si, hardenable, hardened		90	310	N4	●●		
		> 12% Si, not hardenable		130	450	N5			
	Magnesium-based alloys			70	250	N6			
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●		
		Brass, bronze, red brass		90	310	N8	●●		
		Cu-alloys, short-chipping		110	380	N9	●●		
		High-tensile, Ampco		300	1010	N10			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1			
			Hardened	280	940	S2			
		Ni or Co base	Annealed	250	840	S3			
			Hardened	350	1180	S4			
			Cast	320	1080	S5			
	Titanium alloys	Pure titanium		200	680	S6			
		α and β alloys, hardened		375	1260	S7			
		β alloys		410	1400	S8			
	Tungsten alloys			300	1010	S9			
	Molybdenum alloys			300	1010	S10			
H	Hardened steel	Hardened and tempered		50 HRC	–	H1			
		Hardened and tempered		55 HRC	–	H2			
		Hardened and tempered		60 HRC	–	H3			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4			
O	Thermoplastics	Without abrasive fillers				O1			
	Thermosetting plastics	Without abrasive fillers				O2	●		
	Plastic, glass fibre reinforced	GFRP				O3			
	Plastic, carbon fibre reinforced	CFRP				O4			
	Plastic, aramid fibre reinforced	AFRP				O5			
	Graphite (technical)			80 Shore		O6			

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application

[1] The classification of the machining groups can be found from page A 468 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grades					
	Starting values for cutting speed v_c [m/min]					
	HC					
	WXP20		WXM20		WMP32	
Pitch [mm]	0,5–1,25	1,5–3,0	0,5–1,25	1,5–6,0	0,5–1,25	1,5–6,0
Pitch [TPI]	48–19	18–10	48–19	18–5	48–19	18–10
	200	240			180	215
	180	200			160	180
	150	180			135	160
	160	180			145	160
	80	100			70	90
	180	220			160	200
	150	170			135	155
	80	120			70	110
	60	80			55	70
	50	65			45	60
	90	100			80	90
	50	60			45	55
	50	65			45	60
	110	130	150	180	100	115
	40	50	120	150	35	45
			180	220	180	220
			60	70	60	70
			150	190	150	190
	100	120			90	110
	80	100			70	90
	170	200			155	180
	120	150			110	135
	100	120			90	110
	80	90			70	80
			350	400		
			250	300		
			380	400		
			270	320		
			220	250		
			220	250		
			180	200		
			220	250		

HC = Coated carbide

A3

Cutting tool material application charts – Thread turning

Carbide

Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating method	Coating composition	Indexable inserts example
WXP20	HC – P 20	●●								PVD	TiN	
	HC – K 20			●								
WXM20	HC – M 20		●●							PVD	TiCN	
	HC – N 20				●							
WMP32	HC – P 30	●●								PVD	TiAlN	
	HC – M 30		●●									
	HC – K 30			●								

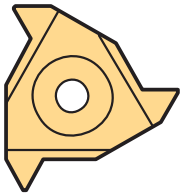
HC = Coated carbide

●● Primary application
● Additional application

A 3

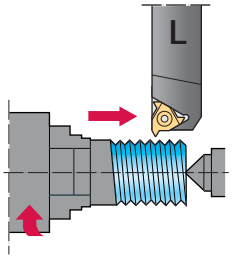
Application information:
Walter NTS thread turning – Application strategy

Performance characteristics



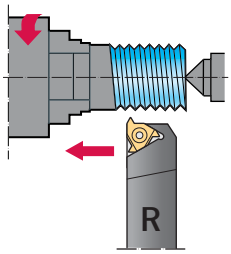
- Precision-ground profile
- Ground-in chip breaker
- Excellent cutting behaviour and reliable chip control thanks to the positive cutting edge shape
- Right-hand and left-hand versions available
- By changing the shim, a thread running in the opposite direction can be produced
- High repeat accuracy
- Extensive profile versatility
- Full profile and partial profile
- PVD-coated carbide grades

External machining

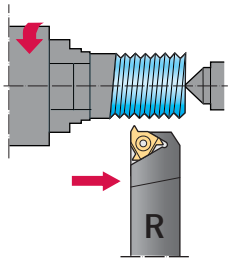


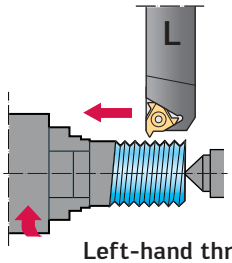
Right-hand thread
Left-hand tool holder
Left-hand insert
Opposite inclination angle

Right-hand thread
Right-hand tool holder
Right-hand insert



Left-hand thread
Right-hand tool holder
Right-hand insert
Opposite inclination angle

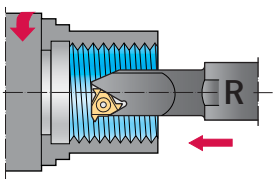




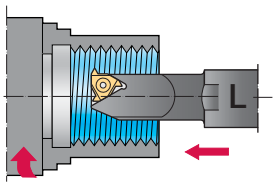
Left-hand thread
Left-hand tool holder
Left-hand insert

Internal machining

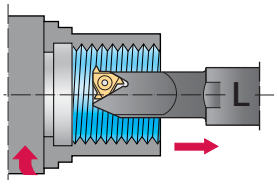
Right-hand thread
Right-hand tool holder
Right-hand insert



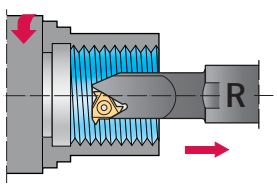
Left-hand thread
Left-hand tool holder
Left-hand insert



Right-hand thread
Left-hand tool holder
Left-hand insert
Opposite inclination angle



Left-hand thread
Right-hand tool holder
Right-hand insert
Opposite inclination angle

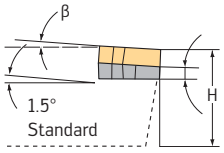


A3

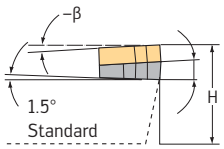
Application information:
Thread turning – Inclination angle correction

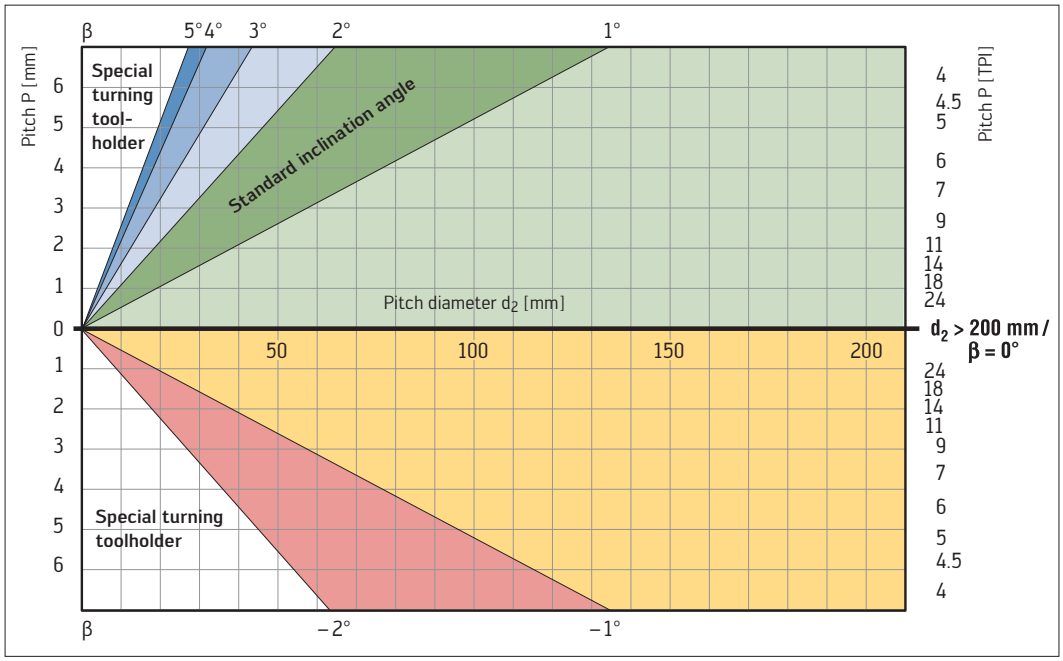
Inclination angle diagram

Standard inclination angle
Feed rate in the direction of the head stock



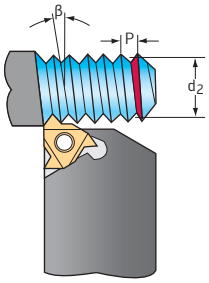
Opposite inclination angle
Feed rate in the direction of the tail stock





The colours in the inclination angle diagram correspond to the colours in the shim table.
No values must be read off.

Inclination angle calculation



The inclination angle is calculated according to the following formula:

$$\beta = \arctan \frac{P}{\Pi \times d_2}$$

β = Inclination angle [°]
P = Thread pitch [mm]
d_2 = Pitch diameter [mm]

The inclination angle can also be determined using the diagram.
The suitable shim is selected in accordance with the relevant table.

Shims

The external and internal standard tool holders have an inclination angle of β = 1.5°.

With an insert size of 1/4" (11 mm), the inclination angle is corrected via the tool.

Insert size		Tool holder	Order no.							
IC	L [mm]		β = 4.5°	β = 3.5°	β = 2.5°	β = 1.5°	β = 0.5°	β = 0	β = −0.5°	β = −1.5°
3/8"	16	ER / IL	YE 3–3P	YE 3–2P	YE 3–1P	YE 3	YE 3–1N	YE 3–1.5N	YE 3–2N	YE 3–3N
		EL / IR	YI 3–3P	YI 3–2P	YI 3–1P	YI 3	YI 3–1N	YI 3–1.5N	YI 3–2N	YI 3–3N
1/2"	22	ER / IL	YE 4–3P	YE 4–2P	YE 4–1P	YE 4	YE 4–1N	YE 4–1.5N	YE 4–2N	YE 4–3N
		EL / IR	YI 4–3P	YI 4–2P	YI 4–1P	YI 4	YI 4–1N	YI 4–1.5N	YI 4–2N	YI 4–3N

Application information:
Standard values for thread turning with Walter NTS

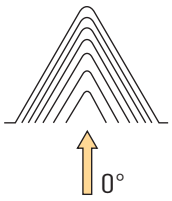
Feed types and their influence on machining

Radial feed

Recommended for:

– Short-chipping materials

– Hard materials



– Formation of V-shaped chips

– Both cutting edges engaged

– High cutting temperature

– Even indexable insert wear on both flanks

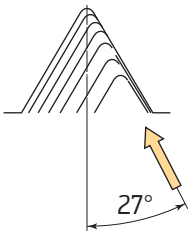
– Suitable for small pitches

Feed via flank 27°-29°

Recommended for:

– Pitches greater than 1.5 mm or 16 TPI

– The manufacture of trapezoidal threads



– Good chip formation

– Formation of helical chips

– One cutting edge engaged

– Chips are directed away from the thread

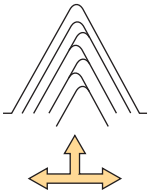
– Thread flanks with excellent surface quality

Alternating feed

Recommended for:

– Steep pitches

– Long-chipping materials



– Good chip formation

– Formation of flat helical chips

– Both cutting edges are evenly engaged, ensuring even wear

A 3

Standard values for the number of radial infeeds for each thread turning pass on manual lathes

The recommended cut distributions are only to be regarded as standard values. They were determined under good operating conditions with medium-strength steel materials. In the case of high-strength steel materials, the number of feeds must be increased. It is important to reduce the initial threading cuts in this case. If the operating conditions are different, the feeds should be modified accordingly. This applies to internal thread turning with a projection length of more than 2.5 × the boring bar diameter.

Whitworth (WH), external and internal machining

	Pitch [TPI]														
No. of feeds	28	26	20	19	18	16	14	12	11	10	9	8	7	6	5
Total depth [mm]	**0,64**	**0,68**	**0,87**	**0,91**	**1,07**	**1,12**	**1,23**	**1,42**	**1,54**	**1,69**	**1,87**	**2,09**	**2,41**	**2,80**	**3,34**
16															
15															
14														0,10	0,10
13														0,12	0,12
12												0,08	0,08	0,14	0,15
11											0,08	0,12	0,12	0,14	0,17
10										0,08	0,12	0,12	0,14	0,15	0,18
9									0,08	0,12	0,12	0,13	0,15	0,16	0,19
8						0,08	0,08	0,08	0,12	0,13	0,13	0,14	0,16	0,17	0,20
7					0,08	0,10	0,11	0,13	0,13	0,13	0,14	0,15	0,18	0,19	0,22
6			0,08	0,08	0,11	0,10	0,12	0,14	0,14	0,15	0,15	0,16	0,19	0,20	0,24
5	0,08	0,08	0,11	0,12	0,13	0,12	0,13	0,15	0,16	0,16	0,17	0,18	0,21	0,21	0,27
4	0,11	0,11	0,13	0,13	0,14	0,14	0,15	017	0,18	0,18	0,19	0,20	0,23	0,24	0,30
3	0,12	0,14	0,15	0,16	0,17	0,16	0,18	0,21	0,21	0,21	0,22	0,23	0,27	0,28	0,36
2	0,15	0,16	0,19	0,20	0,21	0,20	0,22	0,26	0,25	0,26	0,27	0,28	0,33	0,34	0,41
1	0,18	0,19	0,21	0,22	0,23	0,22	0,24	0,28	0,27	0,27	0,28	0,30	0,35	0,36	0,43

Radial infeed [mm]

Reduce the cutting speed

Application information: Standard values for thread turning with Walter NTS

(continued)

External machining, metric 60°

	Pitch [mm]																	
No. of feeds	0,5	0,6	0,7	0,75	0,8	1,0	1,25	1,5	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0
Total depth [mm]	0,34	0,40	0,47	0,50	0,54	0,67	0,80	0,94	1,14	1,28	1,58	1,89	2,20	2,50	2,80	3,12	3,41	3,72
16																	0,10	0,10
15																	0,12	0,12
14														0,08	0,10	0,10	0,13	0,14
13														0,11	0,12	0,12	0,13	0,15
12												0,08	0,08	0,12	0,13	0,15	0,15	0,16
11												0,10	0,11	0,12	0,14	0,16	0,16	0,18
10											0,08	0,11	0,12	0,13	0,15	0,17	0,17	0,19
9											0,11	0,12	0,14	0,14	0,16	0,18	0,18	0,20
8									0,08	0,08	0,11	0,12	0,14	0,15	0,17	0,19	0,19	0,21
7									0,10	0,11	0,12	0,13	0,15	0,16	0,18	0,20	0,20	0,22
6							0,08	0,08	0,10	0,12	0,13	0,14	0,17	0,17	0,20	0,22	0,22	0,24
5						0,08	0,10	0,12	0,12	0,14	0,15	0,16	0,18	0,19	0,22	0,24	0,24	0,27
4	0,07	0,07	0,07	0,07	0,08	0,11	0,11	0,14	0,14	0,16	0,17	0,18	0,21	0,22	0,24	0,27	0,27	0,30
3	0,07	0,08	0,10	0,11	0,12	0,13	0,14	0,17	0,17	0,18	0,20	0,21	0,25	0,25	0,28	0,32	0,32	0,35
2	0,09	0,11	0,14	0,15	0,16	0,16	0,17	0,21	0,21	0,24	0,24	0,26	0,31	0,32	0,34	0,39	0,40	0,43
1	0,11	0,14	0,16	0,17	0,18	0,19	0,20	0,22	0,22	0,25	0,27	0,28	0,34	0,34	0,37	0,41	0,43	0,46

Radial infeed [mm] ← Reduce the cutting speed

Internal machining, metric 60°

	Pitch [mm]																	
No. of feeds	0,5	0,6	0,7	0,75	0,8	1,0	1,25	1,5	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0
Total depth [mm]	0,34	0,38	0,44	0,48	0,51	0,63	0,77	0,90	1,07	1,20	1,49	1,77	2,04	2,32	2,62	2,89	3,20	3,46
16																	0,10	0,10
15																	0,12	0,12
14														0,08	0,10	0,10	0,12	0,13
13														0,10	0,11	0,12	0,13	0,14
12												0,08	0,08	0,10	0,12	0,14	0,14	0,15
11												0,09	0,10	0,11	0,12	0,14	0,14	0,15
10											0,08	0,10	0,11	0,12	0,13	0,15	0,15	0,16
9											0,10	0,10	0,12	0,12	0,14	0,15	0,16	0,18
8									0,08	0,08	0,10	0,11	0,13	0,13	0,15	0,16	0,17	0,19
7									0,09	0,10	0,11	0,12	0,14	0,14	0,16	0,17	0,18	0,20
6							0,08	0,08	0,09	0,11	0,12	0,13	0,15	0,15	0,19	0,20	0,20	0,22
5						0,08	0,09	0,11	0,10	0,12	0,13	0,14	0,17	0,18	0,21	0,22	0,22	0,24
4	0,07	0,07	0,07	0,07	0,07	0,09	0,10	0,13	0,13	0,14	0,15	0,16	0,19	0,21	0,23	0,25	0,26	0,28
3	0,07	0,08	0,08	0,10	0,11	0,11	0,13	0,15	0,15	0,17	0,18	0,20	0,23	0,24	0,27	0,30	0,32	0,35
2	0,09	0,11	0,13	0,14	0,15	0,16	0,17	0,21	0,21	0,23	0,25	0,26	0,30	0,31	0,33	0,38	0,38	0,41
1	0,11	0,12	0,16	0,17	0,18	0,19	0,20	0,22	0,22	0,25	0,27	0,28	0,32	0,33	0,36	0,41	0,41	0,44

Radial infeed [mm] ← Reduce the cutting speed

External machining, UN 60°

	Pitch [TPI]															
No. of feeds	32	28	24	20	18	16	14	13	12	11	10	9	8	7	6	5
Total depth [mm]	**0,52**	**0,62**	**0,71**	**0,83**	**0,93**	**1,03**	**1,17**	**1,26**	**1,36**	**1,48**	**1,63**	**1,79**	**2,01**	**2,28**	**2,66**	**3,19**
16																
15																
14															0,10	0,10
13															0,11	0,12
12													0,08	0,08	0,12	0,15
11												0,08	0,11	0,11	0,13	0,17
10											0,08	0,11	0,12	0,12	0,14	0,18
9										0,08	0,11	0,12	0,12	0,14	0,15	0,19
8							0,08	0,08	0,08	0,11	0,12	0,12	0,13	0,15	0,16	0,19
7						0,08	0,10	0,11	0,12	0,12	0,13	0,13	0,14	0,16	0,17	0,20
6				0,08	0,08	0,11	0,11	0,12	0,13	0,13	0,14	0,14	0,15	0,17	0,18	0,22
5		0,08	0,08	0,10	0,12	0,12	0,12	0,13	0,14	0,15	0,15	0,16	0,17	0,19	0,20	0,24
4	0,08	0,10	0,12	0,12	0,13	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,19	0,22	0,23	0,28
3	0,12	0,12	0,15	0,14	0,16	0,16	0,17	0,18	0,20	0,20	0,20	0,21	0,22	0,26	0,27	0,32
2	0,15	0,15	0,17	0,19	0,21	0,21	0,22	0,24	0,26	0,25	0,26	0,26	0,28	0,33	0,34	0,40
1	0,17	0,17	0,19	0,20	0,23	0,22	0,23	0,25	0,27	0,27	0,27	0,28	0,30	0,35	0,36	0,43

Radial infeed [mm] ← Reduce the cutting speed

Internal machining, UN 60°

	Pitch [TPI]															
No. of feeds	32	28	24	20	18	16	14	13	12	11	10	9	8	7	6	5
Total depth [mm]	**0,49**	**0,59**	**0,66**	**0,78**	**0,86**	**0,95**	**1,10**	**1,17**	**1,26**	**1,38**	**1,49**	**1,66**	**1,86**	**2,11**	**2,44**	**2,93**
16																
15																
14															0,10	0,10
13															0,11	0,12
12													0,08	0,08	0,11	0,14
11												0,08	0,10	0,11	0,12	0,14
10											0,08	0,09	0,10	0,12	0,12	0,15
9										0,08	0,10	0,10	0,11	0,12	0,13	0,16
8							0,08	0,08	0,08	0,10	0,10	0,11	0,11	0,13	0,14	0,17
9						0,08	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,14	0,15	0,18
6				0,08	0,08	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,15	0,16	0,20
5		0,08	0,08	0,09	0,10	0,10	0,11	0,12	0,13	0,13	0,13	0,14	0,15	0,17	0,18	0,22
4	0,08	0,10	0,10	0,11	0,12	0,12	0,13	0,13	0,15	0,15	0,15	0,16	0,17	0,20	0,20	0,25
3	0,10	0,10	0,14	0,13	0,14	0,14	0,15	0,16	0,18	0,18	0,18	0,19	0,21	0,23	0,24	0,30
2	0,14	0,14	0,16	0,17	0,19	0,20	0,21	0,22	0,24	0,24	0,25	0,26	0,28	0,28	0,32	0,38
1	0,17	0,17	0,18	0,20	0,23	0,22	0,23	0,25	0,27	0,27	0,27	0,28	0,30	0,34	0,35	0,42

Radial infeed [mm] ← Reduce the cutting speed



Page

Calculation formulae for turning	A 466
Cutting forces of Walter machining groups	A 467
Material comparison table	A 468
Hardness comparison table	A 490
ISO tolerances	A 491
Clamping screws for indexable inserts	A 492
Torque screwdriver with interchangeable blades	A 493
Screwdriver	A 494
Clamping systems for tools and tool adaptors	A 495

Calculation formulae for turning

Speed

$$n = \frac{v_c \times 1000}{D_c \times \pi} \quad [rpm]$$

Cutting speed

$$v_c = \frac{D_c \times \pi \times n}{1000} \quad [m/min]$$

Feed rate

$$v_f = n \times f \quad [mm/min]$$

Metal removal rate

$$Q = v_c \times a_p \times f \times \left(1 - \frac{a_p}{D_c}\right) \quad [cm^3/min]$$

Chip cross section

$$A = h \times b = a_p \times f \quad [mm^2]$$

Chip width, chip thickness

$$b = \frac{a_p}{\sin\kappa} \quad [mm] \qquad h = f \times \sin\kappa \quad [mm]$$

Main cutting force

$$F_c = A \times k_{c1.1} \times h^{-mc} \quad [N]$$

Specific cutting force

$$k_c = \frac{k_{c1.1}}{h^{m_c}} \quad [N/mm^2]$$

Power requirement

$$P_{mot} = \frac{Q \times k_c}{60\,000 \times \eta} \quad [kW]$$

Cutting time

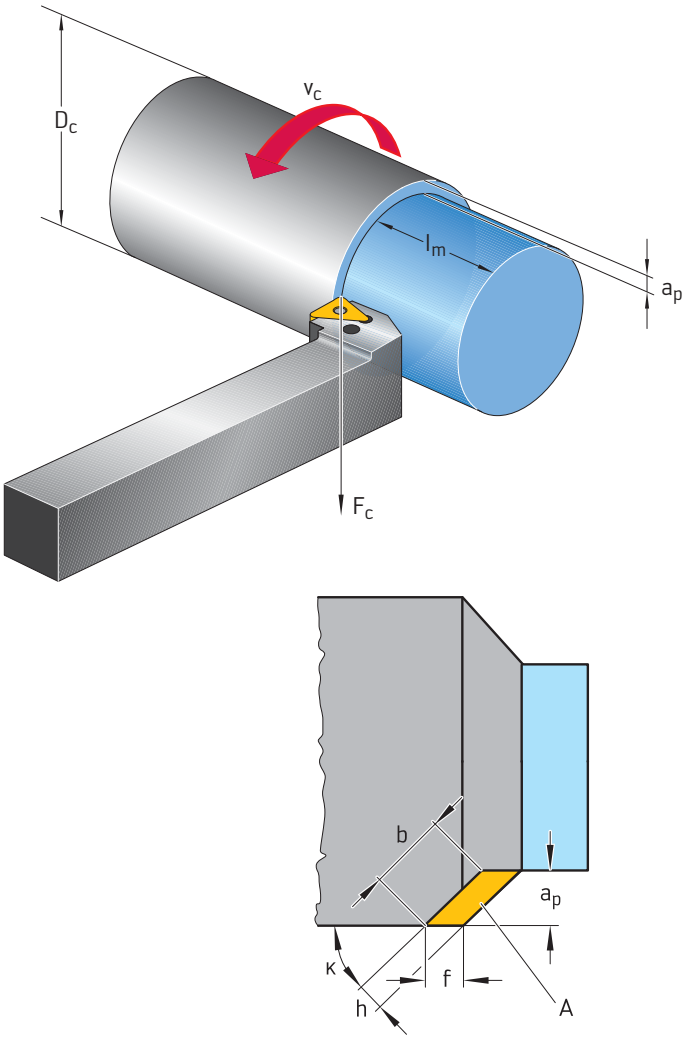
$$t_h = \frac{l_m}{f \times n} \quad [min]$$

Roughness profile depth

$$R_{max} = \frac{f^2}{8 \times r} \times 1000 \quad [\mu m]$$

Unrolled turning length

$$l_c = \frac{D_c \times \pi}{1000} \times \frac{l_m}{f} \quad [m]$$



n	Speed	rpm
D_c	Cutting diameter	mm
v_c	Cutting speed	m/min
v_f	Feed rate	mm/min
f	Feed per revolution	mm
Q	Metal removal rate	cm^3/min
a_p	Depth of cut	mm
A	Chip cross section	mm^2
h	Chip thickness	mm
b	Chip width	mm
κ	Lead angle	°
F_c	Main cutting force	N
$k_{c1.1}$*	Specific cutting force for 1 mm^2 chip cross section	N/mm^2
m_c*	Increase in the k_c curve	
P_{mot}	Power requirement	kW
t_h	Cutting time	min
l_m	Machining length	mm
l_c	Unrolled turning length	m
R_{max}	Roughness profile depth	µm
r	Corner radius of the indexable insert	mm
η	Machine efficiency	(0,75 – 0,9)

* For m_c and $k_{c1.1}$, see table on page A 467

Cutting forces of Walter machining groups

Description	Tensile strength min R_m [N/mm²]	Tensile strength max R_m [N/mm²]	Spec. cutting force $k_{c1.1}$ [N/mm²]	Increase value m_c	Walter machining group
Non-alloyed and low-alloy steels, C > 0.25%, low and medium tensile strength	350	750	1500	0,21	P1, P6
Non-alloyed and low-alloy steels, C > 0.55%, not heat-treated	400	900	1700	0,25	P2, P3, P4, P7, P14
Low and high-alloy steels, low heat treatment level	750	1100	2000	0,25	P5, P8, P11, P12
Stainless ferritic/martensitic steels, heat-treated	800	1400	2200	0,25	P15
Low and high-alloy steels, medium heat treatment level	1100	1400	2500	0,25	P9
Low and high-alloy steels, high heat treatment level	1200	1600	3000	0,25	P10, P13
Stainless, austenitic steels	400	900	1800	0,21	M1
Stainless, austenitic/ferritic steels + duplex	600	1000	2000	0,21	M3
Stainless, austenitic steels, precipitation hardened (PH steels)	700	1500	2400	0,21	M2
Grey cast iron + CGI + malleable cast iron, low tensile strength	200	400	800	0,28	K1, K3, K7
Ductile cast iron with low tensile strength + malleable cast iron with higher tensile strength	400	600	950	0,28	K2, K5
Grey cast iron with higher tensile strength	300	400	1200	0,28	K4,
Ductile cast iron with high tensile strength + ADI high tensile strength, unalloyed + alloyed	600	800	1400	0,28	K6
Wrought aluminium alloy, not hardened			350	0,25	N1
Wrought aluminium alloy, hardened			600	0,25	N2
Cast aluminium alloy < 12% Si, not hardened			600	0,25	N3
Cast aluminium alloy < 12% Si, hardened, cast aluminium alloy ≥ 12%			700	0,25	N4, N5
Pure copper, copper alloy (brass, bronze) with low tensile strength			550	0,25	N7, N8, N9
High tensile copper alloys, bronze with high tensile strength			1000	0,25	N10
Heat-resistant alloys, iron-based, annealed			2400	0,25	S1
Heat-resistant alloys, iron-based, hardened			2500	0,25	S2
Pure titanium			1300	0,25	S6
Titanium alloys, alpha, alpha/beta and beta alloys			1500	0,25	S7, S8
Heat-resistant alloys, nickel-cobalt-based, annealed			2800	0,25	S3
Heat-resistant alloys, nickel-cobalt-based, hardened			2900	0,25	S4
Heat-resistant alloys, nickel-cobalt-based, cast			3000	0,25	S5
Hardened steels 46 – 52 HRC			3000	0,25	H1
Hardened steels 52 – 58 HRC			3700	0,25	H2
Hardened steels 58 – 62 HRC			4300	0,25	H3
Hardened cast iron 50 – 60 HRC			3500	0,25	H4
Thermoplasts and thermosetting plastics, without abrasive fillers			150	0,2	O1, O2
Fibre-reinforced plastics			300	0,3	O3, O4, O5
Graphite			400	0,25	O6

Comments:
The information consists of standard values and refers to a neutral cutting edge geometry.
The condition of the material and of the cutting edge geometry considerably affects the cutting forces.

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	Building and construction steels						
	P1	1.0401		C 15	C15		
	P1	1.0402		C 22	C22		
	P2	1.0501		C 35	C35		
	P2	1.0503		C 45	C45		
	P4	1.0535		C 55	C55		
	P4 / P5	1.0601		C 60	C60		
	P6	1.0715		9 SMn 28	11SMn30		
	P6	1.0718		9 SMnPb 28	11SMnPb30		
	P6	1.0722		10 SPb 20	10SPb20		
	P6	1.0726		35 S 20	35S20		
	P6	1.0736		9 SMn 36	11SMn37		
	P6	1.0737		9 SMnPb 36	11SMnPb37	Ledloy	
	P7 / P10	1.0904			55Si7		
	P7 / P10	1.0961		60 SiCr 7	S340MGC, 60SiCr7		
	P1	1.1141		Ck 15	C15E		
	P7 / H2	1.1157		40 Mn 4	40Mn4		
	P1 / P3	1.1158		Ck 25	C25E		
	P7	1.1167		36 Mn 5	36Mn5		
	P7	1.1170		28 Mn 6	28Mn6		
	P2	1.1183		Cf 35	C35G		
	P2	1.1191		Ck 45	C45E		
	P4 / P5	1.1203		Ck 55	C55E		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	080M15, 144917CS, 040A15, 080A15		C18RR, XC18	C15, C16, 1C15	1350	F.111	S 15 C, JIS S 15C	J 409 grade 1015
	040 A 15, 055 M 15, En 2, 22 CS, 22 HS, C 22, 070 M 20	2D, 2	AF42C20, XC25, 1C22	C20, C21	1450	1C22, F112	S 20 C, S22C, JIS S 20C	1020
	080A32, 080A35, 080M36, 1449.40CS		C35, 1C35, AF55C35	C35, 1C35	1572, 155	F.113	S 35 C	1035
	060A47, 080M46, 1449.50HS, 1449.50CS		1C45, AF 65 C 45	C45, 1C45	1650	F.114	JIS S 45C	1045
	070M55, 5770-50	9	C54, 1C55, AF 70 C 55	C55, 1C55	1655	F.115	S 55 C	1055
	060A62, 5770-60, 1449 60HS.CS		C60, 1C60, AF70C55	C60, 1C60		F.115	S 58 C	1060
	230M07		S250	CF9Mn28	1912	F.2111 - 11SMn28	JIS SUM22	1213
			S250Pb	CF9SMnPb28	1914	F.2112 - 11SMnPb28	SUM22L, SUM23L, SUM24L	12L13, 12L14, J 403 grade 12L14, J 1397 grade 12L14
	212M36		35MF6		1957	F.210G		J 403 grade 1141
	240M07	1B	S300	CF9SMn36		F.2113 - 12 SMn 35	SUM 25	J 403 grade 1213, J 403 grade 1215, J 1392 grade 1213
			S300Pb	CF9SMnPb36	1926	F.2114 - 12 SMnPb 35		J 403 grade 12L14, J 1397 grade 12L14
	250A53	45	55S7		2085	F.1440 - 56 Si 7		9255
	250A61		60SC7			F.1442 - 60 SiCr 8		9262
	040A15, 080M15, S14, CS17	32C			1370	F.1511 - C 16 k, F.1110 - C 15 k	S 15, S 15 CK, JIS S 15 C	1015
	150M36	15	35M5					1035, 1041
	070M26		2C25			F.1120 - C 25 k, C25K (F1120)	S 25 C, S 28 C	1025
	150M36	15 B	40M5		2120	F.1203 - 36 Mn5	SMn 438 (H), SCMn 3	1335
	150M28, 150M19, S92	14A, 14B	20M5	C28Mn		28Mn6	SCMn1	1027
	060A35, 080A35		XC38H1TS	C36, C38			S 35 C	1035
	080M46, 060A47		C45RR, XC42H1, XC45, 2C45, XC48, XC48H1		1672	F1140-C45k, F1142-C48k	S 45 C, S 48 C	1045
	060A57	9	XC55H1, 2C55, XC54		1655	F.1150 - C 55 k	S 55 C	1055

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Building and construction steels** (continued)						
	P2 / P3	1.1213		Cf 53	C53G		
	P4 / P5	1.1221		Ck 60	C60E		
	P4 / H1	1.1274		Ck 101	C101E, C100S		
	P11	1.3401		X 120 Mn 12	X120Mn12		
	P7 / H2	1.3505		100 Cr 6	100Cr6		
	P7	1.5415		15 Mo 3	16Mo3		
	P3	1.5423		16 Mo 5	16Mo5		
	P7	1.5622		14 Ni 6	14Ni6		
	P11	1.5662		X 8 Ni 9	X8Ni9		
	P11	1.5680		12 Ni 19	X12Ni5, 12Ni19		
	P9	1.5710		36 NiCr 6	36NiCr6		
	P7	1.5732		14 NiCr 10	14NiCr10		
	P7	1.5752		14 NiCr 14	15NiCr13		
	P7 / P9	1.6511		36 CrNiMo 4	36CrNiMo4		
	P7	1.6523		20NiCrMo2-2	21NiCrMo2		
	P9	1.6546		40 NiCrMo 22	40NiCrMo2-2, 40NiCrMo2KD		
	P7 / P9	1.6582		34 CrNiMo 6	34CrNiMo6		
	P7	1.6587		17 CrNiMo 8, 17 CrNiMo 6, 17 CrNiMo 6 BG	17CrNiMo6, 18CrNiMo7-6		
	P7	1.6657		14 NiCrMo 134	14NiCrMo13-4		
	P7	1.7015		15 Cr 3	15Cr2KD		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	060A52, 070M55		XC48H1TS				S 50 C	1050, 1055
	060A62, 070M60, CS60		C60RR, XC60, 2C60		1665, 168	F.511, F.512	S 58 C	1060
	060A96, 5770-95, CS95		C100RR, C100, XC100, E 100		1870		SUP4	1095
			Z120M12, Z120Mn12		2183	F.82551-AM-X 120 Mn 12	SCMnH1, SCMnH11	
	BL3, 534A99, 535A99, 2S135, S135		Y100C6, 100C6, 100Cr6	100Cr6	2258	F.5230 100 Cr6, F.1310-100 Cr 6, F.131	SUJ 2, SUJ 4	L3, 52100
	1501-240, 1503-243B, 3606-243, 3059-243		15D3, 15Mo3	16Mo3 (KG KW)	2912	F.2601-16 Mo 3		ASTM A20, GR
	1503-245-420			16Mo5KG, 16Mo5KW		F.2602-16Mo5	SB 450 M, SB 480 M	4520
			16N6, 15N6, 15Ni6	14Ni6KG, 14Ni6KT		F.2641-15Ni6		ASTM A350 LF5
	1501-509;510, 3603-509LT, 1502-502-650, 509-690, 1503-509-690		Z8N9, 9Ni490	X10Ni9, X12Ni09		F.2645-X8 Ni09	SL9N53(60)	ASTM A353
			Z18N5, 5Ni390					2515, 2517
	640A35		35NC6				SNC 236	3135
			14NC11	16NiCr11		F.1540-15NiCr11	SNC 415 (H)	3415
	655M13, 655A12, 655H13	36A, 36B	14NC11, 12NC15, 14NC12, 13NiCr14				SNC 815 (H), SNC22, JIS SNC 815	3310, 3415, 9314
	816M40	110	40NCD3, 36CrNiMo4, 35NCD5	38NiCrMo7 (KB)		F.1280-35NiCrMo4		9840
	805H20, 805M20, 806M20	362	20NCD2, 22NCD2	20NiCrMo2	2506	F1552-20NiCrMo2, F1534-20NiCrMo3	SNCM 220 (H)	J 1268 grade 8620H, 8620
	311-Type7		40NCD2	40NiCrMo2 (KB)		F1204-40NiCrMo2, F1205-40NiCrMo2DF	SNCM 240	8740
	816M40, 817M40	24	35NCD6, 34CrNiMo6, 34CrNiMo8	35NiCrMo6KB	2541	F1272-40NiCrMo7, 34CrNiMo6	SNCM 447, JIS SNc M447	4340
	820A16		18NCD6	18NiCrMo7		F.1560-14 NiCrMo13, F.156		
	832H13, 832M13, S157	36C	16NCD13	15NiCrMo13		F1560-14NiCrMo13, F.1569-14NiCrMo131		
	523M15	206	12C3, 15Cr2, 18C3				SCr 415 (H)	5132

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Building and construction steels** (continued)						
	P7 / P8	1.7033		34 Cr 4	34Cr4		
	P7 / P9	1.7035		41 Cr 4	41Cr4		
	P9	1.7045		42 Cr 4	42Cr4		
	P7	1.7131		16 MnCr 5	16MnCr5		
	P7 / P9	1.7176		55 Cr 3	55Cr3		
	P8	1.7218		25 CrMo 4	25CrMo4		
	P7 / P9	1.7220		34 CrMo 4	34CrMo4		
	P7 / P9	1.7223		41 CrMo 4	41CrMo4		
	P7 / P9	1.7225		42 CrMo 4	42CrMo4		
	P7	1.7262		15 CrMo 5	15CrMo5		
	P7	1.7335		13 CrMo 4 4	13CrMo4-5		
	P7 / P10	1.7361		32 CrMo 12	32CrMo12		
	P7	1.7380		10 CrMo 9 10	10CrMo9-10		
	P7	1.7715		14 MoV 6 3	14MoV6-3		
	P7 / P9	1.8159		50 CrV 4	51CrV4		
	P7	1.8509		41 CrAlMo 7	41CrAlMo7	Nitralloy 135	
	P7 / P10	1.8523		39 CrMoV 13 9	40CrMoV13-9		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	530A32, 530H32, 530M32		32C4, 34Cr4	34Cr4(KB)		F.8221-35 Cr 4, F.224	SCr 435 (H)	5132
	530M40, 530A40, 530H40	18	42C4, 41Cr4	41Cr4, 41Cr4KB		38Cr4, 38Cr41, 42Cr4, F.1202-42Cr4	SCR4, SCr 440 (H)	5140
	530A40	18	42C4, 42C4TS	41Cr4	2245	F1201, F1202, F1206, F.1202-42Cr4	SCR4, SCr 440 (H), SCr 440	5140, 5140H
	527M17, 590H17, 590M17		16MC5, 16MC4, 16MnCr5	16MnCr5	2511, 2173	F.1515-16 MnCr5, F.151		J 1268 grade 4118H, C5115
	525A58, 525A60, 525H60	48	55Cr3, 55C3	55Cr3	2253	F.1431-55 Cr3, F.143	SUP 9 (A)	5155
	1717CDS110, 708A25		25CD4, 25CrMo4	25CrMo4 (KB)	2225	F8372-AM26CrMo4, F8330-AM25CrMo4, F1256-30CrMo4-1, F.222	SCM420, SCM430, SCCrM1	4130
	708A37	19B	35CD4, 34CrMo4, 35CD4 / 34CrMo5	34CrMo4KB, 35CrMo4, 35CrMo4F	2234	F8331-AM34CrMo4, F8231-34CrMo4, F1250-35CrMo4, F1254-35CrMo4DF, F.125	SCM 432, SCCrM 3, SCM 435 H	4135, 4137, J 1268 grade 4135H
	708M40, 3111-5.1		42CD4TS	41CrMo4		F8332-AM42CrMo4, F8232-42CrMo4, F1252-40CrMo4	SCm 440, JIS SCM 440	4140
	708A42, 708M40, 709M40	19A	42CD4, 42CrMo4	38CrMo4KB, 42CrMo4, G40CrMo4	2244	F8332-AM42CrMo4, F8232-42CrMo4, F1252-40CrMo4	SCM 440 (H), SNB 7, JIS SCM 440	4140
			12CD4			F.1551-12CrMo4	SCM 415 (H)	
	620-440, 1503-620-440, 1502, 620-470, 3606-620, 620-540, 3604-620-440		15CD3.05, 15CD4.05	14CrMo3, 16CrMo3	2216	F.2631-14CrMo45	SFVA F 12	A387 grade 12Cl2, ASTM A182
	722M24	40B	30CD12	32CrMo12	2240	F.124.A		
	3059-622-490, 3606-622, 1502-622, 3604-622, 622Gr.31, 622Gr.45		12CD9.10, 10CrMo9-10, 10CrMo9-11	12CrMo9 (KW KG), G14CrMo9, 10	2218	TU.H	SFVAF22A, BSCMV4, SCPH32-CF	A387 grade 22, A387 grade 22Cl2, ASTM A182
	1503-660-460, 3604-660					F.2621-13 MoCrV6		
	735A50, 735A51, 735H51, 735M50	47	50CV4, 51CrV4, 50CrV4	50CrV4	2230	F.1430-51CrV4	SUP 10	6150
	905M39	41B	40CAD6.12	41CrAlMo7	2940	F.1740-41CrAlMo7	SACM 645, JIS SACM 645	Nitralloy 135
	897M39	40C						

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Stainless and heat-resistant steels**						
	P14 / P15	1.4000		X 7 Cr 13	X6Cr13		
	P14	1.4001		X 7 Cr 14	X7Cr14		
	P14 / P15	1.4006		X 10 Cr 13, X 12 Cr 13	X12Cr13, X10Cr13		
	P14	1.4016		X 6 Cr 17	X6Cr17		
	P15	1.4027		G-X 20 Cr 14	GX20Cr14		
	P15	1.4034		X 46 Cr 13	X46Cr13		
	P15	1.4057		X 20 CrNi 17 2	X19CrNi17-2, X17CrNi16-2		
	P14 / P15	1.4104		X 12 CrMoS 17	X14CrMoS17		
	P14	1.4113		X 6 CrMo 17 1	X6CrMo17-1		
	P15	1.4313		X 4 CrNi 13 4	X3CrNiMo13-4		
	P15	1.4718		X 45 CrSi 9 3	X45CrSi9-3-1		
	P14	1.4724		X 10 CrAl 13, X 10 CrAlSi 13	X10CrAlSi13, X10CrAl13		
	P14	1.4742		X 10 CrAl 18, X 10 CrAlSi 18	X10CrAl18, X10CrAlSi18		
	P15	1.4747		X 80 CrNiSi 20	X80CrNiSi20	Sil XB	
	P14	1.4762		X 10 CrAl 24, X 10 CrAlSi 25	X10CrAl24, X10CrAlSi25		
	Tool steels						
	P4	1.1545		C 105 W 1	C105U		
	P4	1.1663		C 125 W	C125W, C125U		
	P7 / H2	1.2067		100 Cr 6	99Cr6, 102Cr6		
	P11 / H3	1.2080		X 210 Cr 12	X210Cr12		
	P11 / H1	1.2344		X 40 CrMoV 5 1	X40CrMoV5-1		
	P11 / H3	1.2363		X 100 CrMoV 5 1	X100CrMoV5-1		
	P7 / H2	1.2419		105 WCr 6	107WCr5, 105WCr6, 100WCr6		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	403S17		Z6013, Z6Cr13, Z8C12	X6Cr13	2301	F.3110-X6 Cr13	SUS403, SUS410S, SUS429	403, 13/6
	403S17		Z3014, Z8C13FF	X6Cr13		F.8401-AM-X12 Cr13	SUS403, SUS410S, SUS429	403, 410S, 429
	410S21, 410C21, ANC1A		Z12C13, Z12Cr13, Z10C13	X12Cr13, X10Cr13	2302	F.3401-X12 Cr13	SUS 410, JIS SUS 410	410
	430S15, 430S17, 430S18	60	Z8C17, Z6Cr17	X8Cr17	2320	F.3113-X8 Cr17	SUS 430	430
	ANC1B, ANC1C, 420C24, 420C29		Z20C13M				SCS 2	
	420S45		Z40C14, Z40Cr14, Z38C13M, Z44C14	X40Cr14		F.3405-X46 Cr13		420
	431S29, 6S80, S80	57	Z15CN16.02	X16CrNi16	2321	F.3427-X15 CrNi16, F.313, F3427-X19CrNi172	SUS 431, JIS SUS 431	431
			Z10CF17	X10CrS17	2383	F3117-X10CrS17, F3413-X14CrMoS17	SUS 431, SUS430F	430F, J 405 grade 51435
	434S17		Z8CD17.01	X8CrMo17	2325	F3116-X6CrMo171	SUS 434	434
	425C11, 425C12		Z5CN13.4, Z4CND13.4M, Z6CN13-4, Z8CD17-01	GX6CrNi13 04	2385		SCS 5, SCS 6	CA6. 13/4
	401S45	52	Z45CS9	X45CrSi8		F.3220-X 4 ScrSi 09-03	SUH 1	HNV3
	403S17		Z10C13, Z13C13	X10CrAl12		F.13152-X 10 CrAl13		405
	430S15	60	Z10CAS18, Z12CAS18	X8Cr17		F.3153-X 10 CrAl 18	SUH 21	430
	443S65	59	Z80CSN20.02			F.3222-X 80CrSiNi20-02	SUH 4	HNV6
			Z10CAS24, Z12CAS25	X16Cr26	2322	F.3154-X 10 CrAl24	SUH 446	446
			C105E2U, Y1105	C100KU	1880	F515, F516	SK 3 (TC105)	W110
			Y2120			F.5123 C120		W112
	BL3, 534A99		100Cr6RR, 100C6, Y100C6		2258	F.5230 100 Cr6, F.1310 - 100 Cr6, F.131	SUJ 2, SUJ 4	L3, 52100, L1
	BD3		X200Cr12, Z200C12	X205Cr12KU		F.5212 X210 Cr12	SKD 1, SKS	D3
	BH13		X40CrMoV5, Z40CDV5	X40CrMoV511KU	2242	F.5318 X40 CrMoV5	SKD 61	H13, P20
	BA2		X100CrMoV5, Z100CDV5	X100CrMoV51KU	2260	F.5227 X100 CrMoV5	SKD 12, JIS SKD 12	A2, D2
			105WC13	107WCr5KU	2140	F.5233 105 WCr5, F.523	SKS 2, SKS 3, SKS 31	

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Tool steels** (continued)						
	P14 / H3	1.2436		X 210 CrW 12	X210CrW12-1, X210CrW12		
	P7 / H2	1.2542		45 WCrV 7	45WCrV8, 45WCrV7		
	P11 / P13	1.2581		X 30 WCrV 9 3	X30WCrV9-3		
	P14 / H3	1.2601		X 165 CrMoV 12	X165CrMoV12		
	P7 / P10 / H1	1.2713		55 NiCrMoV 6	55NiCrMoV6		
	P7 / H3	1.2833		100 V 1	100V1		
	P11 / H3	1.3243		S 6-5-2-5	HS6-5-2-5		
	P11 / H3	1.3255		S 18-1-2-5	HS18-1-2-5		
	P11 / H3	1.3343		S 6-5-2	HS6-5-2		
	P11 / H3	1.3348		S 2-9-2	HS2-9-2		
	P11 / H3	1.3355		S 18-0-1	HS18-0-1		
M	**Stainless and heat-resistant steels**						
	M1	1.4301		X 5 CrNi 18 10	X5CrNi18-10		
	M1	1.4305		X 10 CrNiS 18 9	X8CrNiS18-9		
	M1	1.4306		X 2 CrNi 19 11	X2CrNi19-11		
	M1	1.4308		G-X 6 CrNi 18 9	GX5CrNi19-10		
	M2	1.4310		X 12 CrNi 17 7	X9CrNi18-8, X10CrNi18-8		
	M1	1.4311		X 2 CrNiN 18 10	X2CrNiN18-10		
	M1	1.4401		X 5 CrNiMo 17 12 2	X5CrNiMo17-12-2, X4CrNiMo17-12-2, X5CrNiMo18-10		

A 4

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
			X210CrW12-1, Z210CW12-01, Z 210 CW 12	X215CrW121KU	2312	F.5213 X210 CrW12, F.521		D6
	BS1		45WCrV8, 45WCrV20	45WCrV8KU	2710	F.5241 45 WCrSi 8, F.524, F524145WCrSi 8		S1
	BH21		X30WCrV9, Z30WCV9	X30WCrV93KU		F.5323 X30 WCrV9	SKD 5	O1, H21
				X165CrMoW12KU	2310	F.5211 X160 CrMoV12		
	BH224					F.528, F520S		L6
	BW2		C105E2UV1, Y1105V, 100V2	102V2KU			SKS 43	W210
	BM35		Z85WDKCV06-05-05-04-02, Z90WDKCV06-05-05-04-02	HS6-5-2-5	2723	F.5613 6-5-2-5	SKH 55	S7, M35
	BT4		Z80WKCV18-05-04-01	HS18-1-1-5		F.5530 18-1-1-5	SKH 3	T4
	BM2		Z85WDCV06-05-04-02	HS6-5-2-5	2722	F.5603 6-5-2	SKH 51	M2
			Z100DCWV09-04-02-02	HS2-9-2	2782	F.5607 2-9-2		M7
	BT1		Z80WCV18-04-01	HS18-0-1		F.5520 18-0-1	SKH 2	T1
	304S15, 304S16, 304S31, 304S11, 304S17, LW21, LWCF21	58E	Z4CN19-10FF, Z5CN17-08, Z6CN18-09, Z7CN18-09	X5CrNi18 10	2332, 233	F.3451-X5 CrNi18-10, F.314, F.3504-X6CrNi19 10, F3504-X5CrNi1810	SUS 304	304, 304H
	303S21, 303S22, 303S31	58M	Z10CNF18.09, Z8CNF18-09	X10CrNiS18 09	2346	F.3508-X10CrNiS18-09	SUS 303, JIS SUS 303	J 405 grade 30303, 303
	304S11, LW20, LWCF20, S536, T74, 304C12 (LT196), 305S11		Z1CN18-12, Z2CN18-10, Z3CN19.10M, Z3CN18-10, Z3CN19-11, Z3CN19-11FF	X3CrNi18 11, X2CrNi18 11, GX2CrNi19 10	2352	F.3503-X 2CrNi19-10, F3503-X 2CrNi18-10	JIS SCS 19, JIS SUS 304L	304L
	304C15, 304C15 (LT196)		Z6CN18.10M				SCS 13	
	301S21, 301S22, 302S26		Z12CN17.07, Z12CN18.07, Z11CN17-08, Z11CN18-08, Z12CN18-09	X12CrNi17 07	2331	F.3517-X12CrNi17 07	SUS 301	301
	304S62		Z3CN18-07Az, Z3CN18-10AZ	X2CrNiN18 11	2371	F3541-X2CrNiN1810	SUS 304 LN	304LN
	316S13, 316S17, 316S19, 316S31, 316S33, 316S16		Z6CND17.11, Z3CD17-11-01, Z6CND17-11, Z6CND17-11-02FF, Z7CND17-11-02, Z7CND17-12-02	X5CrNiMo17 12	2347	F.3543-X5CrNiMo17-12, F.3543-X6 CrNiMo17-12-03, F3543-X5CrNiMo17-122	SUS 316	316

A 4

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
M	**Stainless and heat-resistant steels** (continued)						
	M1	1.4408		G-X 6 CrNiMo 18 10	GX5CrNiMo19-11-2		
	M1	1.4429		X 2 CrNiMoN 17 13 3	X2CrNiMoN17-13-3		
	M1	1.4435		X 2 CrNiMo 18 14 3, X 2 CrNiMo 18 12	X2CrNiMo18-14-3		
	M1	1.4438		X 2 CrNiMo 18 16 4	X2CrNiMo18-15-4		
	M1	1.4460		X 4 CrNiMoN 27 5 2	X3CrNiMoN27-5-2		
	M1	1.4541		X 6 CrNiTi 18 10	X6CrNiTi18-10		
	M1	1.4550		X 6 CrNiNb 18 10	X6CrNiNb18-10		
	M1	1.4571		X 6 CrNiMoTi 17 12 2	X6CrNiMoTi17-12-2		
	M1	DIN 1.4565, 1.4581		G-X 5 CrNiMiNb 18 10	GX5CrNiMoNb19-11-2		
	M1	1.4583		X 10 CrNiMoNb 18 12	X10CrNiMoNb18-12		
	M1	1.4828		X 15 CrNiSi 20 12	X15CrNiSi20-12		
	M2	1.4871		X 53 CrMnNiN 21 9	X53CrMnNiN21-9		
	M1	1.4878		X 12 CrNiTi 18 9	X12CrNiTi18-9, X10CrNiTi18-10		
	Heat-resistant alloys, Fe-based						
	M1	1.4558		X 2 NiCrAlTi 32 20	X2NiCrAlTi32-20		
	M1	1.4563		X 1 NiCrMoCu 31 27 4	X1NiCrMoCu31-27-4		
	M1	1.4864		X 12 NiCrSi 36 16	X12NiCrSi36-16, X12NiCrSi35-16	Incoloy DS	
	M1	1.4958		X 5 NiCrAlTi31-20	X5NiCrAlTi31-20		
	M1	1.4977			X 40 CoCrNi 20 20		

A 4

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI/ SAE
	316C16, 316C16 (LT196), ANC4B					F.8414-AM-X7 CrNiMo20 10	SCS 14	
	316S62, 316S63		Z2CND17.13Az	X2CrNiMoN17 13	2375	F3543-X2CrNiMoN17133	SUS 316 LN	316LN
	316S11, 316S13, 316S14, 316S31, LW22, LWCF22, 316S12		Z2CND17.13, Z3CND17-12-03, Z3CND18-14-03	X2CrNiMo17 13	2353	F.3533-X2 CrNiMo 17-12-03, F.3534-X6 CrNiMo 17-12-03		316L
	317S12		Z2CND19.15, Z2CND19-15-04, Z3CND19-15-04	X2CrNiMo18 16	2367	F3539-X2CrNiMo18164	SUS 317 L	317L
			Z3CND25-07Az, Z5CND27-05Az		2324	F3309-X8CrNiMo27-05, F3552-X8CrNiMo266	SUS 329 J1	329
	321S12, 321S31, 321S51 (1010, 1105) LW24, LWCF24	58B, 58C	Z6CNT18.10	X6CrNiTi18 11	2337	F.3553-X7 CrNiTi 18-11, F.3523-X 6 CrNiTi 18-11, 09 Ch 18N10T, F3523-X6CrNiTi1810	SUS 321, JIS SUS 321	321, 15/5 PH, 17/4 PH
	347S20, 347S31, 347S51, ANC3B	58F, 58G	Z6CNNb18.10	X6CrNiNb18 11, X8CrNiNb18 11	2338	F.3552-X 7 CrNiNb 18-11, F.3524-X 67 CrNiNb 18-11, F3524-X6CrNiNb1810	SUS 347	347, 13/8 MO
	320S31, 320S17, 320S18	58J	Z6CNDT17.12	X6CrNiMoTi17 12	2350	F.3552-X 6 CrNiMoTi17-12-03, F3535-X6CrNiMoTi17122	SUS 316 Ti	316Ti, 326Ti
	318C17, ANC4C		Z4CNDNb18.12M	GX6crNiMoNb20 11			SCS 22	Nitronic 50.60
				X6CrNiMoNb17 13				
	309S24		Z15CNS20.12, Z17CNS20-12, Z9CN24-13	X16CrNi23 14		F3312-X15CrNiSi20-12	SUH 309	309
	349S54		Z52CMN21.09, Z53CMNS21-09Az, Z53CMN21-09Az	X53CrMnNiN21 9		F.3217-X53 CrMnNiN 21-09	SUH 35, SUH 36	EV8, 2205 Duplex
	321S20, 321S51	58B, 58C	T6CNT18.12 (B), Z6CNT18-10		2337	F.3523-X 6CrNiTi 18 11	SUS 321	321
								N08800 Incoloy 800
								N08028 Alloy 28
	NA17		Z12NCS37.18, Z12NCS35.16, Z20NCS33-16			F.3313-X12 CrNi 36-16	SUH 330	N08830 Alloy 330
			Z 42 CNKDWNb					

A 4

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
K	**Grey cast iron**						
	K3	0.6010	EN-JL1010	GG-10, GG 10	EN-GJL-100		
	K3	0.6015	EN-JL1020	GG-15, GG 15	EN-GJL-150		
	K3	0.6020	EN-JL1030	GG-20, GG 20	EN-GJL-200		
	K3	0.6025	EN-JL1040	GG-25, GG 25	EN-GJL-250		
	K4	0.6030	EN-JL1050	GG-30, GG 30	EN-GJL-300		
	K4	0.6035	EN-JL1060	GG-35, GG 35	EN-GJL-350		
	K4	0.6040		GG-40, GG 40	EN-GJL-400		
	K4	0.6660		GGL-NiCr 20 2			
	K4			GG-26Cr, GG 26Cr	EN-GJL-260 Cr		
	K7			GGV 45	EN-GJV-450		
	Ductile cast iron						
	K5	0.7040	EN-JS1030	GGG-40	EN-GJS-400-15		
	K6	0.7050	EN-JS1050	GGG-50	EN-GJS-500-7		
	K6	0.7060	EN-JS1060, EN-JS 1092	GGG-60	EN-GJS-600-3, EN-GJS-600-3U		
	K6	0.7070	EN-JS1070, EN-JS 1102	GGG-70	EN-GJS-700-2, EN-GJS-700-2U		
	Malleable cast iron						
	K1	0.8035	EN-JM 1010	GTW-35, GTW-35-04	GTW-35-04, EN-GJMW-350-4		
	K1	0.8040	EN-JM 1030	GTW-40-05, GTW-40	EN-GJMW-400-5, GTW-40-05		
	K1	0.8045	EN-JM 1040	GTW-45-07, GTW-45	EN-GJMW-450-7		
	K1	0.8135	EN-JM 1130	GTS-35-10, GTS-35	EN-GJMB 350-10		
	K1	0.8145	EN-JM 1140	GTS-45-06, GTS-45	EN-GJMB 450-6, GTS-45-06		
	K1	0.8155	EN-JM 1160	GTS-55-04, GTS-55	EN-GJMB 550-4, GTS-55-04		
	K2	0.8165	EN-JM 1180	GTS 65-02, GTS-65	EN-GJMB 650-2, GTS-65-02		
	K2	0.8170	EN-JM 1190	GTS 70-02, GTS-70	EN-GJMB 700-2, GTS-70-02		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
			Ft10D, FGL100	G10	0110	FG 10	FC 100, FC10	ASTM A-48-76
	Grade 150		Ft15D, FGL150	G15	0115	FG 15	FC 150	NO 20B
	Grade 220		Ft20D, FGL200	G20	0120	FG 20	FC 200, FC20	NO 30B
	Grade 260		Ft25D, FGL250	G25	0125	FG 25	FC25, FC 250	NO 35B
	Grade 300		Ft30D, FGL300	G30	0130	FG 30	FC 300	NO 40B
	Grade 350		Ft35D, FGL350	G35	0135	FG 35	FC 350	NO 55B
	Grade 400		Ft40D, FGL400		0140			
	L-NiCr20 2		L-NC 20 2		0523			
	420 / 12		FGS 400-12	GS400-12	0717		FCD 400, FCD40	60/40/18
	500 / 7		FGS 500-7	GS500-7	0727		FCD 500, FCD50	70/50/05
	600 / 3		FGS 600-3	GS600-3	0732		FCD 600, FCD60	80/55/06
	700 / 2		FGS 700-2	GS700-2	0737		FCD 700, FCD70	100/70/03 120/90/02
	W 35-04		MB 35-7				FCMW 330	
	W 410 / 4		MB 40-10				FCMW 350	
	45-07		MB 45-7				FCMWP 440	
	B 340 / 12		MN 35-10		0815		FCMB 340	32510
	P 440 / 7, P 45-06		MP 50-5		0854			40010
	P 540 / 5, P 55-04		MP 60-3		0856			50005
	P 65-02				0862			60004
	P 70-02		MP 70-2		0862			70003

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
N	**Aluminium alloys**						
	N1	3.0255	EN AW-1050A	Al99.5	Al99.5		
	N4	3.1371	EN AC-21000	G-AlCu4TiMg	G-AlCu4TiMg		
	N2	3.1655	EN AW-2011	AlCuBiPb	AlCu6BiPb		
	N2	3.1734		Y-Alloy	AlCu4Mg1.5Ni2, WL 3.1734		
	N4	3.2371	EN AC-42100	G-AlSi7Mg	G-AlSi7Mg, AlSi7Mg		
	N4	3.2373	EN AC-43300	G-AlSi9Mg	G-AlSi9Mg, AlSi9Mg		
	N4	3.2381	EN AC-43000	G-AlSi10Mg	G-AlSi10Mg, AlSi10Mg		
	N4	3.2382	EN AC-43400	GD-AlSi10Mg	AlSi10Mg(Fe)		
	N4	3.2383	EN AC-43200	G-AlSi10MgCu	G-AlSi10MgCu, AlSi10Mg (Cu)		
	N3	3.2581	EN AC-44200	G-AlSi12	G-AlSi12, AlSi12		
	N3	3.2582	EN AC-44300	GD-AlSi12	GD-AlSi12, AlSi12 (Fe)		
	N3	3.2583	EN AC-47000	G-AlSi12 (Cu)	G-AlSi12 (Cu)		
	N2	3.3315	EN AW-5005A	AlMg1	AlMg1C		
	N3	3.3561	EN AC-51300	G-AlMg5	G-AlMg5		
	N2	3.4345	EN AW-7022	AlZnMgCu0.5	AlZnMgCu0.5		
	N4	DIN 3.3211					
	N4	DIN 3.4365					
	Copper alloys						
	N7	2.0240	CW502L	CuZn15	CuZn15	Medium red tombac, Gold tombac	
	N7	2.0265	CW505L	CuZn30	CuZn30	Half tombac, Soldered brass, Cartridge brass, Polished copper, Metarsic	
	N7	2.0321	CW508L	CuZn37	CuZn37	Pressed brass, Etching quality, Tuned brass, Soft brass, Stamped brass	
	N7	2.0592	CC765S	G-CuZn35Al1, GK-CuZn35Al1, GZ-CuZn35Al1	CuZn35Mn2Al1Fe1-C		
	N7	2.0596	CC764S	G-CuZn34Al2, GK-CuZn34Al2, GZ-CuZn34Al2	CuZn34Mn3Al2Fe1-C		
	N7	2.0966	CW307G	CuAl10Ni5Fe4	CuAl10Ni5Fe4		
	N7	2.0975	CC333G	G-CuAl11Ni, G-CuAl10Ni	G-CuAl11Ni		
	N7	2.1050	CC480K	G-CuSn10Zn	CuSn10-C		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	1B		A5	4507	4007	L-3051	A1x1, A1050	1050A
			A-U5GT			L-2140	AC1B	B26
	FC1		A-U5PbBi	6362	4355	L-3182	A2011	2011
	LM14		A-U4NT	3045		L-2150	AC5A	
	2L99, LM25		A-S7G0.3	7257	4244	L-2651	AC4C, JIS AC4 CH (AL 9)	B25
			A7-S10G	3051	4253		AC4A, JIS AC4 A (AL 4)	A13560
	LM9		A-S10G	3051	4253	L-2560, L-2561	JIS AC4 A (AL 4V)	A13600
	LM9		A-S10G	3051	4253	L-2560, L-2561	AC4A	
			A-S9GU				JIS ADC3 (AL 4)	A360.2
	LM6		A-S13	4514	4261	L-2520, L-2521	AC3A	A413.2
	LM6, LM20		A-S13, A-S12	4514, G-AlSi13	4261	L-2520, 21	AC3A	A413.0
	LM20		A-S12U	3048	4260	L-2530	ADC1 (AK 12), AC3A (AL 12)	413.1
	N41		A-G0, 6	5764	4106	L-3350	A2x8, A5005	5005A
	N6, LM5		A-G6	3058	4146	L-3320	JIS AC7A (AL28)	5056A, 514.1
			A-Z5GU0.6					
								6061-T6
								7075-T6
	CZ 102		CuZn15				C2300	C23000
	CZ 106		CuZn30				C2600	C26000
	CZ 108		CuZn37				C2720	C27400
	HTB 1							C86500
								C86200
	CA 104		CuAl9Ni5Fe3Mn, U-A10N					C63000
	AB2		CuAl11Ni5Fe	G-CuAl11Fe4Ni4				B-148-52
	G1, CT1							C90700

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
N	**Copper alloys** (continued)						
	N7	2.1052	CC483K	G-CuSn12, GZ-CuSn12, GC-CuSn12	CuSn12-C		
	N9	2.1090	CC493K	G-CuSn7ZnPb, GZ-CuSn7ZnPb, GC-CuSn7ZnPb	CuSn7Zn4Pb7-C	Rotguss 7	
	N9	2.1096	CC491K	G-CuSn5ZnPb	CuSn5Zn5Pb5-C	Rotguss 5	
	N9	2.1098	CC490K	G-CuSn2ZnPb	CuSn3Zn8Pb5-C	Alloy 5A	
	N9	2.1176	CC495K	G-CuPb10Sn, GZ-CuPb10Sn, GC-CuPb10Sn	CuSn10Pb10-C		
	N9	2.1182	CC496K	G-CuPb15Sn, GZ-CuPb15Sn, GC-CuPb15Sn	CuSn7Pb15-C		
	N9	2.1188	CC497K	G-CuPb20Sn	CuSn5Pb20-C		
	N7	2.1293	CW106C	CuCrZr	CuCr1Zr		
	N7			CuAl6.5Fe2.5Sn0.25		AMPCO 8	
	N7					AMPCO 6	
	N10			CuAl13Fe4.5		AMPCO 21	
	N10					AMPCO 26	
	Magnesium-based alloys						
	N6	3.5101	EN-MC35110	G-MgZn 4 SE 1 Zr 1	EN-MCMgZn4RE1Zr, G-MgZn4SE1Zr1		
	N6	3.5103	EN-MC65120	G-MgSE 3 Zn 2 Zr 1	EN-MCMgRE3Zn2Zr, G-MgSE3Zn2Zr1		
	N6	3.5106	EN-MC65210	G-MgAg 3 SE 2 Zr 1	EN-MCMgRE2Ag2Zr, G-MgAg3SE2Zr1		
	N6	3.5161		MgZn6Zr, MgZn 6 Zr F 29	MgZn6Zr, MgZn6Zr F29		
	N6	3.5200		MgMn2	MgMn2		
	N6	3.5312		MgAl3Zn	MgAl3Zn		
	N6	3.5470	EN-MC21320	MgAl4Si1	EN-MCMgAl4Si		
	N6	3.5612		MgAl6Zn	MgAl6Zn		
	N6	3.5632	EN-MC21150	G-MgAl 6 Zn 3	G-MgAl6Zn3	AZ63	
	N6	3.5662		G-MgAl 6	G-MgAl6		
	N6	3.5812	EN-MC21110	G-MgAl 8 Zn 1	G-MgAl8Zn1	AZ81 hp	
	N6	3.5912	EN-MC21120	GD-MgAl 9 Zn 1	GD-MgAl9Zn1	AZ91	

A 4

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	Pb2		A53-707, CuSn12					Amcoloy 712, B505
			CuSn7Pb6Zn4					C93200
	LG2		CuPb5Sn5Zn5					C83600
	LG1							
	LB2		CuPb10Sn10					C93700
	LB1							C93800
	LB5		CuPb20Sn5					C94100
	CC 102			CuCrZr				C18200
								AMPCO 8
								AMPCO 6
								AMPCO 21
								AMPCO 26
	RZ5, MAG5, MAG9, TZ6		G-Z4TR, ZH62					ZE41
	ZRE1, MAG6		G-TR3Z2					EZ33
	MSR, QE22		G-Ag2, 5					QE22
	ZW1, ZW3, ZW6, ZW21, MAG 161, MAG 131, MAG 141, MAG 151							M1
	MAG 101, AM503		G-M2					
	AZ31, MAG 111		G-A3Z1, AZ31					52, 510
			G-A4S1					
	MAG121, AZM		G-A6Z1, AZ61					520, 531
			AZ63					
	MAG1, MAG2, AZ80, AZ81, A8		G-A9, AZ81	AZ81 hp			AZ81 hp	AZ81
	AZ91, MAG3, MAG7		G-A9Z1, AZ91	AZ91 hp				HK31

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
S	**Titanium and titanium alloys**						
	S6	3.7025		Ti 1	Ti 99.8	Titanium grade 1	
	S7	3.7115.1		TiAl 5 Sn 2	TiAl5Sn2.5		
	S6	3.7124		TiCu2	TiCu2		
	S7	3.7164, 3.7165		TiAl 6 V 4	TiAl6V4	Titanium grade 5	
	Ni/Co-based heat-resistant alloys						
	S3	2.4360		NiCu30Fe	NiCu30	Monel 400	
	S4	2.4375		NiCu30Al	NiCu30Al3Ti	Monel K500	
	S3	2.4630		NiCr20Ti		Nimonic 75	
	S3	2.4642		NiCr30Fe		Inconel 690, Alloy 690	
	S4	2.4668		NiCr19Fe19NbMo, NiCr19Fe19Nb5Mo3, NiCr19NbMo	NiCr19Nb5Mo3	Inconel 718, Udimet 630	
	S4	2.4669		NiCr15Fe7TiAl, Alloy X-750	NiCr15Fe7Ti2Al	Inconel X-750, Alloy X-750	
	S3	2.4856		NiCr22Mo9Nb, Alloy 625	NiCr22Mo9Nb	Inconel 625	
	S3	2.4858		NiCr21Mo, Alloy 825	NiFe30Cr21Mo3	Incoloy 825	
	S4	DIN 2.4698					
	S4	DIN 2.4654					
H	**Hardened cast iron**						
	H4	0.9640		G-X300CrMoNi1521	GX300CrMoNi15-2-1		
	H4	0.9645		G-X260CrMoNi2021	GX260CrMoNi20-2-1		
	H4	0.9650		G-X260Cr27	GX260Cr27		
	H4	0.9655		G-X300CrMo271	GX300CrMo27-1		
	Chilled cast iron						
	H4	0.9620		G-X260NiCr42	GX260NiCr42	Ni hard 2	
	H4	0.9625		G-X330NiCr42	GX330NiCr42	Ni hard 1	
	H4	0.9630		G-X300CrNiSi952	GX300CrNiSi952	Ni hard 4	
	H4	0.9635		G-X300CrMo153	GX300CrMo15-3		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	TA.1		T-35			Ti-P01		R2050
								R54620
	TA.21, TA.22, TA.23, TA.24, TA.52, TA.53, TA.54, TA.55, TA.58		T-U2			Ti-P11		
	TA.10, TA.11, TA.12, TA.13, TA.28, TA.56		T-A6V			Ti-P63		4911, 4928, 4935, 4954, 4965, 4967, 6AL4V
	3072-76, NA13		NU30					Monel 400
	3072-76, HC202, 3146, Na18							AMS 4676, Monel K500
	HR5, 703 B, 203-4		NC 20 T					Nitronic 75, Nimonic 90/120
								Inconel 690
	HR 8		NC 19 FeNb					Inconel 718
	HR 505		NC 15 FeTNb					5542G, Inconel X-750
			NC 22 FeDNB					Incoloy 825
	3072-76		NC 21 FeDU					
								Hastelloy C
								Waspaloy
	Grade 3A, grade 3B BS4844							
	Grade 3C							
	Grade 3D				0466			A532111A 25% CR
	Grade 3E							A532111A 25% CR
	Grade 2A, BS4844 (1986) 2A				0512			Ni hard 2
	Grade 2B, BS4844 (1986) 2B				0513			Ni hard 1
	Grade 2C, Grade 2D, Grade 2E, BS4844 (1986) 2E				0457			Ni hard 4
	Grade 3A; B, Grade 3B							

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
0	**Thermosetting plastics**						
	02					EP, Epoxide, Epoxy	
	02					Bakelite	
	02					Pertinax	
	02					Resitex	
	Thermoplastics						
	01					PMMA, Polymethyl metacrylate, Plexiglas, Acrylic glass	
	01					PC, Polycarbonate, Makrolon	
	01					PA, Polyacrylamide	

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
								Epoxy, Bakelite
								Phenolic
								Phenolic w/glass
								Resitex
								Plexiglas, Acrylic, Polycarbonate
								UHMW
								Acetal plastics, Delrin, Celcon, Teflon, Nylon

Hardness comparison table
Tensile strength, Brinell, Vickers and Rockwell hardness (extract from DIN 50150)

Tensile strength R_m N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRC
255	80	76,0	
270	85	80,7	
285	90	85,5	
305	95	90,2	
320	100	95,0	
335	105	99,8	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	156	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	235	223	
770	240	228	20,3
785	245	233	21,3
800	250	238	22,2
820	255	242	23,1
835	260	247	24,0
850	265	252	24,8
865	270	257	25,6
880	275	261	26,4
900	280	266	27,1
915	285	271	27,8
930	290	276	28,5
950	295	280	29,2
965	300	285	29,8
995	310	295	31,0
1030	320	304	32,2
1060	330	314	33,3
1095	340	323	34,4
1125	350	333	35,5
1155	360	342	36,6
1190	370	352	37,7
1220	380	361	38,8
1255	390	371	39,8
1290	400	380	40,8
1320	410	390	41,8
1350	420	399	42,7
1385	430	409	43,6

Tensile strength R_m N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRC
1420	440	418	44,5
1455	450	428	45,3
1485	460	437	46,1
1520	470	447	46,9
1555	480	(456)	47,7
1595	490	(466)	48,4
1630	500	(475)	49,1
1665	510	(485)	49,8
1700	520	(494)	50,5
1740	530	(504)	51,1
1775	540	(513)	51,7
1810	550	(523)	52,3
1845	560	(532)	53,0
1880	570	(542)	53,6
1920	580	(551)	54,1
1955	590	(561)	54,7
1995	600	(570)	55,2
2030	610	(580)	55,7
2070	620	(589)	56,3
2105	630	(599)	56,8
2145	640	(608)	57,3
2180	650	(618)	57,8
	660		58,3
	670		58,8
	680		59,2
	690		59,7
	700		60,1
	720		61,0
	740		61,8
	760		62,5
	780		63,3
	800		64,0
	820		64,7
	840		65,3
	860		65,9
	880		66,4
	900		67,0
	920		67,5
	940		68,0

Any hardness values converted on the basis of this table will be approximate only.
See DIN 50150.
Values in brackets are theoretically calculated values.

Material property	Unit/ test method	Symbol
Tensile strength	N/mm²	R_m
Vickers hardness	Diamond pyramid 136° Testing force F ≥ 98 N	HV
Brinell hardness Calculated from: HB = 0.95 × HV	0.102 × F/D² = 30 N/mm² F = testing force in N D = sphere diameter in mm	HB
Rockwell hardness C	Diamond cone 120° Overall testing force 1471 ± 9 N	HRC

ISO tolerances

Nominal size range in mm	Tolerances* for external dimensions																	
	d11	e7	e8	h5	h6	h7	h8	h9	h10	h11	h12	js14	js16	k6	k10	k11	k12	m7	p7
> 3	−20 −80	−14 −24	−14 −28	0 −4	0 −6	0 −10	0 −14	0 −25	0 −40	0 −60	0 −100	+125 −125	+300 −300	+6 0	+40 0	+60 0	+100 0	+12 +2	+16 +6
> 3 ≤ 6	−30 −105	−20 −32	−20 −38	0 −5	0 −8	0 −12	0 −18	0 −30	0 −48	0 −75	0 −120	+150 −150	+375 −375	+9 +1	+48 0	+75 0	+120 0	+16 +4	+24 +12
> 6 ≤ 10	−40 −130	−25 −40	−25 −47	0 −6	0 −9	0 −15	0 −22	0 −36	0 −58	0 −90	0 −150	+180 −180	+450 −450	+10 +1	+58 0	+90 0	+150 0	+21 +6	+30 +15
> 10 ≤ 18	−50 −160	−32 −50	−32 −59	0 −8	0 −11	0 −18	0 −27	0 −43	0 −70	0 −110	0 −180	+215 −215	+550 −550	+12 +1	+70 0	+110 0	+180 0	+25 +7	+36 +18
> 18 ≤ 30	−65 −195	−40 −61	−40 −73	0 −9	0 −13	0 −21	0 −33	0 −52	0 −84	0 −130	0 −210	+260 −260	+650 −650	+15 +2	+84 0	+130 0	+210 0	+29 +8	+43 +22
> 30 ≤ 50	−80 −240	−60 −75	−50 −89	0 −11	0 −16	0 −25	0 −39	0 −62	0 −100	0 −160	0 −250	+310 −310	+800 −800	+18 +2	+100 0	+160 0	+250 0	+34 +9	+51 +26
> 50 ≤ 80	−100 −290	−80 −90	−60 −106	0 −13	0 −19	0 −30	0 −46	0 −74	0 −120	0 −190	0 −300	+370 −370	+950 −950	+21 +2	+120 0	+190 0	+300 0	+41 +11	+62 +32
> 80 ≤ 120	−120 −340	−72 −107	−72 −126	0 −15	0 −22	0 −35	0 −54	0 −87	0 −140	0 −220	0 −350	+435 −435	+1100 −1100	+25 +3	+140 0	+220 0	+350 0	+48 +13	+72 +37
> 120 ≤ 180	−145 −395	−86 −125	−85 −148	0 −18	0 −25	0 −40	0 −63	0 −100	0 −160	0 −250	0 −400	+500 −500	+1250 −1250	+28 +3	+160 0	+250 0	+400 0	+55 +15	+83 +43
> 180 ≤ 250	−170 −460	−100 −148	−100 −172	0 −20	0 −29	0 −46	0 −72	0 −115	0 −185	0 −290	0 −460	+575 −575	+1450 −1450	+33 +4	+185 0	+290 0	+460 0	+63 +17	+96 +50
> 250 ≤ 315		−110 −162																	+108 +56
> 315 ≤ 400		−125 −182																	+119 +52
> 400 ≤ 500		−135 −198																	+131 +53

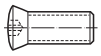
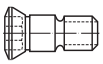
Nominal size range in mm	Tolerances* for external dimensions
	z9
> 3	+51 +26
> 3 ≤ 6	+65 +35
> 6 ≤ 10	+78 +42
> 10 ≤ 14	+93 +50
> 14 ≤ 18	+103 +60
> 18 ≤ 24	+125 +73
> 24 ≤ 30	+140 +88
> 30 ≤ 40	+174 +112
> 40 ≤ 50	+196 +136
> 50 ≤ 65	+246 +172
> 65 ≤ 80	+284 +210
> 80 ≤ 100	+345 +258
> 100 ≤ 120	+397 +310
> 120 ≤ 140	+465 +365
> 140 ≤ 160	+515 +415
> 160 ≤ 180	+565 +465
> 180 ≤ 200	+635 +520

Nominal size range in mm	Tolerances* for internal dimensions			
	H6	H7	H11	H12
> 3	+6 0	+10 0	+60 0	+0,10 0
> 3 ≤ 6	+8 0	+12 0	+75 0	+0,12 0
> 6 ≤ 10	+9 0	+15 0	+90 0	+0,15 0
> 10 ≤ 18	+11 0	+18 0	+110 0	+0,18 0
> 18 ≤ 30	+13 0	+21 0	+130 0	+0,21 0
> 30 ≤ 50	+16 0	+25 0	+160 0	+0,25 0
> 50 ≤ 80	+19 0	+30 0	+190 0	+0,30 0
> 80 ≤ 120	+22 0	+35 0	+220 0	+0,35 0
> 120 ≤ 180	+25 0	+40 0	+250 0	+0,40 0
> 180 ≤ 250	+29 0	+46 0	+290 0	+0,46 0

* Tolerances in µm in accordance with DIN ISO 286 (previously: DIN 7160 or DIN 7161)

A 4

Clamping screws for indexable inserts

Screw types	Designation	Dimensions	Torx	Tightening torque Nm
 Clamping screws with 43° head angle for indexable inserts with countersink	FS322	M2,5 × 5,7	7	0,8
	FS258	M3 × 5,7	8	1,5
	FS246	M3 × 7	8	1,5
	FS1163	M3,5 × 10	15	3,0
	FS320	M4 × 5	15	3,0
	FS318	M4 × 6	15	3,0
	FS245	M4 × 6,5	15	3,0
	FS321	M4 × 7	15	3,0
	FS319	M4 × 8	15	3,0
	FS244	M4 × 9	15	3,0
	FS749	M4 × 10,5	15	3,0
	FS326	M4 × 12	15	3,0
	FS1458	M4 × 12	15IP	2,5
	FS954	M4,5 × 11	20	4,5
	FS260	M5 × 9,5	20	5,0
	FS243	M5 × 11	20	5,0
	FS242	M5 × 13	20	5,0
	FS1165	M5 × 12	20	6,0
	FS1010	M6 × 14	20	5,0
	FS1164	M6 × 15	25	10,0
 Fitting screws	FS925	M2,5 × 6,5	8	0,8
	FS397	M3 × 6,9	8	1,0
	FS2070	M3 × 6,5	8IP	2,0
	FS922	M3,5 × 9,5	15	2,5
	FS390	M4 × 0,5 × 8,4	15	4,0
	FS2071	M4 × 8,4	15IP	4,0
	FS1028	M4,5 × 12,8	20	4,0
	FS1153	M4,5 × 14	20	4,0
	FS391	M5 × 0,5 × 9,1	20	5,0
	FS392	M5 × 0,5 × 12,75	20	5,0
	FS393	M5 × 0,5 × 15,45	20	5,0
	FS2072	M5 × 9,55	20IP	5,0
	FS2073	M5 × 0,5 × 12,75	20IP	5,0
	FS2074	M5 × 15,45	20IP	5,0
	FS2075	M6 × 20,35	20IP	5,0
	FS394	M6 × 0,7 × 20,35	20	5,0
	FS395	M8 × 0,75 × 24,7	30	6,0
	FS2107	M8 × 24,7	30IP	10,0

Screw types	Designation	Dimensions	Torx	Tightening torque Nm
 Clamping screws with 60° head angle for indexable inserts with arched countersink in accordance with ISO	FS1358	M1,8 × 3,5	6	0,4
	FS1012	M1,8 × 4,3	6	0,4
	FS2076	M2 × 3,2	6IP	0,6
	FS1003	M2 × 3,25	6	0,4
	FS1151	M2 × 3,45	6	0,4
	FS2147	M2 × 4,25	6IP	0,6
	FS2148	M2 × 4,95	6IP	0,6
	FS1004	M2,2 × 4,6	7	0,6
	FS2084	M2,2 × 4,6	7IP	0,9
	FS2111	M2,2 × 4,85	7IP	0,9
	FS1020	M2,2 × 5,5	7	0,6
	FS2149	M2,2 × 6,4	7IP	0,9
	FS2066	M2,5 × 5,2	7IP	0,9
	FS924	M2,5 × 4,5	8	0,8
	FS1455	M2,5 × 4,5	8IP	0,8 / 1,2
	FS1129	M2,5 × 5,2	8	0,8
	FS2067	M2,5 × 5,7	7IP	0,9
	FS375	M2,5 × 5,8	7	0,8
	FS923	M2,5 × 6	8	0,8 / 1,2
	FS1454	M2,5 × 6	8IP	0,8 / 1,2
	FS2061	M2,5 × 6,5	7IP	0,9
	FS2077	M3 × 5,3	9IP	1,5
	FS1005	M3 × 6	8	1,0
	FS1456	M3 × 6,2	9IP	1,5 / 2,0
	FS2078	M3 × 7,2	9IP	1,5
	FS1013	M3 × 7,5	8	1,0
	FS1457	M3 × 7,7	9IP	1,5
	FS379	M3 × 8,5	8	1,0
	FS2079	M3 × 8,7	9IP	2,0
	FS920	M3,5 × 7,3	15	2,5
	FS2062	M3,5 × 8,1	15IP	3,0
	FS2266	M3,5 × 8,75	10IP	2,0
	FS359	M3,5 × 9	15	2,5
	FS2119	M3,5 × 9,3	15IP	3,0
	FS2063	M3,5 × 10,1	15IP	3,0
	FS1006	M3,5 × 12	15	2,5
	FS2060	M3,5 × 12,1	15IP	3,0
	FS2279	M3,5 × 12	15IP	3,0
	FS2064	M4 × 0,5 × 11	15IP	3,0
	FS2065	M4 × 0,5 × 14	15IP	3,0
	FS1011	M4 × 7,8	15	3,0
	FS2080	M4 × 8,5	15IP	2,5
	FS2114	M4 × 9	15IP	2,5
	FS378	M4 × 9,5	15	3,0
	FS1453	M4 × 9,7	15IP	2,5 / 3,5
	FS1459*	M4 × 10	15IP	4,0
	FS2163	M4 × 10,8	15IP	3,0
	FS2081	M4 × 12	15IP	3,0
	FS1007	M4 × 12	15	3,0
	FS1029	M5 × 9	20	5,0
	FS2139	M5 × 10	20IP	5,0
	FS1030	M5 × 11	20	5,0
	FS2281	M5 × 11	20IP	5,0
	FS1495	M5 × 13	20IP	5,0
	FS1031	M5 × 13	20	5,0
	FS1009	M5 × 16	20	5,0
	FS2112	M5 × 16	20IP	5,0
	FS2090	M5 × 17,25	20IP	5,0
	FS1036	M6 × 14	20	5,0
	FS2089	M6 × 18,25	25IP	5,0
	FS1008	M6 × 18	20	5,0
	FS1152	M8 × 1 × 18,5	30	10,0
	FS2150	M8 × 22	30IP	10,0

* Screw head with radius

IP = Torx Plus

A4

Torque screwdriver with interchangeable blades

Torque screwdriver



Designation	Size		Scale range
FS2001	1	4	0,4–1,2 Nm
FS2003	3	4	1,5–5,0 Nm
FS2002	1	4	3,5–10,6 in lbs
FS2004	3	4	13,3–44 in lbs



Designation	Size		Scale range
FS2248	3	4	1,0–6,0 Nm

Interchangeable blades	Designation	Torx	
 Torx interchangeable blades Blade length 175 mm	FS2005	6	4
	FS2006	7	
	FS2007	8	
	FS2008	10	
	FS2009	15	
	FS2010	20	
 Torx Plus interchangeable blades Blade length 175 mm	FS2085	6IP	4
	FS2011	7IP	
	FS2012	8IP	
	FS2013	9IP	
	FS2268	10IP	
	FS2014	15IP	
	FS2015	20IP	
	FS2016	25IP	
Complete blade set (FS2005–FS2016) Blade length 175 mm	FS2017		4

IP = Torx Plus

Torque T-handle



Designation		Scale range
FS2041	6	4,5–14 Nm
FS2042	6	40–123 in lbs

Interchangeable blades	Designation	Torx/SW	
 Torx interchangeable blades Blade length 130 mm	FS2043	15	6
	FS2044	20	
	FS2045	25	
	FS2046	30	
 Torx Plus interchangeable blades Blade length 130 mm	FS2047	15IP	6
	FS2048	20IP	
	FS2049	25IP	
	FS2109	30IP	
 Hexagonal interchangeable blades Blade length 130 mm	FS2050	SW3	6
	FS2051	SW4	
	FS2052	SW5	
Complete blade set (FS2043–FS2052) Blade length 130 mm	FS2053		6

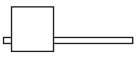
IP = Torx Plus

A 4

Screwdriver

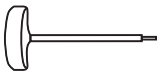
Screwdriver types	Designation	Torx
 Screwdriver	FS1063	6
	FS2086	6IP
	FS309	7
	FS2088	7IP
	FS230	8
	FS1483	8IP
	FS1128	9
	FS1484	9IP
	FS2267	10IP
	FS229	15
	FS1485	15IP
	FS228	20
	FS1486	20IP
	FS2167	25
	FS1487	25IP
	FS396	30
	FS2109	30IP

IP = Torx Plus

Screwdriver types	Designation	Torx	WAF
 Torx key	FS2146	6IP	–
	FS2087	6IP	–
	FS325	7	–
	FS1490	7IP	–
	FS257	8	–
	FS1466	9IP	–
	FS1050	10	–
	FS255	15	–
	FS1465	15IP	3,5
	FS1496	15IP	4,0
	FS256	20	–
	FS1154	–	2,0
	FS1155	–	2,5

IP = Torx Plus

A4

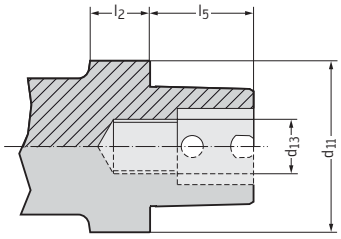
Screwdriver types	Designation	Torx
 Handle key, small	FS1047	15
	FS1048	20
	FS1049	25
 Handle key, large	FS1172	15
	FS1173	20
	FS1174	25
	FS1175	30

Allen key	Designation	Torx	WAF
	ISO 2936–1,3	–	1,3
	ISO 2936–1,5	–	1,5
	ISO 2936–2	–	2
	ISO 2936–2,5	–	2,5
	ISO 2936–3	–	3
	ISO 2936–3,5	–	3,5
	ISO 2936–4	–	4
	ISO 2936–5	–	5
	ISO 2936–6	–	6
	FS1464	20IP	–
	FS1592	25IP	–

IP = Torx Plus

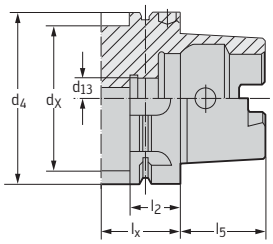
Clamping systems for tools and tool adaptors

Walter Capto™ tool adaptor ISO 26623



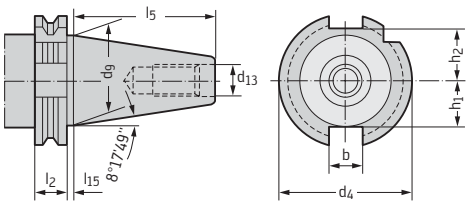
Walter Capto™	d_{11} mm	l_2 mm	l_5 mm	d_{13}
C3	32	15	19	M12 × 1,5
C4	40	20	24	M14 × 1,5
C5	50	20	30	M16 × 1,5
C6	63	22	38	M20 × 2,0
C8	80	30	48	M20 × 2,0

HSK tool adaptor DIN 69893 part 1, form A



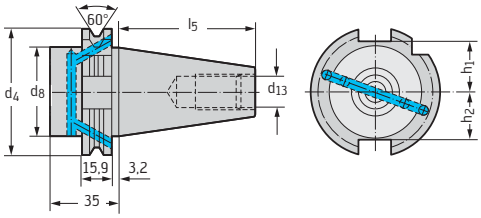
HSK	l_5 mm	d_4 mm	d_x max. mm	d_{13}	l_2 mm	l_x min. mm
63	32	63	53	M18 × 1,0	26	42
100	50	100	85	M24 × 1,5	29	45

SK tool adaptor DIN 69871 part 1, form A



SK no.	l_5 −0,3 mm	l_2 −0,1 mm	l_{15} ± 0,2 mm	d_9 mm	d_{13}	d_4 −0,1 mm	b H12 mm	h_1 −0,4 mm	h_2 −0,4 mm
40	68,4	15,9	3,2	44,45	M16	63,55	16,1	22,8	25,0
50	101,75	15,9	3,2	69,85	M24	97,50	25,7	35,5	37,7

SK tool adaptor DIN 69871 part 1, form B



SK no.	l_5 mm	d_4 mm	d_8 max. mm	d_{13}	h_2 mm	h_1 mm
40	68,40	63,55	50	M16	22,8	25,0
50	101,75	97,50	80	M24	35,5	37,7

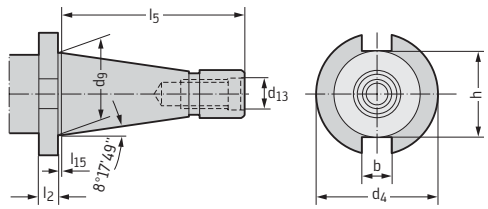
(with internal coolant supply; dimensions similar to form A)

A 4

Clamping systems for tools and tool adaptors

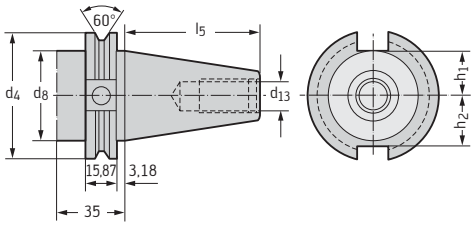
(continued)

SK tool adaptor DIN 2080



SK no.	d_9 mm	l_5 mm	l_{15} ± 0,2 mm	d_{13}	d_4 –0,4 mm	l_2 ± 0,15 mm	b H12 mm	h max. mm
40	44,45	93,4	1,6	M16	63,0	10	16,1	45,0
50	69,85	126,8	3,2	M24	97,5	12	25,7	70,6

CAT tool adaptor ANSI B 5.50

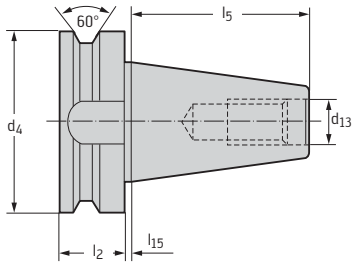


SK no.	l_5 mm	d_4 mm	d_8 mm	d_{13}	h_2 mm	h_1 mm
40	68,25	63,5	44,5	M16	22,6	25,0
50	101,6	98,4	70,0	M24	35,3	37,7

(ANSI/ASME B 5.50 – 1885)

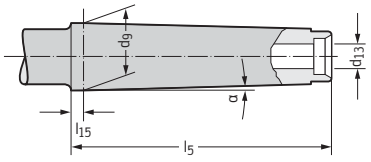
A 4

MAS BT tool adaptor



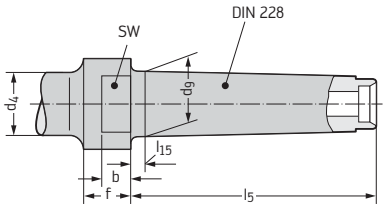
SK no.	l_5 mm	d_4 mm	d_{13}	l_2 mm	l_{15} mm
40	65,4	63	M16	25	2
50	101,8	100	M24	35	3

MT tool adaptor DIN 228 A



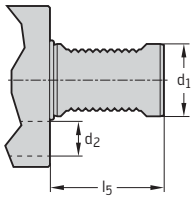
MT	d_9 mm	l_5 mm	l_{15} mm	α	d_{13}
0	9,045	53	3,0	1°29'27"	–
1	12,065	57	3,5	1°25'43"	M6
2	17,780	69	5,0	1°25'50"	M10
3	23,825	86	5,0	1°26'16"	M12
4	31,267	109	6,5	1°29'15"	M16
5	44,399	136	6,5	1°30'26"	M20

MT tool adaptor DIN 2207



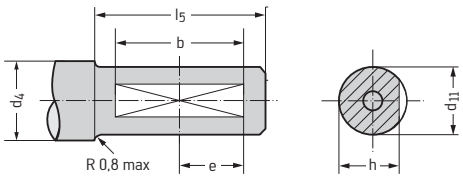
MT	d_9 mm	l_5 mm	l_{15} mm	d_4 mm	f mm	b mm	SW d_9 mm
3	23,825	86	5,0	36	18	12	24
4	31,267	109	6,5	43	23	15	32
5	44,399	136	6,5	60	28	18	45

VDI tool adaptor DIN 69880



Type	d_1 mm	d_2 mm	l_5 mm
VDI 16	16	8	32
VDI 20	20	10	40
VDI 25	25	10	48
VDI 30	30	14	55
VDI 40	40	14	63
VDI 50	50	16	78

Parallel shank ISO 9766:1990 (E)



d_{11} h_6 mm	d_4 min. mm	h h_{13} mm	l_5 ±1 mm	e mm	b mm
20	25	18,2	50	14,5	29
25	31	23	56	17,5	35
32	38	30	60	19,5	39

A 4


WALTER

Walter General Catalogue

Contents

		Page
A – Turning catalogue		A 2
	A 1: ISO turning	A 4
	A 2: Grooving	A 269
	A 3: Thread turning	A 421
	A 4: General information – Turning	A 465
B – Drilling and Threading catalogue		**B 2 and B 706**
Drilling	**B 1: Solid drilling**	**B 4**
	B 2: Counterboring and precision boring	**B 494**
	B 3: Reaming	**B 651**
	B 4: General information – Drilling	**B 695**
Threading	**B 5: Tapping**	**B 708**
	B 6: Thread forming	**B 1023**
	B 7: Thread milling	**B 1083**
	B 8: Threading dies	**B 1135**
	B 9: General information – Threading	**B 1143**
C – Milling catalogue		C 2
	C 1: Solid carbide, PCD and HSS milling tools	C 4
	C 2: Milling tools with indexable inserts	C 274
	C 3: General information – Milling	C 667
D – Adaptors catalogue		
	D 1: Stationary adaptors	D 3
	D 2: Rotating adaptors	D 50
	D 3: General information – Adaptors	D 159

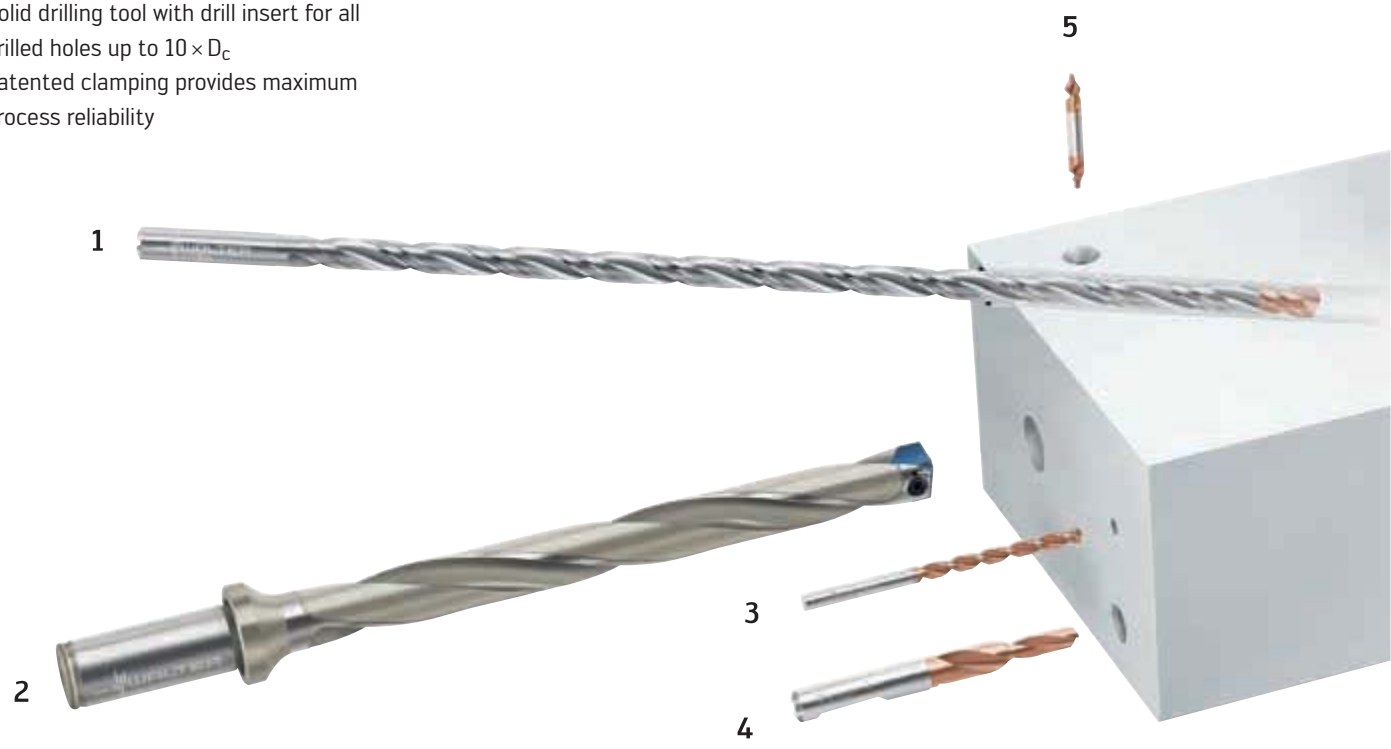
Tools for drilling

The Walter and Walter Titex competence brands provide a full range of products for efficient drilling operations. The standard range of solid drills starts at a diameter of 0.05 mm and ends at a diameter of 100 mm. A wide range of systems with indexable inserts or drill inserts as well as systems made from solid carbide or HSS is available.
In addition to analogue tools, digital solutions with balance compensation are available for counterboring and precision boring operations. Maximum precision and easy handling increase process reliability and productivity. For reaming operations, Walter offers solid carbide or HSS tools with multiple cutting edges, as well as various versions of pad-guided reaming tools with exchangeable cutting edges.

1 XD Technology
[from page B 101]
- Drilling without pecking up to $50 \times D_C$ as a standard tool and up to $70 \times D_C$ as a special tool
- For versatile use in many different materials

2 Xtra·tec® Point Drill
[from page B 198]
- Solid drilling tool with drill insert for all drilled holes up to $10 \times D_C$
- Patented clamping provides maximum process reliability

5 Solid carbide and HSS centre drill
[from page B 396]
- Our product range includes dimensions in accordance with DIN 333 and the associated forms A, R and B



3 UFL® XPL high-performance drill made from HSS-E
[from page B 262]
- UFL® XPL tools offer a long tool life for universal use
- HSS-E provides good temperature resistance and the XPL coating ensures maximum wear resistance

4 X·treme solid carbide chamfer drill
[from page B 27]
- Pilot hole drilling and countersinking can be performed in a single operation
- Other dimensions and stages can be supplied by the Walter Xpress Service within two weeks



6 DC170 Supreme – The ikon of drilling
[from page B 28]
- Innovative new guidance design for maximum performance and component quality
- Reliable thanks to 360° coolant coverage
- Visible cost-effectiveness thanks to the regrinding scale

7 Walter Precision
[from page B 554]
- Self-balancing precision boring tool for final boring operations
- Accuracy of 2 µm with v_c at up to 2000 m/min
- Walter Capto™, NCT and ScrewFit adaptor
- Also available in a lightweight version

8 Xtra·tec® Insert Drill
[from page B 214]
- Indexable insert drill which can be used universally for high productivity with excellent drilled hole quality

9 Walter Boring
[from page B 536]
- Boring tool with a wide adjustment range
- With Walter NCT, Walter Capto™ and ScrewFit, it is compatible with almost any machine spindle

10 X·treme D8–D12
[from page B 79]
- High-performance drill up to $12 \times D_c$ with DPP double point coating for maximum process reliability and maximum productivity
- No centring or pilot holes required

11 Walter Titex reaming
[from page B 660]
- Our comprehensive reaming product range made from solid carbide and HSS includes cylindrical and tapered versions
- 1/100 increments available from stock

12 D4580 + A3382XPL chamfering tool
[from page B 170]
- Xtra·tec®
- Can be used with various solid carbide drills

		Page
Solid carbide drilling tools	Product range overview	B 6
	Designation key	B 10
	Walter Select – Solid carbide drilling tools	B 12
	Solid carbide drills with internal coolant	B 27
	Solid carbide drills without internal coolant	B 123
Drilling/chamfering tools	Product range overview	B 170
	Designation key	B 171
	Tools and indexable inserts	B 172
Indexable inserts for drilling and reaming	Product range overview	B 174
	Designation key	B 175
	Walter Select – Indexable inserts/solid drilling	B 178
	Indexable inserts for drilling	B 180
	Indexable inserts for reaming	B 190
Drilling tools with indexable inserts	Product range overview	B 192
	Designation key	B 193
	Walter Select – Drilling tools with indexable inserts	B 194
	Indexable insert drills	B 198
HSS drilling tools	Product range overview	B 248
	Designation key	B 251
	Walter Select – HSS drilling tools	B 252
	HSS drills	B 262
Solid carbide and HSS NC centre drills	Product range overview	B 375
	Walter Select – Solid carbide and HSS NC centre drills	B 376
	Solid carbide and HSS NC centre drills	B 380

		Page
Solid carbide and HSS centre drills	Product range overview	B 389
	Walter Select – Solid carbide and HSS centre drills	B 390
	Solid carbide and HSS centre drills	B 396
Technical information – Solid carbide drilling tools	Cutting data	B 412
	Cutting tool materials and coatings	B 430
	Grade description	B 432
	Type description	B 434
	Drilling strategies	B 438
	Dimensions for solid carbide drilling tools	B 441
Technical information – Drilling/chamfering tool	Assembly instructions	B 443
Technical information – Drilling tools with indexable inserts	Cutting data	B 444
	Cutting tool material application charts	B 456
	Geometry overview – Indexable inserts	B 457
	Tool diameter tolerance ranges	B 458
	Drilling with X offset	B 459
	Drilling strategies	B 460
	Standard values for cooling, performance, torque and feed force	B 461
	Solutions	B 470
Technical information – HSS drilling tools	Cutting data	B 474
	Cutting tool materials, surface treatment and coatings	B 482
	Dimensions for HSS drilling tools	B 484
Technical information – Solid carbide and HSS NC centre drills	Cutting data	B 487
Technical information – Solid carbide and HSS centre drills	Cutting data	B 488

Product range overview
Solid carbide drills with internal coolant

Machining									
Drilling depth	**3 × D_c**	**3 × D_c**					**5 × D_c**		
Designation	**K3299XPL K3899XPL X·treme Step 90**	**DC170 Supreme**	**A3289DPL X·treme Plus**	**A3293TTP X·treme Inox**	**A3299XPL A3899XPL X·treme**	**DC150 Perform**	**DC170 Supreme**	**A3389AML X·treme M**	**A3389DPL X·treme Plus**
Standard	Walter	DIN 6537 K	DIN 6537 K	DIN 6537 K	DIN 6537 K	DIN 6537 K	DIN 6537 L	Walter	DIN 6537 L
Dia. range [mm]	3,3–14	3–20	3–20	3–20	3–20	3–20	3–20	2–2,95	3–20
Page	B 27	B 28	B 31	B 34	B 37	B 43	B 47	B 50	B 51
									

Machining									
Drilling depth	**5 × D_c**					**8 × D_c**			
Designation	**A3393TTP X·treme Inox**	**A3382XPL X·treme CI**	**A3399XPL A3999XPL X·treme**	**A3387 Alpha® Jet**	**DC150 Perform**	**DC170 Supreme**	**A6489AMP X·treme DM8**	**A6488TML Alpha® 4 Plus Micro**	**A6489DPP X·treme D8**
Standard	DIN 6537 L	DIN 6537 L	DIN 6537 L	DIN 6537 L	DIN 6537 L	Walter	Walter	Walter	Walter
Dia. range [mm]	3–20	3–20	3–25	4–20	3–20	3–20	2–2,95	0,75–1,984	3–20
Page	B 54	B 57	B 60	B 67	B 68	B 74	B 77	B 78	B 79
									

Machining									
Drilling depth	**8 × D_c**				**12 × D_c**				
Designation	**A6493TTP X·treme Inox**	**A3487 Alpha® Jet**	**A3486TIP A3586TIP Alpha® 44**	**DC150 Perform**	**DC170 Supreme**	**A6589AMP X·treme DM12**	**A6588TML Alpha® 4 Plus Micro**	**A6589DPP X·treme D12**	**A3687 Alpha® Jet**
Standard	Walter	Walter	Walter	Walter	Walter	Walter	Walter	Walter	Walter
Dia. range [mm]	3–16	5–20	5–12	3–20	3–20	2–2,9	1–1,9	3–20	5–20
Page	B 82	B 84	B 85	B 86	B 89	B 92	B 93	B 94	B 97
									

Product range overview
Solid carbide drills with internal coolant

Machining									
Drilling depth	**12 × D_c**	**16 × D_c**			**20 × D_c**				**25 × D_c**
Designation	**DC150 Perform**	**DC170 Supreme**	**A6689AMP X·treme DM16**	**A6685TFP Alpha® 4 XD16**	**DC170 Supreme**	**A6789AMP X·treme DM20**	**A6794TFP X·treme DH20**	**A6785TFP Alpha® 4 XD20**	**DC170 Supreme**
Standard	Walter	Walter	Walter	Walter	Walter	Walter	Walter	Walter	Walter
Dia. range [mm]	3–20	3–16	2–2,9	3–16	3–16	2–2,9	3–10	3–16	3–12
Page	B 98	B 101	B 102	B 103	B 104	B 105	B 106	B 107	B 108
									

Machining									
Drilling depth	**25 × D_c**		**30 × D_c**				**40 × D_c**	**50 × D_c**	**2 × D_c**
Designation	**A6889AMP X·treme DM25**	**A6885TFP Alpha® 4 XD25**	**DC170 Supreme**	**A6989AMP X·treme DM30**	**A6994TFP X·treme DH30**	**A6985TFP Alpha® 4 XD30**	**A7495TTP X·treme D40**	**A7595TTP X·treme D50**	**K3281TFT X·treme Pilot Step 90**
Standard	Walter	Walter	Walter	Walter	Walter	Walter	Walter	Walter	Walter
Dia. range [mm]	2–2,9	3–12	3–12	2–2,9	3–10	3–12	3–11	3–9	3–16
Page	B 109	B 110	B 111	B 112	B 113	B 114	B 115	B 116	B 117
									

Machining				
Drilling depth	**2 × D_c**		**2 × D_c**	**2 × D_c**
Designation	**A6181AML X·treme Pilot 150**	**A6181TFT XD Pilot**	**A7191TFT X·treme Pilot 180**	**K5191TFT X·treme Pilot 180 C**
Standard	Walter	Walter	Walter	Walter
Dia. range [mm]	2–2,95	3–16	3–20	4–7
Page	B 118	B 119	B 120	B 122
				

Product range overview
Solid carbide drills without internal coolant

Machining									
Drilling depth	**3 × D_c**	**3 × D_c**							
Designation	**K3879XPL X-treme Step 90**	**A3279XPL A3879XPL X-treme**	**A1164TIN Alpha® 2**	**A1163**	**A1166TIN**	**A1166**	**A1167A**	**A1167B**	**DC150 Perform**
Standard	Walter	DIN 6537 K	DIN 6539	DIN 6539	Walter	Walter	Walter	Walter	DIN 6537 K
Dia. range [mm]	3,3–14,5	3–20	1,5–20	1–12	3–20	3–20	3–20	3–20	3–20
Page	B 123	B 124	B 130	B 134	B 136	B 136	B 139	B 142	B 145
									

Machining							
Drilling depth	**5 × D_c**				**8 × D_c**		
Designation	**DB133 Supreme**	**A3162**	**A3379XPL A3979XPL X-treme**	**A3367 A3967 BSX**	**DB133 Supreme**	**A1276TFL Alpha® 22**	**A1263**
Standard	Walter	DIN 1899	DIN 6537 L	DIN 6537 L	Walter	DIN 338	DIN 338
Dia. range [mm]	0,5–2,95	0,1–1,45	3–25	3–16	0,5–2,95	3–12	0,6–12
Page	B 150	B 152	B 154	B 161	B 164	B 166	B 167
							



Designation key – Solid carbide drilling tools

Example

A	3	3	99	XPL
1	2	3	4	5

1 – Tool type

A	Twist drills
K	Chamfer drills/ conical drills

2 – Shank shape

1	Cylindrical
3	Cylindrical
6	XD drill ≤ 30 × D_c
7	XD drill > 30 × D_c

3 – Length in accordance with DIN or Walter standard

1	DIN 6539	**6**	Walter standard 16 × D_c
2	DIN 338 / 6537 K	**7**	Walter standard 20 × D_c
3	DIN 6537 L	**8**	Walter standard 25 × D_c/ DIN 6537 K
4	Walter standard 8 × D_c/40 × D_c	**9**	Walter standard 30 × D_c/ DIN 6537 L
5	Walter standard 12 × D_c/50 × D_c		

4 – Tool type

62	Type ESU	**79**	X-treme without internal coolant	**89**	X-treme D8 and D12
63	Type N	**81**	XD Pilot	**89**	X-treme M and DM8 . . . 30
64	Alpha® 2	**85**	Alpha® 4 XD16 . . . 30	**94**	X-treme DH20 and DH30
66	Countersinks	**86**	Alpha® 44	**95**	X-treme D40 and D50
67	Countersinks (wide flutes/BSX)	**87**	Alpha® Jet	**99**	X-treme with internal coolant
74	NC centre drills	**88**	Alpha® 4 Plus Micro		
76	Alpha® 22	**89**	X-treme Plus		

5 – Coating

AML	AlTiN micro coating
AMP	AlTiN micro point coating
DPL	Double coating
DPP	Double point coating
XPL	AlCrN coating
TFT	Tinal® TOP coating
TTP	Tinal® TOP point coating
TFP	Tinal® point coating
TiN	TiN coating
TIP	TiN point coating
TML	Tinal® micro coating

Example

D	C	1	70	–	16	–	03.000	A	1	–	W	J	30	EJ
1	2	3	4	5	6		7	8	9		Grade			

1 Tool group

D Drilling

2 Generation

3 Tool type

1 Cylindrical drill

4 Tool type

33 Micro drill

50 Universal

70 ISO P; ISO K

5 1. Delimiters

– Metric

. Inches

6 Drilling depth

03 ≈ 3 × D_c in accordance with DIN 6537 short

05 ≈ 5 × D_c in accordance with DIN 6537 long or in accordance with Walter standard

08 ≈ 8 × D_c in accordance with Walter standard

12 ≈ 12 × D_c in accordance with Walter standard

16 ≈ 16 × D_c in accordance with Walter standard

20 ≈ 20 × D_c in accordance with Walter standard

25 ≈ 25 × D_c in accordance with Walter standard

30 ≈ 30 × D_c in accordance with Walter standard

7 Cutting diameter

8 Shank type

A DIN 6535 HA parallel shank

F DIN 6535 HE parallel shank

9 Cooling

0 External cooling

1 Axial internal coolant

Grade designation key for cutting tool materials made from solid carbide and HSS

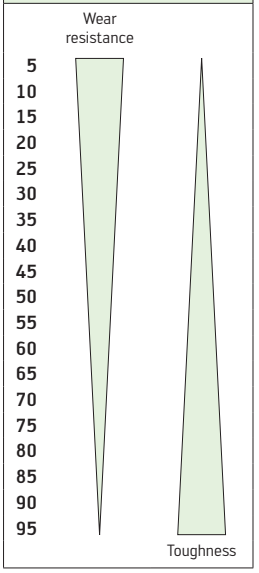
W	J	30	EJ
Walter	1	2	3

1 Substrate

Solid carbide J

HSS

2 Range of applications



3 Coating

EJ TiAlN (AlCrN)

RE TiAlN

TA TiAlN

EL AlCrN

ER AlCrN point coating

Walter Select – Solid carbide drilling tools

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: K5.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Select your tool from the table
– with internal coolant from page B 14 onwards
– without internal coolant from page B 24 onwards

– In accordance with the **drilling depth** or **standard** (e.g. $3 \times D_C$ or DIN 6537 L)
– For the relevant **machining group** (see step 1: P1–P15; M1–M3; …; 01–06)

Walter Select
Solid carbide drills with internal coolant

Machining					
Drilling depth	**3 × D_C**	**3 × D_C**	**3 × D_C**		**3 × D_C**
Designation	**K3299XPL K3899XPL X-treme Step 90**	**DC170 Supreme**	**A3289DPL X-treme Plus**	**A3293TTP X-treme Inox**	**A3299XPL A3899XPL X-treme**
Standard	Walter	DIN 6537 K	DIN 6537 K	DIN 6537 K	DIN 6537 K
Coating/grade	XPL	WJ30EJ	DPL	TTP	XPL
Shank	DIN 6535 HA DIN 6535 HE	DIN 6535 HA			

STEP 3

Select your **cutting data** from the table from page B 412 onwards:

– **Cutting speed:**
v_C; VCRR (v_C rating chart for micro)
– **Feed:** VRR (feed rating chart)

Go to the row for your machining group (e.g. K5) and the column for your selected drilling and reaming tool. You will find the cutting speed v_C or the VCRR and VRR there.
You can find the v_C rating chart (**VCRR**) and the feed rating chart (**VRR**) from page B 428 onwards.

Cutting data
Solid carbide drills with internal coolant

= Wet machining (E = emulsion, O = oil)
= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

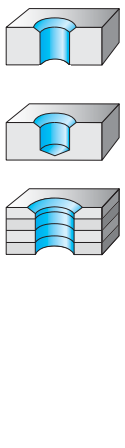
v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

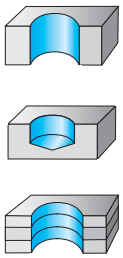
* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth	3 × D_c							
						Designation	**K3299XPL K3899XPL X-treme Step 90**				**DC170 Supreme**			
						Standard	Walter				DIN 6537 K			
						Coating/grade	XPL				WJ30EJ			
						Dia. range [mm]	3.3–14				3–20			
						Page	B 27				B 28			
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	140	10	E O		200	16	E O	M
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	120	12	E O		180	12	E O	M
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	120	12	E O		180	12	E O	M
		C > 0.55%	Annealed	190	640	P4	120	9	E O		180	12	E O	M
		C > 0.55%	Heat-treated	300	1010	P5	100	9	E O		140	12	E O	M
		Free cutting steel (short-chipping)	Annealed	220	750	P6	140	12	E O		200	16	E O	M
	Low-alloyed steel		Annealed	175	590	P7	140	10	E O		180	12	E O	M
			Heat-treated	285	960	P8	90	9	E O		120	16	E O	M
			Heat-treated	380	1280	P9	50	7	E O		100	12	E O	M
			Heat-treated	430	1480	P10	56	5	E O		80	8	E O	M
	High-alloyed steel and high-alloyed tool steel		Annealed	200	680	P11	90	9	E O		140	9	E O	M
			Hardened and tempered	300	1010	P12	100	9	E O		140	12	E O	M

Walter Select
Solid carbide drills with internal coolant

Machining						
Drilling depth	**3 × D_c**	**3 × D_c**	**3 × D_c**		**3 × D_c**	
Designation	**K3299XPL K3899XPL X·treme Step 90**	**DC170 Supreme**	**A3289DPL X·treme Plus**	**A3293TTP X·treme Inox**	**A3299XPL A3899XPL X·treme**	
Standard	Walter	DIN 6537 K	DIN 6537 K	DIN 6537 K	DIN 6537 K	
Coating/grade	XPL	WJ30EJ	DPL	TTP	XPL	
Shank	DIN 6535 HA DIN 6535 HE	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA DIN 6535 HE	
Dia. range [mm]	3,3–14	3–20	3–20	3–20	3–20	
Page	B 27	B 28	B 31	B 34	B 37	
						
P Steel	●●	●●	●●	●	●●	
M Stainless steel	●		●●	●●	●	
K Cast iron	●●	●●	●●		●●	
N NF metals	●●		●●	●	●●	
S Materials with difficult cutting properties	●●		●●	●●	●●	
H Hard materials	●	●	●●		●	
O Other	●		●	●	●	





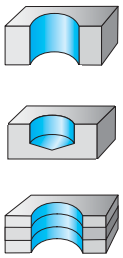
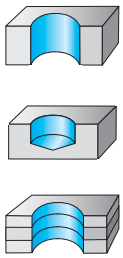

	3 × D_c	5 × D_c	5 × D_c				5 × D_c
	DC150 Perform	**DC170 Supreme**	**A3389AML X-treme M**	**A3389DPL X-treme Plus**	**A3393TTP X-treme Inox**	**A3382XPL X-treme CI**	**A3399XPL A3999XPL X-treme**
	DIN 6537 K	DIN 6537 L	Walter	DIN 6537 L	DIN 6537 L	DIN 6537 L	DIN 6537 L
	WJ30RE	WJ30EJ	AML	DPL	TTP	XPL	XPL
	DIN 6535 HA DIN 6535 HE	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA DIN 6535 HE
	3–20	3–20	2–2,95	3–20	3–20	3–20	3–25
	B 43	B 47	B 50	B 51	B 54	B 57	B 60
							
	●●	●●	●●	●●	●		●●
	●		●●	●●	●●		●
	●●	●●	●●	●●		●●	●●
	●●		●●	●●	●	●	●●
	●●		●●	●●	●●		●●
	●	●	●	●●			●
	●		●	●	●		●

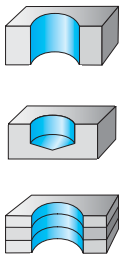
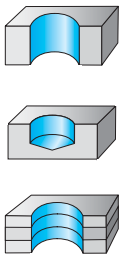
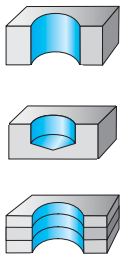
WALTER SELECT

●● Primary application

● Other application

Walter Select
Solid carbide drills with internal coolant

Machining						
Drilling depth	**5 × D_c**	**5 × D_c**	**8 × D_c**	**8 × D_c**		
Designation	**A3387 Alpha® Jet**	**DC150 Perform**	**DC170 Supreme**	**A6489AMP X·treme DM8**	**A6488TML Alpha® 4 Plus Micro**	
Standard	DIN 6537 L	DIN 6537 L	Walter	Walter	Walter	
Coating/grade	Uncoated	WJ30RE	WJ30EJ	AMP	TML	
Shank	DIN 6535 HA	DIN 6535 HA DIN 6535 HE	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	
Dia. range [mm]	4–20	3–20	3–20	2–2,95	0,75–1,984	
Page	B 67	B 68	B 74	B 77	B 78	
						
P Steel		●●	●●	●●	●●	
M Stainless steel		●		●●	●●	
K Cast iron	●	●●	●●	●●	●●	
N NF metals	●	●●		●●	●●	
S Materials with difficult cutting properties		●●		●●	●●	
H Hard materials		●	●	●	●	
O Other	●	●		●	●●	

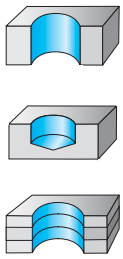
							
	8 × D_c	8 × D_c	8 × D_c	8 × D_c		12 × D_c	12 × D_c
	A6489DPP X-treme D8	**A6493TTP X-treme Inox**	**A3487 Alpha® Jet**	**A3486TIP A3586TIP Alpha® 44**	**DC150 Perform**	**DC170 Supreme**	**A6589AMP X-treme DM12**
	Walter	Walter	Walter	Walter	Walter	Walter	Walter
	DPP	TTP	Uncoated	TIP	WJ30TA	WJ30EJ	AMP
	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA DIN 6535 HE	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
	3–20	3–16	5–20	5–12	3–20	3–20	2–2,9
	B 79	B 82	B 84	B 85	B 86	B 89	B 92
							
	●●	●		●●	●●	●●	●●
	●●	●●		●	●		●●
	●●		●	●	●●	●●	●●
	●●	●	●	●●	●●		●●
	●●	●●		●	●●		●●
	●●				●	●	●
	●	●	●	●	●		●

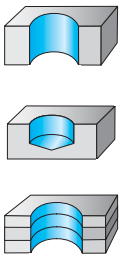
WALTER SELECT

●● Primary application

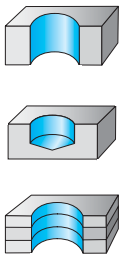
● Other application

Walter Select
Solid carbide drills with internal coolant

Machining						
Drilling depth	**12 × D_c**	**12 × D_c**			**16 × D_c**	
Designation	**A6588TML Alpha® 4 Plus Micro**	**A6589DPP X-treme D12**	**A3687 Alpha® Jet**	**DC150 Perform**	**DC170 Supreme**	
Standard	Walter	Walter	Walter	Walter	Walter	
Coating/grade	TML	DPP	Uncoated	WJ30TA	WJ30EJ	
Shank	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	
Dia. range [mm]	1–1,9	3–20	5–20	3–20	3–16	
Page	B 93	B 94	B 97	B 98	B 101	
						
P Steel	●●	●●		●●	●●	
M Stainless steel	●●	●●		●		
K Cast iron	●●	●●	●	●●	●●	
N NF metals	●●	●●	●	●●		
S Materials with difficult cutting properties	●●	●●	●	●●		
H Hard materials	●	●●		●●	●	
O Other	●●	●	●	●		









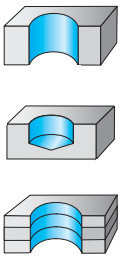
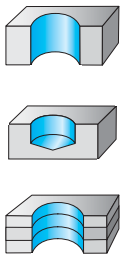
	16 × D_c	16 × D_c	20 × D_c	20 × D_c	20 × D_c		25 × D_c
	A6689AMP X-treme DM16	**A6685TFP Alpha® 4 XD16**	**DC170 Supreme**	**A6789AMP X-treme DM20**	**A6794TFP X-treme DH20**	**A6785TFP Alpha® 4 XD20**	**DC170 Supreme**
	Walter	Walter	Walter	Walter	Walter	Walter	Walter
	AMP	TFP	WJ30EJ	AMP	TFP	TFP	WJ30EJ
	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
	2–2,9	3–16	3–16	2–2,9	3–10	3–16	3–12
	B 102	B 103	B 104	B 105	B 106	B 107	B 108
							
	●●	●●	●●	●●	●●	●●	●●
	●●	●		●●	●	●	
	●●	●●	●●	●●	●	●●	●●
	●●	●●		●●	●	●●	
	●●	●●		●●	●	●●	
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	●	●		●		●	

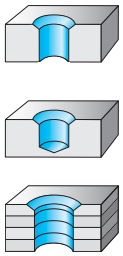
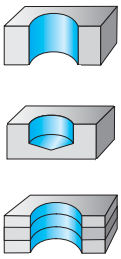
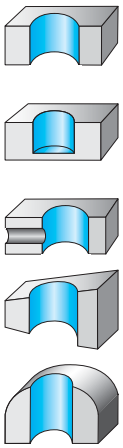
WALTER SELECT

●● Primary application

● Other application

Walter Select
Solid carbide drills with internal coolant

Machining						
Drilling depth	**25 × D_c**	**25 × D_c**	**30 × D_c**	**30 × D_c**	**30 × D_c**	
Designation	**A6889AMP X·treme DM25**	**A6885TFP Alpha® 4 XD25**	**DC170 Supreme**	**A6989AMP X·treme DM30**	**A6994TFP X·treme DH30**	
Standard	Walter	Walter	Walter	Walter	Walter	
Coating/grade	AMP	TFP	WJ30EJ	AMP	TFP	
Shank	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	
Dia. range [mm]	2–2,9	3–12	3–12	2–2,9	3–10	
Page	B 109	B 110	B 111	B 112	B 113	
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●●	●		●●	●	
K Cast iron	●●	●●	●●	●●	●	
N NF metals	●●	●●		●●	●	
S Materials with difficult cutting properties	●●	●●		●●	●	
H Hard materials	●	●	●	●	●	
O Other	●	●		●		

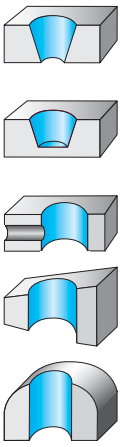
	30 × D_c	40 × D_c	50 × D_c	2 × D_c	2 × D_c		2 × D_c
	A6985TFP Alpha® 4 XD30	**A7495TTP X·treme D40**	**A7595TTP X·treme D50**	**K3281TFT X·treme Pilot Step 90**	**A6181AML X·treme Pilot 150**	**A6181TFT XD Pilot**	**A7191TFT X·treme Pilot 180**
	Walter	Walter	Walter	Walter	Walter	Walter	Walter
	TFP	TTP	TTP	TFT	AML	TFT	TFT
	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
	3–12	3–11	3–9	3–16	2–2,95	3–16	3–20
	B 114	B 115	B 116	B 117	B 118	B 119	B 120
							
	●●	●●	●●	●●	●●	●●	●●
	●	●	●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●			●●	●●	●●	●●
	●			●●	●	●	●
	●			●●	●	●	●

WALTER SELECT

●● Primary application

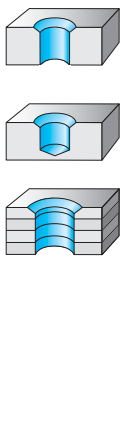
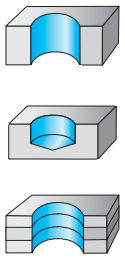
● Other application

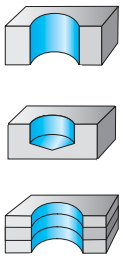
Walter Select
Solid carbide drills with internal coolant

Machining	
Drilling depth	**2×D_c**
Designation	**K5191TFT X-treme Pilot 180 C**
Standard	Walter
Coating/grade	TFT
Shank	DIN 6535 HA
Dia. range [mm]	4–7
Page	B 122
	
P Steel	●●
M Stainless steel	●●
K Cast iron	●●
N NF metals	●●
S Materials with difficult cutting properties	●●
H Hard materials	●●
O Other	●●



Walter Select
Solid carbide drills without internal coolant

Machining						
Drilling depth	**3 × D_c**	**3 × D_c**	**3 × D_c**		**3 × D_c**	
Designation	**K3879XPL X·treme Step 90**	**A3279XPL A3879XPL X·treme**	**A1164TIN Alpha® 2**	**A1163**	**A1166TIN**	
Standard	Walter	DIN 6537 K	DIN 6539	DIN 6539	Walter	
Coating/grade	XPL	XPL	TIN	Uncoated	TIN	
Shank	DIN 6535 HE	DIN 6535 HA DIN 6535 HE	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	
Dia. range [mm]	3,3–14,5	3–20	1,5–20	1–12	3–20	
Page	B 123	B 124	B 130	B 134	B 136	
						
P Steel	●●	●●	●●		●	
M Stainless steel	●	●	●			
K Cast iron	●●	●●	●●	●		
N NF metals	●	●	●●	●●		
S Materials with difficult cutting properties	●	●	●	●		
H Hard materials	●	●	●		●	
O Other	●	●	●	●●		

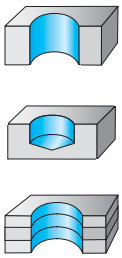

	3 × D_c			3 × D_c	5 × D_c		5 × D_c
	A1166	**A1167A**	**A1167B**	**DC150 Perform**	**DB133 Supreme**	**A3162**	**A3379XPL A3979XPL X-treme**
	Walter	Walter	Walter	DIN 6537 K	Walter	DIN 1899	DIN 6537 L
	Uncoated	Uncoated	Uncoated	WJ30RE	WJ30EL	Uncoated	XPL
	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA DIN 6535 HE	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA DIN 6535 HE
	3–20	3–20	3–20	3–20	0,5–2,95	0,1–1,45	3–25
	B 136	B 139	B 142	B 145	B 150	B 152	B 154
							
	●			●●	●●	●●	●●
				●		●●	
		●		●●	●●	●●	●●
	●	●	●	●	●●	●●	●
	●			●	●	●●	●
	●			●	●		●
				●	●	●●	●

WALTER SELECT

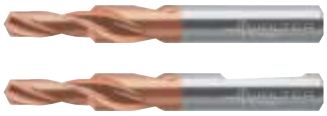
●● Primary application

● Other application

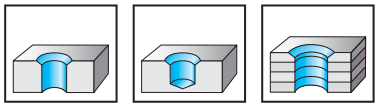
Walter Select
Solid carbide drills without internal coolant

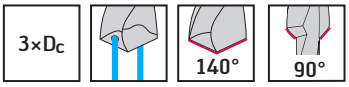
Machining				
Drilling depth	**5 × D_c**	**8 × D_c**		
Designation	**A3367 A3967 BSX**	**DB133 Supreme**	**A1276TFL Alpha® 22**	**A1263**
Standard	DIN 6537 L	Walter	DIN 338	DIN 338
Coating/grade	Uncoated	WJ30ER	TFL	Uncoated
Shank	DIN 6535 HA DIN 6535 HE	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
Dia. range [mm]	3–16	0,5–2,95	3–12	0,6–12
Page	B 161	B 164	B 166	B 167
				
P Steel		●●	●●	
M Stainless steel				
K Cast iron	●●	●●	●●	●
N NF metals	●●	●●	●●	●●
S Materials with difficult cutting properties	●	●	●	●
H Hard materials		●		
O Other	●	●		●●

Solid carbide chamfer drills with coolant-through
K3299XPL / K3899XPL
X-treme Step 90



– Step length in accordance with DIN 8378
– For thread pilot hole drilling





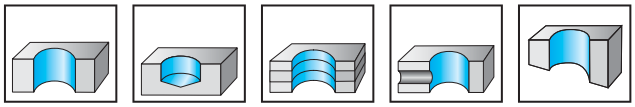
	P	M	K	N	S	H	O
XPL	●●	●	●●	●●	●●	●	●

	Designation XPL	For thread	D_c m7 mm	d_{10} h8 mm	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	K3299XPL-M4	M 4	3,3	5	11	66	28	36	6
	K3299XPL-M5	M 5	4,2	6	14	66	28	36	6
	K3299XPL-M6	M 6	5	8	17	79	41	36	8
	K3299XPL-M8	M 8	6,8	10	21	89	47	40	10
	K3299XPL-M10	M 10	8,5	12	26	102	55	45	12
	K3299XPL-M12	M 12	10,2	14	30	107	60	45	14
	K3299XPL-M14	M 14	12	16	35	115	65	48	16
	K3299XPL-M16	M 16	14	18	39	123	73	48	18
Shank DIN 6535 HE	K3899XPL-M4	M 4	3,3	5	11	66	28	36	6
	K3899XPL-M5	M 5	4,2	6	14	66	28	36	6
	K3899XPL-M6	M 6	5	8	17	79	41	36	8
	K3899XPL-M8	M 8	6,8	10	21	89	47	40	10
	K3899XPL-M10	M 10	8,5	12	26	102	55	45	12
	K3899XPL-M12	M 12	10,2	14	30	107	60	45	14
	K3899XPL-M14	M 14	12	16	35	115	65	48	16
	K3899XPL-M16	M 16	14	18	39	123	73	48	18

XIII D 1 B 412 B 430

Solid carbide drills with coolant-through
DC170 Supreme

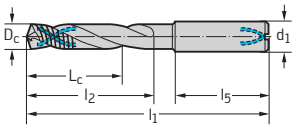




3×D_c | DIN 6537 K | 140°

	P	M	K	N	S	H	O
WJ30EJ	●●		●●			●	

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-03-03.000A1-	3		14	62	20	36	6	●●
DC170-03-03.100A1-	3,1		14	62	20	36	6	●●
DC170-03-03.175A1-	3,175	1/8"	14	62	20	36	6	●●
DC170-03-03.200A1-	3,2		14	62	20	36	6	●●
DC170-03-03.300A1-	3,3		14	62	20	36	6	●●
DC170-03-03.400A1-	3,4		14	62	20	36	6	●●
DC170-03-03.500A1-	3,5		14	62	20	36	6	●●
DC170-03-03.572A1-	3,572	9/64"	14	62	20	36	6	●●
DC170-03-03.600A1-	3,6		14	62	20	36	6	●●
DC170-03-03.700A1-	3,7		14	62	20	36	6	●●
DC170-03-03.800A1-	3,8		17	66	24	36	6	●●
DC170-03-03.900A1-	3,9		17	66	24	36	6	●●
DC170-03-03.969A1-	3,969	5/32"	17	66	24	36	6	●●
DC170-03-04.000A1-	4		17	66	24	36	6	●●
DC170-03-04.100A1-	4,1		17	66	24	36	6	●●
DC170-03-04.200A1-	4,2		17	66	24	36	6	●●
DC170-03-04.300A1-	4,3		17	66	24	36	6	●●
DC170-03-04.366A1-	4,366	11/64"	17	66	24	36	6	●●
DC170-03-04.400A1-	4,4		17	66	24	36	6	●●
DC170-03-04.500A1-	4,5		17	66	24	36	6	●●
DC170-03-04.600A1-	4,6		17	66	24	36	6	●●
DC170-03-04.650A1-	4,65		17	66	24	36	6	●●
DC170-03-04.700A1-	4,7		17	66	24	36	6	●●
DC170-03-04.763A1-	4,763	3/16"	20	66	28	36	6	●●
DC170-03-04.800A1-	4,8		20	66	28	36	6	●●
DC170-03-04.900A1-	4,9		20	66	28	36	6	●●
DC170-03-05.000A1-	5		20	66	28	36	6	●●
DC170-03-05.100A1-	5,1		20	66	28	36	6	●●
DC170-03-05.159A1-	5,159	13/64"	20	66	28	36	6	●●
DC170-03-05.200A1-	5,2		20	66	28	36	6	●●
DC170-03-05.300A1-	5,3		20	66	28	36	6	●●
DC170-03-05.400A1-	5,4		20	66	28	36	6	●●
DC170-03-05.500A1-	5,5		20	66	28	36	6	●●
DC170-03-05.550A1-	5,55		20	66	28	36	6	●●
DC170-03-05.556A1-	5,556	7/32"	20	66	28	36	6	●●
DC170-03-05.600A1-	5,6		20	66	28	36	6	●●
DC170-03-05.700A1-	5,7		20	66	28	36	6	●●
DC170-03-05.800A1-	5,8		20	66	28	36	6	●●
DC170-03-05.900A1-	5,9		20	66	28	36	6	●●
DC170-03-05.953A1-	5,953	15/64"	20	66	28	36	6	●●
DC170-03-06.000A1-	6		20	66	28	36	6	●●
DC170-03-06.100A1-	6,1		24	79	34	36	8	●●
DC170-03-06.200A1-	6,2		24	79	34	36	8	●●

Ordering example for the WJ30EJ grade: DC170-03-03.000A1-WJ30EJ

Continued

WALTER SELECT

Best tool for machining conditions: Good | Average | Poor

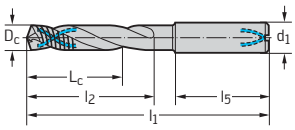
●● Primary application

● Other application

XIII | D 1 | B 412 | B 430

Continued

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-03-06.300A1-	6,3		24	79	34	36	8	●
DC170-03-06.350A1-	6,35	1/4"	24	79	34	36	8	●
DC170-03-06.400A1-	6,4		24	79	34	36	8	●
DC170-03-06.500A1-	6,5		24	79	34	36	8	●
DC170-03-06.600A1-	6,6		24	79	34	36	8	●
DC170-03-06.700A1-	6,7		24	79	34	36	8	●
DC170-03-06.747A1-	6,747	17/64"	24	79	34	36	8	●
DC170-03-06.800A1-	6,8		24	79	34	36	8	●
DC170-03-06.900A1-	6,9		24	79	34	36	8	●
DC170-03-07.000A1-	7		24	79	34	36	8	●
DC170-03-07.100A1-	7,1		29	79	41	36	8	●
DC170-03-07.144A1-	7,144	9/32"	29	79	41	36	8	●
DC170-03-07.200A1-	7,2		29	79	41	36	8	●
DC170-03-07.300A1-	7,3		29	79	41	36	8	●
DC170-03-07.400A1-	7,4		29	79	41	36	8	●
DC170-03-07.500A1-	7,5		29	79	41	36	8	●
DC170-03-07.541A1-	7,541	19/64"	29	79	41	36	8	●
DC170-03-07.800A1-	7,8		29	79	41	36	8	●
DC170-03-07.900A1-	7,9		29	79	41	36	8	●
DC170-03-07.938A1-	7,938	5/16"	29	79	41	36	8	●
DC170-03-08.000A1-	8		29	79	41	36	8	●
DC170-03-08.100A1-	8,1		35	89	47	40	10	●
DC170-03-08.200A1-	8,2		35	89	47	40	10	●
DC170-03-08.300A1-	8,3		35	89	47	40	10	●
DC170-03-08.334A1-	8,334	21/64"	35	89	47	40	10	●
DC170-03-08.400A1-	8,4		35	89	47	40	10	●
DC170-03-08.500A1-	8,5		35	89	47	40	10	●
DC170-03-08.600A1-	8,6		35	89	47	40	10	●
DC170-03-08.700A1-	8,7		35	89	47	40	10	●
DC170-03-08.731A1-	8,731	11/32"	35	89	47	40	10	●
DC170-03-08.800A1-	8,8		35	89	47	40	10	●
DC170-03-09.000A1-	9		35	89	47	40	10	●
DC170-03-09.128A1-	9,128	23/64"	35	89	47	40	10	●
DC170-03-09.200A1-	9,2		35	89	47	40	10	●
DC170-03-09.300A1-	9,3		35	89	47	40	10	●
DC170-03-09.500A1-	9,5		35	89	47	40	10	●
DC170-03-09.525A1-	9,525	3/8"	35	89	47	40	10	●
DC170-03-09.600A1-	9,6		35	89	47	40	10	●
DC170-03-09.700A1-	9,7		35	89	47	40	10	●
DC170-03-09.800A1-	9,8		35	89	47	40	10	●
DC170-03-09.922A1-	9,922	25/64"	35	89	47	40	10	●
DC170-03-10.000A1-	10		35	89	47	40	10	●
DC170-03-10.100A1-	10,1		40	102	55	45	12	●
DC170-03-10.200A1-	10,2		40	102	55	45	12	●
DC170-03-10.300A1-	10,3		40	102	55	45	12	●
DC170-03-10.319A1-	10,319	13/32"	40	102	55	45	12	●
DC170-03-10.400A1-	10,4		40	102	55	45	12	●
DC170-03-10.500A1-	10,5		40	102	55	45	12	●
DC170-03-10.716A1-	10,716	27/64"	40	102	55	45	12	●
DC170-03-10.800A1-	10,8		40	102	55	45	12	●
DC170-03-11.000A1-	11		40	102	55	45	12	●
DC170-03-11.100A1-	11,1		40	102	55	45	12	●
DC170-03-11.113A1-	11,113	7/16"	40	102	55	45	12	●
DC170-03-11.200A1-	11,2		40	102	55	45	12	●
DC170-03-11.500A1-	11,5		40	102	55	45	12	●
DC170-03-11.509A1-	11,509	29/64"	40	102	55	45	12	●
DC170-03-11.700A1-	11,7		40	102	55	45	12	●
DC170-03-11.800A1-	11,8		40	102	55	45	12	●
DC170-03-11.906A1-	11,906	15/32"	40	102	55	45	12	●
DC170-03-12.000A1-	12		40	102	55	45	12	●
DC170-03-12.100A1-	12,1		43	107	60	45	14	●

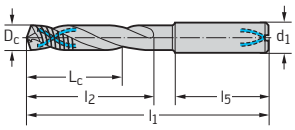
Ordering example for the WJ30EJ grade: DC170-03-03.000A1-WJ30EJ

Continued

XIII D 1 B 412 B 430

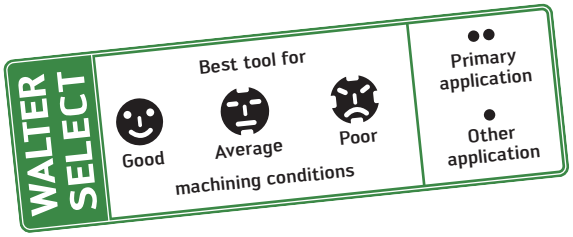
Continued

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-03-12.200A1-	12,2		43	107	60	45	14	☹
DC170-03-12.300A1-	12,3		43	107	60	45	14	☹
DC170-03-12.303A1-	12,303	31/64“	43	107	60	45	14	☹
DC170-03-12.500A1-	12,5		43	107	60	45	14	☹
DC170-03-12.600A1-	12,6		43	107	60	45	14	☹
DC170-03-12.700A1-	12,7	1/2“	43	107	60	45	14	☹
DC170-03-13.000A1-	13		43	107	60	45	14	☹
DC170-03-13.300A1-	13,3		43	107	60	45	14	☹
DC170-03-13.494A1-	13,494	17/32“	43	107	60	45	14	☹
DC170-03-13.500A1-	13,5		43	107	60	45	14	☹
DC170-03-14.000A1-	14		43	107	60	45	14	☹
DC170-03-14.288A1-	14,288	9/16“	45	115	65	48	16	☹
DC170-03-14.500A1-	14,5		45	115	65	48	16	☹
DC170-03-15.000A1-	15		45	115	65	48	16	☹
DC170-03-15.500A1-	15,5		45	115	65	48	16	☹
DC170-03-15.875A1-	15,875	5/8“	45	115	65	48	16	☹
DC170-03-16.000A1-	16		45	115	65	48	16	☹
DC170-03-16.500A1-	16,5		51	123	73	48	18	☹
DC170-03-17.000A1-	17		51	123	73	48	18	☹
DC170-03-17.500A1-	17,5		51	123	73	48	18	☹
DC170-03-18.000A1-	18		51	123	73	48	18	☹
DC170-03-19.050A1-	19,05	3/4“	55	131	79	50	20	☹
DC170-03-20.000A1-	20		55	131	79	50	20	☹

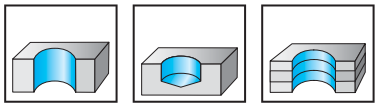
Ordering example for the WJ30EJ grade: DC170-03-03.000A1-WJ30EJ



XIII D 1 B 412 B 430

Solid carbide drills with coolant-through
A3289DPL
X-treme Plus

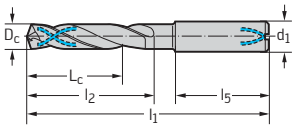




3×D_c	DIN 6537 K		140°

	P	M	K	N	S	H	O
DPL	●●	●●	●●	●●	●●	●●	●

Shank DIN 6535 HA



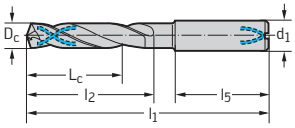
Designation DPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3289DPL-3	3		14	62	20	36	6
A3289DPL-3.1	3,1		14	62	20	36	6
A3289DPL-1/8IN	3,175	1/8"	14	62	20	36	6
A3289DPL-3.2	3,2		14	62	20	36	6
A3289DPL-3.3	3,3		14	62	20	36	6
A3289DPL-3.4	3,4		14	62	20	36	6
A3289DPL-3.5	3,5		14	62	20	36	6
A3289DPL-9/64IN	3,572	9/64"	14	62	20	36	6
A3289DPL-3.6	3,6		14	62	20	36	6
A3289DPL-3.7	3,7		14	62	20	36	6
A3289DPL-3.8	3,8		17	66	24	36	6
A3289DPL-3.9	3,9		17	66	24	36	6
A3289DPL-5/32IN	3,969	5/32"	17	66	24	36	6
A3289DPL-4	4		17	66	24	36	6
A3289DPL-4.1	4,1		17	66	24	36	6
A3289DPL-4.2	4,2		17	66	24	36	6
A3289DPL-4.3	4,3		17	66	24	36	6
A3289DPL-11/64IN	4,366	11/64"	17	66	24	36	6
A3289DPL-4.4	4,4		17	66	24	36	6
A3289DPL-4.5	4,5		17	66	24	36	6
A3289DPL-4.6	4,6		17	66	24	36	6
A3289DPL-4.65	4,65		17	66	24	36	6
A3289DPL-4.7	4,7		17	66	24	36	6
A3289DPL-3/16IN	4,763	3/16"	20	66	28	36	6
A3289DPL-4.8	4,8		20	66	28	36	6
A3289DPL-4.9	4,9		20	66	28	36	6
A3289DPL-5	5		20	66	28	36	6
A3289DPL-5.1	5,1		20	66	28	36	6
A3289DPL-13/64IN	5,159	13/64"	20	66	28	36	6
A3289DPL-5.2	5,2		20	66	28	36	6
A3289DPL-5.3	5,3		20	66	28	36	6
A3289DPL-5.4	5,4		20	66	28	36	6
A3289DPL-5.5	5,5		20	66	28	36	6
A3289DPL-5.55	5,55		20	66	28	36	6
A3289DPL-7/32IN	5,556	7/32"	20	66	28	36	6
A3289DPL-5.6	5,6		20	66	28	36	6
A3289DPL-5.7	5,7		20	66	28	36	6
A3289DPL-5.8	5,8		20	66	28	36	6
A3289DPL-5.9	5,9		20	66	28	36	6
A3289DPL-15/64IN	5,953	15/64"	20	66	28	36	6
A3289DPL-6	6		20	66	28	36	6
A3289DPL-6.1	6,1		24	79	34	36	8
A3289DPL-6.2	6,2		24	79	34	36	8
A3289DPL-6.3	6,3		24	79	34	36	8
A3289DPL-1/4IN	6,35	1/4"	24	79	34	36	8
A3289DPL-6.4	6,4		24	79	34	36	8
A3289DPL-6.5	6,5		24	79	34	36	8
A3289DPL-6.6	6,6		24	79	34	36	8

Continued

XIII D 1 B 412 B 430

Continued

Shank DIN 6535 HA



Designation DPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3289DPL-6.7	6,7		24	79	34	36	8
A3289DPL-17/64IN	6,747	17/64"	24	79	34	36	8
A3289DPL-6.8	6,8		24	79	34	36	8
A3289DPL-6.9	6,9		24	79	34	36	8
A3289DPL-7	7		24	79	34	36	8
A3289DPL-7.1	7,1		29	79	41	36	8
A3289DPL-9/32IN	7,144	9/32"	29	79	41	36	8
A3289DPL-7.2	7,2		29	79	41	36	8
A3289DPL-7.3	7,3		29	79	41	36	8
A3289DPL-7.4	7,4		29	79	41	36	8
A3289DPL-7.5	7,5		29	79	41	36	8
A3289DPL-19/64IN	7,541	19/64"	29	79	41	36	8
A3289DPL-7.8	7,8		29	79	41	36	8
A3289DPL-7.9	7,9		29	79	41	36	8
A3289DPL-5/16IN	7,938	5/16"	29	79	41	36	8
A3289DPL-8	8		29	79	41	36	8
A3289DPL-8.1	8,1		35	89	47	40	10
A3289DPL-8.2	8,2		35	89	47	40	10
A3289DPL-8.3	8,3		35	89	47	40	10
A3289DPL-21/64IN	8,334	21/64"	35	89	47	40	10
A3289DPL-8.4	8,4		35	89	47	40	10
A3289DPL-8.5	8,5		35	89	47	40	10
A3289DPL-8.6	8,6		35	89	47	40	10
A3289DPL-8.7	8,7		35	89	47	40	10
A3289DPL-11/32IN	8,731	11/32"	35	89	47	40	10
A3289DPL-8.8	8,8		35	89	47	40	10
A3289DPL-9	9		35	89	47	40	10
A3289DPL-23/64IN	9,128	23/64"	35	89	47	40	10
A3289DPL-9.2	9,2		35	89	47	40	10
A3289DPL-9.3	9,3		35	89	47	40	10
A3289DPL-9.5	9,5		35	89	47	40	10
A3289DPL-3/8IN	9,525	3/8"	35	89	47	40	10
A3289DPL-9.6	9,6		35	89	47	40	10
A3289DPL-9.7	9,7		35	89	47	40	10
A3289DPL-9.8	9,8		35	89	47	40	10
A3289DPL-25/64IN	9,922	25/64"	35	89	47	40	10
A3289DPL-10	10		35	89	47	40	10
A3289DPL-10.1	10,1		40	102	55	45	12
A3289DPL-10.2	10,2		40	102	55	45	12
A3289DPL-10.3	10,3		40	102	55	45	12
A3289DPL-13/32IN	10,319	13/32"	40	102	55	45	12
A3289DPL-10.4	10,4		40	102	55	45	12
A3289DPL-10.5	10,5		40	102	55	45	12
A3289DPL-27/64IN	10,716	27/64"	40	102	55	45	12
A3289DPL-10.8	10,8		40	102	55	45	12
A3289DPL-11	11		40	102	55	45	12
A3289DPL-11.1	11,1		40	102	55	45	12
A3289DPL-7/16IN	11,113	7/16"	40	102	55	45	12
A3289DPL-11.2	11,2		40	102	55	45	12
A3289DPL-11.5	11,5		40	102	55	45	12
A3289DPL-29/64IN	11,509	29/64"	40	102	55	45	12
A3289DPL-11.7	11,7		40	102	55	45	12
A3289DPL-11.8	11,8		40	102	55	45	12
A3289DPL-15/32IN	11,906	15/32"	40	102	55	45	12
A3289DPL-12	12		40	102	55	45	12
A3289DPL-12.1	12,1		43	107	60	45	14
A3289DPL-12.2	12,2		43	107	60	45	14
A3289DPL-12.3	12,3		43	107	60	45	14

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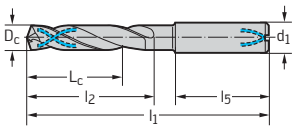
WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 412 B 430

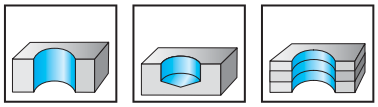
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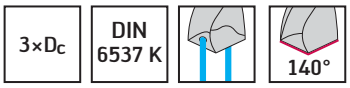
	Designation DPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	A3289DPL-31/64IN	12,303	31/64"	43	107	60	45	14
	A3289DPL-12.5	12,5		43	107	60	45	14
	A3289DPL-12.6	12,6		43	107	60	45	14
	A3289DPL-1/2IN	12,7	1/2"	43	107	60	45	14
	A3289DPL-13	13		43	107	60	45	14
	A3289DPL-13.3	13,3		43	107	60	45	14
	A3289DPL-17/32IN	13,494	17/32"	43	107	60	45	14
	A3289DPL-13.5	13,5		43	107	60	45	14
	A3289DPL-14	14		43	107	60	45	14
	A3289DPL-9/16IN	14,288	9/16"	45	115	65	48	16
	A3289DPL-14.5	14,5		45	115	65	48	16
	A3289DPL-15	15		45	115	65	48	16
	A3289DPL-15.5	15,5		45	115	65	48	16
	A3289DPL-5/8IN	15,875	5/8"	45	115	65	48	16
	A3289DPL-16	16		45	115	65	48	16
	A3289DPL-16.5	16,5		51	123	73	48	18
	A3289DPL-17	17		51	123	73	48	18
	A3289DPL-17.5	17,5		51	123	73	48	18
	A3289DPL-18	18		51	123	73	48	18
	A3289DPL-3/4IN	19,05	3/4"	55	131	79	50	20
	A3289DPL-20	20		55	131	79	50	20

XIII D 1 B 412 B 430

Solid carbide drills with coolant-through
A3293TTP
X-treme Inox

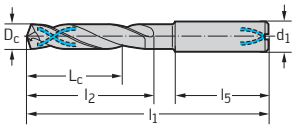






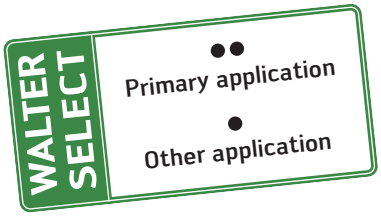
	P	M	K	N	S	H	O
TTP	●	●●		●	●●		●

Shank DIN 6535 HA



Designation TTP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3293TTP-3	3		14	62	20	36	6
A3293TTP-3.1	3,1		14	62	20	36	6
A3293TTP-1/8IN	3,175	1/8"	14	62	20	36	6
A3293TTP-3.2	3,2		14	62	20	36	6
A3293TTP-3.25	3,25		14	62	20	36	6
A3293TTP-3.3	3,3		14	62	20	36	6
A3293TTP-3.4	3,4		14	62	20	36	6
A3293TTP-3.5	3,5		14	62	20	36	6
A3293TTP-3.6	3,6		14	62	20	36	6
A3293TTP-3.7	3,7		14	62	20	36	6
A3293TTP-3.8	3,8		17	66	24	36	6
A3293TTP-3.9	3,9		17	66	24	36	6
A3293TTP-5/32IN	3,969	5/32"	17	66	24	36	6
A3293TTP-4	4		17	66	24	36	6
A3293TTP-4.1	4,1		17	66	24	36	6
A3293TTP-4.2	4,2		17	66	24	36	6
A3293TTP-4.3	4,3		17	66	24	36	6
A3293TTP-11/64IN	4,365	11/64"	17	66	24	36	6
A3293TTP-4.4	4,4		17	66	24	36	6
A3293TTP-4.5	4,5		17	66	24	36	6
A3293TTP-4.6	4,6		17	66	24	36	6
A3293TTP-4.65	4,65		17	66	24	36	6
A3293TTP-4.7	4,7		17	66	24	36	6
A3293TTP-3/16IN	4,763	3/16"	20	66	28	36	6
A3293TTP-4.8	4,8		20	66	28	36	6
A3293TTP-4.9	4,9		20	66	28	36	6
A3293TTP-5	5		20	66	28	36	6
A3293TTP-5.1	5,1		20	66	28	36	6
A3293TTP-5.2	5,2		20	66	28	36	6
A3293TTP-5.3	5,3		20	66	28	36	6
A3293TTP-5.4	5,4		20	66	28	36	6
A3293TTP-5.5	5,5		20	66	28	36	6
A3293TTP-5.55	5,55		20	66	28	36	6
A3293TTP-7/32IN	5,556	7/32"	20	66	28	36	6
A3293TTP-5.6	5,6		20	66	28	36	6
A3293TTP-5.7	5,7		20	66	28	36	6
A3293TTP-5.8	5,8		20	66	28	36	6
A3293TTP-5.9	5,9		20	66	28	36	6
A3293TTP-6	6		20	66	28	36	6
A3293TTP-6.1	6,1		24	79	34	36	8
A3293TTP-6.2	6,2		24	79	34	36	8
A3293TTP-6.3	6,3		24	79	34	36	8
A3293TTP-1/4IN	6,35	1/4"	24	79	34	36	8
A3293TTP-6.4	6,4		24	79	34	36	8

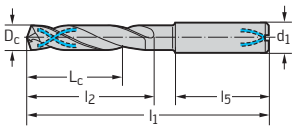
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XIII D 1 B 412 B 430

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Shank DIN 6535 HA



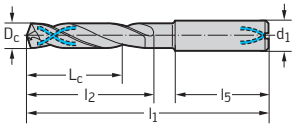
Designation TTP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3293TTP-6.5	6,5		24	79	34	36	8
A3293TTP-6.6	6,6		24	79	34	36	8
A3293TTP-6.7	6,7		24	79	34	36	8
A3293TTP-6.8	6,8		24	79	34	36	8
A3293TTP-6.9	6,9		24	79	34	36	8
A3293TTP-7	7		24	79	34	36	8
A3293TTP-7.1	7,1		29	79	41	36	8
A3293TTP-9/32IN	7,144	9/32"	29	79	41	36	8
A3293TTP-7.2	7,2		29	79	41	36	8
A3293TTP-7.3	7,3		29	79	41	36	8
A3293TTP-7.4	7,4		29	79	41	36	8
A3293TTP-7.5	7,5		29	79	41	36	8
A3293TTP-7.6	7,6		29	79	41	36	8
A3293TTP-7.7	7,7		29	79	41	36	8
A3293TTP-7.8	7,8		29	79	41	36	8
A3293TTP-7.9	7,9		29	79	41	36	8
A3293TTP-5/16IN	7,938	5/16"	29	79	41	36	8
A3293TTP-8	8		29	79	41	36	8
A3293TTP-8.1	8,1		35	89	47	40	10
A3293TTP-8.2	8,2		35	89	47	40	10
A3293TTP-8.3	8,3		35	89	47	40	10
A3293TTP-8.4	8,4		35	89	47	40	10
A3293TTP-8.5	8,5		35	89	47	40	10
A3293TTP-8.6	8,6		35	89	47	40	10
A3293TTP-8.7	8,7		35	89	47	40	10
A3293TTP-11/32IN	8,731	11/32"	35	89	47	40	10
A3293TTP-8.8	8,8		35	89	47	40	10
A3293TTP-8.9	8,9		35	89	47	40	10
A3293TTP-9	9		35	89	47	40	10
A3293TTP-9.1	9,1		35	89	47	40	10
A3293TTP-23/64IN	9,128	23/64"	35	89	47	40	10
A3293TTP-9.2	9,2		35	89	47	40	10
A3293TTP-9.3	9,3		35	89	47	40	10
A3293TTP-9.4	9,4		35	89	47	40	10
A3293TTP-9.5	9,5		35	89	47	40	10
A3293TTP-3/8IN	9,525	3/8"	35	89	47	40	10
A3293TTP-9.6	9,6		35	89	47	40	10
A3293TTP-9.7	9,7		35	89	47	40	10
A3293TTP-9.8	9,8		35	89	47	40	10
A3293TTP-9.9	9,9		35	89	47	40	10
A3293TTP-10	10		35	89	47	40	10
A3293TTP-10.1	10,1		40	102	55	45	12
A3293TTP-10.2	10,2		40	102	55	45	12
A3293TTP-10.3	10,3		40	102	55	45	12
A3293TTP-13/32IN	10,319	13/32"	40	102	55	45	12
A3293TTP-10.4	10,4		40	102	55	45	12
A3293TTP-10.5	10,5		40	102	55	45	12
A3293TTP-10.6	10,6		40	102	55	45	12
A3293TTP-10.7	10,7		40	102	55	45	12
A3293TTP-10.8	10,8		40	102	55	45	12
A3293TTP-10.9	10,9		40	102	55	45	12
A3293TTP-11	11		40	102	55	45	12
A3293TTP-11.1	11,1		40	102	55	45	12
A3293TTP-7/16IN	11,113	7/16"	40	102	55	45	12
A3293TTP-11.2	11,2		40	102	55	45	12
A3293TTP-11.3	11,3		40	102	55	45	12
A3293TTP-11.4	11,4		40	102	55	45	12
A3293TTP-11.5	11,5		40	102	55	45	12
A3293TTP-11.6	11,6		40	102	55	45	12
A3293TTP-11.7	11,7		40	102	55	45	12
A3293TTP-11.8	11,8		40	102	55	45	12
A3293TTP-11.9	11,9		40	102	55	45	12

Continued

XIII D 1 B 412 B 430

Continued

Shank DIN 6535 HA



Designation TTP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3293TTP-15/32IN	11,906	15/32"	40	102	55	45	12
A3293TTP-12	12		40	102	55	45	12
A3293TTP-12.5	12,5		43	107	60	45	14
A3293TTP-1/2IN	12,7	1/2"	43	107	60	45	14
A3293TTP-12.9	12,9		43	107	60	45	14
A3293TTP-13	13		43	107	60	45	14
A3293TTP-13.1	13,1		43	107	60	45	14
A3293TTP-13.3	13,3		43	107	60	45	14
A3293TTP-13.5	13,5		43	107	60	45	14
A3293TTP-13.8	13,8		43	107	60	45	14
A3293TTP-14	14		43	107	60	45	14
A3293TTP-14.2	14,2		45	115	65	48	16
A3293TTP-9/16IN	14,288	9/16"	45	115	65	48	16
A3293TTP-14.5	14,5		45	115	65	48	16
A3293TTP-14.75	14,75		45	115	65	48	16
A3293TTP-15	15		45	115	65	48	16
A3293TTP-15.1	15,1		45	115	65	48	16
A3293TTP-15.2	15,2		45	115	65	48	16
A3293TTP-15.5	15,5		45	115	65	48	16
A3293TTP-15.8	15,8		45	115	65	48	16
A3293TTP-5/8IN	15,875	5/8"	45	115	65	48	16
A3293TTP-16	16		45	115	65	48	16
A3293TTP-16.5	16,5		51	123	73	48	18
A3293TTP-16.8	16,8		51	123	73	48	18
A3293TTP-17	17		51	123	73	48	18
A3293TTP-17.5	17,5		51	123	73	48	18
A3293TTP-17.8	17,8		51	123	73	48	18
A3293TTP-18	18		51	123	73	48	18
A3293TTP-18.5	18,5		55	131	79	50	20
A3293TTP-18.8	18,8		55	131	79	50	20
A3293TTP-19	19		55	131	79	50	20
A3293TTP-3/4IN	19,05	3/4"	55	131	79	50	20
A3293TTP-19.5	19,5		55	131	79	50	20
A3293TTP-19.8	19,8		55	131	79	50	20
A3293TTP-20	20		55	131	79	50	20

WALTER SELECT

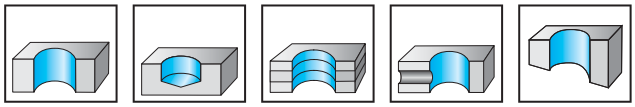
●● Primary application

● Other application

XIII D 1 B 412 B 430

Solid carbide drills with coolant-through
A3299XPL / A3899XPL
X-treme

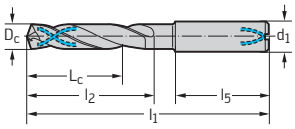




3×D_c | DIN 6537 K | 140°

	P	M	K	N	S	H	O
XPL	●●	●	●●	●●	●●	●	●

Shank DIN 6535 HA



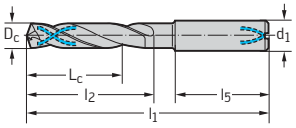
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3299XPL-3	3		14	62	20	36	6
A3299XPL-3.1	3,1		14	62	20	36	6
A3299XPL-1/8IN	3,175	1/8"	14	62	20	36	6
A3299XPL-3.2	3,2		14	62	20	36	6
A3299XPL-3.25	3,25		14	62	20	36	6
A3299XPL-3.3	3,3		14	62	20	36	6
A3299XPL-3.4	3,4		14	62	20	36	6
A3299XPL-3.5	3,5		14	62	20	36	6
A3299XPL-9/64IN	3,572	9/64"	14	62	20	36	6
A3299XPL-3.6	3,6		14	62	20	36	6
A3299XPL-3.65	3,65		14	62	20	36	6
A3299XPL-3.7	3,7		14	62	20	36	6
A3299XPL-3.8	3,8		17	66	24	36	6
A3299XPL-3.9	3,9		17	66	24	36	6
A3299XPL-5/32IN	3,969	5/32"	17	66	24	36	6
A3299XPL-4	4		17	66	24	36	6
A3299XPL-4.1	4,1		17	66	24	36	6
A3299XPL-4.2	4,2		17	66	24	36	6
A3299XPL-4.3	4,3		17	66	24	36	6
A3299XPL-11/64IN	4,366	11/64"	17	66	24	36	6
A3299XPL-4.4	4,4		17	66	24	36	6
A3299XPL-4.5	4,5		17	66	24	36	6
A3299XPL-4.6	4,6		17	66	24	36	6
A3299XPL-4.65	4,65		17	66	24	36	6
A3299XPL-4.7	4,7		17	66	24	36	6
A3299XPL-3/16IN	4,763	3/16"	20	66	28	36	6
A3299XPL-4.8	4,8		20	66	28	36	6
A3299XPL-4.9	4,9		20	66	28	36	6
A3299XPL-5	5		20	66	28	36	6
A3299XPL-5.1	5,1		20	66	28	36	6
A3299XPL-13/64IN	5,159	13/64"	20	66	28	36	6
A3299XPL-5.2	5,2		20	66	28	36	6
A3299XPL-5.3	5,3		20	66	28	36	6
A3299XPL-5.4	5,4		20	66	28	36	6
A3299XPL-5.5	5,5		20	66	28	36	6
A3299XPL-5.55	5,55		20	66	28	36	6
A3299XPL-7/32IN	5,556	7/32"	20	66	28	36	6
A3299XPL-5.6	5,6		20	66	28	36	6
A3299XPL-5.7	5,7		20	66	28	36	6
A3299XPL-5.8	5,8		20	66	28	36	6
A3299XPL-5.9	5,9		20	66	28	36	6
A3299XPL-15/64IN	5,953	15/64"	20	66	28	36	6
A3299XPL-6	6		20	66	28	36	6
A3299XPL-6.1	6,1		24	79	34	36	8
A3299XPL-6.2	6,2		24	79	34	36	8
A3299XPL-6.3	6,3		24	79	34	36	8
A3299XPL-1/4IN	6,35	1/4"	24	79	34	36	8
A3299XPL-6.4	6,4		24	79	34	36	8

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XIII | D 1 | B 412 | B 430

Continued

Shank DIN 6535 HA



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3299XPL-6.5	6,5		24	79	34	36	8
A3299XPL-6.6	6,6		24	79	34	36	8
A3299XPL-6.7	6,7		24	79	34	36	8
A3299XPL-17/64IN	6,747	17/64"	24	79	34	36	8
A3299XPL-6.8	6,8		24	79	34	36	8
A3299XPL-6.9	6,9		24	79	34	36	8
A3299XPL-7	7		24	79	34	36	8
A3299XPL-7.1	7,1		29	79	41	36	8
A3299XPL-9/32IN	7,144	9/32"	29	79	41	36	8
A3299XPL-7.2	7,2		29	79	41	36	8
A3299XPL-7.3	7,3		29	79	41	36	8
A3299XPL-7.4	7,4		29	79	41	36	8
A3299XPL-7.5	7,5		29	79	41	36	8
A3299XPL-19/64IN	7,541	19/64"	29	79	41	36	8
A3299XPL-7.55	7,55		29	79	41	36	8
A3299XPL-7.6	7,6		29	79	41	36	8
A3299XPL-7.7	7,7		29	79	41	36	8
A3299XPL-7.8	7,8		29	79	41	36	8
A3299XPL-7.9	7,9		29	79	41	36	8
A3299XPL-5/16IN	7,938	5/16"	29	79	41	36	8
A3299XPL-8	8		29	79	41	36	8
A3299XPL-8.1	8,1		35	89	47	40	10
A3299XPL-8.2	8,2		35	89	47	40	10
A3299XPL-8.3	8,3		35	89	47	40	10
A3299XPL-21/64IN	8,334	21/64"	35	89	47	40	10
A3299XPL-8.4	8,4		35	89	47	40	10
A3299XPL-8.5	8,5		35	89	47	40	10
A3299XPL-8.6	8,6		35	89	47	40	10
A3299XPL-8.7	8,7		35	89	47	40	10
A3299XPL-11/32IN	8,731	11/32"	35	89	47	40	10
A3299XPL-8.8	8,8		35	89	47	40	10
A3299XPL-8.9	8,9		35	89	47	40	10
A3299XPL-9	9		35	89	47	40	10
A3299XPL-9.1	9,1		35	89	47	40	10
A3299XPL-23/64IN	9,128	23/64"	35	89	47	40	10
A3299XPL-9.2	9,2		35	89	47	40	10
A3299XPL-9.3	9,3		35	89	47	40	10
A3299XPL-9.4	9,4		35	89	47	40	10
A3299XPL-9.5	9,5		35	89	47	40	10
A3299XPL-3/8IN	9,525	3/8"	35	89	47	40	10
A3299XPL-9.55	9,55		35	89	47	40	10
A3299XPL-9.6	9,6		35	89	47	40	10
A3299XPL-9.7	9,7		35	89	47	40	10
A3299XPL-9.8	9,8		35	89	47	40	10
A3299XPL-9.9	9,9		35	89	47	40	10
A3299XPL-25/64IN	9,922	25/64"	35	89	47	40	10
A3299XPL-10	10		35	89	47	40	10
A3299XPL-10.1	10,1		40	102	55	45	12
A3299XPL-10.2	10,2		40	102	55	45	12
A3299XPL-10.3	10,3		40	102	55	45	12
A3299XPL-13/32IN	10,319	13/32"	40	102	55	45	12
A3299XPL-10.4	10,4		40	102	55	45	12
A3299XPL-10.5	10,5		40	102	55	45	12
A3299XPL-10.6	10,6		40	102	55	45	12
A3299XPL-10.7	10,7		40	102	55	45	12
A3299XPL-27/64IN	10,716	27/64"	40	102	55	45	12
A3299XPL-10.8	10,8		40	102	55	45	12
A3299XPL-10.9	10,9		40	102	55	45	12

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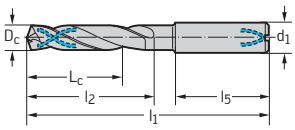
●● Primary application

● Other application

XIII D 1 B 412 B 430

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Shank DIN 6535 HA

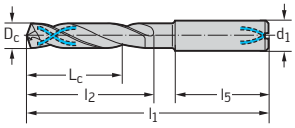
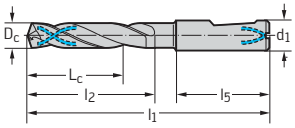


Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3299XPL-11	11		40	102	55	45	12
A3299XPL-11.1	11,1		40	102	55	45	12
A3299XPL-7/16IN	11,113	7/16"	40	102	55	45	12
A3299XPL-11.2	11,2		40	102	55	45	12
A3299XPL-11.3	11,3		40	102	55	45	12
A3299XPL-11.4	11,4		40	102	55	45	12
A3299XPL-11.5	11,5		40	102	55	45	12
A3299XPL-29/64IN	11,509	29/64"	40	102	55	45	12
A3299XPL-11.6	11,6		40	102	55	45	12
A3299XPL-11.7	11,7		40	102	55	45	12
A3299XPL-11.8	11,8		40	102	55	45	12
A3299XPL-11.9	11,9		40	102	55	45	12
A3299XPL-15/32IN	11,906	15/32"	40	102	55	45	12
A3299XPL-12	12		40	102	55	45	12
A3299XPL-12.1	12,1		43	107	60	45	14
A3299XPL-12.2	12,2		43	107	60	45	14
A3299XPL-12.25	12,25		43	107	60	45	14
A3299XPL-12.3	12,3		43	107	60	45	14
A3299XPL-31/64IN	12,303	31/64"	43	107	60	45	14
A3299XPL-12.5	12,5		43	107	60	45	14
A3299XPL-12.6	12,6		43	107	60	45	14
A3299XPL-1/2IN	12,7	1/2"	43	107	60	45	14
A3299XPL-12.75	12,75		43	107	60	45	14
A3299XPL-12.8	12,8		43	107	60	45	14
A3299XPL-12.9	12,9		43	107	60	45	14
A3299XPL-13	13		43	107	60	45	14
A3299XPL-13.1	13,1		43	107	60	45	14
A3299XPL-13.2	13,2		43	107	60	45	14
A3299XPL-13.3	13,3		43	107	60	45	14
A3299XPL-17/32IN	13,494	17/32"	43	107	60	45	14
A3299XPL-13.5	13,5		43	107	60	45	14
A3299XPL-13.8	13,8		43	107	60	45	14
A3299XPL-13.9	13,9		43	107	60	45	14
A3299XPL-14	14		43	107	60	45	14
A3299XPL-14.1	14,1		45	115	65	48	16
A3299XPL-14.2	14,2		45	115	65	48	16
A3299XPL-9/16IN	14,288	9/16"	45	115	65	48	16
A3299XPL-14.3	14,3		45	115	65	48	16
A3299XPL-14.4	14,4		45	115	65	48	16
A3299XPL-14.5	14,5		45	115	65	48	16
A3299XPL-14.6	14,6		45	115	65	48	16
A3299XPL-14.7	14,7		45	115	65	48	16
A3299XPL-14.75	14,75		45	115	65	48	16
A3299XPL-14.8	14,8		45	115	65	48	16
A3299XPL-15	15		45	115	65	48	16
A3299XPL-15.1	15,1		45	115	65	48	16
A3299XPL-15.2	15,2		45	115	65	48	16
A3299XPL-15.3	15,3		45	115	65	48	16
A3299XPL-15.5	15,5		45	115	65	48	16
A3299XPL-15.6	15,6		45	115	65	48	16
A3299XPL-15.7	15,7		45	115	65	48	16
A3299XPL-15.8	15,8		45	115	65	48	16
A3299XPL-5/8IN	15,875	5/8"	45	115	65	48	16
A3299XPL-15.9	15,9		45	115	65	48	16
A3299XPL-16	16		45	115	65	48	16
A3299XPL-16.2	16,2		51	123	73	48	18
A3299XPL-16.4	16,4		51	123	73	48	18
A3299XPL-16.5	16,5		51	123	73	48	18
A3299XPL-16.7	16,7		51	123	73	48	18
A3299XPL-16.8	16,8		51	123	73	48	18
A3299XPL-17	17		51	123	73	48	18
A3299XPL-17.2	17,2		51	123	73	48	18

Continued

XIII D 1 B 412 B 430

Continued

	Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	A3299XPL-17.3	17,3		51	123	73	48	18
	A3299XPL-17.5	17,5		51	123	73	48	18
	A3299XPL-17.6	17,6		51	123	73	48	18
	A3299XPL-17.7	17,7		51	123	73	48	18
	A3299XPL-18	18		51	123	73	48	18
	A3299XPL-18.2	18,2		55	131	79	50	20
	A3299XPL-18.5	18,5		55	131	79	50	20
	A3299XPL-18.7	18,7		55	131	79	50	20
	A3299XPL-18.8	18,8		55	131	79	50	20
	A3299XPL-19	19		55	131	79	50	20
	A3299XPL-3/4IN	19,05	3/4"	55	131	79	50	20
	A3299XPL-19.5	19,5		55	131	79	50	20
	A3299XPL-19.7	19,7		55	131	79	50	20
	A3299XPL-20	20		55	131	79	50	20
Shank DIN 6535 HE	A3899XPL-3	3		14	62	20	36	6
	A3899XPL-3.1	3,1		14	62	20	36	6
	A3899XPL-3.2	3,2		14	62	20	36	6
	A3899XPL-3.25	3,25		14	62	20	36	6
	A3899XPL-3.3	3,3		14	62	20	36	6
	A3899XPL-3.4	3,4		14	62	20	36	6
	A3899XPL-3.5	3,5		14	62	20	36	6
	A3899XPL-3.6	3,6		14	62	20	36	6
	A3899XPL-3.65	3,65		14	62	20	36	6
	A3899XPL-3.7	3,7		14	62	20	36	6
	A3899XPL-3.8	3,8		17	66	24	36	6
	A3899XPL-3.9	3,9		17	66	24	36	6
	A3899XPL-4	4		17	66	24	36	6
	A3899XPL-4.1	4,1		17	66	24	36	6
	A3899XPL-4.2	4,2		17	66	24	36	6
	A3899XPL-4.3	4,3		17	66	24	36	6
	A3899XPL-4.4	4,4		17	66	24	36	6
	A3899XPL-4.5	4,5		17	66	24	36	6
	A3899XPL-4.6	4,6		17	66	24	36	6
	A3899XPL-4.65	4,65		17	66	24	36	6
	A3899XPL-4.7	4,7		17	66	24	36	6
	A3899XPL-4.8	4,8		20	66	28	36	6
	A3899XPL-4.9	4,9		20	66	28	36	6
	A3899XPL-5	5		20	66	28	36	6
	A3899XPL-5.1	5,1		20	66	28	36	6
	A3899XPL-5.2	5,2		20	66	28	36	6
	A3899XPL-5.3	5,3		20	66	28	36	6
	A3899XPL-5.4	5,4		20	66	28	36	6
	A3899XPL-5.5	5,5		20	66	28	36	6
	A3899XPL-5.55	5,55		20	66	28	36	6
	A3899XPL-5.6	5,6		20	66	28	36	6
	A3899XPL-5.7	5,7		20	66	28	36	6
	A3899XPL-5.8	5,8		20	66	28	36	6
	A3899XPL-5.9	5,9		20	66	28	36	6
	A3899XPL-6	6		20	66	28	36	6
	A3899XPL-6.1	6,1		24	79	34	36	8
	A3899XPL-6.2	6,2		24	79	34	36	8
	A3899XPL-6.3	6,3		24	79	34	36	8
	A3899XPL-6.4	6,4		24	79	34	36	8
	A3899XPL-6.5	6,5		24	79	34	36	8
	A3899XPL-6.6	6,6		24	79	34	36	8
	A3899XPL-6.7	6,7		24	79	34	36	8
	A3899XPL-6.8	6,8		24	79	34	36	8
	A3899XPL-6.9	6,9		24	79	34	36	8

Continued

WALTER SELECT

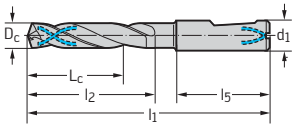
●● Primary application

● Other application

XIII D 1 B 412 B 430

Continued

Shank DIN 6535 HE



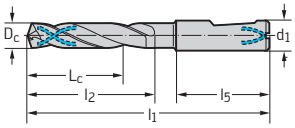
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3899XPL-7	7		24	79	34	36	8
A3899XPL-7.1	7,1		29	79	41	36	8
A3899XPL-7.2	7,2		29	79	41	36	8
A3899XPL-7.3	7,3		29	79	41	36	8
A3899XPL-7.4	7,4		29	79	41	36	8
A3899XPL-7.5	7,5		29	79	41	36	8
A3899XPL-7.55	7,55		29	79	41	36	8
A3899XPL-7.6	7,6		29	79	41	36	8
A3899XPL-7.7	7,7		29	79	41	36	8
A3899XPL-7.8	7,8		29	79	41	36	8
A3899XPL-7.9	7,9		29	79	41	36	8
A3899XPL-8	8		29	79	41	36	8
A3899XPL-8.1	8,1		35	89	47	40	10
A3899XPL-8.2	8,2		35	89	47	40	10
A3899XPL-8.3	8,3		35	89	47	40	10
A3899XPL-8.4	8,4		35	89	47	40	10
A3899XPL-8.5	8,5		35	89	47	40	10
A3899XPL-8.6	8,6		35	89	47	40	10
A3899XPL-8.7	8,7		35	89	47	40	10
A3899XPL-8.8	8,8		35	89	47	40	10
A3899XPL-8.9	8,9		35	89	47	40	10
A3899XPL-9	9		35	89	47	40	10
A3899XPL-9.1	9,1		35	89	47	40	10
A3899XPL-9.2	9,2		35	89	47	40	10
A3899XPL-9.3	9,3		35	89	47	40	10
A3899XPL-9.4	9,4		35	89	47	40	10
A3899XPL-9.5	9,5		35	89	47	40	10
A3899XPL-9.55	9,55		35	89	47	40	10
A3899XPL-9.6	9,6		35	89	47	40	10
A3899XPL-9.7	9,7		35	89	47	40	10
A3899XPL-9.8	9,8		35	89	47	40	10
A3899XPL-9.9	9,9		35	89	47	40	10
A3899XPL-10	10		35	89	47	40	10
A3899XPL-10.1	10,1		40	102	55	45	12
A3899XPL-10.2	10,2		40	102	55	45	12
A3899XPL-10.3	10,3		40	102	55	45	12
A3899XPL-10.4	10,4		40	102	55	45	12
A3899XPL-10.5	10,5		40	102	55	45	12
A3899XPL-10.7	10,7		40	102	55	45	12
A3899XPL-10.8	10,8		40	102	55	45	12
A3899XPL-10.9	10,9		40	102	55	45	12
A3899XPL-11	11		40	102	55	45	12
A3899XPL-11.1	11,1		40	102	55	45	12
A3899XPL-11.2	11,2		40	102	55	45	12
A3899XPL-11.4	11,4		40	102	55	45	12
A3899XPL-11.5	11,5		40	102	55	45	12
A3899XPL-11.55	11,55		40	102	55	45	12
A3899XPL-11.6	11,6		40	102	55	45	12
A3899XPL-11.7	11,7		40	102	55	45	12
A3899XPL-11.8	11,8		40	102	55	45	12
A3899XPL-11.9	11,9		40	102	55	45	12
A3899XPL-12	12		40	102	55	45	12
A3899XPL-12.1	12,1		43	107	60	45	14
A3899XPL-12.2	12,2		43	107	60	45	14
A3899XPL-12.25	12,25		43	107	60	45	14
A3899XPL-12.3	12,3		43	107	60	45	14
A3899XPL-12.4	12,4		43	107	60	45	14
A3899XPL-12.5	12,5		43	107	60	45	14
A3899XPL-12.6	12,6		43	107	60	45	14
A3899XPL-12.7	12,7	1/2"	43	107	60	45	14
A3899XPL-12.75	12,75		43	107	60	45	14
A3899XPL-12.8	12,8		43	107	60	45	14

Continued

XIII D 1 B 412 B 430

Continued

Shank DIN 6535 HE



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3899XPL-12.9	12,9		43	107	60	45	14
A3899XPL-13	13		43	107	60	45	14
A3899XPL-13.1	13,1		43	107	60	45	14
A3899XPL-13.2	13,2		43	107	60	45	14
A3899XPL-13.3	13,3		43	107	60	45	14
A3899XPL-13.4	13,4		43	107	60	45	14
A3899XPL-13.5	13,5		43	107	60	45	14
A3899XPL-13.6	13,6		43	107	60	45	14
A3899XPL-13.7	13,7		43	107	60	45	14
A3899XPL-13.8	13,8		43	107	60	45	14
A3899XPL-13.9	13,9		43	107	60	45	14
A3899XPL-14	14		43	107	60	45	14
A3899XPL-14.1	14,1		45	115	65	48	16
A3899XPL-14.2	14,2		45	115	65	48	16
A3899XPL-14.3	14,3		45	115	65	48	16
A3899XPL-14.4	14,4		45	115	65	48	16
A3899XPL-14.5	14,5		45	115	65	48	16
A3899XPL-14.6	14,6		45	115	65	48	16
A3899XPL-14.7	14,7		45	115	65	48	16
A3899XPL-14.75	14,75		45	115	65	48	16
A3899XPL-14.8	14,8		45	115	65	48	16
A3899XPL-15	15		45	115	65	48	16
A3899XPL-15.1	15,1		45	115	65	48	16
A3899XPL-15.2	15,2		45	115	65	48	16
A3899XPL-15.3	15,3		45	115	65	48	16
A3899XPL-15.5	15,5		45	115	65	48	16
A3899XPL-15.6	15,6		45	115	65	48	16
A3899XPL-15.7	15,7		45	115	65	48	16
A3899XPL-15.8	15,8		45	115	65	48	16
A3899XPL-15.9	15,9		45	115	65	48	16
A3899XPL-16	16		45	115	65	48	16
A3899XPL-16.2	16,2		51	123	73	48	18
A3899XPL-16.3	16,3		51	123	73	48	18
A3899XPL-16.4	16,4		51	123	73	48	18
A3899XPL-16.5	16,5		51	123	73	48	18
A3899XPL-16.6	16,6		51	123	73	48	18
A3899XPL-16.7	16,7		51	123	73	48	18
A3899XPL-16.75	16,75		51	123	73	48	18
A3899XPL-16.8	16,8		51	123	73	48	18
A3899XPL-17	17		51	123	73	48	18
A3899XPL-17.2	17,2		51	123	73	48	18
A3899XPL-17.3	17,3		51	123	73	48	18
A3899XPL-17.5	17,5		51	123	73	48	18
A3899XPL-17.6	17,6		51	123	73	48	18
A3899XPL-17.7	17,7		51	123	73	48	18
A3899XPL-17.8	17,8		51	123	73	48	18
A3899XPL-18	18		51	123	73	48	18
A3899XPL-18.2	18,2		55	131	79	50	20
A3899XPL-18.7	18,7		55	131	79	50	20
A3899XPL-18.8	18,8		55	131	79	50	20
A3899XPL-19	19		55	131	79	50	20
A3899XPL-19.5	19,5		55	131	79	50	20
A3899XPL-19.7	19,7		55	131	79	50	20
A3899XPL-19.8	19,8		55	131	79	50	20
A3899XPL-20	20		55	131	79	50	20

WALTER SELECT

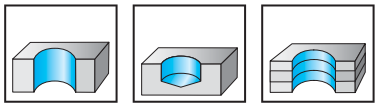
●● Primary application

● Other application

XIII D 1 B 412 B 430

Solid carbide twist drills
DC150 Perform

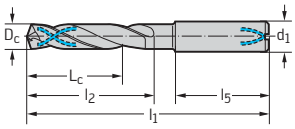




3×D_c | DIN 6537 K | 140°

	P	M	K	N	S	H	O
WJ30RE	●●	●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-03-03.000A1-	3		14	62	20	36	6	●
DC150-03-03.100A1-	3,1		14	62	20	36	6	●
DC150-03-03.175A1-	3,175	1/8"	14	62	20	36	6	●
DC150-03-03.200A1-	3,2		14	62	20	36	6	●
DC150-03-03.250A1-	3,25		14	62	20	36	6	●
DC150-03-03.300A1-	3,3		14	62	20	36	6	●
DC150-03-03.400A1-	3,4		14	62	20	36	6	●
DC150-03-03.500A1-	3,5		14	62	20	36	6	●
DC150-03-03.572A1-	3,572	9/64"	14	62	20	36	6	●
DC150-03-03.600A1-	3,6		14	62	20	36	6	●
DC150-03-03.650A1-	3,65		14	62	20	36	6	●
DC150-03-03.700A1-	3,7		14	62	20	36	6	●
DC150-03-03.800A1-	3,8		17	66	24	36	6	●
DC150-03-03.900A1-	3,9		17	66	24	36	6	●
DC150-03-03.969A1-	3,969	5/32"	17	66	24	36	6	●
DC150-03-04.000A1-	4		17	66	24	36	6	●
DC150-03-04.100A1-	4,1		17	66	24	36	6	●
DC150-03-04.200A1-	4,2		17	66	24	36	6	●
DC150-03-04.300A1-	4,3		17	66	24	36	6	●
DC150-03-04.366A1-	4,366	11/64"	17	66	24	36	6	●
DC150-03-04.400A1-	4,4		17	66	24	36	6	●
DC150-03-04.500A1-	4,5		17	66	24	36	6	●
DC150-03-04.600A1-	4,6		17	66	24	36	6	●
DC150-03-04.650A1-	4,65		17	66	24	36	6	●
DC150-03-04.700A1-	4,7		17	66	24	36	6	●
DC150-03-04.763A1-	4,763	3/16"	20	66	28	36	6	●
DC150-03-04.800A1-	4,8		20	66	28	36	6	●
DC150-03-04.900A1-	4,9		20	66	28	36	6	●
DC150-03-05.000A1-	5		20	66	28	36	6	●
DC150-03-05.100A1-	5,1		20	66	28	36	6	●
DC150-03-05.159A1-	5,159	13/64"	20	66	28	36	6	●
DC150-03-05.200A1-	5,2		20	66	28	36	6	●
DC150-03-05.300A1-	5,3		20	66	28	36	6	●
DC150-03-05.400A1-	5,4		20	66	28	36	6	●
DC150-03-05.500A1-	5,5		20	66	28	36	6	●
DC150-03-05.550A1-	5,55		20	66	28	36	6	●
DC150-03-05.556A1-	5,556	7/32"	20	66	28	36	6	●
DC150-03-05.600A1-	5,6		20	66	28	36	6	●
DC150-03-05.700A1-	5,7		20	66	28	36	6	●
DC150-03-05.800A1-	5,8		20	66	28	36	6	●
DC150-03-05.900A1-	5,9		20	66	28	36	6	●
DC150-03-05.953A1-	5,953	15/64"	20	66	28	36	6	●
DC150-03-06.000A1-	6		20	66	28	36	6	●
DC150-03-06.100A1-	6,1		24	79	34	36	8	●
DC150-03-06.200A1-	6,2		24	79	34	36	8	●
DC150-03-06.300A1-	6,3		24	79	34	36	8	●
DC150-03-06.350A1-	6,35	1/4"	24	79	34	36	8	●

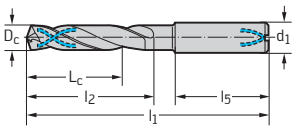
Ordering example for the WJ30RE grade: DC150-03-03.000A1-WJ30RE

Continued

XIII | D 1 | B 412 | B 430

Continued

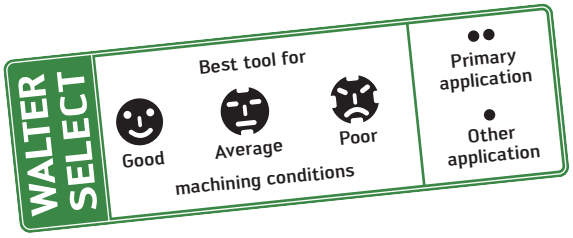
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-03-06.400A1-	6,4		24	79	34	36	8	●●
DC150-03-06.500A1-	6,5		24	79	34	36	8	●●
DC150-03-06.600A1-	6,6		24	79	34	36	8	●●
DC150-03-06.700A1-	6,7		24	79	34	36	8	●●
DC150-03-06.747A1-	6,747	17/64"	24	79	34	36	8	●●
DC150-03-06.800A1-	6,8		24	79	34	36	8	●●
DC150-03-06.900A1-	6,9		24	79	34	36	8	●●
DC150-03-07.000A1-	7		24	79	34	36	8	●●
DC150-03-07.100A1-	7,1		29	79	41	36	8	●●
DC150-03-07.144A1-	7,144	9/32"	29	79	41	36	8	●●
DC150-03-07.200A1-	7,2		29	79	41	36	8	●●
DC150-03-07.300A1-	7,3		29	79	41	36	8	●●
DC150-03-07.400A1-	7,4		29	79	41	36	8	●●
DC150-03-07.500A1-	7,5		29	79	41	36	8	●●
DC150-03-07.541A1-	7,541	19/64"	29	79	41	36	8	●●
DC150-03-07.600A1-	7,6		29	79	41	36	8	●●
DC150-03-07.700A1-	7,7		29	79	41	36	8	●●
DC150-03-07.800A1-	7,8		29	79	41	36	8	●●
DC150-03-07.900A1-	7,9		29	79	41	36	8	●●
DC150-03-07.938A1-	7,938	5/16"	29	79	41	36	8	●●
DC150-03-08.000A1-	8		29	79	41	36	8	●●
DC150-03-08.100A1-	8,1		35	89	47	40	10	●●
DC150-03-08.200A1-	8,2		35	89	47	40	10	●●
DC150-03-08.300A1-	8,3		35	89	47	40	10	●●
DC150-03-08.334A1-	8,334	21/64"	35	89	47	40	10	●●
DC150-03-08.400A1-	8,4		35	89	47	40	10	●●
DC150-03-08.500A1-	8,5		35	89	47	40	10	●●
DC150-03-08.600A1-	8,6		35	89	47	40	10	●●
DC150-03-08.700A1-	8,7		35	89	47	40	10	●●
DC150-03-08.731A1-	8,731	11/32"	35	89	47	40	10	●●
DC150-03-08.800A1-	8,8		35	89	47	40	10	●●
DC150-03-08.900A1-	8,9		35	89	47	40	10	●●
DC150-03-09.000A1-	9		35	89	47	40	10	●●
DC150-03-09.100A1-	9,1		35	89	47	40	10	●●
DC150-03-09.128A1-	9,128	23/64"	35	89	47	40	10	●●
DC150-03-09.200A1-	9,2		35	89	47	40	10	●●
DC150-03-09.300A1-	9,3		35	89	47	40	10	●●
DC150-03-09.400A1-	9,4		35	89	47	40	10	●●
DC150-03-09.500A1-	9,5		35	89	47	40	10	●●
DC150-03-09.525A1-	9,525	3/8"	35	89	47	40	10	●●
DC150-03-09.600A1-	9,6		35	89	47	40	10	●●
DC150-03-09.700A1-	9,7		35	89	47	40	10	●●
DC150-03-09.800A1-	9,8		35	89	47	40	10	●●
DC150-03-09.900A1-	9,9		35	89	47	40	10	●●
DC150-03-09.922A1-	9,922	25/64"	35	89	47	40	10	●●
DC150-03-10.000A1-	10		35	89	47	40	10	●●
DC150-03-10.100A1-	10,1		40	102	55	45	12	●●
DC150-03-10.200A1-	10,2		40	102	55	45	12	●●
DC150-03-10.300A1-	10,3		40	102	55	45	12	●●
DC150-03-10.319A1-	10,319	13/32"	40	102	55	45	12	●●
DC150-03-10.400A1-	10,4		40	102	55	45	12	●●
DC150-03-10.500A1-	10,5		40	102	55	45	12	●●
DC150-03-10.600A1-	10,6		40	102	55	45	12	●●
DC150-03-10.700A1-	10,7		40	102	55	45	12	●●
DC150-03-10.716A1-	10,716	27/64"	40	102	55	45	12	●●
DC150-03-10.800A1-	10,8		40	102	55	45	12	●●
DC150-03-10.900A1-	10,9		40	102	55	45	12	●●

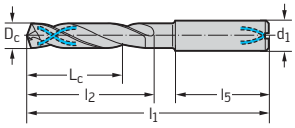
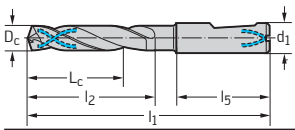
Ordering example for the WJ30RE grade: DC150-03-03.000A1-WJ30RE

Continued



XIII D 1 B 412 B 430

Continued

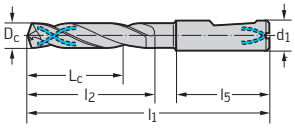
	Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
Shank DIN 6535 HA 	DC150-03-11.000A1-	11		40	102	55	45	12	
	DC150-03-11.100A1-	11,1		40	102	55	45	12	
	DC150-03-11.113A1-	11,113	7/16"	40	102	55	45	12	
	DC150-03-11.200A1-	11,2		40	102	55	45	12	
	DC150-03-11.300A1-	11,3		40	102	55	45	12	
	DC150-03-11.400A1-	11,4		40	102	55	45	12	
	DC150-03-11.500A1-	11,5		40	102	55	45	12	
	DC150-03-11.509A1-	11,509	29/64"	40	102	55	45	12	
	DC150-03-11.600A1-	11,6		40	102	55	45	12	
	DC150-03-11.700A1-	11,7		40	102	55	45	12	
	DC150-03-11.800A1-	11,8		40	102	55	45	12	
	DC150-03-11.900A1-	11,9		40	102	55	45	12	
	DC150-03-11.906A1-	11,906	15/32"	40	102	55	45	12	
	DC150-03-12.000A1-	12		40	102	55	45	12	
	DC150-03-12.100A1-	12,1		43	107	60	45	14	
	DC150-03-12.200A1-	12,2		43	107	60	45	14	
	DC150-03-12.300A1-	12,3		43	107	60	45	14	
	DC150-03-12.303A1-	12,303	31/64"	43	107	60	45	14	
	DC150-03-12.500A1-	12,5		43	107	60	45	14	
	DC150-03-12.600A1-	12,6		43	107	60	45	14	
	DC150-03-12.700A1-	12,7	1/2"	43	107	60	45	14	
	DC150-03-12.800A1-	12,8		43	107	60	45	14	
	DC150-03-12.900A1-	12,9		43	107	60	45	14	
	DC150-03-13.000A1-	13		43	107	60	45	14	
	DC150-03-13.100A1-	13,1		43	107	60	45	14	
	DC150-03-13.200A1-	13,2		43	107	60	45	14	
	DC150-03-13.300A1-	13,3		43	107	60	45	14	
	DC150-03-13.494A1-	13,494	17/32"	43	107	60	45	14	
	DC150-03-13.500A1-	13,5		43	107	60	45	14	
	DC150-03-13.800A1-	13,8		43	107	60	45	14	
	DC150-03-14.000A1-	14		43	107	60	45	14	
	DC150-03-14.100A1-	14,1		45	115	65	48	16	
	DC150-03-14.200A1-	14,2		45	115	65	48	16	
	DC150-03-14.288A1-	14,288	9/16"	45	115	65	48	16	
	DC150-03-14.500A1-	14,5		45	115	65	48	16	
	DC150-03-14.600A1-	14,6		45	115	65	48	16	
	DC150-03-14.700A1-	14,7		45	115	65	48	16	
	DC150-03-15.000A1-	15		45	115	65	48	16	
	DC150-03-15.100A1-	15,1		45	115	65	48	16	
	DC150-03-15.300A1-	15,3		45	115	65	48	16	
	DC150-03-15.500A1-	15,5		45	115	65	48	16	
	DC150-03-15.700A1-	15,7		45	115	65	48	16	
	DC150-03-15.800A1-	15,8		45	115	65	48	16	
	DC150-03-15.875A1-	15,875	5/8"	45	115	65	48	16	
	DC150-03-16.000A1-	16		45	115	65	48	16	
	DC150-03-16.300A1-	16,3		51	123	73	48	18	
	DC150-03-16.500A1-	16,5		51	123	73	48	18	
	DC150-03-16.700A1-	16,7		51	123	73	48	18	
	DC150-03-17.000A1-	17		51	123	73	48	18	
	DC150-03-17.500A1-	17,5		51	123	73	48	18	
	DC150-03-18.000A1-	18		51	123	73	48	18	
	DC150-03-18.500A1-	18,5		55	131	79	50	20	
	DC150-03-19.000A1-	19		55	131	79	50	20	
	DC150-03-19.050A1-	19,05	3/4"	55	131	79	50	20	
	DC150-03-20.000A1-	20		55	131	79	50	20	
Shank DIN 6535 HE 	DC150-03-03.000F1-	3		14	62	20	36	6	
	DC150-03-03.300F1-	3,3		14	62	20	36	6	
	DC150-03-03.400F1-	3,4		14	62	20	36	6	
	DC150-03-03.500F1-	3,5		14	62	20	36	6	
	DC150-03-03.700F1-	3,7		14	62	20	36	6	
	DC150-03-03.800F1-	3,8		17	66	24	36	6	

Ordering example for the WJ30RE grade: DC150-03-03.000A1-WJ30RE

Continued

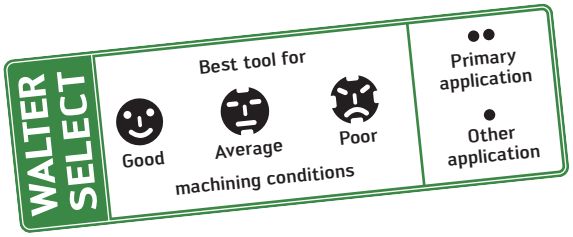
Continued

Shank DIN 6535 HE



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-03-04.000F1-	4		17	66	24	36	6	☹
DC150-03-04.200F1-	4,2		17	66	24	36	6	☹
DC150-03-04.300F1-	4,3		17	66	24	36	6	☹
DC150-03-04.500F1-	4,5		17	66	24	36	6	☹
DC150-03-04.800F1-	4,8		20	66	28	36	6	☹
DC150-03-05.000F1-	5		20	66	28	36	6	☹
DC150-03-05.100F1-	5,1		20	66	28	36	6	☹
DC150-03-05.300F1-	5,3		20	66	28	36	6	☹
DC150-03-05.500F1-	5,5		20	66	28	36	6	☹
DC150-03-06.000F1-	6		20	66	28	36	6	☹
DC150-03-06.500F1-	6,5		24	79	34	36	8	☹
DC150-03-06.700F1-	6,7		24	79	34	36	8	☹
DC150-03-06.800F1-	6,8		24	79	34	36	8	☹
DC150-03-07.000F1-	7		24	79	34	36	8	☹
DC150-03-07.500F1-	7,5		29	79	41	36	8	☹
DC150-03-07.800F1-	7,8		29	79	41	36	8	☹
DC150-03-08.000F1-	8		29	79	41	36	8	☹
DC150-03-08.500F1-	8,5		35	89	47	40	10	☹
DC150-03-08.600F1-	8,6		35	89	47	40	10	☹
DC150-03-08.800F1-	8,8		35	89	47	40	10	☹
DC150-03-09.000F1-	9		35	89	47	40	10	☹
DC150-03-10.000F1-	10		35	89	47	40	10	☹
DC150-03-10.200F1-	10,2		40	102	55	45	12	☹
DC150-03-10.300F1-	10,3		40	102	55	45	12	☹
DC150-03-10.500F1-	10,5		40	102	55	45	12	☹
DC150-03-10.800F1-	10,8		40	102	55	45	12	☹
DC150-03-11.000F1-	11		40	102	55	45	12	☹
DC150-03-11.800F1-	11,8		40	102	55	45	12	☹
DC150-03-12.000F1-	12		40	102	55	45	12	☹
DC150-03-12.200F1-	12,2		43	107	60	45	14	☹
DC150-03-12.500F1-	12,5		43	107	60	45	14	☹
DC150-03-13.000F1-	13		43	107	60	45	14	☹
DC150-03-14.000F1-	14		43	107	60	45	14	☹
DC150-03-15.000F1-	15		45	115	65	48	16	☹
DC150-03-15.500F1-	15,5		45	115	65	48	16	☹
DC150-03-16.000F1-	16		45	115	65	48	16	☹
DC150-03-16.500F1-	16,5		51	123	73	48	18	☹
DC150-03-17.000F1-	17		51	123	73	48	18	☹
DC150-03-17.500F1-	17,5		51	123	73	48	18	☹
DC150-03-18.000F1-	18		51	123	73	48	18	☹
DC150-03-19.000F1-	19		55	131	79	50	20	☹
DC150-03-20.000F1-	20		55	131	79	50	20	☹

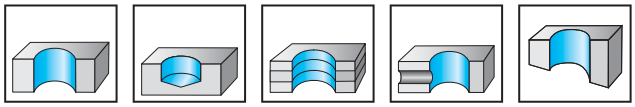
Ordering example for the WJ30RE grade: DC150-03-03.000A1-WJ30RE



XIII D 1 B 412 B 430

Solid carbide drills with coolant-through
DC170 Supreme

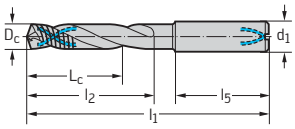




5×D_c | DIN 6537 L | 140°

	P	M	K	N	S	H	O
WJ30EJ	●●		●●			●	

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-05-03.000A1-	3		23	66	28	36	6	●
DC170-05-03.100A1-	3,1		23	66	28	36	6	●
DC170-05-03.175A1-	3,175	1/8"	23	66	28	36	6	●
DC170-05-03.200A1-	3,2		23	66	28	36	6	●
DC170-05-03.300A1-	3,3		23	66	28	36	6	●
DC170-05-03.400A1-	3,4		23	66	28	36	6	●
DC170-05-03.500A1-	3,5		23	66	28	36	6	●
DC170-05-03.572A1-	3,572	9/64"	23	66	28	36	6	●
DC170-05-03.600A1-	3,6		23	66	28	36	6	●
DC170-05-03.700A1-	3,7		23	66	28	36	6	●
DC170-05-03.800A1-	3,8		29	74	36	36	6	●
DC170-05-03.900A1-	3,9		29	74	36	36	6	●
DC170-05-03.969A1-	3,969	5/32"	29	74	36	36	6	●
DC170-05-04.000A1-	4		29	74	36	36	6	●
DC170-05-04.100A1-	4,1		29	74	36	36	6	●
DC170-05-04.200A1-	4,2		29	74	36	36	6	●
DC170-05-04.300A1-	4,3		29	74	36	36	6	●
DC170-05-04.366A1-	4,366	11/64"	29	74	36	36	6	●
DC170-05-04.400A1-	4,4		29	74	36	36	6	●
DC170-05-04.500A1-	4,5		29	74	36	36	6	●
DC170-05-04.600A1-	4,6		29	74	36	36	6	●
DC170-05-04.650A1-	4,65		29	74	36	36	6	●
DC170-05-04.700A1-	4,7		29	74	36	36	6	●
DC170-05-04.763A1-	4,763	3/16"	35	82	44	36	6	●
DC170-05-04.800A1-	4,8		35	82	44	36	6	●
DC170-05-04.900A1-	4,9		35	82	44	36	6	●
DC170-05-05.000A1-	5		35	82	44	36	6	●
DC170-05-05.100A1-	5,1		35	82	44	36	6	●
DC170-05-05.159A1-	5,159	13/64"	35	82	44	36	6	●
DC170-05-05.200A1-	5,2		35	82	44	36	6	●
DC170-05-05.300A1-	5,3		35	82	44	36	6	●
DC170-05-05.400A1-	5,4		35	82	44	36	6	●
DC170-05-05.500A1-	5,5		35	82	44	36	6	●
DC170-05-05.550A1-	5,55		35	82	44	36	6	●
DC170-05-05.556A1-	5,556	7/32"	35	82	44	36	6	●
DC170-05-05.600A1-	5,6		35	82	44	36	6	●
DC170-05-05.700A1-	5,7		35	82	44	36	6	●
DC170-05-05.800A1-	5,8		35	82	44	36	6	●
DC170-05-05.900A1-	5,9		35	82	44	36	6	●
DC170-05-05.953A1-	5,953	15/64"	35	82	44	36	6	●
DC170-05-06.000A1-	6		35	82	44	36	6	●
DC170-05-06.100A1-	6,1		43	91	53	36	8	●
DC170-05-06.200A1-	6,2		43	91	53	36	8	●
DC170-05-06.300A1-	6,3		43	91	53	36	8	●
DC170-05-06.350A1-	6,35	1/4"	43	91	53	36	8	●
DC170-05-06.400A1-	6,4		43	91	53	36	8	●
DC170-05-06.500A1-	6,5		43	91	53	36	8	●

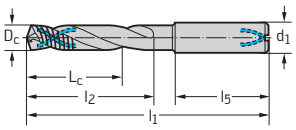
Ordering example for the WJ30EJ grade: DC170-05-03.000A1-WJ30EJ

Continued

XIII | D 1 | B 412 | B 430

Continued

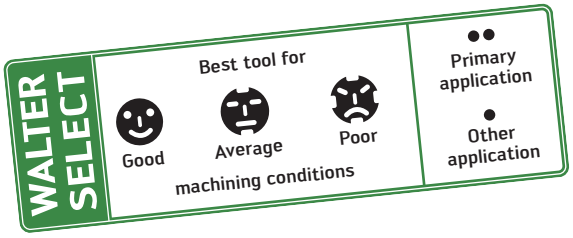
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-05-06.600A1-	6,6		43	91	53	36	8	☹
DC170-05-06.700A1-	6,7		43	91	53	36	8	☹
DC170-05-06.747A1-	6,747	17/64"	43	91	53	36	8	☹
DC170-05-06.800A1-	6,8		43	91	53	36	8	☹
DC170-05-06.900A1-	6,9		43	91	53	36	8	☹
DC170-05-07.000A1-	7		43	91	53	36	8	☹
DC170-05-07.100A1-	7,1		43	91	53	36	8	☹
DC170-05-07.144A1-	7,144	9/32"	43	91	53	36	8	☹
DC170-05-07.200A1-	7,2		43	91	53	36	8	☹
DC170-05-07.300A1-	7,3		43	91	53	36	8	☹
DC170-05-07.400A1-	7,4		43	91	53	36	8	☹
DC170-05-07.500A1-	7,5		43	91	53	36	8	☹
DC170-05-07.541A1-	7,541	19/64"	43	91	53	36	8	☹
DC170-05-07.800A1-	7,8		43	91	53	36	8	☹
DC170-05-07.900A1-	7,9		43	91	53	36	8	☹
DC170-05-07.938A1-	7,938	5/16"	43	91	53	36	8	☹
DC170-05-08.000A1-	8		43	91	53	36	8	☹
DC170-05-08.100A1-	8,1		49	103	61	40	10	☹
DC170-05-08.200A1-	8,2		49	103	61	40	10	☹
DC170-05-08.300A1-	8,3		49	103	61	40	10	☹
DC170-05-08.334A1-	8,334	21/64"	49	103	61	40	10	☹
DC170-05-08.400A1-	8,4		49	103	61	40	10	☹
DC170-05-08.500A1-	8,5		49	103	61	40	10	☹
DC170-05-08.600A1-	8,6		49	103	61	40	10	☹
DC170-05-08.700A1-	8,7		49	103	61	40	10	☹
DC170-05-08.731A1-	8,731	11/32"	49	103	61	40	10	☹
DC170-05-08.800A1-	8,8		49	103	61	40	10	☹
DC170-05-09.000A1-	9		49	103	61	40	10	☹
DC170-05-09.128A1-	9,128	23/64"	49	103	61	40	10	☹
DC170-05-09.200A1-	9,2		49	103	61	40	10	☹
DC170-05-09.300A1-	9,3		49	103	61	40	10	☹
DC170-05-09.500A1-	9,5		49	103	61	40	10	☹
DC170-05-09.525A1-	9,525	3/8"	49	103	61	40	10	☹
DC170-05-09.600A1-	9,6		49	103	61	40	10	☹
DC170-05-09.700A1-	9,7		49	103	61	40	10	☹
DC170-05-09.800A1-	9,8		49	103	61	40	10	☹
DC170-05-09.900A1-	9,9		49	103	61	40	10	☹
DC170-05-09.922A1-	9,922	25/64"	49	103	61	40	10	☹
DC170-05-10.000A1-	10		49	103	61	40	10	☹
DC170-05-10.100A1-	10,1		56	118	71	45	12	☹
DC170-05-10.200A1-	10,2		56	118	71	45	12	☹
DC170-05-10.300A1-	10,3		56	118	71	45	12	☹
DC170-05-10.319A1-	10,319	13/32"	56	118	71	45	12	☹
DC170-05-10.400A1-	10,4		56	118	71	45	12	☹
DC170-05-10.500A1-	10,5		56	118	71	45	12	☹
DC170-05-10.716A1-	10,716	27/64"	56	118	71	45	12	☹
DC170-05-10.800A1-	10,8		56	118	71	45	12	☹
DC170-05-11.000A1-	11		56	118	71	45	12	☹
DC170-05-11.100A1-	11,1		56	118	71	45	12	☹
DC170-05-11.113A1-	11,113	7/16"	56	118	71	45	12	☹
DC170-05-11.200A1-	11,2		56	118	71	45	12	☹
DC170-05-11.500A1-	11,5		56	118	71	45	12	☹
DC170-05-11.509A1-	11,509	29/64"	56	118	71	45	12	☹
DC170-05-11.700A1-	11,7		56	118	71	45	12	☹
DC170-05-11.800A1-	11,8		56	118	71	45	12	☹
DC170-05-11.906A1-	11,906	15/32"	56	118	71	45	12	☹
DC170-05-12.000A1-	12		56	118	71	45	12	☹

Ordering example for the WJ30EJ grade: DC170-05-03.000A1-WJ30EJ

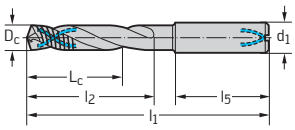
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XIII D 1 B 412 B 430

Continued

Shank DIN 6535 HA



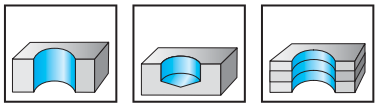
Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-05-12.100A1-	12,1		60	124	77	45	14	●
DC170-05-12.200A1-	12,2		60	124	77	45	14	●
DC170-05-12.300A1-	12,3		60	124	77	45	14	●
DC170-05-12.303A1-	12,303	31/64“	60	124	77	45	14	●
DC170-05-12.500A1-	12,5		60	124	77	45	14	●
DC170-05-12.600A1-	12,6		60	124	77	45	14	●
DC170-05-12.700A1-	12,7	1/2“	60	124	77	45	14	●
DC170-05-13.000A1-	13		60	124	77	45	14	●
DC170-05-13.300A1-	13,3		60	124	77	45	14	●
DC170-05-13.494A1-	13,494	17/32“	60	124	77	45	14	●
DC170-05-13.500A1-	13,5		60	124	77	45	14	●
DC170-05-14.000A1-	14		60	124	77	45	14	●
DC170-05-14.288A1-	14,288	9/16“	63	133	83	48	16	●
DC170-05-14.500A1-	14,5		63	133	83	48	16	●
DC170-05-15.000A1-	15		63	133	83	48	16	●
DC170-05-15.500A1-	15,5		63	133	83	48	16	●
DC170-05-15.875A1-	15,875	5/8“	63	133	83	48	16	●
DC170-05-16.000A1-	16		63	133	83	48	16	●
DC170-05-16.500A1-	16,5		71	143	93	48	18	●
DC170-05-17.000A1-	17		71	143	93	48	18	●
DC170-05-17.500A1-	17,5		71	143	93	48	18	●
DC170-05-18.000A1-	18		71	143	93	48	18	●
DC170-05-18.500A1-	18,5		77	153	101	50	20	●
DC170-05-19.000A1-	19		77	153	101	50	20	●
DC170-05-19.050A1-	19,05	3/4“	77	153	101	50	20	●
DC170-05-20.000A1-	20		77	153	101	50	20	●

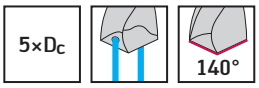
Ordering example for the WJ30EJ grade: DC170-05-03.000A1-WJ30EJ

XIII D 1 B 412 B 430

Solid carbide micro drills with coolant-through
A3389AML
X-treme M

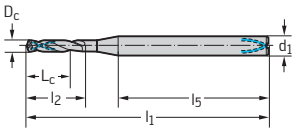






	P	M	K	N	S	H	O
AML	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation AML	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3389AML-2	2		14	57	17	35	3
A3389AML-2.05	2,05		14	57	18	35	3
A3389AML-2.1	2,1		14	57	18	35	3
A3389AML-2.15	2,15		15	57	19	34	3
A3389AML-2.2	2,2		15	57	19	34	3
A3389AML-2.25	2,25		16	59	20	35	3
A3389AML-2.3	2,3		16	59	20	35	3
A3389AML-2.35	2,35		16	59	20	35	3
A3389AML-3/32IN	2,381	3/32"	16	59	20	35	3
A3389AML-2.4	2,4		16	59	20	35	3
A3389AML-2.45	2,45		17	59	21	34	3
A3389AML-2.5	2,5		17	59	21	34	3
A3389AML-2.55	2,55		18	62	22	36	3
A3389AML-2.6	2,6		18	62	22	36	3
A3389AML-2.65	2,65		18	62	23	36	3
A3389AML-2.7	2,7		18	62	23	36	3
A3389AML-2.75	2,75		19	62	24	35	3
A3389AML-7/64IN	2,778	7/64"	19	62	24	35	3
A3389AML-2.8	2,8		19	62	24	35	3
A3389AML-2.85	2,85		20	62	25	34	3
A3389AML-2.9	2,9		20	62	25	34	3
A3389AML-2.95	2,95		20	62	25	34	3

WALTER SELECT

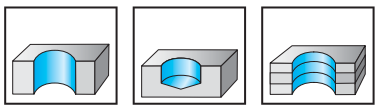
●● Primary application

● Other application

XIII D 1 B 412 B 430

Solid carbide drills with coolant-through
A3389DPL
X-treme Plus

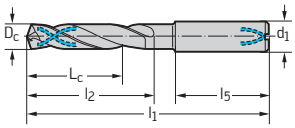




5×D_c | DIN 6537 L | 140°

	P	M	K	N	S	H	O
DPL	●●	●●	●●	●●	●●	●●	●

Shank DIN 6535 HA



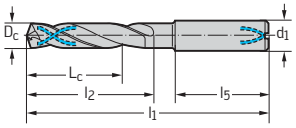
Designation DPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3389DPL-3	3		23	66	28	36	6
A3389DPL-3.1	3,1		23	66	28	36	6
A3389DPL-1/8IN	3,175	1/8"	23	66	28	36	6
A3389DPL-3.2	3,2		23	66	28	36	6
A3389DPL-3.25	3,25		22	66	28	36	6
A3389DPL-3.3	3,3		23	66	28	36	6
A3389DPL-3.4	3,4		23	66	28	36	6
A3389DPL-3.5	3,5		23	66	28	36	6
A3389DPL-9/64IN	3,572	9/64"	23	66	28	36	6
A3389DPL-3.6	3,6		23	66	28	36	6
A3389DPL-3.7	3,7		23	66	28	36	6
A3389DPL-3.8	3,8		29	74	36	36	6
A3389DPL-3.9	3,9		29	74	36	36	6
A3389DPL-5/32IN	3,969	5/32"	29	74	36	36	6
A3389DPL-4	4		29	74	36	36	6
A3389DPL-4.1	4,1		29	74	36	36	6
A3389DPL-4.2	4,2		29	74	36	36	6
A3389DPL-4.3	4,3		29	74	36	36	6
A3389DPL-11/64IN	4,366	11/64"	29	74	36	36	6
A3389DPL-4.4	4,4		29	74	36	36	6
A3389DPL-4.5	4,5		29	74	36	36	6
A3389DPL-4.6	4,6		29	74	36	36	6
A3389DPL-4.65	4,65		29	74	36	36	6
A3389DPL-4.7	4,7		29	74	36	36	6
A3389DPL-3/16IN	4,763	3/16"	35	82	44	36	6
A3389DPL-4.8	4,8		35	82	44	36	6
A3389DPL-4.9	4,9		35	82	44	36	6
A3389DPL-5	5		35	82	44	36	6
A3389DPL-5.1	5,1		35	82	44	36	6
A3389DPL-13/64IN	5,159	13/64"	35	82	44	36	6
A3389DPL-5.2	5,2		35	82	44	36	6
A3389DPL-5.3	5,3		35	82	44	36	6
A3389DPL-5.4	5,4		35	82	44	36	6
A3389DPL-5.5	5,5		35	82	44	36	6
A3389DPL-5.55	5,55		35	82	44	36	6
A3389DPL-7/32IN	5,556	7/32"	35	82	44	36	6
A3389DPL-5.6	5,6		35	82	44	36	6
A3389DPL-5.7	5,7		35	82	44	36	6
A3389DPL-5.8	5,8		35	82	44	36	6
A3389DPL-5.9	5,9		35	82	44	36	6
A3389DPL-15/64IN	5,953	15/64"	35	82	44	36	6
A3389DPL-6	6		35	82	44	36	6
A3389DPL-6.1	6,1		43	91	53	36	8
A3389DPL-6.2	6,2		43	91	53	36	8
A3389DPL-6.3	6,3		43	91	53	36	8
A3389DPL-1/4IN	6,35	1/4"	43	91	53	36	8
A3389DPL-6.4	6,4		43	91	53	36	8
A3389DPL-6.5	6,5		43	91	53	36	8

Continued

XIII | D 1 | B 412 | B 430

Continued

Shank DIN 6535 HA



Designation DPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3389DPL-6.6	6,6		43	91	53	36	8
A3389DPL-6.7	6,7		43	91	53	36	8
A3389DPL-17/64IN	6,747	17/64"	43	91	53	36	8
A3389DPL-6.8	6,8		43	91	53	36	8
A3389DPL-6.9	6,9		43	91	53	36	8
A3389DPL-7	7		43	91	53	36	8
A3389DPL-7.1	7,1		43	91	53	36	8
A3389DPL-9/32IN	7,144	9/32"	43	91	53	36	8
A3389DPL-7.2	7,2		43	91	53	36	8
A3389DPL-7.3	7,3		43	91	53	36	8
A3389DPL-7.4	7,4		43	91	53	36	8
A3389DPL-7.5	7,5		43	91	53	36	8
A3389DPL-19/64IN	7,541	19/64"	43	91	53	36	8
A3389DPL-7.55	7,55		41	91	53	36	8
A3389DPL-7.8	7,8		43	91	53	36	8
A3389DPL-7.9	7,9		43	91	53	36	8
A3389DPL-5/16IN	7,938	5/16"	43	91	53	36	8
A3389DPL-8	8		43	91	53	36	8
A3389DPL-8.1	8,1		49	103	61	40	10
A3389DPL-8.2	8,2		49	103	61	40	10
A3389DPL-8.3	8,3		49	103	61	40	10
A3389DPL-21/64IN	8,334	21/64"	49	103	61	40	10
A3389DPL-8.4	8,4		49	103	61	40	10
A3389DPL-8.5	8,5		49	103	61	40	10
A3389DPL-8.6	8,6		49	103	61	40	10
A3389DPL-8.7	8,7		49	103	61	40	10
A3389DPL-11/32IN	8,731	11/32"	49	103	61	40	10
A3389DPL-8.75	8,75		46	103	61	40	10
A3389DPL-8.8	8,8		49	103	61	40	10
A3389DPL-9	9		49	103	61	40	10
A3389DPL-23/64IN	9,128	23/64"	49	103	61	40	10
A3389DPL-9.2	9,2		49	103	61	40	10
A3389DPL-9.3	9,3		49	103	61	40	10
A3389DPL-9.5	9,5		49	103	61	40	10
A3389DPL-3/8IN	9,525	3/8"	49	103	61	40	10
A3389DPL-9.6	9,6		49	103	61	40	10
A3389DPL-9.7	9,7		49	103	61	40	10
A3389DPL-9.8	9,8		49	103	61	40	10
A3389DPL-9.9	9,9		46	103	61	40	10
A3389DPL-25/64IN	9,922	25/64"	49	103	61	40	10
A3389DPL-10	10		49	103	61	40	10
A3389DPL-10.1	10,1		56	118	71	45	12
A3389DPL-10.2	10,2		56	118	71	45	12
A3389DPL-10.3	10,3		56	118	71	45	12
A3389DPL-13/32IN	10,319	13/32"	56	118	71	45	12
A3389DPL-10.4	10,4		56	118	71	45	12
A3389DPL-10.5	10,5		56	118	71	45	12
A3389DPL-27/64IN	10,716	27/64"	56	118	71	45	12
A3389DPL-10.8	10,8		56	118	71	45	12
A3389DPL-11	11		56	118	71	45	12
A3389DPL-11.1	11,1		56	118	71	45	12
A3389DPL-7/16IN	11,113	7/16"	56	118	71	45	12
A3389DPL-11.2	11,2		56	118	71	45	12
A3389DPL-11.3	11,3		53	118	71	45	12
A3389DPL-11.4	11,4		53	118	71	45	12
A3389DPL-11.5	11,5		56	118	71	45	12
A3389DPL-29/64IN	11,509	29/64"	56	118	71	45	12
A3389DPL-11.7	11,7		56	118	71	45	12

Continued

WALTER SELECT

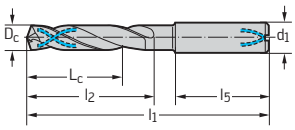
●● Primary application

● Other application

XIII D 1 B 412 B 430

Continued

Shank DIN 6535 HA

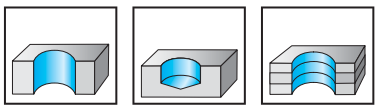


Designation DPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3389DPL-11.8	11,8		56	118	71	45	12
A3389DPL-15/32IN	11,906	15/32"	56	118	71	45	12
A3389DPL-12	12		56	118	71	45	12
A3389DPL-12.1	12,1		60	124	77	45	14
A3389DPL-12.2	12,2		60	124	77	45	14
A3389DPL-12.3	12,3		60	124	77	45	14
A3389DPL-31/64IN	12,303	31/64"	60	124	77	45	14
A3389DPL-12.5	12,5		60	124	77	45	14
A3389DPL-12.6	12,6		60	124	77	45	14
A3389DPL-1/2IN	12,7	1/2"	60	124	77	45	14
A3389DPL-13	13		60	124	77	45	14
A3389DPL-13.1	13,1		63	124	77	45	14
A3389DPL-13.3	13,3		60	124	77	45	14
A3389DPL-17/32IN	13,494	17/32"	60	124	77	45	14
A3389DPL-13.5	13,5		60	124	77	45	14
A3389DPL-14	14		60	124	77	45	14
A3389DPL-9/16IN	14,288	9/16"	63	133	83	48	16
A3389DPL-14.5	14,5		63	133	83	48	16
A3389DPL-15	15		63	133	83	48	16
A3389DPL-15.1	15,1		67	133	83	48	16
A3389DPL-15.3	15,3		67	133	83	48	16
A3389DPL-15.5	15,5		63	133	83	48	16
A3389DPL-5/8IN	15,875	5/8"	63	133	83	48	16
A3389DPL-16	16		63	133	83	48	16
A3389DPL-16.5	16,5		71	143	93	48	18
A3389DPL-17	17		71	143	93	48	18
A3389DPL-17.5	17,5		71	143	93	48	18
A3389DPL-18	18		71	143	93	48	18
A3389DPL-18.5	18,5		77	153	101	50	20
A3389DPL-19	19		77	153	101	50	20
A3389DPL-3/4IN	19,05	3/4"	77	153	101	50	20
A3389DPL-20	20		77	153	101	50	20

XIII D 1 B 412 B 430

Solid carbide drills with coolant-through
A3393TTP
X-treme Inox

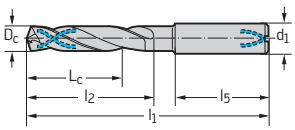




5×D_c | DIN 6537 L | 140°

	P	M	K	N	S	H	O
TTP	●	●●		●	●●		●

Shank DIN 6535 HA



Designation TTP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3393TTP-3	3		23	66	28	36	6
A3393TTP-3.1	3,1		23	66	28	36	6
A3393TTP-1/8IN	3,175	1/8"	23	66	28	36	6
A3393TTP-3.2	3,2		23	66	28	36	6
A3393TTP-3.25	3,25		23	66	28	36	6
A3393TTP-3.3	3,3		23	66	28	36	6
A3393TTP-3.4	3,4		23	66	28	36	6
A3393TTP-3.5	3,5		23	66	28	36	6
A3393TTP-3.6	3,6		23	66	28	36	6
A3393TTP-3.7	3,7		23	66	28	36	6
A3393TTP-3.8	3,8		29	74	36	36	6
A3393TTP-3.9	3,9		29	74	36	36	6
A3393TTP-5/32IN	3,969	5/32"	29	74	36	36	6
A3393TTP-4	4		29	74	36	36	6
A3393TTP-4.1	4,1		29	74	36	36	6
A3393TTP-4.2	4,2		29	74	36	36	6
A3393TTP-4.3	4,3		29	74	36	36	6
A3393TTP-11/64IN	4,365	11/64"	23	74	36	36	6
A3393TTP-4.4	4,4		29	74	36	36	6
A3393TTP-4.5	4,5		29	74	36	36	6
A3393TTP-4.6	4,6		29	74	36	36	6
A3393TTP-4.65	4,65		29	74	36	36	6
A3393TTP-4.7	4,7		29	74	36	36	6
A3393TTP-3/16IN	4,763	3/16"	35	82	44	36	6
A3393TTP-4.8	4,8		35	82	44	36	6
A3393TTP-4.9	4,9		35	82	44	36	6
A3393TTP-5	5		35	82	44	36	6
A3393TTP-5.1	5,1		35	82	44	36	6
A3393TTP-5.2	5,2		35	82	44	36	6
A3393TTP-5.3	5,3		35	82	44	36	6
A3393TTP-5.4	5,4		35	82	44	36	6
A3393TTP-5.5	5,5		35	82	44	36	6
A3393TTP-5.55	5,55		35	82	44	36	6
A3393TTP-7/32IN	5,556	7/32"	35	82	44	36	6
A3393TTP-5.6	5,6		35	82	44	36	6
A3393TTP-5.7	5,7		35	82	44	36	6
A3393TTP-5.8	5,8		35	82	44	36	6
A3393TTP-5.9	5,9		35	82	44	36	6
A3393TTP-15/64IN	5,953	15/64"	29	82	44	36	6
A3393TTP-6	6		35	82	44	36	6
A3393TTP-6.1	6,1		43	91	53	36	8
A3393TTP-6.2	6,2		43	91	53	36	8
A3393TTP-6.3	6,3		43	91	53	36	8
A3393TTP-1/4IN	6,35	1/4"	43	91	53	36	8

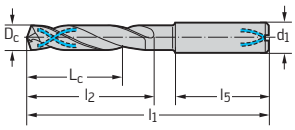
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WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | B 414 | B 430

Continued

Shank DIN 6535 HA



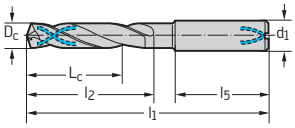
Designation TTP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3393TTP-6.4	6,4		43	91	53	36	8
A3393TTP-6.5	6,5		43	91	53	36	8
A3393TTP-6.6	6,6		43	91	53	36	8
A3393TTP-6.7	6,7		43	91	53	36	8
A3393TTP-6.8	6,8		43	91	53	36	8
A3393TTP-6.9	6,9		43	91	53	36	8
A3393TTP-7	7		43	91	53	36	8
A3393TTP-7.1	7,1		43	91	53	36	8
A3393TTP-9/32IN	7,144	9/32"	43	91	53	36	8
A3393TTP-7.2	7,2		43	91	53	36	8
A3393TTP-7.3	7,3		43	91	53	36	8
A3393TTP-7.4	7,4		43	91	53	36	8
A3393TTP-7.5	7,5		43	91	53	36	8
A3393TTP-7.6	7,6		43	91	53	36	8
A3393TTP-7.7	7,7		43	91	53	36	8
A3393TTP-7.8	7,8		43	91	53	36	8
A3393TTP-7.9	7,9		43	91	53	36	8
A3393TTP-5/16IN	7,938	5/16"	43	91	53	36	8
A3393TTP-8	8		43	91	53	36	8
A3393TTP-8.1	8,1		49	103	61	40	10
A3393TTP-8.2	8,2		49	103	61	40	10
A3393TTP-8.3	8,3		49	103	61	40	10
A3393TTP-8.4	8,4		49	103	61	40	10
A3393TTP-8.5	8,5		49	103	61	40	10
A3393TTP-8.6	8,6		49	103	61	40	10
A3393TTP-8.7	8,7		49	103	61	40	10
A3393TTP-11/32IN	8,731	11/32"	49	103	61	40	10
A3393TTP-8.8	8,8		49	103	61	40	10
A3393TTP-8.9	8,9		49	103	61	40	10
A3393TTP-9	9		49	103	61	40	10
A3393TTP-9.1	9,1		49	103	61	40	10
A3393TTP-23/64IN	9,128	23/64"	49	103	61	40	10
A3393TTP-9.2	9,2		49	103	61	40	10
A3393TTP-9.3	9,3		49	103	61	40	10
A3393TTP-9.4	9,4		49	103	61	40	10
A3393TTP-9.5	9,5		49	103	61	40	10
A3393TTP-3/8IN	9,525	3/8"	49	103	61	40	10
A3393TTP-9.6	9,6		49	103	61	40	10
A3393TTP-9.7	9,7		49	103	61	40	10
A3393TTP-9.8	9,8		49	103	61	40	10
A3393TTP-9.9	9,9		49	103	61	40	10
A3393TTP-25/64IN	9,921	25/64"	49	103	61	40	10
A3393TTP-10	10		49	103	61	40	10
A3393TTP-10.1	10,1		56	118	71	45	12
A3393TTP-10.2	10,2		56	118	71	45	12
A3393TTP-10.3	10,3		56	118	71	45	12
A3393TTP-13/32IN	10,319	13/32"	56	118	71	45	12
A3393TTP-10.4	10,4		56	118	71	45	12
A3393TTP-10.5	10,5		56	118	71	45	12
A3393TTP-10.6	10,6		56	118	71	45	12
A3393TTP-10.7	10,7		56	118	71	45	12
A3393TTP-10.8	10,8		56	118	71	45	12
A3393TTP-10.9	10,9		56	118	71	45	12
A3393TTP-11	11		56	118	71	45	12
A3393TTP-11.1	11,1		56	118	71	45	12
A3393TTP-7/16IN	11,113	7/16"	56	118	71	45	12
A3393TTP-11.2	11,2		56	118	71	45	12
A3393TTP-11.3	11,3		56	118	71	45	12
A3393TTP-11.4	11,4		56	118	71	45	12
A3393TTP-11.5	11,5		56	118	71	45	12
A3393TTP-29/64IN	11,509	29/64"	56	118	71	45	12
A3393TTP-11.6	11,6		56	118	71	45	12

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XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HA



Designation TTP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3393TTP-11.7	11,7		56	118	71	45	12
A3393TTP-11.8	11,8		56	118	71	45	12
A3393TTP-11.9	11,9		56	118	71	45	12
A3393TTP-15/32IN	11,906	15/32"	56	118	71	45	12
A3393TTP-12	12		56	118	71	45	12
A3393TTP-12.2	12,2		60	124	77	45	14
A3393TTP-12.5	12,5		60	124	77	45	14
A3393TTP-1/2IN	12,7	1/2"	60	124	77	45	14
A3393TTP-12.8	12,8		60	124	77	45	14
A3393TTP-13	13		60	124	77	45	14
A3393TTP-17/32IN	13,494	17/32"	60	124	77	45	14
A3393TTP-13.5	13,5		60	124	77	45	14
A3393TTP-13.8	13,8		60	124	77	45	14
A3393TTP-14	14		60	124	77	45	14
A3393TTP-14.2	14,2		63	133	83	48	16
A3393TTP-9/16IN	14,288	9/16"	63	133	83	48	16
A3393TTP-14.4	14,4		63	133	83	48	16
A3393TTP-14.5	14,5		63	133	83	48	16
A3393TTP-14.8	14,8		63	133	83	48	16
A3393TTP-15	15		63	133	83	48	16
A3393TTP-15.1	15,1		63	133	83	48	16
A3393TTP-15.5	15,5		63	133	83	48	16
A3393TTP-15.8	15,8		63	133	83	48	16
A3393TTP-5/8IN	15,875	5/8"	63	133	83	48	16
A3393TTP-16	16		63	133	83	48	16
A3393TTP-16.5	16,5		71	143	93	48	18
A3393TTP-16.8	16,8		71	143	93	48	18
A3393TTP-17	17		71	143	93	48	18
A3393TTP-17.5	17,5		71	143	93	48	18
A3393TTP-17.8	17,8		71	143	93	48	18
A3393TTP-18	18		71	143	93	48	18
A3393TTP-18.5	18,5		77	153	101	50	20
A3393TTP-18.8	18,8		77	153	101	50	20
A3393TTP-19	19		77	153	101	50	20
A3393TTP-3/4IN	19,05	3/4"	77	153	101	50	20
A3393TTP-19.5	19,5		77	153	101	50	20
A3393TTP-19.8	19,8		77	153	101	50	20
A3393TTP-20	20		77	153	101	50	20

WALTER SELECT

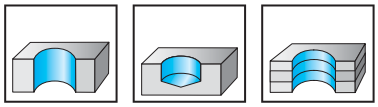
●● Primary application

● Other application

XIII D 1 B 414 B 430

Solid carbide drills with coolant-through
A3382XPL
X-treme CI

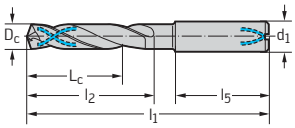




5×D_c | DIN 6537 L | 140°

	P	M	K	N	S	H	O
XPL			●●	●			

Shank DIN 6535 HA



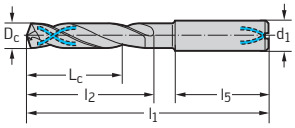
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3382XPL-3	3		23	66	28	36	6
A3382XPL-3.1	3,1		23	66	28	36	6
A3382XPL-1/8IN	3,175	1/8"	23	66	28	36	6
A3382XPL-3.2	3,2		23	66	28	36	6
A3382XPL-3.3	3,3		23	66	28	36	6
A3382XPL-3.4	3,4		23	66	28	36	6
A3382XPL-3.5	3,5		23	66	28	36	6
A3382XPL-9/64IN	3,572	9/64"	23	66	28	36	6
A3382XPL-3.6	3,6		23	66	28	36	6
A3382XPL-3.7	3,7		23	66	28	36	6
A3382XPL-3.8	3,8		29	74	36	36	6
A3382XPL-3.9	3,9		29	74	36	36	6
A3382XPL-5/32IN	3,969	5/32"	29	74	36	36	6
A3382XPL-4	4		29	74	36	36	6
A3382XPL-4.1	4,1		29	74	36	36	6
A3382XPL-4.2	4,2		29	74	36	36	6
A3382XPL-4.3	4,3		29	74	36	36	6
A3382XPL-11/64IN	4,366	11/64"	29	74	36	36	6
A3382XPL-4.4	4,4		29	74	36	36	6
A3382XPL-4.5	4,5		29	74	36	36	6
A3382XPL-4.6	4,6		29	74	36	36	6
A3382XPL-4.65	4,65		29	74	36	36	6
A3382XPL-4.7	4,7		29	74	36	36	6
A3382XPL-3/16IN	4,763	3/16"	35	82	44	36	6
A3382XPL-4.8	4,8		35	82	44	36	6
A3382XPL-4.9	4,9		35	82	44	36	6
A3382XPL-5	5		35	82	44	36	6
A3382XPL-5.1	5,1		35	82	44	36	6
A3382XPL-13/64IN	5,159	13/64"	35	82	44	36	6
A3382XPL-5.2	5,2		35	82	44	36	6
A3382XPL-5.3	5,3		35	82	44	36	6
A3382XPL-5.4	5,4		35	82	44	36	6
A3382XPL-5.5	5,5		35	82	44	36	6
A3382XPL-5.55	5,55		35	82	44	36	6
A3382XPL-7/32IN	5,556	7/32"	35	82	44	36	6
A3382XPL-5.6	5,6		35	82	44	36	6
A3382XPL-5.7	5,7		35	82	44	36	6
A3382XPL-5.8	5,8		35	82	44	36	6
A3382XPL-5.9	5,9		35	82	44	36	6
A3382XPL-15/64IN	5,953	15/64"	35	82	44	36	6
A3382XPL-6	6		35	82	44	36	6
A3382XPL-6.1	6,1		43	91	53	36	8
A3382XPL-6.2	6,2		43	91	53	36	8
A3382XPL-6.3	6,3		43	91	53	36	8
A3382XPL-1/4IN	6,35	1/4"	43	91	53	36	8
A3382XPL-6.4	6,4		43	91	53	36	8
A3382XPL-6.5	6,5		43	91	53	36	8
A3382XPL-6.6	6,6		43	91	53	36	8

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XIII | D 1 | B 414 | B 430

Continued

Shank DIN 6535 HA



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3382XPL-6.7	6,7		43	91	53	36	8
A3382XPL-17/64IN	6,747	17/64"	43	91	53	36	8
A3382XPL-6.8	6,8		43	91	53	36	8
A3382XPL-6.9	6,9		43	91	53	36	8
A3382XPL-7	7		43	91	53	36	8
A3382XPL-7.1	7,1		43	91	53	36	8
A3382XPL-9/32IN	7,144	9/32"	43	91	53	36	8
A3382XPL-7.2	7,2		43	91	53	36	8
A3382XPL-7.3	7,3		43	91	53	36	8
A3382XPL-7.4	7,4		43	91	53	36	8
A3382XPL-7.5	7,5		43	91	53	36	8
A3382XPL-19/64IN	7,541	19/64"	43	91	53	36	8
A3382XPL-7.8	7,8		43	91	53	36	8
A3382XPL-7.9	7,9		43	91	53	36	8
A3382XPL-5/16IN	7,938	5/16"	43	91	53	36	8
A3382XPL-8	8		43	91	53	36	8
A3382XPL-8.1	8,1		49	103	61	40	10
A3382XPL-8.2	8,2		49	103	61	40	10
A3382XPL-8.3	8,3		49	103	61	40	10
A3382XPL-21/64IN	8,334	21/64"	49	103	61	40	10
A3382XPL-8.4	8,4		49	103	61	40	10
A3382XPL-8.5	8,5		49	103	61	40	10
A3382XPL-8.6	8,6		49	103	61	40	10
A3382XPL-8.7	8,7		49	103	61	40	10
A3382XPL-11/32IN	8,731	11/32"	49	103	61	40	10
A3382XPL-8.8	8,8		49	103	61	40	10
A3382XPL-9	9		49	103	61	40	10
A3382XPL-23/64IN	9,128	23/64"	49	103	61	40	10
A3382XPL-9.2	9,2		49	103	61	40	10
A3382XPL-9.3	9,3		49	103	61	40	10
A3382XPL-9.5	9,5		49	103	61	40	10
A3382XPL-3/8IN	9,525	3/8"	49	103	61	40	10
A3382XPL-9.6	9,6		49	103	61	40	10
A3382XPL-9.8	9,8		49	103	61	40	10
A3382XPL-25/64IN	9,922	25/64"	49	103	61	40	10
A3382XPL-10	10		49	103	61	40	10
A3382XPL-10.1	10,1		56	118	71	45	12
A3382XPL-10.2	10,2		56	118	71	45	12
A3382XPL-10.3	10,3		56	118	71	45	12
A3382XPL-13/32IN	10,319	13/32"	56	118	71	45	12
A3382XPL-10.4	10,4		56	118	71	45	12
A3382XPL-10.5	10,5		56	118	71	45	12
A3382XPL-27/64IN	10,716	27/64"	56	118	71	45	12
A3382XPL-10.8	10,8		56	118	71	45	12
A3382XPL-11	11		56	118	71	45	12
A3382XPL-11.1	11,1		56	118	71	45	12
A3382XPL-7/16IN	11,113	7/16"	56	118	71	45	12
A3382XPL-11.2	11,2		56	118	71	45	12
A3382XPL-11.5	11,5		56	118	71	45	12
A3382XPL-29/64IN	11,509	29/64"	56	118	71	45	12
A3382XPL-11.7	11,7		56	118	71	45	12
A3382XPL-11.8	11,8		56	118	71	45	12
A3382XPL-15/32IN	11,906	15/32"	56	118	71	45	12
A3382XPL-12	12		56	118	71	45	12
A3382XPL-12.1	12,1		60	124	77	45	14
A3382XPL-12.2	12,2		60	124	77	45	14
A3382XPL-12.3	12,3		60	124	77	45	14
A3382XPL-31/64IN	12,303	31/64"	60	124	77	45	14

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WALTER SELECT

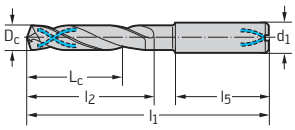
●● Primary application

● Other application

XIII D 1 B 414 B 430

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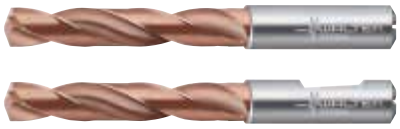
Shank DIN 6535 HA

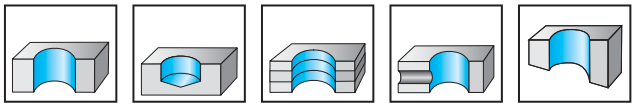


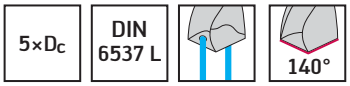
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3382XPL-12.5	12,5		60	124	77	45	14
A3382XPL-12.6	12,6		60	124	77	45	14
A3382XPL-1/2IN	12,7	1/2"	60	124	77	45	14
A3382XPL-13	13		60	124	77	45	14
A3382XPL-13.3	13,3		60	124	77	45	14
A3382XPL-17/32IN	13,494	17/32"	60	124	77	45	14
A3382XPL-13.5	13,5		60	124	77	45	14
A3382XPL-14	14		60	124	77	45	14
A3382XPL-9/16IN	14,288	9/16"	63	133	83	48	16
A3382XPL-14.5	14,5		63	133	83	48	16
A3382XPL-15	15		63	133	83	48	16
A3382XPL-15.3	15,3		63	133	83	48	16
A3382XPL-15.5	15,5		63	133	83	48	16
A3382XPL-5/8IN	15,875	5/8"	63	133	83	48	16
A3382XPL-16	16		63	133	83	48	16
A3382XPL-16.5	16,5		71	143	93	48	18
A3382XPL-17	17		71	143	93	48	18
A3382XPL-17.5	17,5		71	143	93	48	18
A3382XPL-18	18		71	143	93	48	18
A3382XPL-18.5	18,5		77	153	101	50	20
A3382XPL-19	19		77	153	101	50	20
A3382XPL-3/4IN	19,05	3/4"	77	153	101	50	20
A3382XPL-20	20		77	153	101	50	20

XIII D 1 B 414 B 430

Solid carbide drills with coolant-through
A3399XPL / A3999XPL
X-treme

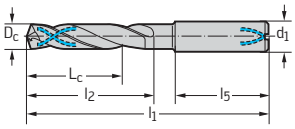






	P	M	K	N	S	H	O
XPL	●●	●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3399XPL-3	3		23	66	28	36	6
A3399XPL-3.1	3,1		23	66	28	36	6
A3399XPL-1/8IN	3,175	1/8"	23	66	28	36	6
A3399XPL-3.2	3,2		23	66	28	36	6
A3399XPL-3.25	3,25		23	66	28	36	6
A3399XPL-3.3	3,3		23	66	28	36	6
A3399XPL-3.4	3,4		23	66	28	36	6
A3399XPL-3.5	3,5		23	66	28	36	6
A3399XPL-9/64IN	3,572	9/64"	23	66	28	36	6
A3399XPL-3.6	3,6		23	66	28	36	6
A3399XPL-3.65	3,65		23	66	28	36	6
A3399XPL-3.7	3,7		23	66	28	36	6
A3399XPL-3.8	3,8		29	74	36	36	6
A3399XPL-3.9	3,9		29	74	36	36	6
A3399XPL-5/32IN	3,969	5/32"	29	74	36	36	6
A3399XPL-4	4		29	74	36	36	6
A3399XPL-4.1	4,1		29	74	36	36	6
A3399XPL-4.2	4,2		29	74	36	36	6
A3399XPL-4.3	4,3		29	74	36	36	6
A3399XPL-11/64IN	4,366	11/64"	29	74	36	36	6
A3399XPL-4.4	4,4		29	74	36	36	6
A3399XPL-4.5	4,5		29	74	36	36	6
A3399XPL-4.6	4,6		29	74	36	36	6
A3399XPL-4.65	4,65		29	74	36	36	6
A3399XPL-4.7	4,7		29	74	36	36	6
A3399XPL-3/16IN	4,763	3/16"	35	82	44	36	6
A3399XPL-4.8	4,8		35	82	44	36	6
A3399XPL-4.9	4,9		35	82	44	36	6
A3399XPL-5	5		35	82	44	36	6
A3399XPL-5.1	5,1		35	82	44	36	6
A3399XPL-13/64IN	5,159	13/64"	35	82	44	36	6
A3399XPL-5.2	5,2		35	82	44	36	6
A3399XPL-5.3	5,3		35	82	44	36	6
A3399XPL-5.4	5,4		35	82	44	36	6
A3399XPL-5.5	5,5		35	82	44	36	6
A3399XPL-5.55	5,55		35	82	44	36	6
A3399XPL-7/32IN	5,556	7/32"	35	82	44	36	6
A3399XPL-5.6	5,6		35	82	44	36	6
A3399XPL-5.7	5,7		35	82	44	36	6
A3399XPL-5.8	5,8		35	82	44	36	6
A3399XPL-5.9	5,9		35	82	44	36	6
A3399XPL-15/64IN	5,953	15/64"	35	82	44	36	6
A3399XPL-6	6		35	82	44	36	6
A3399XPL-6.1	6,1		43	91	53	36	8

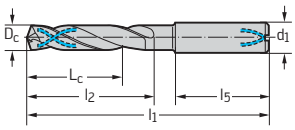
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WALTER SELECT
●● Primary application
● Other application

XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HA



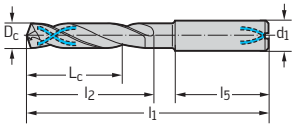
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3399XPL-6.2	6,2		43	91	53	36	8
A3399XPL-6.3	6,3		43	91	53	36	8
A3399XPL-1/4IN	6,35	1/4"	43	91	53	36	8
A3399XPL-6.4	6,4		43	91	53	36	8
A3399XPL-6.5	6,5		43	91	53	36	8
A3399XPL-6.6	6,6		43	91	53	36	8
A3399XPL-6.7	6,7		43	91	53	36	8
A3399XPL-17/64IN	6,747	17/64"	43	91	53	36	8
A3399XPL-6.8	6,8		43	91	53	36	8
A3399XPL-6.9	6,9		43	91	53	36	8
A3399XPL-7	7		43	91	53	36	8
A3399XPL-7.1	7,1		43	91	53	36	8
A3399XPL-9/32IN	7,144	9/32"	43	91	53	36	8
A3399XPL-7.2	7,2		43	91	53	36	8
A3399XPL-7.3	7,3		43	91	53	36	8
A3399XPL-7.4	7,4		43	91	53	36	8
A3399XPL-7.5	7,5		43	91	53	36	8
A3399XPL-19/64IN	7,541	19/64"	43	91	53	36	8
A3399XPL-7.55	7,55		43	91	53	36	8
A3399XPL-7.6	7,6		43	91	53	36	8
A3399XPL-7.7	7,7		43	91	53	36	8
A3399XPL-7.8	7,8		43	91	53	36	8
A3399XPL-7.9	7,9		43	91	53	36	8
A3399XPL-5/16IN	7,938	5/16"	43	91	53	36	8
A3399XPL-8	8		43	91	53	36	8
A3399XPL-8.1	8,1		49	103	61	40	10
A3399XPL-8.2	8,2		49	103	61	40	10
A3399XPL-8.3	8,3		49	103	61	40	10
A3399XPL-21/64IN	8,334	21/64"	49	103	61	40	10
A3399XPL-8.4	8,4		49	103	61	40	10
A3399XPL-8.5	8,5		49	103	61	40	10
A3399XPL-8.6	8,6		49	103	61	40	10
A3399XPL-8.7	8,7		49	103	61	40	10
A3399XPL-11/32IN	8,731	11/32"	49	103	61	40	10
A3399XPL-8.8	8,8		49	103	61	40	10
A3399XPL-8.9	8,9		49	103	61	40	10
A3399XPL-9	9		49	103	61	40	10
A3399XPL-9.1	9,1		49	103	61	40	10
A3399XPL-23/64IN	9,128	23/64"	49	103	61	40	10
A3399XPL-9.2	9,2		49	103	61	40	10
A3399XPL-9.3	9,3		49	103	61	40	10
A3399XPL-9.4	9,4		49	103	61	40	10
A3399XPL-9.5	9,5		49	103	61	40	10
A3399XPL-3/8IN	9,525	3/8"	49	103	61	40	10
A3399XPL-9.55	9,55		49	103	61	40	10
A3399XPL-9.6	9,6		49	103	61	40	10
A3399XPL-9.7	9,7		49	103	61	40	10
A3399XPL-9.8	9,8		49	103	61	40	10
A3399XPL-9.9	9,9		49	103	61	40	10
A3399XPL-25/64IN	9,922	25/64"	49	103	61	40	10
A3399XPL-10	10		49	103	61	40	10
A3399XPL-10.1	10,1		56	118	71	45	12
A3399XPL-10.2	10,2		56	118	71	45	12
A3399XPL-10.3	10,3		56	118	71	45	12
A3399XPL-13/32IN	10,319	13/32"	56	118	71	45	12
A3399XPL-10.4	10,4		56	118	71	45	12
A3399XPL-10.5	10,5		56	118	71	45	12
A3399XPL-10.6	10,6		56	118	71	45	12
A3399XPL-10.7	10,7		56	118	71	45	12
A3399XPL-27/64IN	10,716	27/64"	56	118	71	45	12
A3399XPL-10.8	10,8		56	118	71	45	12
A3399XPL-10.9	10,9		56	118	71	45	12

Continued

XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HA



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3399XPL-11	11		56	118	71	45	12
A3399XPL-11.1	11,1		56	118	71	45	12
A3399XPL-7/16IN	11,113	7/16"	56	118	71	45	12
A3399XPL-11.2	11,2		56	118	71	45	12
A3399XPL-11.3	11,3		56	118	71	45	12
A3399XPL-11.4	11,4		56	118	71	45	12
A3399XPL-11.5	11,5		56	118	71	45	12
A3399XPL-29/64IN	11,509	29/64"	56	118	71	45	12
A3399XPL-11.55	11,55		56	118	71	45	12
A3399XPL-11.6	11,6		56	118	71	45	12
A3399XPL-11.7	11,7		56	118	71	45	12
A3399XPL-11.8	11,8		56	118	71	45	12
A3399XPL-11.9	11,9		56	118	71	45	12
A3399XPL-15/32IN	11,906	15/32"	56	118	71	45	12
A3399XPL-12	12		56	118	71	45	12
A3399XPL-12.1	12,1		60	124	77	45	14
A3399XPL-12.2	12,2		60	124	77	45	14
A3399XPL-12.25	12,25		60	124	77	45	14
A3399XPL-12.3	12,3		60	124	77	45	14
A3399XPL-31/64IN	12,303	31/64"	60	124	77	45	14
A3399XPL-12.4	12,4		60	124	77	45	14
A3399XPL-12.5	12,5		60	124	77	45	14
A3399XPL-12.6	12,6		60	124	77	45	14
A3399XPL-1/2IN	12,7	1/2"	60	124	77	45	14
A3399XPL-12.8	12,8		60	124	77	45	14
A3399XPL-12.9	12,9		60	124	77	45	14
A3399XPL-13	13		60	124	77	45	14
A3399XPL-13.1	13,1		60	124	77	45	14
A3399XPL-13.2	13,2		60	124	77	45	14
A3399XPL-13.3	13,3		60	124	77	45	14
A3399XPL-13.4	13,4		60	124	77	45	14
A3399XPL-17/32IN	13,494	17/32"	60	124	77	45	14
A3399XPL-13.5	13,5		60	124	77	45	14
A3399XPL-13.6	13,6		60	124	77	45	14
A3399XPL-13.7	13,7		60	124	77	45	14
A3399XPL-13.8	13,8		60	124	77	45	14
A3399XPL-13.9	13,9		60	124	77	45	14
A3399XPL-14	14		60	124	77	45	14
A3399XPL-14.1	14,1		63	133	83	48	16
A3399XPL-14.2	14,2		63	133	83	48	16
A3399XPL-9/16IN	14,288	9/16"	63	133	83	48	16
A3399XPL-14.3	14,3		63	133	83	48	16
A3399XPL-14.4	14,4		63	133	83	48	16
A3399XPL-14.5	14,5		63	133	83	48	16
A3399XPL-14.6	14,6		63	133	83	48	16
A3399XPL-14.7	14,7		63	133	83	48	16
A3399XPL-14.75	14,75		63	133	83	48	16
A3399XPL-14.8	14,8		63	133	83	48	16
A3399XPL-14.9	14,9		63	133	83	48	16
A3399XPL-15	15		63	133	83	48	16
A3399XPL-15.1	15,1		63	133	83	48	16
A3399XPL-15.2	15,2		63	133	83	48	16
A3399XPL-15.3	15,3		63	133	83	48	16
A3399XPL-15.4	15,4		63	133	83	48	16
A3399XPL-15.5	15,5		63	133	83	48	16
A3399XPL-15.6	15,6		63	133	83	48	16
A3399XPL-15.7	15,7		63	133	83	48	16
A3399XPL-15.8	15,8		63	133	83	48	16

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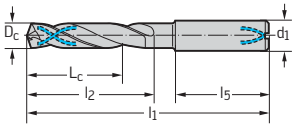
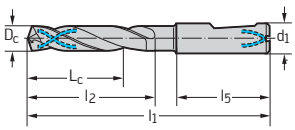
WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 414 B 430

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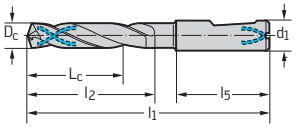
	Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA 	A3399XPL-5/8IN	15,875	5/8"	63	133	83	48	16
	A3399XPL-16	16		63	133	83	48	16
	A3399XPL-16.1	16,1		71	143	93	48	18
	A3399XPL-16.2	16,2		71	143	93	48	18
	A3399XPL-16.3	16,3		71	143	93	48	18
	A3399XPL-16.5	16,5		71	143	93	48	18
	A3399XPL-16.6	16,6		71	143	93	48	18
	A3399XPL-16.7	16,7		71	143	93	48	18
	A3399XPL-16.75	16,75		71	143	93	48	18
	A3399XPL-16.8	16,8		71	143	93	48	18
	A3399XPL-17	17		71	143	93	48	18
	A3399XPL-17.1	17,1		71	143	93	48	18
	A3399XPL-17.3	17,3		71	143	93	48	18
	A3399XPL-17.4	17,4		71	143	93	48	18
	A3399XPL-17.5	17,5		71	143	93	48	18
	A3399XPL-17.6	17,6		71	143	93	48	18
	A3399XPL-17.7	17,7		71	143	93	48	18
	A3399XPL-17.8	17,8		71	143	93	48	18
	A3399XPL-17.9	17,9		71	143	93	48	18
	A3399XPL-18	18		71	143	93	48	18
	A3399XPL-18.1	18,1		77	153	101	50	20
	A3399XPL-18.2	18,2		77	153	101	50	20
	A3399XPL-18.4	18,4		77	153	101	50	20
	A3399XPL-18.5	18,5		77	153	101	50	20
	A3399XPL-18.6	18,6		77	153	101	50	20
	A3399XPL-18.7	18,7		77	153	101	50	20
	A3399XPL-18.9	18,9		77	153	101	50	20
	A3399XPL-19	19		77	153	101	50	20
	A3399XPL-3/4IN	19,05	3/4"	77	153	101	50	20
	A3399XPL-19.1	19,1		77	153	101	50	20
	A3399XPL-19.3	19,3		77	153	101	50	20
	A3399XPL-19.4	19,4		77	153	101	50	20
	A3399XPL-19.5	19,5		77	153	101	50	20
	A3399XPL-19.6	19,6		77	153	101	50	20
	A3399XPL-19.7	19,7		77	153	101	50	20
	A3399XPL-19.8	19,8		77	153	101	50	20
	A3399XPL-19.9	19,9		77	153	101	50	20
	A3399XPL-20	20		77	153	101	50	20
	A3399XPL-20.5	20,5		86	166	108	56	25
	A3399XPL-21	21		86	166	108	56	25
	A3399XPL-21.5	21,5		86	166	108	56	25
	A3399XPL-22	22		86	166	108	56	25
	A3399XPL-22.5	22,5		91	173	115	56	25
	A3399XPL-23	23		91	173	115	56	25
	A3399XPL-23.5	23,5		91	173	115	56	25
	A3399XPL-24	24		91	173	115	56	25
	A3399XPL-25	25		97	180	122	56	25
Shank DIN 6535 HE 	A3999XPL-3	3		23	66	28	36	6
	A3999XPL-3.1	3,1		23	66	28	36	6
	A3999XPL-3.2	3,2		23	66	28	36	6
	A3999XPL-3.25	3,25		23	66	28	36	6
	A3999XPL-3.3	3,3		23	66	28	36	6
	A3999XPL-3.4	3,4		23	66	28	36	6
	A3999XPL-3.5	3,5		23	66	28	36	6
	A3999XPL-3.6	3,6		23	66	28	36	6
	A3999XPL-3.7	3,7		23	66	28	36	6
	A3999XPL-3.8	3,8		29	74	36	36	6
	A3999XPL-3.9	3,9		29	74	36	36	6
	A3999XPL-4	4		29	74	36	36	6
	A3999XPL-4.1	4,1		29	74	36	36	6
	A3999XPL-4.2	4,2		29	74	36	36	6
	A3999XPL-4.3	4,3		29	74	36	36	6

Continued

XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HE



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3999XPL-4.4	4,4		29	74	36	36	6
A3999XPL-4.5	4,5		29	74	36	36	6
A3999XPL-4.6	4,6		29	74	36	36	6
A3999XPL-4.65	4,65		29	74	36	36	6
A3999XPL-4.7	4,7		29	74	36	36	6
A3999XPL-4.8	4,8		35	82	44	36	6
A3999XPL-4.9	4,9		35	82	44	36	6
A3999XPL-5	5		35	82	44	36	6
A3999XPL-5.1	5,1		35	82	44	36	6
A3999XPL-5.2	5,2		35	82	44	36	6
A3999XPL-5.3	5,3		35	82	44	36	6
A3999XPL-5.4	5,4		35	82	44	36	6
A3999XPL-5.5	5,5		35	82	44	36	6
A3999XPL-5.55	5,55		35	82	44	36	6
A3999XPL-5.6	5,6		35	82	44	36	6
A3999XPL-5.7	5,7		35	82	44	36	6
A3999XPL-5.8	5,8		35	82	44	36	6
A3999XPL-5.9	5,9		35	82	44	36	6
A3999XPL-6	6		35	82	44	36	6
A3999XPL-6.1	6,1		43	91	53	36	8
A3999XPL-6.2	6,2		43	91	53	36	8
A3999XPL-6.3	6,3		43	91	53	36	8
A3999XPL-6.4	6,4		43	91	53	36	8
A3999XPL-6.5	6,5		43	91	53	36	8
A3999XPL-6.6	6,6		43	91	53	36	8
A3999XPL-6.7	6,7		43	91	53	36	8
A3999XPL-6.8	6,8		43	91	53	36	8
A3999XPL-6.9	6,9		43	91	53	36	8
A3999XPL-7	7		43	91	53	36	8
A3999XPL-7.1	7,1		43	91	53	36	8
A3999XPL-7.2	7,2		43	91	53	36	8
A3999XPL-7.3	7,3		43	91	53	36	8
A3999XPL-7.4	7,4		43	91	53	36	8
A3999XPL-7.5	7,5		43	91	53	36	8
A3999XPL-7.6	7,6		43	91	53	36	8
A3999XPL-7.7	7,7		43	91	53	36	8
A3999XPL-7.8	7,8		43	91	53	36	8
A3999XPL-7.9	7,9		43	91	53	36	8
A3999XPL-8	8		43	91	53	36	8
A3999XPL-8.1	8,1		49	103	61	40	10
A3999XPL-8.2	8,2		49	103	61	40	10
A3999XPL-8.3	8,3		49	103	61	40	10
A3999XPL-8.4	8,4		49	103	61	40	10
A3999XPL-8.5	8,5		49	103	61	40	10
A3999XPL-8.6	8,6		49	103	61	40	10
A3999XPL-8.7	8,7		49	103	61	40	10
A3999XPL-8.8	8,8		49	103	61	40	10
A3999XPL-8.9	8,9		49	103	61	40	10
A3999XPL-9	9		49	103	61	40	10
A3999XPL-9.1	9,1		49	103	61	40	10
A3999XPL-9.2	9,2		49	103	61	40	10
A3999XPL-9.3	9,3		49	103	61	40	10
A3999XPL-9.5	9,5		49	103	61	40	10
A3999XPL-9.55	9,55		49	103	61	40	10
A3999XPL-9.6	9,6		49	103	61	40	10
A3999XPL-9.7	9,7		49	103	61	40	10
A3999XPL-9.8	9,8		49	103	61	40	10
A3999XPL-9.9	9,9		49	103	61	40	10

Continued

WALTER SELECT

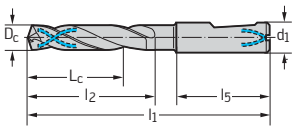
●● Primary application

● Other application

XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HE



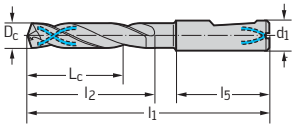
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3999XPL-10	10		49	103	61	40	10
A3999XPL-10.1	10,1		56	118	71	45	12
A3999XPL-10.2	10,2		56	118	71	45	12
A3999XPL-10.3	10,3		56	118	71	45	12
A3999XPL-10.4	10,4		56	118	71	45	12
A3999XPL-10.5	10,5		56	118	71	45	12
A3999XPL-10.6	10,6		56	118	71	45	12
A3999XPL-10.7	10,7		56	118	71	45	12
A3999XPL-10.8	10,8		56	118	71	45	12
A3999XPL-10.9	10,9		56	118	71	45	12
A3999XPL-11	11		56	118	71	45	12
A3999XPL-11.1	11,1		56	118	71	45	12
A3999XPL-11.2	11,2		56	118	71	45	12
A3999XPL-11.3	11,3		56	118	71	45	12
A3999XPL-11.4	11,4		56	118	71	45	12
A3999XPL-11.5	11,5		56	118	71	45	12
A3999XPL-11.55	11,55		56	118	71	45	12
A3999XPL-11.6	11,6		56	118	71	45	12
A3999XPL-11.7	11,7		56	118	71	45	12
A3999XPL-11.8	11,8		56	118	71	45	12
A3999XPL-11.9	11,9		56	118	71	45	12
A3999XPL-12	12		56	118	71	45	12
A3999XPL-12.1	12,1		60	124	77	45	14
A3999XPL-12.2	12,2		60	124	77	45	14
A3999XPL-12.25	12,25		60	124	77	45	14
A3999XPL-12.3	12,3		60	124	77	45	14
A3999XPL-12.4	12,4		60	124	77	45	14
A3999XPL-12.5	12,5		60	124	77	45	14
A3999XPL-12.6	12,6		60	124	77	45	14
A3999XPL-12.7	12,7	1/2"	60	124	77	45	14
A3999XPL-12.75	12,75		60	124	77	45	14
A3999XPL-12.8	12,8		60	124	77	45	14
A3999XPL-12.9	12,9		60	124	77	45	14
A3999XPL-13	13		60	124	77	45	14
A3999XPL-13.1	13,1		60	124	77	45	14
A3999XPL-13.2	13,2		60	124	77	45	14
A3999XPL-13.3	13,3		60	124	77	45	14
A3999XPL-13.4	13,4		60	124	77	45	14
A3999XPL-13.5	13,5		60	124	77	45	14
A3999XPL-13.6	13,6		60	124	77	45	14
A3999XPL-13.8	13,8		60	124	77	45	14
A3999XPL-13.9	13,9		60	124	77	45	14
A3999XPL-14	14		60	124	77	45	14
A3999XPL-14.1	14,1		63	133	83	48	16
A3999XPL-14.2	14,2		63	133	83	48	16
A3999XPL-14.3	14,3		63	133	83	48	16
A3999XPL-14.5	14,5		63	133	83	48	16
A3999XPL-14.6	14,6		63	133	83	48	16
A3999XPL-14.7	14,7		63	133	83	48	16
A3999XPL-14.75	14,75		63	133	83	48	16
A3999XPL-14.8	14,8		63	133	83	48	16
A3999XPL-14.9	14,9		63	133	83	48	16
A3999XPL-15	15		63	133	83	48	16
A3999XPL-15.1	15,1		63	133	83	48	16
A3999XPL-15.2	15,2		63	133	83	48	16
A3999XPL-15.4	15,4		63	133	83	48	16
A3999XPL-15.5	15,5		63	133	83	48	16
A3999XPL-15.6	15,6		63	133	83	48	16
A3999XPL-15.7	15,7		63	133	83	48	16
A3999XPL-15.8	15,8		63	133	83	48	16
A3999XPL-15.9	15,9		63	133	83	48	16
A3999XPL-16	16		63	133	83	48	16

Continued

XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HE



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3999XPL-16.3	16,3		71	143	93	48	18
A3999XPL-16.4	16,4		71	143	93	48	18
A3999XPL-16.5	16,5		71	143	93	48	18
A3999XPL-16.6	16,6		71	143	93	48	18
A3999XPL-16.7	16,7		71	143	93	48	18
A3999XPL-16.75	16,75		71	143	93	48	18
A3999XPL-16.8	16,8		71	143	93	48	18
A3999XPL-16.9	16,9		71	143	93	48	18
A3999XPL-17	17		71	143	93	48	18
A3999XPL-17.1	17,1		71	143	93	48	18
A3999XPL-17.4	17,4		71	143	93	48	18
A3999XPL-17.5	17,5		71	143	93	48	18
A3999XPL-17.6	17,6		71	143	93	48	18
A3999XPL-17.7	17,7		71	143	93	48	18
A3999XPL-17.9	17,9		71	143	93	48	18
A3999XPL-18	18		71	143	93	48	18
A3999XPL-18.2	18,2		77	153	101	50	20
A3999XPL-18.3	18,3		77	153	101	50	20
A3999XPL-18.4	18,4		77	153	101	50	20
A3999XPL-18.5	18,5		77	153	101	50	20
A3999XPL-18.6	18,6		77	153	101	50	20
A3999XPL-18.7	18,7		77	153	101	50	20
A3999XPL-18.8	18,8		77	153	101	50	20
A3999XPL-18.9	18,9		77	153	101	50	20
A3999XPL-19	19		77	153	101	50	20
A3999XPL-19.1	19,1		77	153	101	50	20
A3999XPL-19.2	19,2		77	153	101	50	20
A3999XPL-19.3	19,3		77	153	101	50	20
A3999XPL-19.4	19,4		77	153	101	50	20
A3999XPL-19.5	19,5		77	153	101	50	20
A3999XPL-19.6	19,6		77	153	101	50	20
A3999XPL-19.7	19,7		77	153	101	50	20
A3999XPL-19.8	19,8		77	153	101	50	20
A3999XPL-19.9	19,9		77	153	101	50	20
A3999XPL-20	20		77	153	101	50	20
A3999XPL-21	21		86	166	108	56	25
A3999XPL-21.5	21,5		86	166	108	56	25
A3999XPL-22	22		86	166	108	56	25
A3999XPL-22.5	22,5		91	173	115	56	25
A3999XPL-23	23		91	173	115	56	25
A3999XPL-23.5	23,5		91	173	115	56	25
A3999XPL-24	24		91	173	115	56	25
A3999XPL-24.5	24,5		97	180	122	56	25
A3999XPL-25	25		97	180	122	56	25

WALTER SELECT

●● Primary application

● Other application

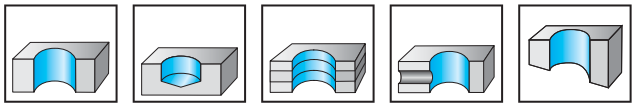
XIII D 1 B 414 B 430

Solid carbide drills with coolant-through, straight-fluted

A3387

Alpha® Jet

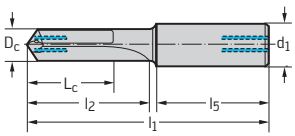




5×D_c | DIN 6537 L | 120°

	P	M	K	N	S	H	O
Uncoated			●	●			●

Shank DIN 6535 HA

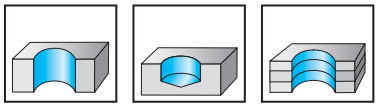


Designation Uncoated	D_c k6 mm	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3387-4	4	21	74	36	36	6
A3387-4.2	4,2	21	74	36	36	6
A3387-5	5	26	82	44	36	6
A3387-5.5	5,5	26	82	44	36	6
A3387-6	6	26	82	44	36	6
A3387-6.5	6,5	32	91	53	36	8
A3387-6.8	6,8	32	91	53	36	8
A3387-7	7	32	91	53	36	8
A3387-7.5	7,5	33	91	53	36	8
A3387-8	8	33	91	53	36	8
A3387-8.5	8,5	41	103	61	40	10
A3387-9	9	41	103	61	40	10
A3387-10	10	41	103	61	40	10
A3387-10.2	10,2	47	118	71	45	12
A3387-10.5	10,5	47	118	71	45	12
A3387-11	11	47	118	71	45	12
A3387-11.5	11,5	47	118	71	45	12
A3387-12	12	47	118	71	45	12
A3387-12.5	12,5	49	124	77	45	14
A3387-13	13	49	124	77	45	14
A3387-14	14	49	124	77	45	14
A3387-15	15	59	133	83	48	16
A3387-15.5	15,5	59	133	83	48	16
A3387-16	16	59	133	83	48	16
A3387-17	17	66	143	93	48	18
A3387-17.5	17,5	66	143	93	48	18
A3387-18	18	66	143	93	48	18
A3387-19.5	19,5	71	153	101	50	20
A3387-20	20	71	153	101	50	20

XIII | D 1 | B 414 | B 430

Solid carbide drills with coolant-through
DC150 Perform

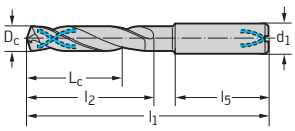




5×D_c | DIN 6537 L | 140°

	P	M	K	N	S	H	O
WJ30RE	●●	●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-05-03.000A1-	3		23	66	28	36	6	●●
DC150-05-03.100A1-	3,1		23	66	28	36	6	●●
DC150-05-03.175A1-	3,175	1/8"	23	66	28	36	6	●●
DC150-05-03.200A1-	3,2		23	66	28	36	6	●●
DC150-05-03.250A1-	3,25		23	66	28	36	6	●●
DC150-05-03.300A1-	3,3		23	66	28	36	6	●●
DC150-05-03.400A1-	3,4		23	66	28	36	6	●●
DC150-05-03.500A1-	3,5		23	66	28	36	6	●●
DC150-05-03.572A1-	3,572	9/64"	23	66	28	36	6	●●
DC150-05-03.600A1-	3,6		23	66	28	36	6	●●
DC150-05-03.650A1-	3,65		23	66	28	36	6	●●
DC150-05-03.700A1-	3,7		23	66	28	36	6	●●
DC150-05-03.800A1-	3,8		29	74	36	36	6	●●
DC150-05-03.900A1-	3,9		29	74	36	36	6	●●
DC150-05-03.969A1-	3,969	5/32"	29	74	36	36	6	●●
DC150-05-04.000A1-	4		29	74	36	36	6	●●
DC150-05-04.100A1-	4,1		29	74	36	36	6	●●
DC150-05-04.200A1-	4,2		29	74	36	36	6	●●
DC150-05-04.300A1-	4,3		29	74	36	36	6	●●
DC150-05-04.366A1-	4,366	11/64"	29	74	36	36	6	●●
DC150-05-04.400A1-	4,4		29	74	36	36	6	●●
DC150-05-04.500A1-	4,5		29	74	36	36	6	●●
DC150-05-04.600A1-	4,6		29	74	36	36	6	●●
DC150-05-04.650A1-	4,65		29	74	36	36	6	●●
DC150-05-04.700A1-	4,7		29	74	36	36	6	●●
DC150-05-04.763A1-	4,763	3/16"	35	82	44	36	6	●●
DC150-05-04.800A1-	4,8		35	82	44	36	6	●●
DC150-05-04.900A1-	4,9		35	82	44	36	6	●●
DC150-05-05.000A1-	5		35	82	44	36	6	●●
DC150-05-05.100A1-	5,1		35	82	44	36	6	●●
DC150-05-05.159A1-	5,159	13/64"	35	82	44	36	6	●●
DC150-05-05.200A1-	5,2		35	82	44	36	6	●●
DC150-05-05.300A1-	5,3		35	82	44	36	6	●●
DC150-05-05.400A1-	5,4		35	82	44	36	6	●●
DC150-05-05.500A1-	5,5		35	82	44	36	6	●●
DC150-05-05.550A1-	5,55		35	82	44	36	6	●●
DC150-05-05.556A1-	5,556	7/32"	35	82	44	36	6	●●
DC150-05-05.600A1-	5,6		35	82	44	36	6	●●
DC150-05-05.700A1-	5,7		35	82	44	36	6	●●
DC150-05-05.800A1-	5,8		35	82	44	36	6	●●
DC150-05-05.900A1-	5,9		35	82	44	36	6	●●
DC150-05-05.953A1-	5,953	15/64"	35	82	44	36	6	●●
DC150-05-06.000A1-	6		35	82	44	36	6	●●

Ordering example for the WJ30RE grade: DC150-05-03.000A1-WJ30RE

Continued

WALTER SELECT

Best tool for

Good | Average | Poor

machining conditions

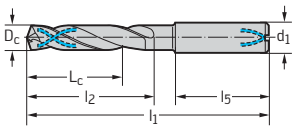
●● Primary application

● Other application

XIII | D 1 | B 414 | B 430

Continued

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-05-06.100A1-	6,1		43	91	53	36	8	●
DC150-05-06.200A1-	6,2		43	91	53	36	8	●
DC150-05-06.300A1-	6,3		43	91	53	36	8	●
DC150-05-06.350A1-	6,35	1/4"	43	91	53	36	8	●
DC150-05-06.400A1-	6,4		43	91	53	36	8	●
DC150-05-06.500A1-	6,5		43	91	53	36	8	●
DC150-05-06.600A1-	6,6		43	91	53	36	8	●
DC150-05-06.700A1-	6,7		43	91	53	36	8	●
DC150-05-06.747A1-	6,747	17/64"	43	91	53	36	8	●
DC150-05-06.800A1-	6,8		43	91	53	36	8	●
DC150-05-06.900A1-	6,9		43	91	53	36	8	●
DC150-05-07.000A1-	7		43	91	53	36	8	●
DC150-05-07.100A1-	7,1		43	91	53	36	8	●
DC150-05-07.144A1-	7,144	9/32"	43	91	53	36	8	●
DC150-05-07.200A1-	7,2		43	91	53	36	8	●
DC150-05-07.300A1-	7,3		43	91	53	36	8	●
DC150-05-07.400A1-	7,4		43	91	53	36	8	●
DC150-05-07.500A1-	7,5		43	91	53	36	8	●
DC150-05-07.541A1-	7,541	19/64"	43	91	53	36	8	●
DC150-05-07.550A1-	7,55		43	91	53	36	8	●
DC150-05-07.600A1-	7,6		43	91	53	36	8	●
DC150-05-07.700A1-	7,7		43	91	53	36	8	●
DC150-05-07.800A1-	7,8		43	91	53	36	8	●
DC150-05-07.900A1-	7,9		43	91	53	36	8	●
DC150-05-07.938A1-	7,938	5/16"	43	91	53	36	8	●
DC150-05-08.000A1-	8		43	91	53	36	8	●
DC150-05-08.100A1-	8,1		49	103	61	40	10	●
DC150-05-08.200A1-	8,2		49	103	61	40	10	●
DC150-05-08.300A1-	8,3		49	103	61	40	10	●
DC150-05-08.334A1-	8,334	21/64"	49	103	61	40	10	●
DC150-05-08.400A1-	8,4		49	103	61	40	10	●
DC150-05-08.500A1-	8,5		49	103	61	40	10	●
DC150-05-08.600A1-	8,6		49	103	61	40	10	●
DC150-05-08.700A1-	8,7		49	103	61	40	10	●
DC150-05-08.731A1-	8,731	11/32"	49	103	61	40	10	●
DC150-05-08.800A1-	8,8		49	103	61	40	10	●
DC150-05-08.900A1-	8,9		49	103	61	40	10	●
DC150-05-09.000A1-	9		49	103	61	40	10	●
DC150-05-09.100A1-	9,1		49	103	61	40	10	●
DC150-05-09.128A1-	9,128	23/64"	49	103	61	40	10	●
DC150-05-09.200A1-	9,2		49	103	61	40	10	●
DC150-05-09.300A1-	9,3		49	103	61	40	10	●
DC150-05-09.400A1-	9,4		49	103	61	40	10	●
DC150-05-09.500A1-	9,4		49	103	61	40	10	●
DC150-05-09.525A1-	9,525	3/8"	49	103	61	40	10	●
DC150-05-09.550A1-	9,55		49	103	61	40	10	●
DC150-05-09.600A1-	9,6		49	103	61	40	10	●
DC150-05-09.700A1-	9,7		49	103	61	40	10	●
DC150-05-09.800A1-	9,8		49	103	61	40	10	●
DC150-05-09.900A1-	9,9		49	103	61	40	10	●
DC150-05-09.922A1-	9,922	25/64"	49	103	61	40	10	●
DC150-05-10.000A1-	10		49	103	61	40	10	●
DC150-05-10.100A1-	10,1		56	118	71	45	12	●
DC150-05-10.200A1-	10,2		56	118	71	45	12	●
DC150-05-10.300A1-	10,3		56	118	71	45	12	●
DC150-05-10.319A1-	10,319	13/32"	56	118	71	45	12	●
DC150-05-10.400A1-	10,4		56	118	71	45	12	●
DC150-05-10.500A1-	10,5		56	118	71	45	12	●
DC150-05-10.600A1-	10,6		56	118	71	45	12	●
DC150-05-10.700A1-	10,7		56	118	71	45	12	●
DC150-05-10.716A1-	10,716	27/64"	56	118	71	45	12	●

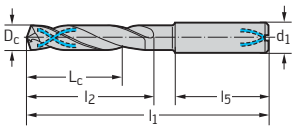
Ordering example for the WJ30RE grade: DC150-05-03.000A1-WJ30RE

Continued

XIII D 1 B 414 B 430

Continued

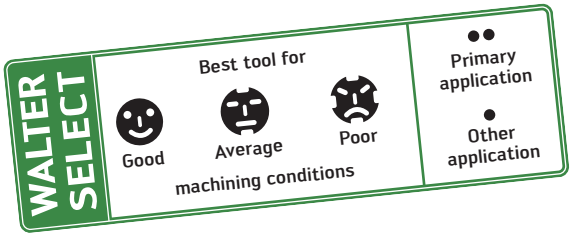
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-05-10.800A1-	10,8		56	118	71	45	12	☹
DC150-05-10.900A1-	10,9		56	118	71	45	12	☹
DC150-05-11.000A1-	11		56	118	71	45	12	☹
DC150-05-11.100A1-	11,1		56	118	71	45	12	☹
DC150-05-11.113A1-	11,113	7/16"	56	118	71	45	12	☹
DC150-05-11.200A1-	11,2		56	118	71	45	12	☹
DC150-05-11.300A1-	11,3		56	118	71	45	12	☹
DC150-05-11.400A1-	11,4		56	118	71	45	12	☹
DC150-05-11.500A1-	11,5		56	118	71	45	12	☹
DC150-05-11.509A1-	11,509	29/64"	56	118	71	45	12	☹
DC150-05-11.600A1-	11,6		56	118	71	45	12	☹
DC150-05-11.700A1-	11,7		56	118	71	45	12	☹
DC150-05-11.800A1-	11,8		56	118	71	45	12	☹
DC150-05-11.900A1-	11,9		56	118	71	45	12	☹
DC150-05-11.906A1-	11,906	15/32"	56	118	71	45	12	☹
DC150-05-12.000A1-	12		56	118	71	45	12	☹
DC150-05-12.100A1-	12,1		60	124	77	45	14	☹
DC150-05-12.200A1-	12,2		60	124	77	45	14	☹
DC150-05-12.250A1-	12,25		60	124	77	45	14	☹
DC150-05-12.300A1-	12,3		60	124	77	45	14	☹
DC150-05-12.303A1-	12,303	31/64"	60	124	77	45	14	☹
DC150-05-12.400A1-	12,4		60	124	77	45	14	☹
DC150-05-13.100A1-	12,4		60	124	77	45	14	☹
DC150-05-12.500A1-	12,5		60	124	77	45	14	☹
DC150-05-12.600A1-	12,6		60	124	77	45	14	☹
DC150-05-12.700A1-	12,7	1/2"	60	124	77	45	14	☹
DC150-05-12.800A1-	12,8		60	124	77	45	14	☹
DC150-05-12.900A1-	12,9		60	124	77	45	14	☹
DC150-05-13.000A1-	13		60	124	77	45	14	☹
DC150-05-13.200A1-	13,2		60	124	77	45	14	☹
DC150-05-13.300A1-	13,3		60	124	77	45	14	☹
DC150-05-13.400A1-	13,4		60	124	77	45	14	☹
DC150-05-13.494A1-	13,494	17/32"	60	124	77	45	14	☹
DC150-05-13.500A1-	13,5		60	124	77	45	14	☹
DC150-05-13.600A1-	13,6		60	124	77	45	14	☹
DC150-05-13.700A1-	13,7		60	124	77	45	14	☹
DC150-05-13.800A1-	13,8		60	124	77	45	14	☹
DC150-05-13.900A1-	13,9		60	124	77	45	14	☹
DC150-05-14.000A1-	14		60	124	77	45	14	☹
DC150-05-14.100A1-	14,1		63	133	83	48	16	☹
DC150-05-14.200A1-	14,2		63	133	83	48	16	☹
DC150-05-14.288A1-	14,288	9/16"	63	133	83	48	16	☹
DC150-05-14.300A1-	14,3		63	133	83	48	16	☹
DC150-05-14.500A1-	14,5		63	133	83	48	16	☹
DC150-05-14.600A1-	14,6		63	133	83	48	16	☹
DC150-05-14.700A1-	14,7		63	133	83	48	16	☹
DC150-05-14.750A1-	14,75		63	133	83	48	16	☹
DC150-05-14.800A1-	14,8		63	133	83	48	16	☹
DC150-05-15.000A1-	15		63	133	83	48	16	☹
DC150-05-15.100A1-	15,1		63	133	83	48	16	☹
DC150-05-15.200A1-	15,2		63	133	83	48	16	☹
DC150-05-15.300A1-	15,3		63	133	83	48	16	☹
DC150-05-15.500A1-	15,5		63	133	83	48	16	☹
DC150-05-15.600A1-	15,6		63	133	83	48	16	☹
DC150-05-15.700A1-	15,7		63	133	83	48	16	☹
DC150-05-15.800A1-	15,8		63	133	83	48	16	☹
DC150-05-15.875A1-	15,875	5/8"	63	133	83	48	16	☹

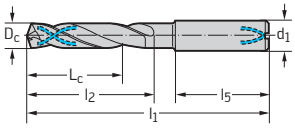
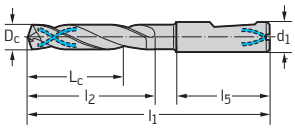
Ordering example for the WJ30RE grade: DC150-05-03.000A1-WJ30RE

Continued



XIII D 1 B 414 B 430

Continued

	Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
Shank DIN 6535 HA 	DC150-05-16.000A1-	16		63	133	83	48	16	
	DC150-05-16.100A1-	16,1		71	143	93	48	18	
	DC150-05-16.200A1-	16,2		71	143	93	48	18	
	DC150-05-16.300A1-	16,3		71	143	93	48	18	
	DC150-05-16.500A1-	16,5		71	143	93	48	18	
	DC150-05-16.700A1-	16,7		71	143	93	48	18	
	DC150-05-16.750A1-	16,75		71	143	93	48	18	
	DC150-05-17.000A1-	17		71	143	93	48	18	
	DC150-05-17.100A1-	17,1		71	143	93	48	18	
	DC150-05-17.200A1-	17,2		71	143	93	48	18	
	DC150-05-17.300A1-	17,3		71	143	93	48	18	
	DC150-05-17.500A1-	17,5		71	143	93	48	18	
	DC150-05-17.600A1-	17,6		71	143	93	48	18	
	DC150-05-17.700A1-	17,7		71	143	93	48	18	
	DC150-05-17.800A1-	17,8		71	143	93	48	18	
	DC150-05-17.900A1-	17,9		71	143	93	48	18	
	DC150-05-18.000A1-	18		71	143	93	48	18	
	DC150-05-18.500A1-	18,5		77	153	101	50	20	
	DC150-05-18.900A1-	18,9		77	153	101	50	20	
	DC150-05-19.000A1-	19		77	153	101	50	20	
	DC150-05-19.050A1-	19,05	3/4"	77	153	101	50	20	
	DC150-05-19.300A1-	19,3		77	153	101	50	20	
	DC150-05-19.500A1-	19,5		77	153	101	50	20	
	DC150-05-19.700A1-	19,7		77	153	101	50	20	
	DC150-05-19.800A1-	19,8		77	153	101	50	20	
	DC150-05-20.000A1-	20		77	153	101	50	20	
Shank DIN 6535 HE 	DC150-05-03.000F1-	3		23	66	28	36	6	
	DC150-05-03.100F1-	3,1		23	66	28	36	6	
	DC150-05-03.200F1-	3,2		23	66	28	36	6	
	DC150-05-03.300F1-	3,3		23	66	28	36	6	
	DC150-05-03.400F1-	3,4		23	66	28	36	6	
	DC150-05-03.500F1-	3,5		23	66	28	36	6	
	DC150-05-03.600F1-	3,6		23	66	28	36	6	
	DC150-05-03.700F1-	3,7		23	66	28	36	6	
	DC150-05-03.800F1-	3,8		29	74	36	36	6	
	DC150-05-03.900F1-	3,9		29	74	36	36	6	
	DC150-05-04.000F1-	4		29	74	36	36	6	
	DC150-05-04.100F1-	4,1		29	74	36	36	6	
	DC150-05-04.200F1-	4,2		29	74	36	36	6	
	DC150-05-04.300F1-	4,3		29	74	36	36	6	
	DC150-05-04.400F1-	4,4		29	74	36	36	6	
	DC150-05-04.500F1-	4,5		29	74	36	36	6	
	DC150-05-04.600F1-	4,6		29	74	36	36	6	
	DC150-05-04.650F1-	4,65		29	74	36	36	6	
	DC150-05-04.700F1-	4,7		29	74	36	36	6	
	DC150-05-04.800F1-	4,8		35	82	44	36	6	
	DC150-05-04.900F1-	4,9		35	82	44	36	6	
	DC150-05-05.000F1-	5		35	82	44	36	6	
	DC150-05-05.100F1-	5,1		35	82	44	36	6	
	DC150-05-05.200F1-	5,2		35	82	44	36	6	
	DC150-05-05.300F1-	5,3		35	82	44	36	6	
	DC150-05-05.400F1-	5,4		35	82	44	36	6	
	DC150-05-05.500F1-	5,5		35	82	44	36	6	
	DC150-05-05.550F1-	5,55		35	82	44	36	6	
	DC150-05-05.600F1-	5,6		35	82	44	36	6	
	DC150-05-05.700F1-	5,7		35	82	44	36	6	
	DC150-05-05.800F1-	5,8		35	82	44	36	6	
	DC150-05-05.900F1-	5,9		35	82	44	36	6	
	DC150-05-06.000F1-	6		35	82	44	36	6	
	DC150-05-06.100F1-	6,1		43	91	53	36	8	
	DC150-05-06.200F1-	6,2		43	91	53	36	8	

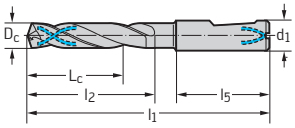
Ordering example for the WJ30RE grade: DC150-05-03.000A1-WJ30RE

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XIII D 1 B 414 B 430

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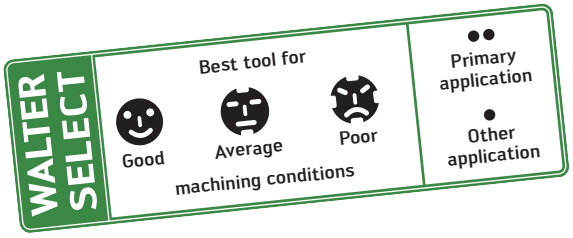
Shank DIN 6535 HE



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-05-06.300F1-	6,2		43	91	53	36	8	
DC150-05-06.400F1-	6,4		43	91	53	36	8	
DC150-05-06.500F1-	6,5		43	91	53	36	8	
DC150-05-06.600F1-	6,6		43	91	53	36	8	
DC150-05-06.700F1-	6,7		43	91	53	36	8	
DC150-05-06.800F1-	6,8		43	91	53	36	8	
DC150-05-06.900F1-	6,9		43	91	53	36	8	
DC150-05-07.000F1-	7		43	91	53	36	8	
DC150-05-07.100F1-	7,1		43	91	53	36	8	
DC150-05-07.200F1-	7,2		43	91	53	36	8	
DC150-05-07.300F1-	7,3		43	91	53	36	8	
DC150-05-07.400F1-	7,4		43	91	53	36	8	
DC150-05-07.500F1-	7,5		43	91	53	36	8	
DC150-05-07.600F1-	7,6		43	91	53	36	8	
DC150-05-07.700F1-	7,7		43	91	53	36	8	
DC150-05-07.800F1-	7,8		43	91	53	36	8	
DC150-05-07.900F1-	7,9		43	91	53	36	8	
DC150-05-08.000F1-	8		43	91	53	36	8	
DC150-05-08.100F1-	8,1		49	103	61	40	10	
DC150-05-08.200F1-	8,2		49	103	61	40	10	
DC150-05-08.300F1-	8,3		49	103	61	40	10	
DC150-05-08.400F1-	8,4		49	103	61	40	10	
DC150-05-08.500F1-	8,5		49	103	61	40	10	
DC150-05-08.600F1-	8,6		49	103	61	40	10	
DC150-05-08.700F1-	8,7		49	103	61	40	10	
DC150-05-08.800F1-	8,8		49	103	61	40	10	
DC150-05-09.000F1-	9		49	103	61	40	10	
DC150-05-09.100F1-	9,1		49	103	61	40	10	
DC150-05-09.200F1-	9,2		49	103	61	40	10	
DC150-05-09.300F1-	9,3		49	103	61	40	10	
DC150-05-09.400F1-	9,4		49	103	61	40	10	
DC150-05-09.500F1-	9,5		49	103	61	40	10	
DC150-05-09.600F1-	9,6		49	103	61	40	10	
DC150-05-09.700F1-	9,7		49	103	61	40	10	
DC150-05-09.800F1-	9,8		49	103	61	40	10	
DC150-05-09.900F1-	9,9		49	103	61	40	10	
DC150-05-10.000F1-	10		49	103	61	40	10	
DC150-05-10.100F1-	10,1		56	118	71	45	12	
DC150-05-10.200F1-	10,2		56	118	71	45	12	
DC150-05-10.300F1-	10,3		56	118	71	45	12	
DC150-05-10.400F1-	10,4		56	118	71	45	12	
DC150-05-10.500F1-	10,5		56	118	71	45	12	
DC150-05-10.600F1-	10,6		56	118	71	45	12	
DC150-05-10.800F1-	10,8		56	118	71	45	12	
DC150-05-11.000F1-	11		56	118	71	45	12	
DC150-05-11.100F1-	11,1		56	118	71	45	12	
DC150-05-11.200F1-	11,2		56	118	71	45	12	
DC150-05-11.300F1-	11,3		56	118	71	45	12	
DC150-05-11.500F1-	11,5		56	118	71	45	12	
DC150-05-11.600F1-	11,6		56	118	71	45	12	
DC150-05-11.700F1-	11,7		56	118	71	45	12	
DC150-05-11.800F1-	11,8		56	118	71	45	12	
DC150-05-11.900F1-	11,9		56	118	71	45	12	
DC150-05-12.000F1-	12		56	118	71	45	12	
DC150-05-12.100F1-	12,1		60	124	77	45	14	
DC150-05-12.200F1-	12,2		60	124	77	45	14	
DC150-05-12.300F1-	12,3		60	124	77	45	14	

Ordering example for the WJ30RE grade: DC150-05-03.000A1-WJ30RE

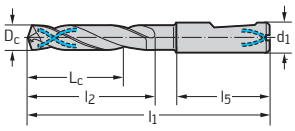
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XIII D 1 B 414 B 430

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Shank DIN 6535 HE



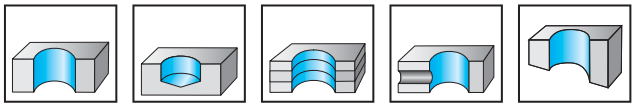
Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-05-12.400F1-	12,4		60	124	77	45	14	●
DC150-05-12.500F1-	12,5		60	124	77	45	14	●
DC150-05-12.700F1-	12,7	1/2"	60	124	77	45	14	●
DC150-05-12.800F1-	12,8		60	124	77	45	14	●
DC150-05-13.000F1-	13		60	124	77	45	14	●
DC150-05-13.100F1-	13,1		60	124	77	45	14	●
DC150-05-13.200F1-	13,2		60	124	77	45	14	●
DC150-05-13.500F1-	13,5		60	124	77	45	14	●
DC150-05-13.800F1-	13,8		60	124	77	45	14	●
DC150-05-14.000F1-	14		60	124	77	45	14	●
DC150-05-14.100F1-	14,1		63	133	83	48	16	●
DC150-05-14.200F1-	14,2		63	133	83	48	16	●
DC150-05-14.300F1-	14,3		63	133	83	48	16	●
DC150-05-14.500F1-	14,5		63	133	83	48	16	●
DC150-05-14.600F1-	14,6		63	133	83	48	16	●
DC150-05-14.800F1-	14,8		63	133	83	48	16	●
DC150-05-15.000F1-	15		63	133	83	48	16	●
DC150-05-15.100F1-	15,1		63	133	83	48	16	●
DC150-05-15.200F1-	15,2		63	133	83	48	16	●
DC150-05-15.300F1-	15,3		63	133	83	48	16	●
DC150-05-15.500F1-	15,5		63	133	83	48	16	●
DC150-05-15.600F1-	15,6		63	133	83	48	16	●
DC150-05-15.700F1-	15,7		63	133	83	48	16	●
DC150-05-15.800F1-	15,8		63	133	83	48	16	●
DC150-05-16.000F1-	16		63	133	83	48	16	●
DC150-05-16.500F1-	16,5		71	143	93	48	18	●
DC150-05-16.600F1-	16,6		71	143	93	48	18	●
DC150-05-17.000F1-	17		71	143	93	48	18	●
DC150-05-17.200F1-	17,2		71	143	93	48	18	●
DC150-05-17.300F1-	17,3		71	143	93	48	18	●
DC150-05-17.500F1-	17,5		71	143	93	48	18	●
DC150-05-17.700F1-	17,7		71	143	93	48	18	●
DC150-05-17.800F1-	17,8		71	143	93	48	18	●
DC150-05-18.000F1-	18		71	143	93	48	18	●
DC150-05-18.100F1-	18,1		77	153	101	50	20	●
DC150-05-18.500F1-	18,5		77	153	101	50	20	●
DC150-05-18.800F1-	18,8		77	153	101	50	20	●
DC150-05-19.000F1-	19		77	153	101	50	20	●
DC150-05-19.500F1-	19,5		77	153	101	50	20	●
DC150-05-19.700F1-	19,7		77	153	101	50	20	●
DC150-05-20.000F1-	20		77	153	101	50	20	●

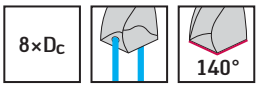
Ordering example for the WJ30RE grade: DC150-05-03.000A1-WJ30RE

XIII D 1 B 414 B 430

Solid carbide drills with coolant-through
DC170 Supreme

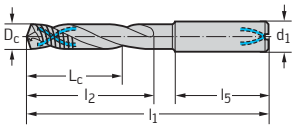






	P	M	K	N	S	H	O
WJ30EJ	●●		●●			●	

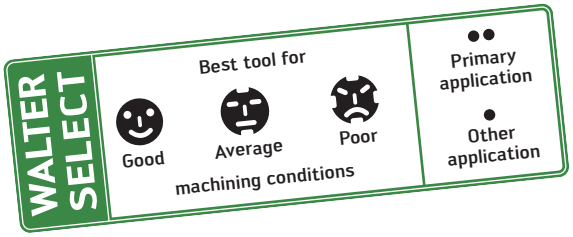
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-08-03.000A1-	3		28	74	34	36	6	●●
DC170-08-03.100A1-	3,1		28	74	34	36	6	●●
DC170-08-03.175A1-	3,175	1/8"	28	74	34	36	6	●●
DC170-08-03.200A1-	3,2		28	74	34	36	6	●●
DC170-08-03.300A1-	3,3		28	74	34	36	6	●●
DC170-08-03.400A1-	3,4		28	74	34	36	6	●●
DC170-08-03.500A1-	3,5		28	74	34	36	6	●●
DC170-08-03.572A1-	3,572	9/64"	28	74	34	36	6	●●
DC170-08-03.600A1-	3,6		28	74	34	36	6	●●
DC170-08-03.700A1-	3,7		28	74	34	36	6	●●
DC170-08-03.800A1-	3,8		37	85	45	36	6	●●
DC170-08-03.900A1-	3,9		37	85	45	36	6	●●
DC170-08-03.969A1-	3,969	5/32"	37	85	45	36	6	●●
DC170-08-04.000A1-	4		37	85	45	36	6	●●
DC170-08-04.100A1-	4,1		37	85	45	36	6	●●
DC170-08-04.200A1-	4,2		37	85	45	36	6	●●
DC170-08-04.300A1-	4,3		37	85	45	36	6	●●
DC170-08-04.366A1-	4,366	11/64"	37	85	45	36	6	●●
DC170-08-04.400A1-	4,4		37	85	45	36	6	●●
DC170-08-04.500A1-	4,5		37	85	45	36	6	●●
DC170-08-04.600A1-	4,6		37	85	45	36	6	●●
DC170-08-04.700A1-	4,7		37	85	45	36	6	●●
DC170-08-04.763A1-	4,763	3/16"	48	97	57	36	6	●●
DC170-08-04.800A1-	4,8		48	97	57	36	6	●●
DC170-08-04.900A1-	4,9		48	97	57	36	6	●●
DC170-08-05.000A1-	5		48	97	57	36	6	●●
DC170-08-05.100A1-	5,1		48	97	57	36	6	●●
DC170-08-05.159A1-	5,159	13/64"	48	97	57	36	6	●●
DC170-08-05.200A1-	5,2		48	97	57	36	6	●●
DC170-08-05.300A1-	5,3		48	97	57	36	6	●●
DC170-08-05.400A1-	5,4		48	97	57	36	6	●●
DC170-08-05.500A1-	5,5		48	97	57	36	6	●●
DC170-08-05.556A1-	5,556	7/32"	48	97	57	36	6	●●
DC170-08-05.600A1-	5,6		48	97	57	36	6	●●
DC170-08-05.700A1-	5,7		48	97	57	36	6	●●
DC170-08-05.800A1-	5,8		48	97	57	36	6	●●
DC170-08-05.900A1-	5,9		48	97	57	36	6	●●
DC170-08-05.953A1-	5,953	15/64"	48	97	57	36	6	●●
DC170-08-06.000A1-	6		48	97	57	36	6	●●
DC170-08-06.100A1-	6,1		55	106	66	36	8	●●
DC170-08-06.200A1-	6,2		55	106	66	36	8	●●
DC170-08-06.300A1-	6,3		55	106	66	36	8	●●
DC170-08-06.350A1-	6,35	1/4"	55	106	66	36	8	●●

Ordering example for the WJ30EJ grade: DC170-08-03.000A1-WJ30EJ

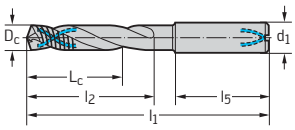
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XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-08-06.400A1-	6,4		55	106	66	36	8	●
DC170-08-06.500A1-	6,5		55	106	66	36	8	●
DC170-08-06.600A1-	6,6		55	106	66	36	8	●
DC170-08-06.700A1-	6,7		55	106	66	36	8	●
DC170-08-06.747A1-	6,747	17/64"	55	106	66	36	8	●
DC170-08-06.800A1-	6,8		55	106	66	36	8	●
DC170-08-06.900A1-	6,9		55	106	66	36	8	●
DC170-08-07.000A1-	7		55	106	66	36	8	●
DC170-08-07.100A1-	7,1		64	116	76	36	8	●
DC170-08-07.144A1-	7,144	9/32"	64	116	76	36	8	●
DC170-08-07.200A1-	7,2		64	116	76	36	8	●
DC170-08-07.300A1-	7,3		64	116	76	36	8	●
DC170-08-07.400A1-	7,4		64	116	76	36	8	●
DC170-08-07.500A1-	7,5		64	116	76	36	8	●
DC170-08-07.541A1-	7,541	19/64"	64	116	76	36	8	●
DC170-08-07.600A1-	7,6		64	116	76	36	8	●
DC170-08-07.700A1-	7,7		64	116	76	36	8	●
DC170-08-07.800A1-	7,8		64	116	76	36	8	●
DC170-08-07.900A1-	7,9		64	116	76	36	8	●
DC170-08-07.938A1-	7,938	5/16"	64	116	76	36	8	●
DC170-08-08.000A1-	8		64	116	76	36	8	●
DC170-08-08.100A1-	8,1		80	139	95	40	10	●
DC170-08-08.200A1-	8,2		80	139	95	40	10	●
DC170-08-08.300A1-	8,3		80	139	95	40	10	●
DC170-08-08.334A1-	8,334	21/64"	80	139	95	40	10	●
DC170-08-08.400A1-	8,4		80	139	95	40	10	●
DC170-08-08.500A1-	8,5		80	139	95	40	10	●
DC170-08-08.600A1-	8,6		80	139	95	40	10	●
DC170-08-08.700A1-	8,7		80	139	95	40	10	●
DC170-08-08.731A1-	8,731	11/32"	80	139	95	40	10	●
DC170-08-08.800A1-	8,8		80	139	95	40	10	●
DC170-08-08.900A1-	8,9		80	139	95	40	10	●
DC170-08-09.000A1-	9		80	139	95	40	10	●
DC170-08-09.100A1-	9,1		80	139	95	40	10	●
DC170-08-09.128A1-	9,128	23/64"	80	139	95	40	10	●
DC170-08-09.200A1-	9,2		80	139	95	40	10	●
DC170-08-09.300A1-	9,3		80	139	95	40	10	●
DC170-08-09.400A1-	9,4		80	139	95	40	10	●
DC170-08-09.500A1-	9,5		80	139	95	40	10	●
DC170-08-09.525A1-	9,525	3/8"	80	139	95	40	10	●
DC170-08-09.600A1-	9,6		80	139	95	40	10	●
DC170-08-09.700A1-	9,7		80	139	95	40	10	●
DC170-08-09.800A1-	9,8		80	139	95	40	10	●
DC170-08-09.900A1-	9,9		80	139	95	40	10	●
DC170-08-09.922A1-	9,922	25/64"	80	139	95	40	10	●
DC170-08-10.000A1-	10		80	139	95	40	10	●
DC170-08-10.100A1-	10,1		96	163	114	45	12	●
DC170-08-10.200A1-	10,2		96	163	114	45	12	●
DC170-08-10.300A1-	10,3		96	163	114	45	12	●
DC170-08-10.319A1-	10,319	13/32"	96	163	114	45	12	●
DC170-08-10.400A1-	10,4		96	163	114	45	12	●
DC170-08-10.500A1-	10,5		96	163	114	45	12	●
DC170-08-10.600A1-	10,6		96	163	114	45	12	●
DC170-08-10.700A1-	10,7		96	163	114	45	12	●
DC170-08-10.716A1-	10,716	27/64"	96	163	114	45	12	●
DC170-08-10.800A1-	10,8		96	163	114	45	12	●
DC170-08-10.900A1-	10,9		96	163	114	45	12	●
DC170-08-11.000A1-	11		96	163	114	45	12	●
DC170-08-11.100A1-	11,1		96	163	114	45	12	●
DC170-08-11.113A1-	11,113	7/16"	96	163	114	45	12	●
DC170-08-11.200A1-	11,2		96	163	114	45	12	●

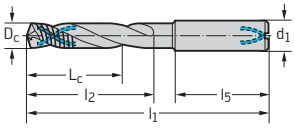
Ordering example for the WJ30EJ grade: DC170-08-03.000A1-WJ30EJ

Continued

XIII D 1 B 414 B 430

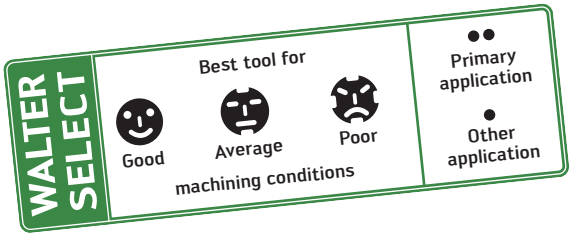
Continued

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-08-11.300A1-	11,3		96	163	114	45	12	●●
DC170-08-11.400A1-	11,4		96	163	114	45	12	●●
DC170-08-11.500A1-	11,5		96	163	114	45	12	●●
DC170-08-11.509A1-	11,509	29/64"	96	163	114	45	12	●●
DC170-08-11.600A1-	11,6		96	163	114	45	12	●●
DC170-08-11.700A1-	11,7		96	163	114	45	12	●●
DC170-08-11.800A1-	11,8		96	163	114	45	12	●●
DC170-08-11.900A1-	11,9		96	163	114	45	12	●●
DC170-08-11.906A1-	11,906	15/32"	96	163	114	45	12	●●
DC170-08-12.000A1-	12		96	163	114	45	12	●●
DC170-08-12.303A1-	12,303	31/64"	119	182	133	45	14	●●
DC170-08-12.500A1-	12,5		119	182	133	45	14	●●
DC170-08-12.700A1-	12,7	1/2"	119	182	133	45	14	●●
DC170-08-13.000A1-	13		119	182	133	45	14	●●
DC170-08-13.494A1-	13,494	17/32"	119	182	133	45	14	●●
DC170-08-13.500A1-	13,5		119	182	133	45	14	●●
DC170-08-14.000A1-	14		119	182	133	45	14	●●
DC170-08-14.288A1-	14,288	9/16"	136	204	152	48	16	●●
DC170-08-14.500A1-	14,5		136	204	152	48	16	●●
DC170-08-15.000A1-	15		136	204	152	48	16	●●
DC170-08-15.500A1-	15,5		136	204	152	48	16	●●
DC170-08-15.875A1-	15,875	5/8"	136	204	152	48	16	●●
DC170-08-16.000A1-	16		136	204	152	48	16	●●
DC170-08-16.500A1-	16,5		153	223	171	48	18	●●
DC170-08-17.000A1-	17		153	223	171	48	18	●●
DC170-08-17.500A1-	17,5		153	223	171	48	18	●●
DC170-08-18.000A1-	18		153	223	171	48	18	●●
DC170-08-18.500A1-	18,5		170	244	190	50	20	●●
DC170-08-19.000A1-	19		170	244	190	50	20	●●
DC170-08-19.050A1-	19,05	3/4"	170	244	190	50	20	●●
DC170-08-19.500A1-	19,5		170	244	190	50	20	●●
DC170-08-20.000A1-	20		170	244	190	50	20	●●

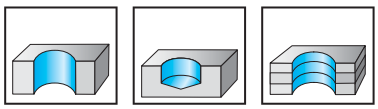
Ordering example for the WJ30EJ grade: DC170-08-03.000A1-WJ30EJ

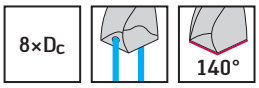


XIII D 1 B 414 B 430

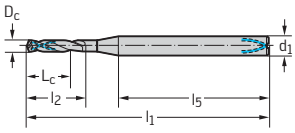
Solid carbide micro drills with coolant-through
A6489AMP
X-treme DM8







	P	M	K	N	S	H	O
AMP	●●	●●	●●	●●	●●	●	●

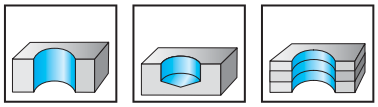


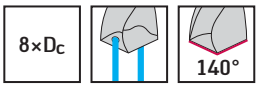
	Designation AMP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	A6489AMP-2	2		20	63	23	35	3
	A6489AMP-2.05	2,05		20	63	24	35	3
	A6489AMP-2.1	2,1		20	63	24	35	3
	A6489AMP-2.15	2,15		21	63	25	34	3
	A6489AMP-2.2	2,2		21	63	25	34	3
	A6489AMP-2.25	2,25		22	67	26	37	3
	A6489AMP-2.3	2,3		22	67	26	37	3
	A6489AMP-2.35	2,35		24	67	28	35	3
	A6489AMP-3/32IN	2,381	3/32"	24	67	28	35	3
	A6489AMP-2.4	2,4		24	67	28	35	3
	A6489AMP-2.45	2,45		25	67	29	34	3
	A6489AMP-2.5	2,5		25	67	29	34	3
	A6489AMP-2.55	2,55		26	71	30	37	3
	A6489AMP-2.6	2,6		26	71	30	37	3
	A6489AMP-2.65	2,65		26	71	31	37	3
	A6489AMP-2.7	2,7		26	71	31	37	3
	A6489AMP-2.75	2,75		27	71	32	36	3
	A6489AMP-7/64IN	2,778	7/64"	27	71	32	36	3
	A6489AMP-2.8	2,8		27	71	32	36	3
	A6489AMP-2.85	2,85		28	71	33	35	3
	A6489AMP-2.9	2,9		28	71	33	35	3
	A6489AMP-2.95	2,95		29	71	34	34	3

XIII D 1 B 414 B 430

Solid carbide micro drills with coolant-through
A6488TML
Alpha® 4 Plus Micro

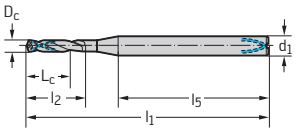




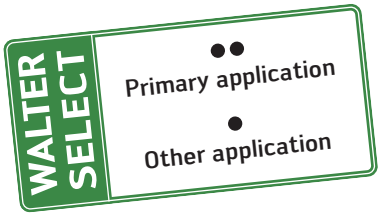


	P	M	K	N	S	H	O
TML	●●	●●	●●	●●	●●	●	●●

Shank DIN 6535 HA



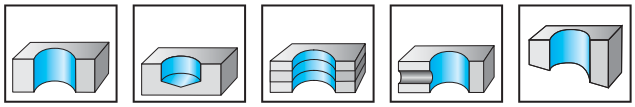
Designation TML	Dc m7 mm	Dc inches/no.	Lc mm	l1 mm	l2 mm	l5 mm	d1 h6 mm
A6488TML-0.75	0,75		8,5	55	10	38	3
A6488TML-1/32IN	0,794	1/32"	8,5	55	10	39	3
A6488TML-0.8	0,8		8,5	55	10	38	3
A6488TML-0.88	0,88		8,5	55	10	37	3
A6488TML-0.9	0,9		8,5	55	10	37	3
A6488TML-0.95	0,95		8,5	55	10	37	3
A6488TML-1	1		12	55	15	36	3
A6488TML-1.05	1,05		12	55	15	36	3
A6488TML-1.08	1,08		12	55	15	36	3
A6488TML-1.1	1,1		12	55	15	36	3
A6488TML-1.15	1,15		12	55	15	36	3
A6488TML-3/64IN	1,191	3/64"	12	55	15	35	3
A6488TML-1.2	1,2		12	55	15	35	3
A6488TML-1.25	1,25		12	55	15	35	3
A6488TML-1.3	1,3		12	55	15	34	3
A6488TML-1.35	1,35		12	55	15	34	3
A6488TML-1.4	1,4		12	55	15	33	3
A6488TML-1.45	1,45		12	55	15	33	3
A6488TML-1.5	1,5		17	68	20	46	3
A6488TML-1.55	1,55		17	68	20	46	3
A6488TML-1/16IN	1,588	1/16"	17	68	20	45	3
A6488TML-1.6	1,6		17	68	20	45	3
A6488TML-1.65	1,65		17	68	20	45	3
A6488TML-1.7	1,7		17	68	20	44	3
A6488TML-1.75	1,75		17	68	20	44	3
A6488TML-1.8	1,8		17	68	20	44	3
A6488TML-1.82	1,82		17	68	20	43	3
A6488TML-1.85	1,85		17	68	20	44	3
A6488TML-1.9	1,9		17	68	20	43	3
A6488TML-1.95	1,95		17	68	20	43	3
A6488TML-5/64IN	1,984	5/64"	17	68	20	43	3

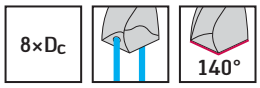


D 1
B 414
B 430

Solid carbide drills with coolant-through
A6489DPP
X-treme D8

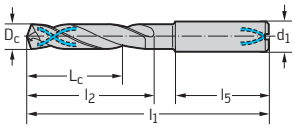






	P	M	K	N	S	H	O
DPP	●●	●●	●●	●●	●●	●●	●

Shank DIN 6535 HA



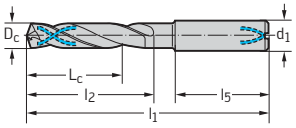
Designation DPP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6489DPP-3	3		28	74	34	36	6
A6489DPP-3.1	3,1		28	74	34	36	6
A6489DPP-1/8IN	3,175	1/8"	28	74	34	36	6
A6489DPP-3.2	3,2		28	74	34	36	6
A6489DPP-3.3	3,3		28	74	34	36	6
A6489DPP-3.4	3,4		28	74	34	36	6
A6489DPP-3.5	3,5		28	74	34	36	6
A6489DPP-9/64IN	3,572	9/64"	28	74	34	36	6
A6489DPP-3.6	3,6		28	74	34	36	6
A6489DPP-3.7	3,7		28	74	34	36	6
A6489DPP-3.8	3,8		37	85	45	36	6
A6489DPP-3.9	3,9		37	85	45	36	6
A6489DPP-5/32IN	3,969	5/32"	37	85	45	36	6
A6489DPP-4	4		37	85	45	36	6
A6489DPP-4.1	4,1		37	85	45	36	6
A6489DPP-4.2	4,2		37	85	45	36	6
A6489DPP-4.3	4,3		37	85	45	36	6
A6489DPP-11/64IN	4,366	11/64"	37	85	45	36	6
A6489DPP-4.4	4,4		37	85	45	36	6
A6489DPP-4.5	4,5		37	85	45	36	6
A6489DPP-4.6	4,6		37	85	45	36	6
A6489DPP-4.7	4,7		37	85	45	36	6
A6489DPP-3/16IN	4,763	3/16"	48	97	57	36	6
A6489DPP-4.8	4,8		48	97	57	36	6
A6489DPP-4.9	4,9		48	97	57	36	6
A6489DPP-5	5		48	97	57	36	6
A6489DPP-5.1	5,1		48	97	57	36	6
A6489DPP-13/64IN	5,159	13/64"	48	97	57	36	6
A6489DPP-5.2	5,2		48	97	57	36	6
A6489DPP-5.3	5,3		48	97	57	36	6
A6489DPP-5.4	5,4		48	97	57	36	6
A6489DPP-5.5	5,5		48	97	57	36	6
A6489DPP-7/32IN	5,556	7/32"	48	97	57	36	6
A6489DPP-5.6	5,6		48	97	57	36	6
A6489DPP-5.7	5,7		48	97	57	36	6
A6489DPP-5.8	5,8		48	97	57	36	6
A6489DPP-5.9	5,9		48	97	57	36	6
A6489DPP-15/64IN	5,953	15/64"	48	97	57	36	6
A6489DPP-6	6		48	97	57	36	6
A6489DPP-6.1	6,1		55	106	66	36	8
A6489DPP-6.2	6,2		55	106	66	36	8
A6489DPP-6.3	6,3		55	106	66	36	8
A6489DPP-1/4IN	6,35	1/4"	55	106	66	36	8
A6489DPP-6.4	6,4		55	106	66	36	8
A6489DPP-6.5	6,5		55	106	66	36	8
A6489DPP-6.6	6,6		55	106	66	36	8
A6489DPP-6.7	6,7		55	106	66	36	8
A6489DPP-17/64IN	6,747	17/64"	55	106	66	36	8

Continued

XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HA



Designation DPP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6489DPP-6.8	6,8		55	106	66	36	8
A6489DPP-6.9	6,9		55	106	66	36	8
A6489DPP-7	7		55	106	66	36	8
A6489DPP-7.1	7,1		64	116	76	36	8
A6489DPP-9/32IN	7,144	9/32"	64	116	76	36	8
A6489DPP-7.2	7,2		64	116	76	36	8
A6489DPP-7.3	7,3		64	116	76	36	8
A6489DPP-7.4	7,4		64	116	76	36	8
A6489DPP-7.5	7,5		64	116	76	36	8
A6489DPP-19/64IN	7,541	19/64"	64	116	76	36	8
A6489DPP-7.6	7,6		64	116	76	36	8
A6489DPP-7.7	7,7		64	116	76	36	8
A6489DPP-7.8	7,8		64	116	76	36	8
A6489DPP-7.9	7,9		64	116	76	36	8
A6489DPP-5/16IN	7,938	5/16"	64	116	76	36	8
A6489DPP-8	8		64	116	76	36	8
A6489DPP-8.1	8,1		80	139	95	40	10
A6489DPP-8.2	8,2		80	139	95	40	10
A6489DPP-8.3	8,3		80	139	95	40	10
A6489DPP-21/64IN	8,334	21/64"	80	139	95	40	10
A6489DPP-8.4	8,4		80	139	95	40	10
A6489DPP-8.5	8,5		80	139	95	40	10
A6489DPP-8.6	8,6		80	139	95	40	10
A6489DPP-8.7	8,7		80	139	95	40	10
A6489DPP-11/32IN	8,731	11/32"	80	139	95	40	10
A6489DPP-8.8	8,8		80	139	95	40	10
A6489DPP-8.9	8,9		80	139	95	40	10
A6489DPP-9	9		80	139	95	40	10
A6489DPP-9.1	9,1		80	139	95	40	10
A6489DPP-23/64IN	9,128	23/64"	80	139	95	40	10
A6489DPP-9.2	9,2		80	139	95	40	10
A6489DPP-9.3	9,3		80	139	95	40	10
A6489DPP-9.4	9,4		80	139	95	40	10
A6489DPP-9.5	9,5		80	139	95	40	10
A6489DPP-3/8IN	9,525	3/8"	80	139	95	40	10
A6489DPP-9.6	9,6		80	139	95	40	10
A6489DPP-9.7	9,7		80	139	95	40	10
A6489DPP-9.8	9,8		80	139	95	40	10
A6489DPP-9.9	9,9		80	139	95	40	10
A6489DPP-25/64IN	9,922	25/64"	80	139	95	40	10
A6489DPP-10	10		80	139	95	40	10
A6489DPP-10.1	10,1		96	163	114	45	12
A6489DPP-10.2	10,2		96	163	114	45	12
A6489DPP-10.3	10,3		96	163	114	45	12
A6489DPP-13/32IN	10,319	13/32"	96	163	114	45	12
A6489DPP-10.4	10,4		96	163	114	45	12
A6489DPP-10.5	10,5		96	163	114	45	12
A6489DPP-10.6	10,6		96	163	114	45	12
A6489DPP-10.7	10,7		96	163	114	45	12
A6489DPP-27/64IN	10,716	27/64"	96	163	114	45	12
A6489DPP-10.8	10,8		96	163	114	45	12
A6489DPP-10.9	10,9		96	163	114	45	12
A6489DPP-11	11		96	163	114	45	12
A6489DPP-11.1	11,1		96	163	114	45	12
A6489DPP-7/16IN	11,113	7/16"	96	163	114	45	12
A6489DPP-11.2	11,2		96	163	114	45	12
A6489DPP-11.3	11,3		96	163	114	45	12
A6489DPP-11.4	11,4		96	163	114	45	12

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WALTER SELECT

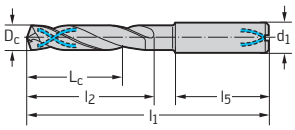
●● Primary application

● Other application

XIII D 1 B 414 B 430

Continued

Shank DIN 6535 HA

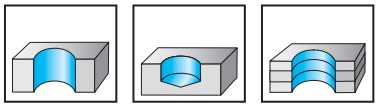


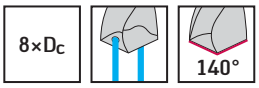
Designation DPP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6489DPP-11.5	11,5		96	163	114	45	12
A6489DPP-29/64IN	11,509	29/64"	96	163	114	45	12
A6489DPP-11.6	11,6		96	163	114	45	12
A6489DPP-11.7	11,7		96	163	114	45	12
A6489DPP-11.8	11,8		96	163	114	45	12
A6489DPP-11.9	11,9		96	163	114	45	12
A6489DPP-15/32IN	11,906	15/32"	96	163	114	45	12
A6489DPP-12	12		96	163	114	45	12
A6489DPP-31/64IN	12,303	31/64"	119	182	133	45	14
A6489DPP-12.5	12,5		119	182	133	45	14
A6489DPP-1/2IN	12,7	1/2"	119	182	133	45	14
A6489DPP-13	13		119	182	133	45	14
A6489DPP-17/32IN	13,494	17/32"	119	182	133	45	14
A6489DPP-13.5	13,5		119	182	133	45	14
A6489DPP-14	14		119	182	133	45	14
A6489DPP-9/16IN	14,288	9/16"	136	204	152	48	16
A6489DPP-14.5	14,5		136	204	152	48	16
A6489DPP-15	15		136	204	152	48	16
A6489DPP-15.5	15,5		136	204	152	48	16
A6489DPP-5/8IN	15,875	5/8"	136	204	152	48	16
A6489DPP-16	16		136	204	152	48	16
A6489DPP-16.5	16,5		153	223	171	48	18
A6489DPP-17	17		153	223	171	48	18
A6489DPP-17.5	17,5		153	223	171	48	18
A6489DPP-18	18		153	223	171	48	18
A6489DPP-18.5	18,5		170	244	190	50	20
A6489DPP-19	19		170	244	190	50	20
A6489DPP-3/4IN	19,05	3/4"	170	244	190	50	20
A6489DPP-19.5	19,5		170	244	190	50	20
A6489DPP-20	20		170	244	190	50	20

XIII D 1 B 414 B 430

Solid carbide drills with coolant-through
A6493TTP
X-treme Inox

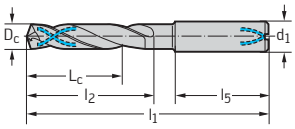






	P	M	K	N	S	H	O
TTP	●	●●		●	●●		●

Shank DIN 6535 HA



Designation TTP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6493TTP-3	3		28	74	34	36	6
A6493TTP-3.1	3,1		28	74	34	36	6
A6493TTP-1/8IN	3,175	1/8"	28	74	34	36	6
A6493TTP-3.2	3,2		28	74	34	36	6
A6493TTP-3.3	3,3		28	74	34	36	6
A6493TTP-3.4	3,4		28	74	34	36	6
A6493TTP-3.5	3,5		28	74	34	36	6
A6493TTP-3.7	3,7		28	74	34	36	6
A6493TTP-3.8	3,8		37	85	45	36	6
A6493TTP-3.9	3,9		37	85	45	36	6
A6493TTP-4	4		37	85	45	36	6
A6493TTP-4.1	4,1		37	85	45	36	6
A6493TTP-4.2	4,2		37	85	45	36	6
A6493TTP-4.3	4,3		37	85	45	36	6
A6493TTP-4.5	4,5		37	85	45	36	6
A6493TTP-4.7	4,7		37	85	45	36	6
A6493TTP-3/16IN	4,763	3/16"	48	97	57	36	6
A6493TTP-4.8	4,8		48	97	57	36	6
A6493TTP-5	5		48	97	57	36	6
A6493TTP-5.1	5,1		48	97	57	36	6
A6493TTP-5.2	5,2		48	97	57	36	6
A6493TTP-5.5	5,5		48	97	57	36	6
A6493TTP-5.6	5,6		48	97	57	36	6
A6493TTP-5.8	5,8		48	97	57	36	6
A6493TTP-6	6		48	97	57	36	6
A6493TTP-6.1	6,1		55	106	66	36	8
A6493TTP-6.2	6,2		55	106	66	36	8
A6493TTP-6.3	6,3		55	106	66	36	8
A6493TTP-1/4IN	6,35	1/4"	55	106	66	36	8
A6493TTP-6.4	6,4		55	106	66	36	8
A6493TTP-6.5	6,5		55	106	66	36	8
A6493TTP-6.6	6,6		55	106	66	36	8
A6493TTP-6.7	6,7		55	106	66	36	8
A6493TTP-6.8	6,8		55	106	66	36	8
A6493TTP-6.9	6,9		55	106	66	36	8
A6493TTP-7	7		55	106	66	36	8
A6493TTP-9/32IN	7,144	9/32"	64	116	76	36	8
A6493TTP-7.5	7,5		64	116	76	36	8
A6493TTP-7.6	7,6		64	116	76	36	8
A6493TTP-7.7	7,7		64	116	76	36	8
A6493TTP-8	8		64	116	76	36	8
A6493TTP-8.1	8,1		80	139	95	40	10
A6493TTP-8.2	8,2		80	139	95	40	10
A6493TTP-8.4	8,4		80	139	95	40	10

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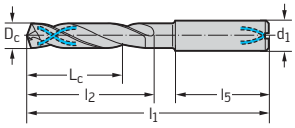
WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 416 B 430

Continued

	Designation TTP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	A6493TTP-8.5	8,5		80	139	95	40	10
	A6493TTP-8.6	8,6		80	139	95	40	10
	A6493TTP-8.7	8,7		80	139	95	40	10
	A6493TTP-8.8	8,8		80	139	95	40	10
	A6493TTP-9	9		80	139	95	40	10
	A6493TTP-9.2	9,2		80	139	95	40	10
	A6493TTP-9.3	9,3		80	139	95	40	10
	A6493TTP-9.5	9,5		80	139	95	40	10
	A6493TTP-9.8	9,8		80	139	95	40	10
	A6493TTP-10	10		80	139	95	40	10
	A6493TTP-10.2	10,2		96	163	114	45	12
	A6493TTP-10.5	10,5		96	163	114	45	12
	A6493TTP-11	11		96	163	114	45	12
	A6493TTP-11.5	11,5		96	163	114	45	12
	A6493TTP-12	12		96	163	114	45	12
	A6493TTP-12.5	12,5		119	182	133	45	14
	A6493TTP-13	13		119	182	133	45	14
	A6493TTP-14	14		119	182	133	45	14
	A6493TTP-15	15		136	204	152	48	16
	A6493TTP-16	16		136	204	152	48	16

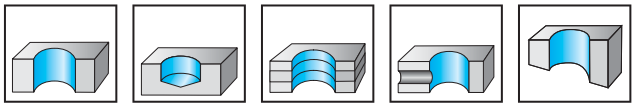
XIII D 1 B 416 B 430

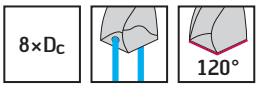
Solid carbide drills with coolant-through, straight-fluted

A3487

Alpha® Jet

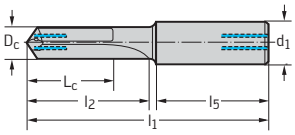






	P	M	K	N	S	H	O
Uncoated			●	●			●

Shank DIN 6535 HA



Designation Uncoated	D_c k6 mm	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3487-5	5	45	101	63	36	6
A3487-6	6	45	101	63	36	6
A3487-8	8	59	117	79	36	8
A3487-9	9	71	133	91	40	10
A3487-10	10	71	133	91	40	10
A3487-11	11	80	151	104	45	12
A3487-12	12	80	151	104	45	12
A3487-14	14	85	160	113	45	14
A3487-15	15	104	178	128	48	16
A3487-16	16	104	178	128	48	16
A3487-17	17	114	191	141	48	18
A3487-18	18	114	191	141	48	18
A3487-20	20	123	205	153	50	20

WALTER SELECT

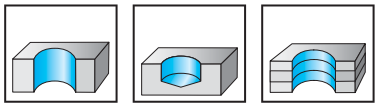
●● Primary application

● Other application

XIII D 1 B 416 B 430

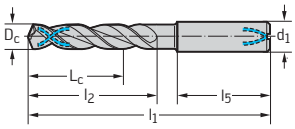
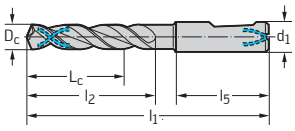
Solid carbide drills with coolant-through
A3486TIP / A3586TIP
Alpha® 44





8×D_c | 130°

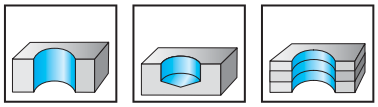
TIP	P	M	K	N	S	H	O
	●●	●	●	●●	●		●

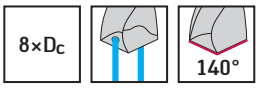
	Designation TIP	D_c m7 mm	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	A3486TIP-5	5	54	101	63	36	6
	A3486TIP-5.1	5,1	54	101	63	36	6
	A3486TIP-5.2	5,2	54	101	63	36	6
	A3486TIP-5.5	5,5	54	101	63	36	6
	A3486TIP-5.8	5,8	54	101	63	36	6
	A3486TIP-6	6	54	101	63	36	6
	A3486TIP-6.1	6,1	67	117	79	36	8
	A3486TIP-6.5	6,5	67	117	79	36	8
	A3486TIP-6.6	6,6	67	117	79	36	8
	A3486TIP-6.8	6,8	67	117	79	36	8
	A3486TIP-7	7	67	117	79	36	8
	A3486TIP-7.5	7,5	67	117	79	36	8
	A3486TIP-7.8	7,8	67	117	79	36	8
	A3486TIP-8	8	67	117	79	36	8
	A3486TIP-8.1	8,1	76	133	91	40	10
	A3486TIP-8.5	8,5	76	133	91	40	10
	A3486TIP-9	9	76	133	91	40	10
	A3486TIP-9.5	9,5	76	133	91	40	10
	A3486TIP-10	10	76	133	91	40	10
	A3486TIP-10.2	10,2	86	151	104	45	12
	A3486TIP-10.5	10,5	86	151	104	45	12
	A3486TIP-11	11	86	151	104	45	12
	A3486TIP-12	12	86	151	104	45	12
Shank DIN 6535 HE	A3586TIP-5	5	54	101	63	36	6
	A3586TIP-5.1	5,1	54	101	63	36	6
	A3586TIP-5.5	5,5	54	101	63	36	6
	A3586TIP-5.8	5,8	54	101	63	36	6
	A3586TIP-6	6	54	101	63	36	6
	A3586TIP-6.1	6,1	67	117	79	36	8
	A3586TIP-6.5	6,5	67	117	79	36	8
	A3586TIP-6.6	6,6	67	117	79	36	8
	A3586TIP-6.8	6,8	67	117	79	36	8
	A3586TIP-7	7	67	117	79	36	8
	A3586TIP-7.5	7,5	67	117	79	36	8
	A3586TIP-7.8	7,8	67	117	79	36	8
	A3586TIP-8	8	67	117	79	36	8
	A3586TIP-8.1	8,1	76	133	91	40	10
	A3586TIP-8.5	8,5	76	133	91	40	10
	A3586TIP-9	9	76	133	91	40	10
	A3586TIP-9.5	9,5	76	133	91	40	10
	A3586TIP-10	10	76	133	91	40	10
	A3586TIP-10.5	10,5	86	151	104	45	12
	A3586TIP-11	11	86	151	104	45	12
	A3586TIP-12	12	86	151	104	45	12

XIII | D 1 | B 416 | B 430

Solid carbide drills with coolant-through
DC150 Perform

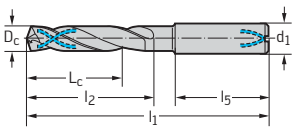






	P	M	K	N	S	H	O
WJ30TA	●●	●	●●	●●	●●	●	●

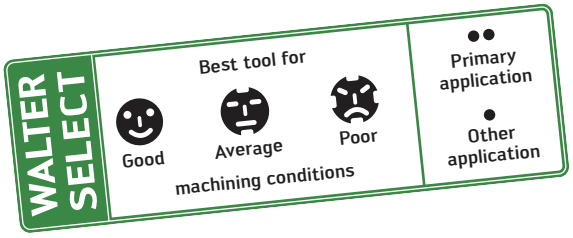
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30TA
DC150-08-03.000A1-	3		28	74	34	36	6	●
DC150-08-03.100A1-	3,1		28	74	34	36	6	●
DC150-08-03.175A1-	3,175	1/8"	28	74	34	36	6	●
DC150-08-03.200A1-	3,2		28	74	34	36	6	●
DC150-08-03.300A1-	3,3		28	74	34	36	6	●
DC150-08-03.400A1-	3,4		28	74	34	36	6	●
DC150-08-03.500A1-	3,5		28	74	34	36	6	●
DC150-08-03.572A1-	3,572	9/64"	28	74	34	36	6	●
DC150-08-03.600A1-	3,6		28	74	34	36	6	●
DC150-08-03.700A1-	3,7		28	74	34	36	6	●
DC150-08-03.800A1-	3,8		37	85	45	36	6	●
DC150-08-03.900A1-	3,9		37	85	45	36	6	●
DC150-08-03.969A1-	3,969	5/32"	37	85	45	36	6	●
DC150-08-04.000A1-	4		37	85	45	36	6	●
DC150-08-04.100A1-	4,1		37	85	45	36	6	●
DC150-08-04.200A1-	4,2		37	85	45	36	6	●
DC150-08-04.300A1-	4,3		37	85	45	36	6	●
DC150-08-04.366A1-	4,366	11/64"	37	85	45	36	6	●
DC150-08-04.400A1-	4,4		37	85	45	36	6	●
DC150-08-04.500A1-	4,5		37	85	45	36	6	●
DC150-08-04.600A1-	4,6		37	85	45	36	6	●
DC150-08-04.700A1-	4,7		37	85	45	36	6	●
DC150-08-04.763A1-	4,7		37	85	45	36	6	●
DC150-08-04.800A1-	4,8		48	97	57	36	6	●
DC150-08-04.900A1-	4,9		48	97	57	36	6	●
DC150-08-05.000A1-	5		48	97	57	36	6	●
DC150-08-05.100A1-	5,1		48	97	57	36	6	●
DC150-08-05.159A1-	5,159	13/64"	48	97	57	36	6	●
DC150-08-05.200A1-	5,2		48	97	57	36	6	●
DC150-08-05.300A1-	5,3		48	97	57	36	6	●
DC150-08-05.400A1-	5,4		48	97	57	36	6	●
DC150-08-05.500A1-	5,5		48	97	57	36	6	●
DC150-08-05.556A1-	5,556	7/32"	48	97	57	36	6	●
DC150-08-05.600A1-	5,6		48	97	57	36	6	●
DC150-08-05.700A1-	5,7		48	97	57	36	6	●
DC150-08-05.800A1-	5,8		48	97	57	36	6	●
DC150-08-05.900A1-	5,9		48	97	57	36	6	●
DC150-08-05.953A1-	5,953	15/64"	48	97	57	36	6	●
DC150-08-06.000A1-	6		48	97	57	36	6	●
DC150-08-06.100A1-	6,1		55	106	66	36	8	●
DC150-08-06.200A1-	6,2		55	106	66	36	8	●
DC150-08-06.300A1-	6,3		55	106	66	36	8	●
DC150-08-06.350A1-	6,35	1/4"	55	106	66	36	8	●

Ordering example for the WJ30TA grade: DC150-08-03.000A1-WJ30TA

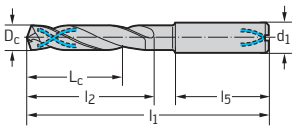
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XIII
D 1
B 416
B 430

Continued

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30TA
DC150-08-06.400A1-	6,4		55	106	66	36	8	●
DC150-08-06.500A1-	6,5		55	106	66	36	8	●
DC150-08-06.600A1-	6,6		55	106	66	36	8	●
DC150-08-06.700A1-	6,7		55	106	66	36	8	●
DC150-08-06.747A1-	6,747	17/64"	55	106	66	36	8	●
DC150-08-06.800A1-	6,8		55	106	66	36	8	●
DC150-08-06.900A1-	6,9		55	106	66	36	8	●
DC150-08-07.000A1-	7		55	106	66	36	8	●
DC150-08-07.100A1-	7,1		64	116	76	36	8	●
DC150-08-07.144A1-	7,144	9/32"	64	116	76	36	8	●
DC150-08-07.200A1-	7,2		64	116	76	36	8	●
DC150-08-07.300A1-	7,3		64	116	76	36	8	●
DC150-08-07.400A1-	7,4		64	116	76	36	8	●
DC150-08-07.500A1-	7,5		64	116	76	36	8	●
DC150-08-07.541A1-	7,541	19/64"	64	116	76	36	8	●
DC150-08-07.600A1-	7,6		64	116	76	36	8	●
DC150-08-07.700A1-	7,7		64	116	76	36	8	●
DC150-08-07.800A1-	7,8		64	116	76	36	8	●
DC150-08-07.900A1-	7,9		64	116	76	36	8	●
DC150-08-07.938A1-	7,938	5/16"	64	116	76	36	8	●
DC150-08-08.000A1-	8		64	116	76	36	8	●
DC150-08-08.100A1-	8,1		80	139	95	40	10	●
DC150-08-08.200A1-	8,2		80	139	95	40	10	●
DC150-08-08.300A1-	8,3		80	139	95	40	10	●
DC150-08-08.334A1-	8,334	21/64"	80	139	95	40	10	●
DC150-08-08.400A1-	8,4		80	139	95	40	10	●
DC150-08-08.500A1-	8,5		80	139	95	40	10	●
DC150-08-08.600A1-	8,6		80	139	95	40	10	●
DC150-08-08.700A1-	8,7		80	139	95	40	10	●
DC150-08-08.731A1-	8,731	11/32"	80	139	95	40	10	●
DC150-08-08.800A1-	8,8		80	139	95	40	10	●
DC150-08-08.900A1-	8,9		80	139	95	40	10	●
DC150-08-09.000A1-	9		80	139	95	40	10	●
DC150-08-09.100A1-	9,1		80	139	95	40	10	●
DC150-08-09.128A1-	9,128	23/64"	80	139	95	40	10	●
DC150-08-09.200A1-	9,2		80	139	95	40	10	●
DC150-08-09.300A1-	9,3		80	139	95	40	10	●
DC150-08-09.400A1-	9,4		80	139	95	40	10	●
DC150-08-09.500A1-	9,5		80	139	95	40	10	●
DC150-08-09.525A1-	9,525	3/8"	80	139	95	40	10	●
DC150-08-09.600A1-	9,6		80	139	95	40	10	●
DC150-08-09.700A1-	9,7		80	139	95	40	10	●
DC150-08-09.800A1-	9,8		80	139	95	40	10	●
DC150-08-09.900A1-	9,9		80	139	95	40	10	●
DC150-08-09.922A1-	9,922	25/64"	80	139	95	40	10	●
DC150-08-10.000A1-	10		80	139	95	40	10	●
DC150-08-10.100A1-	10,1		96	163	114	45	12	●
DC150-08-10.200A1-	10,2		96	163	114	45	12	●
DC150-08-10.300A1-	10,3		96	163	114	45	12	●
DC150-08-10.319A1-	10,319	13/32"	96	163	114	45	12	●
DC150-08-10.400A1-	10,4		96	163	114	45	12	●
DC150-08-10.500A1-	10,5		96	163	114	45	12	●
DC150-08-10.700A1-	10,7		96	163	114	45	12	●
DC150-08-10.716A1-	10,716	27/64"	96	163	114	45	12	●
DC150-08-10.800A1-	10,8		96	163	114	45	12	●
DC150-08-10.900A1-	10,9		96	163	114	45	12	●
DC150-08-11.000A1-	11		96	163	114	45	12	●
DC150-08-11.100A1-	11,1		96	163	114	45	12	●
DC150-08-11.113A1-	11,113	7/16"	96	163	114	45	12	●
DC150-08-11.200A1-	11,2		96	163	114	45	12	●
DC150-08-11.300A1-	11,3		96	163	114	45	12	●

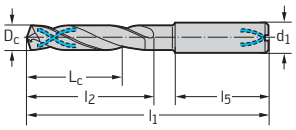
Ordering example for the WJ30TA grade: DC150-08-03.000A1-WJ30TA

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XIII D 1 B 416 B 430

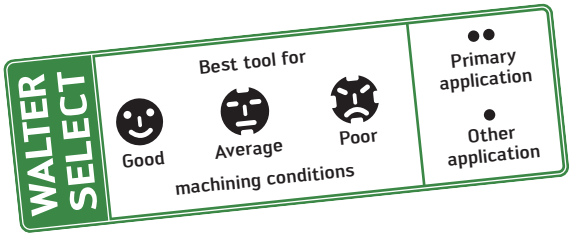
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Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30TA
DC150-08-11.500A1-	11,5		96	163	114	45	12	☹
DC150-08-11.600A1-	11,6		96	163	114	45	12	☹
DC150-08-11.700A1-	11,7		96	163	114	45	12	☹
DC150-08-11.800A1-	11,8		96	163	114	45	12	☹
DC150-08-11.900A1-	11,9		96	163	114	45	12	☹
DC150-08-11.906A1-	11,906	15/32"	96	163	114	45	12	☹
DC150-08-12.000A1-	12		96	163	114	45	12	☹
DC150-08-12.303A1-	12,303	31/64"	119	182	133	45	14	☹
DC150-08-12.500A1-	12,5		119	182	133	45	14	☹
DC150-08-12.700A1-	12,7	1/2"	119	182	133	45	14	☹
DC150-08-13.000A1-	13		119	182	133	45	14	☹
DC150-08-13.494A1-	13,494	17/32"	119	182	133	45	14	☹
DC150-08-13.500A1-	13,5		119	182	133	45	14	☹
DC150-08-14.000A1-	14		119	182	133	45	14	☹
DC150-08-14.288A1-	14,288	9/16"	136	204	152	48	16	☹
DC150-08-14.500A1-	14,5		136	204	152	48	16	☹
DC150-08-15.000A1-	15		136	204	152	48	16	☹
DC150-08-15.500A1-	15,5		136	204	152	48	16	☹
DC150-08-15.875A1-	15,875	5/8"	136	204	152	48	16	☹
DC150-08-16.000A1-	16		136	204	152	48	16	☹
DC150-08-16.500A1-	16,5		153	223	171	48	18	☹
DC150-08-17.000A1-	17		153	223	171	48	18	☹
DC150-08-17.500A1-	17,5		153	223	171	48	18	☹
DC150-08-18.000A1-	18		153	223	171	48	18	☹
DC150-08-18.500A1-	18,5		170	244	190	50	20	☹
DC150-08-19.000A1-	19		170	244	190	50	20	☹
DC150-08-19.050A1-	19,05	3/4"	170	244	190	50	20	☹
DC150-08-19.500A1-	19,5		170	244	190	50	20	☹
DC150-08-20.000A1-	20		170	244	190	50	20	☹

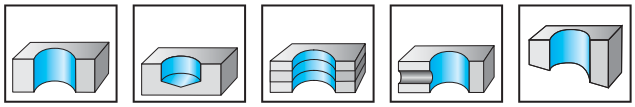
Ordering example for the WJ30TA grade: DC150-08-03.000A1-WJ30TA

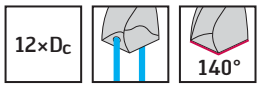


XIII D 1 B 416 B 430

Solid carbide drills with coolant-through
DC170 Supreme

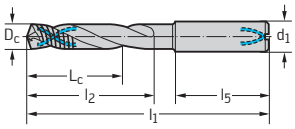






	P	M	K	N	S	H	O
WJ30EJ	●●		●●			●	

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-12-03.000A1-	3		48	92	54	36	6	●
DC170-12-03.100A1-	3,1		48	92	54	36	6	●
DC170-12-03.175A1-	3,175	1/8"	48	92	54	36	6	●
DC170-12-03.200A1-	3,2		48	92	54	36	6	●
DC170-12-03.300A1-	3,3		48	92	54	36	6	●
DC170-12-03.400A1-	3,4		48	92	54	36	6	●
DC170-12-03.500A1-	3,5		48	92	54	36	6	●
DC170-12-03.572A1-	3,572	9/64"	48	92	54	36	6	●
DC170-12-03.600A1-	3,6		48	92	54	36	6	●
DC170-12-03.700A1-	3,7		48	92	54	36	6	●
DC170-12-03.800A1-	3,8		56	102	64	36	6	●
DC170-12-03.900A1-	3,9		56	102	64	36	6	●
DC170-12-03.969A1-	3,969	5/32"	56	102	64	36	6	●
DC170-12-04.000A1-	4		56	102	64	36	6	●
DC170-12-04.100A1-	4,1		56	102	64	36	6	●
DC170-12-04.200A1-	4,2		56	102	64	36	6	●
DC170-12-04.300A1-	4,3		56	102	64	36	6	●
DC170-12-04.366A1-	4,366	11/64"	56	102	64	36	6	●
DC170-12-04.400A1-	4,4		56	102	64	36	6	●
DC170-12-04.500A1-	4,5		56	102	64	36	6	●
DC170-12-04.600A1-	4,6		56	102	64	36	6	●
DC170-12-04.700A1-	4,7		56	102	64	36	6	●
DC170-12-04.763A1-	4,763	3/16"	74	121	83	36	6	●
DC170-12-04.800A1-	4,8		74	121	83	36	6	●
DC170-12-04.900A1-	4,9		74	121	83	36	6	●
DC170-12-05.000A1-	5		74	121	83	36	6	●
DC170-12-05.100A1-	5,1		74	121	83	36	6	●
DC170-12-05.159A1-	5,159	13/64"	74	121	83	36	6	●
DC170-12-05.200A1-	5,2		74	121	83	36	6	●
DC170-12-05.300A1-	5,3		74	121	83	36	6	●
DC170-12-05.400A1-	5,4		74	121	83	36	6	●
DC170-12-05.500A1-	5,5		74	121	83	36	6	●
DC170-12-05.550A1-	5,55		74	121	83	36	6	●
DC170-12-05.556A1-	5,556	7/32"	74	121	83	36	6	●
DC170-12-05.600A1-	5,6		74	121	83	36	6	●
DC170-12-05.700A1-	5,7		74	121	83	36	6	●
DC170-12-05.800A1-	5,8		74	121	83	36	6	●
DC170-12-05.900A1-	5,9		74	121	83	36	6	●
DC170-12-06.000A1-	6		74	121	83	36	6	●
DC170-12-06.100A1-	6,1		98	148	110	36	8	●
DC170-12-06.200A1-	6,2		98	148	110	36	8	●
DC170-12-06.300A1-	6,3		98	148	110	36	8	●
DC170-12-06.350A1-	6,35	1/4"	98	148	110	36	8	●
DC170-12-06.400A1-	6,4		98	148	110	36	8	●
DC170-12-06.500A1-	6,5		98	148	110	36	8	●
DC170-12-06.600A1-	6,6		98	148	110	36	8	●
DC170-12-06.700A1-	6,7		98	148	110	36	8	●

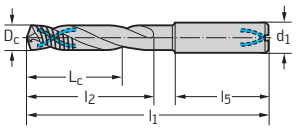
Ordering example for the WJ30EJ grade: DC170-12-03.000A1-WJ30EJ

Continued

XIII D 1 B 416 B 430

Continued

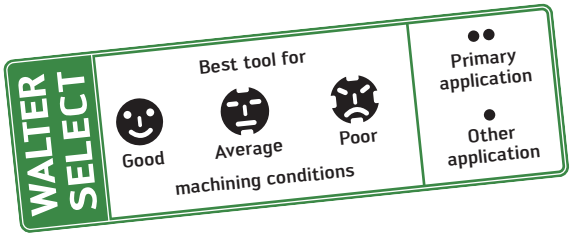
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-12-06.747A1-	6,747	17/64"	98	148	110	36	8	☹
DC170-12-06.800A1-	6,8		98	148	110	36	8	☹
DC170-12-06.900A1-	6,9		98	148	110	36	8	☹
DC170-12-07.000A1-	7		98	148	110	36	8	☹
DC170-12-07.100A1-	7,1		98	148	110	36	8	☹
DC170-12-07.144A1-	7,144	9/32"	98	148	110	36	8	☹
DC170-12-07.200A1-	7,2		98	148	110	36	8	☹
DC170-12-07.300A1-	7,3		98	148	110	36	8	☹
DC170-12-07.400A1-	7,4		98	148	110	36	8	☹
DC170-12-07.500A1-	7,5		98	148	110	36	8	☹
DC170-12-07.541A1-	7,541	19/64"	98	148	110	36	8	☹
DC170-12-07.800A1-	7,8		98	148	110	36	8	☹
DC170-12-07.900A1-	7,9		98	148	110	36	8	☹
DC170-12-07.938A1-	7,938	5/16"	98	148	110	36	8	☹
DC170-12-08.000A1-	8		98	148	110	36	8	☹
DC170-12-08.100A1-	8,1		123	180	138	40	10	☹
DC170-12-08.200A1-	8,2		123	180	138	40	10	☹
DC170-12-08.300A1-	8,3		123	180	138	40	10	☹
DC170-12-08.400A1-	8,4		123	180	138	40	10	☹
DC170-12-08.500A1-	8,5		123	180	138	40	10	☹
DC170-12-08.600A1-	8,6		123	180	138	40	10	☹
DC170-12-08.700A1-	8,7		123	180	138	40	10	☹
DC170-12-08.731A1-	8,731	11/32"	123	180	138	40	10	☹
DC170-12-08.800A1-	8,8		123	180	138	40	10	☹
DC170-12-09.000A1-	9		123	180	138	40	10	☹
DC170-12-09.128A1-	9,128	23/64"	123	180	138	40	10	☹
DC170-12-09.200A1-	9,2		123	180	138	40	10	☹
DC170-12-09.300A1-	9,3		123	180	138	40	10	☹
DC170-12-09.500A1-	9,5		123	180	138	40	10	☹
DC170-12-09.525A1-	9,525	3/8"	123	180	138	40	10	☹
DC170-12-09.600A1-	9,6		123	180	138	40	10	☹
DC170-12-09.700A1-	9,7		123	180	138	40	10	☹
DC170-12-09.800A1-	9,8		123	180	138	40	10	☹
DC170-12-09.922A1-	9,922	25/64"	123	180	138	40	10	☹
DC170-12-10.000A1-	10		123	180	138	40	10	☹
DC170-12-10.100A1-	10,1		140	206	158	45	12	☹
DC170-12-10.200A1-	10,2		140	206	158	45	12	☹
DC170-12-10.300A1-	10,3		140	206	158	45	12	☹
DC170-12-10.319A1-	10,319	13/32"	140	206	158	45	12	☹
DC170-12-10.400A1-	10,4		140	206	158	45	12	☹
DC170-12-10.500A1-	10,5		140	206	158	45	12	☹
DC170-12-10.716A1-	10,716	27/64"	140	206	158	45	12	☹
DC170-12-10.800A1-	10,8		140	206	158	45	12	☹
DC170-12-11.000A1-	11		140	206	158	45	12	☹
DC170-12-11.100A1-	11,1		140	206	158	45	12	☹
DC170-12-11.113A1-	11,113	7/16"	140	206	158	45	12	☹
DC170-12-11.200A1-	11,2		140	206	158	45	12	☹
DC170-12-11.500A1-	11,5		140	206	158	45	12	☹
DC170-12-11.509A1-	11,509	29/64"	140	206	158	45	12	☹
DC170-12-11.700A1-	11,7		140	206	158	45	12	☹
DC170-12-11.800A1-	11,8		140	206	158	45	12	☹
DC170-12-11.906A1-	11,906	15/32"	140	206	158	45	12	☹
DC170-12-12.000A1-	12		140	206	158	45	12	☹
DC170-12-12.100A1-	12,1		168	230	182	45	14	☹
DC170-12-12.200A1-	12,2		168	230	182	45	14	☹
DC170-12-12.300A1-	12,3		168	230	182	45	14	☹
DC170-12-12.303A1-	12,303	31/64"	168	230	182	45	14	☹

Ordering example for the WJ30EJ grade: DC170-12-03.000A1-WJ30EJ

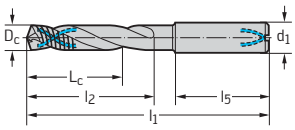
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XIII D 1 B 416 B 430

Continued

Shank DIN 6535 HA



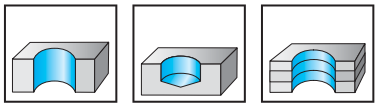
Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-12-12.500A1-	12,5		168	230	182	45	14	●
DC170-12-12.600A1-	12,6		168	230	182	45	14	●
DC170-12-12.700A1-	12,7	1/2“	168	230	182	45	14	●
DC170-12-13.000A1-	13		168	230	182	45	14	●
DC170-12-13.494A1-	13,494	17/32“	168	230	182	45	14	●
DC170-12-13.500A1-	13,5		168	230	182	45	14	●
DC170-12-14.000A1-	14		168	230	182	45	14	●
DC170-12-14.288A1-	14,288	9/16“	192	260	208	48	16	●
DC170-12-14.500A1-	14,5		192	260	208	48	16	●
DC170-12-15.000A1-	15		192	260	208	48	16	●
DC170-12-15.500A1-	15,5		192	260	208	48	16	●
DC170-12-15.875A1-	15,875	5/8“	192	260	208	48	16	●
DC170-12-16.000A1-	16		192	260	208	48	16	●
DC170-12-16.500A1-	16,5		216	285	234	48	18	●
DC170-12-17.000A1-	17		216	285	234	48	18	●
DC170-12-17.500A1-	17,5		216	285	234	48	18	●
DC170-12-18.000A1-	18		216	285	234	48	18	●
DC170-12-18.500A1-	18,5		238	310	258	50	20	●
DC170-12-19.000A1-	19		238	310	258	50	20	●
DC170-12-19.500A1-	19,5		238	310	258	50	20	●
DC170-12-20.000A1-	20		238	310	258	50	20	●

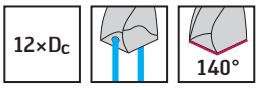
Ordering example for the WJ30EJ grade: DC170-12-03.000A1-WJ30EJ

XIII D 1 B 416 B 430

Solid carbide micro drills with coolant-through
A6589AMP
X-treme DM12

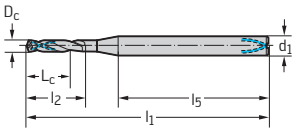






	P	M	K	N	S	H	O
AMP	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation AMP	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6589AMP-2	2		28	72	31	36	3
A6589AMP-2.1	2,1		29	72	33	35	3
A6589AMP-2.2	2,2		30	72	34	34	3
A6589AMP-2.3	2,3		32	77	36	37	3
A6589AMP-3/32IN	2,381	3/32"	33	77	37	36	3
A6589AMP-2.4	2,4		33	77	37	36	3
A6589AMP-2.5	2,5		35	77	39	34	3
A6589AMP-2.6	2,6		36	83	40	39	3
A6589AMP-2.7	2,7		37	83	42	38	3
A6589AMP-7/64IN	2,778	7/64"	38	83	43	37	3
A6589AMP-2.8	2,8		38	83	43	37	3
A6589AMP-2.9	2,9		40	83	45	35	3

WALTER SELECT

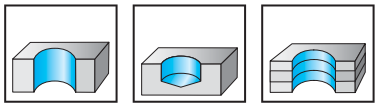
●● Primary application

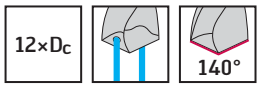
● Other application

XIII D 1 B 416 B 430

Solid carbide micro drills with coolant-through
A6588TML
Alpha® 4 Plus Micro

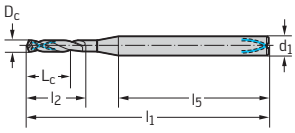






	P	M	K	N	S	H	O
TML	●●	●●	●●	●●	●●	●	●●

Shank DIN 6535 HA

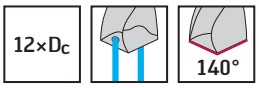


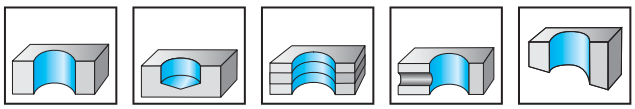
Designation TML	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6588TML-1	1		18	55	21	25	3
A6588TML-1.1	1,1		18	55	21	26	3
A6588TML-3/64IN	1,191	3/64"	18	55	21	26	3
A6588TML-1.2	1,2		18	55	21	26	3
A6588TML-1.3	1,3		18	55	21	26	3
A6588TML-1.4	1,4		18	55	21	26	3
A6588TML-1.5	1,5		25	68	28	33	3
A6588TML-1/16IN	1,588	1/16"	25	68	28	33	3
A6588TML-1.6	1,6		25	68	28	33	3
A6588TML-1.7	1,7		25	68	28	33	3
A6588TML-1.8	1,8		25	68	28	34	3
A6588TML-1.9	1,9		25	68	28	34	3

D 1 B 416 B 430

Solid carbide drills with coolant-through
A6589DPP
X-treme D12

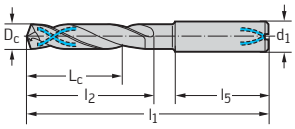






	P	M	K	N	S	H	O
DPP	●●	●●	●●	●●	●●	●●	●

Shank DIN 6535 HA



Designation DPP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6589DPP-3	3		48	92	54	36	6
A6589DPP-3.1	3,1		48	92	54	36	6
A6589DPP-1/8IN	3,175	1/8"	48	92	54	36	6
A6589DPP-3.2	3,2		48	92	54	36	6
A6589DPP-3.3	3,3		48	92	54	36	6
A6589DPP-3.4	3,4		48	92	54	36	6
A6589DPP-3.5	3,5		48	92	54	36	6
A6589DPP-9/64IN	3,572	9/64"	48	92	54	36	6
A6589DPP-3.6	3,6		48	92	54	36	6
A6589DPP-3.7	3,7		48	92	54	36	6
A6589DPP-3.8	3,8		56	102	64	36	6
A6589DPP-3.9	3,9		56	102	64	36	6
A6589DPP-5/32IN	3,969	5/32"	56	102	64	36	6
A6589DPP-4	4		56	102	64	36	6
A6589DPP-4.1	4,1		56	102	64	36	6
A6589DPP-4.2	4,2		56	102	64	36	6
A6589DPP-4.3	4,3		56	102	64	36	6
A6589DPP-11/64IN	4,366	11/64"	56	102	64	36	6
A6589DPP-4.4	4,4		56	102	64	36	6
A6589DPP-4.5	4,5		56	102	64	36	6
A6589DPP-4.6	4,6		56	102	64	36	6
A6589DPP-4.7	4,7		56	102	64	36	6
A6589DPP-3/16IN	4,763	3/16"	74	121	83	36	6
A6589DPP-4.8	4,8		74	121	83	36	6
A6589DPP-4.9	4,9		74	121	83	36	6
A6589DPP-5	5		74	121	83	36	6
A6589DPP-5.1	5,1		74	121	83	36	6
A6589DPP-13/64IN	5,159	13/64"	74	121	83	36	6
A6589DPP-5.2	5,2		74	121	83	36	6
A6589DPP-5.3	5,3		74	121	83	36	6
A6589DPP-5.4	5,4		74	121	83	36	6
A6589DPP-5.5	5,5		74	121	83	36	6
A6589DPP-5.55	5,55		74	121	83	36	6
A6589DPP-7/32IN	5,556	7/32"	74	121	83	36	6
A6589DPP-5.6	5,6		74	121	83	36	6
A6589DPP-5.7	5,7		74	121	83	36	6
A6589DPP-5.8	5,8		74	121	83	36	6
A6589DPP-5.9	5,9		74	121	83	36	6
A6589DPP-6	6		74	121	83	36	6
A6589DPP-6.1	6,1		98	148	110	36	8
A6589DPP-6.2	6,2		98	148	110	36	8
A6589DPP-6.3	6,3		98	148	110	36	8
A6589DPP-1/4IN	6,35	1/4"	98	148	110	36	8
A6589DPP-6.4	6,4		98	148	110	36	8

Continued

WALTER SELECT

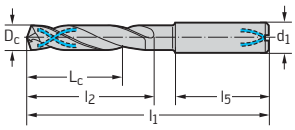
●● Primary application

● Other application

XIII D 1 B 416 B 430

Continued

Shank DIN 6535 HA



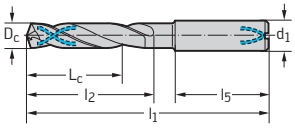
Designation DPP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6589DPP-6.5	6,5		98	148	110	36	8
A6589DPP-6.6	6,6		98	148	110	36	8
A6589DPP-6.7	6,7		98	148	110	36	8
A6589DPP-17/64IN	6,747	17/64"	98	148	110	36	8
A6589DPP-6.8	6,8		98	148	110	36	8
A6589DPP-6.9	6,9		98	148	110	36	8
A6589DPP-7	7		98	148	110	36	8
A6589DPP-7.1	7,1		98	148	110	36	8
A6589DPP-9/32IN	7,144	9/32"	98	148	110	36	8
A6589DPP-7.2	7,2		98	148	110	36	8
A6589DPP-7.3	7,3		98	148	110	36	8
A6589DPP-7.4	7,4		98	148	110	36	8
A6589DPP-7.5	7,5		98	148	110	36	8
A6589DPP-19/64IN	7,541	19/64"	98	148	110	36	8
A6589DPP-7.8	7,8		98	148	110	36	8
A6589DPP-7.9	7,9		98	148	110	36	8
A6589DPP-5/16IN	7,938	5/16"	98	148	110	36	8
A6589DPP-8	8		98	148	110	36	8
A6589DPP-8.1	8,1		123	180	138	40	10
A6589DPP-8.2	8,2		123	180	138	40	10
A6589DPP-8.3	8,3		123	180	138	40	10
A6589DPP-8.4	8,4		123	180	138	40	10
A6589DPP-8.5	8,5		123	180	138	40	10
A6589DPP-8.6	8,6		123	180	138	40	10
A6589DPP-8.7	8,7		123	180	138	40	10
A6589DPP-11/32IN	8,731	11/32"	123	180	138	40	10
A6589DPP-8.8	8,8		123	180	138	40	10
A6589DPP-9	9		123	180	138	40	10
A6589DPP-23/64IN	9,128	23/64"	123	180	138	40	10
A6589DPP-9.2	9,2		123	180	138	40	10
A6589DPP-9.3	9,3		123	180	138	40	10
A6589DPP-9.5	9,5		123	180	138	40	10
A6589DPP-3/8IN	9,525	3/8"	123	180	138	40	10
A6589DPP-9.6	9,6		123	180	138	40	10
A6589DPP-9.7	9,7		123	180	138	40	10
A6589DPP-9.8	9,8		123	180	138	40	10
A6589DPP-25/64IN	9,922	25/64"	123	180	138	40	10
A6589DPP-10	10		123	180	138	40	10
A6589DPP-10.1	10,1		140	206	158	45	12
A6589DPP-10.2	10,2		140	206	158	45	12
A6589DPP-10.3	10,3		140	206	158	45	12
A6589DPP-13/32IN	10,319	13/32"	140	206	158	45	12
A6589DPP-10.4	10,4		140	206	158	45	12
A6589DPP-10.5	10,5		140	206	158	45	12
A6589DPP-27/64IN	10,716	27/64"	140	206	158	45	12
A6589DPP-10.8	10,8		140	206	158	45	12
A6589DPP-11	11		140	206	158	45	12
A6589DPP-11.1	11,1		140	206	158	45	12
A6589DPP-7/16IN	11,113	7/16"	140	206	158	45	12
A6589DPP-11.2	11,2		140	206	158	45	12
A6589DPP-11.5	11,5		140	206	158	45	12
A6589DPP-29/64IN	11,509	29/64"	140	206	158	45	12
A6589DPP-11.7	11,7		140	206	158	45	12
A6589DPP-11.8	11,8		140	206	158	45	12
A6589DPP-15/32IN	11,906	15/32"	140	206	158	45	12
A6589DPP-12	12		140	206	158	45	12
A6589DPP-12.1	12,1		168	230	182	45	14
A6589DPP-12.2	12,2		168	230	182	45	14
A6589DPP-12.3	12,3		168	230	182	45	14
A6589DPP-31/64IN	12,303	31/64"	168	230	182	45	14
A6589DPP-12.5	12,5		168	230	182	45	14
A6589DPP-12.6	12,6		168	230	182	45	14

Continued

XIII D 1 B 416 B 430

Continued

Shank DIN 6535 HA



Designation DPP	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6589DPP-1/2IN	12,7	1/2"	168	230	182	45	14
A6589DPP-13	13		168	230	182	45	14
A6589DPP-17/32IN	13,494	17/32"	168	230	182	45	14
A6589DPP-13.5	13,5		168	230	182	45	14
A6589DPP-14	14		168	230	182	45	14
A6589DPP-9/16IN	14,288	9/16"	192	260	208	48	16
A6589DPP-14.5	14,5		192	260	208	48	16
A6589DPP-15	15		192	260	208	48	16
A6589DPP-15.5	15,5		192	260	208	48	16
A6589DPP-5/8IN	15,875	5/8"	192	260	208	48	16
A6589DPP-16	16		192	260	208	48	16
A6589DPP-16.5	16,5		216	285	234	48	18
A6589DPP-17	17		216	285	234	48	18
A6589DPP-17.5	17,5		216	285	234	48	18
A6589DPP-18	18		216	285	234	48	18
A6589DPP-18.5	18,5		238	310	258	50	20
A6589DPP-19	19		238	310	258	50	20
A6589DPP-19.5	19,5		238	310	258	50	20
A6589DPP-20	20		238	310	258	50	20

WALTER SELECT

●● Primary application

● Other application

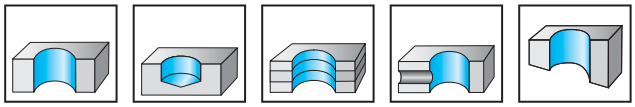
XIII D 1 B 416 B 430

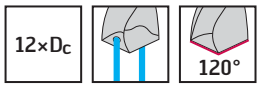
Solid carbide drills with coolant-through, straight-fluted

A3687

Alpha® Jet

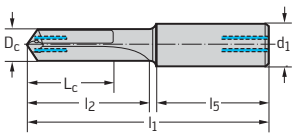






	P	M	K	N	S	H	O
Uncoated			●	●	●		●

Shank DIN 6535 HA

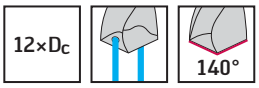


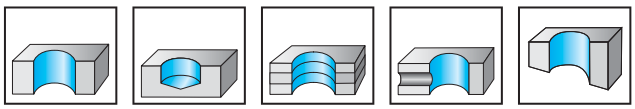
Designation Uncoated	D_c k6 mm	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3687-5	5	79	132	94	36	6
A3687-5.5	5,5	83	139	101	36	6
A3687-6	6	83	139	101	36	6
A3687-6.5	6,5	107	165	127	36	8
A3687-6.8	6,8	107	165	127	36	8
A3687-7	7	107	165	127	36	8
A3687-7.5	7,5	107	165	127	36	8
A3687-8	8	107	165	127	36	8
A3687-8.5	8,5	122	184	142	40	10
A3687-9	9	122	184	142	40	10
A3687-10	10	122	184	142	40	10
A3687-10.2	10,2	134	205	158	45	12
A3687-10.5	10,5	134	205	158	45	12
A3687-11	11	134	205	158	45	12
A3687-11.5	11,5	134	205	158	45	12
A3687-12	12	134	205	158	45	12
A3687-12.5	12,5	139	214	167	45	14
A3687-13	13	139	214	167	45	14
A3687-14	14	139	214	167	45	14
A3687-15	15	153	227	177	48	16
A3687-16	16	153	227	177	48	16
A3687-17	17	164	241	191	48	18
A3687-18	18	164	241	191	48	18
A3687-20	20	172	254	202	50	20

XIII D 1 B 416 B 430

Solid carbide drills with coolant-through
DC150 Perform

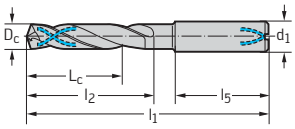






	P	M	K	N	S	H	O
WJ30TA	●●	●	●●	●●	●●	●●	●

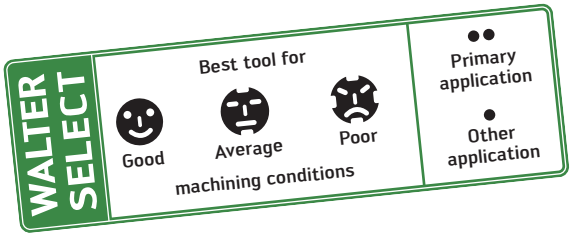
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30TA
DC150-12-03.000A1-	3		48	92	54	36	6	●●
DC150-12-03.100A1-	3,1		48	92	54	36	6	●●
DC150-12-03.175A1-	3,175	1/8"	48	92	54	36	6	●●
DC150-12-03.200A1-	3,2		48	92	54	36	6	●●
DC150-12-03.300A1-	3,3		48	92	54	36	6	●●
DC150-12-03.400A1-	3,4		48	92	54	36	6	●●
DC150-12-03.500A1-	3,5		48	92	54	36	6	●●
DC150-12-03.572A1-	3,572	9/64"	48	92	54	36	6	●●
DC150-12-03.600A1-	3,6		48	92	54	36	6	●●
DC150-12-03.700A1-	3,7		48	92	54	36	6	●●
DC150-12-03.800A1-	3,8		56	102	64	36	6	●●
DC150-12-03.900A1-	3,9		56	102	64	36	6	●●
DC150-12-03.969A1-	3,969	5/32"	56	102	64	36	6	●●
DC150-12-04.000A1-	4		56	102	64	36	6	●●
DC150-12-04.100A1-	4,1		56	102	64	36	6	●●
DC150-12-04.200A1-	4,2		56	102	64	36	6	●●
DC150-12-04.300A1-	4,3		56	102	64	36	6	●●
DC150-12-04.366A1-	4,366	11/64"	56	102	64	36	6	●●
DC150-12-04.400A1-	4,4		56	102	64	36	6	●●
DC150-12-04.500A1-	4,5		56	102	64	36	6	●●
DC150-12-04.600A1-	4,6		56	102	64	36	6	●●
DC150-12-04.700A1-	4,7		56	102	64	36	6	●●
DC150-12-04.763A1-	4,763	3/16"	74	121	83	36	6	●●
DC150-12-04.800A1-	4,8		74	121	83	36	6	●●
DC150-12-04.900A1-	4,9		74	121	83	36	6	●●
DC150-12-05.000A1-	5		74	121	83	36	6	●●
DC150-12-05.100A1-	5,1		74	121	83	36	6	●●
DC150-12-05.159A1-	5,159	13/64"	74	121	83	36	6	●●
DC150-12-05.200A1-	5,2		74	121	83	36	6	●●
DC150-12-05.300A1-	5,3		74	121	83	36	6	●●
DC150-12-05.400A1-	5,4		74	121	83	36	6	●●
DC150-12-05.500A1-	5,5		74	121	83	36	6	●●
DC150-12-05.550A1-	5,55		74	121	83	36	6	●●
DC150-12-05.556A1-	5,556	7/32"	74	121	83	36	6	●●
DC150-12-05.600A1-	5,6		74	121	83	36	6	●●
DC150-12-05.700A1-	5,7		74	121	83	36	6	●●
DC150-12-05.800A1-	5,8		74	121	83	36	6	●●
DC150-12-05.900A1-	5,9		74	121	83	36	6	●●
DC150-12-06.000A1-	6		74	121	83	36	6	●●
DC150-12-06.100A1-	6,1		98	148	110	36	8	●●
DC150-12-06.200A1-	6,2		98	148	110	36	8	●●
DC150-12-06.300A1-	6,3		98	148	110	36	8	●●
DC150-12-06.350A1-	6,35	1/4"	98	148	110	36	8	●●

Ordering example for the WJ30TA grade: DC150-12-03.000A1-WJ30TA

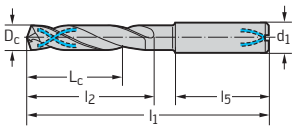
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XIII
D 1
B 418
B 430

Continued

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30TA
DC150-12-06.400A1-	6,4		98	148	110	36	8	●
DC150-12-06.500A1-	6,5		98	148	110	36	8	●
DC150-12-06.600A1-	6,6		98	148	110	36	8	●
DC150-12-06.700A1-	6,7		98	148	110	36	8	●
DC150-12-06.747A1-	6,747	17/64"	98	148	110	36	8	●
DC150-12-06.800A1-	6,8		98	148	110	36	8	●
DC150-12-06.900A1-	6,9		98	148	110	36	8	●
DC150-12-07.000A1-	7		98	148	110	36	8	●
DC150-12-07.100A1-	7,1		98	148	110	36	8	●
DC150-12-07.144A1-	7,144	9/32"	98	148	110	36	8	●
DC150-12-07.200A1-	7,2		98	148	110	36	8	●
DC150-12-07.300A1-	7,3		98	148	110	36	8	●
DC150-12-07.400A1-	7,4		98	148	110	36	8	●
DC150-12-07.500A1-	7,5		98	148	110	36	8	●
DC150-12-07.541A1-	7,541	19/64"	98	148	110	36	8	●
DC150-12-07.800A1-	7,8		98	148	110	36	8	●
DC150-12-07.900A1-	7,9		98	148	110	36	8	●
DC150-12-07.938A1-	7,938	5/16"	98	148	110	36	8	●
DC150-12-08.000A1-	8		98	148	110	36	8	●
DC150-12-08.100A1-	8,1		123	180	138	40	10	●
DC150-12-08.200A1-	8,2		123	180	138	40	10	●
DC150-12-08.300A1-	8,3		123	180	138	40	10	●
DC150-12-08.400A1-	8,4		123	180	138	40	10	●
DC150-12-08.500A1-	8,5		123	180	138	40	10	●
DC150-12-08.600A1-	8,6		123	180	138	40	10	●
DC150-12-08.700A1-	8,7		123	180	138	40	10	●
DC150-12-08.731A1-	8,731	11/32"	123	180	138	40	10	●
DC150-12-08.800A1-	8,8		123	180	138	40	10	●
DC150-12-09.000A1-	9		123	180	138	40	10	●
DC150-12-09.128A1-	9,128	23/64"	123	180	138	40	10	●
DC150-12-09.200A1-	9,2		123	180	138	40	10	●
DC150-12-09.300A1-	9,3		123	180	138	40	10	●
DC150-12-09.500A1-	9,5		123	180	138	40	10	●
DC150-12-09.525A1-	9,525	3/8"	123	180	138	40	10	●
DC150-12-09.600A1-	9,6		123	180	138	40	10	●
DC150-12-09.700A1-	9,7		123	180	138	40	10	●
DC150-12-09.800A1-	9,8		123	180	138	40	10	●
DC150-12-09.922A1-	9,922	25/64"	123	180	138	40	10	●
DC150-12-10.000A1-	10		123	180	138	40	10	●
DC150-12-10.100A1-	10,1		140	206	158	45	12	●
DC150-12-10.200A1-	10,2		140	206	158	45	12	●
DC150-12-10.300A1-	10,3		140	206	158	45	12	●
DC150-12-10.319A1-	10,319	13/32"	140	206	158	45	12	●
DC150-12-10.500A1-	10,5		140	206	158	45	12	●
DC150-12-10.716A1-	10,716	27/64"	140	206	158	45	12	●
DC150-12-10.800A1-	10,8		140	206	158	45	12	●
DC150-12-11.000A1-	11		140	206	158	45	12	●
DC150-12-11.100A1-	11,1		140	206	158	45	12	●
DC150-12-11.113A1-	11,113	7/16"	140	206	158	45	12	●
DC150-12-11.200A1-	11,2		140	206	158	45	12	●
DC150-12-11.500A1-	11,5		140	206	158	45	12	●
DC150-12-11.509A1-	11,509	29/64"	140	206	158	45	12	●
DC150-12-11.700A1-	11,7		140	206	158	45	12	●
DC150-12-11.800A1-	11,8		140	206	158	45	12	●
DC150-12-11.906A1-	11,906	15/32"	140	206	158	45	12	●
DC150-12-12.000A1-	12		140	206	158	45	12	●
DC150-12-12.100A1-	12,1		168	230	182	45	14	●
DC150-12-12.200A1-	12,2		168	230	182	45	14	●
DC150-12-12.300A1-	12,3		168	230	182	45	14	●
DC150-12-12.303A1-	12,303	31/64"	168	230	182	45	14	●
DC150-12-12.500A1-	12,5		168	230	182	45	14	●

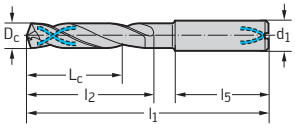
Ordering example for the WJ30TA grade: DC150-12-03.000A1-WJ30TA

Continued

XIII D 1 B 418 B 430

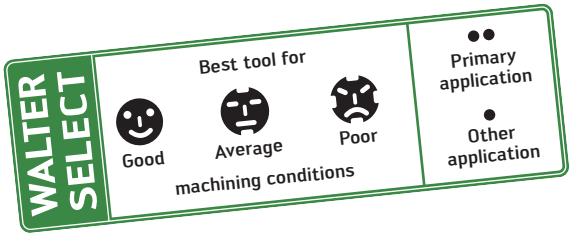
Continued

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30TA
DC150-12-12.600A1-	12,6		168	230	182	45	14	☹
DC150-12-12.700A1-	12,7	1/2"	168	230	182	45	14	☹
DC150-12-13.000A1-	13		168	230	182	45	14	☹
DC150-12-13.494A1-	13,494	17/32"	168	230	182	45	14	☹
DC150-12-13.500A1-	13,5		168	230	182	45	14	☹
DC150-12-14.000A1-	14		168	230	182	45	14	☹
DC150-12-14.288A1-	14,288	9/16"	192	260	208	48	16	☹
DC150-12-14.500A1-	14,5		192	260	208	48	16	☹
DC150-12-15.000A1-	15		192	260	208	48	16	☹
DC150-12-15.500A1-	15,5		192	260	208	48	16	☹
DC150-12-15.875A1-	15,875	5/8"	192	260	208	48	16	☹
DC150-12-16.000A1-	16		192	260	208	48	16	☹
DC150-12-16.500A1-	16,5		216	285	234	48	18	☹
DC150-12-17.000A1-	17		216	285	234	48	18	☹
DC150-12-17.500A1-	17,5		216	285	234	48	18	☹
DC150-12-18.000A1-	18		216	285	234	48	18	☹
DC150-12-19.000A1-	19		238	310	258	50	20	☹
DC150-12-20.000A1-	20		238	310	258	50	20	☹

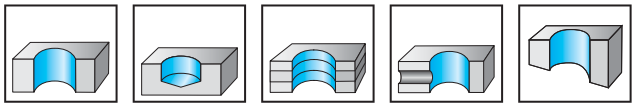
Ordering example for the WJ30TA grade: DC150-12-03.000A1-WJ30TA

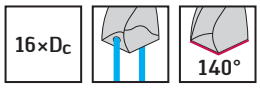


XIII
D 1
B 418
B 430

Solid carbide drills with coolant-through
DC170 Supreme

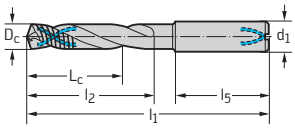






	P	M	K	N	S	H	O
WJ30EJ	●●		●●			●	

Shank DIN 6535 HA



Designation	D_c h7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-16-03.000A1-	3		52	89	57	28	4	●
DC170-16-03.175A1-	3,175	1/8"	60	98	66	28	4	●
DC170-16-03.500A1-	3,5		72	110	78	28	4	●
DC170-16-03.572A1-	3,572	9/64"	72	110	78	28	4	●
DC170-16-03.969A1-	3,969	5/32"	72	110	78	28	4	●
DC170-16-04.000A1-	4		72	110	78	28	4	●
DC170-16-04.500A1-	4,5		93	132	100	28	5	●
DC170-16-04.763A1-	4,763	3/16"	92	132	100	28	5	●
DC170-16-04.800A1-	4,8		92	132	100	28	5	●
DC170-16-05.000A1-	5		92	132	100	28	5	●
DC170-16-05.500A1-	5,5		101	150	110	36	6	●
DC170-16-05.556A1-	5,556	7/32"	111	160	120	36	6	●
DC170-16-05.800A1-	5,8		111	160	120	36	6	●
DC170-16-06.000A1-	6		111	160	120	36	6	●
DC170-16-06.100A1-	6,1		124	175	135	36	8	●
DC170-16-06.350A1-	6,35	1/4"	124	175	135	36	8	●
DC170-16-06.500A1-	6,5		124	175	135	36	8	●
DC170-16-06.800A1-	6,8		124	175	135	36	8	●
DC170-16-07.000A1-	7		124	175	135	36	8	●
DC170-16-07.144A1-	7,144	9/32"	140	192	152	36	8	●
DC170-16-07.400A1-	7,4		140	192	152	36	8	●
DC170-16-07.500A1-	7,5		140	192	152	36	8	●
DC170-16-07.938A1-	7,938	5/16"	140	192	152	36	8	●
DC170-16-08.000A1-	8		140	192	152	36	8	●
DC170-16-08.300A1-	8,3		148	206	162	40	10	●
DC170-16-08.500A1-	8,5		148	206	162	40	10	●
DC170-16-08.731A1-	8,731	11/32"	148	206	162	40	10	●
DC170-16-09.000A1-	9		148	206	162	40	10	●
DC170-16-09.525A1-	9,525	3/8"	165	224	180	40	10	●
DC170-16-09.800A1-	9,8		165	224	180	40	10	●
DC170-16-10.000A1-	10		165	224	180	40	10	●
DC170-16-10.200A1-	10,2		181	247	198	45	12	●
DC170-16-10.319A1-	10,319	13/32"	181	247	198	45	12	●
DC170-16-11.000A1-	11		181	247	198	45	12	●
DC170-16-11.113A1-	11,113	7/16"	198	265	216	45	12	●
DC170-16-11.500A1-	11,5		198	265	216	45	12	●
DC170-16-11.800A1-	11,8		198	265	216	45	12	●
DC170-16-11.906A1-	11,906	15/32"	198	265	216	45	12	●
DC170-16-12.000A1-	12		198	265	216	45	12	●
DC170-16-12.700A1-	12,7	1/2"	238	301	252	45	14	●
DC170-16-13.000A1-	13		238	301	252	45	14	●
DC170-16-14.000A1-	14		238	301	252	45	14	●
DC170-16-14.288A1-	14,288	9/16"	272	340	288	48	16	●
DC170-16-15.000A1-	15		272	340	288	48	16	●
DC170-16-16.000A1-	16		272	340	288	48	16	●

Ordering example for the WJ30EJ grade: DC170-16-03.000A1-WJ30EJ

XIII D 1 B 418 B 430

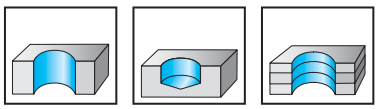
Solid carbide micro drills with coolant-through
A6689AMP
X-treme DM16





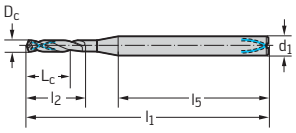




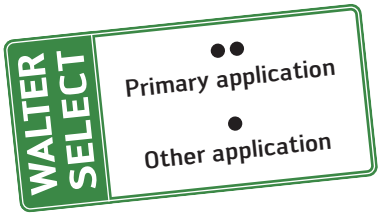


	P	M	K	N	S	H	O
AMP	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



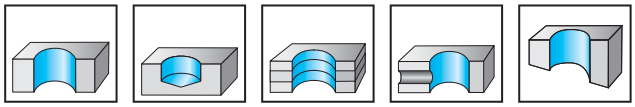
Designation AMP	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6689AMP-2	2		36	81	39	37	3
A6689AMP-2.1	2,1		37	81	41	36	3
A6689AMP-2.2	2,2		39	81	43	34	3
A6689AMP-2.3	2,3		39	87	45	38	3
A6689AMP-3/32IN	2,381	3/32"	43	87	47	36	3
A6689AMP-2.4	2,4		43	87	47	36	3
A6689AMP-2.5	2,5		45	87	49	34	3
A6689AMP-2.6	2,6		47	95	51	40	3
A6689AMP-2.7	2,7		48	95	53	39	3
A6689AMP-7/64IN	2,778	7/64"	50	95	55	37	3
A6689AMP-2.8	2,8		50	95	55	37	3
A6689AMP-2.9	2,9		52	95	57	35	3

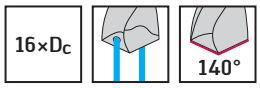


XIII D 1 B 418 B 430

Solid carbide drills with coolant-through
A6685TFP
Alpha® 4 XD16

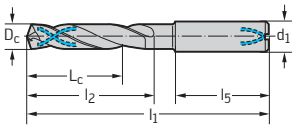






	P	M	K	N	S	H	O
TFP	●●	●	●●	●●	●●	●	●

Shank DIN 6535 HA

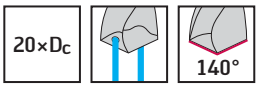


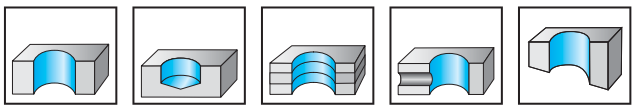
Designation TFP	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6685TFP-3	3		52	100	57	36	6
A6685TFP-1/8IN	3,175	1/8"	72	120	78	36	6
A6685TFP-3.5	3,5		72	120	78	36	6
A6685TFP-9/64IN	3,572	9/64"	72	120	78	36	6
A6685TFP-5/32IN	3,969	5/32"	72	120	78	36	6
A6685TFP-4	4		72	120	78	36	6
A6685TFP-4.5	4,5		92	140	100	36	6
A6685TFP-3/16IN	4,763	3/16"	92	140	100	36	6
A6685TFP-4.8	4,8		92	140	100	36	6
A6685TFP-5	5		92	140	100	36	6
A6685TFP-5.5	5,5		101	150	110	36	6
A6685TFP-7/32IN	5,556	7/32"	111	160	120	36	6
A6685TFP-5.8	5,8		111	160	120	36	6
A6685TFP-6	6		111	160	120	36	6
A6685TFP-6.1	6,1		124	175	135	36	8
A6685TFP-1/4IN	6,35	1/4"	124	175	135	36	8
A6685TFP-6.5	6,5		124	175	135	36	8
A6685TFP-6.8	6,8		124	175	135	36	8
A6685TFP-7	7		124	175	135	36	8
A6685TFP-9/32IN	7,144	9/32"	140	192	152	36	8
A6685TFP-7.4	7,4		140	192	152	36	8
A6685TFP-7.5	7,5		140	192	152	36	8
A6685TFP-5/16IN	7,938	5/16"	140	192	152	36	8
A6685TFP-8	8		140	192	152	36	8
A6685TFP-8.3	8,3		148	206	162	40	10
A6685TFP-8.5	8,5		148	206	162	40	10
A6685TFP-11/32IN	8,731	11/32"	148	206	162	40	10
A6685TFP-9	9		148	206	162	40	10
A6685TFP-3/8IN	9,525	3/8"	165	224	180	40	10
A6685TFP-9.8	9,8		165	224	180	40	10
A6685TFP-10	10		165	224	180	40	10
A6685TFP-10.2	10,2		181	247	198	45	12
A6685TFP-13/32IN	10,319	13/32"	181	247	198	45	12
A6685TFP-11	11		181	247	198	45	12
A6685TFP-7/16IN	11,113	7/16"	198	265	216	45	12
A6685TFP-11.5	11,5		198	265	216	45	12
A6685TFP-11.8	11,8		198	265	216	45	12
A6685TFP-15/32IN	11,906	15/32"	198	265	216	45	12
A6685TFP-12	12		198	265	216	45	12
A6685TFP-1/2IN	12,7	1/2"	238	301	252	45	14
A6685TFP-13	13		238	301	252	45	14
A6685TFP-14	14		238	301	252	45	14
A6685TFP-9/16IN	14,288	9/16"	272	340	288	48	16
A6685TFP-15	15		272	340	288	48	16
A6685TFP-16	16		272	340	288	48	16

XIII D 1 B 418 B 430

Solid carbide drills with coolant-through
DC170 Supreme

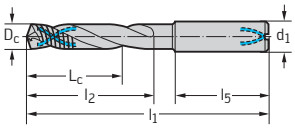






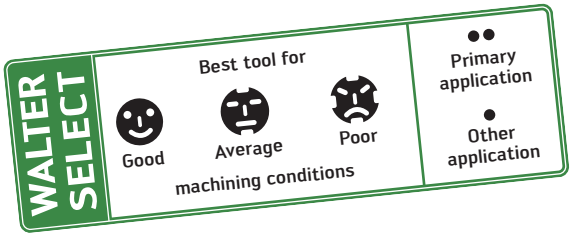
	P	M	K	N	S	H	O
WJ30EJ	●●		●●			●	

Shank DIN 6535 HA



Designation	D_c h7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-20-03.000A1-	3		60	97	65	28	4	●●
DC170-20-03.175A1-	3,175	1/8"	74	112	80	28	4	●●
DC170-20-03.500A1-	3,5		86	124	92	28	4	●●
DC170-20-03.572A1-	3,572	9/64"	86	124	92	28	4	●●
DC170-20-03.969A1-	3,969	5/32"	86	124	92	28	4	●●
DC170-20-04.000A1-	4		86	124	92	28	4	●●
DC170-20-04.500A1-	4,5		111	150	118	28	5	●●
DC170-20-04.763A1-	4,763	3/16"	110	150	118	28	5	●●
DC170-20-04.800A1-	4,8		110	150	118	28	5	●●
DC170-20-05.000A1-	5		110	150	118	28	5	●●
DC170-20-05.500A1-	5,5		123	170	132	36	6	●●
DC170-20-05.556A1-	5,556	7/32"	135	182	144	36	6	●●
DC170-20-05.800A1-	5,8		135	182	144	36	6	●●
DC170-20-06.000A1-	6		135	182	144	36	6	●●
DC170-20-06.100A1-	6,1		151	200	162	36	8	●●
DC170-20-06.350A1-	6,35	1/4"	151	200	162	36	8	●●
DC170-20-06.500A1-	6,5		151	200	162	36	8	●●
DC170-20-06.800A1-	6,8		151	200	162	36	8	●●
DC170-20-07.000A1-	7		151	200	162	36	8	●●
DC170-20-07.144A1-	7,144	9/32"	172	222	184	36	8	●●
DC170-20-07.400A1-	7,4		172	222	184	36	8	●●
DC170-20-07.500A1-	7,5		172	222	184	36	8	●●
DC170-20-07.938A1-	7,938	5/16"	172	222	184	36	8	●●
DC170-20-08.000A1-	8		172	222	184	36	8	●●
DC170-20-08.300A1-	8,3		184	240	198	40	10	●●
DC170-20-08.500A1-	8,5		184	240	198	40	10	●●
DC170-20-08.731A1-	8,731	11/32"	184	240	198	40	10	●●
DC170-20-09.000A1-	9		184	240	198	40	10	●●
DC170-20-09.525A1-	9,525	3/8"	205	262	220	40	10	●●
DC170-20-09.800A1-	9,8		205	262	220	40	10	●●
DC170-20-10.000A1-	10		205	262	220	40	10	●●
DC170-20-10.200A1-	10,2		225	289	242	45	12	●●
DC170-20-10.319A1-	10,319	13/32"	225	289	242	45	12	●●
DC170-20-11.000A1-	11		225	289	242	45	12	●●
DC170-20-11.113A1-	11,113	7/16"	246	311	264	45	12	●●
DC170-20-11.500A1-	11,5		246	311	264	45	12	●●
DC170-20-11.800A1-	11,8		246	311	264	45	12	●●
DC170-20-11.906A1-	11,906	15/32"	246	311	264	45	12	●●
DC170-20-12.000A1-	12		246	311	264	45	12	●●
DC170-20-12.700A1-	12,7	1/2"	294	357	308	45	14	●●
DC170-20-13.000A1-	13		294	357	308	45	14	●●
DC170-20-14.000A1-	14		294	357	308	45	14	●●
DC170-20-14.288A1-	14,288	9/16"	336	404	352	48	16	●●
DC170-20-15.000A1-	15		336	404	352	48	16	●●
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Ordering example for the WJ30EJ grade: DC170-20-03.000A1-WJ30EJ



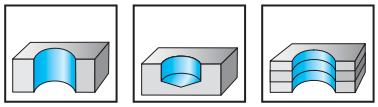
XIII
D 1
B 418
B 430

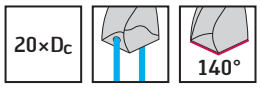
Solid carbide micro drills with coolant-through

A6789AMP

X·treme DM20

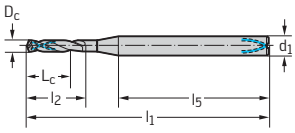






	P	M	K	N	S	H	O
AMP	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA

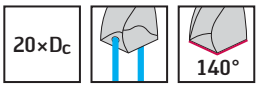


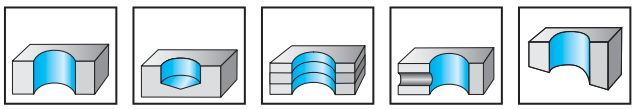
Designation AMP	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6789AMP-2	2		44	90	47	38	3
A6789AMP-2.1	2,1		45	90	49	37	3
A6789AMP-2.2	2,2		48	90	52	34	3
A6789AMP-2.3	2,3		50	97	54	39	3
A6789AMP-3/32IN	2,381	3/32"	52	97	56	37	3
A6789AMP-2.4	2,4		52	97	56	37	3
A6789AMP-2.5	2,5		55	97	59	34	3
A6789AMP-2.6	2,6		57	107	61	42	3
A6789AMP-2.7	2,7		58	107	63	41	3
A6789AMP-7/64IN	2,778	7/64"	61	107	66	38	3
A6789AMP-2.8	2,8		61	107	66	38	3
A6789AMP-2.9	2,9		63	107	68	36	3

XIII D 1 B 418 B 430

Solid carbide drills with coolant-through
A6794TFP
X-treme DH20

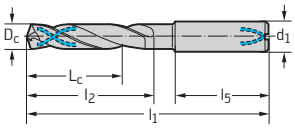






	P	M	K	N	S	H	O
TFP	●●	●	●	●	●	●	

Shank DIN 6535 HA



Designation TFP	D_C h7 mm	D_C inches/no.	L_C mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6794TFP-3	3		60	107	65	36	6
A6794TFP-1/8IN	3,175	1/8"	86	134	92	36	6
A6794TFP-3.5	3,5		86	134	92	36	6
A6794TFP-9/64IN	3,572	9/64"	86	134	92	36	6
A6794TFP-5/32IN	3,969	5/32"	86	134	92	36	6
A6794TFP-4	4		86	134	92	36	6
A6794TFP-4.5	4,5		110	158	118	36	6
A6794TFP-3/16IN	4,763	3/16"	110	158	118	36	6
A6794TFP-4.8	4,8		110	158	118	36	6
A6794TFP-5	5		110	158	118	36	6
A6794TFP-5.5	5,5		123	170	132	36	6
A6794TFP-7/32IN	5,556	7/32"	135	182	144	36	6
A6794TFP-5.8	5,8		135	182	144	36	6
A6794TFP-6	6		135	182	144	36	6
A6794TFP-6.1	6,1		151	200	162	36	8
A6794TFP-1/4IN	6,35	1/4"	151	200	162	36	8
A6794TFP-6.5	6,5		151	200	162	36	8
A6794TFP-6.8	6,8		151	200	162	36	8
A6794TFP-7	7		151	200	162	36	8
A6794TFP-9/32IN	7,144	9/32"	172	222	184	36	8
A6794TFP-7.4	7,4		172	222	184	36	8
A6794TFP-7.5	7,5		172	222	184	36	8
A6794TFP-5/16IN	7,938	5/16"	172	222	184	36	8
A6794TFP-8	8		172	222	184	36	8
A6794TFP-8.3	8,3		184	240	198	40	10
A6794TFP-8.5	8,5		184	240	198	40	10
A6794TFP-11/32IN	8,731	11/32"	184	240	198	40	10
A6794TFP-9	9		184	240	198	40	10
A6794TFP-3/8IN	9,525	3/8"	205	262	220	40	10
A6794TFP-9.8	9,8		205	262	220	40	10
A6794TFP-10	10		205	262	220	40	10

WALTER SELECT

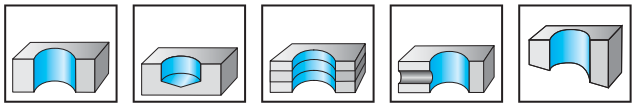
●● Primary application

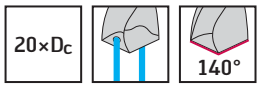
● Other application

XIII D 1 B 418 B 430

Solid carbide drills with coolant-through
A6785TFP
Alpha® 4 XD20

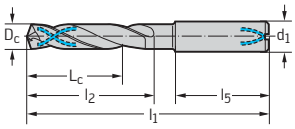






	P	M	K	N	S	H	O
TFP	●●	●	●●	●●	●●	●	●

Shank DIN 6535 HA

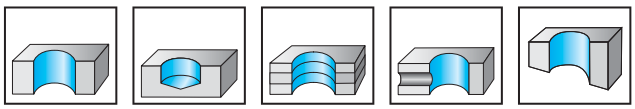


Designation TFP	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6785TFP-3	3		60	107	65	36	6
A6785TFP-1/8IN	3,175	1/8"	86	134	92	36	6
A6785TFP-3.5	3,5		86	134	92	36	6
A6785TFP-9/64IN	3,572	9/64"	86	134	92	36	6
A6785TFP-5/32IN	3,969	5/32"	86	134	92	36	6
A6785TFP-4	4		86	134	92	36	6
A6785TFP-4.5	4,5		110	158	118	36	6
A6785TFP-3/16IN	4,763	3/16"	110	158	118	36	6
A6785TFP-4.8	4,8		110	158	118	36	6
A6785TFP-5	5		110	158	118	36	6
A6785TFP-5.5	5,5		123	170	132	36	6
A6785TFP-7/32IN	5,556	7/32"	135	182	144	36	6
A6785TFP-5.8	5,8		135	182	144	36	6
A6785TFP-6	6		135	182	144	36	6
A6785TFP-6.1	6,1		151	200	162	36	8
A6785TFP-1/4IN	6,35	1/4"	151	200	162	36	8
A6785TFP-6.5	6,5		151	200	162	36	8
A6785TFP-6.8	6,8		151	200	162	36	8
A6785TFP-7	7		151	200	162	36	8
A6785TFP-9/32IN	7,144	9/32"	172	222	184	36	8
A6785TFP-7.4	7,4		172	222	184	36	8
A6785TFP-7.5	7,5		172	222	184	36	8
A6785TFP-5/16IN	7,938	5/16"	172	222	184	36	8
A6785TFP-8	8		172	222	184	36	8
A6785TFP-8.3	8,3		184	240	198	40	10
A6785TFP-8.5	8,5		184	240	198	40	10
A6785TFP-11/32IN	8,731	11/32"	184	240	198	40	10
A6785TFP-9	9		184	240	198	40	10
A6785TFP-3/8IN	9,525	3/8"	205	262	220	40	10
A6785TFP-9.8	9,8		205	262	220	40	10
A6785TFP-10	10		205	262	220	40	10
A6785TFP-10.2	10,2		225	289	242	45	12
A6785TFP-13/32IN	10,319	13/32"	225	289	242	45	12
A6785TFP-11	11		225	289	242	45	12
A6785TFP-7/16IN	11,113	7/16"	246	311	264	45	12
A6785TFP-11.5	11,5		246	311	264	45	12
A6785TFP-11.8	11,8		246	311	264	45	12
A6785TFP-15/32IN	11,906	15/32"	246	311	264	45	12
A6785TFP-12	12		246	311	264	45	12
A6785TFP-1/2IN	12,7	1/2"	294	357	308	45	14
A6785TFP-13	13		294	357	308	45	14
A6785TFP-14	14		294	357	308	45	14
A6785TFP-9/16IN	14,288	9/16"	336	404	352	48	16
A6785TFP-15	15		336	404	352	48	16
A6785TFP-16	16		336	404	352	48	16

XIII D 1 B 418 B 430

Solid carbide drills with coolant-through
DC170 Supreme



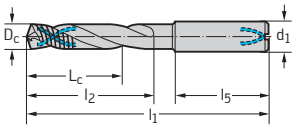


25×D_C

140°

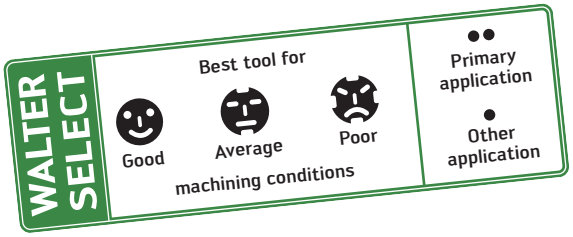
	P	M	K	N	S	H	O
WJ30EJ	●●		●●			●	

Shank DIN 6535 HA



Designation	D_c h7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-25-03.000A1-	3		79	119	84	28	4	●●
DC170-25-03.175A1-	3,175	1/8"	96	148	102	28	4	●●
DC170-25-03.500A1-	3,5		108	148	114	28	4	●●
DC170-25-03.572A1-	3,572	9/64"	108	148	114	28	4	●●
DC170-25-03.969A1-	3,969	5/32"	108	148	114	28	4	●●
DC170-25-04.000A1-	4		108	148	114	28	4	●●
DC170-25-04.500A1-	4,5		138	177	145	28	5	●●
DC170-25-04.763A1-	4,763	3/16"	137	177	145	28	5	●●
DC170-25-04.800A1-	4,8		137	177	145	28	5	●●
DC170-25-05.000A1-	5		137	177	145	28	5	●●
DC170-25-05.500A1-	5,5		151	200	160	36	6	●●
DC170-25-05.556A1-	5,556	7/32"	165	214	174	36	6	●●
DC170-25-06.000A1-	6		165	214	174	36	6	●●
DC170-25-06.100A1-	6,1		183	234	194	36	8	●●
DC170-25-06.350A1-	6,35	1/4"	183	234	194	36	8	●●
DC170-25-06.500A1-	6,5		183	234	194	36	8	●●
DC170-25-06.800A1-	6,8		183	234	194	36	8	●●
DC170-25-07.000A1-	7		183	234	194	36	8	●●
DC170-25-07.144A1-	7,144	9/32"	208	260	220	36	8	●●
DC170-25-07.938A1-	7,938	5/16"	208	260	220	36	8	●●
DC170-25-08.000A1-	8		208	260	220	36	8	●●
DC170-25-08.500A1-	8,5		229	289	243	40	10	●●
DC170-25-08.731A1-	8,731	11/32"	229	289	243	40	10	●●
DC170-25-09.000A1-	9		229	289	243	40	10	●●
DC170-25-09.525A1-	9,525	3/8"	255	314	270	40	10	●●
DC170-25-09.800A1-	9,8		255	314	270	40	10	●●
DC170-25-10.000A1-	10		255	314	270	40	10	●●
DC170-25-10.200A1-	10,2		280	346	297	45	12	●●
DC170-25-11.000A1-	11		280	346	297	45	12	●●
DC170-25-11.113A1-	11,113	7/16"	306	373	324	45	12	●●
DC170-25-11.500A1-	11,5		306	373	324	45	12	●●
DC170-25-12.000A1-	12		306	373	324	45	12	●●

Ordering example for the WJ30EJ grade: DC170-25-03.000A1-WJ30EJ



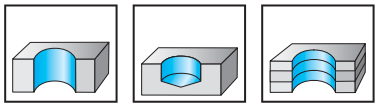
XIII
D 1
B 418
B 430

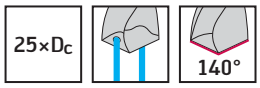
Solid carbide micro drills with coolant-through

A6889AMP

X·treme DM25

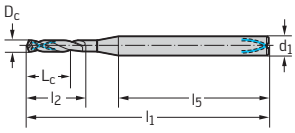






	P	M	K	N	S	H	O
AMP	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA

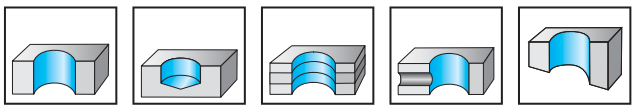


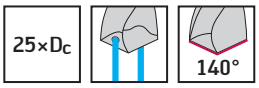
Designation AMP	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6889AMP-2	2		54	101	57	39	3
A6889AMP-2.1	2,1		56	101	60	37	3
A6889AMP-2.2	2,2		59	101	63	34	3
A6889AMP-2.3	2,3		62	107	66	37	3
A6889AMP-3/32IN	2,381	3/32"	62	107	66	35	3
A6889AMP-2.4	2,4		64	107	68	35	3
A6889AMP-2.5	2,5		67	107	71	32	3
A6889AMP-2.6	2,6		70	122	74	44	3
A6889AMP-2.7	2,7		72	122	77	41	3
A6889AMP-7/64IN	2,778	7/64"	75	122	80	38	3
A6889AMP-2.8	2,8		75	122	80	38	3
A6889AMP-2.9	2,9		78	122	83	36	3

XIII D 1 B 420 B 430

Solid carbide drills with coolant-through
A6885TFP
Alpha® 4 XD25

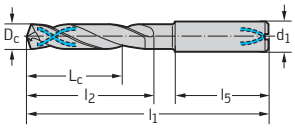






	P	M	K	N	S	H	O
TFP	●●	●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation TFP	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6885TFP-3	3		79	127	84	36	6
A6885TFP-1/8IN	3,175	1/8"	108	156	114	36	6
A6885TFP-3.5	3,5		108	156	114	36	6
A6885TFP-9/64IN	3,572	9/64"	108	156	114	36	6
A6885TFP-5/32IN	3,969	5/32"	108	156	114	36	6
A6885TFP-4	4		108	156	114	36	6
A6885TFP-4.5	4,5		137	185	145	36	6
A6885TFP-3/16IN	4,763	3/16"	137	185	145	36	6
A6885TFP-4.8	4,8		137	185	145	36	6
A6885TFP-5	5		137	185	145	36	6
A6885TFP-5.5	5,5		151	200	160	36	6
A6885TFP-7/32IN	5,556	7/32"	165	214	174	36	6
A6885TFP-5.8	5,8		165	214	174	36	6
A6885TFP-6	6		165	214	174	36	6
A6885TFP-6.1	6,1		183	234	194	36	8
A6885TFP-1/4IN	6,35	1/4"	183	234	194	36	8
A6885TFP-6.5	6,5		183	234	194	36	8
A6885TFP-6.8	6,8		183	234	194	36	8
A6885TFP-7	7		183	234	194	36	8
A6885TFP-9/32IN	7,144	9/32"	208	260	220	36	8
A6885TFP-7.4	7,4		208	260	220	36	8
A6885TFP-7.5	7,5		208	260	220	36	8
A6885TFP-5/16IN	7,938	5/16"	208	260	220	36	8
A6885TFP-8	8		208	260	220	36	8
A6885TFP-8.3	8,3		229	289	243	40	10
A6885TFP-8.5	8,5		229	289	243	40	10
A6885TFP-11/32IN	8,731	11/32"	229	289	243	40	10
A6885TFP-9	9		229	289	243	40	10
A6885TFP-3/8IN	9,525	3/8"	255	314	270	40	10
A6885TFP-9.8	9,8		255	314	270	40	10
A6885TFP-10	10		255	314	270	40	10
A6885TFP-10.2	10,2		280	346	297	45	12
A6885TFP-13/32IN	10,319	13/32"	280	346	297	45	12
A6885TFP-11	11		280	346	297	45	12
A6885TFP-7/16IN	11,113	7/16"	306	373	324	45	12
A6885TFP-11.5	11,5		306	373	324	45	12
A6885TFP-11.8	11,8		306	373	324	45	12
A6885TFP-15/32IN	11,906	15/32"	306	373	324	45	12
A6885TFP-12	12		306	373	324	45	12

WALTER SELECT

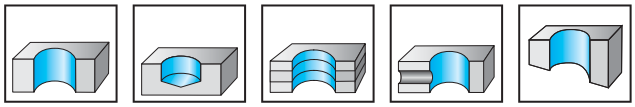
●● Primary application

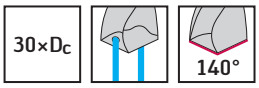
● Other application

XIII D 1 B 420 B 430

Solid carbide drills with coolant-through
DC170 Supreme

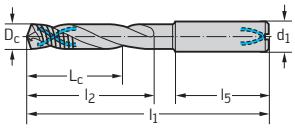






	P	M	K	N	S	H	O
WJ30EJ	●●		●●			●	

Shank DIN 6535 HA



Designation	D_c h7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EJ
DC170-30-03.000A1-	3		92	132	97	28	4	●
DC170-30-03.175A1-	3,175	1/8"	114	166	120	28	4	●
DC170-30-03.500A1-	3,5		127	166	133	28	4	●
DC170-30-03.969A1-	3,969	5/32"	127	166	133	28	4	●
DC170-30-04.000A1-	4		127	166	133	28	4	●
DC170-30-04.500A1-	4,5		162	200	169	28	5	●
DC170-30-04.763A1-	4,763	3/16"	161	200	169	28	5	●
DC170-30-04.800A1-	4,8		161	200	169	28	5	●
DC170-30-05.000A1-	5		161	200	169	28	5	●
DC170-30-05.500A1-	5,5		178	225	187	36	6	●
DC170-30-05.556A1-	5,556	7/32"	195	242	204	36	6	●
DC170-30-06.000A1-	6		195	242	204	36	6	●
DC170-30-06.350A1-	6,35	1/4"	217	268	228	36	8	●
DC170-30-06.500A1-	6,5		217	268	228	36	8	●
DC170-30-06.800A1-	6,8		217	268	228	36	8	●
DC170-30-07.000A1-	7		217	268	228	36	8	●
DC170-30-07.400A1-	7,4		244	294	256	36	8	●
DC170-30-07.938A1-	7,938	5/16"	244	294	256	36	8	●
DC170-30-08.000A1-	8		244	294	256	36	8	●
DC170-30-08.500A1-	8,5		273	330	287	40	10	●
DC170-30-08.731A1-	8,731	11/32"	273	330	287	40	10	●
DC170-30-09.000A1-	9		273	330	287	40	10	●
DC170-30-09.525A1-	9,525	3/8"	305	364	320	40	10	●
DC170-30-10.000A1-	10		305	364	320	40	10	●
DC170-30-10.200A1-	10,2		335	401	352	45	12	●
DC170-30-11.000A1-	11		335	401	352	45	12	●
DC170-30-11.113A1-	11,113	7/16"	364	430	382	45	12	●
DC170-30-12.000A1-	12		364	430	382	45	12	●

Ordering example for the WJ30EJ grade: DC170-30-03.000A1-WJ30EJ

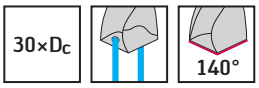
XIII D 1 B 420 B 430

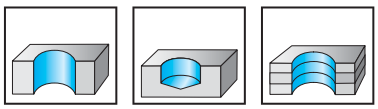
Solid carbide drills with coolant-through – micro

A6989AMP

X-treme DM30

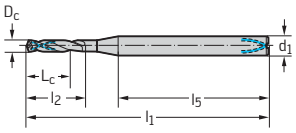




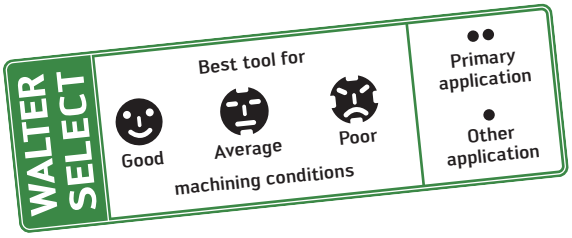


	P	M	K	N	S	H	O
AMP	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



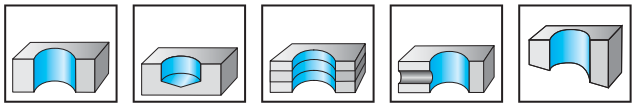
Designation AMP	D_C h7 mm	D_C inches/no.	L_C mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6989AMP-2	2		64	112	67	40	3
A6989AMP-2.1	2,1		66	112	70	38	3
A6989AMP-2.2	2,2		70	112	74	34	3
A6989AMP-2.3	2,3		73	122	77	41	3
A6989AMP-3/32IN	2,381	3/32"	76	122	80	38	3
A6989AMP-2.4	2,4		76	122	80	38	3
A6989AMP-2.5	2,5		80	122	84	34	3
A6989AMP-2.6	2,6		83	136	87	45	3
A6989AMP-2.7	2,7		85	136	90	42	3
A6989AMP-7/64IN	2,778	7/64"	89	136	94	38	3
A6989AMP-2.8	2,8		89	136	94	38	3
A6989AMP-2.9	2,9		92	136	97	36	3

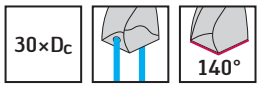


XIII
D 1
B 420
B 430

Solid carbide drills with coolant-through
A6994TFP
X-treme DH30

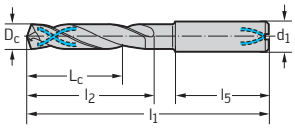






	P	M	K	N	S	H	O
TFP	●●	●	●	●	●	●	

Shank DIN 6535 HA

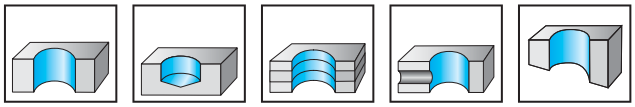


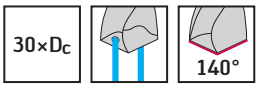
Designation TFP	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6994TFP-3	3		92	140	97	36	6
A6994TFP-1/8IN	3,175	1/8"	127	174	133	36	6
A6994TFP-3.5	3,5		127	174	133	36	6
A6994TFP-9/64IN	3,572	9/64"	127	174	133	36	6
A6994TFP-5/32IN	3,969	5/32"	127	174	133	36	6
A6994TFP-4	4		127	174	133	36	6
A6994TFP-4.5	4,5		161	208	169	36	6
A6994TFP-3/16IN	4,763	3/16"	161	208	169	36	6
A6994TFP-4.8	4,8		161	208	169	36	6
A6994TFP-5	5		161	208	169	36	6
A6994TFP-5.5	5,5		178	225	187	36	6
A6994TFP-7/32IN	5,556	7/32"	195	242	204	36	6
A6994TFP-5.8	5,8		195	242	204	36	6
A6994TFP-6	6		195	242	204	36	6
A6994TFP-6.1	6,1		217	268	228	36	8
A6994TFP-1/4IN	6,35	1/4"	217	268	228	36	8
A6994TFP-6.5	6,5		217	268	228	36	8
A6994TFP-6.8	6,8		217	268	228	36	8
A6994TFP-7	7		217	268	228	36	8
A6994TFP-9/32IN	7,144	9/32"	244	294	256	36	8
A6994TFP-7.4	7,4		244	294	256	36	8
A6994TFP-7.5	7,5		244	294	256	36	8
A6994TFP-5/16IN	7,938	5/16"	244	294	256	36	8
A6994TFP-8	8		244	294	256	36	8
A6994TFP-8.3	8,3		273	330	287	40	10
A6994TFP-8.5	8,5		273	330	287	40	10
A6994TFP-11/32IN	8,731	11/32"	273	330	287	40	10
A6994TFP-9	9		273	330	287	40	10
A6994TFP-3/8IN	9,525	3/8"	305	364	320	40	10
A6994TFP-9.8	9,8		305	364	320	40	10
A6994TFP-10	10		305	364	320	40	10

XIII D 1 B 420 B 430

Solid carbide drills with coolant-through
A6985TFP
Alpha® 4 XD30

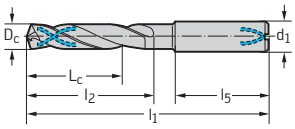






	P	M	K	N	S	H	O
TFP	●●	●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation TFP	D_C h7 mm	D_C inches/no.	L_C mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6985TFP-3	3		92	140	97	36	6
A6985TFP-1/8IN	3,175	1/8"	127	174	133	36	6
A6985TFP-3.5	3,5		127	174	133	36	6
A6985TFP-9/64IN	3,572	9/64"	127	174	133	36	6
A6985TFP-5/32IN	3,969	5/32"	127	174	133	36	6
A6985TFP-4	4		127	174	133	36	6
A6985TFP-4.5	4,5		161	208	169	36	6
A6985TFP-3/16IN	4,763	3/16"	161	208	169	36	6
A6985TFP-4.8	4,8		161	208	169	36	6
A6985TFP-5	5		161	208	169	36	6
A6985TFP-5.5	5,5		178	225	187	36	6
A6985TFP-7/32IN	5,556	7/32"	195	242	204	36	6
A6985TFP-5.8	5,8		195	242	204	36	6
A6985TFP-6	6		195	242	204	36	6
A6985TFP-6.1	6,1		217	268	228	36	8
A6985TFP-1/4IN	6,35	1/4"	217	268	228	36	8
A6985TFP-6.5	6,5		217	268	228	36	8
A6985TFP-6.8	6,8		217	268	228	36	8
A6985TFP-7	7		217	268	228	36	8
A6985TFP-9/32IN	7,144	9/32"	244	294	256	36	8
A6985TFP-7.4	7,4		244	294	256	36	8
A6985TFP-7.5	7,5		244	294	256	36	8
A6985TFP-5/16IN	7,938	5/16"	244	294	256	36	8
A6985TFP-8	8		244	294	256	36	8
A6985TFP-8.3	8,3		273	330	287	40	10
A6985TFP-8.5	8,5		273	330	287	40	10
A6985TFP-11/32IN	8,731	11/32"	273	330	287	40	10
A6985TFP-9	9		273	330	287	40	10
A6985TFP-3/8IN	9,525	3/8"	305	364	320	40	10
A6985TFP-9.8	9,8		305	364	320	40	10
A6985TFP-10	10		305	364	320	40	10
A6985TFP-10.2	10,2		335	401	352	45	12
A6985TFP-13/32IN	10,319	13/32"	335	401	352	45	12
A6985TFP-11	11		335	401	352	45	12
A6985TFP-7/16IN	11,113	7/16"	364	430	382	45	12
A6985TFP-11.5	11,5		364	430	382	45	12
A6985TFP-11.8	11,8		364	430	382	45	12
A6985TFP-15/32IN	11,906	15/32"	364	430	382	45	12
A6985TFP-12	12		364	430	382	45	12

WALTER SELECT

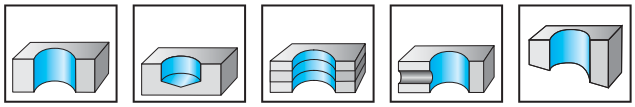
●● Primary application

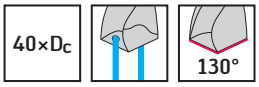
● Other application

XIII D 1 B 420 B 430

Solid carbide drills with coolant-through
A7495TTP
X-treme D40

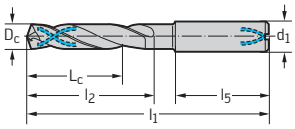






	P	M	K	N	S	H	O
TTP	●●	●	●●	●●			

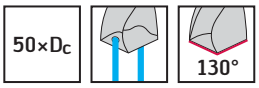
Shank DIN 6535 HA

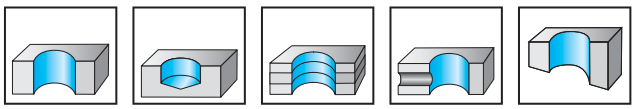


Designation TTP	D_c e7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A7495TTP-3	3		134	172	139	28	4
A7495TTP-1/8IN	3,175	1/8"	134	172	139	28	4
A7495TTP-3.5	3,5		150	188	156	28	4
A7495TTP-9/64IN	3,572	9/64"	150	188	156	28	4
A7495TTP-5/32IN	3,969	5/32"	168	206	174	28	4
A7495TTP-4	4		168	206	174	28	4
A7495TTP-4.5	4,5		188	228	195	28	5
A7495TTP-4.8	4,8		209	249	217	28	5
A7495TTP-5	5		209	249	217	28	5
A7495TTP-7/32IN	5,556	7/32"	248	297	257	36	6
A7495TTP-5.8	5,8		248	297	257	36	6
A7495TTP-6	6		248	297	257	36	6
A7495TTP-6.1	6,1		272	324	282	36	8
A7495TTP-1/4IN	6,35	1/4"	272	324	282	36	8
A7495TTP-6.5	6,5		272	324	282	36	8
A7495TTP-6.8	6,8		287	339	298	36	8
A7495TTP-7	7		287	339	298	36	8
A7495TTP-9/32IN	7,144	9/32"	313	366	325	36	8
A7495TTP-7.4	7,4		313	366	325	36	8
A7495TTP-7.5	7,5		313	366	325	36	8
A7495TTP-5/16IN	7,938	5/16"	330	382	342	36	8
A7495TTP-8	8		330	382	342	36	8
A7495TTP-8.5	8,5		356	415	369	40	10
A7495TTP-9	9		371	430	385	40	10
A7495TTP-9.8	9,8		418	477	433	40	10
A7495TTP-10	10		418	477	433	40	10
A7495TTP-10.2	10,2		460	528	477	45	12
A7495TTP-13/32IN	10,319	13/32"	460	528	477	45	12
A7495TTP-11	11		460	528	477	45	12

XIII D 1 B 420 B 430

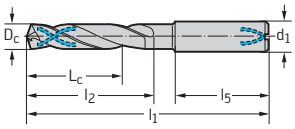
Solid carbide drills with coolant-through
A7595TTP
X-treme D50





	P	M	K	N	S	H	O
TTP	●●	●	●●	●●			

Shank DIN 6535 HA



Designation TTP	D_c e7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A7595TTP-3	3		166	204	171	28	4
A7595TTP-1/8IN	3,175	1/8"	166	204	171	28	4
A7595TTP-3.5	3,5		186	224	192	28	4
A7595TTP-9/64IN	3,572	9/64"	186	224	192	28	4
A7595TTP-5/32IN	3,969	5/32"	208	246	214	28	4
A7595TTP-4	4		208	246	214	28	4
A7595TTP-4.5	4,5		233	273	240	28	5
A7595TTP-4.8	4,8		259	299	267	28	5
A7595TTP-5	5		259	299	267	28	5
A7595TTP-7/32IN	5,556	7/32"	308	357	317	36	6
A7595TTP-5.8	5,8		308	357	317	36	6
A7595TTP-6	6		308	357	317	36	6
A7595TTP-6.1	6,1		337	389	347	36	8
A7595TTP-1/4IN	6,35	1/4"	337	389	347	36	8
A7595TTP-6.5	6,5		337	389	347	36	8
A7595TTP-6.8	6,8		357	409	368	36	8
A7595TTP-7	7		357	409	368	36	8
A7595TTP-9/32IN	7,144	9/32"	388	441	400	36	8
A7595TTP-7.4	7,4		388	441	400	36	8
A7595TTP-7.5	7,5		388	441	400	36	8
A7595TTP-5/16IN	7,938	5/16"	410	462	422	36	8
A7595TTP-8	8		410	462	422	36	8
A7595TTP-8.3	8,3		441	500	454	40	10
A7595TTP-8.5	8,5		441	500	454	40	10
A7595TTP-11/32IN	8,731	11/32"	466	525	480	40	10
A7595TTP-9	9		466	525	480	40	10

WALTER SELECT

●● Primary application

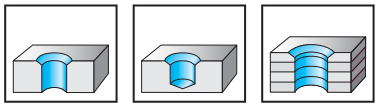
● Other application

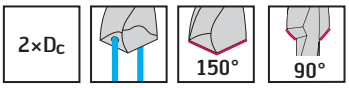
XIII D 1 B 420 B 430

Solid carbide chamfer pilot drills with coolant-through
K3281TFT
X-treme Pilot Step 90



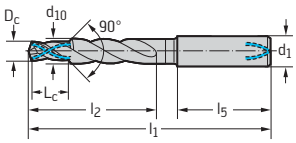
– Special diameter tolerance for XD Technology





	P	M	K	N	S	H	O
TFT	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



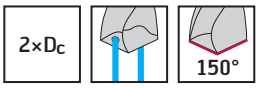
Designation TFT	D_c p7 mm	D_c inches/ no.	d_{10} mm	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
K3281TFT-3	3		6	6	66	20	36	6
K3281TFT-4	4		6	10	66	22	36	6
K3281TFT-4.5	4,5		6	10	66	22	36	6
K3281TFT-5	5		8	12	79	28	36	8
K3281TFT-5.5	5,5		8	12	79	28	36	8
K3281TFT-6	6		8	12	79	28	36	8
K3281TFT-6.1	6,1		10	14	89	34	40	10
K3281TFT-1/4IN	6,35	1/4"	10	14	89	34	40	10
K3281TFT-7	7		10	14	89	34	40	10
K3281TFT-7.4	7,4		12	16	102	40	45	12
K3281TFT-8	8		12	16	102	40	45	12
K3281TFT-8.5	8,5		12	20	102	44	45	12
K3281TFT-9	9		12	20	102	44	45	12
K3281TFT-9.8	9,8		12	20	102	44	45	12
K3281TFT-10	10		12	20	102	44	45	12
K3281TFT-11	11		14	24	107	52	45	14
K3281TFT-12	12		14	24	107	52	45	14
K3281TFT-13	13		16	28	115	58	48	16
K3281TFT-14	14		16	28	115	58	48	16
K3281TFT-16	16		18	32	123	66	48	18

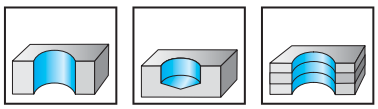
D 1 B 420 B 430

Solid carbide micro pilot drills
A6181AML
X-treme Pilot 150



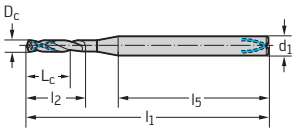
– Special diameter tolerance for micro XD Technology





	P	M	K	N	S	H	O
AML	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation AML	D_c p7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6181AML-2	2		7	57	10	42	3
A6181AML-2.05	2,05		7	57	11	42	3
A6181AML-2.1	2,1		7	57	11	42	3
A6181AML-2.15	2,15		7	57	11	42	3
A6181AML-2.2	2,2		7	57	11	42	3
A6181AML-2.25	2,25		8	57	12	43	3
A6181AML-2.3	2,3		8	59	12	43	3
A6181AML-2.35	2,35		8	59	12	43	3
A6181AML-3/32IN	2,381	3/32"	8	59	12	43	3
A6181AML-2.4	2,4		8	59	12	43	3
A6181AML-2.45	2,45		9	59	13	42	3
A6181AML-2.5	2,5		9	59	13	45	3
A6181AML-2.55	2,55		9	62	13	45	3
A6181AML-2.6	2,6		9	62	13	45	3
A6181AML-2.65	2,65		9	62	14	45	3
A6181AML-2.7	2,7		9	62	14	45	3
A6181AML-2.75	2,75		9	62	14	45	3
A6181AML-7/64IN	2,778	7/64"	9	62	14	45	3
A6181AML-2.8	2,8		9	62	14	45	3
A6181AML-2.85	2,85		10	62	15	44	3
A6181AML-2.9	2,9		10	62	15	44	3
A6181AML-2.95	2,95		10	62	15	44	3

WALTER SELECT

●● Primary application

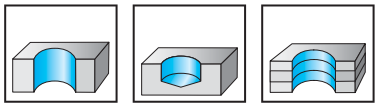
● Other application

D 1 B 422 B 430

Solid carbide pilot drills with coolant-through
A6181TFT
XD Pilot



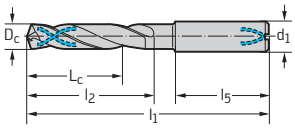
– Special diameter tolerance for XD Technology





	P	M	K	N	S	H	O
TFT	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



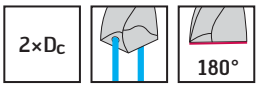
Designation TFT	D_c p7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6181TFT-3	3		14	66	20	36	6
A6181TFT-1/8IN	3,175	1/8"	14	66	20	36	6
A6181TFT-3.5	3,5		14	66	20	36	6
A6181TFT-9/64IN	3,572	9/64"	14	66	20	36	6
A6181TFT-5/32IN	3,969	5/32"	16	74	24	36	6
A6181TFT-4	4		16	74	24	36	6
A6181TFT-4.5	4,5		16	74	24	36	6
A6181TFT-3/16IN	4,763	3/16"	19	82	28	36	6
A6181TFT-4.8	4,8		19	82	28	36	6
A6181TFT-5	5		19	82	28	36	6
A6181TFT-5.5	5,5		19	82	28	36	6
A6181TFT-7/32IN	5,556	7/32"	19	82	28	36	6
A6181TFT-5.8	5,8		19	82	28	36	6
A6181TFT-6	6		19	82	28	36	6
A6181TFT-6.1	6,1		23	91	34	36	8
A6181TFT-1/4IN	6,35	1/4"	23	91	34	36	8
A6181TFT-6.5	6,5		23	91	34	36	8
A6181TFT-6.8	6,8		23	91	34	36	8
A6181TFT-7	7		23	91	34	36	8
A6181TFT-9/32IN	7,144	9/32"	29	91	41	36	8
A6181TFT-7.4	7,4		29	91	41	36	8
A6181TFT-7.5	7,5		29	91	41	36	8
A6181TFT-5/16IN	7,938	5/16"	29	91	41	36	8
A6181TFT-8	8		29	91	41	36	8
A6181TFT-8.3	8,3		32	103	47	40	10
A6181TFT-8.5	8,5		32	103	47	40	10
A6181TFT-11/32IN	8,731	11/32"	32	103	47	40	10
A6181TFT-9	9		32	103	47	40	10
A6181TFT-3/8IN	9,525	3/8"	32	103	47	40	10
A6181TFT-9.8	9,8		32	103	47	40	10
A6181TFT-10	10		32	103	47	40	10
A6181TFT-10.2	10,2		37	118	55	45	12
A6181TFT-13/32IN	10,319	13/32"	37	118	55	45	12
A6181TFT-11	11		37	118	55	45	12
A6181TFT-7/16IN	11,113	7/16"	37	118	55	45	12
A6181TFT-11.5	11,5		37	118	55	45	12
A6181TFT-11.8	11,8		37	118	55	45	12
A6181TFT-15/32IN	11,906	15/32"	37	118	55	45	12
A6181TFT-12	12		37	118	55	45	12
A6181TFT-1/2IN	12,7	1/2"	46	124	60	45	14
A6181TFT-13	13		46	124	60	45	14
A6181TFT-14	14		46	124	60	45	14
A6181TFT-9/16IN	14,288	9/16"	49	133	65	48	16
A6181TFT-15	15		49	133	65	48	16
A6181TFT-16	16		49	133	65	48	16

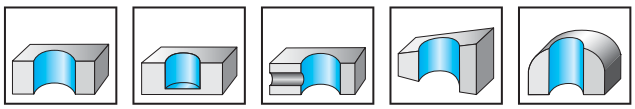
XIII D 1 B 422 B 430

Solid carbide pilot drills with coolant-through
A7191TFT
X-treme Pilot 180



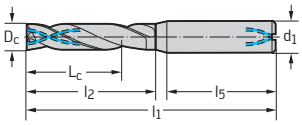
– Special diameter tolerance for XD Technology





	P	M	K	N	S	H	O
TFT	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



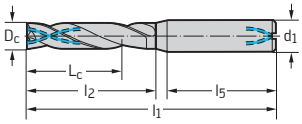
Designation TFT	D_c p7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A7191TFT-3	3		7	62	12	42	6
A7191TFT-1/8IN	3,175	1/8"	7	62	12	42	6
A7191TFT-3.5	3,5		7	62	13	42	6
A7191TFT-9/64IN	3,572	9/64"	7	62	13	42	6
A7191TFT-5/32IN	3,969	5/32"	8	66	14	42	6
A7191TFT-4	4		8	66	14	42	6
A7191TFT-4.5	4,5		9	66	16	42	6
A7191TFT-3/16IN	4,763	3/16"	10	66	18	42	6
A7191TFT-4.8	4,8		10	66	18	42	6
A7191TFT-5	5		10	66	18	42	6
A7191TFT-5.5	5,5		11	66	20	42	6
A7191TFT-7/32IN	5,556	7/32"	12	66	21	42	6
A7191TFT-5.8	5,8		12	66	21	42	6
A7191TFT-6	6		12	66	21	42	6
A7191TFT-6.1	6,1		13	79	23	47	8
A7191TFT-1/4IN	6,35	1/4"	13	79	23	47	8
A7191TFT-6.5	6,5		13	79	23	47	8
A7191TFT-6.8	6,8		14	79	25	47	8
A7191TFT-7	7		14	79	25	47	8
A7191TFT-9/32IN	7,144	9/32"	16	79	28	47	8
A7191TFT-7.4	7,4		16	79	28	47	8
A7191TFT-7.5	7,5		16	79	28	47	8
A7191TFT-5/16IN	7,938	5/16"	16	79	28	47	8
A7191TFT-8	8		16	79	28	47	8
A7191TFT-8.3	8,3		18	89	32	50	10
A7191TFT-8.5	8,5		18	89	32	50	10
A7191TFT-11/32IN	8,731	11/32"	18	89	32	50	10
A7191TFT-9	9		18	89	32	50	10
A7191TFT-3/8IN	9,525	3/8"	20	89	35	50	10
A7191TFT-9.8	9,8		20	89	35	50	10
A7191TFT-10	10		20	89	35	50	10
A7191TFT-10.2	10,2		23	102	40	52	12
A7191TFT-13/32IN	10,319	13/32"	23	102	40	52	12
A7191TFT-10.5	10,5		23	102	40	52	12
A7191TFT-11	11		23	102	40	52	12
A7191TFT-7/16IN	11,113	7/16"	25	102	43	52	12
A7191TFT-11.5	11,5		25	102	43	52	12
A7191TFT-11.8	11,8		25	102	43	52	12
A7191TFT-15/32IN	11,906	15/32"	25	102	43	52	12
A7191TFT-12	12		25	102	43	52	12
A7191TFT-12.5	12,5		35	107	49	52	14
A7191TFT-1/2IN	12,7	1/2"	35	107	49	52	14
A7191TFT-13	13		35	107	49	52	14
A7191TFT-13.5	13,5		35	107	49	52	14
A7191TFT-14	14		35	107	49	52	14
A7191TFT-9/16IN	14,288	9/16"	40	115	56	53	16
A7191TFT-14.5	14,5		40	115	56	53	16
A7191TFT-15	15		40	115	56	53	16

Continued

XIII D 1 B 422 B 430

Continued

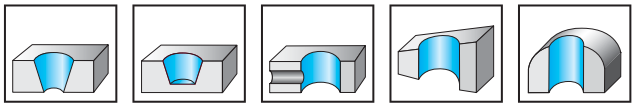
	Designation TFT	D_c p7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	A7191TFT-16	16		40	115	56	53	16
	A7191TFT-17	17		45	123	63	53	18
	A7191TFT-18	18		45	123	63	53	18
	A7191TFT-19	19		50	131	70	55	20
	A7191TFT-20	20		50	131	70	55	20

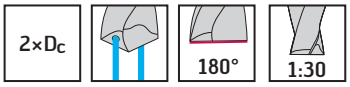


Solid carbide pilot drills with coolant-through
K5191TFT
X-treme Pilot 180 C



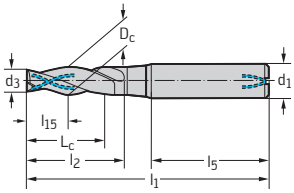
– For inclined and round surfaces (e.g. crankshafts)
– Conical contour 1:30 – for step-free piloting



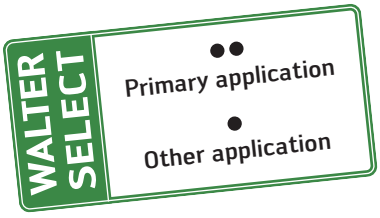


	P	M	K	N	S	H	O
TFT	●●	●●	●●	●●	●●	●	●

Shank DIN 6535 HA



Designation TFT	D_c h10 mm	d_3 mm	L_c mm	l_1 mm	l_2 mm	l_5 mm	l_{15} mm	d_1 h6 mm
K5191TFT-4	4	3,9	10	59	16	36	3	6
K5191TFT-5	5	4,9	11	63	19	36	3	6
K5191TFT-6	6	5,85	13	68	22	36	4,5	8
K5191TFT-7	7	6,85	15	73	26	36	4,5	8

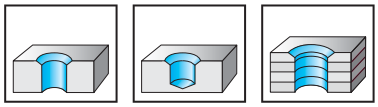


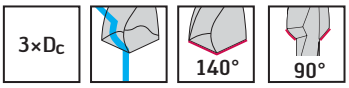
D 1
B 422
B 430

Solid carbide chamfer drills
K3879XPL
X-treme Step 90



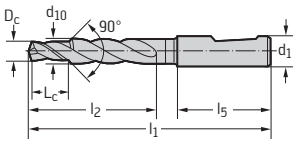
– Step length in accordance with DIN 8378
– For thread core hole drilling





	P	M	K	N	S	H	O
XPL	●●	●	●●	●	●	●	●

Shank DIN 6535 HE

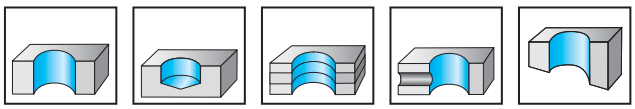


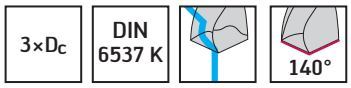
Designation XPL	For thread	D_c m7 mm	d_{10} h8 mm	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
K3879XPL-M4	M 4	3,3	5	11	66	28	36	6
K3879XPL-M5	M 5	4,2	6	14	66	28	36	6
K3879XPL-M6	M 6	5	8	17	79	41	36	8
K3879XPL-M8	M 8	6,8	10	21	89	47	40	10
K3879XPL-M8X1	M 8 x 1	7	10	21	89	47	40	10
K3879XPL-M10	M 10	8,5	12	26	102	55	45	12
K3879XPL-M10X1	M 10 x 1	9	12	26	102	55	45	12
K3879XPL-M12	M 12	10,2	14	30	107	60	45	14
K3879XPL-M12X1.5	M 12 x 1,5	10,5	14	30	107	60	45	14
K3879XPL-M14	M 14	12	16	35	115	65	48	16
K3879XPL-M14X1.5	M 14 x 1,5	12,5	16	35	115	65	48	16
K3879XPL-M16	M 16	14	18	39	123	73	48	18
K3879XPL-M16X1.5	M 16 x 1,5	14,5	18	39	123	73	48	18

XIII D 1 B 424 B 123

Solid carbide twist drills
A3279XPL / A3879XPL
X·treme

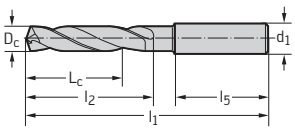






	P	M	K	N	S	H	O
XPL	●●	●	●●	●	●	●	●

Shank DIN 6535 HA



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3279XPL-3	3		14	62	20	36	6
A3279XPL-3.1	3,1		14	62	20	36	6
A3279XPL-1/8IN	3,175	1/8"	14	62	20	36	6
A3279XPL-3.2	3,2		14	62	20	36	6
A3279XPL-3.25	3,25		14	62	20	36	6
A3279XPL-3.3	3,3		14	62	20	36	6
A3279XPL-3.4	3,4		14	62	20	36	6
A3279XPL-3.5	3,5		14	62	20	36	6
A3279XPL-9/64IN	3,572	9/64"	14	62	20	36	6
A3279XPL-3.6	3,6		14	62	20	36	6
A3279XPL-3.65	3,65		14	62	20	36	6
A3279XPL-3.7	3,7		14	62	20	36	6
A3279XPL-3.8	3,8		17	66	24	36	6
A3279XPL-3.9	3,9		17	66	24	36	6
A3279XPL-5/32IN	3,969	5/32"	17	66	24	36	6
A3279XPL-4	4		17	66	24	36	6
A3279XPL-4.1	4,1		17	66	24	36	6
A3279XPL-4.2	4,2		17	66	24	36	6
A3279XPL-4.3	4,3		17	66	24	36	6
A3279XPL-11/64IN	4,366	11/64"	17	66	24	36	6
A3279XPL-4.4	4,4		17	66	24	36	6
A3279XPL-4.5	4,5		17	66	24	36	6
A3279XPL-4.6	4,6		17	66	24	36	6
A3279XPL-4.65	4,65		17	66	24	36	6
A3279XPL-4.7	4,7		17	66	24	36	6
A3279XPL-3/16IN	4,763	3/16"	20	66	28	36	6
A3279XPL-4.8	4,8		20	66	28	36	6
A3279XPL-4.9	4,9		20	66	28	36	6
A3279XPL-5	5		20	66	28	36	6
A3279XPL-5.1	5,1		20	66	28	36	6
A3279XPL-13/64IN	5,159	13/64"	20	66	28	36	6
A3279XPL-5.2	5,2		20	66	28	36	6
A3279XPL-5.3	5,3		20	66	28	36	6
A3279XPL-5.4	5,4		20	66	28	36	6
A3279XPL-5.5	5,5		20	66	28	36	6
A3279XPL-5.55	5,55		20	66	28	36	6
A3279XPL-7/32IN	5,556	7/32"	20	66	28	36	6
A3279XPL-5.6	5,6		20	66	28	36	6
A3279XPL-5.7	5,7		20	66	28	36	6
A3279XPL-5.8	5,8		20	66	28	36	6
A3279XPL-5.9	5,9		20	66	28	36	6
A3279XPL-15/64IN	5,953	15/64"	20	66	28	36	6
A3279XPL-6	6		20	66	28	36	6
A3279XPL-6.1	6,1		24	79	34	36	8

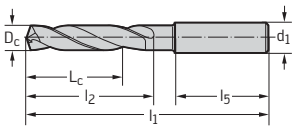
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●● Primary application
● Other application

XIII D 1 B 424 B 123

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Shank DIN 6535 HA



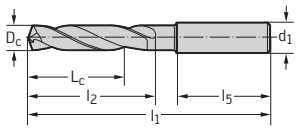
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3279XPL-6.2	6,2		24	79	34	36	8
A3279XPL-6.3	6,3		24	79	34	36	8
A3279XPL-1/4IN	6,35	1/4"	24	79	34	36	8
A3279XPL-6.4	6,4		24	79	34	36	8
A3279XPL-6.5	6,5		24	79	34	36	8
A3279XPL-6.6	6,6		24	79	34	36	8
A3279XPL-6.7	6,7		24	79	34	36	8
A3279XPL-17/64IN	6,747	17/64"	24	79	34	36	8
A3279XPL-6.8	6,8		24	79	34	36	8
A3279XPL-6.9	6,9		24	79	34	36	8
A3279XPL-7	7		24	79	34	36	8
A3279XPL-7.1	7,1		29	79	41	36	8
A3279XPL-9/32IN	7,144	9/32"	29	79	41	36	8
A3279XPL-7.2	7,2		29	79	41	36	8
A3279XPL-7.3	7,3		29	79	41	36	8
A3279XPL-7.4	7,4		29	79	41	36	8
A3279XPL-7.5	7,5		29	79	41	36	8
A3279XPL-19/64IN	7,541	19/64"	29	79	41	36	8
A3279XPL-7.55	7,55		29	79	41	36	8
A3279XPL-7.6	7,6		29	79	41	36	8
A3279XPL-7.7	7,7		29	79	41	36	8
A3279XPL-7.8	7,8		29	79	41	36	8
A3279XPL-7.9	7,9		29	79	41	36	8
A3279XPL-5/16IN	7,938	5/16"	29	79	41	36	8
A3279XPL-8	8		29	79	41	36	8
A3279XPL-8.1	8,1		35	89	47	40	10
A3279XPL-8.2	8,2		35	89	47	40	10
A3279XPL-8.3	8,3		35	89	47	40	10
A3279XPL-21/64IN	8,334	21/64"	35	89	47	40	10
A3279XPL-8.4	8,4		35	89	47	40	10
A3279XPL-8.5	8,5		35	89	47	40	10
A3279XPL-8.6	8,6		35	89	47	40	10
A3279XPL-8.7	8,7		35	89	47	40	10
A3279XPL-11/32IN	8,731	11/32"	35	89	47	40	10
A3279XPL-8.8	8,8		35	89	47	40	10
A3279XPL-8.9	8,9		35	89	47	40	10
A3279XPL-9	9		35	89	47	40	10
A3279XPL-9.1	9,1		35	89	47	40	10
A3279XPL-23/64IN	9,128	23/64"	35	89	47	40	10
A3279XPL-9.2	9,2		35	89	47	40	10
A3279XPL-9.3	9,3		35	89	47	40	10
A3279XPL-9.4	9,4		35	89	47	40	10
A3279XPL-9.5	9,5		35	89	47	40	10
A3279XPL-3/8IN	9,525	3/8"	35	89	47	40	10
A3279XPL-9.6	9,6		35	89	47	40	10
A3279XPL-9.7	9,7		35	89	47	40	10
A3279XPL-9.8	9,8		35	89	47	40	10
A3279XPL-9.9	9,9		35	89	47	40	10
A3279XPL-25/64IN	9,922	25/64"	35	89	47	40	10
A3279XPL-10	10		35	89	47	40	10
A3279XPL-10.1	10,1		40	102	55	45	12
A3279XPL-10.2	10,2		40	102	55	45	12
A3279XPL-10.3	10,3		40	102	55	45	12
A3279XPL-13/32IN	10,319	13/32"	40	102	55	45	12
A3279XPL-10.4	10,4		40	102	55	45	12
A3279XPL-10.5	10,5		40	102	55	45	12
A3279XPL-10.6	10,6		40	102	55	45	12
A3279XPL-27/64IN	10,716	27/64"	40	102	55	45	12
A3279XPL-10.8	10,8		40	102	55	45	12
A3279XPL-10.9	10,9		40	102	55	45	12
A3279XPL-11	11		40	102	55	45	12
A3279XPL-11.1	11,1		40	102	55	45	12

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XIII D 1 B 424 B 123

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Shank DIN 6535 HA



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3279XPL-7/16IN	11,113	7/16"	40	102	55	45	12
A3279XPL-11.2	11,2		40	102	55	45	12
A3279XPL-11.3	11,3		40	102	55	45	12
A3279XPL-11.4	11,4		40	102	55	45	12
A3279XPL-11.5	11,5		40	102	55	45	12
A3279XPL-29/64IN	11,509	29/64"	40	102	55	45	12
A3279XPL-11.55	11,55		40	102	55	45	12
A3279XPL-11.7	11,7		40	102	55	45	12
A3279XPL-11.8	11,8		40	102	55	45	12
A3279XPL-15/32IN	11,906	15/32"	40	102	55	45	12
A3279XPL-12	12		40	102	55	45	12
A3279XPL-12.1	12,1		43	107	60	45	14
A3279XPL-12.2	12,2		43	107	60	45	14
A3279XPL-12.25	12,25		43	107	60	45	14
A3279XPL-12.3	12,3		43	107	60	45	14
A3279XPL-31/64IN	12,303	31/64"	43	107	60	45	14
A3279XPL-12.4	12,4		43	107	60	45	14
A3279XPL-12.5	12,5		43	107	60	45	14
A3279XPL-12.6	12,6		43	107	60	45	14
A3279XPL-1/2IN	12,7	1/2"	43	107	60	45	14
A3279XPL-12.8	12,8		43	107	60	45	14
A3279XPL-12.9	12,9		43	107	60	45	14
A3279XPL-13	13		43	107	60	45	14
A3279XPL-13.1	13,1		43	107	60	45	14
A3279XPL-13.2	13,2		43	107	60	45	14
A3279XPL-13.3	13,3		43	107	60	45	14
A3279XPL-13.4	13,4		43	107	60	45	14
A3279XPL-17/32IN	13,494	17/32"	43	107	60	45	14
A3279XPL-13.5	13,5		43	107	60	45	14
A3279XPL-13.6	13,6		43	107	60	45	14
A3279XPL-13.7	13,7		43	107	60	45	14
A3279XPL-13.8	13,8		43	107	60	45	14
A3279XPL-13.9	13,9		43	107	60	45	14
A3279XPL-14	14		43	107	60	45	14
A3279XPL-14.2	14,2		45	115	65	48	16
A3279XPL-9/16IN	14,288	9/16"	45	115	65	48	16
A3279XPL-14.4	14,4		45	115	65	48	16
A3279XPL-14.5	14,5		45	115	65	48	16
A3279XPL-14.6	14,6		45	115	65	48	16
A3279XPL-14.7	14,7		45	115	65	48	16
A3279XPL-14.75	14,75		45	115	65	48	16
A3279XPL-14.8	14,8		45	115	65	48	16
A3279XPL-15	15		45	115	65	48	16
A3279XPL-15.1	15,1		45	115	65	48	16
A3279XPL-15.2	15,2		45	115	65	48	16
A3279XPL-15.3	15,3		45	115	65	48	16
A3279XPL-15.5	15,5		45	115	65	48	16
A3279XPL-15.6	15,6		45	115	65	48	16
A3279XPL-15.7	15,7		45	115	65	48	16
A3279XPL-15.8	15,8		45	115	65	48	16
A3279XPL-5/8IN	15,875	5/8"	45	115	65	48	16
A3279XPL-15.9	15,9		45	115	65	48	16
A3279XPL-16	16		45	115	65	48	16
A3279XPL-16.1	16,1		51	123	73	48	18
A3279XPL-16.2	16,2		51	123	73	48	18
A3279XPL-16.3	16,3		51	123	73	48	18
A3279XPL-16.4	16,4		51	123	73	48	18
A3279XPL-16.5	16,5		51	123	73	48	18

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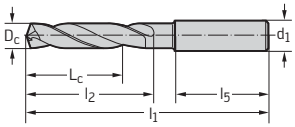
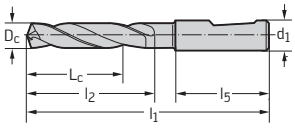
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●● Primary application

● Other application

XIII D 1 B 424 B 123

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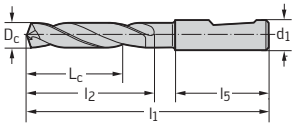
	Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA 	A3279XPL-16.6	16,6		51	123	73	48	18
	A3279XPL-16.7	16,7		51	123	73	48	18
	A3279XPL-16.75	16,75		51	123	73	48	18
	A3279XPL-16.8	16,8		51	123	73	48	18
	A3279XPL-17	17		51	123	73	48	18
	A3279XPL-17.2	17,2		51	123	73	48	18
	A3279XPL-17.3	17,3		51	123	73	48	18
	A3279XPL-17.5	17,5		51	123	73	48	18
	A3279XPL-17.6	17,6		51	123	73	48	18
	A3279XPL-17.7	17,7		51	123	73	48	18
	A3279XPL-17.8	17,8		51	123	73	48	18
	A3279XPL-18	18		51	123	73	48	18
	A3279XPL-18.2	18,2		55	131	79	50	20
	A3279XPL-18.7	18,7		55	131	79	50	20
	A3279XPL-18.8	18,8		55	131	79	50	20
	A3279XPL-19	19		55	131	79	50	20
	A3279XPL-3/4IN	19,05	3/4"	55	131	79	50	20
	A3279XPL-19.5	19,5		55	131	79	50	20
	A3279XPL-19.7	19,7		55	131	79	50	20
	A3279XPL-19.8	19,8		55	131	79	50	20
	A3279XPL-20	20		55	131	79	50	20
Shank DIN 6535 HE 	A3879XPL-3	3		14	62	20	36	6
	A3879XPL-3.1	3,1		14	62	20	36	6
	A3879XPL-3.2	3,2		14	62	20	36	6
	A3879XPL-3.25	3,25		14	62	20	36	6
	A3879XPL-3.3	3,3		14	62	20	36	6
	A3879XPL-3.4	3,4		14	62	20	36	6
	A3879XPL-3.5	3,5		14	62	20	36	6
	A3879XPL-3.6	3,6		14	62	20	36	6
	A3879XPL-3.65	3,65		14	62	20	36	6
	A3879XPL-3.7	3,7		14	62	20	36	6
	A3879XPL-3.8	3,8		17	66	24	36	6
	A3879XPL-3.9	3,9		17	66	24	36	6
	A3879XPL-4	4		17	66	24	36	6
	A3879XPL-4.1	4,1		17	66	24	36	6
	A3879XPL-4.2	4,2		17	66	24	36	6
	A3879XPL-4.3	4,3		17	66	24	36	6
	A3879XPL-4.4	4,4		17	66	24	36	6
	A3879XPL-4.5	4,5		17	66	24	36	6
	A3879XPL-4.6	4,6		17	66	24	36	6
	A3879XPL-4.65	4,65		17	66	24	36	6
	A3879XPL-4.7	4,7		17	66	24	36	6
	A3879XPL-4.8	4,8		20	66	28	36	6
	A3879XPL-4.9	4,9		20	66	28	36	6
	A3879XPL-5	5		20	66	28	36	6
	A3879XPL-5.1	5,1		20	66	28	36	6
	A3879XPL-5.2	5,2		20	66	28	36	6
	A3879XPL-5.3	5,3		20	66	28	36	6
	A3879XPL-5.4	5,4		20	66	28	36	6
	A3879XPL-5.5	5,5		20	66	28	36	6
	A3879XPL-5.55	5,55		20	66	28	36	6
	A3879XPL-5.6	5,6		20	66	28	36	6
	A3879XPL-5.7	5,7		20	66	28	36	6
	A3879XPL-5.8	5,8		20	66	28	36	6
	A3879XPL-5.9	5,9		20	66	28	36	6
	A3879XPL-6	6		20	66	28	36	6
	A3879XPL-6.1	6,1		24	79	34	36	8
	A3879XPL-6.2	6,2		24	79	34	36	8
	A3879XPL-6.3	6,3		24	79	34	36	8
	A3879XPL-6.4	6,4		24	79	34	36	8
	A3879XPL-6.5	6,5		24	79	34	36	8
	A3879XPL-6.6	6,6		24	79	34	36	8

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XIII D 1 B 424 B 123

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Shank DIN 6535 HE



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3879XPL-6.7	6,7		24	79	34	36	8
A3879XPL-6.8	6,8		24	79	34	36	8
A3879XPL-6.9	6,9		24	79	34	36	8
A3879XPL-7	7		24	79	34	36	8
A3879XPL-7.1	7,1		29	79	41	36	8
A3879XPL-7.2	7,2		29	79	41	36	8
A3879XPL-7.3	7,3		29	79	41	36	8
A3879XPL-7.4	7,4		29	79	41	36	8
A3879XPL-7.5	7,5		29	79	41	36	8
A3879XPL-7.55	7,55		29	79	41	36	8
A3879XPL-7.6	7,6		29	79	41	36	8
A3879XPL-7.8	7,8		29	79	41	36	8
A3879XPL-7.9	7,9		29	79	41	36	8
A3879XPL-8	8		29	79	41	36	8
A3879XPL-8.1	8,1		35	89	47	40	10
A3879XPL-8.2	8,2		35	89	47	40	10
A3879XPL-8.3	8,3		35	89	47	40	10
A3879XPL-8.4	8,4		35	89	47	40	10
A3879XPL-8.5	8,5		35	89	47	40	10
A3879XPL-8.6	8,6		35	89	47	40	10
A3879XPL-8.7	8,7		35	89	47	40	10
A3879XPL-8.8	8,8		35	89	47	40	10
A3879XPL-8.9	8,9		35	89	47	40	10
A3879XPL-9	9		35	89	47	40	10
A3879XPL-9.1	9,1		35	89	47	40	10
A3879XPL-9.2	9,2		35	89	47	40	10
A3879XPL-9.3	9,3		35	89	47	40	10
A3879XPL-9.4	9,4		35	89	47	40	10
A3879XPL-9.5	9,5		35	89	47	40	10
A3879XPL-9.55	9,55		35	89	47	40	10
A3879XPL-9.6	9,6		35	89	47	40	10
A3879XPL-9.7	9,7		35	89	47	40	10
A3879XPL-9.8	9,8		35	89	47	40	10
A3879XPL-9.9	9,9		35	89	47	40	10
A3879XPL-10	10		35	89	47	40	10
A3879XPL-10.1	10,1		40	102	55	45	12
A3879XPL-10.2	10,2		40	102	55	45	12
A3879XPL-10.3	10,3		40	102	55	45	12
A3879XPL-10.4	10,4		40	102	55	45	12
A3879XPL-10.5	10,5		40	102	55	45	12
A3879XPL-10.6	10,6		40	102	55	45	12
A3879XPL-10.7	10,7		40	102	55	45	12
A3879XPL-10.8	10,8		40	102	55	45	12
A3879XPL-10.9	10,9		40	102	55	45	12
A3879XPL-11	11		40	102	55	45	12
A3879XPL-11.1	11,1		40	102	55	45	12
A3879XPL-11.2	11,2		40	102	55	45	12
A3879XPL-11.3	11,3		40	102	55	45	12
A3879XPL-11.4	11,4		40	102	55	45	12
A3879XPL-11.5	11,5		40	102	55	45	12
A3879XPL-11.55	11,55		40	102	55	45	12
A3879XPL-11.6	11,6		40	102	55	45	12
A3879XPL-11.7	11,7		40	102	55	45	12
A3879XPL-11.8	11,8		40	102	55	45	12
A3879XPL-12	12		40	102	55	45	12
A3879XPL-12.1	12,1		43	107	60	45	14
A3879XPL-12.2	12,2		43	107	60	45	14
A3879XPL-12.25	12,25		43	107	60	45	14

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WALTER SELECT

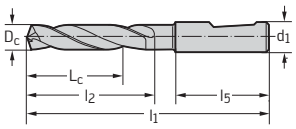
●● Primary application

● Other application

XIII D 1 B 424 B 123

Continued

Shank DIN 6535 HE



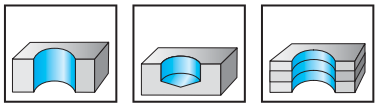
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3879XPL-12.3	12,3		43	107	60	45	14
A3879XPL-12.4	12,4		43	107	60	45	14
A3879XPL-12.5	12,5		43	107	60	45	14
A3879XPL-12.6	12,6		43	107	60	45	14
A3879XPL-12.7	12,7	1/2"	43	107	60	45	14
A3879XPL-12.75	12,75		43	107	60	45	14
A3879XPL-12.8	12,8		43	107	60	45	14
A3879XPL-12.9	12,9		43	107	60	45	14
A3879XPL-13	13		43	107	60	45	14
A3879XPL-13.1	13,1		43	107	60	45	14
A3879XPL-13.2	13,2		43	107	60	45	14
A3879XPL-13.3	13,3		43	107	60	45	14
A3879XPL-13.4	13,4		43	107	60	45	14
A3879XPL-13.5	13,5		43	107	60	45	14
A3879XPL-13.6	13,6		43	107	60	45	14
A3879XPL-13.7	13,7		43	107	60	45	14
A3879XPL-13.8	13,8		43	107	60	45	14
A3879XPL-13.9	13,9		43	107	60	45	14
A3879XPL-14	14		43	107	60	45	14
A3879XPL-14.1	14,1		45	115	65	48	16
A3879XPL-14.2	14,2		45	115	65	48	16
A3879XPL-14.3	14,3		45	115	65	48	16
A3879XPL-14.4	14,4		45	115	65	48	16
A3879XPL-14.5	14,5		45	115	65	48	16
A3879XPL-14.6	14,6		45	115	65	48	16
A3879XPL-14.7	14,7		45	115	65	48	16
A3879XPL-14.75	14,75		45	115	65	48	16
A3879XPL-14.8	14,8		45	115	65	48	16
A3879XPL-15	15		45	115	65	48	16
A3879XPL-15.1	15,1		45	115	65	48	16
A3879XPL-15.2	15,2		45	115	65	48	16
A3879XPL-15.3	15,3		45	115	65	48	16
A3879XPL-15.5	15,5		45	115	65	48	16
A3879XPL-15.6	15,6		45	115	65	48	16
A3879XPL-15.7	15,7		45	115	65	48	16
A3879XPL-15.8	15,8		45	115	65	48	16
A3879XPL-15.9	15,9		45	115	65	48	16
A3879XPL-16	16		45	115	65	48	16
A3879XPL-16.1	16,1		51	123	73	48	18
A3879XPL-16.2	16,2		51	123	73	48	18
A3879XPL-16.3	16,3		51	123	73	48	18
A3879XPL-16.4	16,4		51	123	73	48	18
A3879XPL-16.5	16,5		51	123	73	48	18
A3879XPL-16.6	16,6		51	123	73	48	18
A3879XPL-16.7	16,7		51	123	73	48	18
A3879XPL-16.75	16,75		51	123	73	48	18
A3879XPL-16.8	16,8		51	123	73	48	18
A3879XPL-17	17		51	123	73	48	18
A3879XPL-17.2	17,2		51	123	73	48	18
A3879XPL-17.3	17,3		51	123	73	48	18
A3879XPL-17.5	17,5		51	123	73	48	18
A3879XPL-17.6	17,6		51	123	73	48	18
A3879XPL-17.7	17,7		51	123	73	48	18
A3879XPL-17.8	17,8		51	123	73	48	18
A3879XPL-18	18		51	123	73	48	18
A3879XPL-18.2	18,2		55	131	79	50	20
A3879XPL-18.5	18,5		55	131	79	50	20
A3879XPL-18.7	18,7		55	131	79	50	20
A3879XPL-18.8	18,8		55	131	79	50	20
A3879XPL-19	19		55	131	79	50	20
A3879XPL-19.5	19,5		55	131	79	50	20
A3879XPL-19.7	19,7		55	131	79	50	20
A3879XPL-19.8	19,8		55	131	79	50	20
A3879XPL-20	20		55	131	79	50	20

XIII D 1 B 424 B 123

Solid carbide twist drills
A1164TIN
Alpha® 2



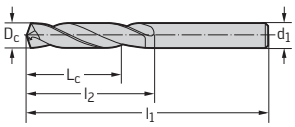
– Up to 1.9 mm dimensions in accordance with DIN 1897



3×D_c | DIN 6539 | 140°

	P	M	K	N	S	H	O
TIN	●●	●	●●	●●	●	●	●

Parallel shank



Designation TIN	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1164TIN-1.5	1,5		6	32	9	1,5
A1164TIN-1/16IN	1,588	1/16"	7	34	10	1,588
A1164TIN-1.6	1,6		7	34	10	1,6
A1164TIN-1.7	1,7		7	34	10	1,7
A1164TIN-1.8	1,8		8	36	11	1,8
A1164TIN-1.82	1,82		8	36	11	1,82
A1164TIN-1.9	1,9		8	36	11	1,9
A1164TIN-5/64IN	1,984	5/64"	8	38	12	1,984
A1164TIN-2	2		8	38	12	2
A1164TIN-2.05	2,05		8	38	12	2,05
A1164TIN-2.1	2,1		8	38	12	2,1
A1164TIN-2.2	2,2		9	40	13	2,2
A1164TIN-2.3	2,3		9	40	13	2,3
A1164TIN-3/32IN	2,381	3/32"	10	43	14	2,381
A1164TIN-2.4	2,4		10	43	14	2,4
A1164TIN-2.5	2,5		10	43	14	2,5
A1164TIN-2.6	2,6		10	43	14	2,6
A1164TIN-2.7	2,7		11	46	16	2,7
A1164TIN-7/64IN	2,778	7/64"	11	46	16	2,778
A1164TIN-2.8	2,8		11	46	16	2,8
A1164TIN-2.9	2,9		11	46	16	2,9
A1164TIN-3	3		11	46	16	3
A1164TIN-3.1	3,1		12	49	18	3,1
A1164TIN-1/8IN	3,175	1/8"	12	49	18	3,175
A1164TIN-3.2	3,2		12	49	18	3,2
A1164TIN-3.25	3,25		12	49	18	3,25
A1164TIN-3.3	3,3		12	49	18	3,3
A1164TIN-3.4	3,4		14	52	20	3,4
A1164TIN-3.5	3,5		14	52	20	3,5
A1164TIN-9/64IN	3,572	9/64"	14	52	20	3,572
A1164TIN-3.6	3,6		14	52	20	3,6
A1164TIN-3.65	3,65		14	52	20	3,65
A1164TIN-3.7	3,7		14	52	20	3,7
A1164TIN-3.8	3,8		15	55	22	3,8
A1164TIN-3.9	3,9		15	55	22	3,9
A1164TIN-5/32IN	3,969	5/32"	15	55	22	3,969
A1164TIN-4	4		15	55	22	4
A1164TIN-4.1	4,1		15	55	22	4,1
A1164TIN-4.2	4,2		15	55	22	4,2
A1164TIN-4.3	4,3		16	58	24	4,3
A1164TIN-11/64IN	4,366	11/64"	16	58	24	4,366
A1164TIN-4.4	4,4		16	58	24	4,4
A1164TIN-4.5	4,5		16	58	24	4,5
A1164TIN-4.6	4,6		16	58	24	4,6

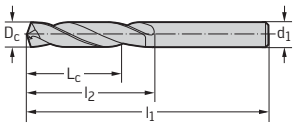
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WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | B 424 | B 123

Continued

Parallel shank



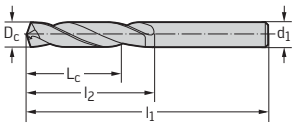
Designation TIN	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1164TIN-4.65	4,65		16	58	24	4,65
A1164TIN-4.7	4,7		16	58	24	4,7
A1164TIN-3/16IN	4,763	3/16"	18	62	26	4,763
A1164TIN-4.8	4,8		18	62	26	4,8
A1164TIN-4.9	4,9		18	62	26	4,9
A1164TIN-5	5		18	62	26	5
A1164TIN-5.1	5,1		18	62	26	5,1
A1164TIN-13/64IN	5,159	13/64"	18	62	26	5,159
A1164TIN-5.2	5,2		18	62	26	5,2
A1164TIN-5.3	5,3		18	62	26	5,3
A1164TIN-5.4	5,4		19	66	28	5,4
A1164TIN-5.5	5,5		19	66	28	5,5
A1164TIN-5.55	5,55		19	66	28	5,55
A1164TIN-7/32IN	5,556	7/32"	19	66	28	5,556
A1164TIN-5.6	5,6		19	66	28	5,6
A1164TIN-5.7	5,7		19	66	28	5,7
A1164TIN-5.8	5,8		19	66	28	5,8
A1164TIN-5.9	5,9		19	66	28	5,9
A1164TIN-15/64IN	5,953	15/64"	19	66	28	5,953
A1164TIN-6	6		19	66	28	6
A1164TIN-6.1	6,1		20	70	31	6,1
A1164TIN-6.2	6,2		20	70	31	6,2
A1164TIN-6.3	6,3		20	70	31	6,3
A1164TIN-1/4IN	6,35	1/4"	20	70	31	6,35
A1164TIN-6.4	6,4		20	70	31	6,4
A1164TIN-6.5	6,5		20	70	31	6,5
A1164TIN-6.6	6,6		20	70	31	6,6
A1164TIN-6.7	6,7		20	70	31	6,7
A1164TIN-17/64IN	6,747	17/64"	22	74	34	6,747
A1164TIN-6.8	6,8		22	74	34	6,8
A1164TIN-6.9	6,9		22	74	34	6,9
A1164TIN-7	7		22	74	34	7
A1164TIN-7.1	7,1		22	74	34	7,1
A1164TIN-9/32IN	7,144	9/32"	22	74	34	7,144
A1164TIN-7.2	7,2		22	74	34	7,2
A1164TIN-7.3	7,3		22	74	34	7,3
A1164TIN-7.4	7,4		22	74	34	7,4
A1164TIN-7.5	7,5		22	74	34	7,5
A1164TIN-7.6	7,6		25	79	37	7,6
A1164TIN-7.7	7,7		25	79	37	7,7
A1164TIN-7.8	7,8		25	79	37	7,8
A1164TIN-7.9	7,9		25	79	37	7,9
A1164TIN-5/16IN	7,938	5/16"	25	79	37	7,938
A1164TIN-8	8		25	79	37	8
A1164TIN-8.1	8,1		24	79	37	8,1
A1164TIN-8.2	8,2		24	79	37	8,2
A1164TIN-8.3	8,3		24	79	37	8,3
A1164TIN-21/64IN	8,334	21/64"	24	79	37	8,334
A1164TIN-8.4	8,4		24	79	37	8,4
A1164TIN-8.5	8,5		24	79	37	8,5
A1164TIN-8.6	8,6		25	84	40	8,6
A1164TIN-8.7	8,7		25	84	40	8,7
A1164TIN-8.8	8,8		25	84	40	8,8
A1164TIN-8.9	8,9		25	84	40	8,9
A1164TIN-9	9		25	84	40	9
A1164TIN-9.1	9,1		25	84	40	9,1
A1164TIN-23/64IN	9,128	23/64"	25	84	40	9,128
A1164TIN-9.2	9,2		25	84	40	9,2
A1164TIN-9.3	9,3		25	84	40	9,3
A1164TIN-9.4	9,4		25	84	40	9,4
A1164TIN-9.5	9,5		25	84	40	9,5
A1164TIN-3/8IN	9,525	3/8"	28	89	43	9,525

Continued

XIII D 1 B 424 B 123

Continued

Parallel shank



Designation TIN	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1164TIN-9.6	9,6		28	89	43	9,6
A1164TIN-9.7	9,7		28	89	43	9,7
A1164TIN-9.8	9,8		28	89	43	9,8
A1164TIN-9.9	9,9		28	89	43	9,9
A1164TIN-10	10		28	89	43	10
A1164TIN-10.1	10,1		27	89	43	10,1
A1164TIN-10.2	10,2		27	89	43	10,2
A1164TIN-10.3	10,3		27	89	43	10,3
A1164TIN-10.4	10,4		27	89	43	10,4
A1164TIN-10.5	10,5		27	89	43	10,5
A1164TIN-10.6	10,6		27	89	43	10,6
A1164TIN-10.7	10,7		29	95	47	10,7
A1164TIN-10.8	10,8		29	95	47	10,8
A1164TIN-10.9	10,9		29	95	47	10,9
A1164TIN-11	11		29	95	47	11
A1164TIN-11.1	11,1		29	95	47	11,1
A1164TIN-7/16IN	11,113	7/16"	29	95	47	11,113
A1164TIN-11.2	11,2		29	95	47	11,2
A1164TIN-11.3	11,3		29	95	47	11,3
A1164TIN-11.4	11,4		29	95	47	11,4
A1164TIN-11.5	11,5		29	95	47	11,5
A1164TIN-11.6	11,6		29	95	47	11,6
A1164TIN-11.7	11,7		29	95	47	11,7
A1164TIN-11.8	11,8		29	95	47	11,8
A1164TIN-11.9	11,9		33	102	51	11,9
A1164TIN-15/32IN	11,906	15/32"	33	102	51	11,906
A1164TIN-12	12		33	102	51	12
A1164TIN-12.1	12,1		37	102	51	12,1
A1164TIN-12.2	12,2		37	102	51	12,2
A1164TIN-12.3	12,3		37	102	51	12,3
A1164TIN-12.4	12,4		37	102	51	12,4
A1164TIN-12.5	12,5		37	102	51	12,5
A1164TIN-12.6	12,6		37	102	51	12,6
A1164TIN-1/2IN	12,7	1/2"	37	102	51	12,7
A1164TIN-12.8	12,8		37	102	51	12,8
A1164TIN-12.9	12,9		37	102	51	12,9
A1164TIN-13	13		37	102	51	13
A1164TIN-13.1	13,1		37	102	51	13,1
A1164TIN-13.2	13,2		37	102	51	13,2
A1164TIN-13.3	13,3		40	107	54	13,3
A1164TIN-13.4	13,4		40	107	54	13,4
A1164TIN-13.5	13,5		40	107	54	13,5
A1164TIN-13.6	13,6		40	107	54	13,6
A1164TIN-13.7	13,7		40	107	54	13,7
A1164TIN-13.8	13,8		40	107	54	13,8
A1164TIN-13.9	13,9		40	107	54	13,9
A1164TIN-14	14		40	107	54	14
A1164TIN-14.1	14,1		41	111	56	14,1
A1164TIN-14.2	14,2		41	111	56	14,2
A1164TIN-9/16IN	14,288	9/16"	41	111	56	14,288
A1164TIN-14.3	14,3		41	111	56	14,3
A1164TIN-14.4	14,4		41	111	56	14,4
A1164TIN-14.5	14,5		41	111	56	14,5
A1164TIN-14.6	14,6		41	111	56	14,6
A1164TIN-14.7	14,7		41	111	56	14,7
A1164TIN-14.8	14,8		41	111	56	14,8
A1164TIN-14.9	14,9		41	111	56	14,9
A1164TIN-15	15		41	111	56	15

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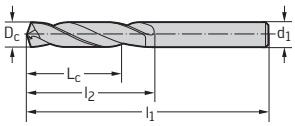
WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 424 B 123

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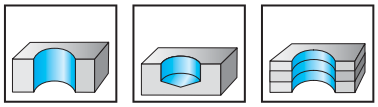
	Designation TIN	D_c h7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
Parallel shank 	A1164TIN-15.1	15,1		42	115	58	15,1
	A1164TIN-15.2	15,2		42	115	58	15,2
	A1164TIN-15.3	15,3		42	115	58	15,3
	A1164TIN-15.4	15,4		42	115	58	15,4
	A1164TIN-15.5	15,5		42	115	58	15,5
	A1164TIN-15.6	15,6		42	115	58	15,6
	A1164TIN-15.7	15,7		42	115	58	15,7
	A1164TIN-15.8	15,8		42	115	58	15,8
	A1164TIN-5/8IN	15,875	5/8"	42	115	58	15,875
	A1164TIN-15.9	15,9		42	115	58	15,9
	A1164TIN-16	16		42	115	58	16
	A1164TIN-18	18		44	123	62	18
	A1164TIN-19	19		45	127	64	19
	A1164TIN-3/4IN	19,05	3/4"	46	131	66	19,05
	A1164TIN-19.5	19,5		46	131	66	19,5
	A1164TIN-20	20		46	131	66	20

XIII D 1 B 424 B 123

Solid carbide twist drills
A1163



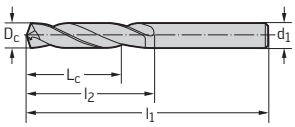
– Type N



3×D_c | DIN 6539 | 118°

	P	M	K	N	S	H	O
Uncoated			●	●●	●		●●

Parallel shank



Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1163-1	1	4	26	6	1
A1163-1.1	1,1	5	28	7	1,1
A1163-1.2	1,2	6	30	8	1,2
A1163-1.3	1,3	6	30	8	1,3
A1163-1.4	1,4	6	32	9	1,4
A1163-1.5	1,5	6	32	9	1,5
A1163-1.6	1,6	7	34	10	1,6
A1163-1.7	1,7	7	34	10	1,7
A1163-1.8	1,8	8	36	11	1,8
A1163-1.9	1,9	8	36	11	1,9
A1163-2	2	8	38	12	2
A1163-2.1	2,1	8	38	12	2,1
A1163-2.2	2,2	9	40	13	2,2
A1163-2.3	2,3	9	40	13	2,3
A1163-2.4	2,4	10	43	14	2,4
A1163-2.5	2,5	10	43	14	2,5
A1163-2.6	2,6	10	43	14	2,6
A1163-2.7	2,7	11	46	16	2,7
A1163-2.8	2,8	11	46	16	2,8
A1163-2.9	2,9	11	46	16	2,9
A1163-3	3	11	46	16	3
A1163-3.1	3,1	12	49	18	3,1
A1163-3.2	3,2	12	49	18	3,2
A1163-3.3	3,3	12	49	18	3,3
A1163-3.4	3,4	14	52	20	3,4
A1163-3.5	3,5	14	52	20	3,5
A1163-3.6	3,6	14	52	20	3,6
A1163-3.7	3,7	14	52	20	3,7
A1163-3.8	3,8	15	55	22	3,8
A1163-3.9	3,9	15	55	22	3,9
A1163-4	4	15	55	22	4
A1163-4.1	4,1	15	55	22	4,1
A1163-4.2	4,2	15	55	22	4,2
A1163-4.3	4,3	16	58	24	4,3
A1163-4.4	4,4	16	58	24	4,4
A1163-4.5	4,5	16	58	24	4,5
A1163-4.6	4,6	16	58	24	4,6
A1163-4.7	4,7	16	58	24	4,7
A1163-4.8	4,8	18	62	26	4,8
A1163-4.9	4,9	18	62	26	4,9
A1163-5	5	18	62	26	5
A1163-5.1	5,1	18	62	26	5,1
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A1163-5.3	5,3	18	62	26	5,3

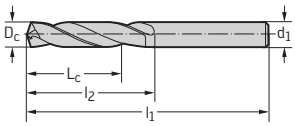
Continued

WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | B 424 | B 123

Continued

Parallel shank



Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1163-5.4	5,4	19	66	28	5,4
A1163-5.5	5,5	19	66	28	5,5
A1163-5.6	5,6	19	66	28	5,6
A1163-5.7	5,7	19	66	28	5,7
A1163-5.8	5,8	19	66	28	5,8
A1163-5.9	5,9	19	66	28	5,9
A1163-6	6	19	66	28	6
A1163-6.1	6,1	20	70	31	6,1
A1163-6.2	6,2	20	70	31	6,2
A1163-6.3	6,3	20	70	31	6,3
A1163-6.4	6,4	20	70	31	6,4
A1163-6.5	6,5	20	70	31	6,5
A1163-6.6	6,6	20	70	31	6,6
A1163-6.7	6,7	20	70	31	6,7
A1163-6.8	6,8	22	74	34	6,8
A1163-6.9	6,9	22	74	34	6,9
A1163-7	7	22	74	34	7
A1163-7.1	7,1	22	74	34	7,1
A1163-7.2	7,2	22	74	34	7,2
A1163-7.3	7,3	22	74	34	7,3
A1163-7.4	7,4	22	74	34	7,4
A1163-7.5	7,5	22	74	34	7,5
A1163-7.6	7,6	25	79	37	7,6
A1163-7.7	7,7	25	79	37	7,7
A1163-7.8	7,8	25	79	37	7,8
A1163-7.9	7,9	25	79	37	7,9
A1163-8	8	25	79	37	8
A1163-8.1	8,1	24	79	37	8,1
A1163-8.2	8,2	24	79	37	8,2
A1163-8.3	8,3	24	79	37	8,3
A1163-8.4	8,4	24	79	37	8,4
A1163-8.5	8,5	24	79	37	8,5
A1163-8.6	8,6	25	84	40	8,6
A1163-8.7	8,7	25	84	40	8,7
A1163-8.8	8,8	25	84	40	8,8
A1163-8.9	8,9	25	84	40	8,9
A1163-9	9	25	84	40	9
A1163-9.1	9,1	25	84	40	9,1
A1163-9.2	9,2	25	84	40	9,2
A1163-9.3	9,3	25	84	40	9,3
A1163-9.4	9,4	25	84	40	9,4
A1163-9.5	9,5	25	84	40	9,5
A1163-9.6	9,6	28	89	43	9,6
A1163-9.7	9,7	28	89	43	9,7
A1163-9.8	9,8	28	89	43	9,8
A1163-9.9	9,9	28	89	43	9,9
A1163-10	10	28	89	43	10
A1163-10.2	10,2	27	89	43	10,2
A1163-10.5	10,5	27	89	43	10,5
A1163-11	11	29	95	47	11
A1163-11.5	11,5	29	95	47	11,5
A1163-12	12	33	102	51	12

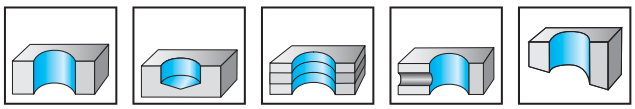
XIII D 1 B 424 B 123

Solid carbide 3 Flute Drills
A1166TIN / A1166



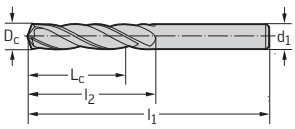
– Overall length DIN 6539, flutes extended compared to DIN 6539





	P	M	K	N	S	H	O
TIN	●					●	
Uncoated	●			●	●	●	

Parallel shank



Designation TIN	Designation Uncoated	D_c h7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1166TIN-3	A1166-3	3		17	46	22	3
	A1166-3.1	3,1		18	49	24	3,1
	A1166-1/8IN	3,175	1/8"	18	49	24	3,175
	A1166-3.2	3,2		18	49	24	3,2
A1166TIN-3.3	A1166-3.3	3,3		18	49	24	3,3
	A1166-3.4	3,4		21	52	27	3,4
A1166TIN-3.5	A1166-3.5	3,5		21	52	27	3,5
	A1166-9/64IN	3,572	9/64"	21	52	27	3,572
	A1166-3.6	3,6		21	52	27	3,6
	A1166-3.7	3,7		21	52	27	3,7
	A1166-3.8	3,8		23	55	30	3,8
	A1166-3.9	3,9		23	55	30	3,9
	A1166-5/32IN	3,969	5/32"	23	55	30	3,969
A1166TIN-4	A1166-4	4		23	55	30	4
	A1166-4.1	4,1		23	55	30	4,1
A1166TIN-4.2	A1166-4.2	4,2		23	55	30	4,2
	A1166-4.3	4,3		24	58	32	4,3
	A1166-4.4	4,4		24	58	32	4,4
A1166TIN-4.5	A1166-4.5	4,5		24	58	32	4,5
A1166TIN-4.6	A1166-4.6	4,6		24	58	32	4,6
	A1166-4.7	4,7		24	58	32	4,7
	A1166-3/16IN	4,763	3/16"	27	62	35	4,763
	A1166-4.8	4,8		27	62	35	4,8
	A1166-4.9	4,9		27	62	35	4,9
A1166TIN-5	A1166-5	5		27	62	35	5
	A1166-5.1	5,1		27	62	35	5,1
	A1166-13/64IN	5,159	13/64"	27	62	35	5,159
	A1166-5.2	5,2		27	62	35	5,2
	A1166-5.3	5,3		27	62	35	5,3
	A1166-5.4	5,4		30	66	39	5,4
A1166TIN-5.5	A1166-5.5	5,5		30	66	39	5,5
	A1166-7/32IN	5,556	7/32"	30	66	39	5,556
	A1166-5.6	5,6		30	66	39	5,6
	A1166-5.7	5,7		30	66	39	5,7
	A1166-5.8	5,8		30	66	39	5,8
	A1166-5.9	5,9		30	66	39	5,9
	A1166-15/64IN	5,953	15/64"	30	66	39	5,953
A1166TIN-6	A1166-6	6		30	66	39	6
	A1166-6.1	6,1		31	70	42	6,1
	A1166-6.2	6,2		31	70	42	6,2
	A1166-6.3	6,3		31	70	42	6,3
	A1166-1/4IN	6,35	1/4"	31	70	42	6,35
	A1166-6.4	6,4		31	70	42	6,4
A1166TIN-6.5	A1166-6.5	6,5		31	70	42	6,5

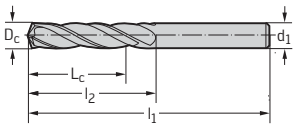
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WALTER SELECT
●● Primary application
● Other application

XIII D 1 B 424 B 123

Continued

Parallel shank



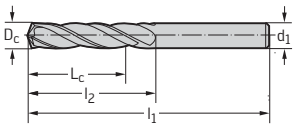
Designation TIN	Designation Uncoated	D_c h7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
	A1166-6.6	6,6		31	70	42	6,6
	A1166-6.7	6,7		31	70	42	6,7
A1166TIN-6.8	A1166-6.8	6,8		33	74	45	6,8
	A1166-6.9	6,9		33	74	45	6,9
A1166TIN-7	A1166-7	7		33	74	45	7
	A1166-7.1	7,1		33	74	45	7,1
	A1166-7.2	7,2		33	74	45	7,2
	A1166-7.3	7,3		33	74	45	7,3
	A1166-7.4	7,4		33	74	45	7,4
A1166TIN-7.5	A1166-7.5	7,5		33	74	45	7,5
	A1166-7.6	7,6		35	79	48	7,6
	A1166-7.7	7,7		35	79	48	7,7
A1166TIN-7.8	A1166-7.8	7,8		35	79	48	7,8
	A1166-7.9	7,9		35	79	48	7,9
	A1166-5/16IN	7,938	5/16"	35	79	48	7,938
A1166TIN-8	A1166-8	8		35	79	48	8
	A1166-8.1	8,1		35	79	48	8,1
	A1166-8.2	8,2		35	79	48	8,2
	A1166-8.3	8,3		35	79	48	8,3
	A1166-8.4	8,4		35	79	48	8,4
A1166TIN-8.5	A1166-8.5	8,5		35	79	48	8,5
	A1166-8.6	8,6		37	84	52	8,6
	A1166-8.7	8,7		37	84	52	8,7
	A1166-8.8	8,8		37	84	52	8,8
	A1166-8.9	8,9		37	84	52	8,9
A1166TIN-9	A1166-9	9		37	84	52	9
	A1166-9.1	9,1		37	84	52	9,1
	A1166-9.2	9,2		37	84	52	9,2
	A1166-9.3	9,3		37	84	52	9,3
	A1166-9.4	9,4		37	84	52	9,4
A1166TIN-9.5	A1166-9.5	9,5		37	84	52	9,5
	A1166-9.6	9,6		39	89	55	9,6
	A1166-9.7	9,7		39	89	55	9,7
	A1166-9.8	9,8		39	89	55	9,8
	A1166-9.9	9,9		39	89	55	9,9
A1166TIN-10	A1166-10	10		39	89	55	10
	A1166-10.1	10,1		39	89	55	10,1
A1166TIN-10.2	A1166-10.2	10,2		39	89	55	10,2
	A1166-10.3	10,3		39	89	55	10,3
	A1166-10.4	10,4		39	89	55	10,4
A1166TIN-10.5	A1166-10.5	10,5		39	89	55	10,5
	A1166-10.6	10,6		39	89	55	10,6
	A1166-10.7	10,7		42	95	60	10,7
	A1166-10.8	10,8		42	95	60	10,8
	A1166-10.9	10,9		42	95	60	10,9
A1166TIN-11	A1166-11	11		42	95	60	11
	A1166-11.1	11,1		42	95	60	11,1
	A1166-11.2	11,2		42	95	60	11,2
	A1166-11.3	11,3		42	95	60	11,3
	A1166-11.4	11,4		42	95	60	11,4
	A1166-11.5	11,5		42	95	60	11,5
	A1166-11.6	11,6		42	95	60	11,6
	A1166-11.7	11,7		42	95	60	11,7
	A1166-11.8	11,8		42	95	60	11,8
	A1166-11.9	11,9		51	102	65	11,9
A1166TIN-12	A1166-12	12		51	102	65	12
	A1166-12.1	12,1		51	102	65	12,1
	A1166-12.2	12,2		51	102	65	12,2
	A1166-12.3	12,3		51	102	65	12,3
	A1166-12.4	12,4		51	102	65	12,4
	A1166-12.5	12,5		51	102	65	12,5
	A1166-12.6	12,6		51	102	65	12,6

Continued

XIII D 1 B 424 B 123

Continued

Parallel shank



Designation TIN	Designation Uncoated	D_c h7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
	A1166-1/2IN	12,7	1/2"	51	102	65	12,7
	A1166-12.8	12,8		51	102	65	12,8
	A1166-12.9	12,9		51	102	65	12,9
A1166TIN-13	A1166-13	13		51	102	65	13
	A1166-13.1	13,1		51	102	65	13,1
	A1166-13.2	13,2		51	102	65	13,2
	A1166-13.3	13,3		52	107	66	13,3
	A1166-13.4	13,4		52	107	66	13,4
	A1166-13.5	13,5		52	107	66	13,5
	A1166-13.6	13,6		52	107	66	13,6
	A1166-13.7	13,7		52	107	66	13,7
	A1166-13.8	13,8		52	107	66	13,8
	A1166-13.9	13,9		52	107	66	13,9
A1166TIN-14	A1166-14	14		52	107	66	14
	A1166-14.1	14,1		55	111	70	14,1
	A1166-14.2	14,2		55	111	70	14,2
	A1166-14.5	14,5		55	111	70	14,5
	A1166-14.6	14,6		55	111	70	14,6
	A1166-15	15		55	111	70	15
	A1166-15.2	15,2		57	115	73	15,2
	A1166-15.3	15,3		57	115	73	15,3
	A1166-15.5	15,5		57	115	73	15,5
	A1166-15.6	15,6		57	115	73	15,6
	A1166-15.7	15,7		57	115	73	15,7
	A1166-15.8	15,8		57	115	73	15,8
A1166TIN-16	A1166-16	16		57	115	73	16
	A1166-16.5	16,5		56	119	73	16,5
	A1166-17	17		56	119	73	17
	A1166-17.5	17,5		58	123	76	17,5
A1166TIN-18	A1166-18	18		58	123	76	18
	A1166-18.5	18,5		57	127	76	18,5
	A1166-19	19		57	127	76	19
	A1166-19.5	19,5		59	131	79	19,5
A1166TIN-20	A1166-20	20		59	131	79	20

WALTER SELECT

●● Primary application

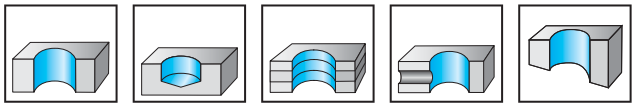
● Other application

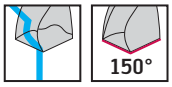
XIII D 1 B 424 B 123

Solid carbide 3 Flute Drills
A1167A



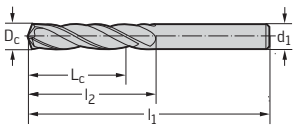
– Overall length DIN 6539, flutes extended compared to DIN 6539





	P	M	K	N	S	H	O
Uncoated			●	●			

Parallel shank



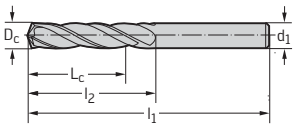
Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1167A-3	3	17	46	22	3
A1167A-3.1	3,1	18	49	24	3,1
A1167A-3.2	3,2	18	49	24	3,2
A1167A-3.3	3,3	18	49	24	3,3
A1167A-3.4	3,4	21	52	27	3,4
A1167A-3.5	3,5	21	52	27	3,5
A1167A-3.6	3,6	21	52	27	3,6
A1167A-3.7	3,7	21	52	27	3,7
A1167A-3.8	3,8	23	55	30	3,8
A1167A-3.9	3,9	23	55	30	3,9
A1167A-4	4	23	55	30	4
A1167A-4.1	4,1	23	55	30	4,1
A1167A-4.2	4,2	23	55	30	4,2
A1167A-4.3	4,3	24	58	32	4,3
A1167A-4.4	4,4	24	58	32	4,4
A1167A-4.5	4,5	24	58	32	4,5
A1167A-4.6	4,6	24	58	32	4,6
A1167A-4.7	4,7	24	58	32	4,7
A1167A-4.8	4,8	27	62	35	4,8
A1167A-4.9	4,9	27	62	35	4,9
A1167A-5	5	27	62	35	5
A1167A-5.1	5,1	27	62	35	5,1
A1167A-5.2	5,2	27	62	35	5,2
A1167A-5.3	5,3	27	62	35	5,3
A1167A-5.4	5,4	30	66	39	5,4
A1167A-5.5	5,5	30	66	39	5,5
A1167A-5.6	5,6	30	66	39	5,6
A1167A-5.7	5,7	30	66	39	5,7
A1167A-5.8	5,8	30	66	39	5,8
A1167A-5.9	5,9	30	66	39	5,9
A1167A-6	6	30	66	39	6
A1167A-6.1	6,1	31	70	42	6,1
A1167A-6.2	6,2	31	70	42	6,2
A1167A-6.3	6,3	31	70	42	6,3
A1167A-6.4	6,4	31	70	42	6,4
A1167A-6.5	6,5	31	70	42	6,5
A1167A-6.6	6,6	31	70	42	6,6
A1167A-6.7	6,7	31	70	42	6,7
A1167A-6.8	6,8	33	74	45	6,8
A1167A-6.9	6,9	33	74	45	6,9
A1167A-7	7	33	74	45	7
A1167A-7.1	7,1	33	74	45	7,1
A1167A-7.2	7,2	33	74	45	7,2
A1167A-7.3	7,3	33	74	45	7,3
A1167A-7.4	7,4	33	74	45	7,4
A1167A-7.5	7,5	33	74	45	7,5
A1167A-7.6	7,6	35	79	48	7,6
A1167A-7.7	7,7	35	79	48	7,7

Continued

XIII D 1 B 424 B 123

Continued

Parallel shank



Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1167A-7.8	7,8	35	79	48	7,8
A1167A-7.9	7,9	35	79	48	7,9
A1167A-8	8	35	79	48	8
A1167A-8.1	8,1	35	79	48	8,1
A1167A-8.2	8,2	35	79	48	8,2
A1167A-8.3	8,3	35	79	48	8,3
A1167A-8.4	8,4	35	79	48	8,4
A1167A-8.5	8,5	35	79	48	8,5
A1167A-8.6	8,6	37	84	52	8,6
A1167A-8.7	8,7	37	84	52	8,7
A1167A-8.8	8,8	37	84	52	8,8
A1167A-8.9	8,9	37	84	52	8,9
A1167A-9	9	37	84	52	9
A1167A-9.1	9,1	37	84	52	9,1
A1167A-9.2	9,2	37	84	52	9,2
A1167A-9.3	9,3	37	84	52	9,3
A1167A-9.4	9,4	37	84	52	9,4
A1167A-9.5	9,5	37	84	52	9,5
A1167A-9.6	9,6	39	89	55	9,6
A1167A-9.7	9,7	39	89	55	9,7
A1167A-9.8	9,8	39	89	55	9,8
A1167A-9.9	9,9	39	89	55	9,9
A1167A-10	10	39	89	55	10
A1167A-10.1	10,1	39	89	55	10,1
A1167A-10.2	10,2	39	89	55	10,2
A1167A-10.3	10,3	39	89	55	10,3
A1167A-10.4	10,4	39	89	55	10,4
A1167A-10.5	10,5	39	89	55	10,5
A1167A-10.6	10,6	39	89	55	10,6
A1167A-10.7	10,7	42	95	60	10,7
A1167A-10.8	10,8	42	95	60	10,8
A1167A-10.9	10,9	42	95	60	10,9
A1167A-11	11	42	95	60	11
A1167A-11.1	11,1	42	95	60	11,1
A1167A-11.2	11,2	42	95	60	11,2
A1167A-11.3	11,3	42	95	60	11,3
A1167A-11.4	11,4	42	95	60	11,4
A1167A-11.5	11,5	42	95	60	11,5
A1167A-11.6	11,6	42	95	60	11,6
A1167A-11.7	11,7	42	95	60	11,7
A1167A-11.8	11,8	42	95	60	11,8
A1167A-11.9	11,9	51	102	65	11,9
A1167A-12	12	51	102	65	12
A1167A-12.1	12,1	51	102	65	12,1
A1167A-12.2	12,2	51	102	65	12,2
A1167A-12.3	12,3	51	102	65	12,3
A1167A-12.5	12,5	51	102	65	12,5
A1167A-12.6	12,6	51	102	65	12,6
A1167A-12.7	12,7	51	102	65	12,7
A1167A-12.8	12,8	51	102	65	12,8
A1167A-13	13	51	102	65	13
A1167A-13.1	13,1	51	102	65	13,1
A1167A-13.2	13,2	51	102	65	13,2
A1167A-13.5	13,5	52	107	66	13,5
A1167A-13.6	13,6	52	107	66	13,6
A1167A-13.7	13,7	52	107	66	13,7
A1167A-13.8	13,8	52	107	66	13,8
A1167A-13.9	13,9	52	107	66	13,9

Continued

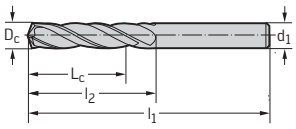
WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 424 B 123

Continued

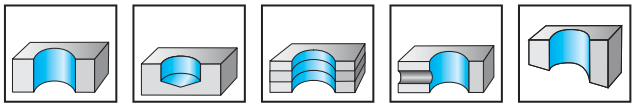
	Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
Parallel shank	A1167A-14	14	52	107	66	14
	A1167A-14.1	14,1	55	111	70	14,1
	A1167A-14.2	14,2	55	111	70	14,2
	A1167A-14.3	14,3	55	111	70	14,3
	A1167A-14.4	14,4	55	111	70	14,4
	A1167A-14.5	14,5	55	111	70	14,5
	A1167A-14.6	14,6	55	111	70	14,6
	A1167A-14.7	14,7	55	111	70	14,7
	A1167A-14.8	14,8	55	111	70	14,8
	A1167A-14.9	14,9	55	111	70	14,9
	A1167A-15	15	55	111	70	15
	A1167A-15.2	15,2	57	115	73	15,2
	A1167A-15.7	15,7	57	115	73	15,7
	A1167A-15.8	15,8	57	115	73	15,8
	A1167A-15.9	15,9	57	115	73	15,9
	A1167A-16	16	57	115	73	16
	A1167A-16.5	16,5	56	119	73	16,5
	A1167A-17	17	56	119	73	17
	A1167A-17.5	17,5	58	123	76	17,5
	A1167A-18	18	58	123	76	18
	A1167A-18.5	18,5	57	127	76	18,5
	A1167A-19	19	57	127	76	19
	A1167A-19.5	19,5	59	131	79	19,5
	A1167A-20	20	59	131	79	20

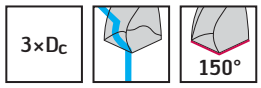
XIII D 1 B 424 B 123

Solid carbide 3 Flute Drills
A1167B



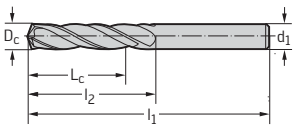
– Overall length DIN 6539, flutes extended compared to DIN 6539





	P	M	K	N	S	H	O
Uncoated				●			

Parallel shank



Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1167B-3	3	17	46	22	3
A1167B-3.1	3,1	18	49	24	3,1
A1167B-3.2	3,2	18	49	24	3,2
A1167B-3.3	3,3	18	49	24	3,3
A1167B-3.4	3,4	21	52	27	3,4
A1167B-3.5	3,5	21	52	27	3,5
A1167B-3.6	3,6	21	52	27	3,6
A1167B-3.7	3,7	21	52	27	3,7
A1167B-3.9	3,9	23	55	30	3,9
A1167B-4	4	23	55	30	4
A1167B-4.1	4,1	23	55	30	4,1
A1167B-4.2	4,2	23	55	30	4,2
A1167B-4.3	4,3	24	58	32	4,3
A1167B-4.4	4,4	24	58	32	4,4
A1167B-4.5	4,5	24	58	32	4,5
A1167B-4.6	4,6	24	58	32	4,6
A1167B-4.7	4,7	24	58	32	4,7
A1167B-4.8	4,8	27	62	35	4,8
A1167B-4.9	4,9	27	62	35	4,9
A1167B-5	5	27	62	35	5
A1167B-5.1	5,1	27	62	35	5,1
A1167B-5.2	5,2	27	62	35	5,2
A1167B-5.3	5,3	27	62	35	5,3
A1167B-5.4	5,4	30	66	39	5,4
A1167B-5.5	5,5	30	66	39	5,5
A1167B-5.6	5,6	30	66	39	5,6
A1167B-5.7	5,7	30	66	39	5,7
A1167B-5.8	5,8	30	66	39	5,8
A1167B-5.9	5,9	30	66	39	5,9
A1167B-6	6	30	66	39	6
A1167B-6.1	6,1	31	70	42	6,1
A1167B-6.3	6,3	31	70	42	6,3
A1167B-6.4	6,4	31	70	42	6,4
A1167B-6.5	6,5	31	70	42	6,5
A1167B-6.6	6,6	31	70	42	6,6
A1167B-6.7	6,7	31	70	42	6,7
A1167B-6.8	6,8	33	74	45	6,8
A1167B-6.9	6,9	33	74	45	6,9
A1167B-7	7	33	74	45	7
A1167B-7.1	7,1	33	74	45	7,1
A1167B-7.3	7,3	33	74	45	7,3
A1167B-7.4	7,4	33	74	45	7,4
A1167B-7.5	7,5	33	74	45	7,5
A1167B-7.6	7,6	35	79	48	7,6

Continued

WALTER SELECT

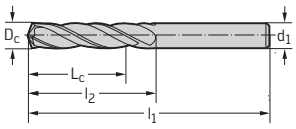
●● Primary application

● Other application

XIII D 1 B 424 B 123

Continued

Parallel shank



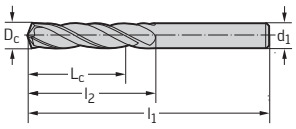
Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1167B-7.7	7,7	35	79	48	7,7
A1167B-7.8	7,8	35	79	48	7,8
A1167B-8	8	35	79	48	8
A1167B-8.1	8,1	35	79	48	8,1
A1167B-8.2	8,2	35	79	48	8,2
A1167B-8.3	8,3	35	79	48	8,3
A1167B-8.5	8,5	35	79	48	8,5
A1167B-8.6	8,6	37	84	52	8,6
A1167B-8.7	8,7	37	84	52	8,7
A1167B-8.9	8,9	37	84	52	8,9
A1167B-9	9	37	84	52	9
A1167B-9.1	9,1	37	84	52	9,1
A1167B-9.2	9,2	37	84	52	9,2
A1167B-9.3	9,3	37	84	52	9,3
A1167B-9.4	9,4	37	84	52	9,4
A1167B-9.5	9,5	37	84	52	9,5
A1167B-9.6	9,6	39	89	55	9,6
A1167B-9.7	9,7	39	89	55	9,7
A1167B-9.8	9,8	39	89	55	9,8
A1167B-9.9	9,9	39	89	55	9,9
A1167B-10	10	39	89	55	10
A1167B-10.1	10,1	39	89	55	10,1
A1167B-10.2	10,2	39	89	55	10,2
A1167B-10.3	10,3	39	89	55	10,3
A1167B-10.4	10,4	39	89	55	10,4
A1167B-10.5	10,5	39	89	55	10,5
A1167B-10.6	10,6	39	89	55	10,6
A1167B-10.7	10,7	42	95	60	10,7
A1167B-10.8	10,8	42	95	60	10,8
A1167B-10.9	10,9	42	95	60	10,9
A1167B-11	11	42	95	60	11
A1167B-11.1	11,1	42	95	60	11,1
A1167B-11.2	11,2	42	95	60	11,2
A1167B-11.3	11,3	42	95	60	11,3
A1167B-11.4	11,4	42	95	60	11,4
A1167B-11.5	11,5	42	95	60	11,5
A1167B-11.6	11,6	42	95	60	11,6
A1167B-11.7	11,7	42	95	60	11,7
A1167B-11.8	11,8	42	95	60	11,8
A1167B-11.9	11,9	51	102	65	11,9
A1167B-12	12	51	102	65	12
A1167B-12.1	12,1	51	102	65	12,1
A1167B-12.2	12,2	51	102	65	12,2
A1167B-12.3	12,3	51	102	65	12,3
A1167B-12.4	12,4	51	102	65	12,4
A1167B-12.5	12,5	51	102	65	12,5
A1167B-12.6	12,6	51	102	65	12,6
A1167B-12.7	12,7	51	102	65	12,7
A1167B-12.8	12,8	51	102	65	12,8
A1167B-12.9	12,9	51	102	65	12,9
A1167B-13	13	51	102	65	13
A1167B-13.1	13,1	51	102	65	13,1
A1167B-13.2	13,2	51	102	65	13,2
A1167B-13.3	13,3	52	107	66	13,3
A1167B-13.4	13,4	52	107	66	13,4
A1167B-13.5	13,5	52	107	66	13,5
A1167B-13.6	13,6	52	107	66	13,6
A1167B-13.7	13,7	52	107	66	13,7
A1167B-13.8	13,8	52	107	66	13,8
A1167B-13.9	13,9	52	107	66	13,9
A1167B-14	14	52	107	66	14
A1167B-14.1	14,1	55	111	70	14,1

Continued

XIII D 1 B 424 B 123

Continued

	Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
Parallel shank	A1167B-14.2	14,2	55	111	70	14,2
	A1167B-14.3	14,3	55	111	70	14,3
	A1167B-14.4	14,4	55	111	70	14,4
	A1167B-14.5	14,5	55	111	70	14,5
	A1167B-14.6	14,6	55	111	70	14,6
	A1167B-14.7	14,7	55	111	70	14,7
	A1167B-14.8	14,8	55	111	70	14,8
	A1167B-14.9	14,9	55	111	70	14,9
	A1167B-15	15	55	111	70	15
	A1167B-15.1	15,1	57	115	73	15,1
	A1167B-15.2	15,2	57	115	73	15,2
	A1167B-15.3	15,3	57	115	73	15,3
	A1167B-15.4	15,4	57	115	73	15,4
	A1167B-15.5	15,5	57	115	73	15,5
	A1167B-15.6	15,6	57	115	73	15,6
	A1167B-15.7	15,7	57	115	73	15,7
	A1167B-15.8	15,8	57	115	73	15,8
	A1167B-15.9	15,9	57	115	73	15,9
	A1167B-16	16	57	115	73	16
	A1167B-16.5	16,5	56	119	73	16,5
	A1167B-17	17	56	119	73	17
	A1167B-17.5	17,5	58	123	76	17,5
	A1167B-18	18	58	123	76	18
	A1167B-18.5	18,5	57	127	76	18,5
	A1167B-19	19	57	127	76	19
	A1167B-19.5	19,5	59	131	79	19,5
	A1167B-20	20	59	131	79	20



WALTER SELECT

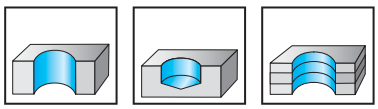
●● Primary application

● Other application

XIII D 1 B 424 B 123

Solid carbide twist drills
DC150 Perform

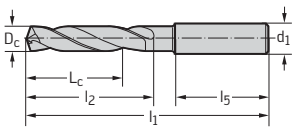




3×D_c | DIN 6537 K | 140°

	P	M	K	N	S	H	O
WJ30RE	●●	●	●●	●	●	●	●

Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-03-03.000A0-	3		14	62	20	36	6	●
DC150-03-03.100A0-	3,1		14	62	20	36	6	●
DC150-03-03.175A0-	3,175	1/8"	14	62	20	36	6	●
DC150-03-03.200A0-	3,2		14	62	20	36	6	●
DC150-03-03.250A0-	3,25		14	62	20	36	6	●
DC150-03-03.300A0-	3,3		14	62	20	36	6	●
DC150-03-03.400A0-	3,4		14	62	20	36	6	●
DC150-03-03.500A0-	3,5		14	62	20	36	6	●
DC150-03-03.572A0-	3,572	9/64"	14	62	20	36	6	●
DC150-03-03.600A0-	3,6		14	62	20	36	6	●
DC150-03-03.700A0-	3,7		14	62	20	36	6	●
DC150-03-03.800A0-	3,8		17	66	24	36	6	●
DC150-03-03.900A0-	3,9		17	66	24	36	6	●
DC150-03-03.969A0-	3,969	5/32"	17	66	24	36	6	●
DC150-03-04.000A0-	4		17	66	24	36	6	●
DC150-03-04.100A0-	4,1		17	66	24	36	6	●
DC150-03-04.200A0-	4,2		17	66	24	36	6	●
DC150-03-04.300A0-	4,3		17	66	24	36	6	●
DC150-03-04.366A0-	4,366	11/64"	17	66	24	36	6	●
DC150-03-04.400A0-	4,4		17	66	24	36	6	●
DC150-03-04.500A0-	4,5		17	66	24	36	6	●
DC150-03-04.600A0-	4,6		17	66	24	36	6	●
DC150-03-04.650A0-	4,65		17	66	24	36	6	●
DC150-03-04.700A0-	4,7		17	66	24	36	6	●
DC150-03-04.763A0-	4,763	3/16"	20	66	28	36	6	●
DC150-03-04.800A0-	4,8		20	66	28	36	6	●
DC150-03-04.900A0-	4,9		20	66	28	36	6	●
DC150-03-05.000A0-	5		20	66	28	36	6	●
DC150-03-05.100A0-	5,1		20	66	28	36	6	●
DC150-03-05.159A0-	5,159	13/64"	20	66	28	36	6	●
DC150-03-05.200A0-	5,2		20	66	28	36	6	●
DC150-03-05.300A0-	5,3		20	66	28	36	6	●
DC150-03-05.400A0-	5,4		20	66	28	36	6	●
DC150-03-05.500A0-	5,5		20	66	28	36	6	●
DC150-03-05.550A0-	5,55		20	66	28	36	6	●
DC150-03-05.556A0-	5,556	7/32"	20	66	28	36	6	●
DC150-03-05.600A0-	5,6		20	66	28	36	6	●
DC150-03-05.700A0-	5,7		20	66	28	36	6	●
DC150-03-05.800A0-	5,8		20	66	28	36	6	●
DC150-03-05.900A0-	5,9		20	66	28	36	6	●
DC150-03-05.953A0-	5,953	15/64"	20	66	28	36	6	●
DC150-03-06.000A0-	6		20	66	28	36	6	●
DC150-03-06.100A0-	6,1		24	79	34	36	8	●
DC150-03-06.200A0-	6,2		24	79	34	36	8	●
DC150-03-06.300A0-	6,3		24	79	34	36	8	●
DC150-03-06.350A0-	6,35	1/4"	24	79	34	36	8	●
DC150-03-06.400A0-	6,4		24	79	34	36	8	●

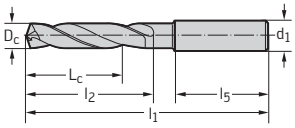
Ordering example for the WJ30RE grade: DC150-03-03.000A0-WJ30RE

Continued

XIII | D 1 | B 424 | B 123

Continued

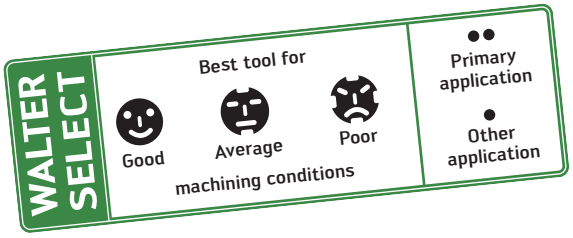
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-03-06.500A0-	6,5		24	79	34	36	8	☹
DC150-03-06.600A0-	6,6		24	79	34	36	8	☹
DC150-03-06.700A0-	6,7		24	79	34	36	8	☹
DC150-03-06.747A0-	6,747	17/64"	24	79	34	36	8	☹
DC150-03-06.800A0-	6,8		24	79	34	36	8	☹
DC150-03-06.900A0-	6,9		24	79	34	36	8	☹
DC150-03-07.000A0-	7		24	79	34	36	8	☹
DC150-03-07.100A0-	7,1		29	79	41	36	8	☹
DC150-03-07.144A0-	7,144	9/32"	29	79	41	36	8	☹
DC150-03-07.200A0-	7,2		29	79	41	36	8	☹
DC150-03-07.300A0-	7,3		29	79	41	36	8	☹
DC150-03-07.400A0-	7,4		29	79	41	36	8	☹
DC150-03-07.500A0-	7,5		29	79	41	36	8	☹
DC150-03-07.541A0-	7,541	19/64"	29	79	41	36	8	☹
DC150-03-07.600A0-	7,6		29	79	41	36	8	☹
DC150-03-07.700A0-	7,7		29	79	41	36	8	☹
DC150-03-07.800A0-	7,8		29	79	41	36	8	☹
DC150-03-07.900A0-	7,9		29	79	41	36	8	☹
DC150-03-07.938A0-	7,938	5/16"	29	79	41	36	8	☹
DC150-03-08.000A0-	8		29	79	41	36	8	☹
DC150-03-08.100A0-	8,1		35	89	47	40	10	☹
DC150-03-08.200A0-	8,2		35	89	47	40	10	☹
DC150-03-08.300A0-	8,3		35	89	47	40	10	☹
DC150-03-08.334A0-	8,334	21/64"	35	89	47	40	10	☹
DC150-03-08.400A0-	8,4		35	89	47	40	10	☹
DC150-03-08.500A0-	8,5		35	89	47	40	10	☹
DC150-03-08.600A0-	8,6		35	89	47	40	10	☹
DC150-03-08.700A0-	8,7		35	89	47	40	10	☹
DC150-03-08.731A0-	8,731	11/32"	35	89	47	40	10	☹
DC150-03-08.800A0-	8,8		35	89	47	40	10	☹
DC150-03-08.900A0-	8,9		35	89	47	40	10	☹
DC150-03-09.000A0-	9		35	89	47	40	10	☹
DC150-03-09.100A0-	9,1		35	89	47	40	10	☹
DC150-03-09.200A0-	9,2		35	89	47	40	10	☹
DC150-03-09.300A0-	9,3		35	89	47	40	10	☹
DC150-03-09.400A0-	9,4		35	89	47	40	10	☹
DC150-03-09.500A0-	9,5		35	89	47	40	10	☹
DC150-03-09.525A0-	9,525	3/8"	35	89	47	40	10	☹
DC150-03-09.600A0-	9,6		35	89	47	40	10	☹
DC150-03-09.700A0-	9,7		35	89	47	40	10	☹
DC150-03-09.800A0-	9,8		35	89	47	40	10	☹
DC150-03-09.900A0-	9,9		35	89	47	40	10	☹
DC150-03-09.922A0-	9,922	25/64"	35	89	47	40	10	☹
DC150-03-10.000A0-	10		35	89	47	40	10	☹
DC150-03-10.100A0-	10,1		40	102	55	45	12	☹
DC150-03-10.200A0-	10,2		40	102	55	45	12	☹
DC150-03-10.300A0-	10,3		40	102	55	45	12	☹
DC150-03-10.319A0-	10,319	13/32"	40	102	55	45	12	☹
DC150-03-10.400A0-	10,4		40	102	55	45	12	☹
DC150-03-10.500A0-	10,5		40	102	55	45	12	☹
DC150-03-10.600A0-	10,6		40	102	55	45	12	☹
DC150-03-10.716A0-	10,716	27/64"	40	102	55	45	12	☹
DC150-03-10.800A0-	10,8		40	102	55	45	12	☹
DC150-03-11.000A0-	11		40	102	55	45	12	☹
DC150-03-11.100A0-	11,1		40	102	55	45	12	☹
DC150-03-11.113A0-	11,113	7/16"	40	102	55	45	12	☹
DC150-03-11.200A0-	11,2		40	102	55	45	12	☹

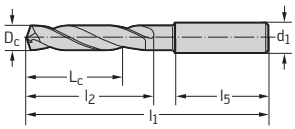
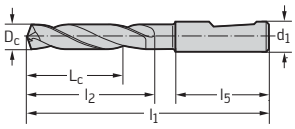
Ordering example for the WJ30RE grade: DC150-03-03.000A0-WJ30RE

Continued



XIII D 1 B 424 B 123

Continued

	Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
Shank DIN 6535 HA 	DC150-03-11.300A0-	11,3		40	102	55	45	12	
	DC150-03-11.400A0-	11,4		40	102	55	45	12	
	DC150-03-11.500A0-	11,5		40	102	55	45	12	
	DC150-03-11.509A0-	11,509	29/64"	40	102	55	45	12	
	DC150-03-11.700A0-	11,7		40	102	55	45	12	
	DC150-03-11.800A0-	11,8		40	102	55	45	12	
	DC150-03-11.900A0-	11,9		40	102	55	45	12	
	DC150-03-12.000A0-	12		40	102	55	45	12	
	DC150-03-12.100A0-	12,1		43	107	60	45	14	
	DC150-03-12.200A0-	12,2		43	107	60	45	14	
	DC150-03-12.250A0-	12,25		43	107	60	45	14	
	DC150-03-12.300A0-	12,3		43	107	60	45	14	
	DC150-03-12.303A0-	12,303	31/64"	43	107	60	45	14	
	DC150-03-12.500A0-	12,5		43	107	60	45	14	
	DC150-03-12.700A0-	12,7	1/2"	43	107	60	45	14	
	DC150-03-12.800A0-	12,8		43	107	60	45	14	
	DC150-03-13.000A0-	13		43	107	60	45	14	
	DC150-03-13.100A0-	13,1		43	107	60	45	14	
	DC150-03-13.300A0-	13,3		43	107	60	45	14	
	DC150-03-13.494A0-	13,494	17/32"	43	107	60	45	14	
	DC150-03-13.500A0-	13,5		43	107	60	45	14	
	DC150-03-14.000A0-	14		43	107	60	45	14	
	DC150-03-14.200A0-	14,2		45	115	65	48	16	
	DC150-03-14.288A0-	14,288	9/16"	45	115	65	48	16	
	DC150-03-14.500A0-	14,5		45	115	65	48	16	
	DC150-03-14.700A0-	14,7		45	115	65	48	16	
	DC150-03-14.800A0-	14,8		45	115	65	48	16	
	DC150-03-15.000A0-	15		45	115	65	48	16	
	DC150-03-15.100A0-	15,1		45	115	65	48	16	
	DC150-03-15.500A0-	15,5		45	115	65	48	16	
	DC150-03-15.800A0-	15,8		45	115	65	48	16	
	DC150-03-15.875A0-	15,875	5/8"	45	115	65	48	16	
	DC150-03-16.000A0-	16		45	115	65	48	16	
	DC150-03-16.500A0-	16,5		51	123	73	48	18	
	DC150-03-16.750A0-	16,75		51	123	73	48	18	
	DC150-03-17.000A0-	17		51	123	73	48	18	
	DC150-03-17.500A0-	17,5		51	123	73	48	18	
	DC150-03-17.800A0-	17,8		51	123	73	48	18	
	DC150-03-18.000A0-	18		51	123	73	48	18	
	DC150-03-19.000A0-	19		55	131	79	50	20	
	DC150-03-20.000A0-	20		55	131	79	50	20	
Shank DIN 6535 HE 	DC150-03-03.000F0-	3		14	62	20	36	6	
	DC150-03-03.100F0-	3,1		14	62	20	36	6	
	DC150-03-03.200F0-	3,2		14	62	20	36	6	
	DC150-03-03.300F0-	3,3		14	62	20	36	6	
	DC150-03-03.400F0-	3,4		14	62	20	36	6	
	DC150-03-03.500F0-	3,5		14	62	20	36	6	
	DC150-03-03.600F0-	3,6		14	62	20	36	6	
	DC150-03-03.700F0-	3,7		14	62	20	36	6	
	DC150-03-03.800F0-	3,8		17	66	24	36	6	
	DC150-03-03.900F0-	3,9		17	66	24	36	6	
	DC150-03-04.000F0-	4		17	66	24	36	6	
	DC150-03-04.200F0-	4,2		17	66	24	36	6	
	DC150-03-04.300F0-	4,3		17	66	24	36	6	
	DC150-03-04.500F0-	4,5		17	66	24	36	6	
	DC150-03-04.650F0-	4,65		17	66	24	36	6	
	DC150-03-04.700F0-	4,7		17	66	24	36	6	
	DC150-03-04.800F0-	4,8		20	66	28	36	6	
	DC150-03-05.000F0-	5		20	66	28	36	6	
	DC150-03-05.100F0-	5,1		20	66	28	36	6	
	DC150-03-05.300F0-	5,3		20	66	28	36	6	

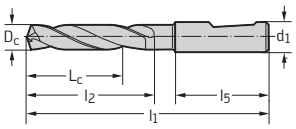
Ordering example for the WJ30RE grade: DC150-03-03.000A0-WJ30RE

Continued

XIII D 1 B 424 B 123

Continued

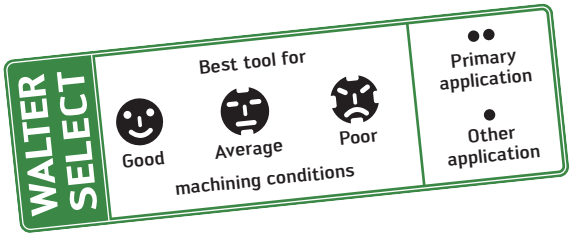
Shank DIN 6535 HE



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
DC150-03-05.500F0-	5,5		20	66	28	36	6	●●
DC150-03-05.550F0-	5,55		20	66	28	36	6	●●
DC150-03-05.600F0-	5,6		20	66	28	36	6	●●
DC150-03-05.800F0-	5,8		20	66	28	36	6	●●
DC150-03-06.000F0-	6		20	66	28	36	6	●●
DC150-03-06.100F0-	6,1		24	79	34	36	8	●●
DC150-03-06.200F0-	6,2		24	79	34	36	8	●●
DC150-03-06.300F0-	6,3		24	79	34	36	8	●●
DC150-03-06.500F0-	6,5		24	79	34	36	8	●●
DC150-03-06.600F0-	6,6		24	79	34	36	8	●●
DC150-03-06.700F0-	6,7		24	79	34	36	8	●●
DC150-03-06.800F0-	6,8		24	79	34	36	8	●●
DC150-03-07.000F0-	7		24	79	34	36	8	●●
DC150-03-07.100F0-	7,1		29	79	41	36	8	●●
DC150-03-07.400F0-	7,4		29	79	41	36	8	●●
DC150-03-07.500F0-	7,5		29	79	41	36	8	●●
DC150-03-07.600F0-	7,6		29	79	41	36	8	●●
DC150-03-07.800F0-	7,8		29	79	41	36	8	●●
DC150-03-08.000F0-	8		29	79	41	36	8	●●
DC150-03-08.100F0-	8,1		35	89	47	40	10	●●
DC150-03-08.200F0-	8,2		35	89	47	40	10	●●
DC150-03-08.300F0-	8,3		35	89	47	40	10	●●
DC150-03-08.400F0-	8,4		35	89	47	40	10	●●
DC150-03-08.500F0-	8,5		35	89	47	40	10	●●
DC150-03-08.600F0-	8,6		35	89	47	40	10	●●
DC150-03-08.700F0-	8,7		35	89	47	40	10	●●
DC150-03-08.800F0-	8,8		35	89	47	40	10	●●
DC150-03-09.000F0-	9		35	89	47	40	10	●●
DC150-03-09.100F0-	9,1		35	89	47	40	10	●●
DC150-03-09.500F0-	9,5		35	89	47	40	10	●●
DC150-03-09.700F0-	9,5		35	89	47	40	10	●●
DC150-03-09.800F0-	9,8		35	89	47	40	10	●●
DC150-03-10.000F0-	10		35	89	47	40	10	●●
DC150-03-10.100F0-	10,1		40	102	55	45	12	●●
DC150-03-10.200F0-	10,2		40	102	55	45	12	●●
DC150-03-10.300F0-	10,3		40	102	55	45	12	●●
DC150-03-10.400F0-	10,4		40	102	55	45	12	●●
DC150-03-10.500F0-	10,5		40	102	55	45	12	●●
DC150-03-10.600F0-	10,6		40	102	55	45	12	●●
DC150-03-10.800F0-	10,8		40	102	55	45	12	●●
DC150-03-10.900F0-	10,9		40	102	55	45	12	●●
DC150-03-11.000F0-	11		40	102	55	45	12	●●
DC150-03-11.100F0-	11,1		40	102	55	45	12	●●
DC150-03-11.200F0-	11,2		40	102	55	45	12	●●
DC150-03-11.300F0-	11,3		40	102	55	45	12	●●
DC150-03-11.500F0-	11,5		40	102	55	45	12	●●
DC150-03-11.600F0-	11,6		40	102	55	45	12	●●
DC150-03-11.800F0-	11,8		40	102	55	45	12	●●
DC150-03-12.000F0-	12		40	102	55	45	12	●●
DC150-03-12.200F0-	12,2		43	107	60	45	14	●●
DC150-03-12.300F0-	12,3		43	107	60	45	14	●●
DC150-03-12.500F0-	12,5		43	107	60	45	14	●●
DC150-03-13.000F0-	13		43	107	60	45	14	●●
DC150-03-13.200F0-	13,2		43	107	60	45	14	●●
DC150-03-13.300F0-	13,3		43	107	60	45	14	●●
DC150-03-13.400F0-	13,4		43	107	60	45	14	●●
DC150-03-13.500F0-	13,5		43	107	60	45	14	●●

Ordering example for the WJ30RE grade: DC150-03-03.000A0-WJ30RE

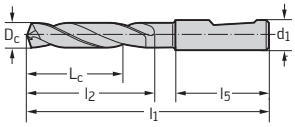
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XIII D 1 B 424 B 123

Continued

	Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30RE
Shank DIN 6535 HE	DC150-03-13.600F0-	13,6		43	107	60	45	14	●
	DC150-03-13.800F0-	13,8		43	107	60	45	14	●
	DC150-03-14.000F0-	14		43	107	60	45	14	●
	DC150-03-14.500F0-	14,5		45	115	65	48	16	●
	DC150-03-15.000F0-	15		45	115	65	48	16	●
	DC150-03-15.100F0-	15,1		45	115	65	48	16	●
	DC150-03-16.000F0-	16		45	115	65	48	16	●
	DC150-03-16.500F0-	16,5		51	123	73	48	18	●
	DC150-03-17.000F0-	17		51	123	73	48	18	●
	DC150-03-17.500F0-	17,5		51	123	73	48	18	●
	DC150-03-18.000F0-	18		51	123	73	48	18	●
	DC150-03-18.500F0-	18,5		55	131	79	50	20	●
	DC150-03-19.000F0-	19		55	131	79	50	20	●
	DC150-03-20.000F0-	20		55	131	79	50	20	●

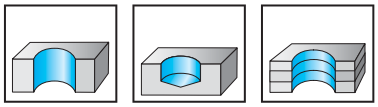


Ordering example for the WJ30RE grade: DC150-03-03.000A0-WJ30RE

XIII D 1 B 424 B 123

Solid carbide micro twist drills
DB133 Supreme

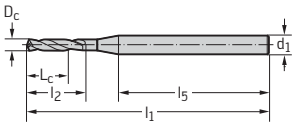




5×D_c | 140°

	P	M	K	N	S	H	O
WJ30EL	●●		●●	●●	●	●	●

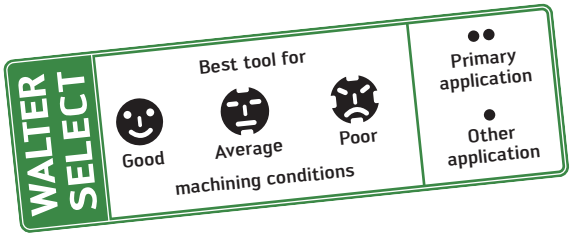
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EL
DB133-05-00.500A0-	0,5		3,2	47	4	36	3	☹
DB133-05-00.550A0-	0,55		4,1	47	5	35	3	☹
DB133-05-00.600A0-	0,6		4,1	47	5	35	3	☹
DB133-05-00.650A0-	0,65		5	47	6	34	3	☹
DB133-05-00.700A0-	0,7		4,9	48	6	35	3	☹
DB133-05-00.750A0-	0,75		5,8	48	7	34	3	☹
DB133-05-00.794A0-	0,794	1/32"	5,8	48	7	34	3	☹
DB133-05-00.800A0-	0,8		5,8	48	7	34	3	☹
DB133-05-00.850A0-	0,85		6,6	50	8	35	3	☹
DB133-05-00.880A0-	0,88		6,6	50	8	35	3	☹
DB133-05-00.900A0-	0,9		6,6	50	8	35	3	☹
DB133-05-00.950A0-	0,95		7,5	50	9	34	3	☹
DB133-05-01.000A0-	1		7,5	50	9	34	3	☹
DB133-05-01.050A0-	1,05		7	51	9	36	3	☹
DB133-05-01.080A0-	1,08		7	51	9	36	3	☹
DB133-05-01.100A0-	1,1		7	51	9	36	3	☹
DB133-05-01.150A0-	1,15		8	51	10	35	3	☹
DB133-05-01.191A0-	1,191	3/64"	8	51	10	35	3	☹
DB133-05-01.200A0-	1,2		8	51	10	35	3	☹
DB133-05-01.250A0-	1,25		9	51	11	34	3	☹
DB133-05-01.300A0-	1,3		9	53	11	36	3	☹
DB133-05-01.350A0-	1,35		9	53	12	35	3	☹
DB133-05-01.400A0-	1,4		9	53	12	35	3	☹
DB133-05-01.450A0-	1,45		10	53	13	34	3	☹
DB133-05-01.500A0-	1,5		10	53	13	34	3	☹
DB133-05-01.550A0-	1,55		11	54	14	35	3	☹
DB133-05-01.588A0-	1,588	1/16"	11	54	14	35	3	☹
DB133-05-01.600A0-	1,6		11	54	14	35	3	☹
DB133-05-01.650A0-	1,65		11	54	14	35	3	☹
DB133-05-01.700A0-	1,7		11	54	14	35	3	☹
DB133-05-01.750A0-	1,75		12	54	15	34	3	☹
DB133-05-01.800A0-	1,8		12	54	15	34	3	☹
DB133-05-01.820A0-	1,82		13	57	16	36	3	☹
DB133-05-01.850A0-	1,85		13	57	16	36	3	☹
DB133-05-01.900A0-	1,9		13	57	16	36	3	☹
DB133-05-01.950A0-	1,95		14	57	17	35	3	☹
DB133-05-01.984A0-	1,984	5/64"	14	57	17	35	3	☹
DB133-05-02.000A0-	2		14	57	17	35	3	☹
DB133-05-02.050A0-	2,05		14	57	18	35	3	☹
DB133-05-02.100A0-	2,1		14	57	18	35	3	☹
DB133-05-02.150A0-	2,15		15	57	19	34	3	☹
DB133-05-02.200A0-	2,2		15	57	19	34	3	☹
DB133-05-02.250A0-	2,25		16	59	20	35	3	☹

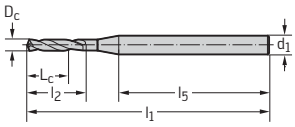
Ordering example for the WJ30EL grade: DB133-05-00.500A0-WJ30EL

Continued



XIII D 1 B 426 B 123

Continued

	Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EL
Shank DIN 6535 HA	DB133-05-02.300A0-	2,3		16	59	20	35	3	
	DB133-05-02.350A0-	2,35		16	59	20	35	3	
	DB133-05-02.381A0-	2,381	3/32"	16	59	20	35	3	
	DB133-05-02.400A0-	2,4		16	59	20	35	3	
	DB133-05-02.450A0-	2,45		17	59	21	34	3	
	DB133-05-02.500A0-	2,5		17	59	21	34	3	
	DB133-05-02.550A0-	2,55		18	62	22	36	3	
	DB133-05-02.600A0-	2,6		18	62	22	36	3	
	DB133-05-02.650A0-	2,65		18	62	23	36	3	
	DB133-05-02.700A0-	2,7		18	62	23	36	3	
	DB133-05-02.750A0-	2,75		19	62	24	35	3	
	DB133-05-02.778A0-	2,778	7/64"	19	62	24	35	3	
	DB133-05-02.800A0-	2,8		19	62	24	35	3	
	DB133-05-02.850A0-	2,85		20	62	25	34	3	
	DB133-05-02.900A0-	2,9		20	62	25	34	3	
	DB133-05-02.950A0-	2,95		20	62	25	34	3	

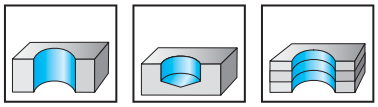
Ordering example for the WJ30EL grade: DB133-05-00.500A0-WJ30EL

XIII D 1 B 426 B 123

Solid carbide micro drills
A3162



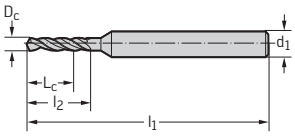
– Type ESU



5×D_c | DIN 1899 |  |  118°

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



Designation Uncoated	D_c 0-0,004 mm	L_c mm	l_1 mm	l_2 mm	d_1 h8 mm
A3162-0.1	0,1	0,3	25	0,5	1
A3162-0.12	0,12	0,3	25	0,5	1
A3162-0.13	0,13	0,5	25	0,8	1
A3162-0.14	0,14	0,5	25	0,8	1
A3162-0.15	0,15	0,5	25	0,8	1
A3162-0.16	0,16	0,8	25	1,1	1
A3162-0.17	0,17	0,8	25	1,1	1
A3162-0.18	0,18	0,8	25	1,1	1
A3162-0.19	0,19	0,8	25	1,1	1
A3162-0.2	0,2	1,1	25	1,5	1
A3162-0.21	0,21	1,1	25	1,5	1
A3162-0.22	0,22	1,1	25	1,5	1
A3162-0.23	0,23	1,1	25	1,5	1
A3162-0.24	0,24	1,1	25	1,5	1
A3162-0.25	0,25	1,4	25	1,9	1
A3162-0.26	0,26	1,4	25	1,9	1
A3162-0.27	0,27	1,4	25	1,9	1
A3162-0.28	0,28	1,4	25	1,9	1
A3162-0.29	0,29	1,4	25	1,9	1
A3162-0.3	0,3	1,4	25	1,9	1
A3162-0.31	0,31	1,8	25	2,4	1
A3162-0.32	0,32	1,8	25	2,4	1
A3162-0.33	0,33	1,8	25	2,4	1
A3162-0.34	0,34	1,8	25	2,4	1
A3162-0.35	0,35	1,8	25	2,4	1
A3162-0.36	0,36	1,8	25	2,4	1
A3162-0.37	0,37	1,8	25	2,4	1
A3162-0.38	0,38	1,8	25	2,4	1
A3162-0.39	0,39	2,2	25	3	1
A3162-0.4	0,4	2,2	25	3	1
A3162-0.41	0,41	2,2	25	3	1
A3162-0.42	0,42	2,2	25	3	1
A3162-0.43	0,43	2,2	25	3	1
A3162-0.44	0,44	2,2	25	3	1
A3162-0.45	0,45	2,2	25	3	1
A3162-0.46	0,46	2,2	25	3	1
A3162-0.47	0,47	2,2	25	3	1
A3162-0.48	0,48	2,2	25	3	1
A3162-0.49	0,49	2,6	25	3,4	1
A3162-0.5	0,5	2,6	25	3,4	1
A3162-0.51	0,51	2,6	25	3,4	1
A3162-0.52	0,52	2,6	25	3,4	1
A3162-0.53	0,53	2,6	25	3,4	1
A3162-0.54	0,54	3	25	3,9	1

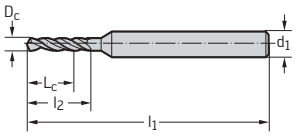
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WALTER SELECT
●● Primary application
● Other application

D 1 | B 426 | B 123

Continued

Parallel shank

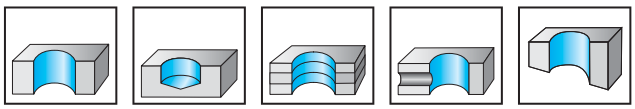


Designation Uncoated	D_c 0-0,004 mm	L_c mm	l_1 mm	l_2 mm	d_1 h8 mm
A3162-0.55	0,55	3	25	3,9	1
A3162-0.56	0,56	3	25	3,9	1
A3162-0.57	0,57	3	25	3,9	1
A3162-0.58	0,58	3	25	3,9	1
A3162-0.59	0,59	3	25	3,9	1
A3162-0.6	0,6	3	25	3,9	1
A3162-0.61	0,61	3,1	25	4,2	1
A3162-0.62	0,62	3,1	25	4,2	1
A3162-0.63	0,63	3,1	25	4,2	1
A3162-0.64	0,64	3,1	25	4,2	1
A3162-0.65	0,65	3,1	25	4,2	1
A3162-0.67	0,67	3,1	25	4,2	1
A3162-0.68	0,68	3,6	25	4,8	1
A3162-0.69	0,69	3,6	25	4,8	1
A3162-0.7	0,7	3,6	25	4,8	1
A3162-0.71	0,71	3,6	25	4,8	1
A3162-0.72	0,72	3,6	25	4,8	1
A3162-0.73	0,73	3,6	25	4,8	1
A3162-0.74	0,74	3,6	25	4,8	1
A3162-0.75	0,75	3,6	25	4,8	1
A3162-0.77	0,77	4,1	25	5,3	1
A3162-0.78	0,78	4,1	25	5,3	1
A3162-0.79	0,79	4,1	25	5,3	1
A3162-0.8	0,8	4	25	5,3	1,5
A3162-0.81	0,81	4	25	5,3	1,5
A3162-0.82	0,82	4	25	5,3	1,5
A3162-0.83	0,83	4	25	5,3	1,5
A3162-0.84	0,84	4	25	5,3	1,5
A3162-0.85	0,85	4	25	5,3	1,5
A3162-0.86	0,86	4,5	25	6	1,5
A3162-0.87	0,87	4,5	25	6	1,5
A3162-0.88	0,88	4,5	25	6	1,5
A3162-0.89	0,89	4,5	25	6	1,5
A3162-0.9	0,9	4,5	25	6	1,5
A3162-0.91	0,91	4,5	25	6	1,5
A3162-0.92	0,92	4,5	25	6	1,5
A3162-0.93	0,93	4,5	25	6	1,5
A3162-0.94	0,94	4,5	25	6	1,5
A3162-0.95	0,95	4,5	25	6	1,5
A3162-0.96	0,96	5	25	6,8	1,5
A3162-0.97	0,97	5	25	6,8	1,5
A3162-0.98	0,98	5	25	6,8	1,5
A3162-0.99	0,99	5	25	6,8	1,5
A3162-1	1	5	25	6,8	1,5
A3162-1.05	1,05	5	25	6,8	1,5
A3162-1.1	1,1	5	25	7,6	1,5
A3162-1.15	1,15	5	25	7,6	1,5
A3162-1.2	1,2	6	25	8,5	1,5
A3162-1.25	1,25	6	25	8,5	1,5
A3162-1.3	1,3	6	25	8,5	1,5
A3162-1.35	1,35	7	25	9,5	1,5
A3162-1.4	1,4	7	25	9,5	1,5
A3162-1.45	1,45	7	25	9,5	1,5

D 1 B 426 B 123

Solid carbide twist drills
A3379XPL / A3979XPL
X-treme

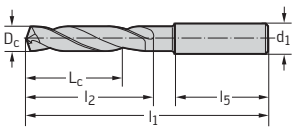




5×D_c | DIN 6537 L | 140°

	P	M	K	N	S	H	O
XPL	●●		●●	●	●	●	●

Shank DIN 6535 HA



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3379XPL-3	3		23	66	28	36	6
A3379XPL-3.1	3,1		23	66	28	36	6
A3379XPL-1/8IN	3,175	1/8"	23	66	28	36	6
A3379XPL-3.2	3,2		23	66	28	36	6
A3379XPL-3.25	3,25		23	66	28	36	6
A3379XPL-3.3	3,3		23	66	28	36	6
A3379XPL-3.4	3,4		23	66	28	36	6
A3379XPL-3.5	3,5		23	66	28	36	6
A3379XPL-9/64IN	3,572	9/64"	23	66	28	36	6
A3379XPL-3.6	3,6		23	66	28	36	6
A3379XPL-3.65	3,65		23	66	28	36	6
A3379XPL-3.7	3,7		23	66	28	36	6
A3379XPL-3.8	3,8		29	74	36	36	6
A3379XPL-3.9	3,9		29	74	36	36	6
A3379XPL-5/32IN	3,969	5/32"	29	74	36	36	6
A3379XPL-4	4		29	74	36	36	6
A3379XPL-4.1	4,1		29	74	36	36	6
A3379XPL-4.2	4,2		29	74	36	36	6
A3379XPL-4.3	4,3		29	74	36	36	6
A3379XPL-11/64IN	4,366	11/64"	29	74	36	36	6
A3379XPL-4.4	4,4		29	74	36	36	6
A3379XPL-4.5	4,5		29	74	36	36	6
A3379XPL-4.6	4,6		29	74	36	36	6
A3379XPL-4.65	4,65		29	74	36	36	6
A3379XPL-4.7	4,7		29	74	36	36	6
A3379XPL-3/16IN	4,763	3/16"	35	82	44	36	6
A3379XPL-4.8	4,8		35	82	44	36	6
A3379XPL-4.9	4,9		35	82	44	36	6
A3379XPL-5	5		35	82	44	36	6
A3379XPL-5.1	5,1		35	82	44	36	6
A3379XPL-13/64IN	5,159	13/64"	35	82	44	36	6
A3379XPL-5.2	5,2		35	82	44	36	6
A3379XPL-5.3	5,3		35	82	44	36	6
A3379XPL-5.4	5,4		35	82	44	36	6
A3379XPL-5.5	5,5		35	82	44	36	6
A3379XPL-5.55	5,55		35	82	44	36	6
A3379XPL-7/32IN	5,556	7/32"	35	82	44	36	6
A3379XPL-5.6	5,6		35	82	44	36	6
A3379XPL-5.7	5,7		35	82	44	36	6
A3379XPL-5.8	5,8		35	82	44	36	6
A3379XPL-5.9	5,9		35	82	44	36	6
A3379XPL-15/64IN	5,953	15/64"	35	82	44	36	6
A3379XPL-6	6		35	82	44	36	6
A3379XPL-6.1	6,1		43	91	53	36	8

Continued

WALTER SELECT

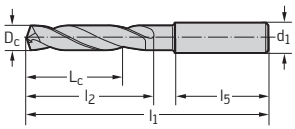
●● Primary application

● Other application

XIII | D 1 | B 426 | B 123

Continued

Shank DIN 6535 HA



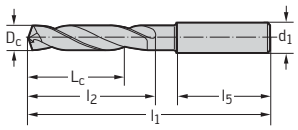
Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3379XPL-6.2	6,2		43	91	53	36	8
A3379XPL-6.3	6,3		43	91	53	36	8
A3379XPL-1/4IN	6,35	1/4"	43	91	53	36	8
A3379XPL-6.4	6,4		43	91	53	36	8
A3379XPL-6.5	6,5		43	91	53	36	8
A3379XPL-6.6	6,6		43	91	53	36	8
A3379XPL-6.7	6,7		43	91	53	36	8
A3379XPL-17/64IN	6,747	17/64"	43	91	53	36	8
A3379XPL-6.8	6,8		43	91	53	36	8
A3379XPL-6.9	6,9		43	91	53	36	8
A3379XPL-7	7		43	91	53	36	8
A3379XPL-7.1	7,1		43	91	53	36	8
A3379XPL-9/32IN	7,144	9/32"	43	91	53	36	8
A3379XPL-7.2	7,2		43	91	53	36	8
A3379XPL-7.3	7,3		43	91	53	36	8
A3379XPL-7.4	7,4		43	91	53	36	8
A3379XPL-7.5	7,5		43	91	53	36	8
A3379XPL-19/64IN	7,541	19/64"	43	91	53	36	8
A3379XPL-7.55	7,55		43	91	53	36	8
A3379XPL-7.6	7,6		43	91	53	36	8
A3379XPL-7.7	7,7		43	91	53	36	8
A3379XPL-7.8	7,8		43	91	53	36	8
A3379XPL-7.9	7,9		43	91	53	36	8
A3379XPL-5/16IN	7,938	5/16"	43	91	53	36	8
A3379XPL-8	8		43	91	53	36	8
A3379XPL-8.1	8,1		49	103	61	40	10
A3379XPL-8.2	8,2		49	103	61	40	10
A3379XPL-8.3	8,3		49	103	61	40	10
A3379XPL-21/64IN	8,334	21/64"	49	103	61	40	10
A3379XPL-8.4	8,4		49	103	61	40	10
A3379XPL-8.5	8,5		49	103	61	40	10
A3379XPL-8.6	8,6		49	103	61	40	10
A3379XPL-8.7	8,7		49	103	61	40	10
A3379XPL-11/32IN	8,731	11/32"	49	103	61	40	10
A3379XPL-8.8	8,8		49	103	61	40	10
A3379XPL-8.9	8,9		49	103	61	40	10
A3379XPL-9	9		49	103	61	40	10
A3379XPL-9.1	9,1		49	103	61	40	10
A3379XPL-23/64IN	9,128	23/64"	49	103	61	40	10
A3379XPL-9.2	9,2		49	103	61	40	10
A3379XPL-9.3	9,3		49	103	61	40	10
A3379XPL-9.4	9,4		49	103	61	40	10
A3379XPL-9.5	9,5		49	103	61	40	10
A3379XPL-3/8IN	9,525	3/8"	49	103	61	40	10
A3379XPL-9.55	9,55		49	103	61	40	10
A3379XPL-9.6	9,6		49	103	61	40	10
A3379XPL-9.7	9,7		49	103	61	40	10
A3379XPL-9.8	9,8		49	103	61	40	10
A3379XPL-9.9	9,9		49	103	61	40	10
A3379XPL-25/64IN	9,922	25/64"	49	103	61	40	10
A3379XPL-10	10		49	103	61	40	10
A3379XPL-10.1	10,1		56	118	71	45	12
A3379XPL-10.2	10,2		56	118	71	45	12
A3379XPL-10.3	10,3		56	118	71	45	12
A3379XPL-13/32IN	10,319	13/32"	56	118	71	45	12
A3379XPL-10.4	10,4		56	118	71	45	12
A3379XPL-10.5	10,5		56	118	71	45	12
A3379XPL-10.6	10,6		56	118	71	45	12
A3379XPL-10.7	10,7		56	118	71	45	12
A3379XPL-27/64IN	10,716	27/64"	56	118	71	45	12
A3379XPL-10.8	10,8		56	118	71	45	12
A3379XPL-10.9	10,9		56	118	71	45	12

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XIII D 1 B 426 B 123

Continued

Shank DIN 6535 HA



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3379XPL-11	11		56	118	71	45	12
A3379XPL-11.1	11,1		56	118	71	45	12
A3379XPL-7/16IN	11,113	7/16"	56	118	71	45	12
A3379XPL-11.2	11,2		56	118	71	45	12
A3379XPL-11.3	11,3		56	118	71	45	12
A3379XPL-11.4	11,4		56	118	71	45	12
A3379XPL-11.5	11,5		56	118	71	45	12
A3379XPL-29/64IN	11,509	29/64"	56	118	71	45	12
A3379XPL-11.55	11,55		56	118	71	45	12
A3379XPL-11.7	11,7		56	118	71	45	12
A3379XPL-11.8	11,8		56	118	71	45	12
A3379XPL-11.9	11,9		56	118	71	45	12
A3379XPL-15/32IN	11,906	15/32"	56	118	71	45	12
A3379XPL-12	12		56	118	71	45	12
A3379XPL-12.1	12,1		60	124	77	45	14
A3379XPL-12.2	12,2		60	124	77	45	14
A3379XPL-12.25	12,25		60	124	77	45	14
A3379XPL-12.3	12,3		60	124	77	45	14
A3379XPL-31/64IN	12,303	31/64"	60	124	77	45	14
A3379XPL-12.4	12,4		60	124	77	45	14
A3379XPL-12.5	12,5		60	124	77	45	14
A3379XPL-12.6	12,6		60	124	77	45	14
A3379XPL-1/2IN	12,7	1/2"	60	124	77	45	14
A3379XPL-12.75	12,75		60	124	77	45	14
A3379XPL-12.9	12,9		60	124	77	45	14
A3379XPL-13	13		60	124	77	45	14
A3379XPL-13.1	13,1		60	124	77	45	14
A3379XPL-13.2	13,2		60	124	77	45	14
A3379XPL-13.3	13,3		60	124	77	45	14
A3379XPL-13.4	13,4		60	124	77	45	14
A3379XPL-17/32IN	13,494	17/32"	60	124	77	45	14
A3379XPL-13.5	13,5		60	124	77	45	14
A3379XPL-13.6	13,6		60	124	77	45	14
A3379XPL-13.7	13,7		60	124	77	45	14
A3379XPL-13.9	13,9		60	124	77	45	14
A3379XPL-14	14		60	124	77	45	14
A3379XPL-14.1	14,1		63	133	83	48	16
A3379XPL-14.2	14,2		63	133	83	48	16
A3379XPL-9/16IN	14,288	9/16"	63	133	83	48	16
A3379XPL-14.3	14,3		63	133	83	48	16
A3379XPL-14.4	14,4		63	133	83	48	16
A3379XPL-14.5	14,5		63	133	83	48	16
A3379XPL-14.6	14,6		63	133	83	48	16
A3379XPL-14.7	14,7		63	133	83	48	16
A3379XPL-14.75	14,75		63	133	83	48	16
A3379XPL-14.8	14,8		63	133	83	48	16
A3379XPL-15	15		63	133	83	48	16
A3379XPL-15.1	15,1		63	133	83	48	16
A3379XPL-15.3	15,3		63	133	83	48	16
A3379XPL-15.5	15,5		63	133	83	48	16
A3379XPL-15.6	15,6		63	133	83	48	16
A3379XPL-15.7	15,7		63	133	83	48	16
A3379XPL-15.8	15,8		63	133	83	48	16
A3379XPL-5/8IN	15,875	5/8"	63	133	83	48	16
A3379XPL-15.9	15,9		63	133	83	48	16
A3379XPL-16	16		63	133	83	48	16
A3379XPL-16.1	16,1		71	143	93	48	18
A3379XPL-16.2	16,2		71	143	93	48	18

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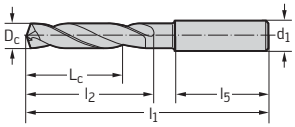
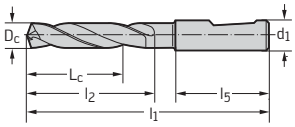
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●● Primary application

● Other application

XIII D 1 B 426 B 123

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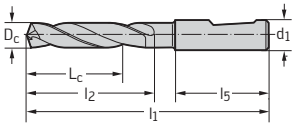
	Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	A3379XPL-16.3	16,3		71	143	93	48	18
	A3379XPL-16.4	16,4		71	143	93	48	18
	A3379XPL-16.5	16,5		71	143	93	48	18
	A3379XPL-16.6	16,6		71	143	93	48	18
	A3379XPL-16.7	16,7		71	143	93	48	18
	A3379XPL-16.75	16,75		71	143	93	48	18
	A3379XPL-16.8	16,8		71	143	93	48	18
	A3379XPL-17	17		71	143	93	48	18
	A3379XPL-17.2	17,2		71	143	93	48	18
	A3379XPL-17.3	17,3		71	143	93	48	18
	A3379XPL-17.5	17,5		71	143	93	48	18
	A3379XPL-17.6	17,6		71	143	93	48	18
	A3379XPL-17.7	17,7		71	143	93	48	18
	A3379XPL-17.8	17,8		71	143	93	48	18
	A3379XPL-18	18		71	143	93	48	18
	A3379XPL-18.2	18,2		77	153	101	50	20
	A3379XPL-18.5	18,5		77	153	101	50	20
	A3379XPL-18.7	18,7		77	153	101	50	20
	A3379XPL-18.8	18,8		77	153	101	50	20
	A3379XPL-19	19		77	153	101	50	20
	A3379XPL-3/4IN	19,05	3/4"	77	153	101	50	20
	A3379XPL-19.5	19,5		77	153	101	50	20
	A3379XPL-19.7	19,7		77	153	101	50	20
	A3379XPL-19.8	19,8		77	153	101	50	20
	A3379XPL-20	20		77	153	101	50	20
	A3379XPL-20.5	20,5		86	166	108	56	25
	A3379XPL-21	21		86	166	108	56	25
	A3379XPL-21.5	21,5		86	166	108	56	25
	A3379XPL-22	22		86	166	108	56	25
	A3379XPL-22.5	22,5		91	173	115	56	25
	A3379XPL-23	23		91	173	115	56	25
	A3379XPL-23.5	23,5		91	173	115	56	25
	A3379XPL-24	24		91	173	115	56	25
	A3379XPL-24.5	24,5		97	180	122	56	25
	A3379XPL-25	25		97	180	122	56	25
Shank DIN 6535 HE	A3979XPL-3	3		23	66	28	36	6
	A3979XPL-3.1	3,1		23	66	28	36	6
	A3979XPL-3.2	3,2		23	66	28	36	6
	A3979XPL-3.25	3,25		23	66	28	36	6
	A3979XPL-3.3	3,3		23	66	28	36	6
	A3979XPL-3.4	3,4		23	66	28	36	6
	A3979XPL-3.5	3,5		23	66	28	36	6
	A3979XPL-3.6	3,6		23	66	28	36	6
	A3979XPL-3.65	3,65		23	66	28	36	6
	A3979XPL-3.7	3,7		23	66	28	36	6
	A3979XPL-3.8	3,8		29	74	36	36	6
	A3979XPL-3.9	3,9		29	74	36	36	6
	A3979XPL-4	4		29	74	36	36	6
	A3979XPL-4.1	4,1		29	74	36	36	6
	A3979XPL-4.2	4,2		29	74	36	36	6
	A3979XPL-4.3	4,3		29	74	36	36	6
	A3979XPL-4.4	4,4		29	74	36	36	6
	A3979XPL-4.5	4,5		29	74	36	36	6
	A3979XPL-4.6	4,6		29	74	36	36	6
	A3979XPL-4.65	4,65		29	74	36	36	6
	A3979XPL-4.7	4,7		29	74	36	36	6
	A3979XPL-4.8	4,8		35	82	44	36	6
	A3979XPL-4.9	4,9		35	82	44	36	6
	A3979XPL-5	5		35	82	44	36	6
	A3979XPL-5.1	5,1		35	82	44	36	6
	A3979XPL-5.2	5,2		35	82	44	36	6
	A3979XPL-5.3	5,3		35	82	44	36	6

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XIII D 1 B 426 B 123

Continued

Shank DIN 6535 HE



Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3979XPL-5.4	5,4		35	82	44	36	6
A3979XPL-5.5	5,5		35	82	44	36	6
A3979XPL-5.55	5,55		35	82	44	36	6
A3979XPL-5.6	5,6		35	82	44	36	6
A3979XPL-5.7	5,7		35	82	44	36	6
A3979XPL-5.8	5,8		35	82	44	36	6
A3979XPL-5.9	5,9		35	82	44	36	6
A3979XPL-6	6		35	82	44	36	6
A3979XPL-6.1	6,1		43	91	53	36	8
A3979XPL-6.2	6,2		43	91	53	36	8
A3979XPL-6.3	6,3		43	91	53	36	8
A3979XPL-6.4	6,4		43	91	53	36	8
A3979XPL-6.5	6,5		43	91	53	36	8
A3979XPL-6.6	6,6		43	91	53	36	8
A3979XPL-6.7	6,7		43	91	53	36	8
A3979XPL-6.8	6,8		43	91	53	36	8
A3979XPL-6.9	6,9		43	91	53	36	8
A3979XPL-7	7		43	91	53	36	8
A3979XPL-7.1	7,1		43	91	53	36	8
A3979XPL-7.2	7,2		43	91	53	36	8
A3979XPL-7.3	7,3		43	91	53	36	8
A3979XPL-7.4	7,4		43	91	53	36	8
A3979XPL-7.5	7,5		43	91	53	36	8
A3979XPL-7.55	7,55		43	91	53	36	8
A3979XPL-7.6	7,6		43	91	53	36	8
A3979XPL-7.7	7,7		43	91	53	36	8
A3979XPL-7.8	7,8		43	91	53	36	8
A3979XPL-7.9	7,9		43	91	53	36	8
A3979XPL-8	8		43	91	53	36	8
A3979XPL-8.1	8,1		49	103	61	40	10
A3979XPL-8.2	8,2		49	103	61	40	10
A3979XPL-8.3	8,3		49	103	61	40	10
A3979XPL-8.4	8,4		49	103	61	40	10
A3979XPL-8.5	8,5		49	103	61	40	10
A3979XPL-8.6	8,6		49	103	61	40	10
A3979XPL-8.7	8,7		49	103	61	40	10
A3979XPL-8.8	8,8		49	103	61	40	10
A3979XPL-8.9	8,9		49	103	61	40	10
A3979XPL-9	9		49	103	61	40	10
A3979XPL-9.1	9,1		49	103	61	40	10
A3979XPL-9.2	9,2		49	103	61	40	10
A3979XPL-9.3	9,3		49	103	61	40	10
A3979XPL-9.4	9,4		49	103	61	40	10
A3979XPL-9.5	9,5		49	103	61	40	10
A3979XPL-9.55	9,55		49	103	61	40	10
A3979XPL-9.6	9,6		49	103	61	40	10
A3979XPL-9.7	9,7		49	103	61	40	10
A3979XPL-9.8	9,8		49	103	61	40	10
A3979XPL-9.9	9,9		49	103	61	40	10
A3979XPL-10	10		49	103	61	40	10
A3979XPL-10.1	10,1		56	118	71	45	12
A3979XPL-10.2	10,2		56	118	71	45	12
A3979XPL-10.3	10,3		56	118	71	45	12
A3979XPL-10.4	10,4		56	118	71	45	12
A3979XPL-10.5	10,5		56	118	71	45	12
A3979XPL-10.6	10,6		56	118	71	45	12
A3979XPL-10.7	10,7		56	118	71	45	12
A3979XPL-10.8	10,8		56	118	71	45	12

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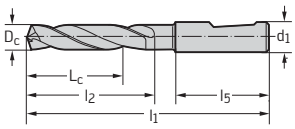
●● Primary application

● Other application

XIII D 1 B 426 B 123

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Shank DIN 6535 HE

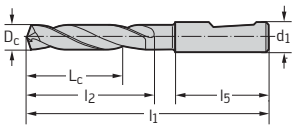


Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3979XPL-10.9	10,9		56	118	71	45	12
A3979XPL-11	11		56	118	71	45	12
A3979XPL-11.1	11,1		56	118	71	45	12
A3979XPL-11.2	11,2		56	118	71	45	12
A3979XPL-11.3	11,3		56	118	71	45	12
A3979XPL-11.4	11,4		56	118	71	45	12
A3979XPL-11.5	11,5		56	118	71	45	12
A3979XPL-11.55	11,55		56	118	71	45	12
A3979XPL-11.6	11,6		56	118	71	45	12
A3979XPL-11.7	11,7		56	118	71	45	12
A3979XPL-11.8	11,8		56	118	71	45	12
A3979XPL-11.9	11,9		56	118	71	45	12
A3979XPL-12	12		56	118	71	45	12
A3979XPL-12.1	12,1		60	124	77	45	14
A3979XPL-12.2	12,2		60	124	77	45	14
A3979XPL-12.25	12,25		60	124	77	45	14
A3979XPL-12.3	12,3		60	124	77	45	14
A3979XPL-12.4	12,4		60	124	77	45	14
A3979XPL-12.5	12,5		60	124	77	45	14
A3979XPL-12.6	12,6		60	124	77	45	14
A3979XPL-12.7	12,7	1/2"	60	124	77	45	14
A3979XPL-12.75	12,75		60	124	77	45	14
A3979XPL-12.8	12,8		60	124	77	45	14
A3979XPL-12.9	12,9		60	124	77	45	14
A3979XPL-13	13		60	124	77	45	14
A3979XPL-13.1	13,1		60	124	77	45	14
A3979XPL-13.2	13,2		60	124	77	45	14
A3979XPL-13.3	13,3		60	124	77	45	14
A3979XPL-13.4	13,4		60	124	77	45	14
A3979XPL-13.5	13,5		60	124	77	45	14
A3979XPL-13.6	13,6		60	124	77	45	14
A3979XPL-13.7	13,7		60	124	77	45	14
A3979XPL-13.8	13,8		60	124	77	45	14
A3979XPL-13.9	13,9		60	124	77	45	14
A3979XPL-14	14		60	124	77	45	14
A3979XPL-14.1	14,1		63	133	83	48	16
A3979XPL-14.2	14,2		63	133	83	48	16
A3979XPL-14.3	14,3		63	133	83	48	16
A3979XPL-14.4	14,4		63	133	83	48	16
A3979XPL-14.5	14,5		63	133	83	48	16
A3979XPL-14.6	14,6		63	133	83	48	16
A3979XPL-14.7	14,7		63	133	83	48	16
A3979XPL-14.75	14,75		63	133	83	48	16
A3979XPL-14.8	14,8		63	133	83	48	16
A3979XPL-15	15		63	133	83	48	16
A3979XPL-15.1	15,1		63	133	83	48	16
A3979XPL-15.2	15,2		63	133	83	48	16
A3979XPL-15.3	15,3		63	133	83	48	16
A3979XPL-15.5	15,5		63	133	83	48	16
A3979XPL-15.6	15,6		63	133	83	48	16
A3979XPL-15.7	15,7		63	133	83	48	16
A3979XPL-15.8	15,8		63	133	83	48	16
A3979XPL-15.9	15,9		63	133	83	48	16
A3979XPL-16	16		63	133	83	48	16
A3979XPL-16.1	16,1		71	143	93	48	18
A3979XPL-16.2	16,2		71	143	93	48	18
A3979XPL-16.3	16,3		71	143	93	48	18
A3979XPL-16.4	16,4		71	143	93	48	18
A3979XPL-16.5	16,5		71	143	93	48	18
A3979XPL-16.6	16,6		71	143	93	48	18
A3979XPL-16.7	16,7		71	143	93	48	18
A3979XPL-16.75	16,75		71	143	93	48	18

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XIII D 1 B 426 B 123

Continued

	Designation XPL	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HE	A3979XPL-16.8	16,8		71	143	93	48	18
	A3979XPL-17	17		71	143	93	48	18
	A3979XPL-17.2	17,2		71	143	93	48	18
	A3979XPL-17.3	17,3		71	143	93	48	18
	A3979XPL-17.5	17,5		71	143	93	48	18
	A3979XPL-17.6	17,6		71	143	93	48	18
	A3979XPL-17.7	17,7		71	143	93	48	18
	A3979XPL-17.8	17,8		71	143	93	48	18
	A3979XPL-18	18		71	143	93	48	18
	A3979XPL-18.2	18,2		77	153	101	50	20
	A3979XPL-18.5	18,5		77	153	101	50	20
	A3979XPL-18.7	18,7		77	153	101	50	20
	A3979XPL-18.8	18,8		77	153	101	50	20
	A3979XPL-19	19		77	153	101	50	20
	A3979XPL-19.5	19,5		77	153	101	50	20
	A3979XPL-19.7	19,7		77	153	101	50	20
	A3979XPL-19.8	19,8		77	153	101	50	20
	A3979XPL-20	20		77	153	101	50	20
	A3979XPL-20.5	20,5		86	166	108	56	25
	A3979XPL-21	21		86	166	108	56	25
	A3979XPL-21.5	21,5		86	166	108	56	25
	A3979XPL-22.5	22,5		91	173	115	56	25
	A3979XPL-23	23		91	173	115	56	25
	A3979XPL-23.5	23,5		91	173	115	56	25
	A3979XPL-24	24		91	173	115	56	25
	A3979XPL-24.5	24,5		97	180	122	56	25
	A3979XPL-25	25		97	180	122	56	25

WALTER SELECT

●● Primary application

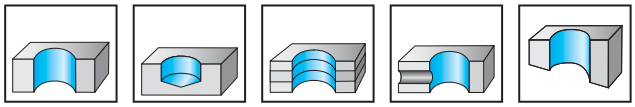
● Other application

XIII D 1 B 426 B 123

Solid carbide 3 flute drills
A3367 / A3967
BSX



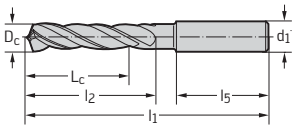
– SX ground tip



5×D_c | DIN 6537 L | 130°

	P	M	K	N	S	H	O
Uncoated			●●	●●	●		●

Shank DIN 6535 HA

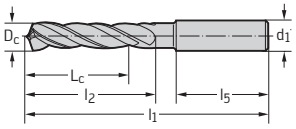
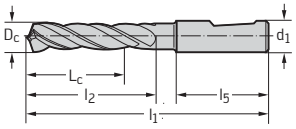


Designation Uncoated	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A3367-3	3		23	66	28	36	6
A3367-3.15	3,15		23	66	28	36	6
A3367-1/8IN	3,175	1/8"	23	66	28	36	6
A3367-3.3	3,3		23	66	28	36	6
A3367-3.5	3,5		23	66	28	36	6
A3367-9/64IN	3,572	9/64"	23	66	28	36	6
A3367-3.7	3,7		23	66	28	36	6
A3367-3.8	3,8		29	74	36	36	6
A3367-5/32IN	3,969	5/32"	29	74	36	36	6
A3367-4	4		29	74	36	36	6
A3367-4.2	4,2		29	74	36	36	6
A3367-4.3	4,3		29	74	36	36	6
A3367-11/64IN	4,366	11/64"	29	74	36	36	6
A3367-4.45	4,45		29	74	36	36	6
A3367-4.5	4,5		29	74	36	36	6
A3367-4.65	4,65		29	74	36	36	6
A3367-3/16IN	4,763	3/16"	35	82	44	36	6
A3367-5	5		35	82	44	36	6
A3367-13/64IN	5,159	13/64"	35	82	44	36	6
A3367-5.5	5,5		35	82	44	36	6
A3367-5.55	5,55		35	82	44	36	6
A3367-7/32IN	5,556	7/32"	35	82	44	36	6
A3367-5.75	5,75		35	82	44	36	6
A3367-5.9	5,9		35	82	44	36	6
A3367-15/64IN	5,953	15/64"	35	82	44	36	6
A3367-6	6		35	82	44	36	6
A3367-1/4IN	6,35	1/4"	43	91	53	36	8
A3367-6.5	6,5		43	91	53	36	8
A3367-6.55	6,55		43	91	53	36	8
A3367-17/64IN	6,747	17/64"	43	91	53	36	8
A3367-6.8	6,8		43	91	53	36	8
A3367-7	7		43	91	53	36	8
A3367-9/32IN	7,144	9/32"	43	91	53	36	8
A3367-7.25	7,25		43	91	53	36	8
A3367-7.4	7,4		43	91	53	36	8
A3367-7.5	7,5		43	91	53	36	8
A3367-7.55	7,55		43	91	53	36	8
A3367-5/16IN	7,938	5/16"	43	91	53	36	8
A3367-8	8		43	91	53	36	8
A3367-21/64IN	8,334	21/64"	49	103	61	40	10
A3367-8.5	8,5		49	103	61	40	10
A3367-8.75	8,75		49	103	61	40	10
A3367-9	9		49	103	61	40	10
A3367-23/64IN	9,128	23/64"	49	103	61	40	10
A3367-9.3	9,3		49	103	61	40	10
A3367-9.4	9,4		49	103	61	40	10
A3367-9.5	9,5		49	103	61	40	10
A3367-3/8IN	9,525	3/8"	49	103	61	40	10

Continued

XIII | D 1 | B 426 | B 123

Continued

	Designation Uncoated	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HA	A3367-9.55	9,55		49	103	61	40	10
	A3367-25/64IN	9,922	25/64"	49	103	61	40	10
	A3367-10	10		49	103	61	40	10
	A3367-10.2	10,2		56	118	71	45	12
	A3367-10.5	10,5		56	118	71	45	12
	A3367-11	11		56	118	71	45	12
	A3367-11.2	11,2		56	118	71	45	12
	A3367-11.3	11,3		56	118	71	45	12
	A3367-11.5	11,5		56	118	71	45	12
	A3367-11.7	11,7		56	118	71	45	12
	A3367-12	12		56	118	71	45	12
	A3367-12.5	12,5		60	124	77	45	14
	A3367-1/2IN	12,7	1/2"	60	124	77	45	14
	A3367-13	13		60	124	77	45	14
	A3367-13.1	13,1		60	124	77	45	14
	A3367-13.3	13,3		60	124	77	45	14
	A3367-13.5	13,5		60	124	77	45	14
	A3367-14	14		60	124	77	45	14
	A3367-14.5	14,5		63	133	83	48	16
	A3367-15	15		63	133	83	48	16
	A3367-15.1	15,1		63	133	83	48	16
	A3367-15.3	15,3		63	133	83	48	16
	A3367-15.5	15,5		63	133	83	48	16
	A3367-16	16		63	133	83	48	16
Shank DIN 6535 HE	A3967-3	3		23	66	28	36	6
	A3967-3.15	3,15		23	66	28	36	6
	A3967-3.3	3,3		23	66	28	36	6
	A3967-3.5	3,5		23	66	28	36	6
	A3967-3.7	3,7		23	66	28	36	6
	A3967-3.8	3,8		29	74	36	36	6
	A3967-4	4		29	74	36	36	6
	A3967-4.2	4,2		29	74	36	36	6
	A3967-4.3	4,3		29	74	36	36	6
	A3967-4.45	4,45		29	74	36	36	6
	A3967-4.5	4,5		29	74	36	36	6
	A3967-4.65	4,65		29	74	36	36	6
	A3967-5	5		35	82	44	36	6
	A3967-5.5	5,5		35	82	44	36	6
	A3967-5.55	5,55		35	82	44	36	6
	A3967-5.75	5,75		35	82	44	36	6
	A3967-5.9	5,9		35	82	44	36	6
	A3967-6	6		35	82	44	36	6
	A3967-6.5	6,5		43	91	53	36	8
	A3967-6.55	6,55		43	91	53	36	8
	A3967-6.8	6,8		43	91	53	36	8
	A3967-7	7		43	91	53	36	8
	A3967-7.25	7,25		43	91	53	36	8
	A3967-7.4	7,4		43	91	53	36	8
	A3967-7.45	7,45		43	91	53	36	8
	A3967-7.5	7,5		43	91	53	36	8
	A3967-7.55	7,55		43	91	53	36	8
	A3967-8	8		43	91	53	36	8
	A3967-8.5	8,5		49	103	61	40	10
	A3967-9	9		49	103	61	40	10
	A3967-9.3	9,3		49	103	61	40	10
	A3967-9.4	9,4		49	103	61	40	10
	A3967-9.5	9,5		49	103	61	40	10
	A3967-10	10		49	103	61	40	10

Continued

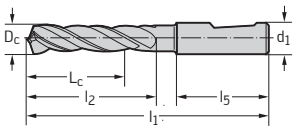
WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 426 B 123

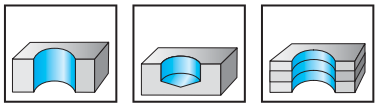
Continued

	Designation Uncoated	D_c m7 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
Shank DIN 6535 HE 	A3967-10.2	10,2		56	118	71	45	12
	A3967-10.5	10,5		56	118	71	45	12
	A3967-11	11		56	118	71	45	12
	A3967-11.2	11,2		56	118	71	45	12
	A3967-11.3	11,3		56	118	71	45	12
	A3967-11.5	11,5		56	118	71	45	12
	A3967-11.55	11,55		56	118	71	45	12
	A3967-11.7	11,7		56	118	71	45	12
	A3967-12	12		56	118	71	45	12
	A3967-12.5	12,5		60	124	77	45	14
	A3967-13	13		60	124	77	45	14
	A3967-13.1	13,1		60	124	77	45	14
	A3967-13.3	13,3		60	124	77	45	14
	A3967-13.5	13,5		60	124	77	45	14
	A3967-14	14		60	124	77	45	14
	A3967-14.5	14,5		63	133	83	48	16
	A3967-15	15		63	133	83	48	16
	A3967-15.1	15,1		63	133	83	48	16
	A3967-15.3	15,3		63	133	83	48	16
	A3967-15.5	15,5		63	133	83	48	16
	A3967-16	16		63	133	83	48	16

XIII D 1 B 426 B 123

Solid carbide micro twist drills
DB133 Supreme

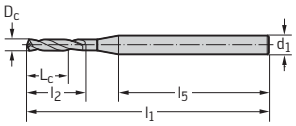






	P	M	K	N	S	H	O
WJ30ER	●●		●●	●●	●	●	●

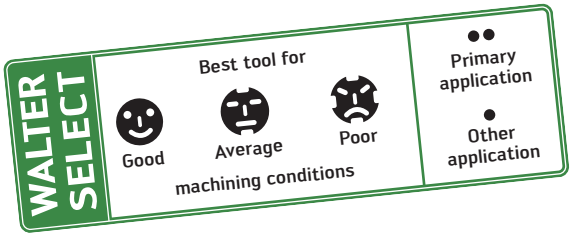
Shank DIN 6535 HA



Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30ER
DB133-08-00.500A0-	0,5		5,2	48	6	35	3	●●
DB133-08-00.600A0-	0,6		6,1	48	7	34	3	●●
DB133-08-00.700A0-	0,7		6,9	50	8	35	3	●●
DB133-08-00.750A0-	0,75		7,8	50	9	34	3	●●
DB133-08-00.794A0-	0,794	1/32"	7,8	50	9	34	3	●●
DB133-08-00.800A0-	0,8		7,8	50	9	34	3	●●
DB133-08-00.880A0-	0,88		8,6	53	10	36	3	●●
DB133-08-00.900A0-	0,9		8,6	53	10	36	3	●●
DB133-08-00.950A0-	0,95		10,5	53	12	34	3	●●
DB133-08-01.000A0-	1		10,5	53	12	34	3	●●
DB133-08-01.050A0-	1,05		11	54	13	35	3	●●
DB133-08-01.100A0-	1,1		11	54	13	35	3	●●
DB133-08-01.191A0-	1,191	3/64"	12	54	14	34	3	●●
DB133-08-01.200A0-	1,2		12	54	14	34	3	●●
DB133-08-01.250A0-	1,25		12	54	14	34	3	●●
DB133-08-01.300A0-	1,3		13	57	15	36	3	●●
DB133-08-01.350A0-	1,35		13	57	16	35	3	●●
DB133-08-01.400A0-	1,4		13	57	16	35	3	●●
DB133-08-01.450A0-	1,45		14	57	17	34	3	●●
DB133-08-01.500A0-	1,5		14	57	17	34	3	●●
DB133-08-01.550A0-	1,55		15	60	18	37	3	●●
DB133-08-01.588A0-	1,588	1/16"	15	60	18	37	3	●●
DB133-08-01.600A0-	1,6		15	60	18	37	3	●●
DB133-08-01.650A0-	1,65		17	60	20	35	3	●●
DB133-08-01.700A0-	1,7		17	60	20	35	3	●●
DB133-08-01.750A0-	1,75		18	60	21	34	3	●●
DB133-08-01.800A0-	1,8		18	60	21	34	3	●●
DB133-08-01.820A0-	1,82		19	63	22	36	3	●●
DB133-08-01.850A0-	1,85		19	63	22	36	3	●●
DB133-08-01.900A0-	1,9		19	63	22	36	3	●●
DB133-08-01.950A0-	1,95		20	63	23	35	3	●●
DB133-08-01.984A0-	1,984	5/64"	20	63	23	35	3	●●
DB133-08-02.000A0-	2		20	63	23	35	3	●●
DB133-08-02.050A0-	2,05		20	63	24	35	3	●●
DB133-08-02.100A0-	2,1		20	63	24	35	3	●●
DB133-08-02.150A0-	2,15		21	63	25	34	3	●●
DB133-08-02.200A0-	2,2		21	63	25	34	3	●●
DB133-08-02.250A0-	2,25		22	67	26	37	3	●●
DB133-08-02.300A0-	2,3		22	67	26	37	3	●●
DB133-08-02.350A0-	2,35		24	67	28	35	3	●●
DB133-08-02.381A0-	2,381	3/32"	24	67	28	35	3	●●
DB133-08-02.400A0-	2,4		24	67	28	35	3	●●
DB133-08-02.450A0-	2,45		25	67	29	34	3	●●

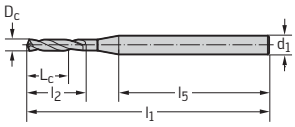
Ordering example for the WJ30ER grade: DB133-08-00.500A0-WJ30ER

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XIII D 1 B 426 B 123

Continued

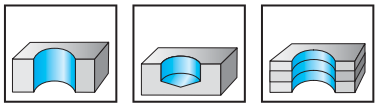
	Designation	D_c m7 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30ER
Shank DIN 6535 HA 	DB133-08-02.500A0-	2,5		25	67	29	34	3	●
	DB133-08-02.550A0-	2,55		26	71	30	37	3	●
	DB133-08-02.600A0-	2,6		26	71	30	37	3	●
	DB133-08-02.650A0-	2,65		26	71	31	37	3	●
	DB133-08-02.700A0-	2,7		26	71	31	37	3	●
	DB133-08-02.750A0-	2,75		27	71	32	36	3	●
	DB133-08-02.778A0-	2,778	7/64“	27	71	32	36	3	●
	DB133-08-02.800A0-	2,8		27	71	32	36	3	●
	DB133-08-02.850A0-	2,85		28	71	33	35	3	●
	DB133-08-02.900A0-	2,9		28	71	33	35	3	●
	DB133-08-02.950A0-	2,95		29	71	34	34	3	●

Ordering example for the WJ30ER grade: DB133-08-00.500A0-WJ30ER

XIII D 1 B 426 B 123

Solid carbide twist drills
A1276TFL
Alpha® 22

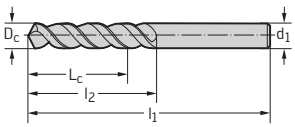




8×D_c | DIN 338 |  | 

	P	M	K	N	S	H	O
TFL	●●		●●	●●	●		

Parallel shank



Designation TFL	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1276TFL-3	3	28	61	33	3
A1276TFL-3.1	3,1	30	65	36	3,1
A1276TFL-3.2	3,2	30	65	36	3,2
A1276TFL-3.3	3,3	30	65	36	3,3
A1276TFL-3.4	3,4	33	70	39	3,4
A1276TFL-3.5	3,5	33	70	39	3,5
A1276TFL-3.7	3,7	33	70	39	3,7
A1276TFL-3.8	3,8	36	75	43	3,8
A1276TFL-4	4	36	75	43	4
A1276TFL-4.2	4,2	36	75	43	4,2
A1276TFL-4.3	4,3	39	80	47	4,3
A1276TFL-4.5	4,5	39	80	47	4,5
A1276TFL-4.7	4,7	39	80	47	4,7
A1276TFL-4.8	4,8	44	86	52	4,8
A1276TFL-5	5	44	86	52	5
A1276TFL-5.1	5,1	44	86	52	5,1
A1276TFL-5.2	5,2	44	86	52	5,2
A1276TFL-5.5	5,5	48	93	57	5,5
A1276TFL-5.8	5,8	48	93	57	5,8
A1276TFL-6	6	48	93	57	6
A1276TFL-6.1	6,1	52	101	63	6,1
A1276TFL-6.5	6,5	52	101	63	6,5
A1276TFL-6.6	6,6	52	101	63	6,6
A1276TFL-6.8	6,8	57	109	69	6,8
A1276TFL-7	7	57	109	69	7
A1276TFL-7.5	7,5	57	109	69	7,5
A1276TFL-7.8	7,8	62	117	75	7,8
A1276TFL-8	8	62	117	75	8
A1276TFL-8.1	8,1	62	117	75	8,1
A1276TFL-8.5	8,5	62	117	75	8,5
A1276TFL-9	9	66	125	81	9
A1276TFL-9.5	9,5	66	125	81	9,5
A1276TFL-10	10	71	133	87	10
A1276TFL-10.2	10,2	71	133	87	10,2
A1276TFL-10.5	10,5	71	133	87	10,5
A1276TFL-11	11	76	142	94	11
A1276TFL-12	12	87	151	101	12

WALTER SELECT

●● Primary application

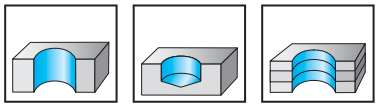
● Other application

XIII | D 1 | B 426 | B 123

Solid carbide twist drills
A1263



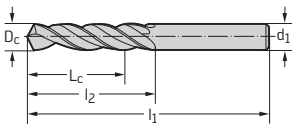
– Type N



8×D_c | DIN 338 | 118°

	P	M	K	N	S	H	O
Uncoated			●	●●	●		●●

Parallel shank



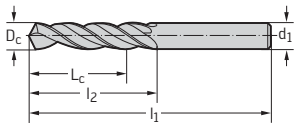
Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1263-0.6	0,6	6,1	24	7	0,6
A1263-0.7	0,7	7,8	28	9	0,7
A1263-0.8	0,8	8,7	30	10	0,8
A1263-0.9	0,9	9,5	32	11	0,9
A1263-1	1	10	34	12	1
A1263-1.1	1,1	12	36	14	1,1
A1263-1.2	1,2	14	38	16	1,2
A1263-1.3	1,3	14	38	16	1,3
A1263-1.4	1,4	15	40	18	1,4
A1263-1.5	1,5	15	40	18	1,5
A1263-1.6	1,6	17	43	20	1,6
A1263-1.7	1,7	17	43	20	1,7
A1263-1.8	1,8	19	46	22	1,8
A1263-1.9	1,9	19	46	22	1,9
A1263-2	2	20	49	24	2
A1263-2.1	2,1	20	49	24	2,1
A1263-2.2	2,2	23	53	27	2,2
A1263-2.3	2,3	23	53	27	2,3
A1263-2.4	2,4	26	57	30	2,4
A1263-2.5	2,5	26	57	30	2,5
A1263-2.6	2,6	26	57	30	2,6
A1263-2.7	2,7	28	61	33	2,7
A1263-2.8	2,8	28	61	33	2,8
A1263-2.9	2,9	28	61	33	2,9
A1263-3	3	28	61	33	3
A1263-3.1	3,1	30	65	36	3,1
A1263-3.2	3,2	30	65	36	3,2
A1263-3.3	3,3	30	65	36	3,3
A1263-3.4	3,4	33	70	39	3,4
A1263-3.5	3,5	33	70	39	3,5
A1263-3.6	3,6	33	70	39	3,6
A1263-3.7	3,7	33	70	39	3,7
A1263-3.8	3,8	36	75	43	3,8
A1263-3.9	3,9	36	75	43	3,9
A1263-4	4	36	75	43	4
A1263-4.1	4,1	36	75	43	4,1
A1263-4.2	4,2	36	75	43	4,2
A1263-4.3	4,3	39	80	47	4,3
A1263-4.4	4,4	39	80	47	4,4
A1263-4.5	4,5	39	80	47	4,5
A1263-4.6	4,6	39	80	47	4,6
A1263-4.7	4,7	39	80	47	4,7
A1263-4.8	4,8	44	86	52	4,8
A1263-4.9	4,9	44	86	52	4,9
A1263-5	5	44	86	52	5
A1263-5.1	5,1	44	86	52	5,1
A1263-5.2	5,2	44	86	52	5,2
A1263-5.3	5,3	44	86	52	5,3

Continued

XIII | D 1 | B 426 | B 123

Continued

Parallel shank



Designation Uncoated	D_c h7 mm	L_c mm	l_1 mm	l_2 mm	d_1 h6 mm
A1263-5.4	5,4	48	93	57	5,4
A1263-5.5	5,5	48	93	57	5,5
A1263-5.6	5,6	48	93	57	5,6
A1263-5.7	5,7	48	93	57	5,7
A1263-5.8	5,8	48	93	57	5,8
A1263-5.9	5,9	48	93	57	5,9
A1263-6	6	48	93	57	6
A1263-6.1	6,1	52	101	63	6,1
A1263-6.2	6,2	52	101	63	6,2
A1263-6.3	6,3	52	101	63	6,3
A1263-6.4	6,4	52	101	63	6,4
A1263-6.5	6,5	52	101	63	6,5
A1263-6.6	6,6	52	101	63	6,6
A1263-6.7	6,7	52	101	63	6,7
A1263-6.8	6,8	57	109	69	6,8
A1263-6.9	6,9	57	109	69	6,9
A1263-7	7	57	109	69	7
A1263-7.1	7,1	57	109	69	7,1
A1263-7.2	7,2	57	109	69	7,2
A1263-7.3	7,3	57	109	69	7,3
A1263-7.4	7,4	57	109	69	7,4
A1263-7.5	7,5	57	109	69	7,5
A1263-7.6	7,6	62	117	75	7,6
A1263-7.7	7,7	62	117	75	7,7
A1263-7.8	7,8	62	117	75	7,8
A1263-7.9	7,9	62	117	75	7,9
A1263-8	8	62	117	75	8
A1263-8.1	8,1	62	117	75	8,1
A1263-8.2	8,2	62	117	75	8,2
A1263-8.3	8,3	62	117	75	8,3
A1263-8.4	8,4	62	117	75	8,4
A1263-8.5	8,5	62	117	75	8,5
A1263-8.6	8,6	66	125	81	8,6
A1263-8.7	8,7	66	125	81	8,7
A1263-8.8	8,8	66	125	81	8,8
A1263-8.9	8,9	66	125	81	8,9
A1263-9	9	66	125	81	9
A1263-9.1	9,1	66	125	81	9,1
A1263-9.2	9,2	66	125	81	9,2
A1263-9.3	9,3	66	125	81	9,3
A1263-9.4	9,4	66	125	81	9,4
A1263-9.5	9,5	66	125	81	9,5
A1263-9.6	9,6	71	133	87	9,6
A1263-9.7	9,7	71	133	87	9,7
A1263-9.8	9,8	71	133	87	9,8
A1263-9.9	9,9	71	133	87	9,9
A1263-10	10	71	133	87	10
A1263-10.2	10,2	71	133	87	10,2
A1263-10.5	10,5	71	133	87	10,5
A1263-10.8	10,8	76	142	94	10,8
A1263-11	11	76	142	94	11
A1263-11.2	11,2	76	142	94	11,2
A1263-11.5	11,5	76	142	94	11,5
A1263-11.8	11,8	76	142	94	11,8
A1263-12	12	87	151	101	12

WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 426 B 123



Product range overview of bodies and indexable inserts for chamfering

Machining	 	
Drilling depth L_c	**D_c = 4–16 mm**	
Type	Tool	Indexable inserts
Designation	**D4580 Xtra·tec®**	**VCGX**
Shank	Collet	–
Diameter range D_c [mm]	4–16	4–16
Page	B 172	B 173
		

Designation key for Walter drilling tools

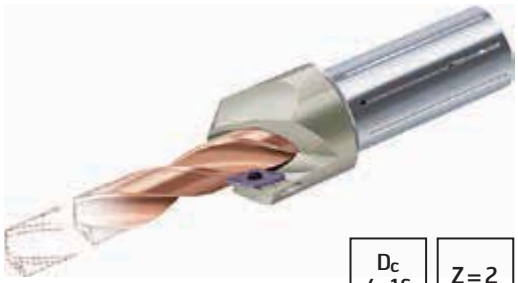
D	4	5	80	–	45	08.00	A16	–	VC09
1	2	3	4	5	6	7	8		9

1	2	3	4	5
Tool group	Generation	Tool type	Tool type	1. Delimiters
D Drilling		5 Chamfering tool	80 Compact chamfering tool	– Metric . Inches

6	7	8	9
Chamfer angle	Cutting diameter/ clamping diameter chamfering tool	Shank type and size cylindrical	Insert size/interface size
45° Chamfer angle		A12 12 mm A16 16 mm A20 20 mm A25 25 mm A13 0.500" A15 0.625" A19 0.750" A26 1.000"	VC09 Metric

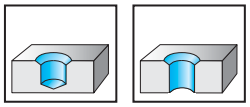
Chamfering tool D4580

Xtra·tec®



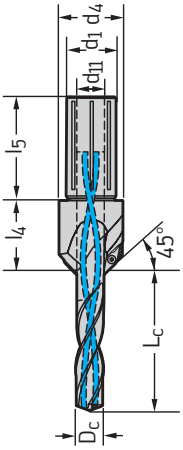
D_c 4–16

Z = 2



	P	M	K	N	S	H	O
D4580	●●	●	●●	●●	●		

Tool



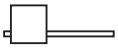
Designation	D_c min mm	D_c max mm	d_{11} mm	d_1 mm	d_4 mm	l_4 mm	l_5 mm	kg	No. of indexable inserts	Indexable insert type
D4580-45-06.00A12-VC09	4,0	6,0	6,0	12,0	21,0	25,0	41,0	0,03	2	VC..09..
D4580-45-08.00A16-VC09	6,1	8,0	8,0	16,0	25,0	25,0	44,5	0,04	2	VC..09..
D4580-45-10.00A16-VC09	8,1	10,0	10,0	16,0	25,0	25,0	44,5	0,05	2	VC..09..
D4580-45-12.00A20-VC09	10,1	12,0	12,0	20,0	28,0	25,0	46,5	0,06	2	VC..09..
D4580-45-14.00A20-VC09	12,1	14,0	14,0	20,0	30,0	25,0	46,5	0,07	2	VC..09..
D4580-45-16.00A25-VC09	14,1	16,0	16,0	25,0	32,0	34,0	53,0	0,08	2	VC..09..

The drill is not included in the scope of delivery.
Technical information from page B 442 onwards.

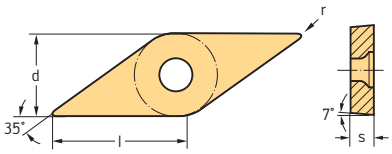
Assembly parts

	Indexable insert type	VC . X09 . .
	Cartridge	FK390
	Clamping screw for indexable insert	FS2111 T7 1P (Torx 7IP)
	Adjusting screw	FS2029

Accessories

	Indexable insert type	VC . X09 . .
	Torx key	FS1490 T7 1P (Torx 7IP)
	Key	ISO 2936-1,5 (SW 1,5)

Positive basic shape VCGX



Indexable inserts

	Designation	Number of cutting edges	l mm	s mm	r mm	d mm	P HC	M HC	K HC	S HC	HC WXP30
	VCGX0902ACFR	2	9,0	2,5	0,2	5,556					✖

HC = Coated carbide

D 1 B 443

Product range overview of indexable inserts for drilling from solid



Insert shape	Insert shape		Description	Page
Solid drilling		P6001 . . P6003 . . P6004 . . P6005 . .	For solid drilling	B 180
		T	For chamfering	B 184
		P484 . .	For solid drilling	B 185
		P284 . .	For solid drilling	B 187
		L	For solid drilling	B 188
		W	For solid drilling	B 189

Designation key
for square indexable inserts for solid drilling

P 284	0	S	–	2	N	–	A57
1	2	3		4	5		6

1	
Walter indexable insert designation	
P284	For B321x drills
P484	For B421x drills

2	
Version	
0	Ground
1	Sintered

3	
Position	
C	Centre insert
P	Outer insert
S	Centre insert and outer insert identical

4
Insert size

5	
Cutting direction	
R	RH-cutting
N	Neutral

6	
Walter geometry	
A57	The stable one
E57	The universal one
E67	The sharp one

Designation key
for exchangeable inserts for use in a Point Drill

P 600	5	–	D 18,50	R	WKK45C
1	2		3	4	5

1	
Walter exchangeable insert designation	
P600	For B401x drills

2	
Walter geometry	
1	For ISO P
3	For ISO M and ISO S
4	For ISO N
5	For ISO K

3	
Insert diameter	
D	In mm

4	
Cutting direction	
R	RH-cutting

5
Coating

Designation key in accordance with ISO 1832 for indexable inserts for solid drilling

L	C	M	X	06	T2	04	–	D57
1	2	3	4	5	6	7		8

1 Insert shape

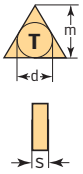
L  W 

2 Clearance angle

C 

O 

3 Tolerances



Permissible deviation in mm for

	d	m	s
E	± 0,025	± 0,025	± 0,025
M	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,130

[1] Inserts with ground planar cutting edges
[2] Depending on the insert size (see ISO standard 1832)

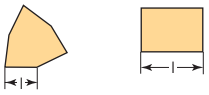
4 Machining and fastening features

A 

X Drawing or precise description of the indexable insert is required

B 

5 Cutting edge length



6 Insert thickness



02	s = 2,38
T1	s = 2,78
03	s = 3,18
T3	s = 3,97
04	s = 4,76
05	s = 5,56
06	s = 6,35

7 Corner radius



02	r = 0,2
04	r = 0,4
08	r = 0,8

8 Manufacturer specifications

The ISO code includes nine symbols. The eighth and/or ninth symbols should only be used when required.

The manufacturer can add other symbols which can be combined with the ISO code by means of a hyphen (e.g. for the chip breaker form).

Solid drilling	A 57, B 57, D 57, E 57, E 67

Designation key for cutting material grades – Drilling

W	K	P	25	S
Walter	1	2	3	4

1

1. Primary application or coating type

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials
A	CVD aluminium coating
X	PVD coating

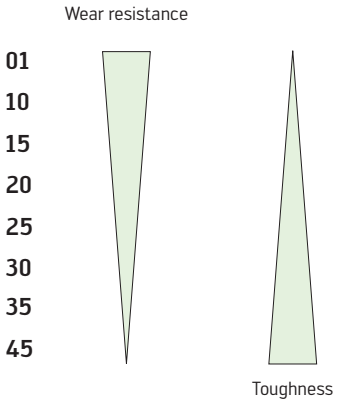
2

2. Primary application

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials

3

ISO range of applications



4

Generation

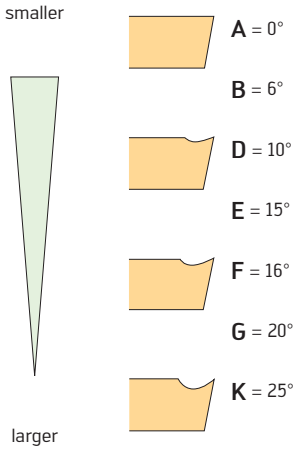
S	Tiger·tec® Silver
C	Color Select

Geometry designation key for indexable inserts for solid drilling

B	5	7
1	2	3

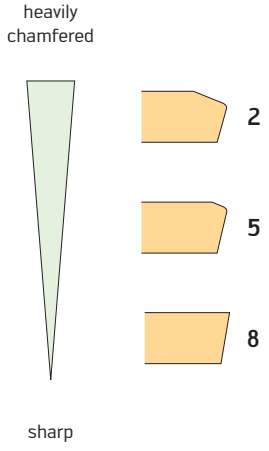
1

Chip breaker groove



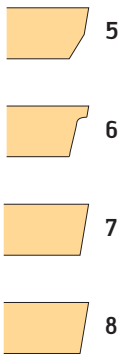
2

Cutting edge



3

Flank face design



Walter Select for indexable inserts for solid drilling

Step by step to the right indexable insert

STEP 1

Determine the **material** to be machined from page B 1174 onwards.

Note the **machining group** that corresponds to your **material,** e.g.: P10.

Code letters	Machining group	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**High-temperature alloys and titanium alloys**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Select the **machining conditions:**

	Machine stability, clamping system and workpiece		
Tool projection	**very good**	**good**	**moderate**
Short projection length			
Long projection length			

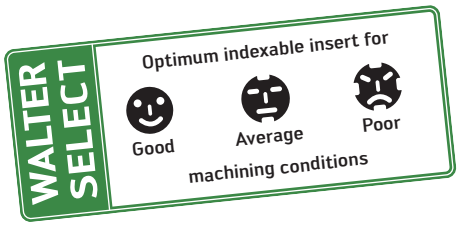
STEP 3

Select your **tool** according to your application and individual requirements.
Then select your drill from the corresponding tool page.

Drilling depth	Page
1 × D_c	B 200
2 × D_c	B 198
3 × D_c	B 202
4 × D_c	B 230
5 × D_c	B 204
7 × D_c	B 208
10 × D_c	B 212

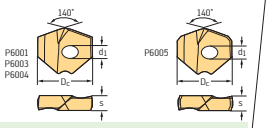
STEP 4

Determine your optimum **indexable insert grade and geometry** on the appropriate tool page.
When doing so, please take into consideration the machining conditions (step 2) and the material to be machined.



Drill inserts
P6001, P6003, P6004, P6005

For Xtra·tec® Point Drill



Drill inserts

	Designation	Number of cutting edges	D_c mm	D_c inches/ no.	d_1 mm	s mm	P6001 P HC WPP45C	P6003 P HC WMP35	P6003 M HC WMP35	P6005 K HC WKK45C	P6004 N HC WNN25	P6003 S HC WMP35
P6001	P60..-D12,00R	2	12		3	3,6	●	●	●	●	●	●
	P60..-D12,10R	2	12,1		3	3,6	●	●	●	●		●
	P60..-D12,20R	2	12,2		3	3,6	●	●	●	●		●
	P60..-D12,30R	2	12,3		3	3,6	●	●	●	●		●
	P60..-D12,40R	2	12,4		3	3,6	●	●	●	●		●
	P60..-D12,50R	2	12,5		3	3,6	●	●	●	●	●	●
P6003	P60..-D12,60R	2	12,6		3	3,6	●	●	●	●		●
	P60..-D12,70R	2	12,7	1/2"	3	3,6	●	●	●	●		●
	P60..-D12,80R	2	12,8		3	3,6	●	●	●	●		●
	P60..-D12,90R	2	12,9		3	3,6	●	●	●	●		●
	P60..-D12,95R	2	12,95		3	3,6	●	●	●	●		●
	P60..-D13,00R	2	13		3	3,6	●	●	●	●	●	●
P6004	P60..-D13,10R	2	13,1		3	3,6				●		
	P60..-D13,11R	2	13,11		3	3,6	●	●	●	●		●
	P60..-D13,20R	2	13,2		3	3,6	●	●	●	●		●
	P60..-D13,25R	2	13,25		3	3,6	●	●	●	●		●
	P60..-D13,30R	2	13,3		3		●	●	●	●		●

STEP 5

Select the **cutting data** from page B 444 onwards.

Cutting data for solid drilling using the Xtra·tec® Point Drill

= Wet machining (E = emulsion, O = oil)
= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

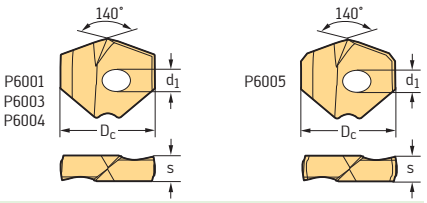
v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth	1,3 × D_c							
						Designation	B4011							
						Diameter range	12–25							
														
							 P6001 WPP45C			 P6003 WMP35				
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0,25%	Annealed	125	430	P1	120	7	E O		120	7	E O	
		C > 0,25% to ≤ 0,55%	Annealed	190	640	P2	120	7	E O		120	7	E O	
		C > 0,25% to ≤ 0,55%	Heat-treated	210	710	P3	120	7	E O		120	7	E O	
		C > 0,55%	Annealed	190	640	P4	110	6	E O		110	6	E O	
		C > 0,55%	Heat-treated	300	1010	P5	90	7	E O		90	7	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	120	7	E O		120	7	E O	
	Low-alloyed steel	Annealed		175	590	P7	120	7	E O		120	7	E O	
		Heat-treated		285	960	P8	71	7	E O		71	7	E O	
		Heat-treated		380	1280	P9	32	3	O E		32	3	O E	
		Heat-treated		430	1480	P10								
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	90	6	E O		90	6	E O	
		Hardened and tempered		300	1010	P12	90	7	E O		90	7	E O	
		Hardened and tempered		380	1280	P13	63	5	E O		63	5	E O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	100	7	E O		100	7	E O	
				330	1110	P15							E O	

Drill inserts
P6001, P6003, P6004, P6005

For Xtra·tec® Point Drill



Drill inserts

	Designation	Number of cutting edges	D_c mm	D_c inches/ no.	d_1 mm	s mm	P6001 P HC WPP45C	P6003 P HC WMP35	P6003 M HC WMP35	P6005 K HC WKK45C	P6004 N HC WNN25	P6003 S HC WMP35
P6001	P60..-D12,00R	2	12		3	3,6	●	●	●	●	●	●
	P60..-D12,10R	2	12,1		3	3,6	●	●	●	●		●
	P60..-D12,20R	2	12,2		3	3,6	●	●	●	●		●
	P60..-D12,30R	2	12,3		3	3,6	●	●	●	●		●
	P60..-D12,40R	2	12,4		3	3,6	●	●	●	●		●
	P60..-D12,50R	2	12,5		3	3,6	●	●	●	●	●	●
P6003	P60..-D12,60R	2	12,6		3	3,6	●	●	●	●		●
	P60..-D12,70R	2	12,7	1/2"	3	3,6	●	●	●	●		●
	P60..-D12,80R	2	12,8		3	3,6	●	●	●	●		●
	P60..-D12,90R	2	12,9		3	3,6	●	●	●	●		●
	P60..-D12,95R	2	12,95		3	3,6	●	●	●	●		●
	P60..-D13,00R	2	13		3	3,6	●	●	●	●	●	●
P6004	P60..-D13,10R	2	13,1		3	3,6				●		
	P60..-D13,11R	2	13,11		3	3,6	●	●	●	●		●
	P60..-D13,20R	2	13,2		3	3,6	●	●	●	●		●
	P60..-D13,25R	2	13,25		3	3,6	●	●	●	●		●
	P60..-D13,30R	2	13,3		3	3,6	●	●	●	●		●
	P60..-D13,40R	2	13,4		3	3,6	●	●	●	●		●
P6005	P60..-D13,49R	2	13,49		3	3,6				●		
	P60..-D13,50R	2	13,5		3	3,6	●	●	●	●	●	●
	P60..-D13,60R	2	13,6		3	3,6	●	●	●	●		●
	P60..-D13,70R	2	13,7		3	3,6	●	●	●	●		●
	P60..-D13,80R	2	13,8		3	3,6	●	●	●	●		●
	P60..-D13,89R	2	13,89	35/64"	3	3,6	●	●	●	●		●
	P60..-D13,90R	2	13,9		3	3,6				●		
	P60..-D14,00R	2	14		3	4	●	●	●	●	●	●
	P60..-D14,10R	2	14,1		3	4	●	●	●	●		●
	P60..-D14,20R	2	14,2		3	4	●	●	●	●		●
	P60..-D14,29R	2	14,29		3	4				●		
	P60..-D14,30R	2	14,3		3	4	●	●	●	●		●
	P60..-D14,40R	2	14,4		3	4	●	●	●	●		●
	P60..-D14,50R	2	14,5		3	4	●	●	●	●	●	●
	P60..-D14,60R	2	14,6		3	4	●	●	●	●		●
	P60..-D14,68R	2	14,68		3	4	●	●	●	●		●
	P60..-D14,70R	2	14,7		3	4				●		
	P60..-D14,80R	2	14,8		3	4	●	●	●	●	●	●
	P60..-D14,90R	2	14,9		3	4	●	●	●	●		●
	P60..-D15,00R	2	15		3	4	●	●	●	●	●	●
	P60..-D15,08R	2	15,08		3	4				●		
	P60..-D15,09R	2	15,09		3	4	●	●	●	●		●
	P60..-D15,10R	2	15,1		3	4				●		
	P60..-D15,20R	2	15,2		3	4	●	●	●	●		●
	P60..-D15,30R	2	15,3		3	4	●	●	●	●		●

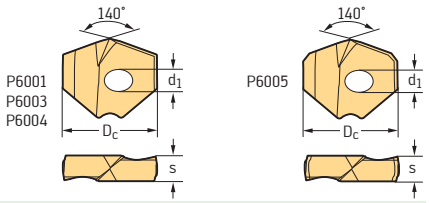
Ordering example: P60.. -D13.00R is available as
P6003 in the WMP35 grade (ISO P, ISO M and ISO S): P6003-D13.00R WMP35 or as
P6001 in the WPP45C grade (ISO P): P6001-D13.00R WPP45C

HC = Coated carbide

B 444 B 456

Drill inserts
P6001, P6003, P6004, P6005

For Xtra·tec® Point Drill

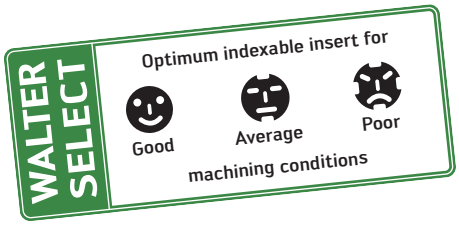


Drill inserts

	Designation	Number of cutting edges	D_c mm	D_c inches/ no.	d_1 mm	s mm	P6001 P HC WPP45C	P6003 P HC WMP35	P6003 M HC WMP35	P6005 K HC WKK45C	P6004 N HC WNN25	P6003 S HC WMP35
P6001	P60..-D15,40R	2	15,4		3	4	●	○	●	○		●
	P60..-D15,47R	2	15,47		3	4	●	○	●	○		●
	P60..-D15,48R	2	15,48		3	4				○		
	P60..-D15,50R	2	15,5		3	4	●	○	●	○	●	●
	P60..-D15,60R	2	15,6		3	4	●	○	●	○		●
	P60..-D15,70R	2	15,7		3	4	●	○	●	○		●
P6003	P60..-D15,80R	2	15,8		3	4	●	○	●	○		●
	P60..-D15,87R	2	15,87		3	4	●	○	●	○		●
	P60..-D15,88R	2	15,88		3	4				○		
	P60..-D15,90R	2	15,9		3	4				○		
	P60..-D16,00R	2	16		4	4,5	●	○	●	○	●	●
	P60..-D16,13R	2	16,13		4	4,5	●	○	●	○		●
	P60..-D16,26R	2	16,26		4	4,5	●	○	●	○		●
P6004	P60..-D16,27R	2	16,27		4	4,5				○		
	P60..-D16,43R	2	16,43		4	4,5	●	○	●	○		●
	P60..-D16,50R	2	16,5		4	4,5	●	○	●	○	●	●
	P60..-D16,66R	2	16,66		4	4,5	●	○	●	○	●	●
	P60..-D16,67R	2	16,67		4	4,5				○		
	P60..-D16,70R	2	16,7		4	4,5	●	○	●	○		●
P6005	P60..-D16,80R	2	16,8		4	4,5				○		
	P60..-D17,00R	2	17		4	4,5	●	○	●	○	●	●
	P60..-D17,07R	2	17,07		4	4,5	●	○	●	○		●
	P60..-D17,20R	2	17,2		4	4,5	●	○	●	○		●
	P60..-D17,45R	2	17,45		4	4,5	●	○	●	○		●
	P60..-D17,46R	2	17,46		4	4,5				○		
	P60..-D17,50R	2	17,5		4	4,5	●	○	●	○	●	●
	P60..-D17,70R	2	17,7		4	4,5	●	○	●	○	●	●
	P60..-D17,80R	2	17,8		4	4,5				○		
	P60..-D17,86R	2	17,86	45/64"	4	4,5	●	○	●	○		●
	P60..-D18,00R	2	18		4	5	●	○	●	○	●	●
	P60..-D18,24R	2	18,24		4	5	●	○	●	○		●
	P60..-D18,26R	2	18,26		4	5				○		
	P60..-D18,50R	2	18,5		4	5	●	○	●	○	●	●
	P60..-D18,65R	2	18,65		4	5	●	○	●	○	●	●
	P60..-D18,70R	2	18,7		4	5	●	○	●	○		●
	P60..-D18,80R	2	18,8		4	5	●	○	●	○		●
	P60..-D19,00R	2	19		4	5	●	○	●	○	●	●
	P60..-D19,05R	2	19,05	3/4"	4	5	●	○	●	○		●
	P60..-D19,20R	2	19,2		4	5	●	○	●	○		●

Ordering example: P60.. -D13.00R is available as
P6003 in the WMP35 grade (ISO P, ISO M and ISO S): P6003-D13.00R WMP35 or as
P6001 in the WPP45C grade (ISO P): P6001-D13.00R WPP45C

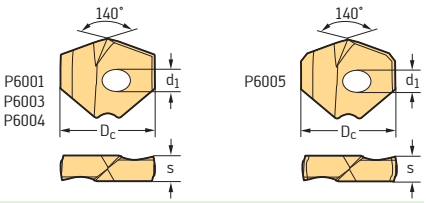
HC = Coated carbide



B 444
B 456

Drill inserts
P6001, P6003, P6004, P6005

For Xtra·tec® Point Drill



Drill inserts

	Designation	Number of cutting edges	D_c mm	D_c inches/ no.	d_1 mm	s mm	P6001 P HC WPP45C	P6003 P HC WMP35	P6003 M HC WMP35	P6005 K HC WKK45C	P6004 N HC WNN25	P6003 S HC WMP35
P6001	P60..-D19,25R	2	19,25		4	5	●	●	●	●		●
	P60..-D19,30R	2	19,3		4	5	●	●	●	●		●
	P60..-D19,43R	2	19,43		4	5	●	●	●	●		●
	P60..-D19,45R	2	19,45		4	5				●		
	P60..-D19,50R	2	19,5		4	5	●	●	●	●	●	●
	P60..-D19,60R	2	19,6		4	5	●	●	●	●		●
P6003	P60..-D19,70R	2	19,7		4	5	●	●	●	●	●	●
	P60..-D19,80R	2	19,8		4	5				●		
	P60..-D19,84R	2	19,84		4	5	●	●	●	●	●	●
	P60..-D20,00R	2	20		5	5,5	●	●	●	●	●	●
	P60..-D20,20R	2	20,2		5	5,5	●	●	●	●		●
	P60..-D20,24R	2	20,24	51/64"	5	5,5	●	●	●	●		●
P6004	P60..-D20,50R	2	20,5		5	5,5	●	●	●	●	●	●
	P60..-D20,62R	2	20,62		5	5,5	●	●	●	●		●
	P60..-D20,64R	2	20,64		5	5,5				●		
	P60..-D20,70R	2	20,7		5	5,5	●	●	●	●		●
	P60..-D21,00R	2	21		5	5,5	●	●	●	●	●	●
	P60..-D21,41R	2	21,41		5	5,5	●	●	●	●		●
P6005	P60..-D21,43R	2	21,43		5	5,5				●		
	P60..-D21,50R	2	21,5		5	5,5	●	●	●	●	●	●
	P60..-D21,70R	2	21,7		5	5,5	●	●	●	●	●	●
	P60..-D21,83R	2	21,83		5	5,5	●	●	●	●		●
	P60..-D22,00R	2	22		5	6	●	●	●	●	●	●
	P60..-D22,22R	2	22,22		5	6	●	●	●	●		●
	P60..-D22,23R	2	22,23		5	6				●		
	P60..-D22,42R	2	22,42		5	6	●	●	●	●		●
	P60..-D22,47R	2	22,47		5	6	●	●	●	●		●
	P60..-D22,50R	2	22,5		5	6	●	●	●	●	●	●
	P60..-D22,62R	2	22,62		5	6	●	●	●	●		●
	P60..-D22,70R	2	22,7		5	6	●	●	●	●		●
	P60..-D22,77R	2	22,77		5	6	●	●	●	●		●
	P60..-D23,00R	2	23		5	6	●	●	●	●	●	●
	P60..-D23,02R	2	23,02		5	6				●		
	P60..-D23,39R	2	23,39		5	6	●	●	●	●		●
	P60..-D23,50R	2	23,5		5	6	●	●	●	●	●	●
	P60..-D23,70R	2	23,7		5	6	●	●	●	●		●
	P60..-D23,80R	2	23,8		5	6	●	●	●	●		●
	P60..-D23,81R	2	23,81		5	6				●		
	P60..-D24,00R	2	24		5	6,5	●	●	●	●	●	●
	P60..-D24,21R	2	24,21	61/64"	5	6,5	●	●	●	●		●
	P60..-D24,50R	2	24,5		5	6,5	●	●	●	●	●	●
	P60..-D24,59R	2	24,59		5	6,5	●	●	●	●		●
	P60..-D24,61R	2	24,61		5	6,5				●		

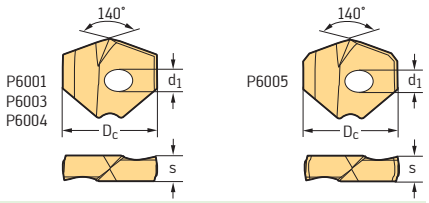
Ordering example: P60.. -D13.00R is available as
P6003 in the WMP35 grade (ISO P, ISO M and ISO S): P6003-D13.00R WMP35 or as
P6001 in the WPP45C grade (ISO P): P6001-D13.00R WPP45C

HC = Coated carbide

B 444 B 456

Drill inserts
P6001, P6003, P6004, P6005

For Xtra·tec® Point Drill

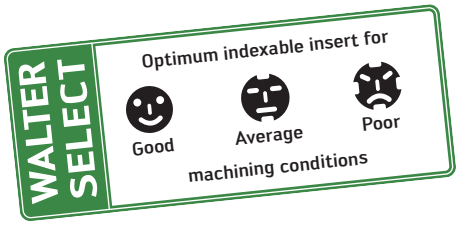


Drill inserts

	Designation	Number of cutting edges	D_c mm	D_c inches/ no.	d_1 mm	s mm	P6001 P HC WPP45C	P6003 P HC WMP35	P6003 M HC WMP35	P6005 K HC WKK45C	P6004 N HC WNN25	P6003 S HC WMP35
P6001	P60..-D24,70R	2	24,7		5	6,5	☺	☹	☺	☹		☺
	P60..-D25,00R	2	25		5	6,5	☺	☹	☺	☹	☺	☺
	P60..-D25,25R	2	25,25		5	6,5	☺	☹	☺	☹		☺
	P60..-D25,40R	2	25,4	1“	5	6,5	☺	☹	☺	☹		☺
	P60..-D25,50R	2	25,5		5	6,5	☺	☹	☺	☹	☺	☺
	P60..-D25,65R	2	25,65		5	6,5	☺	☹	☺	☹		☺
P6003	P60..-D25,70R	2	25,7		5	6,5	☺	☹	☺	☹		☺
	P60..-D25,80R	2	25,8		5	6,5	☺	☹	☺	☹		☺
	P60..-D26,00R	2	26		6	7,1	☺	☹	☺	☹	☺	☺
	P60..-D26,25R	2	26,25		6	7,1	☺	☹	☺	☹		☺
	P60..-D26,50R	2	26,5		6	7,1	☺	☹	☺	☹	☺	☺
	P60..-D26,59R	2	26,59	1 3/64“	6	7,1	☺	☹	☺	☹		☺
P6004	P60..-D27,00R	2	27		6	7,1	☺	☹	☺	☹	☺	☺
	P60..-D27,38R	2	27,38		6	7,1	☺	☹	☺	☹		☺
	P60..-D27,50R	2	27,5		6	7,1	☺	☹	☺	☹	☺	☺
	P60..-D27,78R	2	27,78		6	7,1	☺	☹	☺	☹		☺
	P60..-D28,00R	2	28		6	7,7	☺	☹	☺	☹	☺	☺
	P60..-D28,17R	2	28,17		6	7,7	☺	☹	☺	☹		☺
P6005	P60..-D28,50R	2	28,5		6	7,7	☺	☹	☺	☹	☺	☺
	P60..-D28,57R	2	28,57		6	7,7	☺	☹	☺	☹		☺
	P60..-D29,00R	2	29		6	7,7	☺	☹	☺	☹	☺	☺
	P60..-D29,37R	2	29,37		6	7,7	☺	☹	☺	☹		☺
	P60..-D29,50R	2	29,5		6	7,7	☺	☹	☺	☹	☺	☺
	P60..-D29,77R	2	29,77		6	7,7	☺	☹	☺	☹		☺
	P60..-D30,00R	2	30		6	8	☺	☹	☺	☹	☺	☺
	P60..-D30,15R	2	30,15		6	8	☺	☹	☺	☹		☺
	P60..-D30,50R	2	30,5		6	8	☺	☹	☺	☹	☺	☺
	P60..-D31,00R	2	31		6	8	☺	☹	☺	☹	☺	☺
	P60..-D31,50R	2	31,5		6	8	☺	☹	☺	☹	☺	☺
	P60..-D31,75R	2	31,75	1 1/4“	6	8	☺	☹	☺	☹		☺
	P60..-D31,99R	2	31,99		6	8	☺	☹	☺	☹		☺
	P60..-D32,00R	2	32		6	8,3	☺	☹	☺	☹		☺
	P60..-D32,10R	2	32,1		6	8,3	☺	☹	☺	☹		☺
	P60..-D33,00R	2	33		6	8,3	☺	☹	☺	☹		☺
	P60..-D34,00R	2	34		6	8,6	☺	☹	☺	☹		☺
	P60..-D35,00R	2	35		6	8,6	☺	☹	☺	☹		☺
	P60..-D36,00R	2	36		6	8,9	☺	☹	☺	☹		☺
	P60..-D37,00R	2	37		6	8,9	☺	☹	☺	☹		☺
	P60..-D37,99R	2	37,99		6	8,9	☺	☹	☺	☹		☺

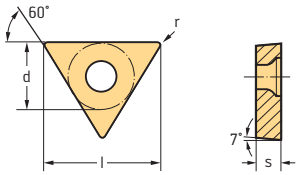
Ordering example: P60.. -D13.00R is available as
P6003 in the WMP35 grade (ISO P, ISO M and ISO S): P6003-D13.00R WMP35 or as
P6001 in the WPP45C grade (ISO P): P6001-D13.00R WPP45C

HC = Coated carbide



B 444
B 456

Positive triangular 60°
TCMT / TCMW
Tiger·tec® Silver



Indexable inserts

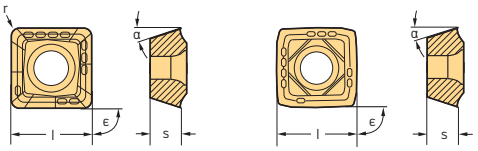
	Designation	l mm	r mm	P HC					M HC							K HC		S HC					
				WPP01	WPP10S	WPP20S	WPP30S	WMP20S	WMP20S	WSM10S	WSM20S	WSM30S	WSM10	WSM20	WSM30	WKK10S	WKK20S	WSM10S	WSM20S	WSM30S	WSM10	WSM20	WSM30
	TCMT110208-MK4	10,74	0,8													●	●						
	TCMT16T308-MK4	16,50	0,8													●	●						
	TCMT110208-MM4	10,74	0,8							●	●							●	●				
	TCMT16T308-MM4	16,50	0,8					●	●	●	●							●	●				
	TCMT110208-MP4	10,74	0,8		●	●																	
	TCMT16T308-MP4	16,50	0,8		●	●																	
	TCMT110208-PF4	10,74	0,8										●	●	●						●	●	●
	TCMT16T308-PF4	16,50	0,8	●									●	●	●						●	●	●
	TCMT110208-PM5	10,74	0,8											●	●							●	●
	TCMT16T308-PM5	16,50	0,8										●	●	●						●	●	●
	TCMT16T312-PM5	16,50	1,2											●	●							●	●
	TCMT110208-PS5	10,74	0,8											●	●							●	●
	TCMT16T308-PS5	16,50	0,8											●	●							●	●
	TCMT110208-RK4	10,74	0,8													●	●						
	TCMT16T308-RK4	16,50	0,8													●	●						
	TCMT16T312-RK4	16,50	1,2													●	●						
	TCMT110208-RM4	10,74	0,8					●	●		●	●							●	●			
	TCMT16T308-RM4	16,50	0,8					●	●	●	●	●						●	●	●			
	TCMT110208-RP4	10,74	0,8		●	●	●																
	TCMT16T308-RP4	16,50	0,8		●	●	●																
	TCMT16T312-RP4	16,50	1,2		●	●	●																
	TCMW110208-RK6	10,74	0,8													●	●						
	TCMW16T308-RK6	16,50	0,8													●	●						

See the ISO 1832 designation key for dimensions

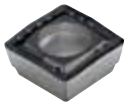
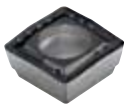
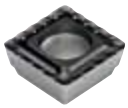
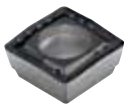
HC = Coated carbide

Square
P484.

Tiger·tec® Silver



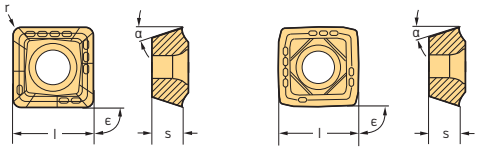
Indexable inserts

	Designation	Number of cutting edges	l mm	s mm	r mm	α	ε	P HC					M HC			K HC				N HC		S HC		
								WKP25S	WKP35S	WSP45	WSP45S	WXP40	WSP45	WSP45S	WXP40	WAK15	WKP25S	WKP35S	WXP40	WSP45	WXP40	WSP45	WSP45S	WXP40
	P4840P-1R-A57	4	4,55	1,96	0,29	11°	90°	●	●	●			○				●	●				○		
	P4840P-2R-A57	4	5,52	2,28	0,34	11°	90°	●	●	●			○				●	●				○		
	P4840P-3R-A57	4	6,5	2,8	0,4	11°	90°	●	●	●			○				●	●				○		
	P4840P-4R-A57	4	7,8	3,36	0,48	11°	90°	●	●	●			○				●	●				○		
	P4840P-5R-A57	4	9,56	4,12	0,59	11°	90°	●	●	●			○				●	●				○		
	P4840P-6R-A57	4	11,75	4,87	0,7	11°	90°	●	●	●			○				●	●				○		
	P4840P-7R-A57	4	14,03	5,53	0,8	11°	90°	●	●	●			○				●	●				○		
	P4840P-8R-A57	4	16,5	5,53	1	11°	90°	●	●	●			○				●	●				○		
	P4840P-1R-E57	4	4,55	1,96	0,29	11°	90°	●	●	●			○				●	●				○		
	P4840P-2R-E57	4	5,52	2,28	0,34	11°	90°	●	●	●			○				●	●				○		
	P4840P-3R-E57	4	6,5	2,8	0,4	11°	90°	●	●	●			○				●	●				○		
	P4840P-4R-E57	4	7,8	3,36	0,48	11°	90°	●	●	●			○				●	●				○		
	P4840P-5R-E57	4	9,56	4,12	0,59	11°	90°	●	●	●			○				●	●				○		
	P4840P-6R-E57	4	11,75	4,87	0,7	11°	90°	●	●	●			○				●	●				○		
	P4840P-7R-E57	4	14,03	5,53	0,8	11°	90°	●	●	●			○				●	●				○		
	P4840P-8R-E57	4	16,5	5,53	1	11°	90°	●	●	●			○				●	●				○		
	P4840P-1R-E67	4	4,55	1,96	0,29	11°	90°	●	●	●			○				●	●		●		○		
	P4840P-2R-E67	4	5,52	2,28	0,34	11°	90°	●	●	●			○				●	●		●		○		
	P4840P-3R-E67	4	6,5	2,8	0,4	11°	90°	●	●	●			○				●	●		●		○		
	P4840P-4R-E67	4	7,8	3,36	0,48	11°	90°	●	●	●			○				●	●		●		○		
	P4840P-5R-E67	4	9,56	4,12	0,59	11°	90°	●	●	●			○				●	●		●		○		
	P4840P-6R-E67	4	11,75	4,87	0,7	11°	90°	●	●	●			○				●	●		●		○		
	P4840P-7R-E67	4	14,03	5,53	0,8	11°	90°	●	●	●			○				●	●		●		○		
	P4840P-8R-E67	4	16,5	5,53	1	11°	90°	●	●	●			○				●	●		●		○		
	P4841P-1R-A57	4	4,55	1,96	0,29	11°	90°	●	●	●			○				●	●				○		
	P4841P-2R-A57	4	5,52	2,28	0,34	11°	90°	●	●	●			○				●	●				○		
	P4841P-3R-A57	4	6,5	2,8	0,4	11°	90°	●	●	●			○				●	●				○		
	P4841P-4R-A57	4	7,8	3,36	0,48	11°	90°	●	●	●			○				●	●				○		
	P4841P-5R-A57	4	9,56	4,12	0,59	11°	90°	●	●	●			○				●	●				○		
	P4841P-6R-A57	4	11,75	4,87	0,7	11°	90°	●	●	●			○				●	●				○		
	P4841P-7R-A57	4	14,03	5,53	0,8	11°	90°	●	●	●			○				●	●				○		
	P4841P-8R-A57	4	16,5	5,53	1	11°	90°	●	●	●			○				●	●				○		
	P4841P-1R-E57	4	4,55	1,96	0,29	11°	90°	●	●	●			○				●	●				○		
	P4841P-2R-E57	4	5,52	2,28	0,34	11°	90°	●	●	●			○				●	●				○		
	P4841P-3R-E57	4	6,5	2,8	0,4	11°	90°	●	●	●			○				●	●				○		
	P4841P-4R-E57	4	7,8	3,36	0,48	11°	90°	●	●	●			○				●	●				○		
	P4841P-5R-E57	4	9,56	4,12	0,59	11°	90°	●	●	●			○				●	●				○		
	P4841P-6R-E57	4	11,75	4,87	0,7	11°	90°	●	●	●			○				●	●				○		
	P4841P-7R-E57	4	14,03	5,53	0,8	11°	90°	●	●	●			○				●	●				○		
	P4841P-8R-E57	4	16,5	5,53	1	11°	90°	●	●	●			○				●	●				○		

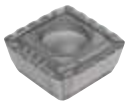
HC = Coated carbide

B 450 B 456

Square
P484.
Tiger·tec® Silver



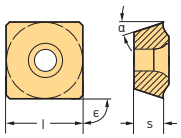
Indexable inserts

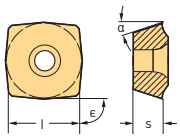
	Designation	Number of cutting edges	l mm	s mm	r mm	α	ε	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4841C-1R-A57	4	4,9	1,96	0,29	11°	90°		☺			☹			☹			☹	☹					☹
	P4841C-2R-A57	4	5,95	2,38	0,34	11°	90°		☺			☹			☹			☹	☹					☹
	P4841C-3R-A57	4	7	2,8	0,4	11°	90°		☺			☹			☹			☹	☹					☹
	P4841C-4R-A57	4	8,4	3,36	0,48	11°	90°		☺			☹			☹			☹	☹					☹
	P4841C-5R-A57	4	10,29	4,12	0,59	11°	90°		☺			☹			☹			☹	☹					☹
	P4841C-6R-A57	4	12,24	4,87	0,7	11°	90°		☺			☹			☹			☹	☹					☹
	P4841C-7R-A57	4	14,69	5,53	0,8	11°	90°		☺			☹			☹			☹	☹					☹
	P4841C-8R-A57	4	17,49	5,53	1	11°	90°		☺			☹			☹			☹	☹					☹
	P4841C-1R-E57	4	4,9	1,96	0,29	11°	90°		☺			☹			☹			☺	☹					☹
	P4841C-2R-E57	4	5,95	2,38	0,34	11°	90°		☺			☹			☹			☺	☹					☹
	P4841C-3R-E57	4	7	2,8	0,4	11°	90°		☺			☹			☹			☺	☹					☹
	P4841C-4R-E57	4	8,4	3,36	0,48	11°	90°		☺			☹			☹			☺	☹					☹
	P4841C-5R-E57	4	10,29	4,12	0,59	11°	90°		☺			☹			☹			☺	☹					☹
	P4841C-6R-E57	4	12,24	4,87	0,7	11°	90°		☺			☹			☹			☺	☹					☹
	P4841C-7R-E57	4	14,69	5,53	0,8	11°	90°		☺			☹			☹			☺	☹					☹
	P4841C-8R-E57	4	17,49	5,53	1	11°	90°		☺			☹			☹			☺	☹					☹
	P4840C-1R-E67	4	4,9	1,96	0,29	11°	90°		☺			☹			☹			☺	☹	☺				☹
	P4840C-2R-E67	4	5,95	2,38	0,34	11°	90°		☺			☹			☹			☺	☹	☺				☹
	P4840C-3R-E67	4	7	2,8	0,4	11°	90°		☺			☹			☹			☺	☹	☺				☹
	P4840C-4R-E67	4	8,4	3,36	0,48	11°	90°		☺			☹			☹			☺	☹	☺				☹
	P4840C-5R-E67	4	10,29	4,12	0,59	11°	90°		☺			☹			☹			☺	☹	☺				☹
	P4840C-6R-E67	4	12,24	4,87	0,7	11°	90°		☺			☹			☹			☺	☹	☺				☹
	P4840C-7R-E67	4	14,69	5,53	0,8	11°	90°		☺			☹			☹			☺	☹	☺				☹
	P4840C-8R-E67	4	17,49	5,53	1	11°	90°		☺			☹			☹			☺	☹	☺				☹

HC = Coated carbide

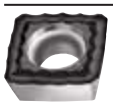
B 450 B 456

Square
P284.

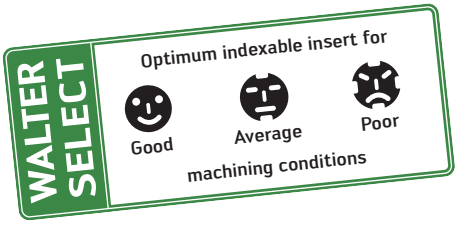




Indexable inserts

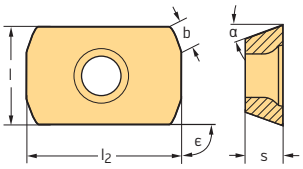
	Designation	Number of cutting edges	l mm	s mm	α	ε	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P2840S-1N-A57	4	6,35	2,38	14°	90°	☺	😐		☹	☹			☹		☺	😐	☹			☹
	P2840S-2N-A57	4	7,8	3,18	14°	90°	☺	😐		☹	☹			☹		☺	😐	☹			☹
	P2840S-3N-A57	4	9,52	3,97	11°	96°	☺	😐		☹	☹			☹		☺	😐	☹			☹
	P2840S-4N-A57	4	11	3,97	11°	96°	☺	😐		☹	☹			☹		☺	😐	☹			☹
	P2840S-5N-A57	4	12,7	4,76	11°	96°	☺	😐		☹	☹			☹		☺	😐	☹			☹
	P2840S-1N-E67	4	6,35	2,38	14°	90°		😐		☹	☹		☹	☹			😐	☹		☹	☹
	P2840S-2N-E67	4	7,8	3,18	14°	90°		😐		☹	☹		☹	☹			😐	☹		☹	☹
	P2840S-3N-E67	4	9,52	3,97	11°	96°		😐		☹	☹		☹	☹			😐	☹		☹	☹
	P2840S-4N-E67	4	11	3,97	11°	96°		😐		☹	☹		☹	☹			😐	☹		☹	☹
	P2840S-5N-E67	4	12,7	4,76	11°	96°		😐		☹	☹		☹	☹			😐	☹		☹	☹
	P2841S-1N-A57	4	6,35	2,38	14°	90°	☺	😐		☹						😐	😐				
	P2841S-2N-A57	4	7,8	3,18	14°	90°	☺	😐		☹						😐	😐				
	P2841S-3N-A57	4	9,52	3,97	11°	96°	☺	😐		☹						😐	😐				
	P2841S-4N-A57	4	11	3,97	11°	96°	☺	😐		☹						😐	😐				
	P2841S-5N-A57	4	12,7	4,76	11°	96°	☺	😐		☹						😐	😐				
	P2841S-1N-E57	4	6,35	2,38	14°	90°	☺	😐		☹			☹			😐	😐			☹	
	P2841S-2N-E57	4	7,8	3,18	14°	90°	☺	😐		☹			☹			😐	😐			☹	
	P2841S-3N-E57	4	9,52	3,97	11°	96°	☺	😐		☹			☹			😐	😐			☹	
	P2841S-4N-E57	4	11	3,97	11°	96°	☺	😐		☹			☹			😐	😐			☹	
	P2841S-5N-E57	4	12,7	4,76	11°	96°	☺	😐		☹			☹			😐	😐			☹	
	P2841S-1N-E67	4	6,35	2,38	14°	90°		😐		☹			☹				😐			☹	
	P2841S-2N-E67	4	7,8	3,18	14°	90°		😐		☹			☹				😐			☹	
	P2841S-3N-E67	4	9,52	3,97	11°	96°		😐		☹			☹				😐			☹	
	P2841S-4N-E67	4	11	3,97	11°	96°		😐		☹			☹				😐			☹	
	P2841S-5N-E67	4	12,7	4,76	11°	96°		😐		☹			☹				😐			☹	

HC = Coated carbide



B 456

Rectangular
LCMX



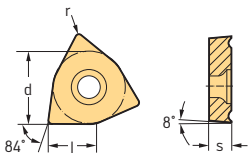
Indexable inserts

	Designation	Number of cutting edges	l mm	l_2 mm	s mm	α	b mm	ε	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45S	S HC WSP45	S HC WSP45S	S HC WXP40
	LCMX050203-B57	2	4	5,2	2,38	7°	0,6	90°	☺	☺			☹			☹		☺	☺	☹				☹
	LCMX06T204-B57	2	5,2	6,6	2,78	7°	0,8	90°	☺	☺			☹			☹		☺	☺	☹				☹
	LCMX050203-D57	2	4	5,2	2,38	7°	0,6	90°	☺	☺		☹	☹		☹	☹		☺	☹	☹			☹	☹
	LCMX06T204-D57	2	5,2	6,6	2,78	7°	0,8	90°	☺	☺		☹	☹		☹	☹		☺	☹	☹			☹	☹
	LCMX050203-E57	2	4	5,2	2,38	7°	0,6	90°	☺	☺		☹	☹		☹	☹		☺	☹	☹	☺		☹	☹
	LCMX06T204-E57	2	5,2	6,6	2,78	7°	0,8	90°	☺	☺		☹	☹		☹	☹		☺	☹	☹	☺		☹	☹

HC = Coated carbide

B 452 B 456

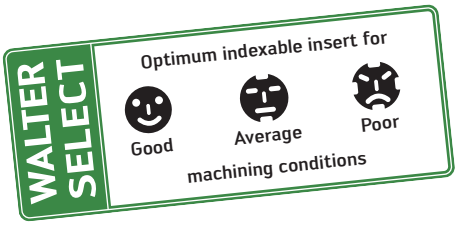
Trigon indexable inserts
WOMX / WOEX
Tiger·tec® Silver



Indexable inserts

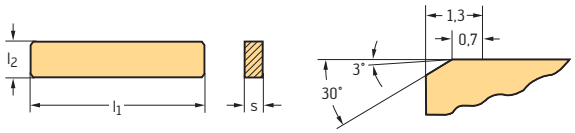
	Designation	Number of cutting edges	l mm	s mm	r mm	d mm	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	WOMX030204-B57	3	3,31	2,3	0,4	5		☹									☒				
	WOMX040304-B57	3	4,2	3,18	0,4	6,35		☹									☒				
	WOMX05T304-B57	3	5,29	3,8	0,4	8		☹									☒				
	WOMX06T304-B57	3	6,62	3,8	0,4	10		☹									☒				
	WOMX080408-B57	3	7,94	4,8	0,8	12		☹									☒				
	WOMX100508-B57	3	9,92	5,3	0,8	15		☹									☒				
	WOMX120608-B57	3	11,64	6	0,8	17,5		☹									☒				
	WOMX030204-D57	3	3,31	2,3	0,4	5		☹			☒			☒			☒	☒			☒
	WOMX040304-D57	3	4,2	3,18	0,4	6,35		☹			☒			☒			☒	☒			☒
	WOMX05T304-D57	3	5,29	3,8	0,4	8		☹			☒			☒	☺		☒	☒			☒
	WOMX06T304-D57	3	6,62	3,8	0,4	10	☺	☹			☒			☒	☺	☹	☒	☒			☒
	WOMX080408-D57	3	7,94	4,8	0,8	12	☺	☹			☒			☒	☺	☹	☒	☒			☒
	WOMX100508-D57	3	9,92	5,3	0,8	15	☺	☹			☒			☒	☺	☹	☒	☒			☒
	WOMX120608-D57	3	11,64	6	0,8	17,5	☺	☹			☒			☒	☺	☹	☒	☒			☒
	WOEX030204-E57	3	3,31	2,3	0,4	5		☹									☹				
	WOEX040304-E57	3	4,2	3,18	0,4	6,35	☺	☹								☹	☹				
	WOEX05T304-E57	3	5,29	3,8	0,4	8	☺	☹								☹	☹				
	WOEX06T304-E57	3	6,62	3,8	0,4	10	☺	☹							☺	☹	☹				
	WOEX080408-E57	3	7,94	4,8	0,8	12	☺	☹								☹	☹				
	WOEX100508-E57	3	9,92	5,3	0,8	15		☹									☹				
	WOEX120608-E57	3	11,64	6	0,8	17,5		☹									☹				

HC = Coated carbide



B 454
B 456

Positive basic shape
P6500



Indexable inserts for reaming

	Designation	Number of cutting edges	l_1 mm	l_2 mm	s mm	Rake angle	Chamfer	P HC WXK05	P HC WCE10	P HC WXP15	M HC WK10	K HC WXK05	K HC WXP15	N HC WK10	S HC WXK05	H HC WXK05	O HC WXP40
	P6500-00R-A88-E1	1	11	1,5	1	0°	E1			☺			☺				
	P6500-0R-A88-E1	2	20	2,5	1,2	0°	E1			☺			☺				
	P6500-1R-A88-E1	2	20	3	1,5	0°	E1			☺			☺				
	P6500-2R-A88-E1	2	20	4,5	4,5	0°	E1			☺			☺				
	P6500-4R-A88-E1	2	70	7	2,3	0°	E1			☺			☺				
	P6500-00R-B88-E1	1	11	1,5	1	6°	E1	☺	☺	☺		☺	☺	☺	☺	☺	
	P6500-0R-B88-E1	2	20	2,5	1,2	6°	E1	☺	☺	☺		☺	☺	☺	☺	☺	
	P6500-1R-B88-E1	2	20	3	1,5	6°	E1	☺	☺	☺		☺	☺	☺	☺	☺	
	P6500-2R-B88-E1	2	20	4,5	4,5	6°	E1	☺	☺	☺		☺	☺	☺	☺	☺	
	P6500-4R-B88-E1	2	70	7	2,3	6°	E1	☺	☺	☺		☺	☺	☺	☺	☺	
	P6500-00R-B88-E5	1	11	1,5	1	6°	E5	☺				☺			☺	☺	
	P6500-0R-B88-E5	2	20	2,5	1,2	6°	E5	☺				☺			☺	☺	
	P6500-1R-B88-E5	2	20	3	1,5	6°	E5	☺				☺			☺	☺	
	P6500-2R-B88-E5	2	20	4,5	4,5	6°	E5	☺				☺			☺	☺	
	P6500-4R-B88-E5	2	70	7	2,3	6°	E5	☺				☺			☺	☺	

HC = Coated carbide



Product range overview
Indexable insert drills

Drilling depth	**2,5 × D_c**	**1,3 × D_c**	**3 × D_c**	**5 × D_c**	**7 × D_c**	**10 × D_c**
Designation	**B4012C Xtra·tec®**	**B4011 Xtra·tec®**	**B4013 Xtra·tec®**	**B4015 Xtra·tec®**	**B4017 Xtra·tec®**	**B4010 Xtra·tec®**
Dia. range [mm]	12–29.99	12–25.99	12–37.99	12–37.99	12–37.99	18–24.99
Page	B 198	B 200	B 202	B 204	B 208	B 212
						

Drilling depth	**2 × D_c**	**3 × D_c**			**4 × D_c**	**5 × D_c**
Designation	**B4212 Xtra·tec®**	**B4213 Xtra·tec®**	**B4213.C Xtra·tec®**	**B4213.N Xtra·tec®**	**B4214 Xtra·tec®**	**B4215 Xtra·tec®**
Dia. range [mm]	13,5–59	13,5–59	16–45	65–80	17–59	17–59
Page	B 214	B 220	B 226	B 228	B 230	B 236
						

Drilling depth	**2 × D_c**	**3 × D_c**	**4 × D_c**
Designation	**B3212**	**B3213**	**B3214**
Dia. range [mm]	10–18	10–18	10–18
Page	B 242	B 244	B 246
			

Designation key for solid drilling

B421	2	.	F25	.	24	.	Z1	.	A57	R	–	3
1	2		3		4		5		6	7		8

1	
Walter indexable insert designation	
B421	Xtra·tec® Insert Drill
B401	Xtra·tec® Point Drill
B321	Stardrill

2	
Drilling depth (L/D ratio)	
2	× D_c
3	× D_c
4	× D_c
5	× D_c

3	
Shank variant and diameter	
C	Walter Capto™ ISO 26623
DF	Combi-shank DIN 1835 B and DIN 6535 HE
F	Parallel shank with clamping flat
N	NCT
T	ScrewFit
UF	Inch
Z	Parallel shank without clamping flat

4
Nominal diameter [mm]

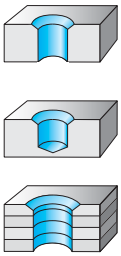
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Effective number of teeth

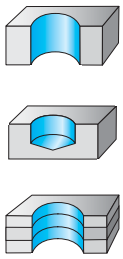
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Drilling depth [mm]

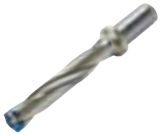
7	
Cutting direction	
R	RH-cutting

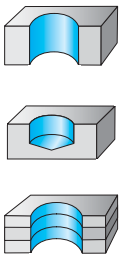
8
Insert size
only Xtra·tec® Insert Drill

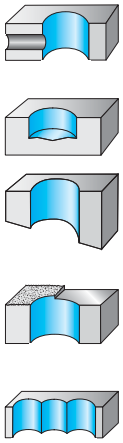
Walter Select
Indexable insert drills

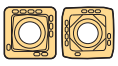
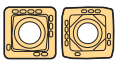
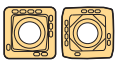
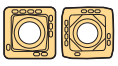
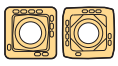
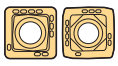




Drilling depth	2,5 × D_c	1,3 × D_c	3 × D_c	5 × D_c	7 × D_c	
Designation	**B4012C Xtra·tec®**	**B4011 Xtra·tec®**	**B4013 Xtra·tec®**	**B4015 Xtra·tec®**	**B4017 Xtra·tec®**	
Dia. range [mm]	12–29.99	12–25.99	12–37.99	12–37.99	12–37.99	
Page	B 198	B 200	B 202	B 204	B 208	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●●	●●	●●	●●	●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals	●●	●●	●●	●●	●●	
S Materials with difficult cutting properties	●●	●●	●●	●	●	
H Hard materials						
O Other						
Indexable inserts						
Type	P600 . -D12, .. TC .. 11020 .. P600 . -D14, .. P600 . -D15, ...	P600 . -D12, .. P600 . -D13, .. P600 . -D14, .. P600 . -D15, ...	P600 . -D12, .. P600 . -D13, .. P600 . -D14, .. P600 . -D15, ...	P600 . -D12, .. P600 . -D13, .. P600 . -D14, .. P600 . -D15, ...	P600 . -D12, .. P600 . -D13, .. P600 . -D14, .. P600 . -D15, ...	





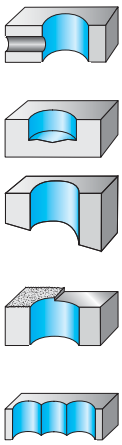
	$10 \times D_c$	$2 \times D_c$	$3 \times D_c$			$4 \times D_c$	$5 \times D_c$
	B4010 Xtra·tec®	**B4212 Xtra·tec®**	**B4213 Xtra·tec®**	**B4213.C Xtra·tec®**	**B4213.N Xtra·tec®**	**B4214 Xtra·tec®**	**B4215 Xtra·tec®**
	18–24.99	13,5–59	13,5–59	16–45	65–80	17–59	17–59
	B 212	B 214	B 220	B 226	B 228	B 230	B 236
							
	●●	●●	●●	●●	●●	●●	●●
	●	●●	●●	●●	●●	●	
	●●	●●	●●	●●	●●	●●	●●
	●●	●	●	●	●	●	●
	●	●●	●●	●●	●●	●	
							
	P600 . -D18, .. P600 . -D20, .. P600 . -D22, .. P600 . -D24, ..	P484 . P-1R- .. P484 . C-1R- .. P484 . P-2R- .. P484 . C-2R-	P484 . P-1R- .. P484 . C-1R- .. P484 . P-2R- .. P484 . C-2R-	P484 . P-1R- .. P484 . C-1R- .. P484 . P-2R- .. P484 . C-2R-	P484 . P-5R- .. P484 . C-5R- .. P484 . P-6R- .. P484 . C-6R- ..	P484 . P-2R- .. P484 . C-2R- .. P484 . P-3R- .. P484 . C-3R-	P484 . P-2R- .. P484 . C-2R- .. P484 . P-3R- .. P484 . C-3R- .. ...

WALTER SELECT

●● Primary application

● Other application

Walter Select
Indexable insert drills



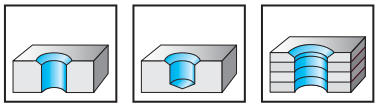
Drilling depth	2 × D_c	3 × D_c	4 × D_c
Designation	**B3212**	**B3213**	**B3214**
Dia. range [mm]	10–18	10–18	10–18
Page	B 242	B 244	B 246
			
P Steel	●●	●●	
M Stainless steel	●●	●●	
K Cast iron	●●	●●	●●
N NF metals	●	●	●
S Materials with difficult cutting properties	●●	●●	
H Hard materials			
O Other			
Indexable inserts			
Type	LCMX050203- .. LCMX06T204- ..	LCMX050203- .. LCMX06T204- ..	LCMX050203- .. LCMX06T204- ..



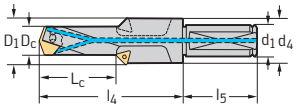
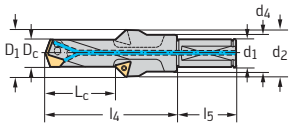
Chamfer drills
B4012C
Xtra·tec®



D_c 12–29,99	2,5×D_c	90°	140°	Z=2

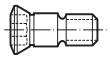


	P	M	K	N	S	H	O
B4012C	●●	●●	●●	●●	●●		

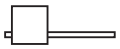
Tool	Designation	D_c mm	D_1 mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4012C.F20.12,0.Z02.35R	12	23,7	35,2	68	50	20	30	0,21	1 2	P600 . -D12, .. TC .. 11020 ..
	B4012C.F20.14,0.Z02.40R	14	25,7	40,6	76	50	20	30	0,23	1 2	P600 . -D14, .. TC .. 11020 ..
	B4012C.F20.15,0.Z02.44R	15	26,7	46,7	80	50	20	30	0,25	1 2	P600 . -D15, .. TC .. 11020 ..
	B4012C.F20.17,0.Z02.48R	17	28,7	48,6	88	50	20	30	0,28	1 2	P600 . -D17, .. TC .. 11020 ..
	B4012C.F20.19,0.Z02.52R	19	30,7	52,5	96	50	20	30	0,31	1 2	P600 . -D19, .. TC .. 11020 ..
Parallel shank with flat 	B4012C.F20.21,0.Z02.55R	21	32,7	55,3	104	50	20	30	0,34	1 2	P600 . -D21, .. TC .. 11020 ..
	B4012C.F25.24,0.Z02.61R	24	43,4	61,4	117	56	25	35	0,6	1 2	P600 . -D24, .. TC .. 16T3 ..
	B4012C.F25.26,0.Z02.66R	26	45,4	66,7	125	56	25	35	0,65	1 2	P600 . -D26, .. TC .. 16T3 ..
	B4012C.F32.29,0.Z02.71R	29	48,4	72,3	138	60	32	42	1,05	1 2	P600 . -D29, .. TC .. 16T3 ..

Bodies and assembly parts are included in the scope of delivery.

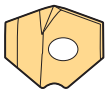
Assembly parts

	D_c [mm]	12	14–15	17	19	21	24	26	29
	Clamping screw for P600. drill insert Tightening torque	FS1396 (Torx 7IP) 1,2 Nm	FS1397 (Torx 8IP) 2,0 Nm	FS1398 (Torx 8IP) 2,0 Nm	FS1399 (Torx 15IP) 4,0 Nm	FS1400 (Torx 20IP) 5,0 Nm	FS1402 (Torx 20IP) 5,0 Nm	FS1403 (Torx 25IP) 5,5 Nm	FS1404 (Torx 25IP) 5,5 Nm
	Clamping screw for TC.. chamfering insert Tightening torque	FS2061 (Torx 7IP) 0,9 Nm	FS2061 (Torx 7IP) 0,9 Nm	FS2061 (Torx 7IP) 0,9 Nm	FS2061 (Torx 7IP) 0,9 Nm	FS2061 (Torx 7IP) 0,9 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm	FS2063 (Torx 15IP) 3,0 Nm

Accessories

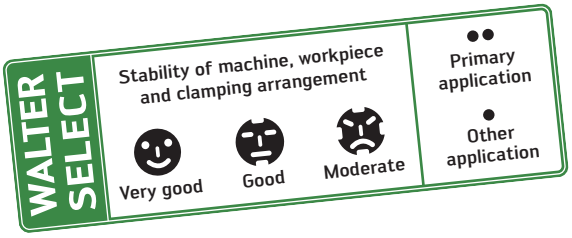
	D_c [mm]	12	14–17	19	21–24	26–29
	Torque T-handle Tightening torque					FS2041 4,5–14 Nm
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)	FS2049 (Torx 25IP)
	Torx key	FS1490 (Torx 7IP)				
	Screwdriver		FS1483 (Torx 8IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)	FS1487 (Torx 25IP)

Drill inserts

	Designation	D_c mm	P HC WPP45C	P HC WMP35	M HC WMP35	K HC WKK45C	N HC WNN25	S HC WMP35
	P6001-D..	12–29,77	●					
	P6003-D..	12–29,77		✕	●			●
	P6004-D..	12–29,5					●	
	P6005-D..	12–29,77				✕		

For TC .. chamfer inserts, see “Positive indexable inserts”

HC = Coated carbide



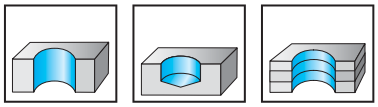
B 180 D 1 B 444 B 456

Point Drills, 1.3 x Dc
B4011

Xtra·tec®



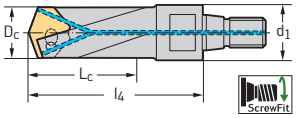
D_c 12–25,99	1,3×D_c	140°	Z=2



	P	M	K	N	S	H	O
B4011	●●	●●	●●	●●	●●		

Tool

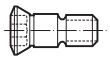
ScrewFit



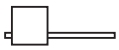
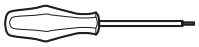
Designation	D_c mm	L_c mm	l_4 mm	d_1 mm	kg	No. of indexable inserts	Type
B4011.T14.12,0.Z02.15R	12	18	47,6	T14	0,04	1	P600 . -D12, ..
B4011.T14.13,0.Z02.17R	13	19	49,9	T14	0,05	1	P600 . -D13, ..
B4011.T14.14,0.Z02.18R	14	21	52,2	T14	0,05	1	P600 . -D14, ..
B4011.T18.15,0.Z02.19R	15	22	54,5	T18	0,08	1	P600 . -D15, ..
B4011.T18.16,0.Z02.21R	16	24	56,8	T18	0,09	1	P600 . -D16, ..
B4011.T18.17,0.Z02.22R	17	25	59,1	T18	0,09	1	P600 . -D17, ..
B4011.T18.18,0.Z02.23R	18	27	61,4	T18	0,09	1	P600 . -D18, ..
B4011.T22.19,0.Z02.24R	19	28	63,7	T22	0,12	1	P600 . -D19, ..
B4011.T22.20,0.Z02.26R	20	30	66	T22	0,13	1	P600 . -D20, ..
B4011.T22.21,0.Z02.27R	21	31	68,3	T22	0,14	1	P600 . -D21, ..
B4011.T22.22,0.Z02.28R	22	33	71,6	T22	0,16	1	P600 . -D22, ..
B4011.T28.23,0.Z02.30R	23	34	73,9	T28	0,22	1	P600 . -D23, ..
B4011.T28.24,0.Z02.31R	24	36	76,2	T28	0,23	1	P600 . -D24, ..
B4011.T28.25,0.Z02.32R	25	37	78,5	T28	0,25	1	P600 . -D25, ..

Bodies and assembly parts are included in the scope of delivery.

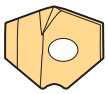
Assembly parts

	D_c [mm]	12–13	14–15	16–17	18–19	20–21	22–23	24–25
	Clamping screw for drill insert Tightening torque	FS1396 (Torx 7IP) 1,2 Nm	FS1397 (Torx 8IP) 2,0 Nm	FS1398 (Torx 8IP) 2,0 Nm	FS1399 (Torx 15IP) 4,0 Nm	FS1400 (Torx 20IP) 5,0 Nm	FS1401 (Torx 20IP) 5,0 Nm	FS1402 (Torx 20IP) 5,0 Nm

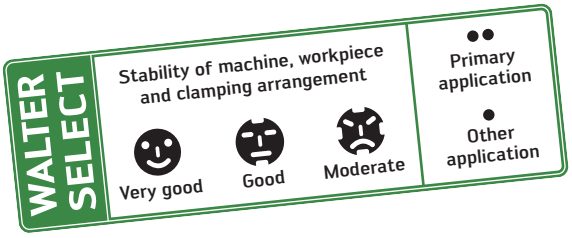
Accessories

	D_c [mm]	12–13	14–17	18–19	20–25
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)
	Torx key	FS1490 (Torx 7IP)			
	Screwdriver		FS1483 (Torx 8IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)

Drill inserts

	Designation	D_c mm	P HC WPP45C	P HC WMP35	M HC WMP35	K HC WKK45C	N HC WNN25	S HC WMP35
	P6001-D..	12–25,8	●					
	P6003-D..	12–25,8		○	●			●
	P6004-D..	12–25,5					●	
	P6005-D..	12–25,8				○		

HC = Coated carbide



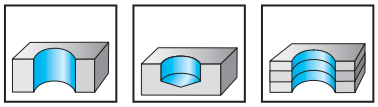
B 180 D 1 B 444 B 456

Point drills, 3 x Dc
B4013

Xtra·tec®



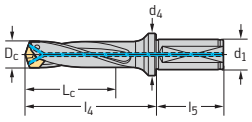
D_c 12–37,99	3×D_c	140°	Z=2



	P	M	K	N	S	H	O
B4013	●●	●●	●●	●●	●●		

Tool

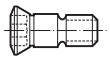
Parallel shank with flat



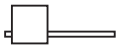
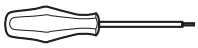
Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
B4013.F20.12,0.Z02.36R	12	38	68	50	20	30	0,22	1	P600 . -D12, ..
B4013.F20.13,0.Z02.39R	13	41	72	50	20	30	0,22	1	P600 . -D13, ..
B4013.F20.14,0.Z02.42R	14	45	76	50	20	30	0,22	1	P600 . -D14, ..
B4013.F20.15,0.Z02.45R	15	48	80	50	20	30	0,25	1	P600 . -D15, ..
B4013.F20.16,0.Z02.48R	16	51	84	50	20	30	0,25	1	P600 . -D16, ..
B4013.F20.17,0.Z02.51R	17	54	88	50	20	30	0,26	1	P600 . -D17, ..
B4013.F20.18,0.Z02.54R	18	57	92	50	20	30	0,28	1	P600 . -D18, ..
B4013.F20.19,0.Z02.57R	19	61	96	50	20	30	0,29	1	P600 . -D19, ..
B4013.F20.20,0.Z02.60R	20	64	100	50	20	30	0,31	1	P600 . -D20, ..
B4013.F20.21,0.Z02.63R	21	67	104	50	20	30	0,33	1	P600 . -D21, ..
B4013.F25.22,0.Z02.66R	22	70	109	56	25	35	0,48	1	P600 . -D22, ..
B4013.F25.23,0.Z02.69R	23	73	113	56	25	35	0,5	1	P600 . -D23, ..
B4013.F25.24,0.Z02.72R	24	76	117	56	25	35	0,52	1	P600 . -D24, ..
B4013.F25.25,0.Z02.75R	25	80	121	56	25	35	0,55	1	P600 . -D25, ..
B4013.F25.26,0.Z02.78R	26	83	125	56	25	35	0,58	1	P600 . -D26, ..
B4013.F25.27,0.Z02.81R	27	86	129	56	25	35	0,62	1	P600 . -D27, ..
B4013.F32.28,0.Z02.84R	28	89	134	60	32	42	0,85	1	P600 . -D28, ..
B4013.F32.29,0.Z02.87R	29	92	138	60	32	42	0,89	1	P600 . -D29, ..
B4013.F32.30,0.Z02.90R	30	95	142	60	32	42	0,95	1	P600 . -D30, ..
B4013.F32.31,0.Z02.93R	31	99	146	60	32	42	1	1	P600 . -D31, ..
B4013.F40.32,0.Z02.96R	32	102	150	70	40	50	1,28	1	P600 . -D32, ..
B4013.F40.33,0.Z02.99R	33	105	154	70	40	50	1,33	1	P600 . -D33,0 ..
B4013.F40.34,0.Z02.102R	34	108	158	70	40	50	1,38	1	P600 . -D34,0 ..
B4013.F40.35,0.Z02.105R	35	111	162	70	40	50	1,45	1	P600 . -D35,0 ..
B4013.F40.36,0.Z02.108R	36	115	166	70	40	50	1,48	1	P600 . -D36,0 ..
B4013.F40.37,0.Z02.111R	37	118	170	70	40	50	1,54	1	P600 . -D37, ..

Bodies and assembly parts are included in the scope of delivery.

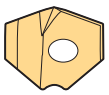
Assembly parts

	D_c [mm]	12–13	14–15	16–17	18–19	20–21	22–23	24–25	26–27	28–33	34–37
	Clamping screw for drill insert Tightening torque	FS1396 (Torx 7IP) 1,2 Nm	FS1397 (Torx 8IP) 2,0 Nm	FS1398 (Torx 8IP) 2,0 Nm	FS1399 (Torx 15IP) 4,0 Nm	FS1400 (Torx 20IP) 5,0 Nm	FS1401 (Torx 20IP) 5,0 Nm	FS1402 (Torx 20IP) 5,0 Nm	FS1403 (Torx 25IP) 5,5 Nm	FS1404 (Torx 25IP) 5,5 Nm	FS2159 (Torx 25IP) 5,5 Nm

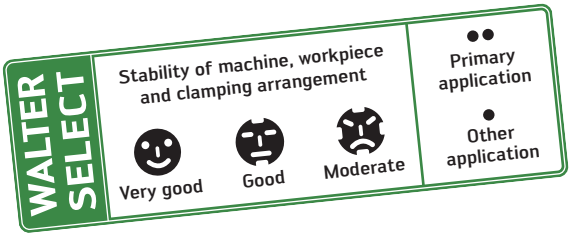
Accessories

	D_c [mm]	12–13	14–17	18–19	20–25	26–37
	Torque T-handle Tightening torque					FS2041 4,5–14 Nm
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)	FS2049 (Torx 25IP)
	Torx key	FS1490 (Torx 7IP)				
	Screwdriver		FS1483 (Torx 8IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)	FS1487 (Torx 25IP)

Drill inserts

	Designation	D_c mm	P HC WPP45C	P HC WMP35	M HC WMP35	K HC WKK45C	N HC WNN25	S HC WMP35
	P6001-D..	12–37,99	●●					
	P6003-D..	12–37,99		●	●●			●●
	P6004-D..	12–31,5					●●	
	P6005-D..	12–37,99				●		

HC = Coated carbide

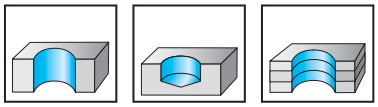


B 180 D 1 B 444 B 456

Point Drills, 5 x Dc
B4015

Xtra·tec®



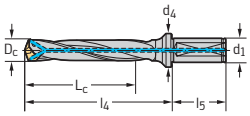


D_c 12–37,99	5×D_c	140°	Z=2

	P	M	K	N	S	H	O
B4015	●●	●●	●●	●●	●		

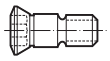
Tool

Parallel shank with flat

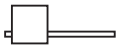
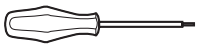


Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
B4015.F20.12,0.Z02.60R	12	62	92	50	20	30	0,22	1	P600 . -D12, ..
B4015.F20.13,0.Z02.65R	13	67	98	50	20	30	0,25	1	P600 . -D13, ..
B4015.F20.14,0.Z02.70R	14	73	104	50	20	30	0,25	1	P600 . -D14, ..
B4015.F20.15,0.Z02.75R	15	78	110	50	20	30	0,26	1	P600 . -D15, ..
B4015.F20.16,0.Z02.80R	16	83	116	50	20	30	0,28	1	P600 . -D16, ..
B4015.F20.17,0.Z02.85R	17	88	122	50	20	30	0,26	1	P600 . -D17, ..
B4015.F20.18,0.Z02.90R	18	93	128	50	20	30	0,3	1	P600 . -D18, ..
B4015.F20.19,0.Z02.95R	19	98	134	50	20	30	0,32	1	P600 . -D19, ..
B4015.F20.20,0.Z02.100R	20	104	140	50	20	30	0,35	1	P600 . -D20, ..
B4015.F20.21,0.Z02.105R	21	109	146	50	20	30	0,38	1	P600 . -D21, ..
B4015.F25.22,0.Z02.110R	22	114	153	56	25	35	0,53	1	P600 . -D22, ..
B4015.F25.23,0.Z02.115R	23	119	159	56	25	35	0,57	1	P600 . -D23, ..
B4015.F25.24,0.Z02.120R	24	124	165	56	25	35	0,6	1	P600 . -D24, ..
B4015.F25.25,0.Z02.125R	25	130	171	56	25	35	0,65	1	P600 . -D25, ..
B4015.F25.26,0.Z02.130R	26	135	177	56	25	35	0,69	1	P600 . -D26, ..
B4015.F25.27,0.Z02.135R	27	140	183	56	25	35	0,69	1	P600 . -D27, ..
B4015.F32.28,0.Z02.140R	28	145	190	60	32	42	0,99	1	P600 . -D28, ..
B4015.F32.29,0.Z02.145R	29	150	196	60	32	42	1,05	1	P600 . -D29, ..
B4015.F32.30,0.Z02.150R	30	155	202	60	32	42	1,12	1	P600 . -D30, ..
B4015.F32.31,0.Z02.155R	31	161	208	60	32	42	1,2	1	P600 . -D31, ..
B4015.F40.32,0.Z02.160R	32	166	214	70	40	50	1,54	1	P600 . -D32, ..
B4015.F40.33,0.Z02.165R	33	171	220	70	40	50	1,6	1	P600 . -D33,0 ..
B4015.F40.34,0.Z02.170R	34	176	226	70	40	50	1,69	1	P600 . -D34,0 ..
B4015.F40.35,0.Z02.175R	35	181	232	70	40	50	1,78	1	P600 . -D35,0 ..
B4015.F40.36,0.Z02.180R	36	187	238	70	40	50	1,83	1	P600 . -D36,0 ..
B4015.F40.37,0.Z02.185R	37	192	244	70	40	50	1,92	1	P600 . -D37, ..

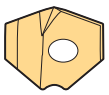
Assembly parts

	D_c [mm]	12–13	14–15	16–17	18–19	20–21	22–23	24–25	26–27	28–33	34–35
	Clamping screw for drill insert Tightening torque	FS1396 (Torx 7IP) 1,2 Nm	FS1397 (Torx 8IP) 2,0 Nm	FS1398 (Torx 8IP) 2,0 Nm	FS1399 (Torx 15IP) 4,0 Nm	FS1400 (Torx 20IP) 5,0 Nm	FS1401 (Torx 20IP) 5,0 Nm	FS1402 (Torx 20IP) 5,0 Nm	FS1403 (Torx 25IP) 5,5 Nm	FS1404 (Torx 25IP) 5,5 Nm	FS2159 (Torx 25IP) 5,5 Nm

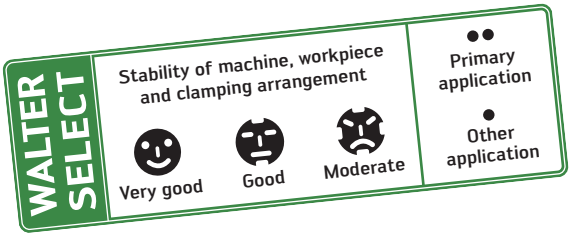
Accessories

	D_c [mm]	12–13	14–17	18–19	20–25	26–35
	Torque T-handle Tightening torque					FS2041 4,5–14 Nm
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)	FS2049 (Torx 25IP)
	Torx key	FS1490 (Torx 7IP)				
	Screwdriver		FS1483 (Torx 8IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)	FS1487 (Torx 25IP)

Drill inserts

	Designation	D_c mm	P HC WPP45C	P HC WMP35	M HC WMP35	K HC WKK45C	N HC WNN25	S HC WMP35
	P6001-D..	12–37,99	●●					
	P6003-D..	12–37,99		●	●●			●●
	P6004-D..	12–31,5					●●	
	P6005-D..	12–37,99				●		

HC = Coated carbide

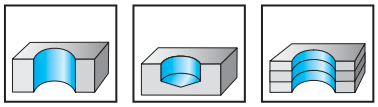


B 180 D 1 B 444 B 456

Point Drills, 5 x Dc
B4015

Xtra·tec®



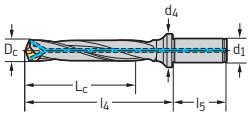


D_c 12–31,99	5×D_c	140°	Z=2

	P	M	K	N	S	H	O
B4015	●●	●●	●●	●●	●		

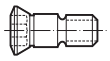
Tool

Full Cylindrical Shank

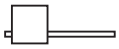
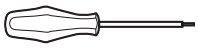


Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
B4015.ZB20.12,0.Z02.60R	12	62	92	50	20	30	0,22	1	P600 . -D12, ..
B4015.ZB20.13,0.Z02.65R	13	67	98	50	20	30	0,24	1	P600 . -D13, ..
B4015.ZB20.14,0.Z02.70R	14	73	104	50	20	30	0,25	1	P600 . -D14, ..
B4015.ZB20.15,0.Z02.75R	15	78	110	50	20	30	0,27	1	P600 . -D15, ..
B4015.ZB20.16,0.Z02.80R	16	83	116	50	20	30	0,28	1	P600 . -D16, ..
B4015.ZB20.17,0.Z02.85R	17	88	122	50	20	30	0,30	1	P600 . -D17, ..
B4015.ZB20.18,0.Z02.90R	18	93	128	50	20	30	0,3	1	P600 . -D18, ..
B4015.ZB20.19,0.Z02.95R	19	98	134	50	20	30	0,33	1	P600 . -D19, ..
B4015.ZB20.20,0.Z02.100R	20	104	140	50	20	30	0,36	1	P600 . -D20, ..
B4015.ZB20.21,0.Z02.105R	21	109	146	50	20	30	0,39	1	P600 . -D21, ..
B4015.ZB25.22,0.Z02.110R	22	114	153	56	25	35	0,54	1	P600 . -D22, ..
B4015.ZB25.23,0.Z02.115R	23	119	159	56	25	35	0,58	1	P600 . -D23, ..
B4015.ZB25.24,0.Z02.120R	24	124	165	56	25	35	0,61	1	P600 . -D24, ..
B4015.ZB25.25,0.Z02.125R	25	130	171	56	25	35	0,65	1	P600 . -D25, ..
B4015.ZB25.26,0.Z02.130R	26	135	177	56	25	35	0,7	1	P600 . -D26, ..
B4015.ZB25.27,0.Z02.135R	27	140	183	56	25	35	0,75	1	P600 . -D27, ..
B4015.ZB32.28,0.Z02.140R	28	145	190	60	32	42	1	1	P600 . -D28, ..
B4015.ZB32.29,0.Z02.145R	29	150	196	60	32	42	1,06	1	P600 . -D29, ..
B4015.ZB32.30,0.Z02.150R	30	155	202	60	32	42	1,13	1	P600 . -D30, ..
B4015.ZB32.31,0.Z02.155R	31	161	208	60	32	42	1,2	1	P600 . -D31, ..

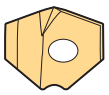
Assembly parts

	D_c [mm]	12–13	14–15	16–17	18–19	20–21	22–23	24–25	26–27	28–33	34–35
	Clamping screw for drill insert Tightening torque	FS1396 (Torx 7IP) 1,2 Nm	FS1397 (Torx 8IP) 2,0 Nm	FS1398 (Torx 8IP) 2,0 Nm	FS1399 (Torx 15IP) 4,0 Nm	FS1400 (Torx 20IP) 5,0 Nm	FS1401 (Torx 20IP) 5,0 Nm	FS1402 (Torx 20IP) 5,0 Nm	FS1403 (Torx 25IP) 5,5 Nm	FS1404 (Torx 25IP) 5,5 Nm	FS2159 (Torx 25IP) 5,5 Nm

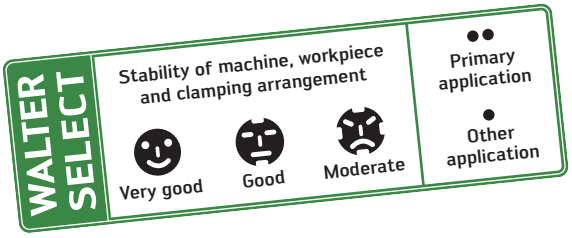
Accessories

	D_c [mm]	12–13	14–17	18–19	20–25	26–35
	Torque T-handle Tightening torque					FS2041 4,5–14 Nm
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)	FS2049 (Torx 25IP)
	Torx key	FS1490 (Torx 7IP)				
	Screwdriver		FS1483 (Torx 8IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)	FS1487 (Torx 25IP)

Drill inserts

	Designation	D_c mm	P HC WPP45C	P HC WMP35	M HC WMP35	K HC WKK45C	N HC WNN25	S HC WMP35
	P6001-D..	12–31,99	●●					
	P6003-D..	12–31,99		●	●●			●●
	P6004-D..	12–31,5					●●	
	P6005-D..	12–31,99				●		

HC = Coated carbide



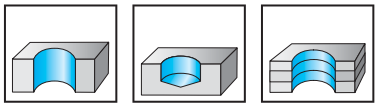
B 180 D 1 B 444 B 456

Point drills, 7 x Dc
B4017

Xtra·tec®



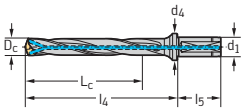
D_c 12–37,99	7×D_c	140°	Z=2



	P	M	K	N	S	H	O
B4017	●●	●	●●	●●	●		

Tool

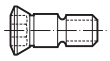
Parallel shank with flat



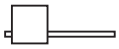
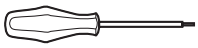
Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
B4017.F20.12,0.Z02.84R	12	86	116	50	20	30	0,23	1	P600 . -D12, ..
B4017.F20.13,0.Z02.91R	13	93	124	50	20	30	0,25	1	P600 . -D13, ..
B4017.F20.14,0.Z02.98R	14	101	132	50	20	30	0,27	1	P600 . -D14, ..
B4017.F20.15,0.Z02.105R	15	108	140	50	20	30	0,29	1	P600 . -D15, ..
B4017.F20.16,0.Z02.112R	16	115	148	50	20	30	0,31	1	P600 . -D16, ..
B4017.F20.17,0.Z02.119R	17	122	156	50	20	30	0,35	1	P600 . -D17, ..
B4017.F20.18,0.Z02.126R	18	126	164	50	20	30	0,34	1	P600 . -D18, ..
B4017.F20.19,0.Z02.133R	19	136	172	50	20	30	0,37	1	P600 . -D19, ..
B4017.F20.20,0.Z02.140R	20	144	180	50	20	30	0,41	1	P600 . -D20, ..
B4017.F20.21,0.Z02.147R	21	151	188	50	20	30	0,45	1	P600 . -D21, ..
B4017.F25.22,0.Z02.154R	22	158	197	56	25	35	0,62	1	P600 . -D22, ..
B4017.F25.23,0.Z02.161R	23	165	205	56	25	35	0,66	1	P600 . -D23, ..
B4017.F25.24,0.Z02.168R	24	172	213	56	25	35	0,71	1	P600 . -D24, ..
B4017.F25.25,0.Z02.175R	25	180	221	56	25	35	0,76	1	P600 . -D25, ..
B4017.F25.26,0.Z02.182R	26	187	229	56	25	35	0,82	1	P600 . -D26, ..
B4017.F25.27,0.Z02.189R	27	194	237	56	25	35	0,89	1	P600 . -D27, ..
B4017.F32.28,0.Z02.196R	28	201	246	60	32	42	1,16	1	P600 . -D28, ..
B4017.F32.29,0.Z02.203R	29	208	254	60	32	42	1,24	1	P600 . -D29, ..
B4017.F32.30,0.Z02.210R	30	215	262	60	32	42	1,24	1	P600 . -D30, ..
B4017.F32.31,0.Z02.217R	31	223	270	60	32	42	1,42	1	P600 . -D31, ..
B4017.F40.32,0.Z02.224R	32	230	278	70	40	50	1,73	1	P600 . -D32, ..
B4017.F40.33,0.Z02.231R	33	237	286	70	40	50	1,82	1	P600 . -D33,0 ..
B4017.F40.34,0.Z02.238R	34	244	294	70	40	50	1,94	1	P600 . -D34,0 ..
B4017.F40.35,0.Z02.245R	35	251	302	70	40	50	2,05	1	P600 . -D35,0 ..
B4017.F40.36,0.Z02.252R	36	259	310	70	40	50	2,14	1	P600 . -D36,0 ..
B4017.F40.37,0.Z02.259R	37	266	318	70	40	50	2,28	1	P600 . -D37, ..

Producing a pilot hole with a B 4013 or NC centre drill is recommended
Bodies and assembly parts are included in the scope of delivery.

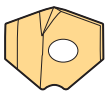
Assembly parts

	D_c [mm]	12–13	14–15	16–17	18–19	20–21	22–23	24–25	26–27	28–33	34–37
	Clamping screw for drill insert Tightening torque	FS1396 (Torx 7IP) 1,2 Nm	FS1397 (Torx 8IP) 2,0 Nm	FS1398 (Torx 8IP) 2,0 Nm	FS1399 (Torx 15IP) 4,0 Nm	FS1400 (Torx 20IP) 5,0 Nm	FS1401 (Torx 20IP) 5,0 Nm	FS1402 (Torx 20IP) 5,0 Nm	FS1403 (Torx 25IP) 5,5 Nm	FS1404 (Torx 25IP) 5,5 Nm	FS2159 (Torx 25IP) 5,5 Nm

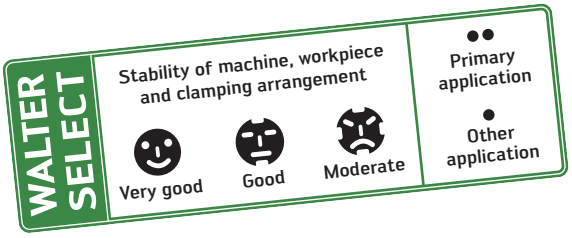
Accessories

	D_c [mm]	12–13	14–17	18–19	20–25	26–37
	Torque T-handle Tightening torque					FS2041 4,5–14 Nm
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)	FS2049 (Torx 25IP)
	Torx key	FS1490 (Torx 7IP)				
	Screwdriver		FS1483 (Torx 8IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)	FS1487 (Torx 25IP)

Drill inserts

	Designation	D_c mm	P HC WPP45C	P HC WMP35	M HC WMP35	K HC WKK45C	N HC WNN25	S HC WMP35
	P6001-D..	12–37,99	●●					
	P6003-D..	12–37,99		●	●●			●●
	P6004-D..	12–31,5					●●	
	P6005-D..	12–37,99				●		

HC = Coated carbide



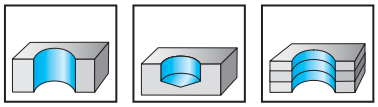
B 180 D 1 B 444 B 456

Point drills, 7 x Dc
B4017

Xtra·tec®



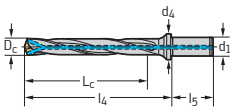
D_c 12–31,99	7×D_c	140°	Z=2



	P	M	K	N	S	H	O
B4017	●●	●	●●	●●	●		

Tool

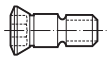
Full Cylindrical shank



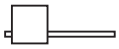
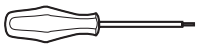
Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
B4017.ZB20.12,0.Z02.84R	12	86	116	50	20	30	0,24	1	P600 . -D12, ..
B4017.ZB20.13,0.Z02.91R	13	93	124	50	20	30	0,26	1	P600 . -D13, ..
B4017.ZB20.14,0.Z02.98R	14	101	132	50	20	30	0,27	1	P600 . -D14, ..
B4017.ZB20.15,0.Z02.105R	15	108	140	50	20	30	0,31	1	P600 . -D15, ..
B4017.ZB20.16,0.Z02.112R	16	115	148	50	20	30	0,31	1	P600 . -D16, ..
B4017.ZB20.17,0.Z02.119R	17	122	156	50	20	30	0,34	1	P600 . -D17, ..
B4017.ZB20.18,0.Z02.126R	18	133	164	50	20	30	0,34	1	P600 . -D18, ..
B4017.ZB20.19,0.Z02.133R	19	136	172	50	20	30	0,37	1	P600 . -D19, ..
B4017.ZB20.20,0.Z02.140R	20	144	180	50	20	30	0,41	1	P600 . -D20, ..
B4017.ZB20.21,0.Z02.147R	21	151	188	50	20	30	0,45	1	P600 . -D21, ..
B4017.ZB25.22,0.Z02.154R	22	158	197	56	25	35	0,62	1	P600 . -D22, ..
B4017.ZB25.23,0.Z02.161R	23	165	205	56	25	35	0,67	1	P600 . -D23, ..
B4017.ZB25.24,0.Z02.168R	24	172	213	56	25	35	0,71	1	P600 . -D24, ..
B4017.ZB25.25,0.Z02.175R	25	180	221	56	25	35	0,77	1	P600 . -D25, ..
B4017.ZB25.26,0.Z02.182R	26	187	229	56	25	35	0,83	1	P600 . -D26, ..
B4017.ZB25.27,0.Z02.189R	27	194	237	56	25	35	0,89	1	P600 . -D27, ..
B4017.ZB32.28,0.Z02.196R	28	201	246	60	32	42	1,17	1	P600 . -D28, ..
B4017.ZB32.29,0.Z02.203R	29	208	254	60	32	42	1,25	1	P600 . -D29, ..
B4017.ZB32.30,0.Z02.210R	30	215	262	60	32	42	1,34	1	P600 . -D30, ..
B4017.ZB32.31,0.Z02.217R	31	223	270	60	32	42	1,43	1	P600 . -D31, ..

Producing a pilot hole with a B 4013 or NC centre drill is recommended
Bodies and assembly parts are included in the scope of delivery.

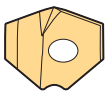
Assembly parts

	D_c [mm]	12–13	14–15	16–17	18–19	20–21	22–23	24–25	26–27	28–33	34–37
	Clamping screw for drill insert Tightening torque	FS1396 (Torx 7IP) 1,2 Nm	FS1397 (Torx 8IP) 2,0 Nm	FS1398 (Torx 8IP) 2,0 Nm	FS1399 (Torx 15IP) 4,0 Nm	FS1400 (Torx 20IP) 5,0 Nm	FS1401 (Torx 20IP) 5,0 Nm	FS1402 (Torx 20IP) 5,0 Nm	FS1403 (Torx 25IP) 5,5 Nm	FS1404 (Torx 25IP) 5,5 Nm	FS2159 (Torx 25IP) 5,5 Nm

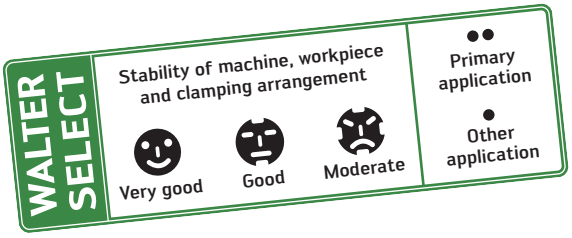
Accessories

	D_c [mm]	12–13	14–17	18–19	20–25	26–37
	Torque T-handle Tightening torque					FS2041 4,5–14 Nm
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)	FS2049 (Torx 25IP)
	Torx key	FS1490 (Torx 7IP)				
	Screwdriver		FS1483 (Torx 8IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)	FS1487 (Torx 25IP)

Drill inserts

	Designation	D_c mm	P HC WPP45C	P HC WMP35	M HC WMP35	K HC WKK45C	N HC WNN25	S HC WMP35
	P6001-D..	12–31,99	●●					
	P6003-D..	12–31,99		●	●●			●●
	P6004-D..	12–31,5					●●	
	P6005-D..	12–31,99				●		

HC = Coated carbide



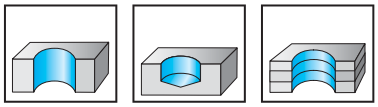
B 180 D 1 B 444 B 456

Point drills, 10 x Dc
B4010

Xtra·tec®



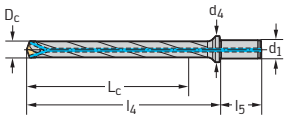
D_c 18– 24,99	10×D_c	140°	Z=2



	P	M	K	N	S	H	O
B4010	●●	●	●●	●●	●		

Tool

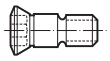
Parallel shank with flat



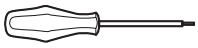
Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
B4010.F20.18,0.Z02.180R	18	183	218	50	20	30	0,45	1	P600 . -D18, ..
B4010.F20.20,0.Z02.200R	20	204	240	50	20	30	0,54	1	P600 . -D20, ..
B4010.F25.22,0.Z02.220R	22	224	263	56	25	35	0,8	1	P600 . -D22, ..
B4010.F25.24,0.Z02.240R	24	244	285	56	25	35	0,9	1	P600 . -D24, ..

Producing a pilot hole with a B 4013 or NC centre drill is recommended
Bodies and assembly parts are included in the scope of delivery.

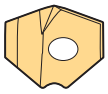
Assembly parts

	D_c [mm]	18	20	22	24
	Clamping screw for drill insert Tightening torque	FS1399 (Torx 15IP) 4,0 Nm	FS1400 (Torx 20IP) 5,0 Nm	FS1401 (Torx 20IP) 5,0 Nm	FS1402 (Torx 20IP) 5,0 Nm

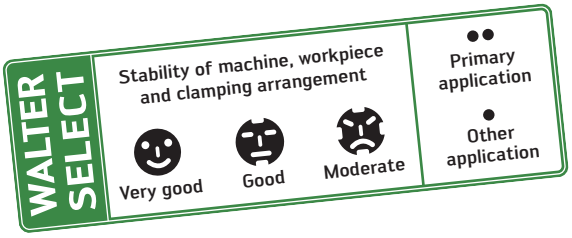
Accessories

	D_c [mm]	18	20–24
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)

Drill inserts

	Designation	D_c mm	P HC WPP45C	P HC WMP35	M HC WMP35	K HC WKK45C	N HC WNN25	S HC WMP35
	P6001-D..	18–24,7	●●					
	P6003-D..	18–24,7		●	●●			●●
	P6004-D..	18–24,5					●●	
	P6005-D..	18–24,7				●		

HC = Coated carbide



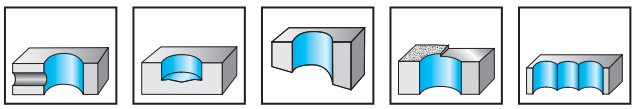
B 180 D 1 B 444 B 456

Insert drills, 2 x Dc
B4212

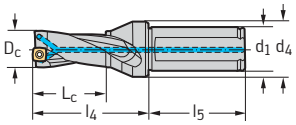
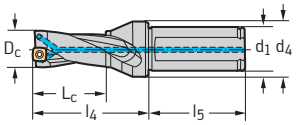
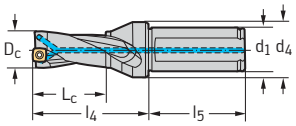
Xtra·tec®



D_c 13,5–59	2×D_c	Z=1



	P	M	K	N	S	H	O
B4212	●●	●●	●●	●	●●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4212.F20.13,5.Z1.027R-1	13,5	27	47	50	20	30	0,17	1 1	
	B4212.F20.14.Z1.028R-1	14	28	48	50	20	30	0,17	1 1	
	B4212.F20.14,5.Z1.029R-1	14,5	29	49	50	20	30	0,17	1 1	P484 . P-1R- .. P484 . C-1R- ..
	B4212.F20.15.Z1.030R-1	15	30	50	50	20	30	0,17	1 1	
	B4212.F20.15,5.Z1.031R-1	15,5	31	51	50	20	30	0,18	1 1	
	B4212.F25.16.Z1.032R-1	16	32	57	56	25	32	0,32	1 1	
Parallel shank with flat 	B4212.F25.16,5.Z1.033R-2	16,5	33	58	56	25	32	0,3	1 1	
	B4212.F25.17.Z1.034R-2	17	34	59	56	25	32	0,42	1 1	
	B4212.F25.17,5.Z1.035R-2	17,5	35	60	56	25	32	0,4	1 1	
	B4212.F25.18.Z1.036R-2	18	36	61	56	25	32	0,33	1 1	P484 . P-2R- .. P484 . C-2R- ..
	B4212.F25.18,5.Z1.037R-2	18,5	37	62	56	25	32	0,45	1 1	
	B4212.F25.19.Z1.038R-2	19	38	63	56	25	32	0,34	1 1	
	B4212.F25.19,5.Z1.039R-2	19,5	39	64	56	25	32	0,35	1 1	
	B4212.F25.20.Z1.040R-2	20	40	65	56	25	32	0,45	1 1	
Parallel shank with flat 	B4212.F25.20,5.Z1.041R-3	20,5	41	66	56	25	32	0,44	1 1	
	B4212.F25.21.Z1.042R-3	21	42	67	56	25	32	0,45	1 1	
	B4212.F25.21,5.Z1.043R-3	21,5	43	68	56	25	32	0,37	1 1	
	B4212.F25.22.Z1.044R-3	22	44	69	56	25	32	0,37	1 1	P484 . P-3R- .. P484 . C-3R- ..
	B4212.F25.22,5.Z1.045R-3	22,5	45	70	56	25	32	0,46	1 1	
	B4212.F25.23.Z1.046R-3	23	46	71	56	25	32	0,48	1 1	
	B4212.F25.23,5.Z1.047R-3	23,5	47	72	56	25	32	0,44	1 1	
	B4212.F25.24.Z1.048R-3	24	48	73	56	25	32	0,48	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2120 (Torx 6IP) 0,4 Nm	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

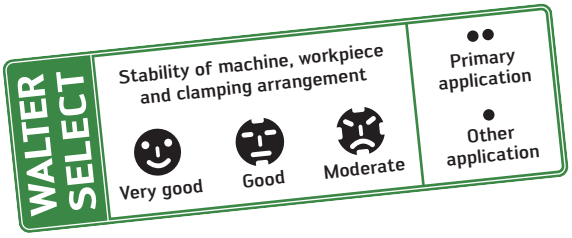
	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2085 (Torx 6IP)	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	1–3	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E57	1–3	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	1–3	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	1–3	☺	☺	☹			☹				☺	☹				☹		
	P4841P-.R-E57	1–3	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	1–3		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	1–3		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	1–3		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



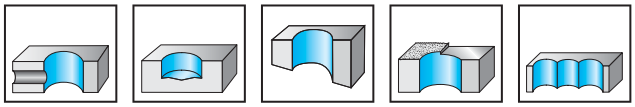
B 185 D 1 B 450 B 456

Insert drills, 2 x Dc
B4212

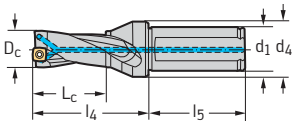
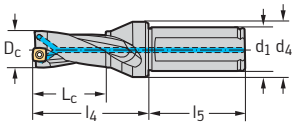
Xtra·tec®



D_c 13,5–59	2×D_c	Z=1



	P	M	K	N	S	H	O
B4212	●●	●●	●●	●	●●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4212.F25.24,5.Z1.049R-4	24,5	49	74	56	25	32	0,5	1 1	P484 . P-4R- .. P484 . C-4R- ..
	B4212.F25.25.Z1.050R-4	25	50	75	56	25	32	0,4	1 1	
	B4212.F32.25,5.Z1.051R-4	25,5	51	83	60	32	40	0,76	1 1	
	B4212.F32.26.Z1.052R-4	26	52	84	60	32	40	0,77	1 1	
	B4212.F32.26,5.Z1.053R-4	26,5	53	85	60	32	40	0,78	1 1	
	B4212.F32.27.Z1.054R-4	27	54	86	60	32	40	0,68	1 1	
	B4212.F32.27,5.Z1.055R-4	27,5	55	87	60	32	40	0,8	1 1	
	B4212.F32.28.Z1.056R-4	28	56	88	60	32	40	0,8	1 1	
	B4212.F32.28,5.Z1.057R-4	28,5	57	89	60	32	40	0,81	1 1	
	B4212.F32.29.Z1.058R-4	29	58	90	60	32	40	0,85	1 1	
Parallel shank with flat 	B4212.F32.29,5.Z1.059R-5	29,5	59	91	60	32	40	0,72	1 1	P484 . P-5R- .. P484 . C-5R- ..
	B4212.F32.30.Z1.060R-5	30	60	92	60	32	40	0,73	1 1	
	B4212.F32.31.Z1.062R-5	31	62	94	60	32	40	0,75	1 1	
	B4212.F32.32.Z1.064R-5	32	64	96	60	32	40	0,77	1 1	
	B4212.F32.33.Z1.066R-5	33	66	98	60	32	40	0,80	1 1	
	B4212.F32.34.Z1.068R-5	34	68	100	60	32	40	0,83	1 1	
	B4212.F32.35.Z1.070R-5	35	70	102	60	32	40	0,86	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2120 (Torx 6IP) 0,4 Nm	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

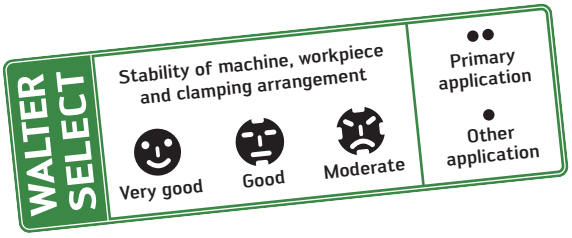
	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2085 (Torx 6IP)	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	4–5	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E57	4–5	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	4–5	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	4–5	☺	☺	☹			☹				☺	☹				☹		
	P4841P-.R-E57	4–5	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	4–5		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	4–5		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	4–5		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



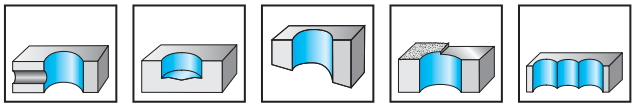
B 185 D 1 B 450 B 456

Insert drills, 2 x Dc
B4212

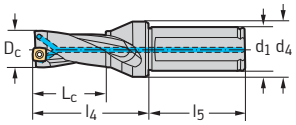
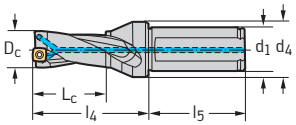
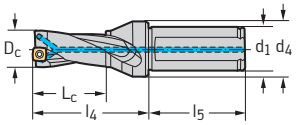
Xtra·tec®



D_c 13,5–59	2×D_c	Z=1



	P	M	K	N	S	H	O
B4212	●●	●●	●●	●	●●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4212.F32.36.Z1.072R-6	36	72	104	60	32	40	0,84	1 1	
	B4212.F40.37.Z1.074R-6	37	74	114	70	40	50	1,36	1 1	
	B4212.F40.38.Z1.076R-6	38	76	116	70	40	50	1,39	1 1	
	B4212.F40.39.Z1.078R-6	39	78	118	70	40	50	1,43	1 1	P484 . P-6R- .. P484 . C-6R- ..
	B4212.F40.40.Z1.080R-6	40	80	120	70	40	50	1,47	1 1	
	B4212.F40.41.Z1.082R-6	41	82	122	70	40	50	1,51	1 1	
	B4212.F40.42.Z1.084R-6	42	84	124	70	40	50	1,56	1 1	
Parallel shank with flat 	B4212.F40.43.Z1.086R-7	43	86	126	70	40	50	1,54	1 1	
	B4212.F40.44.Z1.088R-7	44	88	128	70	40	50	1,58	1 1	
	B4212.F40.45.Z1.090R-7	45	90	130	70	40	50	1,63	1 1	
	B4212.F40.46.Z1.092R-7	46	92	132	70	40	50	1,68	1 1	P484 . P-7R- .. P484 . C-7R- ..
	B4212.F40.47.Z1.094R-7	47	94	134	70	40	50	1,73	1 1	
	B4212.F40.48.Z1.096R-7	48	96	136	70	40	50	1,78	1 1	
	B4212.F40.49.Z1.098R-7	49	98	138	70	40	50	1,84	1 1	
	B4212.F40.50.Z1.100R-7	50	100	140	70	40	50	1,9	1 1	
Parallel shank with flat 	B4212.F40.51.Z1.102R-8	51	102	142	70	40	50	1,90	1 1	
	B4212.F40.52.Z1.104R-8	52	104	144	70	40	50	1,96	1 1	
	B4212.F40.53.Z1.106R-8	53	106	146	70	40	50	2,02	1 1	
	B4212.F40.54.Z1.108R-8	54	108	148	70	40	50	2,09	1 1	
	B4212.F40.55.Z1.110R-8	55	110	150	70	40	50	2,16	1 1	P484 . P-8R- .. P484 . C-8R- ..
	B4212.F40.56.Z1.112R-8	56	112	152	70	40	50	2,23	1 1	
	B4212.F40.57.Z1.114R-8	57	114	154	70	40	50	2,31	1 1	
	B4212.F40.58.Z1.116R-8	58	116	156	70	40	50	2,38	1 1	
	B4212.F40.59.Z1.118R-8	59	118	158	70	40	50	2,47	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2120 (Torx 6IP) 0,4 Nm	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

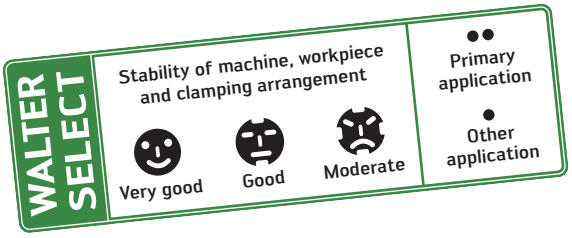
	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2085 (Torx 6IP)	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	6–8	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E57	6–8	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	6–8	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	6–8	☺	☺	☹			☹				☺	☹				☹		
	P4841P-.R-E57	6–8	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	6–8		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	6–8		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	6–8		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



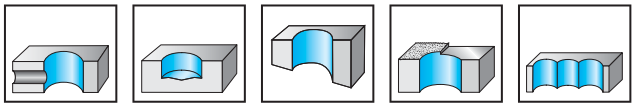
B 185 D 1 B 450 B 456

Insert drills, 3 x Dc
B4213

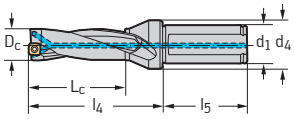
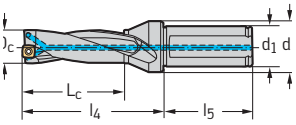
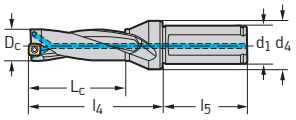
Xtra·tec®



D_c 13,5–59	3×D_c	Z=1



	P	M	K	N	S	H	O
B4213	●●	●●	●●	●	●●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4213.F20.13,5.Z1.040R-1	13,5	40,5	61	50	20	30	0,17	1 1	P484 . P-1R- .. P484 . C-1R- ..
	B4213.F20.14.Z1.042R-1	14	42	62	50	20	30	0,18	1 1	
	B4213.F20.14,5.Z1.043R-1	14,5	43,5	64	50	20	30	0,18	1 1	
	B4213.F20.15.Z1.045R-1	15	45	65	50	20	30	0,18	1 1	
	B4213.F20.15,5.Z1.046R-1	15,5	46,5	67	50	20	30	0,19	1 1	
	B4213.F25.16.Z1.048R-1	16	48	73	56	25	32	0,33	1 1	
Parallel shank with flat 	B4213.F25.16,5.Z1.049R-2	16,5	49,5	75	56	25	32	0,44	1 1	P484 . P-2R- .. P484 . C-2R- ..
	B4213.F25.17.Z1.051R-2	17	51	76	56	25	32	0,43	1 1	
	B4213.F25.17,5.Z1.052R-2	17,5	52,5	77	56	25	32	0,44	1 1	
	B4213.F25.18.Z1.054R-2	18	54	79	56	25	32	0,43	1 1	
	B4213.F25.18,5.Z1.055R-2	18,5	55,5	80	56	25	32	0,46	1 1	
	B4213.F25.19.Z1.057R-2	19	57	82	56	25	32	0,46	1 1	
	B4213.F25.19,5.Z1.058R-2	19,5	58,5	84	56	25	32	0,47	1 1	
	B4213.F25.20.Z1.060R-2	20	60	85	56	25	32	0,48	1 1	
Parallel shank with flat 	B4213.F25.20,5.Z1.061R-3	20,5	61,5	87	56	25	32	0,5	1 1	P484 . P-3R- .. P484 . C-3R- ..
	B4213.F25.21.Z1.063R-3	21	63	88	56	25	32	0,4	1 1	
	B4213.F25.21,5.Z1.064R-3	21,5	64,5	90	56	25	32	0,5	1 1	
	B4213.F25.22.Z1.066R-3	22	66	91	56	25	32	0,42	1 1	
	B4213.F25.22,5.Z1.067R-3	22,5	67,5	93	56	25	32	0,52	1 1	
	B4213.F25.23.Z1.069R-3	23	69	94	56	25	32	0,43	1 1	
	B4213.F25.23,5.Z1.070R-3	23,5	70,5	96	56	25	32	0,53	1 1	
	B4213.F25.24.Z1.072R-3	24	72	97	56	25	32	0,44	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2120 (Torx 6IP) 0,4 Nm	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

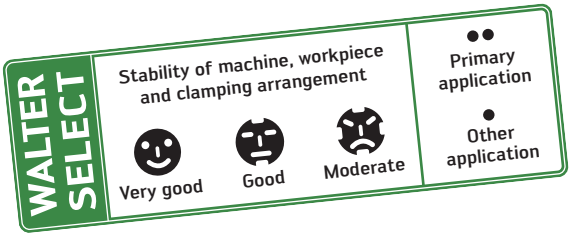
	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2085 (Torx 6IP)	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	1–3	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E57	1–3	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	1–3	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	1–3	☺	☺	☹			☹				☺	☹				☹		
	P4841P-.R-E57	1–3	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	1–3		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	1–3		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	1–3		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



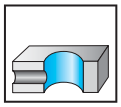
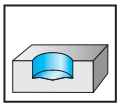
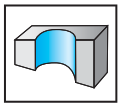
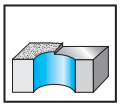
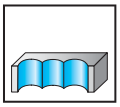
B 185 D 1 B 450 B 456

Insert drills, 3 x Dc
B4213

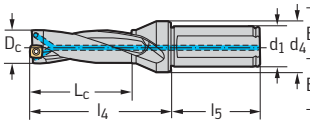
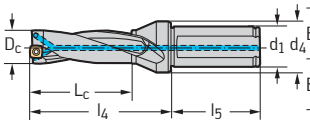
Xtra·tec®



D_c 13,5–59	3×D_c	Z=1

	P	M	K	N	S	H	O
B4213	●●	●●	●●	●	●●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4213.F25.24,5.Z1.073R-4	24,5	73,5	99	56	25	32	0,54	1 1	P484 . P-4R- .. P484 . C-4R- ..
	B4213.F25.25.Z1.075R-4	25	75	100	56	25	32	0,56	1 1	
	B4213.F32.25,5.Z1.076R-4	25,5	76,5	109	60	32	40	0,84	1 1	
	B4213.F32.26.Z1.078R-4	26	78	110	60	32	40	0,83	1 1	
	B4213.F32.26,5.Z1.079R-4	26,5	79,5	112	60	32	40	0,85	1 1	
	B4213.F32.27.Z1.081R-4	27	81	113	60	32	40	0,85	1 1	
	B4213.F32.27,5.Z1.082R-4	27,5	82,5	115	60	32	40	0,88	1 1	
	B4213.F32.28.Z1.084R-4	28	84	116	60	32	40	0,8	1 1	
	B4213.F32.28,5.Z1.085R-4	28,5	85,5	118	60	32	40	0,91	1 1	
	B4213.F32.29.Z1.087R-4	29	87	119	60	32	40	0,91	1 1	
Parallel shank with flat 	B4213.F32.29,5.Z1.088R-5	29,5	88,5	121	60	32	40	0,81	1 1	P484 . P-5R- .. P484 . C-5R- ..
	B4213.F32.30.Z1.090R-5	30	90	122	60	32	40	0,95	1 1	
	B4213.F32.31.Z1.093R-5	31	93	125	60	32	40	0,85	1 1	
	B4213.F32.32.Z1.096R-5	32	96	128	60	32	40	0,89	1 1	
	B4213.F32.33.Z1.099R-5	33	99	131	60	32	40	0,93	1 1	
	B4213.F32.34.Z1.102R-5	34	102	134	60	32	40	0,98	1 1	
	B4213.F32.35.Z1.105R-5	35	105	137	60	32	40	1,02	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2120 (Torx 6IP) 0,4 Nm	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

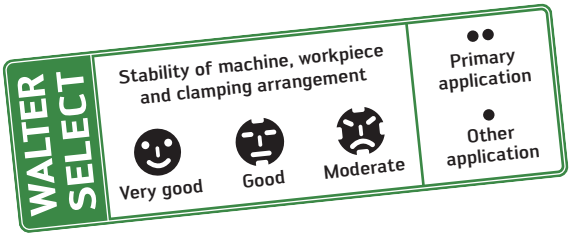
	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2085 (Torx 6IP)	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	4–5	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E57	4–5	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	4–5	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	4–5	☺	☺	☹			☹				☺	☹				☹		
	P4841P-.R-E57	4–5	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	4–5		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	4–5		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	4–5		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



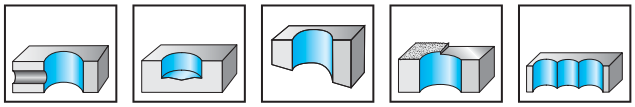
B 185 D 1 B 450 B 456

Insert drills, 3 x Dc
B4213

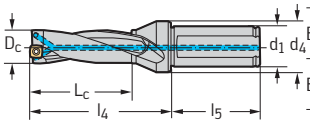
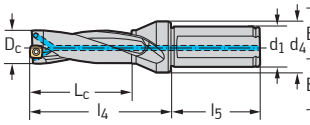
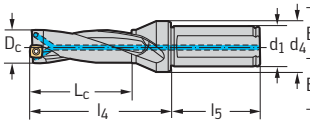
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D_c 13,5–59	3×D_c	Z=1



	P	M	K	N	S	H	O
B4213	●●	●●	●●	●	●●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4213.F32.36.Z1.108R-6	36	108	140	60	32	40	0,99	1 1	
	B4213.F40.37.Z1.111R-6	37	111	151	70	40	50	1,53	1 1	
	B4213.F40.38.Z1.114R-6	38	114	154	70	40	50	1,58	1 1	
	B4213.F40.39.Z1.117R-6	39	117	157	70	40	50	1,63	1 1	P484 . P-6R- .. P484 . C-6R- ..
	B4213.F40.40.Z1.120R-6	40	120	160	70	40	50	1,69	1 1	
	B4213.F40.41.Z1.123R-6	41	123	163	70	40	50	1,75	1 1	
	B4213.F40.42.Z1.126R-6	42	126	166	70	40	50	1,82	1 1	
Parallel shank with flat 	B4213.F40.43.Z1.129R-7	43	129	169	70	40	50	1,80	1 1	
	B4213.F40.44.Z1.132R-7	44	132	172	70	40	50	1,87	1 1	
	B4213.F40.45.Z1.135R-7	45	135	175	70	40	50	1,94	1 1	
	B4213.F40.46.Z1.138R-7	46	138	178	70	40	50	2,01	1 1	P484 . P-7R- .. P484 . C-7R- ..
	B4213.F40.47.Z1.141R-7	47	141	181	70	40	50	2,09	1 1	
	B4213.F40.48.Z1.144R-7	48	144	184	70	40	50	2,17	1 1	
	B4213.F40.49.Z1.147R-7	49	147	187	70	40	50	2,25	1 1	
	B4213.F40.50.Z1.150R-7	50	150	190	70	40	50	2,34	1 1	
Parallel shank with flat 	B4213.F40.51.Z1.153R-8	51	153	193	70	40	50	2,33	1 1	
	B4213.F40.52.Z1.156R-8	52	156	196	70	40	50	2,42	1 1	
	B4213.F40.53.Z1.159R-8	53	159	199	70	40	50	2,51	1 1	
	B4213.F40.54.Z1.162R-8	54	162	202	70	40	50	2,61	1 1	
	B4213.F40.55.Z1.165R-8	55	165	205	70	40	50	2,72	1 1	P484 . P-8R- .. P484 . C-8R- ..
	B4213.F40.56.Z1.168R-8	56	168	208	70	40	50	2,83	1 1	
	B4213.F40.57.Z1.171R-8	57	171	211	70	40	50	2,94	1 1	
	B4213.F40.58.Z1.174R-8	58	174	214	70	40	50	3,07	1 1	
	B4213.F40.59.Z1.177R-8	59	177	217	70	40	50	3,18	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2120 (Torx 6IP) 0,4 Nm	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

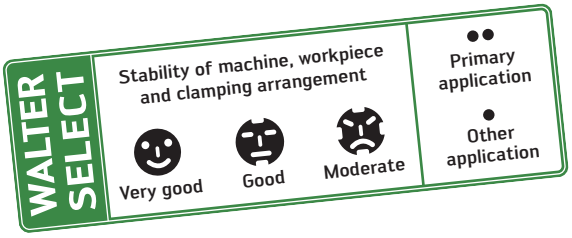
	D_c [mm]	13,5–16	16,5–20	20,5–24	24,5–29	29,5–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2085 (Torx 6IP)	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	6–8	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E57	6–8	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	6–8	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	6–8	☺	☺	☹			☹				☺	☹				☹		
	P4841P-.R-E57	6–8	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	6–8		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	6–8		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	6–8		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



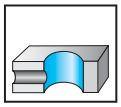
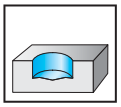
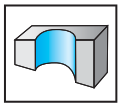
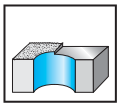
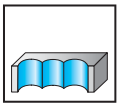
B 185 D 1 B 450 B 456

Insert drills, 3 x Dc, Capto
B4213.C

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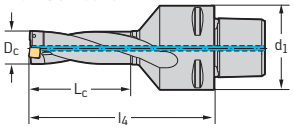
D_c 16–45 | 3×D_c | Z=1

	P	M	K	N	S	H	O
B4213.C	●●	●●	●●	●	●●		

Tool

Walter Capto™ in accordance with ISO 26623



Designation	D_c mm	L_c mm	l_4 mm	d_1 mm	kg	No. of indexable inserts	Type
B4213.C4.16.Z1.048R-1	16	48	88	C4	0,4	1 1	P484 . P-1R- .. P484 . C-1R- ..
B4213.C4.20.Z1.060R-2	20	60	100	C4	0,4	1 1	P484 . P-2R- .. P484 . C-2R- ..
B4213.C4.25.Z1.075R-4	25	75	115	C4	0,5	1 1	P484 . P-4R- .. P484 . C-4R- ..
B4213.C4.32.Z1.096R-5	32	96	135	C4	0,7	1 1	P484 . P-5R- .. P484 . C-5R- ..
B4213.C5.16.Z1.048R-1	16	48	92	C5	0,7	1 1	P484 . P-1R- .. P484 . C-1R- ..
B4213.C5.20.Z1.060R-2	20	60	105	C5	0,7	1 1	P484 . P-2R- .. P484 . C-2R- ..
B4213.C5.25.Z1.075R-4	25	75	120	C5	0,8	1 1	P484 . P-4R- .. P484 . C-4R- ..
B4213.C5.32.Z1.096R-5	32	96	140	C5	0,9	1 1	P484 . P-5R- .. P484 . C-5R- ..
B4213.C5.40.Z1.120R-6	40	120	165	C5	1,3	1 1	P484 . P-6R- .. P484 . C-6R- ..
B4213.C6.25.Z1.075R-4	25	75	125	C6	1,3	1 1	P484 . P-4R- .. P484 . C-4R- ..
B4213.C6.32.Z1.096R-5	32	96	145	C6	1,4	1 1	P484 . P-5R- .. P484 . C-5R- ..
B4213.C6.40.Z1.120R-6	40	120	170	C6	1,7	1 1	P484 . P-6R- .. P484 . C-6R- ..
B4213.C6.45.Z1.135R-7	45	135	185	C6	2,0	1 1	P484 . P-7R- .. P484 . C-7R- ..

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	16	20	25	32	40	45
	Clamping screw for indexable insert Tightening torque	FS2120 (Torx 6IP) 0,4 Nm	FS2111 (Torx 7IP) 0,9 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

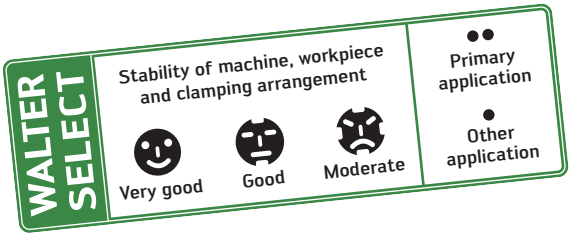
	D_c [mm]	16	20	25	32–40	45
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2085 (Torx 6IP)	FS2011 (Torx 7IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	1–7	☺	😐	☹			☹				😐	☹				☹		
	P4840P-.R-E57	1–7	☺	😐	☹			☹				😐	☹				☹		
	P4840P-.R-E67	1–7	☺	😐	☹			☹				😐	☹		😐		☹		
	P4841P-.R-A57	1–7	😐	☹	☹			☹				😐	☹				☹		
	P4841P-.R-E57	1–7	☺	😐	☹			☹				😐	☹				☹		
	P4840C-.R-E67	1–7		☺			☹			☹			☺	☹		😐			☹
	P4841C-.R-A57	1–7		😐			☹			☹			☹	☹					☹
	P4841C-.R-E57	1–7		😐			☹			☹			😐	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



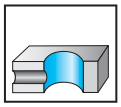
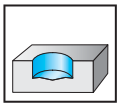
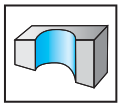
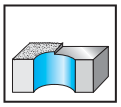
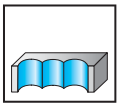
B 185 D 1 B 450 B 456

Insert drills, 3 x Dc, NCT
B4213.N

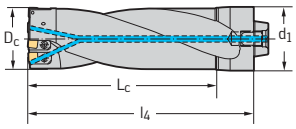
Xtra·tec®



D_c 65–80	3×D_c	Z=1

	P	M	K	N	S	H	O
B4213	●●	●●	●●	●	●●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	d_1 mm	kg	No. of indexable inserts	Type
Modular NCT adaptor 	B4213.N8.065.Z1.195R-5	65	195	245	NCT 80	4,1	3 1	P484 . P-5R- .. P484 . C-5R- ..
	B4213.N8.068.Z1.204R-6	68	204	254	NCT 80	4,5	3 1	
	B4213.N8.070.Z1.210R-6	70	210	260	NCT 80	4,7	3 1	P484 . P-6R- .. P484 . C-6R- ..
	B4213.N8.078.Z1.234R-6	78	234	284	NCT 80	5,9	3 1	
	B4213.N8.080.Z1.240R-5	80	240	290	NCT 80	6,2	5 1	P484 . P-5R- .. P484 . C-5R- ..

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	65	68	70	78	80
	Internal cartridge	FR737C-5	FR743C-6	FR743C-6	FR743C-6	FR737C-5
	Clamping screw for indexable insert Tightening torque	FS1453 (Torx 15IP) 3,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1453 (Torx 15IP) 3,5 Nm
	Radial adjusting screw	FS334	FS334	FS334	FS334	FS334
	External cartridge 1	FR738P-5	FR744P-6	FR744P-6	FR744P-6	FR738P-5
	External cartridge 2	FR741P-5	FR745P-6	FR746P-6	FR748P-6	FR739P-5
	Clamping screw for internal and external cartridge 1 Tightening torque	FS1149 (SW 4) 5,0 Nm	FS1149 (SW 4) 5,0 Nm	FS1149 (SW 4) 5,0 Nm	FS1149 (SW 4) 5,0 Nm	FS1149 (SW 4) 5,0 Nm
	Clamping screw for external cartridge 2 Tightening torque	FS966 (SW 5) 8,0 Nm	FS966 (SW 5) 8,0 Nm	FS966 (SW 5) 8,0 Nm	FS966 (SW 5) 8,0 Nm	FS966 (SW 5) 8,0 Nm

Accessories

	D_c [mm]	65–80
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)
	ISO 2936 Allen key for internal and external cartridge 1	ISO2936-4 (SW 4)
	ISO 2936 Allen key for external cartridge 2	ISO2936-5 (SW 5)
	Screwdriver	FS1485 (Torx 15IP)

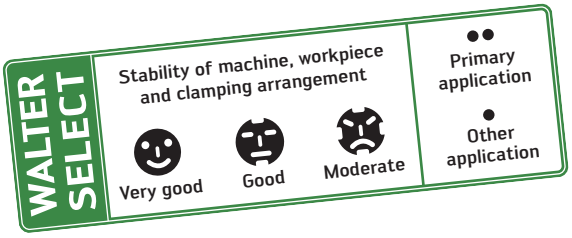
In tools with the diameter D_c = 80 mm, the external cartridge 1 (FR738P-5) is fitted three times

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	5–6	☺	☺	☺			☹				☺	☺				☹		
	P4840P-.R-E57	5–6	☺	☺	☺			☹				☺	☺				☹		
	P4840P-.R-E67	5–6	☺	☺	☺			☹				☺	☺		☺		☹		
	P4841P-.R-A57	5–6	☺	☹	☹			☹				☺	☹				☹		
	P4841P-.R-E57	5–6	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	5–6		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	5–6		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	5–6		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide

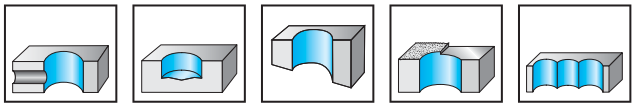


B 185 D 1 B 450 B 456

Insert drills, 4 x Dc
B4214

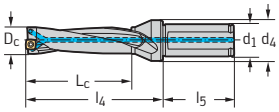
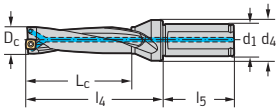
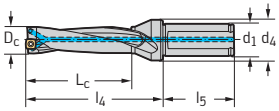
Xtra·tec®





D_c 17–59	4×D_c	Z=1

	P	M	K	N	S	H	O
B4214	●●	●	●●	●	●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4214.F25.17.Z1.068R-2	17	68	93	56	25	32	0,36	1 1	P484 . P-2R- .. P484 . C-2R- ..
	B4214.F25.18.Z1.072R-2	18	72	97	56	25	32	0,38	1 1	
	B4214.F25.19.Z1.076R-2	19	76	101	56	25	32	0,39	1 1	
	B4214.F25.20.Z1.080R-2	20	80	105	56	25	32	0,4	1 1	
Parallel shank with flat 	B4214.F25.21.Z1.084R-3	21	84	109	56	25	32	0,51	1 1	P484 . P-3R- .. P484 . C-3R- ..
	B4214.F25.22.Z1.088R-3	22	88	113	56	25	32	0,53	1 1	
	B4214.F25.23.Z1.092R-3	23	92	117	56	25	32	0,55	1 1	
	B4214.F25.24.Z1.096R-3	24	96	121	56	25	32	0,5	1 1	
Parallel shank with flat 	B4214.F25.25.Z1.100R-4	25	100	125	56	25	32	0,52	1 1	P484 . P-4R- .. P484 . C-4R- ..
	B4214.F32.26.Z1.104R-4	26	104	136	60	32	40	0,8	1 1	
	B4214.F32.27.Z1.108R-4	27	108	140	60	32	40	0,83	1 1	
	B4214.F32.28.Z1.112R-4	28	112	144	60	32	40	0,92	1 1	
	B4214.F32.29.Z1.116R-4	29	116	148	60	32	40	0,9	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	17–20	21–24	25–29	30–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

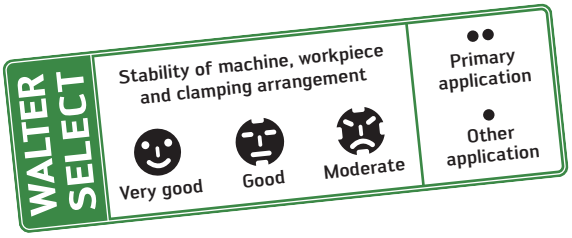
	D_c [mm]	17–20	21–24	25–29	30–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	2–4	☺	☺	☺			☹				☺	☺				☹		
	P4840P-.R-E57	2–4	☺	☺	☺			☹				☺	☺				☹		
	P4840P-.R-E67	2–4	☺	☺	☺			☹				☺	☺		☺		☹		
	P4841P-.R-A57	2–4	☺	☺	☺			☹				☺	☺				☹		
	P4841P-.R-E57	2–4	☺	☺	☺			☹				☺	☺				☹		
	P4840C-.R-E67	2–4		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	2–4		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	2–4		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



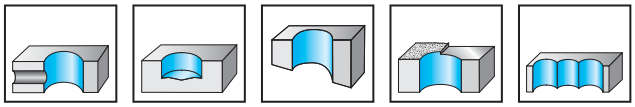
B 185 D 1 B 450 B 456

Insert drills, 4 x Dc
B4214

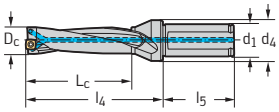
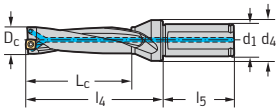
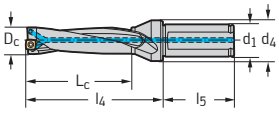
Xtra·tec®



D_c 17–59	4×D_c	Z=1



	P	M	K	N	S	H	O
B4214	●●	●	●●	●	●		

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4214.F32.30.Z1.120R-5	30	120	152	60	32	40	0,91	1 1	P484 . P-5R- .. P484 . C-5R- ..
	B4214.F32.31.Z1.124R-5	31	124	156	60	32	40	0,96	1 1	
	B4214.F32.32.Z1.128R-5	32	128	160	60	32	40	1	1 1	
	B4214.F32.33.Z1.132R-5	33	132	164	60	32	40	1,06	1 1	
	B4214.F32.34.Z1.136R-5	34	136	168	60	32	40	1,12	1 1	
	B4214.F32.35.Z1.140R-5	35	140	172	60	32	40	1,2	1 1	
Parallel shank with flat 	B4214.F32.36.Z1.144R-6	36	144	176	60	32	40	1,14	1 1	P484 . P-6R- .. P484 . C-6R- ..
	B4214.F40.37.Z1.148R-6	37	148	188	70	40	50	1,69	1 1	
	B4214.F40.38.Z1.152R-6	38	152	192	70	40	50	1,76	1 1	
	B4214.F40.39.Z1.156R-6	39	156	196	70	40	50	1,83	1 1	
	B4214.F40.40.Z1.160R-6	40	160	200	70	40	50	1,91	1 1	
	B4214.F40.41.Z1.164R-6	41	164	204	70	40	50	1,99	1 1	
	B4214.F40.42.Z1.168R-6	42	168	208	70	40	50	2,08	1 1	
Parallel shank with flat 	B4214.F40.43.Z1.172R-7	43	172	212	70	40	50	2,04	1 1	P484 . P-7R- .. P484 . C-7R- ..
	B4214.F40.44.Z1.176R-7	44	176	216	70	40	50	2,13	1 1	
	B4214.F40.45.Z1.180R-7	45	180	220	70	40	50	2,22	1 1	
	B4214.F40.46.Z1.184R-7	46	184	224	70	40	50	2,32	1 1	
	B4214.F40.47.Z1.188R-7	47	188	228	70	40	50	2,44	1 1	
	B4214.F40.48.Z1.192R-7	48	192	232	70	40	50	2,54	1 1	
	B4214.F40.49.Z1.196R-7	49	196	236	70	40	50	2,65	1 1	
	B4214.F40.50.Z1.200R-7	50	200	240	70	40	50	2,77	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	17–20	21–24	25–29	30–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

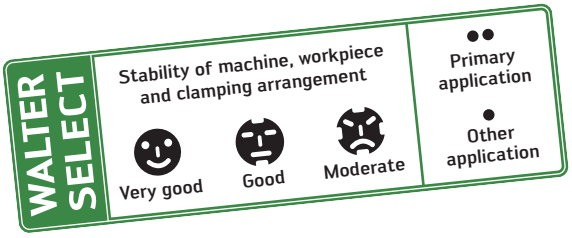
	D_c [mm]	17–20	21–24	25–29	30–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	5–7	☺	☹	☹			☹				☺	☹				☹		
	P4840P-.R-E57	5–7	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	5–7	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	5–7	☺	☹	☹			☹				☺	☹				☹		
	P4841P-.R-E57	5–7	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	5–7		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	5–7		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	5–7		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



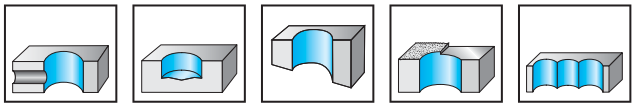
B 185 D 1 B 450 B 456

Insert drills, 4 x Dc
B4214

Xtra·tec®



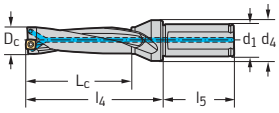
D_c 17–59	4×D_c	Z=1



	P	M	K	N	S	H	O
B4214	●●	●	●●	●	●		

Tool

Parallel shank with flat



Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
B4214.F40.51.Z1.204R-8	51	204	244	70	40	50	2,78	1 1	P484 . P-8R- .. P484 . C-8R- ..
B4214.F40.52.Z1.208R-8	52	208	248	70	40	50	2,91	1 1	
B4214.F40.53.Z1.212R-8	53	212	252	70	40	50	3,03	1 1	
B4214.F40.54.Z1.216R-8	54	216	256	70	40	50	3,16	1 1	
B4214.F40.55.Z1.220R-8	55	220	260	70	40	50	3,3	1 1	
B4214.F40.56.Z1.224R-8	56	224	264	70	40	50	3,44	1 1	
B4214.F40.57.Z1.228R-8	57	228	268	70	40	50	3,58	1 1	
B4214.F40.58.Z1.232R-8	58	232	272	70	40	50	3,75	1 1	
B4214.F40.59.Z1.236R-8	59	236	276	70	40	50	3,91	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	17–20	21–24	25–29	30–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

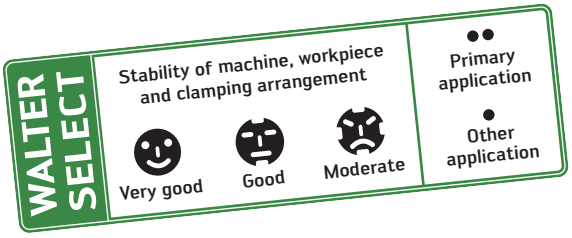
Accessories

	D_c [mm]	17–20	21–24	25–29	30–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	8–8	☺	☹	☹			☹				☺	☹				☹		
	P4840P-.R-E57	8–8	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	8–8	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	8–8	☺	☹	☹			☹				☺	☹				☹		
	P4841P-.R-E57	8–8	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	8–8		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	8–8		☺			☹			☹			☹	☹		☺			☹
	P4841C-.R-E57	8–8		☺			☹			☹			☺	☹		☺			☹

HC = Coated carbide



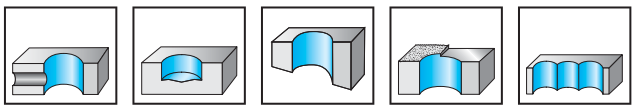
B 185 D 1 B 450 B 456

Insert drills, 5 x Dc
B4215

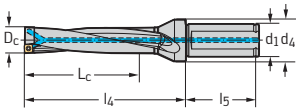
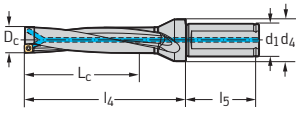
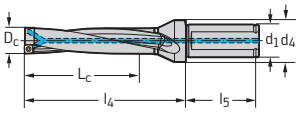
Xtra·tec®



D_c 17–59	5×D_c	Z=1



	P	M	K	N	S	H	O
B4215	●●		●●	●			

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4215.F25.17.Z1.085R-2	17	85	110	56	25	32	0,38	1 1	P484 . P-2R- .. P484 . C-2R- ..
	B4215.F25.18.Z1.090R-2	18	90	115	56	25	32	0,48	1 1	
	B4215.F25.19.Z1.095R-2	19	95	120	56	25	32	0,42	1 1	
	B4215.F25.20.Z1.100R-2	20	100	125	56	25	32	0,44	1 1	
Parallel shank with flat 	B4215.F25.21.Z1.105R-3	21	105	130	56	25	32	0,54	1 1	P484 . P-3R- .. P484 . C-3R- ..
	B4215.F25.22.Z1.110R-3	22	110	135	56	25	32	0,58	1 1	
	B4215.F25.23.Z1.115R-3	23	115	140	56	25	32	0,51	1 1	
	B4215.F25.24.Z1.120R-3	24	120	145	56	25	32	0,55	1 1	
Parallel shank with flat 	B4215.F25.25.Z1.125R-4	25	125	150	56	25	32	0,57	1 1	P484 . P-4R- .. P484 . C-4R- ..
	B4215.F32.26.Z1.130R-4	26	130	162	60	32	40	0,86	1 1	
	B4215.F32.27.Z1.135R-4	27	135	167	60	32	40	0,90	1 1	
	B4215.F32.28.Z1.140R-4	28	140	172	60	32	40	0,94	1 1	
	B4215.F32.29.Z1.145R-4	29	145	177	60	32	40	0,99	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	17–20	21–24	25–29	30–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

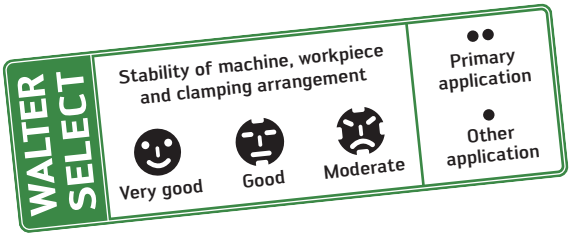
	D_c [mm]	17–20	21–24	25–29	30–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	2–4	☺	☺	☺			☹				☺	☺				☹		
	P4840P-.R-E57	2–4	☺	☺	☺			☹				☺	☺				☹		
	P4840P-.R-E67	2–4	☺	☺	☺			☹				☺	☺		☺		☹		
	P4841P-.R-A57	2–4	☺	☺	☺			☹				☺	☺				☹		
	P4841P-.R-E57	2–4	☺	☺	☺			☹				☺	☺				☹		
	P4840C-.R-E67	2–4		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	2–4		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	2–4		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



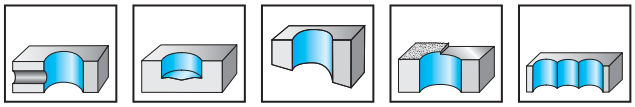
B 185 D 1 B 450 B 456

Insert drills, 5 x Dc
B4215

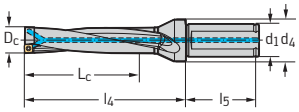
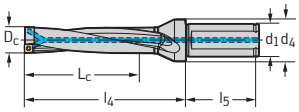
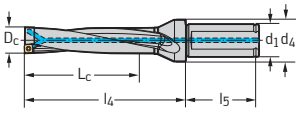
Xtra·tec®



D_c 17–59	5×D_c	Z=1



	P	M	K	N	S	H	O
B4215	●●		●●	●			

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4215.F32.30.Z1.150R-5	30	150	182	60	32	40	1,01	1 1	P484 . P-5R- .. P484 . C-5R- ..
	B4215.F32.31.Z1.155R-5	31	155	187	60	32	40	1,06	1 1	
	B4215.F32.32.Z1.160R-5	32	160	192	60	32	40	1,12	1 1	
	B4215.F32.33.Z1.165R-5	33	165	197	60	32	40	1,19	1 1	
	B4215.F32.34.Z1.170R-5	34	170	202	60	32	40	1,26	1 1	
	B4215.F32.35.Z1.175R-5	35	175	207	60	32	40	1,34	1 1	
Parallel shank with flat 	B4215.F32.36.Z1.180R-6	36	180	212	60	32	40	1,29	1 1	P484 . P-6R- .. P484 . C-6R- ..
	B4215.F40.37.Z1.185R-6	37	185	225	70	40	50	1,85	1 1	
	B4215.F40.38.Z1.190R-6	38	190	230	70	40	50	1,93	1 1	
	B4215.F40.39.Z1.195R-6	39	195	235	70	40	50	2,02	1 1	
	B4215.F40.40.Z1.200R-6	40	200	240	70	40	50	2,12	1 1	
	B4215.F40.41.Z1.205R-6	41	205	245	70	40	50	2,22	1 1	
	B4215.F40.42.Z1.210R-6	42	210	250	70	40	50	2,32	1 1	
Parallel shank with flat 	B4215.F40.43.Z1.215R-7	43	215	255	70	40	50	2,34	1 1	P484 . P-7R- .. P484 . C-7R- ..
	B4215.F40.44.Z1.220R-7	44	220	260	70	40	50	2,44	1 1	
	B4215.F40.45.Z1.225R-7	45	225	265	70	40	50	2,55	1 1	
	B4215.F40.46.Z1.230R-7	46	230	270	70	40	50	2,65	1 1	
	B4215.F40.47.Z1.235R-7	47	235	275	70	40	50	2,77	1 1	
	B4215.F40.48.Z1.240R-7	48	240	280	70	40	50	2,9	1 1	
	B4215.F40.49.Z1.245R-7	49	245	285	70	40	50	3,04	1 1	
	B4215.F40.50.Z1.250R-7	50	250	290	70	40	50	3,18	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	17–20	21–24	25–29	30–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

Accessories

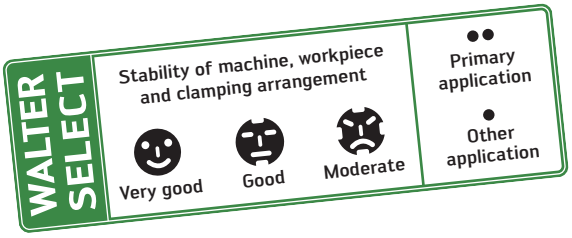
	D_c [mm]	17–20	21–24	25–29	30–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P					M			K				N		S		
				HC					HC			HC				HC		HC		
			WKP25S	WKP35S	WSP45	WSP45S	WXP40	WSP45	WSP45S	WXP40	WAK15	WKP25S	WKP35S	WXP40	WSP45	WXP40	WSP45	WSP45S	WXP40
	P4840P-.R-A57	5–7	☺	☹	☹			☹				☺	☹				☹		
	P4840P-.R-E57	5–7	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	5–7	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	5–7	☺	☹	☹			☹				☺	☹				☹		
	P4841P-.R-E57	5–7	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	5–7		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	5–7		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	5–7		☺			☹			☹			☺	☹					☹

P48 . . C = Centre insert
P48 . . P = Outer insert

HC = Coated carbide



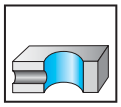
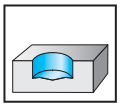
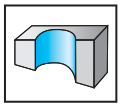
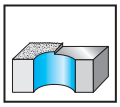
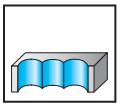
B 185 D 1 B 450 B 456

Insert drills, 5 x Dc
B4215

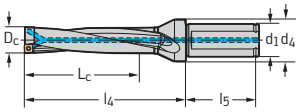
Xtra·tec®



D_c 17–59 | 5×D_c | Z=1

	P	M	K	N	S	H	O
B4215	●●		●●	●			

Tool	Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	d_4 mm	kg	No. of indexable inserts	Type
Parallel shank with flat 	B4215.F40.51.Z1.255R-8	51	255	295	70	40	50	3,21	1 1	P484 . P-8R- .. P484 . C-8R- ..
	B4215.F40.52.Z1.260R-8	52	260	300	70	40	50	3,35	1 1	
	B4215.F40.53.Z1.265R-8	53	265	305	70	40	50	3,5	1 1	
	B4215.F40.54.Z1.270R-8	54	270	310	70	40	50	3,66	1 1	
	B4215.F40.55.Z1.275R-8	55	275	315	70	40	50	3,83	1 1	
	B4215.F40.56.Z1.280R-8	56	280	320	70	40	50	4,01	1 1	
	B4215.F40.57.Z1.285R-8	57	285	325	70	40	50	4,20	1 1	
	B4215.F40.58.Z1.290R-8	58	290	330	70	40	50	4,39	1 1	
	B4215.F40.59.Z1.295R-8	59	295	335	70	40	50	4,59	1 1	

Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	17–20	21–24	25–29	30–35	36–42	43–59
	Clamping screw for indexable insert Tightening torque	FS2111 (Torx 7IP) 0,9 Nm	FS1454 (Torx 8IP) 1,2 Nm	FS1457 (Torx 9IP) 2,0 Nm	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

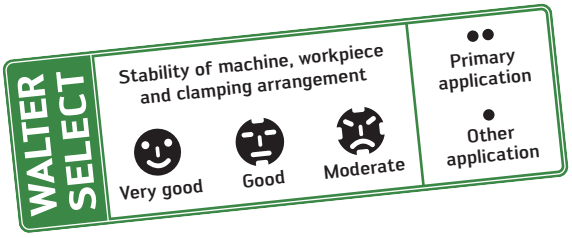
Accessories

	D_c [mm]	17–20	21–24	25–29	30–42	43–59
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2012 (Torx 8IP)	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)

Indexable inserts

	Designation	Size	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45	N HC WXP40	S HC WSP45	S HC WSP45S	S HC WXP40
	P4840P-.R-A57	8–8	☺	☹	☹			☹				☺	☹				☹		
	P4840P-.R-E57	8–8	☺	☺	☹			☹				☺	☹				☹		
	P4840P-.R-E67	8–8	☺	☺	☹			☹				☺	☹		☺		☹		
	P4841P-.R-A57	8–8	☺	☹	☹			☹				☺	☹				☹		
	P4841P-.R-E57	8–8	☺	☺	☹			☹				☺	☹				☹		
	P4840C-.R-E67	8–8		☺			☹			☹			☺	☹		☺			☹
	P4841C-.R-A57	8–8		☺			☹			☹			☹	☹					☹
	P4841C-.R-E57	8–8		☺			☹			☹			☺	☹					☹

HC = Coated carbide

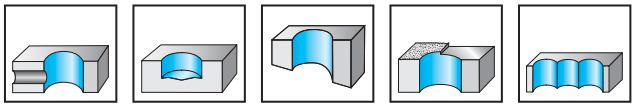


B 185 D 1 B 450 B 456

Insert drills, 2 x Dc, DIN1835/6535
B3212



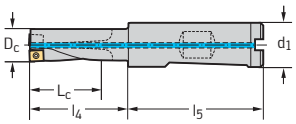
D_c 10–18	2×D_c	Z=1



	P	M	K	N	S	H	O
B3212	●●	●●	●●	●	●●		

Tool

DIN 1835 form B,
turned 90°
DIN 6535 form HE



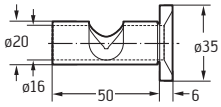
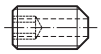
Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	kg	No. of indexable inserts	Type
B3212.DF.10,0.Z01.20R	10	20	31	49	16	0,08	2	
B3212.DF.10,2.Z01.20R	10,2	20,4	31	49	16	0,08	2	
B3212.DF.10,5.Z01.21R	10,5	21	32	49	16	0,09	2	
B3212.DF.11,0.Z01.22R	11	22	34	49	16	0,09	2	
B3212.DF.11,5.Z01.23R	11,5	23	35	49	16	0,09	2	
B3212.DF.11,7.Z01.23R	11,7	23,4	35	49	16	0,01	2	LCMX050203- ..
B3212.DF.12,0.Z01.24R	12	24	36	49	16	0,09	2	
B3212.DF.12,5.Z01.25R	12,5	25	38	49	16	0,09	2	
B3212.DF.13,0.Z01.26R	13	26	39	49	16	0,09	2	
B3212.DF.13,5.Z01.27R	13,5	27	40	49	16	0,1	2	
B3212.DF.13,7.Z01.27R	13,7	27,4	41	49	16	0,1	2	
B3212.DF.14,0.Z01.28R	14	28	42	49	16	0,1	2	
B3212.DF.14,5.Z01.29R	14,5	29	43	49	16	0,1	2	
B3212.DF.15,0.Z01.30R	15	30	44	49	16	0,11	2	
B3212.DF.15,5.Z01.31R	15,5	31	45	49	16	0,11	2	
B3212.DF.15,7.Z01.31R	15,7	31,4	46	49	16	0,11	2	
B3212.DF.16,0.Z01.32R	16	32	47	49	16	0,11	2	LCMX06T204- ..
B3212.DF.16,5.Z01.33R	16,5	33	48	49	16	0,12	2	
B3212.DF.17,0.Z01.34R	17	34	49	49	16	0,12	2	
B3212.DF.17,5.Z01.35R	17,5	35	51	49	16	0,12	2	
B3212.DF.18,0.Z01.36R	18	36	52	49	16	0,13	2	

Possible X adjustment for drilling into solid material greater than the nominal diameter
X = +0.2 mm/–0.1 mm → ΔD = +0.4 mm/–0.2 mm
Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

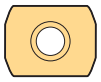
Assembly parts

	D_c [mm]	10–13,7	14–15,7	16–18
	Clamping screw for indexable insert Tightening torque	FS1012 (Torx 6) 0,4 Nm	FS1004 (Torx 7) 0,6 Nm	FS1020 (Torx 7) 0,6 Nm

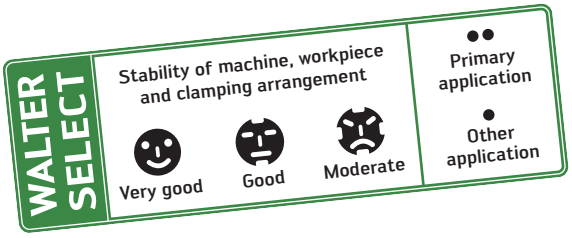
Accessories

	D_c [mm]	10–13,7	14–18
	Eccentric sleeve	FS1207	FS1207
	Screwdriver	FS1063 (Torx 6)	FS309 (Torx 7)
	Clamping screw for chuck	FS1209 (SW 8)	FS1209 (SW 8)

Indexable inserts

	Designation	l mm	l_2 mm	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45S	S HC WSP45	S HC WSP45S	S HC WXP40
	LCMX050203-B57	4	5,2	☺	😐			☹			☹		😐	😐	☹				☹
	LCMX06T204-B57	5,2	6,6	☺	😐			☹			☹		😐	😐	☹				☹
	LCMX050203-D57	4	5,2	☺	😐		☹	☹		☹	☹		😐	☹	☹			☹	☹
	LCMX06T204-D57	5,2	6,6	☺	😐		☹	☹		☹	☹		😐	☹	☹			☹	☹
	LCMX050203-E57	4	5,2	☺	😐		☹	☹		☹	☹		😐	☹	☹	☺		☹	☹
	LCMX06T204-E57	5,2	6,6	☺	😐		☹	☹		☹	☹		😐	☹	☹	☺		☹	☹

HC = Coated carbide

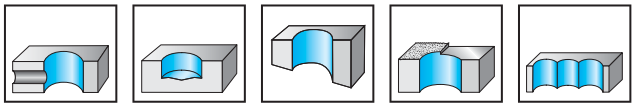


B 188 D 1 B 452 B 456

Insert drills, 3 x Dc, DIN1835/6535
B3213



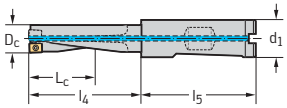
D_c 10–18	3×D_c	Z=1



	P	M	K	N	S	H	O
B3213	●●	●●	●●	●	●●		

Tool

DIN 1835 form B,
turned 90°
DIN 6535 form HE



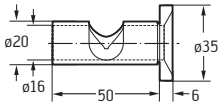
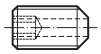
Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	kg	No. of indexable inserts	Type
B3213.DF.10,0.Z01.30R	10	30	41	49	16	0,09	2	
B3213.DF.10,2.Z01.30R	10,2	30,6	41	49	16	0,09	2	
B3213.DF.10,5.Z01.31R	10,5	31,5	43	49	16	0,09	2	
B3213.DF.11,0.Z01.33R	11	33	45	49	16	0,09	2	
B3213.DF.11,5.Z01.34R	11,5	34,5	47	49	16	0,1	2	
B3213.DF.11,7.Z01.35R	11,7	35,1	48	49	16	0,1	2	LCMX050203- ..
B3213.DF.12,0.Z01.36R	12	36	48	49	16	0,1	2	
B3213.DF.12,5.Z01.37R	12,5	37,5	50	49	16	0,1	2	
B3213.DF.13,0.Z01.39R	13	39	52	49	16	0,1	2	
B3213.DF.13,5.Z01.40R	13,5	40,5	54	49	16	0,11	2	
B3213.DF.13,7.Z01.41R	13,7	41,1	55	49	16	0,11	2	
B3213.DF.14,0.Z01.42R	14	42	56	49	16	0,11	2	
B3213.DF.14,5.Z01.43R	14,5	43,5	57	49	16	0,11	2	
B3213.DF.15,0.Z01.45R	15	45	59	49	16	0,12	2	
B3213.DF.15,5.Z01.46R	15,5	46,5	61	49	16	0,12	2	
B3213.DF.15,7.Z01.47R	15,7	47	62	49	16	0,13	2	
B3213.DF.16,0.Z01.48R	16	48	63	49	16	0,13	2	LCMX06T204- ..
B3213.DF.16,5.Z01.49R	16,5	49,5	65	49	16	0,12	2	
B3213.DF.17,0.Z01.51R	17	51	66	49	16	0,12	2	
B3213.DF.17,5.Z01.52R	17,5	52,5	68	49	16	0,14	2	
B3213.DF.18,0.Z01.54R	18	54	70	49	16	0,16	2	

Possible X adjustment for drilling into solid material greater than the nominal diameter
X = +0.2 mm/–0.1 mm → ΔD = +0.4 mm/–0.2 mm
Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

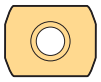
Assembly parts

	D_c [mm]	10–13,7	14–15,7	16–18
	Clamping screw for indexable insert Tightening torque	FS1012 (Torx 6) 0,4 Nm	FS1004 (Torx 7) 0,6 Nm	FS1020 (Torx 7) 0,6 Nm

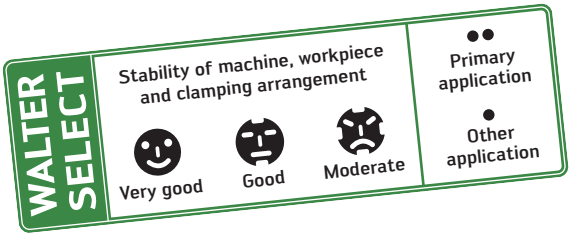
Accessories

	D_c [mm]	10–13,7	14–18
	Eccentric sleeve	FS1207	FS1207
	Screwdriver	FS1063 (Torx 6)	FS309 (Torx 7)
	Clamping screw for chuck	FS1209 (SW 8)	FS1209 (SW 8)

Indexable inserts

	Designation	l mm	l_2 mm	P HC WKP25S	P HC WKP35S	P HC WSP45	P HC WSP45S	P HC WXP40	M HC WSP45	M HC WSP45S	M HC WXP40	K HC WAK15	K HC WKP25S	K HC WKP35S	K HC WXP40	N HC WSP45S	S HC WSP45	S HC WSP45S	S HC WXP40
	LCMX050203-B57	4	5,2	☺	☹			☒			☒		☹	☹	☒				☒
	LCMX06T204-B57	5,2	6,6	☺	☹			☒			☒		☹	☹	☒				☒
	LCMX050203-D57	4	5,2	☺	☹		☒	☒		☒	☒		☹	☒	☒			☒	☒
	LCMX06T204-D57	5,2	6,6	☺	☹		☒	☒		☒	☒		☹	☒	☒			☒	☒
	LCMX050203-E57	4	5,2	☺	☹		☒	☒		☒	☒		☹	☒	☒	☺		☒	☒
	LCMX06T204-E57	5,2	6,6	☺	☹		☒	☒		☒	☒		☹	☒	☒	☺		☒	☒

HC = Coated carbide

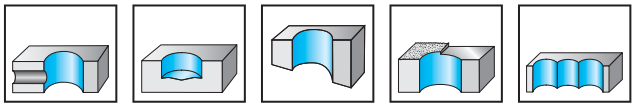


B 188 D 1 B 452 B 456

Insert drills, 4 x Dc, DIN1835/6535
B3214



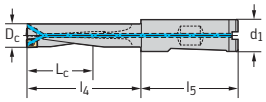
D_c 10–18	4×D_c	Z=1



	P	M	K	N	S	H	O
B3214			●●	●			

Tool

DIN 1835 form B,
turned 90°
DIN 6535 form HE



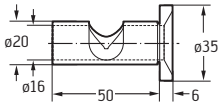
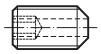
Designation	D_c mm	L_c mm	l_4 mm	l_5 mm	d_1 mm	kg	No. of indexable inserts	Type
B3214.DF.10,0.Z01.40R	10	40	51	49	16	0,09	2	LCMX050203- ..
B3214.DF.10,5.Z01.42R	10,5	42	53	49	16	0,1	2	
B3214.DF.11,0.Z01.44R	11	44	56	49	16	0,1	2	
B3214.DF.11,5.Z01.46R	11,5	46	58	49	16	0,1	2	
B3214.DF.12,0.Z01.48R	12	48	60	49	16	0,11	2	
B3214.DF.12,5.Z01.50R	12,5	50	62	49	16	0,11	2	
B3214.DF.13,0.Z01.52R	13	52	65	49	16	0,12	2	
B3214.DF.13,5.Z01.54R	13,5	54	67	49	16	0,12	2	
B3214.DF.14,0.Z01.56R	14	56	70	49	16	0,12	2	LCMX06T204- ..
B3214.DF.14,5.Z01.58R	14,5	58	72	49	16	0,13	2	
B3214.DF.15,0.Z01.60R	15	60	74	49	16	0,13	2	
B3214.DF.15,5.Z01.62R	15,5	62	77	49	16	0,14	2	
B3214.DF.16,0.Z01.64R	16	64	78	49	16	0,14	2	
B3214.DF.16,5.Z01.66R	16,5	66	82	49	16	0,15	2	
B3214.DF.17,5.Z01.70R	17,5	70	85	49	16	0,16	2	
B3214.DF.18,0.Z01.72R	18	72	88	49	16	0,17	2	

Possible X adjustment for drilling into solid material greater than the nominal diameter
X = +0.2 mm/–0.1 mm → ΔD = +0.4 mm/–0.2 mm
Important: A disc forms where through holes are created by a rotating tool. This disc might then be ejected. Please take precautionary measures.
Bodies and assembly parts are included in the scope of delivery.

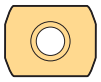
Assembly parts

	D_c [mm]	10–13,5	14–15,5	16–18
	Clamping screw for indexable insert Tightening torque	FS1012 (Torx 6) 0,4 Nm	FS1004 (Torx 7) 0,6 Nm	FS1020 (Torx 7) 0,6 Nm

Accessories

	D_c [mm]	10–13,5	14–18
	Eccentric sleeve	FS1207	FS1207
	Screwdriver	FS1063 (Torx 6)	FS309 (Torx 7)
	Clamping screw for chuck	FS1209 (SW 8)	FS1209 (SW 8)

Indexable inserts

	Designation	l mm	l_2 mm	P HC					M HC			K HC				N HC	S HC		
				WKP25S	WKP35S	WSP45	WSP45S	WXP40	WSP45	WSP45S	WXP40	WAK15	WKP25S	WKP35S	WXP40	WSP45S	WSP45	WSP45S	WXP40
	LCMX050203-B57	4	5,2	☺	☹			☒			☒		☹	☹	☒				☒
	LCMX06T204-B57	5,2	6,6	☺	☹			☒			☒		☹	☹	☒				☒
	LCMX050203-D57	4	5,2	☺	☹		☒	☒		☒	☒		☹	☒	☒			☒	☒
	LCMX06T204-D57	5,2	6,6	☺	☹		☒	☒		☒	☒		☹	☒	☒			☒	☒
	LCMX050203-E57	4	5,2	☺	☹		☒	☒		☒	☒		☹	☒	☒	☺		☒	☒
	LCMX06T204-E57	5,2	6,6	☺	☹		☒	☒		☒	☒		☹	☒	☒	☺		☒	☒

HC = Coated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

B 188 | D 1 | B 452 | B 456

Product range overview
HSS drills

Machining									
Drilling depth	~3 × D_c					~5 × D_c			~8 × D_c
Designation	**A1149XPL UFL®**	**A1154TFT VA Inox**	**A1148 UFL®**	**A1111**	**A2258 UFL® – LH**	**A3143**	**A3153 LH**	**A6292TIN MegaJet**	**A1249XPL UFL®**
Standard	DIN 1897	DIN 1897	DIN 1897	DIN 1897	Walter	DIN 1899	DIN 1899	Walter	DIN 338
Dia. range [mm]	1–20	2–16	1–20	0,5–32	1–20	0,05–1,45	0,15–1,4	5–24	1–20
Page	B 262	B 267	B 270	B 275	B 279	B 282	B 284	B 286	B 288
									

Machining									
Drilling depth	~8 × D_c								
Designation	**A1254TFT VA Inox**	**A1247 Alpha® XE**	**A1244 VA**	**A1222 UFL®**	**A1211TIN**	**A1211**	**A1212**	**A1234 UFL® – LH**	**A1231 LH**
Standard	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338
Dia. range [mm]	3–16	1–16	0,3–15	1–16	0,5–16	0,2–22	0,4–16	1,016–12,303	0,2–20
Page	B 292	B 294	B 298	B 303	B 308	B 308	B 316	B 319	B 322
									

Machining									
Drilling depth	~12 × D_c					~16 × D_c	~22 × D_c	~30 × D_c	~60 × D_c
Designation	**A1549TFP UFL®**	**A1547 Alpha® XE**	**A1544 VA**	**A1522 UFL®**	**A1511**	**A1622 UFL®**	**A1722 UFL®**	**A1822 UFL®**	**A1922S UFL®**
Standard	DIN 340	DIN 340	DIN 340	DIN 340	DIN 340	DIN 1869 I	DIN 1869 II	DIN 1869 III	Walter
Dia. range [mm]	1–12	1–12,7	1–12	1–22,225	0,5–22	2–12,7	3–12	3,5–12	6–14
Page	B 325	B 327	B 330	B 332	B 336	B 339	B 342	B 343	B 344
									

LH = Left-hand cutting

Product range overview
HSS drills

Machining									
Drilling depth	~85 × D_c	~8 × D_c				~12 × D_c		~16 × D_c	
Designation	**A1922L UFL®**	**A4211TIN**	**A4211**	**A4244 VA**	**A4247 Alpha® XE**	**A4422 UFL®**	**A4411**	**A4622 UFL®**	**A4611**
Standard	Walter	DIN 345	DIN 345	DIN 345	DIN 345	DIN 341	DIN 341	DIN 1870 I	DIN 1870 I
Dia. range [mm]	8–12	10–30	3–100	10–32	10–40	10–31	5–50	12–30	8–50
Page	B 345	B 346	B 346	B 353	B 355	B 357	B 359	B 362	B 363
									

Machining						
Drilling depth	~22 × D_c				1:50	
Designation	**A4722 UFL®**	**K6221**	**K6222**	**K6223**	**K2929**	**K4929**
Standard	DIN 1870 II	DIN 8374	DIN 8378	DIN 8376	DIN 1898	DIN 1898
Dia. range [mm]	8–40	3,2–8,4	2,5–10,2	4,5–11	2–12	8–25
Page	B 365	B 366	B 367	B 368	B 369	B 370
						

Machining	
	Twist drill set
Designation	**DIN 338**
Type	N; VA; UFL®
Page	B 371
	



Designation key – HSS drilling tools

Example:

A	1	1	49	XPL
1	2	3	4	5

1 – Tool type

A	Twist drills
K	Multi-chamfer step drills/ pin hole drills/centre drills
Z	Drill sets in cartridges and accessories

2 – Shank shape

1	Cylindrical
2	Cylindrical
3	Cylindrical
4	With Morse taper
6	DIN 1835 E

3 – Length in accordance with DIN or Walter standard

Cylindrical		Morse taper	
1	DIN 1897 / 1899	1	Walter standard
2	DIN 338	2	DIN 345
3	DIN 334	3	DIN 346
4	DIN 339	4	DIN 341
5	DIN 340	5	DIN 8041
6	DIN 1869 – Series I	6	DIN 1870 – Series I
7	DIN 1869 – Series II	7	DIN 1870 – Series II
8	DIN 1869 – Series III		
9	Walter standard/DIN 8037		

4 – Tool type

11	Type N (HSS)	34	Type UFL® (HSS-LH)	53	Type ESU (HSS-E LH)
12	Type H (HSS)	43	Type ESU (HSS-E)	54	Type VA stainless steel (HSS-E)
14	120° NC centre drill (HSS)	44	Type VA (HSS-E)	92	Type MegaJet (HSS-E)
15	90° NC centre drill (HSS)	47	Type Alpha® XE (HSS-E)		
22	Type UFL® (HSS)	48	Type UFL® (HSS-E)		
31	Type N (HSS-LH)	49	Type UFL® (HSS-E)		

5 – Coating

TiN	TiN coating
TFT	Tinal® TOP coating
TFP	Tinal® point coating
XPL	AlCrN coating

Walter Select – HSS drilling tools

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: K5.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Choose your tool:

– In accordance with the **drilling depth** or **standard** (e.g. ~3 × D_C or DIN 338)
– For the relevant **machining group** (see step 1: P1–P15; M1–M3; …; 01–06)

Walter Select
HSS drills

Machining					
Drilling depth	~3 × D_C				
Designation	**A1149XPL UFL®**	**A1154TFT VA Inox**	**A1148 UFL®**	**A1111**	**A2258 UFL®**
Direction of cut	Right	Right	Right	Right	Left
Standard	DIN 1897	DIN 1897	DIN 1897	DIN 1897	Walter
Cutting tool material	HSS-E	HSS-E	HSS	HSS-E	HSS-E
Coating	XPL	TFT	Uncoated	Uncoated	Uncoated
Dia. range [mm]	1–20	2–16	1–20	0,5–32	1–20
Page	B 262	B 267	B 270	B 275	B 279

STEP 3

Select your **cutting data** from the table from page B 474 onwards:

– **Cutting speed:**
v_C; VCRR (v_C rating chart for micro)
– **Feed:**
VRR (feed rating chart)

Go to the row for your machining group (e.g. K5) and the column for your selected drilling and reaming tool. You will find the cutting speed v_C or the VCRR and VRR there. You can find the v_C rating chart (**VCRR**) and the feed rating chart (**VRR**) from page B 480 onwards.

Cutting data
HSS drills

= Wet machining (E = emulsion, O = oil)
= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

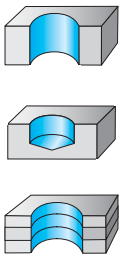
v_c = Cutting speed
VRR = Feed rating chart from page B 481 onwards

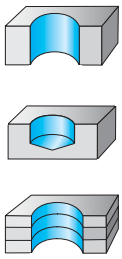
VCRR = v_c rating chart from page B 480 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth	~3 × D_c						
						Designation	**A1149XPL UFL®**				**A1154TFT VA Inox**		
						Standard	DIN 1897				DIN 1897		
						Coating	XPL				TFT		
						Dia. range [mm]	1–20				2–16		
						Page	B 262				B 267		
							v_c	VRR			v_c	VRR	
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	56	12	E	O	56	12	E O
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	63	12	E	O	56	12	E O
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	63	12	E	O			
		C > 0.55%	Annealed	190	640	P4	63	10	E	O			
		C > 0.55%	Heat-treated	300	1010	P5	50	10	E	O			
		Free cutting steel (short-chipping)	Annealed	220	750	P6	56	12	E	O	56	12	E O
	Low-alloyed steel	Annealed		175	590	P7	56	12	E	O	56	12	E O
		Heat-treated		285	960	P8	45	10	E	O			
		Heat-treated		380	1280	P9	28	7	E	O			
		Heat-treated		430	1480	P10	18	5	E	O			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	32	5	E	O			
		Hardened and tempered		300	1010	P12	50	10	E	O			
				380	1280	P13							

Walter Select
HSS drills

Machining						
Drilling depth	~3 × D_c					
Designation	**A1149XPL UFL®**	**A1154TFT VA Inox**	**A1148 UFL®**	**A1111**	**A2258 UFL®**	
Direction of cut	Right	Right	Right	Right	Left	
Standard	DIN 1897	DIN 1897	DIN 1897	DIN 1897	Walter	
Cutting tool material	HSS-E	HSS-E	HSS	HSS-E	HSS-E	
Coating	XPL	TFT	Uncoated	Uncoated	Uncoated	
Dia. range [mm]	1–20	2–16	1–20	0,5–32	1–20	
Page	B 262	B 267	B 270	B 275	B 279	
						
P Steel	●●	●	●●	●●	●●	
M Stainless steel	●●	●●	●●	●	●●	
K Cast iron	●●		●●	●●	●●	
N NF metals	●●	●●	●●	●	●●	
S Materials with difficult cutting properties	●	●	●●	●	●●	
H Hard materials						
O Other	●	●	●	●	●	



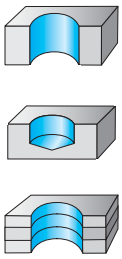
	~5 × D_c			~8 × D_c			
	A3143	**A3153**	**A6292TIN MegaJet**	**A1249XPL UFL®**	**A1254TFT VA Inox**	**A1247 Alpha® XE**	**A1244 VA**
	Right	Left	Right	Right	Right	Right	Right
	DIN 1899	DIN 1899	Walter	DIN 338	DIN 338	DIN 338	DIN 338
	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
	Uncoated	Uncoated	TIN	XPL	TFT	Uncoated	Uncoated
	0,05–1,45	0,15–1,4	5–24	1–20	3–16	1–16	0,3–15
	B 282	B 284	B 286	B 288	B 292	B 294	B 298
							
	●●	●●	●●	●●	●	●●	●
	●	●	●●	●●	●●	●●	●●
	●●	●●	●●	●●		●●	
	●●	●●	●●	●●	●●	●●	●
	●●	●●	●	●	●	●●	●●
	●	●		●	●	●	

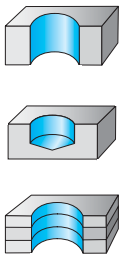
WALTER SELECT

●● Primary application

● Other application

Walter Select
HSS drills

Machining						
Drilling depth	**~8 × D_c**					
Designation	**A1222 UFL®**	**A1211TIN Jobber**	**A1211 Jobber**	**A1212**	**A1234 UFL®**	
Direction of cut	Right	Right	Right	Right	Left	
Standard	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338	
Cutting tool material	HSS	HSS	HSS	HSS	HSS	
Coating	Uncoated	TIN	Uncoated	Uncoated	Uncoated	
Dia. range [mm]	1–16	0,5–16	0,2–22	0,4–16	1,016–12,303	
Page	B 303	B 308	B 308	B 316	B 319	
						
P Steel	●●	●●	●●		●●	
M Stainless steel	●	●	●		●	
K Cast iron	●●	●●	●●		●●	
N NF metals	●●	●	●	●	●●	
S Materials with difficult cutting properties	●	●	●		●	
H Hard materials						
O Other	●	●	●	●	●	



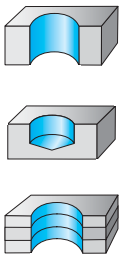
	~8 × D_c	~12 × D_c					~16 × D_c
	A1231	**A1549TFP UFL®**	**A1547 Alpha® XE**	**A1544 VA**	**A1522 UFL®**	**A1511**	**A1622 UFL®**
	Left	Right	Right	Right	Right	Right	Right
	DIN 338	DIN 340	DIN 340	DIN 340	DIN 340	DIN 340	DIN 1869 I
	HSS	HSS-E	HSS-E	HSS-E	HSS	HSS	HSS
	Uncoated	TFP	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
	0,2–20	1–12	1–12,7	1–12	1–22,225	0,5–22	2–12,7
	B 322	B 325	B 327	B 330	B 332	B 336	B 339
							
	●●	●●	●	●	●●	●	●●
		●●	●●	●●	●	●	●
	●●	●●	●●		●●	●	●●
	●	●●	●	●	●●	●	●●
		●	●●	●●	●	●	●
	●	●	●		●	●	●

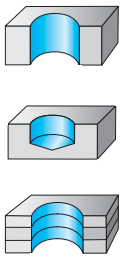
WALTER SELECT

●● Primary application

● Other application

Walter Select
HSS drills

Machining						
Drilling depth	~22 × D_c	~30 × D_c	~60 × D_c	~85 × D_c	~8 × D_c	
Designation	**A1722 UFL®**	**A1822 UFL®**	**A1922S UFL®**	**A1922L UFL®**	**A4211TIN**	
Direction of cut	Right	Right	Right	Right	Right	
Standard	DIN 1869 II	DIN 1869 III	Walter	Walter	DIN 345	
Cutting tool material	HSS	HSS	HSS	HSS	HSS	
Coating	Uncoated	Uncoated	Uncoated	Uncoated	TIN	
Dia. range [mm]	3–12	3,5–12	6–14	8–12	10–30	
Page	B 342	B 343	B 344	B 345	B 346	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●	●	●	●	●●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals	●●	●●	●●	●●	●	
S Materials with difficult cutting properties	●	●	●	●	●	
H Hard materials						
O Other	●	●	●	●	●	



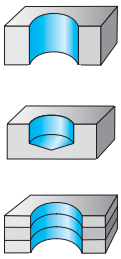
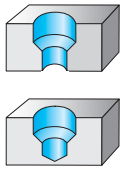
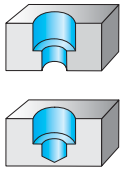
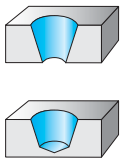
	~8 × D_c			~12 × D_c		~16 × D_c	
	A4211	**A4244 VA**	**A4247 Alpha® XE**	**A4422 UFL®**	**A4411**	**A4622 UFL®**	**A4611**
	Right	Right	Right	Right	Right	Right	Right
	DIN 345	DIN 345	DIN 345	DIN 341	DIN 341	DIN 1870 I	DIN 1870 I
	HSS	HSS-E	HSS-E	HSS	HSS	HSS	HSS
	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
	3–100	10–32	10–40	10–31	5–50	12–30	8–50
	B 346	B 353	B 355	B 357	B 359	B 362	B 363
							
	●●	●	●●	●●	●●	●●	●
	●	●●	●●	●	●	●	●
	●●		●●	●●	●●	●●	●
	●	●	●●	●●	●	●●	●
	●	●●	●●	●	●	●	●
	●		●	●	●	●	●

WALTER SELECT

●● Primary application

● Other application

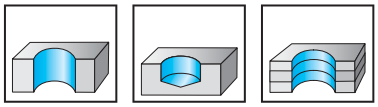
Walter Select
HSS drills

Machining						
Drilling depth	~22 × D_c					
Designation	**A4722 UFL®**	**K6221**	**K6222**	**K6223**	**K2929**	**K4929**
Direction of cut	Right					
Standard	DIN 1870 II	DIN 8374	DIN 8378	DIN 8376	DIN 1898	DIN 1898
Cutting tool material	HSS	HSS	HSS	HSS	HSS	HSS
Coating	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Dia. range [mm]	8–40	3,2–8,4	2,5–10,2	4,5–11	2–12	8–25
Page	B 365	B 366	B 367	B 368	B 369	B 370
						
P Steel	●●	●●	●●	●●	●●	●●
M Stainless steel	●	●●	●●	●●	●●	●●
K Cast iron	●●	●●	●●	●●	●●	●●
N NF metals	●●	●●	●●	●●	●●	●●
S Materials with difficult cutting properties	●	●●	●●	●●	●●	●●
H Hard materials						
O Other	●	●●	●●	●●	●●	●●



HSS-E twist drills, extra short (Stub)
A1149XPL
UFL®

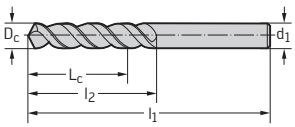




~3×D_c | DIN 1897 |  |  130°

	P	M	K	N	S	H	O
XPL	●●	●●	●●	●●	●		●

Parallel shank



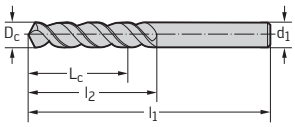
Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1149XPL-1	1		4	26	6	1
A1149XPL-NO60	1,016	No. 60	4	26	6	1,016
A1149XPL-NO59	1,041	No. 59	4	26	6	1,041
A1149XPL-NO58	1,067	No. 58	5	28	7	1,067
A1149XPL-NO57	1,092	No. 57	5	28	7	1,092
A1149XPL-1.1	1,1		5	28	7	1,1
A1149XPL-NO56	1,181	No. 56	6	30	8	1,181
A1149XPL-3/64IN	1,191	3/64"	6	30	8	1,191
A1149XPL-1.2	1,2		6	30	8	1,2
A1149XPL-1.3	1,3		6	30	8	1,3
A1149XPL-NO55	1,321	No. 55	6	32	9	1,321
A1149XPL-NO54	1,397	No. 54	6	32	9	1,397
A1149XPL-1.4	1,4		6	32	9	1,4
A1149XPL-1.5	1,5		6	32	9	1,5
A1149XPL-NO53	1,511	No. 53	7	34	10	1,511
A1149XPL-1/16IN	1,588	1/16"	7	34	10	1,588
A1149XPL-1.6	1,6		7	34	10	1,6
A1149XPL-NO52	1,613	No. 52	7	34	10	1,613
A1149XPL-1.7	1,7		7	34	10	1,7
A1149XPL-NO51	1,702	No. 51	8	36	11	1,702
A1149XPL-NO50	1,778	No. 50	8	36	11	1,778
A1149XPL-1.8	1,8		8	36	11	1,8
A1149XPL-NO49	1,854	No. 49	8	36	11	1,854
A1149XPL-1.9	1,9		8	36	11	1,9
A1149XPL-NO48	1,93	No. 48	8	38	12	1,93
A1149XPL-5/64IN	1,984	5/64"	8	38	12	1,984
A1149XPL-NO47	1,994	No. 47	8	38	12	1,994
A1149XPL-2	2		8	38	12	2
A1149XPL-NO46	2,057	No. 46	8	38	12	2,057
A1149XPL-NO45	2,083	No. 45	8	38	12	2,083
A1149XPL-2.1	2,1		8	38	12	2,1
A1149XPL-NO44	2,184	No. 44	9	40	13	2,184
A1149XPL-2.2	2,2		9	40	13	2,2
A1149XPL-NO43	2,261	No. 43	9	40	13	2,261
A1149XPL-2.3	2,3		9	40	13	2,3
A1149XPL-NO42	2,375	No. 42	10	43	14	2,375
A1149XPL-3/32IN	2,381	3/32"	10	43	14	2,381
A1149XPL-2.4	2,4		10	43	14	2,4
A1149XPL-NO41	2,438	No. 41	10	43	14	2,438
A1149XPL-NO40	2,489	No. 40	10	43	14	2,489
A1149XPL-2.5	2,5		10	43	14	2,5
A1149XPL-NO39	2,527	No. 39	10	43	14	2,527
A1149XPL-NO38	2,578	No. 38	10	43	14	2,578
A1149XPL-2.6	2,6		10	43	14	2,6
A1149XPL-NO37	2,642	No. 37	10	43	14	2,642
A1149XPL-2.7	2,7		11	46	16	2,7
A1149XPL-NO36	2,705	No. 36	11	46	16	2,705
A1149XPL-7/64IN	2,778	7/64"	11	46	16	2,778

Continued

XIII | D 1 | B 474 | B 482

Continued

Parallel shank



Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1149XPL-NO35	2,794	No. 35	11	46	16	2,794
A1149XPL-2.8	2,8		11	46	16	2,8
A1149XPL-NO34	2,819	No. 34	11	46	16	2,819
A1149XPL-NO33	2,87	No. 33	11	46	16	2,87
A1149XPL-2.9	2,9		11	46	16	2,9
A1149XPL-NO32	2,946	No. 32	11	46	16	2,946
A1149XPL-3	3		11	46	16	3
A1149XPL-NO31	3,048	No. 31	12	49	18	3,048
A1149XPL-3.1	3,1		12	49	18	3,1
A1149XPL-1/8IN	3,175	1/8"	12	49	18	3,175
A1149XPL-3.2	3,2		12	49	18	3,2
A1149XPL-NO30	3,264	No. 30	12	49	18	3,264
A1149XPL-3.3	3,3		12	49	18	3,3
A1149XPL-3.4	3,4		14	52	20	3,4
A1149XPL-NO29	3,454	No. 29	14	52	20	3,454
A1149XPL-3.5	3,5		14	52	20	3,5
A1149XPL-NO28	3,569	No. 28	14	52	20	3,569
A1149XPL-9/64IN	3,572	9/64"	14	52	20	3,572
A1149XPL-3.6	3,6		14	52	20	3,6
A1149XPL-NO27	3,658	No. 27	14	52	20	3,658
A1149XPL-3.7	3,7		14	52	20	3,7
A1149XPL-NO26	3,734	No. 26	14	52	20	3,734
A1149XPL-NO25	3,797	No. 25	15	55	22	3,797
A1149XPL-3.8	3,8		15	55	22	3,8
A1149XPL-NO24	3,861	No. 24	15	55	22	3,861
A1149XPL-3.9	3,9		15	55	22	3,9
A1149XPL-NO23	3,912	No. 23	15	55	22	3,912
A1149XPL-5/32IN	3,969	5/32"	15	55	22	3,969
A1149XPL-NO22	3,988	No. 22	15	55	22	3,988
A1149XPL-4	4		15	55	22	4
A1149XPL-NO21	4,039	No. 21	15	55	22	4,039
A1149XPL-NO20	4,089	No. 20	15	55	22	4,089
A1149XPL-4.1	4,1		15	55	22	4,1
A1149XPL-4.2	4,2		15	55	22	4,2
A1149XPL-NO19	4,216	No. 19	15	55	22	4,216
A1149XPL-4.3	4,3		16	58	24	4,3
A1149XPL-NO18	4,305	No. 18	16	58	24	4,305
A1149XPL-11/64IN	4,366	11/64"	16	58	24	4,366
A1149XPL-NO17	4,394	No. 17	16	58	24	4,394
A1149XPL-4.4	4,4		16	58	24	4,4
A1149XPL-NO16	4,496	No. 16	16	58	24	4,496
A1149XPL-4.5	4,5		16	58	24	4,5
A1149XPL-NO15	4,572	No. 15	16	58	24	4,572
A1149XPL-4.6	4,6		16	58	24	4,6
A1149XPL-NO14	4,623	No. 14	16	58	24	4,623
A1149XPL-4.65	4,65		16	58	24	4,65
A1149XPL-NO13	4,699	No. 13	16	58	24	4,699
A1149XPL-4.7	4,7		16	58	24	4,7
A1149XPL-3/16IN	4,763	3/16"	18	62	26	4,763
A1149XPL-4.8	4,8		18	62	26	4,8
A1149XPL-NO12	4,801	No. 12	18	62	26	4,801
A1149XPL-NO11	4,851	No. 11	18	62	26	4,851
A1149XPL-4.9	4,9		18	62	26	4,9
A1149XPL-NO10	4,915	No. 10	18	62	26	4,915
A1149XPL-NO9	4,978	No. 09	18	62	26	4,978
A1149XPL-5	5		18	62	26	5
A1149XPL-NO8	5,055	No. 08	18	62	26	5,055
A1149XPL-5.1	5,1		18	62	26	5,1

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WALTER SELECT

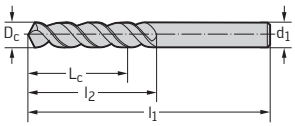
●● Primary application

● Other application

XIII D 1 B 474 B 482

Continued

Parallel shank



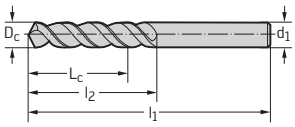
Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1149XPL-NO7	5,105	No. 07	18	62	26	5,105
A1149XPL-13/64IN	5,159	13/64"	18	62	26	5,159
A1149XPL-NO6	5,182	No. 06	18	62	26	5,182
A1149XPL-5.2	5,2		18	62	26	5,2
A1149XPL-NO5	5,22	No. 05	18	62	26	5,22
A1149XPL-5.3	5,3		18	62	26	5,3
A1149XPL-NO4	5,309	No. 04	19	66	28	5,309
A1149XPL-5.4	5,4		19	66	28	5,4
A1149XPL-NO3	5,41	No. 03	19	66	28	5,41
A1149XPL-5.5	5,5		19	66	28	5,5
A1149XPL-5.55	5,55		19	66	28	5,55
A1149XPL-7/32IN	5,556	7/32"	19	66	28	5,556
A1149XPL-5.6	5,6		19	66	28	5,6
A1149XPL-NO2	5,613	No. 02	19	66	28	5,613
A1149XPL-5.7	5,7		19	66	28	5,7
A1149XPL-NO1	5,791	No. 01	19	66	28	5,791
A1149XPL-5.8	5,8		19	66	28	5,8
A1149XPL-5.9	5,9		19	66	28	5,9
A1149XPL-LET.A	5,944	Let.A	19	66	28	5,944
A1149XPL-15/64IN	5,953	15/64"	19	66	28	5,953
A1149XPL-6	6		19	66	28	6
A1149XPL-LET.B	6,045	Let.B	20	70	31	6,045
A1149XPL-6.1	6,1		20	70	31	6,1
A1149XPL-LET.C	6,147	Let.C	20	70	31	6,147
A1149XPL-6.2	6,2		20	70	31	6,2
A1149XPL-LET.D	6,248	Let.D	20	70	31	6,248
A1149XPL-6.3	6,3		20	70	31	6,3
A1149XPL-1/4IN	6,35	1/4"	20	70	31	6,35
A1149XPL-6.4	6,4		20	70	31	6,4
A1149XPL-6.5	6,5		20	70	31	6,5
A1149XPL-LET.F	6,528	Let.F	20	70	31	6,528
A1149XPL-6.6	6,6		20	70	31	6,6
A1149XPL-LET.G	6,629	Let.G	20	70	31	6,629
A1149XPL-6.7	6,7		20	70	31	6,7
A1149XPL-17/64IN	6,747	17/64"	22	74	34	6,747
A1149XPL-LET.H	6,756	Let.H	22	74	34	6,756
A1149XPL-6.8	6,8		22	74	34	6,8
A1149XPL-6.9	6,9		22	74	34	6,9
A1149XPL-LET.I	6,909	Let.I	22	74	34	6,909
A1149XPL-7	7		22	74	34	7
A1149XPL-LET.J	7,036	Let.J	22	74	34	7,036
A1149XPL-7.1	7,1		22	74	34	7,1
A1149XPL-LET.K	7,137	Let.K	22	74	34	7,137
A1149XPL-9/32IN	7,144	9/32"	22	74	34	7,144
A1149XPL-7.2	7,2		22	74	34	7,2
A1149XPL-7.3	7,3		22	74	34	7,3
A1149XPL-LET.L	7,366	Let.L	22	74	34	7,366
A1149XPL-7.4	7,4		22	74	34	7,4
A1149XPL-LET.M	7,493	Let.M	22	74	34	7,493
A1149XPL-7.5	7,5		22	74	34	7,5
A1149XPL-19/64IN	7,541	19/64"	24	79	37	7,541
A1149XPL-7.6	7,6		24	79	37	7,6
A1149XPL-LET.N	7,671	Let.N	24	79	37	7,671
A1149XPL-7.7	7,7		24	79	37	7,7
A1149XPL-7.8	7,8		24	79	37	7,8
A1149XPL-7.9	7,9		24	79	37	7,9
A1149XPL-5/16IN	7,938	5/16"	24	79	37	7,938
A1149XPL-8	8		24	79	37	8
A1149XPL-LET.O	8,026	Let.O	24	79	37	8,026
A1149XPL-8.1	8,1		24	79	37	8,1
A1149XPL-8.2	8,2		24	79	37	8,2
A1149XPL-LET.P	8,204	Let.P	24	79	37	8,204

Continued

XIII D 1 B 474 B 482

Continued

Parallel shank



Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1149XPL-8.3	8,3		24	79	37	8,3
A1149XPL-21/64IN	8,334	21/64"	24	79	37	8,334
A1149XPL-8.4	8,4		24	79	37	8,4
A1149XPL-LET.Q	8,433	Let.Q	24	79	37	8,433
A1149XPL-8.5	8,5		24	79	37	8,5
A1149XPL-8.6	8,6		25	84	40	8,6
A1149XPL-LET.R	8,611	Let.R	25	84	40	8,611
A1149XPL-8.7	8,7		25	84	40	8,7
A1149XPL-11/32IN	8,731	11/32"	25	84	40	8,731
A1149XPL-8.8	8,8		25	84	40	8,8
A1149XPL-LET.S	8,839	Let.S	25	84	40	8,839
A1149XPL-8.9	8,9		25	84	40	8,9
A1149XPL-9	9		25	84	40	9
A1149XPL-LET.T	9,093	Let.T	25	84	40	9,093
A1149XPL-9.1	9,1		25	84	40	9,1
A1149XPL-23/64IN	9,128	23/64"	25	84	40	9,128
A1149XPL-9.2	9,2		25	84	40	9,2
A1149XPL-9.3	9,3		25	84	40	9,3
A1149XPL-LET.U	9,347	Let.U	25	84	40	9,347
A1149XPL-9.4	9,4		25	84	40	9,4
A1149XPL-9.5	9,5		25	84	40	9,5
A1149XPL-3/8IN	9,525	3/8"	27	89	43	9,525
A1149XPL-LET.V	9,576	Let.V	27	89	43	9,576
A1149XPL-9.6	9,6		27	89	43	9,6
A1149XPL-9.7	9,7		27	89	43	9,7
A1149XPL-9.8	9,8		27	89	43	9,8
A1149XPL-LET.W	9,804	Let.W	27	89	43	9,804
A1149XPL-9.9	9,9		27	89	43	9,9
A1149XPL-25/64IN	9,922	25/64"	27	89	43	9,922
A1149XPL-10	10		27	89	43	10
A1149XPL-LET.X	10,084	Let.X	27	89	43	10,084
A1149XPL-10.2	10,2		27	89	43	10,2
A1149XPL-LET.Y	10,262	Let.Y	27	89	43	10,262
A1149XPL-13/32IN	10,319	13/32"	27	89	43	10,319
A1149XPL-LET.Z	10,49	Let.Z	27	89	43	10,49
A1149XPL-10.5	10,5		27	89	43	10,5
A1149XPL-27/64IN	10,716	27/64"	29	95	47	10,716
A1149XPL-10.8	10,8		29	95	47	10,8
A1149XPL-11	11		29	95	47	11
A1149XPL-7/16IN	11,113	7/16"	29	95	47	11,113
A1149XPL-11.2	11,2		29	95	47	11,2
A1149XPL-11.3	11,3		29	95	47	11,3
A1149XPL-11.5	11,5		29	95	47	11,5
A1149XPL-29/64IN	11,509	29/64"	29	95	47	11,509
A1149XPL-11.8	11,8		29	95	47	11,8
A1149XPL-15/32IN	11,906	15/32"	37	102	51	11,906
A1149XPL-12	12		37	102	51	12
A1149XPL-31/64IN	12,303	31/64"	37	102	51	12,303
A1149XPL-12.5	12,5		37	102	51	12,5
A1149XPL-1/2IN	12,7	1/2"	37	102	51	12,7
A1149XPL-12.8	12,8		37	102	51	12,8
A1149XPL-13	13		37	102	51	13
A1149XPL-33/64IN	13,097	33/64"	37	102	51	13,097
A1149XPL-13.1	13,1		37	102	51	13,1
A1149XPL-13.3	13,3		40	107	54	13,3
A1149XPL-17/32IN	13,494	17/32"	40	107	54	13,494
A1149XPL-13.5	13,5		40	107	54	13,5
A1149XPL-35/64IN	13,891	35/64"	40	107	54	13,891

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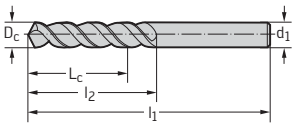
WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 474 B 482

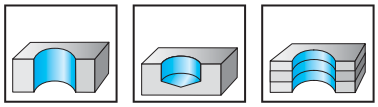
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	Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank 	A1149XPL-14	14		40	107	54	14
	A1149XPL-9/16IN	14,288	9/16"	41	111	56	14,288
	A1149XPL-14.5	14,5		41	111	56	14,5
	A1149XPL-37/64IN	14,684	37/64"	41	111	56	14,684
	A1149XPL-15	15		41	111	56	15
	A1149XPL-19/32IN	15,081	19/32"	42	115	58	15,081
	A1149XPL-15.1	15,1		42	115	58	15,1
	A1149XPL-15.3	15,3		42	115	58	15,3
	A1149XPL-39/64IN	15,478	39/64"	42	115	58	15,478
	A1149XPL-15.5	15,5		42	115	58	15,5
	A1149XPL-5/8IN	15,875	5/8"	42	115	58	15,875
	A1149XPL-16	16		42	115	58	16
	A1149XPL-41/64IN	16,272	41/64"	43	119	60	16,272
	A1149XPL-16.5	16,5		43	119	60	16,5
	A1149XPL-21/32IN	16,669	21/32"	43	119	60	16,669
	A1149XPL-17	17		43	119	60	17
	A1149XPL-43/64IN	17,066	43/64"	44	123	62	17,066
	A1149XPL-11/16IN	17,463	11/16"	44	123	62	17,463
	A1149XPL-17.5	17,5		44	123	62	17,5
	A1149XPL-45/64IN	17,859	45/64"	44	123	62	17,859
	A1149XPL-18	18		44	123	62	18
	A1149XPL-23/32IN	18,256	23/32"	45	127	64	18,256
	A1149XPL-18.5	18,5		45	127	64	18,5
	A1149XPL-47/64IN	18,653	47/64"	45	127	64	18,653
	A1149XPL-19	19		45	127	64	19
	A1149XPL-3/4IN	19,05	3/4"	46	131	66	19,05
	A1149XPL-19.5	19,5		46	131	66	19,5
	A1149XPL-20	20		46	131	66	20

XIII D 1 B 474 B 482

HSS-E twist drills, short series
A1154TFT
VA Inox

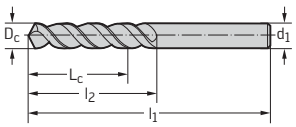




~3×D_c | DIN 1897 | 118°

	P	M	K	N	S	H	O
TFT	●	●●		●●	●		●

Parallel shank



Designation TFT	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1154TFT-2	2	8	38	12	2
A1154TFT-2.1	2,1	8	38	12	2,1
A1154TFT-2.2	2,2	9	40	13	2,2
A1154TFT-2.3	2,3	9	40	13	2,3
A1154TFT-2.4	2,4	10	43	14	2,4
A1154TFT-2.5	2,5	10	43	14	2,5
A1154TFT-2.6	2,6	10	43	14	2,6
A1154TFT-2.7	2,7	11	46	16	2,7
A1154TFT-2.8	2,8	11	46	16	2,8
A1154TFT-2.9	2,9	11	46	16	2,9
A1154TFT-3	3	11	46	16	3
A1154TFT-3.1	3,1	12	49	18	3,1
A1154TFT-3.2	3,2	12	49	18	3,2
A1154TFT-3.3	3,3	12	49	18	3,3
A1154TFT-3.4	3,4	14	52	20	3,4
A1154TFT-3.5	3,5	14	52	20	3,5
A1154TFT-3.6	3,6	14	52	20	3,6
A1154TFT-3.7	3,7	14	52	20	3,7
A1154TFT-3.8	3,8	15	55	22	3,8
A1154TFT-3.9	3,9	15	55	22	3,9
A1154TFT-4	4	15	55	22	4
A1154TFT-4.1	4,1	15	55	22	4,1
A1154TFT-4.2	4,2	15	55	22	4,2
A1154TFT-4.3	4,3	16	58	24	4,3
A1154TFT-4.4	4,4	16	58	24	4,4
A1154TFT-4.5	4,5	16	58	24	4,5
A1154TFT-4.6	4,6	16	58	24	4,6
A1154TFT-4.65	4,65	16	58	24	4,65
A1154TFT-4.7	4,7	16	58	24	4,7
A1154TFT-4.8	4,8	18	62	26	4,8
A1154TFT-4.9	4,9	18	62	26	4,9
A1154TFT-5	5	18	62	26	5
A1154TFT-5.1	5,1	18	62	26	5,1
A1154TFT-5.2	5,2	18	62	26	5,2
A1154TFT-5.3	5,3	18	62	26	5,3
A1154TFT-5.4	5,4	19	66	28	5,4
A1154TFT-5.5	5,5	19	66	28	5,5
A1154TFT-5.55	5,55	19	66	28	5,55
A1154TFT-5.6	5,6	19	66	28	5,6
A1154TFT-5.7	5,7	19	66	28	5,7
A1154TFT-5.8	5,8	19	66	28	5,8
A1154TFT-5.9	5,9	19	66	28	5,9
A1154TFT-6	6	19	66	28	6
A1154TFT-6.1	6,1	20	70	31	6,1

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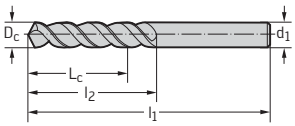
●● Primary application

● Other application

XIII | D 1 | B 474 | B 482

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Parallel shank

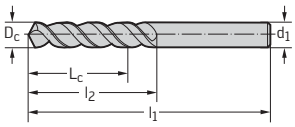


Designation TFT	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1154TFT-6.2	6,2	20	70	31	6,2
A1154TFT-6.3	6,3	20	70	31	6,3
A1154TFT-6.4	6,4	20	70	31	6,4
A1154TFT-6.5	6,5	20	70	31	6,5
A1154TFT-6.6	6,6	20	70	31	6,6
A1154TFT-6.7	6,7	20	70	31	6,7
A1154TFT-6.8	6,8	22	74	34	6,8
A1154TFT-6.9	6,9	22	74	34	6,9
A1154TFT-7	7	22	74	34	7
A1154TFT-7.1	7,1	22	74	34	7,1
A1154TFT-7.2	7,2	22	74	34	7,2
A1154TFT-7.3	7,3	22	74	34	7,3
A1154TFT-7.4	7,4	22	74	34	7,4
A1154TFT-7.5	7,5	22	74	34	7,5
A1154TFT-7.6	7,6	24	79	37	7,6
A1154TFT-7.7	7,7	24	79	37	7,7
A1154TFT-7.8	7,8	24	79	37	7,8
A1154TFT-7.9	7,9	24	79	37	7,9
A1154TFT-8	8	24	79	37	8
A1154TFT-8.1	8,1	24	79	37	8,1
A1154TFT-8.2	8,2	24	79	37	8,2
A1154TFT-8.3	8,3	24	79	37	8,3
A1154TFT-8.4	8,4	24	79	37	8,4
A1154TFT-8.5	8,5	24	79	37	8,5
A1154TFT-8.6	8,6	25	84	40	8,6
A1154TFT-8.7	8,7	25	84	40	8,7
A1154TFT-8.8	8,8	25	84	40	8,8
A1154TFT-8.9	8,9	25	84	40	8,9
A1154TFT-9	9	25	84	40	9
A1154TFT-9.1	9,1	25	84	40	9,1
A1154TFT-9.2	9,2	25	84	40	9,2
A1154TFT-9.3	9,3	25	84	40	9,3
A1154TFT-9.4	9,4	25	84	40	9,4
A1154TFT-9.5	9,5	25	84	40	9,5
A1154TFT-9.6	9,6	27	89	43	9,6
A1154TFT-9.7	9,7	27	89	43	9,7
A1154TFT-9.8	9,8	27	89	43	9,8
A1154TFT-9.9	9,9	27	89	43	9,9
A1154TFT-10	10	27	89	43	10
A1154TFT-10.2	10,2	27	89	43	10,2
A1154TFT-10.3	10,3	27	89	43	10,3
A1154TFT-10.5	10,5	27	89	43	10,5
A1154TFT-10.6	10,6	27	89	43	10,6
A1154TFT-10.7	10,7	29	95	47	10,7
A1154TFT-10.8	10,8	29	95	47	10,8
A1154TFT-10.9	10,9	29	95	47	10,9
A1154TFT-11	11	29	95	47	11
A1154TFT-11.1	11,1	29	95	47	11,1
A1154TFT-11.2	11,2	29	95	47	11,2
A1154TFT-11.3	11,3	29	95	47	11,3
A1154TFT-11.5	11,5	29	95	47	11,5
A1154TFT-11.6	11,6	29	95	47	11,6
A1154TFT-11.8	11,8	29	95	47	11,8
A1154TFT-11.9	11,9	37	102	51	11,9
A1154TFT-12	12	37	102	51	12
A1154TFT-12.1	12,1	37	102	51	12,1
A1154TFT-12.3	12,3	37	102	51	12,3
A1154TFT-12.5	12,5	37	102	51	12,5
A1154TFT-12.6	12,6	37	102	51	12,6
A1154TFT-12.7	12,7	37	102	51	12,7
A1154TFT-13	13	37	102	51	13
A1154TFT-13.1	13,1	37	102	51	13,1

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XIII D 1 B 474 B 482

Continued

	Designation TFT	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank 	A1154TFT-13.2	13,2	37	102	51	13,2
	A1154TFT-13.3	13,3	40	107	54	13,3
	A1154TFT-13.4	13,4	40	107	54	13,4
	A1154TFT-13.5	13,5	40	107	54	13,5
	A1154TFT-13.6	13,6	40	107	54	13,6
	A1154TFT-14	14	40	107	54	14
	A1154TFT-14.1	14,1	41	111	56	14,1
	A1154TFT-14.2	14,2	41	111	56	14,2
	A1154TFT-14.5	14,5	41	111	56	14,5
	A1154TFT-14.8	14,8	41	111	56	14,8
	A1154TFT-15	15	41	111	56	15
	A1154TFT-15.1	15,1	42	115	58	15,1
	A1154TFT-15.2	15,2	42	115	58	15,2
	A1154TFT-15.3	15,3	42	115	58	15,3
	A1154TFT-15.4	15,4	42	115	58	15,4
	A1154TFT-15.5	15,5	42	115	58	15,5
	A1154TFT-15.8	15,8	42	115	58	15,8
	A1154TFT-16	16	42	115	58	16

WALTER SELECT

●● Primary application

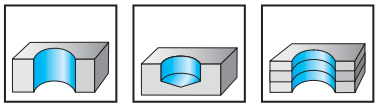
● Other application

XIII D 1 B 474 B 482

HSS-E twist drills, extra short (Stub)
A1148
UFL®



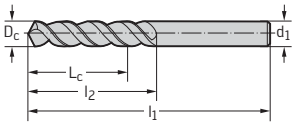
– Uncoated up to 1.9 mm



~3×D_c | DIN 1897 |  |  130°

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●

Parallel shank



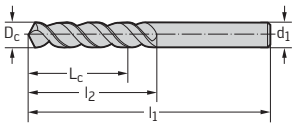
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1148-1	1		4	26	6	1
A1148-NO60	1,016	No. 60	4	26	6	1,016
A1148-NO59	1,041	No. 59	4	26	6	1,041
A1148-NO58	1,067	No. 58	5	28	7	1,067
A1148-NO57	1,092	No. 57	5	28	7	1,092
A1148-1.1	1,1		5	28	7	1,1
A1148-NO56	1,181	No. 56	6	30	8	1,181
A1148-3/64IN	1,191	3/64"	6	30	8	1,191
A1148-1.2	1,2		6	30	8	1,2
A1148-1.3	1,3		6	30	8	1,3
A1148-NO55	1,321	No. 55	6	32	9	1,321
A1148-NO54	1,397	No. 54	6	32	9	1,397
A1148-1.4	1,4		6	32	9	1,4
A1148-1.5	1,5		6	32	9	1,5
A1148-NO53	1,511	No. 53	7	34	10	1,511
A1148-1/16IN	1,588	1/16"	7	34	10	1,588
A1148-1.6	1,6		7	34	10	1,6
A1148-NO52	1,613	No. 52	7	34	10	1,613
A1148-1.7	1,7		7	34	10	1,7
A1148-NO51	1,702	No. 51	8	36	11	1,702
A1148-NO50	1,778	No. 50	8	36	11	1,778
A1148-1.8	1,8		8	36	11	1,8
A1148-NO49	1,854	No. 49	8	36	11	1,854
A1148-1.9	1,9		8	36	11	1,9
A1148-NO48	1,93	No. 48	8	38	12	1,93
A1148-5/64IN	1,984	5/64"	8	38	12	1,984
A1148-NO47	1,994	No. 47	8	38	12	1,994
A1148-2	2		8	38	12	2
A1148-NO46	2,057	No. 46	8	38	12	2,057
A1148-NO45	2,083	No. 45	8	38	12	2,083
A1148-2.1	2,1		8	38	12	2,1
A1148-NO44	2,184	No. 44	9	40	13	2,184
A1148-2.2	2,2		9	40	13	2,2
A1148-NO43	2,261	No. 43	9	40	13	2,261
A1148-2.3	2,3		9	40	13	2,3
A1148-NO42	2,375	No. 42	10	43	14	2,375
A1148-3/32IN	2,381	3/32"	10	43	14	2,381
A1148-2.4	2,4		10	43	14	2,4
A1148-NO41	2,438	No. 41	10	43	14	2,438
A1148-NO40	2,489	No. 40	10	43	14	2,489
A1148-2.5	2,5		10	43	14	2,5
A1148-NO39	2,527	No. 39	10	43	14	2,527
A1148-NO38	2,578	No. 38	10	43	14	2,578
A1148-2.6	2,6		10	43	14	2,6
A1148-NO37	2,642	No. 37	10	43	14	2,642
A1148-2.7	2,7		11	46	16	2,7
A1148-NO36	2,705	No. 36	11	46	16	2,705
A1148-7/64IN	2,778	7/64"	11	46	16	2,778

Continued

XIII | D 1 | B 474 | B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1148-NO35	2,794	No. 35	11	46	16	2,794
A1148-2.8	2,8		11	46	16	2,8
A1148-NO34	2,819	No. 34	11	46	16	2,819
A1148-NO33	2,87	No. 33	11	46	16	2,87
A1148-2.9	2,9		11	46	16	2,9
A1148-NO32	2,946	No. 32	11	46	16	2,946
A1148-3	3		11	46	16	3
A1148-NO31	3,048	No. 31	12	49	18	3,048
A1148-3.1	3,1		12	49	18	3,1
A1148-1/8IN	3,175	1/8"	12	49	18	3,175
A1148-3.2	3,2		12	49	18	3,2
A1148-NO30	3,264	No. 30	12	49	18	3,264
A1148-3.3	3,3		12	49	18	3,3
A1148-3.4	3,4		14	52	20	3,4
A1148-NO29	3,454	No. 29	14	52	20	3,454
A1148-3.5	3,5		14	52	20	3,5
A1148-NO28	3,569	No. 28	14	52	20	3,569
A1148-9/64IN	3,572	9/64"	14	52	20	3,572
A1148-3.6	3,6		14	52	20	3,6
A1148-NO27	3,658	No. 27	14	52	20	3,658
A1148-3.7	3,7		14	52	20	3,7
A1148-NO26	3,734	No. 26	14	52	20	3,734
A1148-NO25	3,797	No. 25	15	55	22	3,797
A1148-3.8	3,8		15	55	22	3,8
A1148-NO24	3,861	No. 24	15	55	22	3,861
A1148-3.9	3,9		15	55	22	3,9
A1148-NO23	3,912	No. 23	15	55	22	3,912
A1148-5/32IN	3,969	5/32"	15	55	22	3,969
A1148-NO22	3,988	No. 22	15	55	22	3,988
A1148-4	4		15	55	22	4
A1148-NO21	4,039	No. 21	15	55	22	4,039
A1148-NO20	4,089	No. 20	15	55	22	4,089
A1148-4.1	4,1		15	55	22	4,1
A1148-4.2	4,2		15	55	22	4,2
A1148-NO19	4,216	No. 19	15	55	22	4,216
A1148-4.3	4,3		16	58	24	4,3
A1148-NO18	4,305	No. 18	16	58	24	4,305
A1148-11/64IN	4,366	11/64"	16	58	24	4,366
A1148-NO17	4,394	No. 17	16	58	24	4,394
A1148-4.4	4,4		16	58	24	4,4
A1148-NO16	4,496	No. 16	16	58	24	4,496
A1148-4.5	4,5		16	58	24	4,5
A1148-NO15	4,572	No. 15	16	58	24	4,572
A1148-4.6	4,6		16	58	24	4,6
A1148-NO14	4,623	No. 14	16	58	24	4,623
A1148-NO13	4,699	No. 13	16	58	24	4,699
A1148-4.7	4,7		16	58	24	4,7
A1148-3/16IN	4,763	3/16"	18	62	26	4,763
A1148-4.8	4,8		18	62	26	4,8
A1148-NO12	4,801	No. 12	18	62	26	4,801
A1148-NO11	4,851	No. 11	18	62	26	4,851
A1148-4.9	4,9		18	62	26	4,9
A1148-NO10	4,915	No. 10	18	62	26	4,915
A1148-NO9	4,978	No. 09	18	62	26	4,978
A1148-5	5		18	62	26	5
A1148-NO8	5,055	No. 08	18	62	26	5,055
A1148-5.1	5,1		18	62	26	5,1
A1148-NO7	5,105	No. 07	18	62	26	5,105

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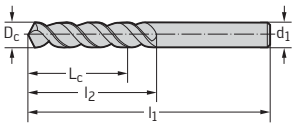
●● Primary application

● Other application

XIII D 1 B 474 B 482

Continued

Parallel shank



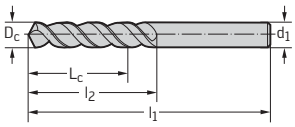
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1148-13/64IN	5,159	13/64"	18	62	26	5,159
A1148-NO6	5,182	No. 06	18	62	26	5,182
A1148-5.2	5,2		18	62	26	5,2
A1148-NO5	5,22	No. 05	18	62	26	5,22
A1148-5.3	5,3		18	62	26	5,3
A1148-NO4	5,309	No. 04	19	66	28	5,309
A1148-5.4	5,4		19	66	28	5,4
A1148-NO3	5,41	No. 03	19	66	28	5,41
A1148-5.5	5,5		19	66	28	5,5
A1148-7/32IN	5,556	7/32"	19	66	28	5,556
A1148-5.6	5,6		19	66	28	5,6
A1148-NO2	5,613	No. 02	19	66	28	5,613
A1148-5.7	5,7		19	66	28	5,7
A1148-NO1	5,791	No. 01	19	66	28	5,791
A1148-5.8	5,8		19	66	28	5,8
A1148-5.9	5,9		19	66	28	5,9
A1148-LET.A	5,944	Let.A	19	66	28	5,944
A1148-15/64IN	5,953	15/64"	19	66	28	5,953
A1148-6	6		19	66	28	6
A1148-LET.B	6,045	Let.B	20	70	31	6,045
A1148-6.1	6,1		20	70	31	6,1
A1148-LET.C	6,147	Let.C	20	70	31	6,147
A1148-6.2	6,2		20	70	31	6,2
A1148-LET.D	6,248	Let.D	20	70	31	6,248
A1148-6.3	6,3		20	70	31	6,3
A1148-1/4IN	6,35	1/4"	20	70	31	6,35
A1148-6.4	6,4		20	70	31	6,4
A1148-6.5	6,5		20	70	31	6,5
A1148-LET.F	6,528	Let.F	20	70	31	6,528
A1148-6.6	6,6		20	70	31	6,6
A1148-LET.G	6,629	Let.G	20	70	31	6,629
A1148-6.7	6,7		20	70	31	6,7
A1148-17/64IN	6,747	17/64"	22	74	34	6,747
A1148-LET.H	6,756	Let.H	22	74	34	6,756
A1148-6.8	6,8		22	74	34	6,8
A1148-6.9	6,9		22	74	34	6,9
A1148-LET.I	6,909	Let.I	22	74	34	6,909
A1148-7	7		22	74	34	7
A1148-LET.J	7,036	Let.J	22	74	34	7,036
A1148-7.1	7,1		22	74	34	7,1
A1148-LET.K	7,137	Let.K	22	74	34	7,137
A1148-9/32IN	7,144	9/32"	22	74	34	7,144
A1148-7.2	7,2		22	74	34	7,2
A1148-7.3	7,3		22	74	34	7,3
A1148-LET.L	7,366	Let.L	22	74	34	7,366
A1148-7.4	7,4		22	74	34	7,4
A1148-LET.M	7,493	Let.M	22	74	34	7,493
A1148-7.5	7,5		22	74	34	7,5
A1148-19/64IN	7,541	19/64"	24	79	37	7,541
A1148-7.6	7,6		24	79	37	7,6
A1148-LET.N	7,671	Let.N	24	79	37	7,671
A1148-7.7	7,7		24	79	37	7,7
A1148-7.8	7,8		24	79	37	7,8
A1148-7.9	7,9		24	79	37	7,9
A1148-5/16IN	7,938	5/16"	24	79	37	7,938
A1148-8	8		24	79	37	8
A1148-LET.O	8,026	Let.O	24	79	37	8,026
A1148-8.1	8,1		24	79	37	8,1
A1148-8.2	8,2		24	79	37	8,2
A1148-LET.P	8,204	Let.P	24	79	37	8,204
A1148-8.3	8,3		24	79	37	8,3
A1148-21/64IN	8,334	21/64"	24	79	37	8,334

Continued

XIII D 1 B 474 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1148-8.4	8,4		24	79	37	8,4
A1148-LET.Q	8,433	Let.Q	24	79	37	8,433
A1148-8.5	8,5		24	79	37	8,5
A1148-8.6	8,6		25	84	40	8,6
A1148-LET.R	8,611	Let.R	25	84	40	8,611
A1148-8.7	8,7		25	84	40	8,7
A1148-11/32IN	8,731	11/32"	25	84	40	8,731
A1148-8.8	8,8		25	84	40	8,8
A1148-LET.S	8,839	Let.S	25	84	40	8,839
A1148-8.9	8,9		25	84	40	8,9
A1148-9	9		25	84	40	9
A1148-LET.T	9,093	Let.T	25	84	40	9,093
A1148-9.1	9,1		25	84	40	9,1
A1148-23/64IN	9,128	23/64"	25	84	40	9,128
A1148-9.2	9,2		25	84	40	9,2
A1148-9.3	9,3		25	84	40	9,3
A1148-LET.U	9,347	Let.U	25	84	40	9,347
A1148-9.4	9,4		25	84	40	9,4
A1148-9.5	9,5		25	84	40	9,5
A1148-3/8IN	9,525	3/8"	27	89	43	9,525
A1148-LET.V	9,576	Let.V	27	89	43	9,576
A1148-9.6	9,6		27	89	43	9,6
A1148-9.7	9,7		27	89	43	9,7
A1148-9.8	9,8		27	89	43	9,8
A1148-LET.W	9,804	Let.W	27	89	43	9,804
A1148-9.9	9,9		27	89	43	9,9
A1148-25/64IN	9,922	25/64"	27	89	43	9,922
A1148-10	10		27	89	43	10
A1148-LET.X	10,084	Let.X	27	89	43	10,084
A1148-10.2	10,2		27	89	43	10,2
A1148-LET.Y	10,262	Let.Y	27	89	43	10,262
A1148-13/32IN	10,319	13/32"	27	89	43	10,319
A1148-LET.Z	10,49	Let.Z	27	89	43	10,49
A1148-10.5	10,5		27	89	43	10,5
A1148-27/64IN	10,716	27/64"	29	95	47	10,716
A1148-10.8	10,8		29	95	47	10,8
A1148-11	11		29	95	47	11
A1148-7/16IN	11,113	7/16"	29	95	47	11,113
A1148-11.2	11,2		29	95	47	11,2
A1148-11.5	11,5		29	95	47	11,5
A1148-29/64IN	11,509	29/64"	29	95	47	11,509
A1148-11.8	11,8		29	95	47	11,8
A1148-15/32IN	11,906	15/32"	37	102	51	11,906
A1148-12	12		37	102	51	12
A1148-31/64IN	12,303	31/64"	37	102	51	12,303
A1148-12.5	12,5		37	102	51	12,5
A1148-1/2IN	12,7	1/2"	37	102	51	12,7
A1148-12.8	12,8		37	102	51	12,8
A1148-13	13		37	102	51	13
A1148-33/64IN	13,097	33/64"	37	102	51	13,097
A1148-13.3	13,3		40	107	54	13,3
A1148-17/32IN	13,494	17/32"	40	107	54	13,494
A1148-13.5	13,5		40	107	54	13,5
A1148-35/64IN	13,891	35/64"	40	107	54	13,891
A1148-14	14		40	107	54	14
A1148-9/16IN	14,288	9/16"	41	111	56	14,288
A1148-14.5	14,5		41	111	56	14,5
A1148-37/64IN	14,684	37/64"	41	111	56	14,684

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WALTER SELECT

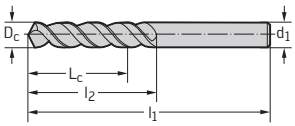
●● Primary application

● Other application

XIII D 1 B 474 B 482

Continued

Parallel shank



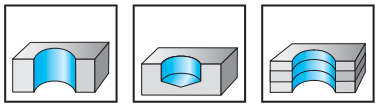
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1148-15	15		41	111	56	15
A1148-19/32IN	15,081	19/32"	42	115	58	15,081
A1148-15.3	15,3		42	115	58	15,3
A1148-39/64IN	15,478	39/64"	42	115	58	15,478
A1148-15.5	15,5		42	115	58	15,5
A1148-5/8IN	15,875	5/8"	42	115	58	15,875
A1148-16	16		42	115	58	16
A1148-41/64IN	16,272	41/64"	43	119	60	16,272
A1148-16.5	16,5		43	119	60	16,5
A1148-21/32IN	16,669	21/32"	43	119	60	16,669
A1148-17	17		43	119	60	17
A1148-43/64IN	17,066	43/64"	44	123	62	17,066
A1148-11/16IN	17,463	11/16"	44	123	62	17,463
A1148-17.5	17,5		44	123	62	17,5
A1148-45/64IN	17,859	45/64"	44	123	62	17,859
A1148-18	18		44	123	62	18
A1148-23/32IN	18,256	23/32"	45	127	64	18,256
A1148-18.5	18,5		45	127	64	18,5
A1148-47/64IN	18,653	47/64"	45	127	64	18,653
A1148-19	19		45	127	64	19
A1148-3/4IN	19,05	3/4"	46	131	66	19,05
A1148-19.5	19,5		46	131	66	19,5
A1148-20	20		46	131	66	20

XIII D 1 B 474 B 482

HSS twist drills, extra short (Stub)
A1111



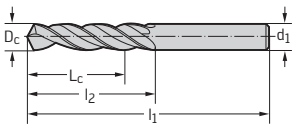
– Uncoated up to 3 mm
– Type N



~3×D_c | DIN 1897 |  |  118°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●	●		●

Parallel shank



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1111-0.5	0,5	2,2	20	3	0,5
A1111-0.6	0,6	2,6	21	3,5	0,6
A1111-0.7	0,7	3,3	23	4,5	0,7
A1111-0.8	0,8	3,7	24	5	0,8
A1111-0.9	0,9	4	25	5,5	0,9
A1111-1	1	4	26	6	1
A1111-1.05	1,05	4	26	6	1,05
A1111-1.1	1,1	5	28	7	1,1
A1111-1.15	1,15	5	28	7	1,15
A1111-1.2	1,2	6	30	8	1,2
A1111-1.25	1,25	6	30	8	1,25
A1111-1.3	1,3	6	30	8	1,3
A1111-1.35	1,35	6	32	9	1,35
A1111-1.4	1,4	6	32	9	1,4
A1111-1.45	1,45	6	32	9	1,45
A1111-1.5	1,5	6	32	9	1,5
A1111-1.55	1,55	7	34	10	1,55
A1111-1.6	1,6	7	34	10	1,6
A1111-1.65	1,65	7	34	10	1,65
A1111-1.7	1,7	7	34	10	1,7
A1111-1.75	1,75	8	36	11	1,75
A1111-1.8	1,8	8	36	11	1,8
A1111-1.85	1,85	8	36	11	1,85
A1111-1.9	1,9	8	36	11	1,9
A1111-1.95	1,95	8	38	12	1,95
A1111-2	2	8	38	12	2
A1111-2.05	2,05	8	38	12	2,05
A1111-2.1	2,1	8	38	12	2,1
A1111-2.15	2,15	9	40	13	2,15
A1111-2.2	2,2	9	40	13	2,2
A1111-2.25	2,25	9	40	13	2,25
A1111-2.3	2,3	9	40	13	2,3
A1111-2.35	2,35	9	40	13	2,35
A1111-2.4	2,4	10	43	14	2,4
A1111-2.45	2,45	10	43	14	2,45
A1111-2.5	2,5	10	43	14	2,5
A1111-2.55	2,55	10	43	14	2,55
A1111-2.6	2,6	10	43	14	2,6
A1111-2.65	2,65	10	43	14	2,65
A1111-2.7	2,7	11	46	16	2,7
A1111-2.75	2,75	11	46	16	2,75
A1111-2.8	2,8	11	46	16	2,8
A1111-2.85	2,85	11	46	16	2,85
A1111-2.9	2,9	11	46	16	2,9

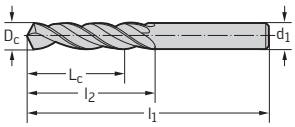
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WALTER SELECT
●● Primary application
● Other application

D 1 | B 474 | B 482

Continued

Parallel shank



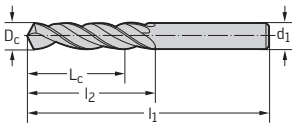
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1111-2.95	2,95	11	46	16	2,95
A1111-3	3	11	46	16	3
A1111-3.1	3,1	12	49	18	3,1
A1111-3.2	3,2	12	49	18	3,2
A1111-3.25	3,25	12	49	18	3,25
A1111-3.3	3,3	12	49	18	3,3
A1111-3.4	3,4	14	52	20	3,4
A1111-3.5	3,5	14	52	20	3,5
A1111-3.6	3,6	14	52	20	3,6
A1111-3.7	3,7	14	52	20	3,7
A1111-3.8	3,8	15	55	22	3,8
A1111-3.9	3,9	15	55	22	3,9
A1111-4	4	15	55	22	4
A1111-4.1	4,1	15	55	22	4,1
A1111-4.2	4,2	15	55	22	4,2
A1111-4.25	4,25	15	55	22	4,25
A1111-4.3	4,3	16	58	24	4,3
A1111-4.4	4,4	16	58	24	4,4
A1111-4.5	4,5	16	58	24	4,5
A1111-4.6	4,6	16	58	24	4,6
A1111-4.7	4,7	16	58	24	4,7
A1111-4.75	4,75	16	58	24	4,75
A1111-4.8	4,8	18	62	26	4,8
A1111-4.9	4,9	18	62	26	4,9
A1111-5	5	18	62	26	5
A1111-5.1	5,1	18	62	26	5,1
A1111-5.2	5,2	18	62	26	5,2
A1111-5.25	5,25	18	62	26	5,25
A1111-5.3	5,3	18	62	26	5,3
A1111-5.4	5,4	19	66	28	5,4
A1111-5.5	5,5	19	66	28	5,5
A1111-5.6	5,6	19	66	28	5,6
A1111-5.7	5,7	19	66	28	5,7
A1111-5.75	5,75	19	66	28	5,75
A1111-5.8	5,8	19	66	28	5,8
A1111-5.9	5,9	19	66	28	5,9
A1111-6	6	19	66	28	6
A1111-6.1	6,1	20	70	31	6,1
A1111-6.2	6,2	20	70	31	6,2
A1111-6.3	6,3	20	70	31	6,3
A1111-6.4	6,4	20	70	31	6,4
A1111-6.5	6,5	20	70	31	6,5
A1111-6.6	6,6	20	70	31	6,6
A1111-6.7	6,7	20	70	31	6,7
A1111-6.75	6,75	22	74	34	6,75
A1111-6.8	6,8	22	74	34	6,8
A1111-6.9	6,9	22	74	34	6,9
A1111-7	7	22	74	34	7
A1111-7.1	7,1	22	74	34	7,1
A1111-7.2	7,2	22	74	34	7,2
A1111-7.3	7,3	22	74	34	7,3
A1111-7.4	7,4	22	74	34	7,4
A1111-7.5	7,5	22	74	34	7,5
A1111-7.6	7,6	24	79	37	7,6
A1111-7.7	7,7	24	79	37	7,7
A1111-7.75	7,75	24	79	37	7,75
A1111-7.8	7,8	24	79	37	7,8
A1111-7.9	7,9	24	79	37	7,9
A1111-8	8	24	79	37	8
A1111-8.1	8,1	24	79	37	8,1
A1111-8.2	8,2	24	79	37	8,2
A1111-8.25	8,25	24	79	37	8,25

Continued

D 1 B 474 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1111-8.3	8,3	24	79	37	8,3
A1111-8.4	8,4	24	79	37	8,4
A1111-8.5	8,5	24	79	37	8,5
A1111-8.6	8,6	25	84	40	8,6
A1111-8.7	8,7	25	84	40	8,7
A1111-8.8	8,8	25	84	40	8,8
A1111-8.9	8,9	25	84	40	8,9
A1111-9	9	25	84	40	9
A1111-9.1	9,1	25	84	40	9,1
A1111-9.2	9,2	25	84	40	9,2
A1111-9.3	9,3	25	84	40	9,3
A1111-9.4	9,4	25	84	40	9,4
A1111-9.5	9,5	25	84	40	9,5
A1111-9.6	9,6	27	89	43	9,6
A1111-9.7	9,7	27	89	43	9,7
A1111-9.8	9,8	27	89	43	9,8
A1111-9.9	9,9	27	89	43	9,9
A1111-10	10	27	89	43	10
A1111-10.1	10,1	27	89	43	10,1
A1111-10.2	10,2	27	89	43	10,2
A1111-10.3	10,3	27	89	43	10,3
A1111-10.4	10,4	27	89	43	10,4
A1111-10.5	10,5	27	89	43	10,5
A1111-10.6	10,6	27	89	43	10,6
A1111-10.7	10,7	29	95	47	10,7
A1111-10.8	10,8	29	95	47	10,8
A1111-10.9	10,9	29	95	47	10,9
A1111-11	11	29	95	47	11
A1111-11.1	11,1	29	95	47	11,1
A1111-11.2	11,2	29	95	47	11,2
A1111-11.3	11,3	29	95	47	11,3
A1111-11.4	11,4	29	95	47	11,4
A1111-11.5	11,5	29	95	47	11,5
A1111-11.6	11,6	29	95	47	11,6
A1111-11.7	11,7	29	95	47	11,7
A1111-11.8	11,8	29	95	47	11,8
A1111-11.9	11,9	37	102	51	11,9
A1111-12	12	37	102	51	12
A1111-12.1	12,1	37	102	51	12,1
A1111-12.2	12,2	37	102	51	12,2
A1111-12.3	12,3	37	102	51	12,3
A1111-12.4	12,4	37	102	51	12,4
A1111-12.5	12,5	37	102	51	12,5
A1111-12.6	12,6	37	102	51	12,6
A1111-12.7	12,7	37	102	51	12,7
A1111-12.8	12,8	37	102	51	12,8
A1111-12.9	12,9	37	102	51	12,9
A1111-13	13	37	102	51	13
A1111-13.1	13,1	37	102	51	13,1
A1111-13.2	13,2	37	102	51	13,2
A1111-13.3	13,3	40	107	54	13,3
A1111-13.4	13,4	40	107	54	13,4
A1111-13.5	13,5	40	107	54	13,5
A1111-13.6	13,6	40	107	54	13,6
A1111-13.7	13,7	40	107	54	13,7
A1111-13.8	13,8	40	107	54	13,8
A1111-13.9	13,9	40	107	54	13,9
A1111-14	14	40	107	54	14

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WALTER SELECT

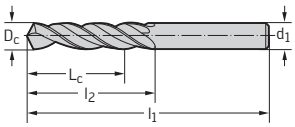
●● Primary application

● Other application

D 1 B 474 B 482

Continued

Parallel shank



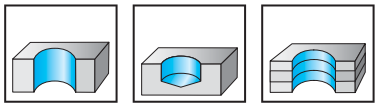
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1111-14.1	14,1	41	111	56	14,1
A1111-14.2	14,2	41	111	56	14,2
A1111-14.3	14,3	41	111	56	14,3
A1111-14.4	14,4	41	111	56	14,4
A1111-14.5	14,5	41	111	56	14,5
A1111-14.6	14,6	41	111	56	14,6
A1111-14.7	14,7	41	111	56	14,7
A1111-14.8	14,8	41	111	56	14,8
A1111-14.9	14,9	41	111	56	14,9
A1111-15	15	41	111	56	15
A1111-15.5	15,5	42	115	58	15,5
A1111-16	16	42	115	58	16
A1111-16.5	16,5	43	119	60	16,5
A1111-17	17	43	119	60	17
A1111-17.5	17,5	44	123	62	17,5
A1111-18	18	44	123	62	18
A1111-18.5	18,5	45	127	64	18,5
A1111-19	19	45	127	64	19
A1111-19.5	19,5	46	131	66	19,5
A1111-20	20	46	131	66	20
A1111-20.5	20,5	46	136	68	20,5
A1111-21	21	46	136	68	21
A1111-21.5	21,5	47	141	70	21,5
A1111-22	22	47	141	70	22
A1111-22.5	22,5	48	146	72	22,5
A1111-23	23	48	146	72	23
A1111-23.5	23,5	48	146	72	23,5
A1111-24	24	50	151	75	24
A1111-24.5	24,5	50	151	75	24,5
A1111-25	25	50	151	75	25
A1111-25.5	25,5	51	156	78	25,5
A1111-26	26	51	156	78	26
A1111-26.5	26,5	51	156	78	26,5
A1111-27	27	53	162	81	27
A1111-27.5	27,5	53	162	81	27,5
A1111-28	28	53	162	81	28
A1111-28.5	28,5	54	168	84	28,5
A1111-29	29	54	168	84	29
A1111-29.5	29,5	54	168	84	29,5
A1111-30	30	54	168	84	30
A1111-31	31	55	174	87	31
A1111-32	32	56	180	90	32

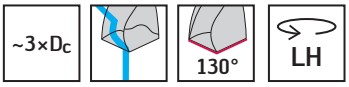
D 1 B 474 B 482

HSS-E twist drills, extra short (Stub)
A2258
UFL®



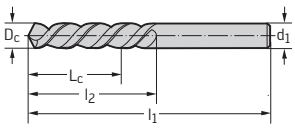
– Overall length DIN 1897, flutes extended compared to DIN 1897





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A2258-1	1		6	26	8	1
A2258-NO60	1,016	No. 60	6	26	8	1,016
A2258-1.1	1,1		7	28	9	1,1
A2258-1.2	1,2		8	30	10	1,2
A2258-1.3	1,3		8	30	10	1,3
A2258-NO55	1,321	No. 55	9	32	12	1,321
A2258-NO54	1,397	No. 54	9	32	12	1,397
A2258-1.4	1,4		9	32	12	1,4
A2258-1.5	1,5		9	32	12	1,5
A2258-NO53	1,511	No. 53	10	34	13	1,511
A2258-1/16IN	1,588	1/16"	10	34	13	1,588
A2258-1.6	1,6		10	34	13	1,6
A2258-NO52	1,613	No. 52	10	34	13	1,613
A2258-1.7	1,7		10	34	13	1,7
A2258-NO50	1,778	No. 50	11	36	14	1,778
A2258-1.8	1,8		11	36	14	1,8
A2258-NO49	1,854	No. 49	11	36	14	1,854
A2258-1.9	1,9		11	36	14	1,9
A2258-NO48	1,93	No. 48	12	38	16	1,93
A2258-5/64IN	1,984	5/64"	12	38	16	1,984
A2258-2	2		12	38	16	2
A2258-NO46	2,057	No. 46	12	38	16	2,057
A2258-2.1	2,1		12	38	16	2,1
A2258-2.2	2,2		13	40	17	2,2
A2258-NO43	2,261	No. 43	13	40	17	2,261
A2258-2.3	2,3		13	40	17	2,3
A2258-NO42	2,375	No. 42	14	43	18	2,375
A2258-3/32IN	2,381	3/32"	14	43	18	2,381
A2258-2.4	2,4		14	43	18	2,4
A2258-NO41	2,438	No. 41	14	43	18	2,438
A2258-NO40	2,489	No. 40	14	43	18	2,489
A2258-2.5	2,5		14	43	18	2,5
A2258-NO38	2,578	No. 38	14	43	18	2,578
A2258-2.6	2,6		14	43	18	2,6
A2258-2.7	2,7		16	46	21	2,7
A2258-NO36	2,705	No. 36	16	46	21	2,705
A2258-7/64IN	2,778	7/64"	16	46	21	2,778
A2258-NO35	2,794	No. 35	16	46	21	2,794
A2258-2.8	2,8		16	46	21	2,8
A2258-NO33	2,87	No. 33	16	46	21	2,87
A2258-2.9	2,9		16	46	21	2,9
A2258-3	3		16	46	21	3
A2258-NO31	3,048	No. 31	17	49	23	3,048
A2258-3.1	3,1		17	49	23	3,1

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WALTER SELECT

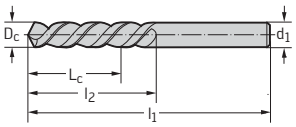
●● Primary application

● Other application

D 1 B 474 B 482

Continued

Parallel shank



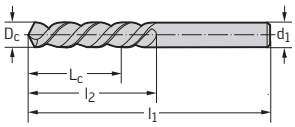
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A2258-1/8IN	3,175	1/8"	17	49	23	3,175
A2258-3.2	3,2		17	49	23	3,2
A2258-3.3	3,3		17	49	23	3,3
A2258-3.4	3,4		20	52	26	3,4
A2258-NO29	3,454	No. 29	20	52	26	3,454
A2258-3.5	3,5		20	52	26	3,5
A2258-9/64IN	3,572	9/64"	20	52	26	3,572
A2258-3.6	3,6		20	52	26	3,6
A2258-NO27	3,658	No. 27	20	52	26	3,658
A2258-3.7	3,7		20	52	26	3,7
A2258-NO26	3,734	No. 26	20	52	26	3,734
A2258-NO25	3,797	No. 25	22	55	29	3,797
A2258-3.8	3,8		22	55	29	3,8
A2258-NO24	3,861	No. 24	22	55	29	3,861
A2258-3.9	3,9		22	55	29	3,9
A2258-5/32IN	3,969	5/32"	22	55	29	3,969
A2258-NO22	3,988	No. 22	22	55	29	3,988
A2258-4	4		22	55	29	4
A2258-NO21	4,039	No. 21	22	55	29	4,039
A2258-NO20	4,089	No. 20	22	55	29	4,089
A2258-4.1	4,1		22	55	29	4,1
A2258-4.2	4,2		22	55	29	4,2
A2258-NO19	4,216	No. 19	22	55	29	4,216
A2258-4.3	4,3		23	58	31	4,3
A2258-NO18	4,305	No. 18	23	58	31	4,305
A2258-11/64IN	4,366	11/64"	23	58	31	4,366
A2258-NO17	4,394	No. 17	23	58	31	4,394
A2258-4.4	4,4		23	58	31	4,4
A2258-NO16	4,496	No. 16	23	58	31	4,496
A2258-4.5	4,5		23	58	31	4,5
A2258-NO15	4,572	No. 15	23	58	31	4,572
A2258-4.6	4,6		23	58	31	4,6
A2258-NO14	4,623	No. 14	23	58	31	4,623
A2258-4.7	4,7		23	58	31	4,7
A2258-3/16IN	4,763	3/16"	26	62	34	4,763
A2258-4.8	4,8		26	62	34	4,8
A2258-NO12	4,801	No. 12	26	62	34	4,801
A2258-NO11	4,851	No. 11	26	62	34	4,851
A2258-4.9	4,9		26	62	34	4,9
A2258-NO10	4,915	No. 10	26	62	34	4,915
A2258-NO9	4,978	No. 09	26	62	34	4,978
A2258-5	5		26	62	34	5
A2258-5.1	5,1		26	62	34	5,1
A2258-NO7	5,105	No. 07	26	62	34	5,105
A2258-13/64IN	5,159	13/64"	26	62	34	5,159
A2258-NO6	5,182	No. 06	26	62	34	5,182
A2258-5.2	5,2		26	62	34	5,2
A2258-NO5	5,22	No. 05	26	62	34	5,22
A2258-5.3	5,3		26	62	34	5,3
A2258-NO4	5,309	No. 04	27	66	36	5,309
A2258-5.4	5,4		27	66	36	5,4
A2258-5.5	5,5		27	66	36	5,5
A2258-7/32IN	5,556	7/32"	27	66	36	5,556
A2258-5.6	5,6		27	66	36	5,6
A2258-5.7	5,7		27	66	36	5,7
A2258-NO1	5,791	No. 01	27	66	36	5,791
A2258-5.8	5,8		27	66	36	5,8
A2258-5.9	5,9		27	66	36	5,9
A2258-6	6		27	66	36	6
A2258-6.1	6,1		29	70	40	6,1
A2258-6.2	6,2		29	70	40	6,2
A2258-6.3	6,3		29	70	40	6,3

Continued

D 1 B 474 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A2258-1/4IN	6,35	1/4"	29	70	40	6,35
A2258-6.4	6,4		29	70	40	6,4
A2258-6.5	6,5		29	70	40	6,5
A2258-6.6	6,6		29	70	40	6,6
A2258-6.7	6,7		29	70	40	6,7
A2258-6.8	6,8		32	74	44	6,8
A2258-6.9	6,9		32	74	44	6,9
A2258-7	7		32	74	44	7
A2258-7.1	7,1		32	74	44	7,1
A2258-9/32IN	7,144	9/32"	32	74	44	7,144
A2258-7.2	7,2		32	74	44	7,2
A2258-7.3	7,3		32	74	44	7,3
A2258-7.4	7,4		32	74	44	7,4
A2258-7.5	7,5		32	74	44	7,5
A2258-7.6	7,6		35	79	48	7,6
A2258-7.8	7,8		35	79	48	7,8
A2258-7.9	7,9		35	79	48	7,9
A2258-8	8		35	79	48	8
A2258-8.1	8,1		35	79	48	8,1
A2258-8.2	8,2		35	79	48	8,2
A2258-8.3	8,3		35	79	48	8,3
A2258-8.4	8,4		35	79	48	8,4
A2258-8.5	8,5		35	79	48	8,5
A2258-8.6	8,6		37	84	52	8,6
A2258-8.7	8,7		37	84	52	8,7
A2258-11/32IN	8,731	11/32"	37	84	52	8,731
A2258-8.9	8,9		37	84	52	8,9
A2258-9	9		37	84	52	9
A2258-9.1	9,1		37	84	52	9,1
A2258-9.3	9,3		37	84	52	9,3
A2258-9.5	9,5		37	84	52	9,5
A2258-3/8IN	9,525	3/8"	40	89	56	9,525
A2258-9.6	9,6		40	89	56	9,6
A2258-9.7	9,7		40	89	56	9,7
A2258-9.8	9,8		40	89	56	9,8
A2258-10	10		40	89	56	10
A2258-10.2	10,2		40	89	56	10,2
A2258-13/32IN	10,319	13/32"	40	89	56	10,319
A2258-10.5	10,5		40	89	56	10,5
A2258-27/64IN	10,716	27/64"	43	95	61	10,716
A2258-11	11		43	95	61	11
A2258-11.5	11,5		43	95	61	11,5
A2258-15/32IN	11,906	15/32"	52	102	66	11,906
A2258-12	12		52	102	66	12
A2258-12.5	12,5		52	102	66	12,5
A2258-1/2IN	12,7	1/2"	52	102	66	12,7
A2258-13	13		52	102	66	13
A2258-13.5	13,5		56	107	70	13,5
A2258-14	14		56	107	70	14
A2258-14.5	14,5		58	111	73	14,5
A2258-15	15		58	111	73	15
A2258-16	16		59	115	75	16
A2258-17	17		61	119	78	17
A2258-18	18		63	123	81	18
A2258-20	20		66	131	86	20

WALTER SELECT

●● Primary application

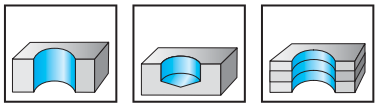
● Other application

D 1 B 474 B 482

HSS-E micro drills
A3143

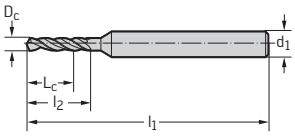


– Type ESU



~5×D_c | DIN 1899 | 118°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●●		●

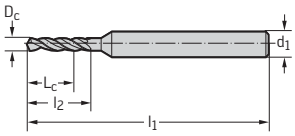
	Designation Uncoated	D_c 0-0,004 mm	L_c mm	l_1 mm	l_2 mm	d_1 h8 mm
Parallel shank	A3143-0.05	0,05	0,2	25	0,3	1
	A3143-0.06	0,06	0,2	25	0,3	1
	A3143-0.07	0,07	0,2	25	0,4	1
	A3143-0.08	0,08	0,2	25	0,4	1
	A3143-0.09	0,09	0,2	25	0,4	1
	A3143-0.1	0,1	0,3	25	0,5	1
	A3143-0.11	0,11	0,3	25	0,5	1
	A3143-0.12	0,12	0,3	25	0,5	1
	A3143-0.13	0,13	0,5	25	0,8	1
	A3143-0.14	0,14	0,5	25	0,8	1
	A3143-0.15	0,15	0,5	25	0,8	1
	A3143-0.16	0,16	0,8	25	1,1	1
	A3143-0.17	0,17	0,8	25	1,1	1
	A3143-0.18	0,18	0,8	25	1,1	1
	A3143-0.19	0,19	0,8	25	1,1	1
	A3143-0.2	0,2	1,1	25	1,5	1
	A3143-0.21	0,21	1,1	25	1,5	1
	A3143-0.22	0,22	1,1	25	1,5	1
	A3143-0.23	0,23	1,1	25	1,5	1
	A3143-0.24	0,24	1,1	25	1,5	1
	A3143-0.25	0,25	1,4	25	1,9	1
	A3143-0.26	0,26	1,4	25	1,9	1
	A3143-0.27	0,27	1,4	25	1,9	1
	A3143-0.28	0,28	1,4	25	1,9	1
	A3143-0.29	0,29	1,4	25	1,9	1
	A3143-0.3	0,3	1,4	25	1,9	1
	A3143-0.31	0,31	1,8	25	2,4	1
	A3143-0.32	0,32	1,8	25	2,4	1
	A3143-0.33	0,33	1,8	25	2,4	1
	A3143-0.34	0,34	1,8	25	2,4	1
	A3143-0.35	0,35	1,8	25	2,4	1
	A3143-0.36	0,36	1,8	25	2,4	1
	A3143-0.37	0,37	1,8	25	2,4	1
	A3143-0.38	0,38	1,8	25	2,4	1
	A3143-0.39	0,39	2,2	25	3	1
	A3143-0.4	0,4	2,2	25	3	1
	A3143-0.41	0,41	2,2	25	3	1
	A3143-0.42	0,42	2,2	25	3	1
	A3143-0.43	0,43	2,2	25	3	1
	A3143-0.44	0,44	2,2	25	3	1
	A3143-0.45	0,45	2,2	25	3	1
	A3143-0.46	0,46	2,2	25	3	1
	A3143-0.47	0,47	2,2	25	3	1
	A3143-0.48	0,48	2,2	25	3	1
	A3143-0.49	0,49	2,6	25	3,4	1
	A3143-0.5	0,5	2,6	25	3,4	1
	A3143-0.51	0,51	2,6	25	3,4	1
	A3143-0.52	0,52	2,6	25	3,4	1

Continued

D 1 | B 474 | B 482

Continued

Parallel shank



Designation Uncoated	D_c 0-0,004 mm	L_c mm	l_1 mm	l_2 mm	d_1 h8 mm
A3143-0.53	0,53	2,6	25	3,4	1
A3143-0.54	0,54	3	25	3,9	1
A3143-0.55	0,55	3	25	3,9	1
A3143-0.56	0,56	3	25	3,9	1
A3143-0.57	0,57	3	25	3,9	1
A3143-0.58	0,58	3	25	3,9	1
A3143-0.59	0,59	3	25	3,9	1
A3143-0.6	0,6	3	25	3,9	1
A3143-0.61	0,61	3,1	25	4,2	1
A3143-0.62	0,62	3,1	25	4,2	1
A3143-0.63	0,63	3,1	25	4,2	1
A3143-0.64	0,64	3,1	25	4,2	1
A3143-0.65	0,65	3,1	25	4,2	1
A3143-0.66	0,66	3,1	25	4,2	1
A3143-0.67	0,67	3,1	25	4,2	1
A3143-0.68	0,68	3,6	25	4,8	1
A3143-0.69	0,69	3,6	25	4,8	1
A3143-0.7	0,7	3,6	25	4,8	1
A3143-0.71	0,71	3,6	25	4,8	1
A3143-0.72	0,72	3,6	25	4,8	1
A3143-0.73	0,73	3,6	25	4,8	1
A3143-0.74	0,74	3,6	25	4,8	1
A3143-0.75	0,75	3,6	25	4,8	1
A3143-0.76	0,76	4,1	25	5,3	1
A3143-0.77	0,77	4,1	25	5,3	1
A3143-0.78	0,78	4,1	25	5,3	1
A3143-0.79	0,79	4,1	25	5,3	1
A3143-0.8	0,8	4	25	5,3	1,5
A3143-0.81	0,81	4	25	5,3	1,5
A3143-0.82	0,82	4	25	5,3	1,5
A3143-0.83	0,83	4	25	5,3	1,5
A3143-0.84	0,84	4	25	5,3	1,5
A3143-0.85	0,85	4	25	5,3	1,5
A3143-0.86	0,86	4,5	25	6	1,5
A3143-0.87	0,87	4,5	25	6	1,5
A3143-0.88	0,88	4,5	25	6	1,5
A3143-0.89	0,89	4,5	25	6	1,5
A3143-0.9	0,9	4,5	25	6	1,5
A3143-0.91	0,91	4,5	25	6	1,5
A3143-0.92	0,92	4,5	25	6	1,5
A3143-0.93	0,93	4,5	25	6	1,5
A3143-0.94	0,94	4,5	25	6	1,5
A3143-0.95	0,95	4,5	25	6	1,5
A3143-0.96	0,96	5	25	6,8	1,5
A3143-0.97	0,97	5	25	6,8	1,5
A3143-0.98	0,98	5	25	6,8	1,5
A3143-0.99	0,99	5	25	6,8	1,5
A3143-1	1	5	25	6,8	1,5
A3143-1.05	1,05	5	25	6,8	1,5
A3143-1.1	1,1	5	25	7,6	1,5
A3143-1.15	1,15	5	25	7,6	1,5
A3143-1.2	1,2	6	25	8,5	1,5
A3143-1.25	1,25	6	25	8,5	1,5
A3143-1.3	1,3	6	25	8,5	1,5
A3143-1.35	1,35	7	25	9,5	1,5
A3143-1.4	1,4	7	25	9,5	1,5
A3143-1.45	1,45	7	25	9,5	1,5

WALTER SELECT

●● Primary application

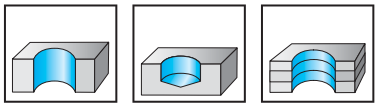
● Other application

D 1 B 474 B 482

HSS-E micro drills
A3153



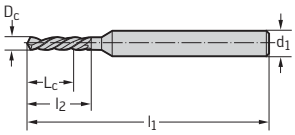
– Type ESU



~5×D_c | DIN 1899 |  |  118° | LH

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●●		●

Parallel shank

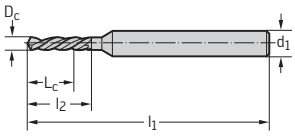


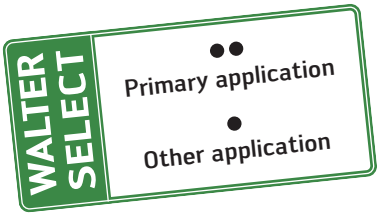
Designation Uncoated	D_c 0-0,004 mm	L_c mm	l_1 mm	l_2 mm	d_1 h8 mm
A3153-0.15	0,15	0,5	25	0,8	1
A3153-0.16	0,16	0,8	25	1,1	1
A3153-0.17	0,17	0,8	25	1,1	1
A3153-0.18	0,18	0,8	25	1,1	1
A3153-0.19	0,19	0,8	25	1,1	1
A3153-0.2	0,2	1,1	25	1,5	1
A3153-0.21	0,21	1,1	25	1,5	1
A3153-0.22	0,22	1,1	25	1,5	1
A3153-0.23	0,23	1,1	25	1,5	1
A3153-0.24	0,24	1,1	25	1,5	1
A3153-0.25	0,25	1,4	25	1,9	1
A3153-0.26	0,26	1,4	25	1,9	1
A3153-0.27	0,27	1,4	25	1,9	1
A3153-0.28	0,28	1,4	25	1,9	1
A3153-0.29	0,29	1,4	25	1,9	1
A3153-0.3	0,3	1,4	25	1,9	1
A3153-0.31	0,31	1,8	25	2,4	1
A3153-0.32	0,32	1,8	25	2,4	1
A3153-0.33	0,33	1,8	25	2,4	1
A3153-0.34	0,34	1,8	25	2,4	1
A3153-0.35	0,35	1,8	25	2,4	1
A3153-0.36	0,36	1,8	25	2,4	1
A3153-0.37	0,37	1,8	25	2,4	1
A3153-0.38	0,38	1,8	25	2,4	1
A3153-0.39	0,39	2,2	25	3	1
A3153-0.4	0,4	2,2	25	3	1
A3153-0.41	0,41	2,2	25	3	1
A3153-0.42	0,42	2,2	25	3	1
A3153-0.43	0,43	2,2	25	3	1
A3153-0.44	0,44	2,2	25	3	1
A3153-0.45	0,45	2,2	25	3	1
A3153-0.46	0,46	2,2	25	3	1
A3153-0.47	0,47	2,2	25	3	1
A3153-0.48	0,48	2,2	25	3	1
A3153-0.49	0,49	2,6	25	3,4	1
A3153-0.5	0,5	2,6	25	3,4	1
A3153-0.51	0,51	2,6	25	3,4	1
A3153-0.52	0,52	2,6	25	3,4	1
A3153-0.53	0,53	2,6	25	3,4	1
A3153-0.54	0,54	3	25	3,9	1
A3153-0.55	0,55	3	25	3,9	1
A3153-0.56	0,56	3	25	3,9	1
A3153-0.57	0,57	3	25	3,9	1
A3153-0.58	0,58	3	25	3,9	1
A3153-0.59	0,59	3	25	3,9	1
A3153-0.6	0,6	3	25	3,9	1
A3153-0.61	0,61	3,1	25	4,2	1
A3153-0.62	0,62	3,1	25	4,2	1

Continued

 D 1 |  B 474 |  B 482

Continued

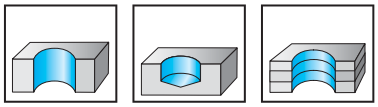
	Designation Uncoated	D_c 0-0,004 mm	L_c mm	l_1 mm	l_2 mm	d_1 h8 mm
Parallel shank	A3153-0.63	0,63	3,1	25	4,2	1
	A3153-0.64	0,64	3,1	25	4,2	1
	A3153-0.65	0,65	3,1	25	4,2	1
	A3153-0.66	0,66	3,1	25	4,2	1
	A3153-0.67	0,67	3,1	25	4,2	1
	A3153-0.68	0,68	3,6	25	4,8	1
	A3153-0.69	0,69	3,6	25	4,8	1
	A3153-0.7	0,7	3,6	25	4,8	1
	A3153-0.71	0,71	3,6	25	4,8	1
	A3153-0.72	0,72	3,6	25	4,8	1
	A3153-0.73	0,73	3,6	25	4,8	1
	A3153-0.74	0,74	3,6	25	4,8	1
	A3153-0.75	0,75	3,6	25	4,8	1
	A3153-0.76	0,76	4,1	25	5,3	1
	A3153-0.77	0,77	4,1	25	5,3	1
	A3153-0.78	0,78	4,1	25	5,3	1
	A3153-0.79	0,79	4,1	25	5,3	1
	A3153-0.8	0,8	4	25	5,3	1,5
	A3153-0.81	0,81	4	25	5,3	1,5
	A3153-0.82	0,82	4	25	5,3	1,5
	A3153-0.83	0,83	4	25	5,3	1,5
	A3153-0.84	0,84	4	25	5,3	1,5
	A3153-0.85	0,85	4	25	5,3	1,5
	A3153-0.86	0,86	4,5	25	6	1,5
	A3153-0.87	0,87	4,5	25	6	1,5
	A3153-0.88	0,88	4,5	25	6	1,5
	A3153-0.89	0,89	4,5	25	6	1,5
	A3153-0.9	0,9	4,5	25	6	1,5
	A3153-0.91	0,91	4,5	25	6	1,5
	A3153-0.92	0,92	4,5	25	6	1,5
	A3153-0.93	0,93	4,5	25	6	1,5
	A3153-0.94	0,94	4,5	25	6	1,5
	A3153-0.95	0,95	4,5	25	6	1,5
	A3153-0.96	0,96	5	25	6,8	1,5
	A3153-0.97	0,97	5	25	6,8	1,5
	A3153-0.98	0,98	5	25	6,8	1,5
	A3153-0.99	0,99	5	25	6,8	1,5
	A3153-1	1	5	25	6,8	1,5
	A3153-1.05	1,05	5	25	6,8	1,5
	A3153-1.1	1,1	5	25	7,6	1,5
	A3153-1.15	1,15	5	25	7,6	1,5
	A3153-1.2	1,2	6	25	8,5	1,5
	A3153-1.3	1,3	6	25	8,5	1,5
	A3153-1.4	1,4	7	25	9,5	1,5

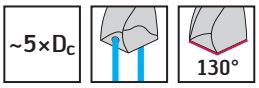


D 1 B 474 B 482

HSS-E drills with coolant-through
A6292TIN
MegaJet

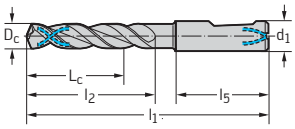






	P	M	K	N	S	H	O
TIN	●●	●●	●●	●●	●		

Shank DIN 1835 E



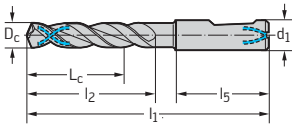
Designation TIN	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6292TIN-5	5		35	82	44	36	6
A6292TIN-5.1	5,1		35	82	44	36	6
A6292TIN-5.2	5,2		35	82	44	36	6
A6292TIN-5.3	5,3		35	82	44	36	6
A6292TIN-5.4	5,4		35	82	44	36	6
A6292TIN-5.5	5,5		35	82	44	36	6
A6292TIN-7/32IN	5,556	7/32"	35	82	44	36	6
A6292TIN-5.6	5,6		35	82	44	36	6
A6292TIN-5.7	5,7		35	82	44	36	6
A6292TIN-5.8	5,8		35	82	44	36	6
A6292TIN-5.9	5,9		35	82	44	36	6
A6292TIN-6	6		35	82	44	36	6
A6292TIN-6.1	6,1		41	91	53	36	8
A6292TIN-6.2	6,2		41	91	53	36	8
A6292TIN-6.3	6,3		41	91	53	36	8
A6292TIN-1/4IN	6,35	1/4"	41	91	53	36	8
A6292TIN-6.4	6,4		41	91	53	36	8
A6292TIN-6.5	6,5		41	91	53	36	8
A6292TIN-6.6	6,6		41	91	53	36	8
A6292TIN-6.7	6,7		41	91	53	36	8
A6292TIN-6.8	6,8		41	91	53	36	8
A6292TIN-6.9	6,9		41	91	53	36	8
A6292TIN-7	7		41	91	53	36	8
A6292TIN-7.1	7,1		41	91	53	36	8
A6292TIN-9/32IN	7,144	9/32"	41	91	53	36	8
A6292TIN-7.2	7,2		41	91	53	36	8
A6292TIN-7.3	7,3		41	91	53	36	8
A6292TIN-7.4	7,4		41	91	53	36	8
A6292TIN-7.5	7,5		41	91	53	36	8
A6292TIN-7.6	7,6		41	91	53	36	8
A6292TIN-7.7	7,7		41	91	53	36	8
A6292TIN-7.8	7,8		41	91	53	36	8
A6292TIN-7.9	7,9		41	91	53	36	8
A6292TIN-5/16IN	7,938	5/16"	41	91	53	36	8
A6292TIN-8	8		41	91	53	36	8
A6292TIN-8.1	8,1		46	103	61	40	10
A6292TIN-8.2	8,2		46	103	61	40	10
A6292TIN-8.3	8,3		46	103	61	40	10
A6292TIN-8.4	8,4		46	103	61	40	10
A6292TIN-8.5	8,5		46	103	61	40	10
A6292TIN-8.6	8,6		46	103	61	40	10
A6292TIN-8.7	8,7		46	103	61	40	10
A6292TIN-11/32IN	8,731	11/32"	46	103	61	40	10
A6292TIN-8.8	8,8		46	103	61	40	10
A6292TIN-8.9	8,9		46	103	61	40	10
A6292TIN-9	9		46	103	61	40	10
A6292TIN-9.1	9,1		46	103	61	40	10
A6292TIN-9.2	9,2		46	103	61	40	10

Continued

XIII D 1 B 474 B 482

Continued

Shank DIN 1835 E



Designation TIN	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm
A6292TIN-9.3	9,3		46	103	61	40	10
A6292TIN-9.4	9,4		46	103	61	40	10
A6292TIN-9.5	9,5		46	103	61	40	10
A6292TIN-3/8IN	9,525	3/8"	46	103	61	40	10
A6292TIN-9.6	9,6		46	103	61	40	10
A6292TIN-9.7	9,7		46	103	61	40	10
A6292TIN-9.8	9,8		46	103	61	40	10
A6292TIN-9.9	9,9		46	103	61	40	10
A6292TIN-10	10		46	103	61	40	10
A6292TIN-10.2	10,2		57	122	75	45	12
A6292TIN-13/32IN	10,319	13/32"	57	122	75	45	12
A6292TIN-10.5	10,5		57	122	75	45	12
A6292TIN-11	11		57	122	75	45	12
A6292TIN-7/16IN	11,113	7/16"	57	122	75	45	12
A6292TIN-11.5	11,5		57	122	75	45	12
A6292TIN-15/32IN	11,906	15/32"	57	122	75	45	12
A6292TIN-12	12		57	122	75	45	12
A6292TIN-12.5	12,5		73	134	87	45	14
A6292TIN-1/2IN	12,7	1/2"	73	134	87	45	14
A6292TIN-13	13		73	134	87	45	14
A6292TIN-17/32IN	13,494	17/32"	73	134	87	45	14
A6292TIN-13.5	13,5		73	134	87	45	14
A6292TIN-14	14		73	134	87	45	14
A6292TIN-9/16IN	14,288	9/16"	84	150	100	48	16
A6292TIN-14.5	14,5		84	150	100	48	16
A6292TIN-15	15		84	150	100	48	16
A6292TIN-19/32IN	15,081	19/32"	84	150	100	48	16
A6292TIN-15.5	15,5		84	150	100	48	16
A6292TIN-5/8IN	15,875	5/8"	84	150	100	48	16
A6292TIN-16	16		84	150	100	48	16
A6292TIN-16.5	16,5		94	162	112	48	18
A6292TIN-17	17		94	162	112	48	18
A6292TIN-11/16IN	17,463	11/16"	94	162	112	48	18
A6292TIN-17.5	17,5		94	162	112	48	18
A6292TIN-18	18		94	162	112	48	18
A6292TIN-23/32IN	18,256	23/32"	104	176	124	50	20
A6292TIN-18.5	18,5		104	176	124	50	20
A6292TIN-19	19		104	176	124	50	20
A6292TIN-3/4IN	19,05	3/4"	104	176	124	50	20
A6292TIN-19.5	19,5		104	176	124	50	20
A6292TIN-20	20		104	176	124	50	20
A6292TIN-20.5	20,5		120	207	145	56	25
A6292TIN-21	21		120	207	145	56	25
A6292TIN-22	22		120	207	145	56	25
A6292TIN-23	23		120	207	145	56	25
A6292TIN-24	24		120	207	145	56	25

WALTER SELECT

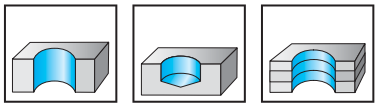
●● Primary application

● Other application

XIII D 1 B 474 B 482

HSS-E deep-hole drills
A1249XPL
UFL®

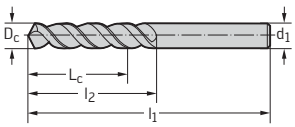




~8×D_c | DIN 338 |  |  130°

	P	M	K	N	S	H	O
XPL	●●	●●	●●	●●	●		●

Parallel shank



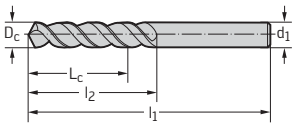
Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1249XPL-1	1		10	34	12	1
A1249XPL-NO60	1,016	No. 60	10	34	12	1,016
A1249XPL-NO59	1,041	No. 59	10	34	12	1,041
A1249XPL-NO58	1,067	No. 58	12	36	14	1,067
A1249XPL-NO57	1,092	No. 57	12	36	14	1,092
A1249XPL-1.1	1,1		12	36	14	1,1
A1249XPL-NO56	1,181	No. 56	14	38	16	1,181
A1249XPL-3/64IN	1,191	3/64"	14	38	16	1,191
A1249XPL-1.2	1,2		14	38	16	1,2
A1249XPL-1.3	1,3		14	38	16	1,3
A1249XPL-NO55	1,321	No. 55	15	40	18	1,321
A1249XPL-NO54	1,397	No. 54	15	40	18	1,397
A1249XPL-1.4	1,4		15	40	18	1,4
A1249XPL-1.5	1,5		15	40	18	1,5
A1249XPL-NO53	1,511	No. 53	17	43	20	1,511
A1249XPL-1/16IN	1,588	1/16"	17	43	20	1,588
A1249XPL-1.6	1,6		17	43	20	1,6
A1249XPL-NO52	1,613	No. 52	17	43	20	1,613
A1249XPL-1.7	1,7		17	43	20	1,7
A1249XPL-NO51	1,702	No. 51	19	46	22	1,702
A1249XPL-NO50	1,778	No. 50	19	46	22	1,778
A1249XPL-1.8	1,8		19	46	22	1,8
A1249XPL-NO49	1,854	No. 49	19	46	22	1,854
A1249XPL-1.9	1,9		19	46	22	1,9
A1249XPL-NO48	1,93	No. 48	20	49	24	1,93
A1249XPL-5/64IN	1,984	5/64"	20	49	24	1,984
A1249XPL-NO47	1,994	No. 47	20	49	24	1,994
A1249XPL-2	2		20	49	24	2
A1249XPL-NO46	2,057	No. 46	20	49	24	2,057
A1249XPL-NO45	2,083	No. 45	20	49	24	2,083
A1249XPL-2.1	2,1		20	49	24	2,1
A1249XPL-NO44	2,184	No. 44	23	53	27	2,184
A1249XPL-2.2	2,2		23	53	27	2,2
A1249XPL-NO43	2,261	No. 43	23	53	27	2,261
A1249XPL-2.3	2,3		23	53	27	2,3
A1249XPL-NO42	2,375	No. 42	26	57	30	2,375
A1249XPL-3/32IN	2,381	3/32"	26	57	30	2,381
A1249XPL-2.4	2,4		26	57	30	2,4
A1249XPL-NO41	2,438	No. 41	26	57	30	2,438
A1249XPL-NO40	2,489	No. 40	26	57	30	2,489
A1249XPL-2.5	2,5		26	57	30	2,5
A1249XPL-NO39	2,527	No. 39	26	57	30	2,527
A1249XPL-NO38	2,578	No. 38	26	57	30	2,578
A1249XPL-2.6	2,6		26	57	30	2,6
A1249XPL-NO37	2,642	No. 37	26	57	30	2,642
A1249XPL-2.7	2,7		28	61	33	2,7
A1249XPL-NO36	2,705	No. 36	28	61	33	2,705
A1249XPL-7/64IN	2,778	7/64"	28	61	33	2,778

Continued

XIII | D 1 | B 474 | B 482

Continued

Parallel shank



Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1249XPL-NO35	2,794	No. 35	28	61	33	2,794
A1249XPL-2.8	2,8		28	61	33	2,8
A1249XPL-NO34	2,819	No. 34	28	61	33	2,819
A1249XPL-NO33	2,87	No. 33	28	61	33	2,87
A1249XPL-2.9	2,9		28	61	33	2,9
A1249XPL-NO32	2,946	No. 32	28	61	33	2,946
A1249XPL-3	3		28	61	33	3
A1249XPL-NO31	3,048	No. 31	30	65	36	3,048
A1249XPL-3.1	3,1		30	65	36	3,1
A1249XPL-1/8IN	3,175	1/8"	30	65	36	3,175
A1249XPL-3.2	3,2		30	65	36	3,2
A1249XPL-NO30	3,264	No. 30	30	65	36	3,264
A1249XPL-3.3	3,3		30	65	36	3,3
A1249XPL-3.4	3,4		33	70	39	3,4
A1249XPL-NO29	3,454	No. 29	33	70	39	3,454
A1249XPL-3.5	3,5		33	70	39	3,5
A1249XPL-NO28	3,569	No. 28	33	70	39	3,569
A1249XPL-9/64IN	3,572	9/64"	33	70	39	3,572
A1249XPL-3.6	3,6		33	70	39	3,6
A1249XPL-NO27	3,658	No. 27	33	70	39	3,658
A1249XPL-3.7	3,7		33	70	39	3,7
A1249XPL-NO26	3,734	No. 26	33	70	39	3,734
A1249XPL-NO25	3,797	No. 25	36	75	43	3,797
A1249XPL-3.8	3,8		36	75	43	3,8
A1249XPL-NO24	3,861	No. 24	36	75	43	3,861
A1249XPL-3.9	3,9		36	75	43	3,9
A1249XPL-NO23	3,912	No. 23	36	75	43	3,912
A1249XPL-5/32IN	3,969	5/32"	36	75	43	3,969
A1249XPL-NO22	3,988	No. 22	36	75	43	3,988
A1249XPL-4	4		36	75	43	4
A1249XPL-NO21	4,039	No. 21	36	75	43	4,039
A1249XPL-NO20	4,089	No. 20	36	75	43	4,089
A1249XPL-4.1	4,1		36	75	43	4,1
A1249XPL-4.2	4,2		36	75	43	4,2
A1249XPL-NO19	4,216	No. 19	36	75	43	4,216
A1249XPL-4.3	4,3		39	80	47	4,3
A1249XPL-NO18	4,305	No. 18	39	80	47	4,305
A1249XPL-11/64IN	4,366	11/64"	39	80	47	4,366
A1249XPL-NO17	4,394	No. 17	39	80	47	4,394
A1249XPL-4.4	4,4		39	80	47	4,4
A1249XPL-NO16	4,496	No. 16	39	80	47	4,496
A1249XPL-4.5	4,5		39	80	47	4,5
A1249XPL-NO15	4,572	No. 15	39	80	47	4,572
A1249XPL-4.6	4,6		39	80	47	4,6
A1249XPL-NO14	4,623	No. 14	39	80	47	4,623
A1249XPL-4.65	4,65		39	80	47	4,65
A1249XPL-NO13	4,699	No. 13	39	80	47	4,699
A1249XPL-4.7	4,7		39	80	47	4,7
A1249XPL-3/16IN	4,763	3/16"	44	86	52	4,763
A1249XPL-4.8	4,8		44	86	52	4,8
A1249XPL-NO12	4,801	No. 12	44	86	52	4,801
A1249XPL-NO11	4,851	No. 11	44	86	52	4,851
A1249XPL-4.9	4,9		44	86	52	4,9
A1249XPL-NO10	4,915	No. 10	44	86	52	4,915
A1249XPL-NO9	4,978	No. 09	44	86	52	4,978
A1249XPL-5	5		44	86	52	5
A1249XPL-NO8	5,055	No. 08	44	86	52	5,055
A1249XPL-5.1	5,1		44	86	52	5,1

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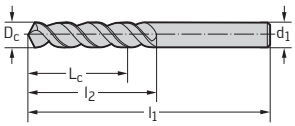
●● Primary application

● Other application

XIII D 1 B 474 B 482

Continued

Parallel shank



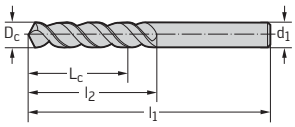
Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1249XPL-NO7	5,105	No. 07	44	86	52	5,105
A1249XPL-13/64IN	5,159	13/64"	44	86	52	5,159
A1249XPL-NO6	5,182	No. 06	44	86	52	5,182
A1249XPL-5.2	5,2		44	86	52	5,2
A1249XPL-NO5	5,22	No. 05	44	86	52	5,22
A1249XPL-5.3	5,3		44	86	52	5,3
A1249XPL-NO4	5,309	No. 04	48	93	57	5,309
A1249XPL-5.4	5,4		48	93	57	5,4
A1249XPL-NO3	5,41	No. 03	48	93	57	5,41
A1249XPL-5.5	5,5		48	93	57	5,5
A1249XPL-5.55	5,55		48	93	57	5,55
A1249XPL-7/32IN	5,556	7/32"	48	93	57	5,556
A1249XPL-5.6	5,6		48	93	57	5,6
A1249XPL-NO2	5,613	No. 02	48	93	57	5,613
A1249XPL-5.7	5,7		48	93	57	5,7
A1249XPL-NO1	5,791	No. 01	48	93	57	5,791
A1249XPL-5.8	5,8		48	93	57	5,8
A1249XPL-5.9	5,9		48	93	57	5,9
A1249XPL-15/64IN	5,953	15/64"	48	93	57	5,953
A1249XPL-6	6		48	93	57	6
A1249XPL-6.1	6,1		52	101	63	6,1
A1249XPL-6.2	6,2		52	101	63	6,2
A1249XPL-6.3	6,3		52	101	63	6,3
A1249XPL-1/4IN	6,35	1/4"	52	101	63	6,35
A1249XPL-6.4	6,4		52	101	63	6,4
A1249XPL-6.5	6,5		52	101	63	6,5
A1249XPL-6.6	6,6		52	101	63	6,6
A1249XPL-6.7	6,7		52	101	63	6,7
A1249XPL-17/64IN	6,747	17/64"	57	109	69	6,747
A1249XPL-6.8	6,8		57	109	69	6,8
A1249XPL-6.9	6,9		57	109	69	6,9
A1249XPL-7	7		57	109	69	7
A1249XPL-7.1	7,1		57	109	69	7,1
A1249XPL-9/32IN	7,144	9/32"	57	109	69	7,144
A1249XPL-7.2	7,2		57	109	69	7,2
A1249XPL-7.3	7,3		57	109	69	7,3
A1249XPL-7.4	7,4		57	109	69	7,4
A1249XPL-7.5	7,5		57	109	69	7,5
A1249XPL-19/64IN	7,541	19/64"	62	117	75	7,541
A1249XPL-7.6	7,6		62	117	75	7,6
A1249XPL-7.7	7,7		62	117	75	7,7
A1249XPL-7.8	7,8		62	117	75	7,8
A1249XPL-7.9	7,9		62	117	75	7,9
A1249XPL-5/16IN	7,938	5/16"	62	117	75	7,938
A1249XPL-8	8		62	117	75	8
A1249XPL-8.1	8,1		62	117	75	8,1
A1249XPL-8.2	8,2		62	117	75	8,2
A1249XPL-8.3	8,3		62	117	75	8,3
A1249XPL-21/64IN	8,334	21/64"	62	117	75	8,334
A1249XPL-8.4	8,4		62	117	75	8,4
A1249XPL-8.5	8,5		62	117	75	8,5
A1249XPL-8.6	8,6		66	125	81	8,6
A1249XPL-8.7	8,7		66	125	81	8,7
A1249XPL-11/32IN	8,731	11/32"	66	125	81	8,731
A1249XPL-8.8	8,8		66	125	81	8,8
A1249XPL-8.9	8,9		66	125	81	8,9
A1249XPL-9	9		66	125	81	9
A1249XPL-9.1	9,1		66	125	81	9,1
A1249XPL-23/64IN	9,128	23/64"	66	125	81	9,128
A1249XPL-9.2	9,2		66	125	81	9,2
A1249XPL-9.3	9,3		66	125	81	9,3
A1249XPL-9.4	9,4		66	125	81	9,4

Continued

XIII D 1 B 474 B 482

Continued

Parallel shank



Designation XPL	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1249XPL-9.5	9,5		66	125	81	9,5
A1249XPL-3/8IN	9,525	3/8"	71	133	87	9,525
A1249XPL-9.6	9,6		71	133	87	9,6
A1249XPL-9.7	9,7		71	133	87	9,7
A1249XPL-9.8	9,8		71	133	87	9,8
A1249XPL-9.9	9,9		71	133	87	9,9
A1249XPL-25/64IN	9,922	25/64"	71	133	87	9,922
A1249XPL-10	10		71	133	87	10
A1249XPL-10.2	10,2		71	133	87	10,2
A1249XPL-13/32IN	10,319	13/32"	71	133	87	10,319
A1249XPL-10.5	10,5		71	133	87	10,5
A1249XPL-27/64IN	10,716	27/64"	76	142	94	10,716
A1249XPL-11	11		76	142	94	11
A1249XPL-7/16IN	11,113	7/16"	76	142	94	11,113
A1249XPL-11.2	11,2		76	142	94	11,2
A1249XPL-11.3	11,3		76	142	94	11,3
A1249XPL-11.5	11,5		76	142	94	11,5
A1249XPL-29/64IN	11,509	29/64"	76	142	94	11,509
A1249XPL-15/32IN	11,906	15/32"	87	151	101	11,906
A1249XPL-12	12		87	151	101	12
A1249XPL-31/64IN	12,303	31/64"	87	151	101	12,303
A1249XPL-12.5	12,5		87	151	101	12,5
A1249XPL-1/2IN	12,7	1/2"	87	151	101	12,7
A1249XPL-13	13		87	151	101	13
A1249XPL-13.1	13,1		87	151	101	13,1
A1249XPL-13.3	13,3		94	160	108	13,3
A1249XPL-13.5	13,5		94	160	108	13,5
A1249XPL-14	14		94	160	108	14
A1249XPL-14.5	14,5		99	169	114	14,5
A1249XPL-15	15		99	169	114	15
A1249XPL-15.1	15,1		104	178	120	15,1
A1249XPL-15.3	15,3		104	178	120	15,3
A1249XPL-15.5	15,5		104	178	120	15,5
A1249XPL-16	16		104	178	120	16
A1249XPL-16.5	16,5		108	184	125	16,5
A1249XPL-17	17		108	184	125	17
A1249XPL-17.5	17,5		112	191	130	17,5
A1249XPL-18	18		112	191	130	18
A1249XPL-18.5	18,5		116	198	135	18,5
A1249XPL-19	19		116	198	135	19
A1249XPL-19.5	19,5		120	205	140	19,5
A1249XPL-20	20		120	205	140	20

WALTER SELECT

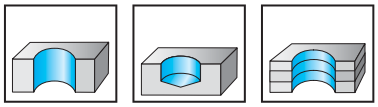
●● Primary application

● Other application

XIII D 1 B 474 B 482

HSS-E deep-hole drills
A1254TFT
VA Inox

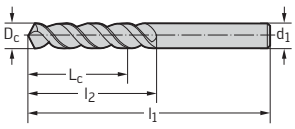




~8×D_c | DIN 338 | 118°

	P	M	K	N	S	H	O
TFT	●	●●		●●	●		●

Parallel shank

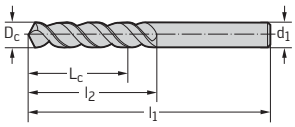


Designation TFT	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1254TFT-3	3	28	61	33	3
A1254TFT-3.2	3,2	30	65	36	3,2
A1254TFT-3.3	3,3	30	65	36	3,3
A1254TFT-3.4	3,4	33	70	39	3,4
A1254TFT-3.5	3,5	33	70	39	3,5
A1254TFT-3.7	3,7	33	70	39	3,7
A1254TFT-3.8	3,8	36	75	43	3,8
A1254TFT-4	4	36	75	43	4
A1254TFT-4.2	4,2	36	75	43	4,2
A1254TFT-4.3	4,3	39	80	47	4,3
A1254TFT-4.5	4,5	39	80	47	4,5
A1254TFT-4.65	4,65	39	80	47	4,65
A1254TFT-4.7	4,7	39	80	47	4,7
A1254TFT-4.8	4,8	44	86	52	4,8
A1254TFT-5	5	44	86	52	5
A1254TFT-5.1	5,1	44	86	52	5,1
A1254TFT-5.3	5,3	44	86	52	5,3
A1254TFT-5.5	5,5	48	93	57	5,5
A1254TFT-5.55	5,55	48	93	57	5,55
A1254TFT-5.6	5,6	48	93	57	5,6
A1254TFT-5.8	5,8	48	93	57	5,8
A1254TFT-6	6	48	93	57	6
A1254TFT-6.5	6,5	52	101	63	6,5
A1254TFT-6.6	6,6	52	101	63	6,6
A1254TFT-6.8	6,8	57	109	69	6,8
A1254TFT-6.9	6,9	57	109	69	6,9
A1254TFT-7	7	57	109	69	7
A1254TFT-7.4	7,4	57	109	69	7,4
A1254TFT-7.5	7,5	57	109	69	7,5
A1254TFT-7.8	7,8	62	117	75	7,8
A1254TFT-8	8	62	117	75	8
A1254TFT-8.5	8,5	62	117	75	8,5
A1254TFT-8.6	8,6	66	125	81	8,6
A1254TFT-8.8	8,8	66	125	81	8,8
A1254TFT-9	9	66	125	81	9
A1254TFT-9.3	9,3	66	125	81	9,3
A1254TFT-9.4	9,4	66	125	81	9,4
A1254TFT-9.5	9,5	66	125	81	9,5
A1254TFT-9.8	9,8	71	133	87	9,8
A1254TFT-10	10	71	133	87	10
A1254TFT-10.2	10,2	71	133	87	10,2
A1254TFT-10.3	10,3	71	133	87	10,3
A1254TFT-10.5	10,5	71	133	87	10,5
A1254TFT-11	11	76	142	94	11
A1254TFT-11.2	11,2	76	142	94	11,2
A1254TFT-11.3	11,3	76	142	94	11,3
A1254TFT-11.5	11,5	76	142	94	11,5
A1254TFT-11.8	11,8	76	142	94	11,8

Continued

XIII | D 1 | B 474 | B 482

Continued

	Designation TFT	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank 	A1254TFT-12	12	87	151	101	12
	A1254TFT-12.1	12,1	87	151	101	12,1
	A1254TFT-12.5	12,5	87	151	101	12,5
	A1254TFT-13	13	87	151	101	13
	A1254TFT-13.2	13,2	87	151	101	13,2
	A1254TFT-13.5	13,5	94	160	108	13,5
	A1254TFT-14	14	94	160	108	14
	A1254TFT-14.1	14,1	99	169	114	14,1
	A1254TFT-14.2	14,2	99	169	114	14,2
	A1254TFT-14.5	14,5	99	169	114	14,5
	A1254TFT-15	15	99	169	114	15
	A1254TFT-15.1	15,1	104	178	120	15,1
	A1254TFT-15.2	15,2	104	178	120	15,2
	A1254TFT-15.5	15,5	104	178	120	15,5
	A1254TFT-16	16	104	178	120	16

WALTER SELECT

●● Primary application

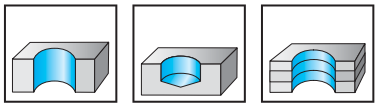
● Other application

XIII D 1 B 474 B 482

HSS-E twist drills
A1247
Alpha® XE



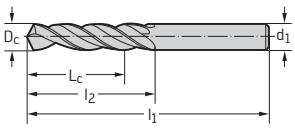
– Uncoated up to 1.9 mm



~8×D_c | DIN 338 | 130°

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●

Parallel shank



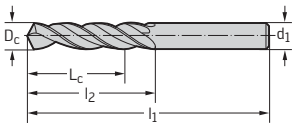
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1247-1	1		10	34	12	1
A1247-NO60	1,016	No. 60	10	34	12	1,016
A1247-NO59	1,041	No. 59	10	34	12	1,041
A1247-NO58	1,067	No. 58	12	36	14	1,067
A1247-NO57	1,092	No. 57	12	36	14	1,092
A1247-1.1	1,1		12	36	14	1,1
A1247-NO56	1,181	No. 56	14	38	16	1,181
A1247-3/64IN	1,191	3/64"	14	38	16	1,191
A1247-1.2	1,2		14	38	16	1,2
A1247-1.25	1,25		14	38	16	1,25
A1247-1.3	1,3		14	38	16	1,3
A1247-NO55	1,321	No. 55	15	40	18	1,321
A1247-NO54	1,397	No. 54	15	40	18	1,397
A1247-1.4	1,4		15	40	18	1,4
A1247-1.5	1,5		15	40	18	1,5
A1247-NO53	1,511	No. 53	17	43	20	1,511
A1247-1/16IN	1,588	1/16"	17	43	20	1,588
A1247-1.6	1,6		17	43	20	1,6
A1247-NO52	1,613	No. 52	17	43	20	1,613
A1247-1.7	1,7		17	43	20	1,7
A1247-NO51	1,702	No. 51	19	46	22	1,702
A1247-NO50	1,778	No. 50	19	46	22	1,778
A1247-1.8	1,8		19	46	22	1,8
A1247-NO49	1,854	No. 49	19	46	22	1,854
A1247-1.9	1,9		19	46	22	1,9
A1247-NO48	1,93	No. 48	20	49	24	1,93
A1247-5/64IN	1,984	5/64"	20	49	24	1,984
A1247-NO47	1,994	No. 47	20	49	24	1,994
A1247-2	2		20	49	24	2
A1247-NO46	2,057	No. 46	20	49	24	2,057
A1247-NO45	2,083	No. 45	20	49	24	2,083
A1247-2.1	2,1		20	49	24	2,1
A1247-NO44	2,184	No. 44	23	53	27	2,184
A1247-2.2	2,2		23	53	27	2,2
A1247-NO43	2,261	No. 43	23	53	27	2,261
A1247-2.3	2,3		23	53	27	2,3
A1247-NO42	2,375	No. 42	26	57	30	2,375
A1247-3/32IN	2,381	3/32"	26	57	30	2,381
A1247-2.4	2,4		26	57	30	2,4
A1247-NO41	2,438	No. 41	26	57	30	2,438
A1247-NO40	2,489	No. 40	26	57	30	2,489
A1247-2.5	2,5		26	57	30	2,5
A1247-NO39	2,527	No. 39	26	57	30	2,527
A1247-NO38	2,578	No. 38	26	57	30	2,578
A1247-2.6	2,6		26	57	30	2,6
A1247-NO37	2,642	No. 37	26	57	30	2,642
A1247-2.7	2,7		28	61	33	2,7
A1247-NO36	2,705	No. 36	28	61	33	2,705

Continued

D 1 | B 474 | B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1247-7/64IN	2,778	7/64"	28	61	33	2,778
A1247-NO35	2,794	No. 35	28	61	33	2,794
A1247-2.8	2,8		28	61	33	2,8
A1247-NO34	2,819	No. 34	28	61	33	2,819
A1247-NO33	2,87	No. 33	28	61	33	2,87
A1247-2.9	2,9		28	61	33	2,9
A1247-NO32	2,946	No. 32	28	61	33	2,946
A1247-3	3		28	61	33	3
A1247-NO31	3,048	No. 31	30	65	36	3,048
A1247-3.1	3,1		30	65	36	3,1
A1247-1/8IN	3,175	1/8"	30	65	36	3,175
A1247-3.2	3,2		30	65	36	3,2
A1247-NO30	3,264	No. 30	30	65	36	3,264
A1247-3.3	3,3		30	65	36	3,3
A1247-3.4	3,4		33	70	39	3,4
A1247-NO29	3,454	No. 29	33	70	39	3,454
A1247-3.5	3,5		33	70	39	3,5
A1247-NO28	3,569	No. 28	33	70	39	3,569
A1247-9/64IN	3,572	9/64"	33	70	39	3,572
A1247-3.6	3,6		33	70	39	3,6
A1247-NO27	3,658	No. 27	33	70	39	3,658
A1247-3.7	3,7		33	70	39	3,7
A1247-NO26	3,734	No. 26	33	70	39	3,734
A1247-NO25	3,797	No. 25	36	75	43	3,797
A1247-3.8	3,8		36	75	43	3,8
A1247-NO24	3,861	No. 24	36	75	43	3,861
A1247-3.9	3,9		36	75	43	3,9
A1247-NO23	3,912	No. 23	36	75	43	3,912
A1247-5/32IN	3,969	5/32"	36	75	43	3,969
A1247-NO22	3,988	No. 22	36	75	43	3,988
A1247-4	4		36	75	43	4
A1247-NO21	4,039	No. 21	36	75	43	4,039
A1247-NO20	4,089	No. 20	36	75	43	4,089
A1247-4.1	4,1		36	75	43	4,1
A1247-4.2	4,2		36	75	43	4,2
A1247-NO19	4,216	No. 19	36	75	43	4,216
A1247-4.3	4,3		39	80	47	4,3
A1247-NO18	4,305	No. 18	39	80	47	4,305
A1247-11/64IN	4,366	11/64"	39	80	47	4,366
A1247-NO17	4,394	No. 17	39	80	47	4,394
A1247-4.4	4,4		39	80	47	4,4
A1247-NO16	4,496	No. 16	39	80	47	4,496
A1247-4.5	4,5		39	80	47	4,5
A1247-NO15	4,572	No. 15	39	80	47	4,572
A1247-4.6	4,6		39	80	47	4,6
A1247-NO14	4,623	No. 14	39	80	47	4,623
A1247-NO13	4,699	No. 13	39	80	47	4,699
A1247-4.7	4,7		39	80	47	4,7
A1247-3/16IN	4,763	3/16"	44	86	52	4,763
A1247-4.8	4,8		44	86	52	4,8
A1247-NO12	4,801	No. 12	44	86	52	4,801
A1247-NO11	4,851	No. 11	44	86	52	4,851
A1247-4.9	4,9		44	86	52	4,9
A1247-NO10	4,915	No. 10	44	86	52	4,915
A1247-NO9	4,978	No. 09	44	86	52	4,978
A1247-5	5		44	86	52	5
A1247-NO8	5,055	No. 08	44	86	52	5,055
A1247-5.1	5,1		44	86	52	5,1

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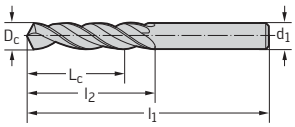
●● Primary application

● Other application

D 1 B 474 B 482

Continued

Parallel shank



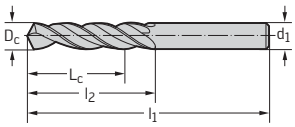
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1247-NO7	5,105	No. 07	44	86	52	5,105
A1247-13/64IN	5,159	13/64"	44	86	52	5,159
A1247-NO6	5,182	No. 06	44	86	52	5,182
A1247-5.2	5,2		44	86	52	5,2
A1247-NO5	5,22	No. 05	44	86	52	5,22
A1247-5.3	5,3		44	86	52	5,3
A1247-NO4	5,309	No. 04	48	93	57	5,309
A1247-5.4	5,4		48	93	57	5,4
A1247-NO3	5,41	No. 03	48	93	57	5,41
A1247-5.5	5,5		48	93	57	5,5
A1247-7/32IN	5,556	7/32"	48	93	57	5,556
A1247-5.6	5,6		48	93	57	5,6
A1247-NO2	5,613	No. 02	48	93	57	5,613
A1247-5.7	5,7		48	93	57	5,7
A1247-NO1	5,791	No. 01	48	93	57	5,791
A1247-5.8	5,8		48	93	57	5,8
A1247-5.9	5,9		48	93	57	5,9
A1247-15/64IN	5,953	15/64"	48	93	57	5,953
A1247-6	6		48	93	57	6
A1247-6.1	6,1		52	101	63	6,1
A1247-6.2	6,2		52	101	63	6,2
A1247-6.3	6,3		52	101	63	6,3
A1247-1/4IN	6,35	1/4"	52	101	63	6,35
A1247-6.4	6,4		52	101	63	6,4
A1247-6.5	6,5		52	101	63	6,5
A1247-6.6	6,6		52	101	63	6,6
A1247-6.7	6,7		52	101	63	6,7
A1247-17/64IN	6,747	17/64"	57	109	69	6,747
A1247-6.8	6,8		57	109	69	6,8
A1247-6.9	6,9		57	109	69	6,9
A1247-7	7		57	109	69	7
A1247-7.1	7,1		57	109	69	7,1
A1247-9/32IN	7,144	9/32"	57	109	69	7,144
A1247-7.2	7,2		57	109	69	7,2
A1247-7.3	7,3		57	109	69	7,3
A1247-7.4	7,4		57	109	69	7,4
A1247-7.5	7,5		57	109	69	7,5
A1247-19/64IN	7,541	19/64"	62	117	75	7,541
A1247-7.6	7,6		62	117	75	7,6
A1247-7.7	7,7		62	117	75	7,7
A1247-7.8	7,8		62	117	75	7,8
A1247-7.9	7,9		62	117	75	7,9
A1247-5/16IN	7,938	5/16"	62	117	75	7,938
A1247-8	8		62	117	75	8
A1247-8.1	8,1		62	117	75	8,1
A1247-8.2	8,2		62	117	75	8,2
A1247-8.3	8,3		62	117	75	8,3
A1247-21/64IN	8,334	21/64"	62	117	75	8,334
A1247-8.4	8,4		62	117	75	8,4
A1247-8.5	8,5		62	117	75	8,5
A1247-8.6	8,6		66	125	81	8,6
A1247-8.7	8,7		66	125	81	8,7
A1247-11/32IN	8,731	11/32"	66	125	81	8,731
A1247-8.8	8,8		66	125	81	8,8
A1247-8.9	8,9		66	125	81	8,9
A1247-9	9		66	125	81	9
A1247-9.1	9,1		66	125	81	9,1
A1247-23/64IN	9,128	23/64"	66	125	81	9,128
A1247-9.2	9,2		66	125	81	9,2
A1247-9.3	9,3		66	125	81	9,3
A1247-9.4	9,4		66	125	81	9,4
A1247-9.5	9,5		66	125	81	9,5

Continued

D 1 B 474 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1247-3/8IN	9,525	3/8"	71	133	87	9,525
A1247-9.6	9,6		71	133	87	9,6
A1247-9.7	9,7		71	133	87	9,7
A1247-9.8	9,8		71	133	87	9,8
A1247-9.9	9,9		71	133	87	9,9
A1247-25/64IN	9,922	25/64"	71	133	87	9,922
A1247-10	10		71	133	87	10
A1247-10.2	10,2		71	133	87	10,2
A1247-13/32IN	10,319	13/32"	71	133	87	10,319
A1247-10.5	10,5		71	133	87	10,5
A1247-27/64IN	10,716	27/64"	76	142	94	10,716
A1247-10.8	10,8		76	142	94	10,8
A1247-11	11		76	142	94	11
A1247-7/16IN	11,113	7/16"	76	142	94	11,113
A1247-11.2	11,2		76	142	94	11,2
A1247-11.5	11,5		76	142	94	11,5
A1247-29/64IN	11,509	29/64"	76	142	94	11,509
A1247-11.8	11,8		76	142	94	11,8
A1247-15/32IN	11,906	15/32"	87	151	101	11,906
A1247-12	12		87	151	101	12
A1247-31/64IN	12,303	31/64"	87	151	101	12,303
A1247-12.5	12,5		87	151	101	12,5
A1247-1/2IN	12,7	1/2"	87	151	101	12,7
A1247-13	13		87	151	101	13
A1247-13.1	13,1		87	151	101	13,1
A1247-13.3	13,3		94	160	108	13,3
A1247-13.5	13,5		94	160	108	13,5
A1247-14	14		94	160	108	14
A1247-14.5	14,5		99	169	114	14,5
A1247-15	15		99	169	114	15
A1247-15.1	15,1		104	178	120	15,1
A1247-15.3	15,3		104	178	120	15,3
A1247-15.5	15,5		104	178	120	15,5
A1247-16	16		104	178	120	16

WALTER SELECT

●● Primary application

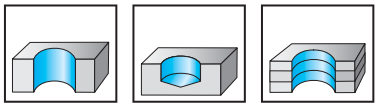
● Other application

D 1 B 474 B 482

HSS-E twist drills
A1244
VA



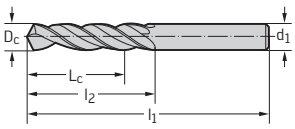
– Available as set



~8×D_c | DIN 338 | 130°

	P	M	K	N	S	H	O
Uncoated	●	●●		●	●●		

Parallel shank



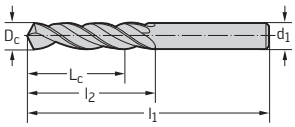
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1244-0.3	0,3		2,5	19	3	0,3
A1244-NO80	0,343	No. 80	3,4	19	4	0,343
A1244-0.35	0,35		3,4	19	4	0,35
A1244-NO79	0,368	No. 79	3,4	19	4	0,368
A1244-1/64IN	0,397	1/64"	4,2	20	5	0,397
A1244-0.4	0,4		4,2	20	5	0,4
A1244-NO78	0,406	No. 78	4,2	20	5	0,406
A1244-0.45	0,45		4,2	20	5	0,45
A1244-NO77	0,457	No. 77	4,2	20	5	0,457
A1244-0.5	0,5		5,2	22	6	0,5
A1244-NO76	0,508	No. 76	5,2	22	6	0,508
A1244-NO75	0,533	No. 75	6,1	24	7	0,533
A1244-0.55	0,55		6,1	24	7	0,55
A1244-NO74	0,572	No. 74	6,1	24	7	0,572
A1244-0.6	0,6		6,1	24	7	0,6
A1244-NO73	0,61	No. 73	6,9	26	8	0,61
A1244-NO72	0,635	No. 72	6,9	26	8	0,635
A1244-0.65	0,65		6,9	26	8	0,65
A1244-NO71	0,66	No. 71	6,9	26	8	0,66
A1244-0.7	0,7		7,8	28	9	0,7
A1244-NO70	0,711	No. 70	7,8	28	9	0,711
A1244-NO69	0,742	No. 69	7,8	28	9	0,742
A1244-0.75	0,75		7,8	28	9	0,75
A1244-NO68	0,787	No. 68	8,7	30	10	0,787
A1244-1/32IN	0,794	1/32"	8,7	30	10	0,794
A1244-0.8	0,8		8,7	30	10	0,8
A1244-NO67	0,813	No. 67	8,7	30	10	0,813
A1244-NO66	0,838	No. 66	8,7	30	10	0,838
A1244-0.85	0,85		8,7	30	10	0,85
A1244-NO65	0,889	No. 65	9,5	32	11	0,889
A1244-0.9	0,9		9,5	32	11	0,9
A1244-NO64	0,914	No. 64	9,5	32	11	0,914
A1244-NO63	0,94	No. 63	9,5	32	11	0,94
A1244-0.95	0,95		9,5	32	11	0,95
A1244-NO62	0,965	No. 62	10	34	12	0,965
A1244-NO61	0,991	No. 61	10	34	12	0,991
A1244-1	1		10	34	12	1
A1244-NO60	1,016	No. 60	10	34	12	1,016
A1244-NO59	1,041	No. 59	10	34	12	1,041
A1244-1.05	1,05		10	34	12	1,05
A1244-NO58	1,067	No. 58	12	36	14	1,067
A1244-NO57	1,092	No. 57	12	36	14	1,092
A1244-1.1	1,1		12	36	14	1,1
A1244-1.15	1,15		12	36	14	1,15
A1244-NO56	1,181	No. 56	14	38	16	1,181
A1244-3/64IN	1,191	3/64"	14	38	16	1,191
A1244-1.2	1,2		14	38	16	1,2
A1244-1.25	1,25		14	38	16	1,25

Continued

D 1 | B 476 | B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1244-1.3	1,3		14	38	16	1,3
A1244-NO55	1,321	No. 55	15	40	18	1,321
A1244-1.35	1,35		15	40	18	1,35
A1244-NO54	1,397	No. 54	15	40	18	1,397
A1244-1.4	1,4		15	40	18	1,4
A1244-1.45	1,45		15	40	18	1,45
A1244-1.5	1,5		15	40	18	1,5
A1244-NO53	1,511	No. 53	17	43	20	1,511
A1244-1.55	1,55		17	43	20	1,55
A1244-1/16IN	1,588	1/16“	17	43	20	1,588
A1244-1.6	1,6		17	43	20	1,6
A1244-NO52	1,613	No. 52	17	43	20	1,613
A1244-1.65	1,65		17	43	20	1,65
A1244-1.7	1,7		17	43	20	1,7
A1244-NO51	1,702	No. 51	19	46	22	1,702
A1244-1.75	1,75		19	46	22	1,75
A1244-NO50	1,778	No. 50	19	46	22	1,778
A1244-1.8	1,8		19	46	22	1,8
A1244-1.85	1,85		19	46	22	1,85
A1244-NO49	1,854	No. 49	19	46	22	1,854
A1244-1.9	1,9		19	46	22	1,9
A1244-NO48	1,93	No. 48	20	49	24	1,93
A1244-1.95	1,95		20	49	24	1,95
A1244-5/64IN	1,984	5/64“	20	49	24	1,984
A1244-NO47	1,994	No. 47	20	49	24	1,994
A1244-2	2		20	49	24	2
A1244-2.05	2,05		20	49	24	2,05
A1244-NO46	2,057	No. 46	20	49	24	2,057
A1244-NO45	2,083	No. 45	20	49	24	2,083
A1244-2.1	2,1		20	49	24	2,1
A1244-2.15	2,15		23	53	27	2,15
A1244-NO44	2,184	No. 44	23	53	27	2,184
A1244-2.2	2,2		23	53	27	2,2
A1244-2.25	2,25		23	53	27	2,25
A1244-NO43	2,261	No. 43	23	53	27	2,261
A1244-2.3	2,3		23	53	27	2,3
A1244-2.35	2,35		23	53	27	2,35
A1244-NO42	2,375	No. 42	26	57	30	2,375
A1244-3/32IN	2,381	3/32“	26	57	30	2,381
A1244-2.4	2,4		26	57	30	2,4
A1244-NO41	2,438	No. 41	26	57	30	2,438
A1244-2.45	2,45		26	57	30	2,45
A1244-NO40	2,489	No. 40	26	57	30	2,489
A1244-2.5	2,5		26	57	30	2,5
A1244-NO39	2,527	No. 39	26	57	30	2,527
A1244-2.55	2,55		26	57	30	2,55
A1244-NO38	2,578	No. 38	26	57	30	2,578
A1244-2.6	2,6		26	57	30	2,6
A1244-NO37	2,642	No. 37	26	57	30	2,642
A1244-2.65	2,65		26	57	30	2,65
A1244-2.7	2,7		28	61	33	2,7
A1244-NO36	2,705	No. 36	28	61	33	2,705
A1244-2.75	2,75		28	61	33	2,75
A1244-7/64IN	2,778	7/64“	28	61	33	2,778
A1244-NO35	2,794	No. 35	28	61	33	2,794
A1244-2.8	2,8		28	61	33	2,8
A1244-NO34	2,819	No. 34	28	61	33	2,819
A1244-2.85	2,85		28	61	33	2,85

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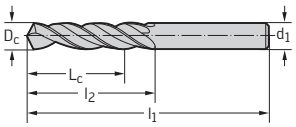
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Parallel shank



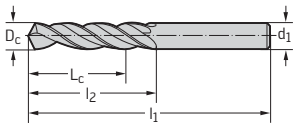
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1244-NO33	2,87	No. 33	28	61	33	2,87
A1244-2.9	2,9		28	61	33	2,9
A1244-NO32	2,946	No. 32	28	61	33	2,946
A1244-2.95	2,95		28	61	33	2,95
A1244-3	3		28	61	33	3
A1244-NO31	3,048	No. 31	30	65	36	3,048
A1244-3.1	3,1		30	65	36	3,1
A1244-1/8IN	3,175	1/8"	30	65	36	3,175
A1244-3.2	3,2		30	65	36	3,2
A1244-NO30	3,264	No. 30	30	65	36	3,264
A1244-3.3	3,3		30	65	36	3,3
A1244-3.4	3,4		33	70	39	3,4
A1244-NO29	3,454	No. 29	33	70	39	3,454
A1244-3.5	3,5		33	70	39	3,5
A1244-NO28	3,569	No. 28	33	70	39	3,569
A1244-9/64IN	3,572	9/64"	33	70	39	3,572
A1244-3.6	3,6		33	70	39	3,6
A1244-3.65	3,65		33	70	39	3,65
A1244-NO27	3,658	No. 27	33	70	39	3,658
A1244-3.7	3,7		33	70	39	3,7
A1244-NO26	3,734	No. 26	33	70	39	3,734
A1244-NO25	3,797	No. 25	36	75	43	3,797
A1244-3.8	3,8		36	75	43	3,8
A1244-NO24	3,861	No. 24	36	75	43	3,861
A1244-3.9	3,9		36	75	43	3,9
A1244-NO23	3,912	No. 23	36	75	43	3,912
A1244-5/32IN	3,969	5/32"	36	75	43	3,969
A1244-NO22	3,988	No. 22	36	75	43	3,988
A1244-4	4		36	75	43	4
A1244-NO21	4,039	No. 21	36	75	43	4,039
A1244-NO20	4,089	No. 20	36	75	43	4,089
A1244-4.1	4,1		36	75	43	4,1
A1244-4.2	4,2		36	75	43	4,2
A1244-NO19	4,216	No. 19	36	75	43	4,216
A1244-4.3	4,3		39	80	47	4,3
A1244-NO18	4,305	No. 18	39	80	47	4,305
A1244-11/64IN	4,366	11/64"	39	80	47	4,366
A1244-NO17	4,394	No. 17	39	80	47	4,394
A1244-4.4	4,4		39	80	47	4,4
A1244-NO16	4,496	No. 16	39	80	47	4,496
A1244-4.5	4,5		39	80	47	4,5
A1244-NO15	4,572	No. 15	39	80	47	4,572
A1244-4.6	4,6		39	80	47	4,6
A1244-NO14	4,623	No. 14	39	80	47	4,623
A1244-NO13	4,699	No. 13	39	80	47	4,699
A1244-4.7	4,7		39	80	47	4,7
A1244-3/16IN	4,763	3/16"	44	86	52	4,763
A1244-4.8	4,8		44	86	52	4,8
A1244-NO12	4,801	No. 12	44	86	52	4,801
A1244-NO11	4,851	No. 11	44	86	52	4,851
A1244-4.9	4,9		44	86	52	4,9
A1244-NO10	4,915	No. 10	44	86	52	4,915
A1244-NO9	4,978	No. 09	44	86	52	4,978
A1244-5	5		44	86	52	5
A1244-NO8	5,055	No. 08	44	86	52	5,055
A1244-5.1	5,1		44	86	52	5,1
A1244-NO7	5,105	No. 07	44	86	52	5,105
A1244-13/64IN	5,159	13/64"	44	86	52	5,159
A1244-NO6	5,182	No. 06	44	86	52	5,182
A1244-5.2	5,2		44	86	52	5,2
A1244-NO5	5,22	No. 05	44	86	52	5,22
A1244-5.3	5,3		44	86	52	5,3

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D 1 B 476 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1244-NO4	5,309	No. 04	48	93	57	5,309
A1244-5.4	5,4		48	93	57	5,4
A1244-NO3	5,41	No. 03	48	93	57	5,41
A1244-5.5	5,5		48	93	57	5,5
A1244-7/32IN	5,556	7/32"	48	93	57	5,556
A1244-5.6	5,6		48	93	57	5,6
A1244-NO2	5,613	No. 02	48	93	57	5,613
A1244-5.7	5,7		48	93	57	5,7
A1244-NO1	5,791	No. 01	48	93	57	5,791
A1244-5.8	5,8		48	93	57	5,8
A1244-5.9	5,9		48	93	57	5,9
A1244-15/64IN	5,953	15/64"	48	93	57	5,953
A1244-6	6		48	93	57	6
A1244-6.1	6,1		52	101	63	6,1
A1244-6.2	6,2		52	101	63	6,2
A1244-6.3	6,3		52	101	63	6,3
A1244-1/4IN	6,35	1/4"	52	101	63	6,35
A1244-6.4	6,4		52	101	63	6,4
A1244-6.5	6,5		52	101	63	6,5
A1244-6.6	6,6		52	101	63	6,6
A1244-6.7	6,7		52	101	63	6,7
A1244-17/64IN	6,747	17/64"	57	109	69	6,747
A1244-6.8	6,8		57	109	69	6,8
A1244-6.9	6,9		57	109	69	6,9
A1244-7	7		57	109	69	7
A1244-7.1	7,1		57	109	69	7,1
A1244-9/32IN	7,144	9/32"	57	109	69	7,144
A1244-7.2	7,2		57	109	69	7,2
A1244-7.3	7,3		57	109	69	7,3
A1244-7.4	7,4		57	109	69	7,4
A1244-7.5	7,5		57	109	69	7,5
A1244-19/64IN	7,541	19/64"	62	117	75	7,541
A1244-7.6	7,6		62	117	75	7,6
A1244-7.7	7,7		62	117	75	7,7
A1244-7.8	7,8		62	117	75	7,8
A1244-7.9	7,9		62	117	75	7,9
A1244-5/16IN	7,938	5/16"	62	117	75	7,938
A1244-8	8		62	117	75	8
A1244-8.1	8,1		62	117	75	8,1
A1244-8.2	8,2		62	117	75	8,2
A1244-8.3	8,3		62	117	75	8,3
A1244-21/64IN	8,334	21/64"	62	117	75	8,334
A1244-8.4	8,4		62	117	75	8,4
A1244-8.5	8,5		62	117	75	8,5
A1244-8.6	8,6		66	125	81	8,6
A1244-8.7	8,7		66	125	81	8,7
A1244-11/32IN	8,731	11/32"	66	125	81	8,731
A1244-8.8	8,8		66	125	81	8,8
A1244-8.9	8,9		66	125	81	8,9
A1244-9	9		66	125	81	9
A1244-9.1	9,1		66	125	81	9,1
A1244-23/64IN	9,128	23/64"	66	125	81	9,128
A1244-9.2	9,2		66	125	81	9,2
A1244-9.3	9,3		66	125	81	9,3
A1244-9.4	9,4		66	125	81	9,4
A1244-9.5	9,5		66	125	81	9,5
A1244-3/8IN	9,525	3/8"	71	133	87	9,525
A1244-9.6	9,6		71	133	87	9,6

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WALTER SELECT

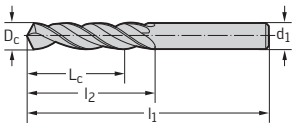
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Parallel shank



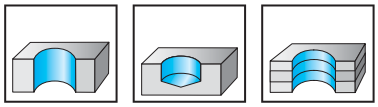
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1244-9.7	9,7		71	133	87	9,7
A1244-9.8	9,8		71	133	87	9,8
A1244-9.9	9,9		71	133	87	9,9
A1244-25/64IN	9,922	25/64"	71	133	87	9,922
A1244-10	10		71	133	87	10
A1244-10.2	10,2		71	133	87	10,2
A1244-13/32IN	10,319	13/32"	71	133	87	10,319
A1244-10.5	10,5		71	133	87	10,5
A1244-27/64IN	10,716	27/64"	76	142	94	10,716
A1244-11	11		76	142	94	11
A1244-7/16IN	11,113	7/16"	76	142	94	11,113
A1244-11.2	11,2		76	142	94	11,2
A1244-11.5	11,5		76	142	94	11,5
A1244-29/64IN	11,509	29/64"	76	142	94	11,509
A1244-15/32IN	11,906	15/32"	87	151	101	11,906
A1244-12	12		87	151	101	12
A1244-31/64IN	12,303	31/64"	87	151	101	12,303
A1244-12.5	12,5		87	151	101	12,5
A1244-1/2IN	12,7	1/2"	87	151	101	12,7
A1244-13	13		87	151	101	13
A1244-33/64IN	13,097	33/64"	87	151	101	13,097
A1244-17/32IN	13,494	17/32"	94	160	108	13,494
A1244-13.5	13,5		94	160	108	13,5
A1244-35/64IN	13,891	35/64"	94	160	108	13,891
A1244-14	14		94	160	108	14
A1244-9/16IN	14,288	9/16"	99	169	114	14,288
A1244-14.5	14,5		99	169	114	14,5
A1244-15	15		99	169	114	15

D 1 B 476 B 482

HSS deep-hole drills
A1222
UFL®



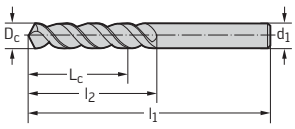
– Uncoated up to 1.9 mm
– Available as set



~8×D_c | DIN 338 |  |  130°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1222-1	1		10	34	12	1
A1222-N060	1,016	No. 60	10	34	12	1,016
A1222-N059	1,041	No. 59	10	34	12	1,041
A1222-N058	1,067	No. 58	12	36	14	1,067
A1222-N057	1,092	No. 57	12	36	14	1,092
A1222-1.1	1,1		12	36	14	1,1
A1222-N056	1,181	No. 56	14	38	16	1,181
A1222-3/64IN	1,191	3/64"	14	38	16	1,191
A1222-1.2	1,2		14	38	16	1,2
A1222-1.25	1,25		14	38	16	1,25
A1222-1.3	1,3		14	38	16	1,3
A1222-N055	1,321	No. 55	15	40	18	1,321
A1222-N054	1,397	No. 54	15	40	18	1,397
A1222-1.4	1,4		15	40	18	1,4
A1222-1.5	1,5		15	40	18	1,5
A1222-N053	1,511	No. 53	17	43	20	1,511
A1222-1/16IN	1,588	1/16"	17	43	20	1,588
A1222-1.6	1,6		17	43	20	1,6
A1222-N052	1,613	No. 52	17	43	20	1,613
A1222-1.7	1,7		17	43	20	1,7
A1222-N051	1,702	No. 51	19	46	22	1,702
A1222-N050	1,778	No. 50	19	46	22	1,778
A1222-1.8	1,8		19	46	22	1,8
A1222-N049	1,854	No. 49	19	46	22	1,854
A1222-1.9	1,9		19	46	22	1,9
A1222-N048	1,93	No. 48	20	49	24	1,93
A1222-5/64IN	1,984	5/64"	20	49	24	1,984
A1222-N047	1,994	No. 47	20	49	24	1,994
A1222-2	2		20	49	24	2
A1222-N046	2,057	No. 46	20	49	24	2,057
A1222-N045	2,083	No. 45	20	49	24	2,083
A1222-2.1	2,1		20	49	24	2,1
A1222-N044	2,184	No. 44	23	53	27	2,184
A1222-2.2	2,2		23	53	27	2,2
A1222-N043	2,261	No. 43	23	53	27	2,261
A1222-2.3	2,3		23	53	27	2,3
A1222-N042	2,375	No. 42	26	57	30	2,375
A1222-3/32IN	2,381	3/32"	26	57	30	2,381
A1222-2.4	2,4		26	57	30	2,4
A1222-N041	2,438	No. 41	26	57	30	2,438
A1222-N040	2,489	No. 40	26	57	30	2,489
A1222-2.5	2,5		26	57	30	2,5
A1222-N039	2,527	No. 39	26	57	30	2,527
A1222-N038	2,578	No. 38	26	57	30	2,578

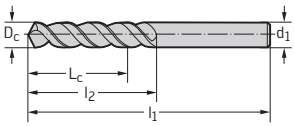
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WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | B 476 | B 482

Continued

Parallel shank



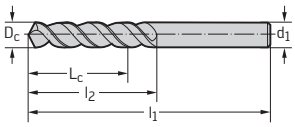
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1222-2.6	2,6		26	57	30	2,6
A1222-NO37	2,642	No. 37	26	57	30	2,642
A1222-2.7	2,7		28	61	33	2,7
A1222-NO36	2,705	No. 36	28	61	33	2,705
A1222-7/64IN	2,778	7/64"	28	61	33	2,778
A1222-NO35	2,794	No. 35	28	61	33	2,794
A1222-2.8	2,8		28	61	33	2,8
A1222-NO34	2,819	No. 34	28	61	33	2,819
A1222-NO33	2,87	No. 33	28	61	33	2,87
A1222-2.9	2,9		28	61	33	2,9
A1222-NO32	2,946	No. 32	28	61	33	2,946
A1222-3	3		28	61	33	3
A1222-NO31	3,048	No. 31	30	65	36	3,048
A1222-3.1	3,1		30	65	36	3,1
A1222-1/8IN	3,175	1/8"	30	65	36	3,175
A1222-3.2	3,2		30	65	36	3,2
A1222-NO30	3,264	No. 30	30	65	36	3,264
A1222-3.3	3,3		30	65	36	3,3
A1222-3.4	3,4		33	70	39	3,4
A1222-NO29	3,454	No. 29	33	70	39	3,454
A1222-3.5	3,5		33	70	39	3,5
A1222-NO28	3,569	No. 28	33	70	39	3,569
A1222-9/64IN	3,572	9/64"	33	70	39	3,572
A1222-3.6	3,6		33	70	39	3,6
A1222-NO27	3,658	No. 27	33	70	39	3,658
A1222-3.7	3,7		33	70	39	3,7
A1222-NO26	3,734	No. 26	33	70	39	3,734
A1222-NO25	3,797	No. 25	36	75	43	3,797
A1222-3.8	3,8		36	75	43	3,8
A1222-NO24	3,861	No. 24	36	75	43	3,861
A1222-3.9	3,9		36	75	43	3,9
A1222-NO23	3,912	No. 23	36	75	43	3,912
A1222-5/32IN	3,969	5/32"	36	75	43	3,969
A1222-NO22	3,988	No. 22	36	75	43	3,988
A1222-4	4		36	75	43	4
A1222-NO21	4,039	No. 21	36	75	43	4,039
A1222-NO20	4,089	No. 20	36	75	43	4,089
A1222-4.1	4,1		36	75	43	4,1
A1222-4.2	4,2		36	75	43	4,2
A1222-NO19	4,216	No. 19	36	75	43	4,216
A1222-4.3	4,3		39	80	47	4,3
A1222-NO18	4,305	No. 18	39	80	47	4,305
A1222-11/64IN	4,366	11/64"	39	80	47	4,366
A1222-NO17	4,394	No. 17	39	80	47	4,394
A1222-4.4	4,4		39	80	47	4,4
A1222-NO16	4,496	No. 16	39	80	47	4,496
A1222-4.5	4,5		39	80	47	4,5
A1222-NO15	4,572	No. 15	39	80	47	4,572
A1222-4.6	4,6		39	80	47	4,6
A1222-NO14	4,623	No. 14	39	80	47	4,623
A1222-NO13	4,699	No. 13	39	80	47	4,699
A1222-4.7	4,7		39	80	47	4,7
A1222-3/16IN	4,763	3/16"	44	86	52	4,763
A1222-4.8	4,8		44	86	52	4,8
A1222-NO12	4,801	No. 12	44	86	52	4,801
A1222-NO11	4,851	No. 11	44	86	52	4,851
A1222-4.9	4,9		44	86	52	4,9
A1222-NO10	4,915	No. 10	44	86	52	4,915
A1222-NO9	4,978	No. 09	44	86	52	4,978
A1222-5	5		44	86	52	5
A1222-NO8	5,055	No. 08	44	86	52	5,055
A1222-5.1	5,1		44	86	52	5,1

Continued

XIII D 1 B 476 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1222-NO7	5,105	No. 07	44	86	52	5,105
A1222-13/64IN	5,159	13/64"	44	86	52	5,159
A1222-NO6	5,182	No. 06	44	86	52	5,182
A1222-5.2	5,2		44	86	52	5,2
A1222-NO5	5,22	No. 05	44	86	52	5,22
A1222-5.3	5,3		44	86	52	5,3
A1222-NO4	5,309	No. 04	48	93	57	5,309
A1222-5.4	5,4		48	93	57	5,4
A1222-NO3	5,41	No. 03	48	93	57	5,41
A1222-5.5	5,5		48	93	57	5,5
A1222-7/32IN	5,556	7/32"	48	93	57	5,556
A1222-5.6	5,6		48	93	57	5,6
A1222-NO2	5,613	No. 02	48	93	57	5,613
A1222-5.7	5,7		48	93	57	5,7
A1222-NO1	5,791	No. 01	48	93	57	5,791
A1222-5.8	5,8		48	93	57	5,8
A1222-5.9	5,9		48	93	57	5,9
A1222-LET.A	5,944	Let.A	48	93	57	5,944
A1222-15/64IN	5,953	15/64"	48	93	57	5,953
A1222-6	6		48	93	57	6
A1222-LET.B	6,045	Let.B	52	101	63	6,045
A1222-6.1	6,1		52	101	63	6,1
A1222-LET.C	6,147	Let.C	52	101	63	6,147
A1222-6.2	6,2		52	101	63	6,2
A1222-LET.D	6,248	Let.D	52	101	63	6,248
A1222-6.3	6,3		52	101	63	6,3
A1222-1/4IN	6,35	1/4"	52	101	63	6,35
A1222-6.4	6,4		52	101	63	6,4
A1222-6.5	6,5		52	101	63	6,5
A1222-LET.F	6,528	Let.F	52	101	63	6,528
A1222-6.6	6,6		52	101	63	6,6
A1222-LET.G	6,629	Let.G	52	101	63	6,629
A1222-6.7	6,7		52	101	63	6,7
A1222-17/64IN	6,747	17/64"	57	109	69	6,747
A1222-LET.H	6,756	Let.H	57	109	69	6,756
A1222-6.8	6,8		57	109	69	6,8
A1222-6.9	6,9		57	109	69	6,9
A1222-LET.I	6,909	Let.I	57	109	69	6,909
A1222-7	7		57	109	69	7
A1222-LET.J	7,036	Let.J	57	109	69	7,036
A1222-7.1	7,1		57	109	69	7,1
A1222-LET.K	7,137	Let.K	57	109	69	7,137
A1222-9/32IN	7,144	9/32"	57	109	69	7,144
A1222-7.2	7,2		57	109	69	7,2
A1222-7.3	7,3		57	109	69	7,3
A1222-LET.L	7,366	Let.L	57	109	69	7,366
A1222-7.4	7,4		57	109	69	7,4
A1222-LET.M	7,493	Let.M	57	109	69	7,493
A1222-7.5	7,5		57	109	69	7,5
A1222-19/64IN	7,541	19/64"	62	117	75	7,541
A1222-7.6	7,6		62	117	75	7,6
A1222-LET.N	7,671	Let.N	62	117	75	7,671
A1222-7.7	7,7		62	117	75	7,7
A1222-7.8	7,8		62	117	75	7,8
A1222-7.9	7,9		62	117	75	7,9
A1222-5/16IN	7,938	5/16"	62	117	75	7,938
A1222-8	8		62	117	75	8
A1222-LET.O	8,026	Let.O	62	117	75	8,026

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WALTER SELECT

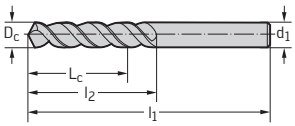
●● Primary application

● Other application

XIII D 1 B 476 B 482

Continued

Parallel shank

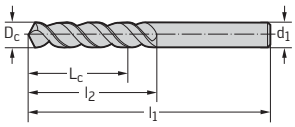


Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1222-8.1	8,1		62	117	75	8,1
A1222-8.2	8,2		62	117	75	8,2
A1222-LET.P	8,204	Let.P	62	117	75	8,204
A1222-8.3	8,3		62	117	75	8,3
A1222-21/64IN	8,334	21/64"	62	117	75	8,334
A1222-8.4	8,4		62	117	75	8,4
A1222-LET.Q	8,433	Let.Q	62	117	75	8,433
A1222-8.5	8,5		62	117	75	8,5
A1222-8.6	8,6		66	125	81	8,6
A1222-LET.R	8,611	Let.R	66	125	81	8,611
A1222-8.7	8,7		66	125	81	8,7
A1222-11/32IN	8,731	11/32"	66	125	81	8,731
A1222-8.8	8,8		66	125	81	8,8
A1222-LET.S	8,839	Let.S	66	125	81	8,839
A1222-8.9	8,9		66	125	81	8,9
A1222-9	9		66	125	81	9
A1222-LET.T	9,093	Let.T	66	125	81	9,093
A1222-9.1	9,1		66	125	81	9,1
A1222-23/64IN	9,128	23/64"	66	125	81	9,128
A1222-9.2	9,2		66	125	81	9,2
A1222-9.3	9,3		66	125	81	9,3
A1222-LET.U	9,347	Let.U	66	125	81	9,347
A1222-9.4	9,4		66	125	81	9,4
A1222-9.5	9,5		66	125	81	9,5
A1222-3/8IN	9,525	3/8"	71	133	87	9,525
A1222-LET.V	9,576	Let.V	71	133	87	9,576
A1222-9.6	9,6		71	133	87	9,6
A1222-9.7	9,7		71	133	87	9,7
A1222-9.8	9,8		71	133	87	9,8
A1222-LET.W	9,804	Let.W	71	133	87	9,804
A1222-9.9	9,9		71	133	87	9,9
A1222-25/64IN	9,922	25/64"	71	133	87	9,922
A1222-10	10		71	133	87	10
A1222-LET.X	10,084	Let.X	71	133	87	10,084
A1222-10.2	10,2		71	133	87	10,2
A1222-LET.Y	10,262	Let.Y	71	133	87	10,262
A1222-13/32IN	10,319	13/32"	71	133	87	10,319
A1222-LET.Z	10,49	Let.Z	71	133	87	10,49
A1222-10.5	10,5		71	133	87	10,5
A1222-27/64IN	10,716	27/64"	76	142	94	10,716
A1222-10.8	10,8		76	142	94	10,8
A1222-11	11		76	142	94	11
A1222-7/16IN	11,113	7/16"	76	142	94	11,113
A1222-11.2	11,2		76	142	94	11,2
A1222-11.5	11,5		76	142	94	11,5
A1222-29/64IN	11,509	29/64"	76	142	94	11,509
A1222-11.8	11,8		76	142	94	11,8
A1222-15/32IN	11,906	15/32"	87	151	101	11,906
A1222-12	12		87	151	101	12
A1222-31/64IN	12,303	31/64"	87	151	101	12,303
A1222-12.5	12,5		87	151	101	12,5
A1222-1/2IN	12,7	1/2"	87	151	101	12,7
A1222-13	13		87	151	101	13
A1222-33/64IN	13,097	33/64"	87	151	101	13,097
A1222-13.1	13,1		87	151	101	13,1
A1222-13.3	13,3		94	160	108	13,3
A1222-17/32IN	13,494	17/32"	94	160	108	13,494
A1222-13.5	13,5		94	160	108	13,5
A1222-35/64IN	13,891	35/64"	94	160	108	13,891
A1222-14	14		94	160	108	14
A1222-9/16IN	14,288	9/16"	99	169	114	14,288
A1222-14.5	14,5		99	169	114	14,5

Continued

XIII D 1 B 476 B 482

Continued

	Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank 	A1222-37/64IN	14,684	37/64"	99	169	114	14,684
	A1222-15	15		99	169	114	15
	A1222-19/32IN	15,081	19/32"	104	178	120	15,081
	A1222-15.1	15,1		104	178	120	15,1
	A1222-15.3	15,3		104	178	120	15,3
	A1222-39/64IN	15,478	39/64"	104	178	120	15,478
	A1222-15.5	15,5		104	178	120	15,5
	A1222-5/8IN	15,875	5/8"	104	178	120	15,875
	A1222-16	16		104	178	120	16

WALTER SELECT

●● Primary application

● Other application

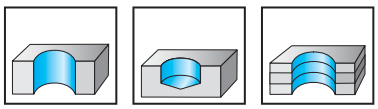
XIII D 1 B 476 B 482

HSS Jobber drills
A1211 / A1211TIN



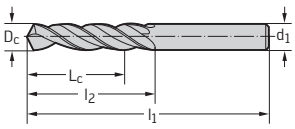
– Available as set
– Type N

~8×D_C | DIN 338 |  | 



	P	M	K	N	S	H	O
TIN	●●	●	●●	●	●		●
Uncoated	●●	●	●●	●	●		●

Parallel shank



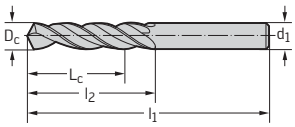
Designation TIN	Designation Uncoated	D_C h8 mm	D_C inches/ no.	L_C mm	l_1 mm	l_2 mm	d_1 f11 mm
	A1211-0.2	0,2		2,1	19	2,5	0,2
	A1211-0.22	0,22		2,1	19	2,5	0,22
	A1211-0.23	0,23		2,1	19	2,5	0,23
	A1211-0.25	0,25		2,5	19	3	0,25
	A1211-0.27	0,27		2,5	19	3	0,27
	A1211-0.28	0,28		2,5	19	3	0,28
	A1211-0.29	0,29		2,5	19	3	0,29
	A1211-0.3	0,3		2,5	19	3	0,3
	A1211-0.31	0,31		3,4	19	4	0,31
	A1211-NO82	0,318	No. 82	3,4	19	4	0,318
	A1211-0.32	0,32		3,4	19	4	0,32
	A1211-0.33	0,33	No. 81	3,4	19	4	0,33
	A1211-0.34	0,34		3,4	19	4	0,34
	A1211-NO80	0,343	No. 80	3,4	19	4	0,343
	A1211-0.35	0,35		3,4	19	4	0,35
	A1211-NO79	0,368	No. 79	3,4	19	4	0,368
	A1211-0.38	0,38		3,4	19	4	0,38
	A1211-1/64IN	0,397	1/64"	4,2	20	5	0,397
	A1211-0.4	0,4		4,2	20	5	0,4
	A1211-NO78	0,406	No. 78	4,2	20	5	0,406
	A1211-0.42	0,42		4,2	20	5	0,42
	A1211-0.43	0,43		4,2	20	5	0,43
	A1211-0.45	0,45		4,2	20	5	0,45
	A1211-NO77	0,457	No. 77	4,2	20	5	0,457
	A1211-0.47	0,47		4,2	20	5	0,47
	A1211-0.48	0,48		4,2	20	5	0,48
	A1211-0.49	0,49		5,2	22	6	0,49
A1211TIN-0.5	A1211-0.5	0,5		5,2	22	6	0,5
	A1211-NO76	0,508	No. 76	5,2	22	6	0,508
	A1211-0.51	0,51		5,2	22	6	0,51
	A1211-0.52	0,52		5,2	22	6	0,52
	A1211-0.53	0,53		5,2	22	6	0,53
	A1211-NO75	0,533	No. 75	6,1	24	7	0,533
	A1211-0.54	0,54		6,1	24	7	0,54
	A1211-0.55	0,55		6,1	24	7	0,55
	A1211-0.57	0,57		6,1	24	7	0,57
	A1211-NO74	0,572	No. 74	6,1	24	7	0,572
	A1211-0.58	0,58		6,1	24	7	0,58
	A1211-0.59	0,59		6,1	24	7	0,59
A1211TIN-0.6	A1211-0.6	0,6		6,1	24	7	0,6
	A1211-NO73	0,61	No. 73	6,9	26	8	0,61
	A1211-0.62	0,62		6,9	26	8	0,62
	A1211-0.63	0,63		6,9	26	8	0,63
	A1211-NO72	0,635	No. 72	6,9	26	8	0,635
	A1211-0.65	0,65		6,9	26	8	0,65
	A1211-NO71	0,66	No. 71	6,9	26	8	0,66
	A1211-0.67	0,67		6,9	26	8	0,67
	A1211-0.68	0,68		7,8	28	9	0,68

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D 1 | B 476 | B 482

Continued

Parallel shank



Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1211TIN-0.7	A1211-0.7	0,7		7,8	28	9	0,7
	A1211-NO70	0,711	No. 70	7,8	28	9	0,711
	A1211-0.72	0,72		7,8	28	9	0,72
	A1211-0.73	0,73		7,8	28	9	0,73
	A1211-NO69	0,742	No. 69	7,8	28	9	0,742
	A1211-0.75	0,75		7,8	28	9	0,75
	A1211-0.76	0,76		8,7	30	10	0,76
	A1211-0.78	0,78		8,7	30	10	0,78
	A1211-NO68	0,787	No. 68	8,7	30	10	0,787
	A1211-1/32IN	0,794	1/32"	8,7	30	10	0,794
A1211TIN-0.8	A1211-0.8	0,8		8,7	30	10	0,8
	A1211-0.81	0,81		8,7	30	10	0,81
	A1211-NO67	0,813	No. 67	8,7	30	10	0,813
	A1211-0.82	0,82		8,7	30	10	0,82
	A1211-0.83	0,83		8,7	30	10	0,83
	A1211-NO66	0,838	No. 66	8,7	30	10	0,838
	A1211-0.85	0,85		8,7	30	10	0,85
	A1211-0.87	0,87		9,5	32	11	0,87
	A1211-0.88	0,88		9,5	32	11	0,88
	A1211-NO65	0,889	No. 65	9,5	32	11	0,889
A1211TIN-0.9	A1211-0.9	0,9		9,5	32	11	0,9
	A1211-0.91	0,91		9,5	32	11	0,91
	A1211-NO64	0,914	No. 64	9,5	32	11	0,914
	A1211-0.92	0,92		9,5	32	11	0,92
	A1211-NO63	0,94	No. 63	9,5	32	11	0,94
	A1211-0.95	0,95		9,5	32	11	0,95
	A1211-0.96	0,96		10	34	12	0,96
	A1211-NO62	0,965	No. 62	10	34	12	0,965
	A1211-0.97	0,97		10	34	12	0,97
	A1211-0.98	0,98		10	34	12	0,98
	A1211-0.99	0,99		10	34	12	0,99
	A1211-NO61	0,991	No. 61	10	34	12	0,991
A1211TIN-1	A1211-1	1		10	34	12	1
	A1211-1.01	1,01		10	34	12	1,01
	A1211-NO60	1,016	No. 60	10	34	12	1,016
	A1211-1.02	1,02		10	34	12	1,02
	A1211-1.03	1,03		10	34	12	1,03
	A1211-1.04	1,04		10	34	12	1,04
	A1211-NO59	1,041	No. 59	10	34	12	1,041
	A1211-1.05	1,05		10	34	12	1,05
	A1211-NO58	1,067	No. 58	12	36	14	1,067
	A1211-NO57	1,092	No. 57	12	36	14	1,092
A1211TIN-1.1	A1211-1.1	1,1		12	36	14	1,1
	A1211-1.12	1,12		12	36	14	1,12
	A1211-1.13	1,13		12	36	14	1,13
	A1211-1.15	1,15		12	36	14	1,15
	A1211-1.18	1,18		12	36	14	1,18
	A1211-NO56	1,181	No. 56	14	38	16	1,181
	A1211-3/64IN	1,191	3/64"	14	38	16	1,191
A1211TIN-1.2	A1211-1.2	1,2		14	38	16	1,2
	A1211-1.21	1,21		14	38	16	1,21
	A1211-1.22	1,22		14	38	16	1,22
	A1211-1.23	1,23		14	38	16	1,23
	A1211-1.24	1,24		14	38	16	1,24
	A1211-1.25	1,25		14	38	16	1,25
	A1211-1.27	1,27		14	38	16	1,27
	A1211-1.28	1,28		14	38	16	1,28
A1211TIN-1.3	A1211-1.3	1,3		14	38	16	1,3

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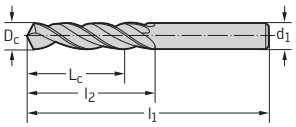
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Parallel shank



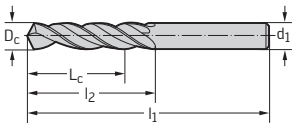
Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
	A1211-NO55	1,321	No. 55	15	40	18	1,321
	A1211-1.33	1,33		15	40	18	1,33
	A1211-1.35	1,35		15	40	18	1,35
	A1211-1.36	1,36		15	40	18	1,36
	A1211-1.37	1,37		15	40	18	1,37
	A1211-NO54	1,397	No. 54	15	40	18	1,397
A1211TIN-1.4	A1211-1.4	1,4		15	40	18	1,4
	A1211-1.42	1,42		15	40	18	1,42
	A1211-1.43	1,43		15	40	18	1,43
	A1211-1.45	1,45		15	40	18	1,45
	A1211-1.49	1,49		15	40	18	1,49
A1211TIN-1.5	A1211-1.5	1,5		15	40	18	1,5
	A1211-1.51	1,51		17	43	20	1,51
	A1211-NO53	1,511	No. 53	17	43	20	1,511
	A1211-1.52	1,52		17	43	20	1,52
	A1211-1.53	1,53		17	43	20	1,53
	A1211-1.55	1,55		17	43	20	1,55
	A1211-1.57	1,57		17	43	20	1,57
	A1211-1/16IN	1,588	1/16"	17	43	20	1,588
A1211TIN-1.6	A1211-1.6	1,6		17	43	20	1,6
	A1211-NO52	1,613	No. 52	17	43	20	1,613
	A1211-1.63	1,63		17	43	20	1,63
	A1211-1.65	1,65		17	43	20	1,65
A1211TIN-1.7	A1211-1.7	1,7		17	43	20	1,7
	A1211-NO51	1,702	No. 51	19	46	22	1,702
	A1211-1.75	1,75		19	46	22	1,75
	A1211-NO50	1,778	No. 50	19	46	22	1,778
A1211TIN-1.8	A1211-1.8	1,8		19	46	22	1,8
	A1211-1.85	1,85		19	46	22	1,85
	A1211-NO49	1,854	No. 49	19	46	22	1,854
A1211TIN-1.9	A1211-1.9	1,9		19	46	22	1,9
	A1211-NO48	1,93	No. 48	20	49	24	1,93
	A1211-1.95	1,95		20	49	24	1,95
	A1211-5/64IN	1,984	5/64"	20	49	24	1,984
	A1211-NO47	1,994	No. 47	20	49	24	1,994
A1211TIN-2	A1211-2	2		20	49	24	2
	A1211-2.05	2,05		20	49	24	2,05
	A1211-NO46	2,057	No. 46	20	49	24	2,057
	A1211-NO45	2,083	No. 45	20	49	24	2,083
A1211TIN-2.1	A1211-2.1	2,1		20	49	24	2,1
	A1211-2.15	2,15		23	53	27	2,15
	A1211-NO44	2,184	No. 44	23	53	27	2,184
A1211TIN-2.2	A1211-2.2	2,2		23	53	27	2,2
	A1211-2.25	2,25		23	53	27	2,25
	A1211-NO43	2,261	No. 43	23	53	27	2,261
A1211TIN-2.3	A1211-2.3	2,3		23	53	27	2,3
	A1211-2.35	2,35		23	53	27	2,35
	A1211-NO42	2,375	No. 42	26	57	30	2,375
	A1211-3/32IN	2,381	3/32"	26	57	30	2,381
A1211TIN-2.4	A1211-2.4	2,4		26	57	30	2,4
	A1211-NO41	2,438	No. 41	26	57	30	2,438
	A1211-2.45	2,45		26	57	30	2,45
	A1211-NO40	2,489	No. 40	26	57	30	2,489
A1211TIN-2.5	A1211-2.5	2,5		26	57	30	2,5
	A1211-NO39	2,527	No. 39	26	57	30	2,527
	A1211-2.55	2,55		26	57	30	2,55
	A1211-NO38	2,578	No. 38	26	57	30	2,578
A1211TIN-2.6	A1211-2.6	2,6		26	57	30	2,6
	A1211-NO37	2,642	No. 37	26	57	30	2,642
	A1211-2.65	2,65		26	57	30	2,65
A1211TIN-2.7	A1211-2.7	2,7		28	61	33	2,7
	A1211-NO36	2,705	No. 36	28	61	33	2,705

Continued

D 1 B 476 B 482

Continued

Parallel shank



Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
	A1211-2.75	2,75		28	61	33	2,75
	A1211-7/64IN	2,778	7/64"	28	61	33	2,778
	A1211-NO35	2,794	No. 35	28	61	33	2,794
A1211TIN-2.8	A1211-2.8	2,8		28	61	33	2,8
	A1211-NO34	2,819	No. 34	28	61	33	2,819
	A1211-2.85	2,85		28	61	33	2,85
	A1211-NO33	2,87	No. 33	28	61	33	2,87
A1211TIN-2.9	A1211-2.9	2,9		28	61	33	2,9
	A1211-NO32	2,946	No. 32	28	61	33	2,946
	A1211-2.95	2,95		28	61	33	2,95
A1211TIN-3	A1211-3	3		28	61	33	3
	A1211-NO31	3,048	No. 31	30	65	36	3,048
	A1211-3.05	3,05		30	65	36	3,05
A1211TIN-3.1	A1211-3.1	3,1		30	65	36	3,1
	A1211-3.15	3,15		30	65	36	3,15
	A1211-1/8IN	3,175	1/8"	30	65	36	3,175
A1211TIN-3.2	A1211-3.2	3,2		30	65	36	3,2
	A1211-3.25	3,25		30	65	36	3,25
	A1211-NO30	3,264	No. 30	30	65	36	3,264
A1211TIN-3.3	A1211-3.3	3,3		30	65	36	3,3
	A1211-3.35	3,35		30	65	36	3,35
A1211TIN-3.4	A1211-3.4	3,4		33	70	39	3,4
	A1211-3.45	3,45		33	70	39	3,45
	A1211-NO29	3,454	No. 29	33	70	39	3,454
A1211TIN-3.5	A1211-3.5	3,5		33	70	39	3,5
	A1211-3.55	3,55		33	70	39	3,55
	A1211-NO28	3,569	No. 28	33	70	39	3,569
	A1211-9/64IN	3,572	9/64"	33	70	39	3,572
A1211TIN-3.6	A1211-3.6	3,6		33	70	39	3,6
	A1211-3.65	3,65		33	70	39	3,65
	A1211-NO27	3,658	No. 27	33	70	39	3,658
A1211TIN-3.7	A1211-3.7	3,7		33	70	39	3,7
	A1211-NO26	3,734	No. 26	33	70	39	3,734
	A1211-3.75	3,75		33	70	39	3,75
	A1211-NO25	3,797	No. 25	36	75	43	3,797
A1211TIN-3.8	A1211-3.8	3,8		36	75	43	3,8
	A1211-NO24	3,861	No. 24	36	75	43	3,861
A1211TIN-3.9	A1211-3.9	3,9		36	75	43	3,9
	A1211-NO23	3,912	No. 23	36	75	43	3,912
	A1211-3.95	3,95		36	75	43	3,95
	A1211-5/32IN	3,969	5/32"	36	75	43	3,969
	A1211-NO22	3,988	No. 22	36	75	43	3,988
A1211TIN-4	A1211-4	4		36	75	43	4
	A1211-NO21	4,039	No. 21	36	75	43	4,039
	A1211-4.05	4,05		36	75	43	4,05
	A1211-NO20	4,089	No. 20	36	75	43	4,089
A1211TIN-4.1	A1211-4.1	4,1		36	75	43	4,1
	A1211-4.15	4,15		36	75	43	4,15
A1211TIN-4.2	A1211-4.2	4,2		36	75	43	4,2
	A1211-NO19	4,216	No. 19	36	75	43	4,216
	A1211-4.25	4,25		36	75	43	4,25
A1211TIN-4.3	A1211-4.3	4,3		39	80	47	4,3
	A1211-NO18	4,305	No. 18	39	80	47	4,305
	A1211-4.35	4,35		39	80	47	4,35
	A1211-11/64IN	4,366	11/64"	39	80	47	4,366
	A1211-NO17	4,394	No. 17	39	80	47	4,394
A1211TIN-4.4	A1211-4.4	4,4		39	80	47	4,4
	A1211-4.45	4,45		39	80	47	4,45

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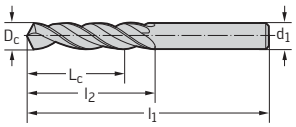
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Parallel shank



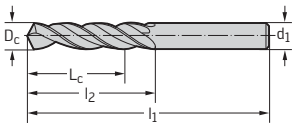
Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
	A1211-NO16	4,496	No. 16	39	80	47	4,496
A1211TIN-4.5	A1211-4.5	4,5		39	80	47	4,5
	A1211-4.55	4,55		39	80	47	4,55
	A1211-NO15	4,572	No. 15	39	80	47	4,572
A1211TIN-4.6	A1211-4.6	4,6		39	80	47	4,6
	A1211-NO14	4,623	No. 14	39	80	47	4,623
	A1211-4.65	4,65		39	80	47	4,65
	A1211-NO13	4,699	No. 13	39	80	47	4,699
A1211TIN-4.7	A1211-4.7	4,7		39	80	47	4,7
	A1211-4.75	4,75		39	80	47	4,75
	A1211-3/16IN	4,763	3/16"	44	86	52	4,763
A1211TIN-4.8	A1211-4.8	4,8		44	86	52	4,8
	A1211-NO12	4,801	No. 12	44	86	52	4,801
	A1211-4.85	4,85		44	86	52	4,85
	A1211-NO11	4,851	No. 11	44	86	52	4,851
A1211TIN-4.9	A1211-4.9	4,9		44	86	52	4,9
	A1211-NO10	4,915	No. 10	44	86	52	4,915
	A1211-4.95	4,95		44	86	52	4,95
	A1211-NO9	4,978	No. 09	44	86	52	4,978
A1211TIN-5	A1211-5	5		44	86	52	5
	A1211-5.05	5,05		44	86	52	5,05
	A1211-NO8	5,055	No. 08	44	86	52	5,055
A1211TIN-5.1	A1211-5.1	5,1		44	86	52	5,1
	A1211-NO7	5,105	No. 07	44	86	52	5,105
	A1211-5.15	5,15		44	86	52	5,15
	A1211-13/64IN	5,159	13/64"	44	86	52	5,159
	A1211-NO6	5,182	No. 06	44	86	52	5,182
A1211TIN-5.2	A1211-5.2	5,2		44	86	52	5,2
	A1211-NO5	5,22	No. 05	44	86	52	5,22
	A1211-5.25	5,25		44	86	52	5,25
A1211TIN-5.3	A1211-5.3	5,3		44	86	52	5,3
	A1211-NO4	5,309	No. 04	48	93	57	5,309
A1211TIN-5.4	A1211-5.4	5,4		48	93	57	5,4
	A1211-NO3	5,41	No. 03	48	93	57	5,41
A1211TIN-5.5	A1211-5.5	5,5		48	93	57	5,5
	A1211-5.55	5,55		48	93	57	5,55
	A1211-7/32IN	5,556	7/32"	48	93	57	5,556
A1211TIN-5.6	A1211-5.6	5,6		48	93	57	5,6
	A1211-NO2	5,613	No. 02	48	93	57	5,613
A1211TIN-5.7	A1211-5.7	5,7		48	93	57	5,7
	A1211-5.75	5,75		48	93	57	5,75
	A1211-NO1	5,791	No. 01	48	93	57	5,791
A1211TIN-5.8	A1211-5.8	5,8		48	93	57	5,8
A1211TIN-5.9	A1211-5.9	5,9		48	93	57	5,9
	A1211-LET.A	5,944	Let.A	48	93	57	5,944
	A1211-5.95	5,95		48	93	57	5,95
	A1211-15/64IN	5,953	15/64"	48	93	57	5,953
A1211TIN-6	A1211-6	6		48	93	57	6
	A1211-LET.B	6,045	Let.B	52	101	63	6,045
	A1211-6.05	6,05		52	101	63	6,05
A1211TIN-6.1	A1211-6.1	6,1		52	101	63	6,1
	A1211-LET.C	6,147	Let.C	52	101	63	6,147
	A1211-6.15	6,15		52	101	63	6,15
A1211TIN-6.2	A1211-6.2	6,2		52	101	63	6,2
	A1211-LET.D	6,248	Let.D	52	101	63	6,248
	A1211-6.25	6,25		52	101	63	6,25
A1211TIN-6.3	A1211-6.3	6,3		52	101	63	6,3
	A1211-1/4IN	6,35	1/4"	52	101	63	6,35
A1211TIN-6.4	A1211-6.4	6,4		52	101	63	6,4
	A1211-6.45	6,45		52	101	63	6,45
A1211TIN-6.5	A1211-6.5	6,5		52	101	63	6,5
	A1211-LET.F	6,528	Let.F	52	101	63	6,528

Continued

D 1 B 476 B 482

Continued

Parallel shank



Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
	A1211-6.55	6,55		52	101	63	6,55
A1211TIN-6.6	A1211-6.6	6,6		52	101	63	6,6
	A1211-LET.G	6,629	Let.G	52	101	63	6,629
	A1211-6.65	6,65		52	101	63	6,65
A1211TIN-6.7	A1211-6.7	6,7		52	101	63	6,7
	A1211-17/64IN	6,747	17/64"	57	109	69	6,747
	A1211-6.75	6,75		57	109	69	6,75
	A1211-LET.H	6,756	Let.H	57	109	69	6,756
A1211TIN-6.8	A1211-6.8	6,8		57	109	69	6,8
A1211TIN-6.9	A1211-6.9	6,9		57	109	69	6,9
	A1211-LET.I	6,909	Let.I	57	109	69	6,909
A1211TIN-7	A1211-7	7		57	109	69	7
	A1211-LET.J	7,036	Let.J	57	109	69	7,036
	A1211-7.05	7,05		57	109	69	7,05
A1211TIN-7.1	A1211-7.1	7,1		57	109	69	7,1
	A1211-LET.K	7,137	Let.K	57	109	69	7,137
	A1211-9/32IN	7,144	9/32"	57	109	69	7,144
A1211TIN-7.2	A1211-7.2	7,2		57	109	69	7,2
	A1211-7.25	7,25		57	109	69	7,25
A1211TIN-7.3	A1211-7.3	7,3		57	109	69	7,3
	A1211-LET.L	7,366	Let.L	57	109	69	7,366
A1211TIN-7.4	A1211-7.4	7,4		57	109	69	7,4
	A1211-LET.M	7,493	Let.M	57	109	69	7,493
A1211TIN-7.5	A1211-7.5	7,5		57	109	69	7,5
	A1211-19/64IN	7,541	19/64"	62	117	75	7,541
A1211TIN-7.6	A1211-7.6	7,6		62	117	75	7,6
	A1211-LET.N	7,671	Let.N	62	117	75	7,671
A1211TIN-7.7	A1211-7.7	7,7		62	117	75	7,7
	A1211-7.75	7,75		62	117	75	7,75
A1211TIN-7.8	A1211-7.8	7,8		62	117	75	7,8
A1211TIN-7.9	A1211-7.9	7,9		62	117	75	7,9
	A1211-5/16IN	7,938	5/16"	62	117	75	7,938
A1211TIN-8	A1211-8	8		62	117	75	8
	A1211-LET.O	8,026	Let.O	62	117	75	8,026
	A1211-8.05	8,05		62	117	75	8,05
A1211TIN-8.1	A1211-8.1	8,1		62	117	75	8,1
A1211TIN-8.2	A1211-8.2	8,2		62	117	75	8,2
	A1211-LET.P	8,204	Let.P	62	117	75	8,204
	A1211-8.25	8,25		62	117	75	8,25
A1211TIN-8.3	A1211-8.3	8,3		62	117	75	8,3
	A1211-21/64IN	8,334	21/64"	62	117	75	8,334
A1211TIN-8.4	A1211-8.4	8,4		62	117	75	8,4
	A1211-LET.Q	8,433	Let.Q	62	117	75	8,433
A1211TIN-8.5	A1211-8.5	8,5		62	117	75	8,5
A1211TIN-8.6	A1211-8.6	8,6		66	125	81	8,6
	A1211-LET.R	8,611	Let.R	66	125	81	8,611
A1211TIN-8.7	A1211-8.7	8,7		66	125	81	8,7
	A1211-11/32IN	8,731	11/32"	66	125	81	8,731
	A1211-8.75	8,75		66	125	81	8,75
A1211TIN-8.8	A1211-8.8	8,8		66	125	81	8,8
	A1211-LET.S	8,839	Let.S	66	125	81	8,839
A1211TIN-8.9	A1211-8.9	8,9		66	125	81	8,9
A1211TIN-9	A1211-9	9		66	125	81	9
	A1211-LET.T	9,093	Let.T	66	125	81	9,093
A1211TIN-9.1	A1211-9.1	9,1		66	125	81	9,1
	A1211-23/64IN	9,128	23/64"	66	125	81	9,128
A1211TIN-9.2	A1211-9.2	9,2		66	125	81	9,2
	A1211-9.25	9,25		66	125	81	9,25

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WALTER SELECT

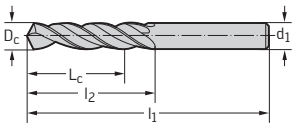
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Parallel shank



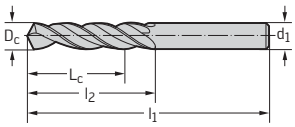
Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1211TIN-9.3	A1211-9.3	9,3		66	125	81	9,3
	A1211-LET.U	9,347	Let.U	66	125	81	9,347
A1211TIN-9.4	A1211-9.4	9,4		66	125	81	9,4
A1211TIN-9.5	A1211-9.5	9,5		66	125	81	9,5
	A1211-3/8IN	9,525	3/8"	71	133	87	9,525
	A1211-LET.V	9,576	Let.V	71	133	87	9,576
A1211TIN-9.6	A1211-9.6	9,6		71	133	87	9,6
A1211TIN-9.7	A1211-9.7	9,7		71	133	87	9,7
	A1211-9.75	9,75		71	133	87	9,75
A1211TIN-9.8	A1211-9.8	9,8		71	133	87	9,8
	A1211-LET.W	9,804	Let.W	71	133	87	9,804
A1211TIN-9.9	A1211-9.9	9,9		71	133	87	9,9
	A1211-25/64IN	9,922	25/64"	71	133	87	9,922
A1211TIN-10	A1211-10	10		71	133	87	10
	A1211-LET.X	10,084	Let.X	71	133	87	10,084
	A1211-10.1	10,1		71	133	87	10,1
A1211TIN-10.2	A1211-10.2	10,2		71	133	87	10,2
	A1211-10.25	10,25		71	133	87	10,25
	A1211-LET.Y	10,262	Let.Y	71	133	87	10,262
	A1211-10.3	10,3		71	133	87	10,3
	A1211-13/32IN	10,319	13/32"	71	133	87	10,319
	A1211-10.4	10,4		71	133	87	10,4
	A1211-LET.Z	10,49	Let.Z	71	133	87	10,49
A1211TIN-10.5	A1211-10.5	10,5		71	133	87	10,5
	A1211-10.6	10,6		71	133	87	10,6
	A1211-10.7	10,7		76	142	94	10,7
	A1211-27/64IN	10,716	27/64"	76	142	94	10,716
	A1211-10.75	10,75		76	142	94	10,75
	A1211-10.8	10,8		76	142	94	10,8
	A1211-10.9	10,9		76	142	94	10,9
A1211TIN-11	A1211-11	11		76	142	94	11
	A1211-11.1	11,1		76	142	94	11,1
	A1211-7/16IN	11,113	7/16"	76	142	94	11,113
	A1211-11.2	11,2		76	142	94	11,2
	A1211-11.25	11,25		76	142	94	11,25
	A1211-11.3	11,3		76	142	94	11,3
	A1211-11.4	11,4		76	142	94	11,4
A1211TIN-11.5	A1211-11.5	11,5		76	142	94	11,5
	A1211-29/64IN	11,509	29/64"	76	142	94	11,509
	A1211-11.6	11,6		76	142	94	11,6
	A1211-11.7	11,7		76	142	94	11,7
	A1211-11.75	11,75		76	142	94	11,75
	A1211-11.8	11,8		76	142	94	11,8
	A1211-11.9	11,9		87	151	101	11,9
	A1211-15/32IN	11,906	15/32"	87	151	101	11,906
A1211TIN-12	A1211-12	12		87	151	101	12
	A1211-12.1	12,1		87	151	101	12,1
	A1211-12.2	12,2		87	151	101	12,2
	A1211-12.25	12,25		87	151	101	12,25
	A1211-12.3	12,3		87	151	101	12,3
	A1211-31/64IN	12,303	31/64"	87	151	101	12,303
	A1211-12.4	12,4		87	151	101	12,4
A1211TIN-12.5	A1211-12.5	12,5		87	151	101	12,5
	A1211-12.6	12,6		87	151	101	12,6
	A1211-1/2IN	12,7	1/2"	87	151	101	12,7
	A1211-12.75	12,75		87	151	101	12,75
	A1211-12.8	12,8		87	151	101	12,8
	A1211-12.9	12,9		87	151	101	12,9
A1211TIN-13	A1211-13	13		87	151	101	13
	A1211-33/64IN	13,097	33/64"	87	151	101	13,097
	A1211-13.1	13,1		87	151	101	13,1
	A1211-13.2	13,2		87	151	101	13,2

Continued

D 1 B 476 B 482

Continued

Parallel shank



Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
	A1211-13.25	13,25		94	160	108	13,25
	A1211-13.3	13,3		94	160	108	13,3
	A1211-13.4	13,4		94	160	108	13,4
	A1211-17/32IN	13,494	17/32"	94	160	108	13,494
A1211TIN-13.5	A1211-13.5	13,5		94	160	108	13,5
	A1211-13.6	13,6		94	160	108	13,6
	A1211-13.7	13,7		94	160	108	13,7
	A1211-13.75	13,75		94	160	108	13,75
	A1211-13.8	13,8		94	160	108	13,8
	A1211-35/64IN	13,891	35/64"	94	160	108	13,891
	A1211-13.9	13,9		94	160	108	13,9
A1211TIN-14	A1211-14	14		94	160	108	14
	A1211-14.1	14,1		99	169	114	14,1
	A1211-14.2	14,2		99	169	114	14,2
	A1211-14.25	14,25		99	169	114	14,25
	A1211-9/16IN	14,288	9/16"	99	169	114	14,288
	A1211-14.3	14,3		99	169	114	14,3
A1211TIN-14.5	A1211-14.5	14,5		99	169	114	14,5
	A1211-37/64IN	14,684	37/64"	99	169	114	14,684
	A1211-14.75	14,75		99	169	114	14,75
A1211TIN-15	A1211-15	15		99	169	114	15
	A1211-19/32IN	15,081	19/32"	104	178	120	15,081
	A1211-15.2	15,2		104	178	120	15,2
	A1211-15.25	15,25		104	178	120	15,25
	A1211-39/64IN	15,478	39/64"	104	178	120	15,478
	A1211-15.5	15,5		104	178	120	15,5
	A1211-15.75	15,75		104	178	120	15,75
	A1211-5/8IN	15,875	5/8"	104	178	120	15,875
A1211TIN-16	A1211-16	16		104	178	120	16
	A1211-41/64IN	16,272	41/64"	108	184	125	16,272
	A1211-16.5	16,5		108	184	125	16,5
	A1211-21/32IN	16,669	21/32"	108	184	125	16,669
	A1211-17	17		108	184	125	17
	A1211-43/64IN	17,066	43/64"	112	191	130	17,066
	A1211-11/16IN	17,463	11/16"	112	191	130	17,463
	A1211-17.5	17,5		112	191	130	17,5
	A1211-18	18		112	191	130	18
	A1211-18.5	18,5		116	198	135	18,5
	A1211-19	19		116	198	135	19
	A1211-19.5	19,5		120	205	140	19,5
	A1211-20	20		120	205	140	20
	A1211-21	21		123	213	145	21
	A1211-22	22		127	221	150	22

WALTER SELECT

●● Primary application

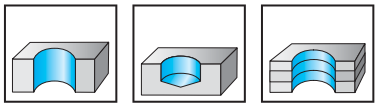
● Other application

D 1 B 476 B 482

HSS twist drills
A1212



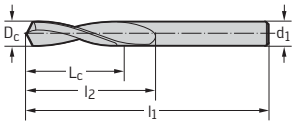
– Type H



~8×D_c | DIN 338 | 118°

	P	M	K	N	S	H	O
Uncoated				●			●

Parallel shank



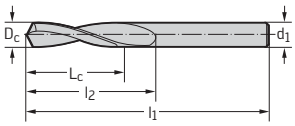
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1212-0.4	0,4	4,2	20	5	0,4
A1212-0.5	0,5	5,2	22	6	0,5
A1212-0.55	0,55	6,1	24	7	0,55
A1212-0.6	0,6	6,1	24	7	0,6
A1212-0.7	0,7	7,8	28	9	0,7
A1212-0.75	0,75	7,8	28	9	0,75
A1212-0.8	0,8	8,7	30	10	0,8
A1212-0.9	0,9	9,5	32	11	0,9
A1212-1	1	10	34	12	1
A1212-1.05	1,05	10	34	12	1,05
A1212-1.1	1,1	12	36	14	1,1
A1212-1.15	1,15	12	36	14	1,15
A1212-1.2	1,2	14	38	16	1,2
A1212-1.25	1,25	14	38	16	1,25
A1212-1.3	1,3	14	38	16	1,3
A1212-1.4	1,4	15	40	18	1,4
A1212-1.5	1,5	15	40	18	1,5
A1212-1.55	1,55	17	43	20	1,55
A1212-1.6	1,6	17	43	20	1,6
A1212-1.7	1,7	17	43	20	1,7
A1212-1.8	1,8	19	46	22	1,8
A1212-1.85	1,85	19	46	22	1,85
A1212-1.9	1,9	19	46	22	1,9
A1212-2	2	20	49	24	2
A1212-2.05	2,05	20	49	24	2,05
A1212-2.1	2,1	20	49	24	2,1
A1212-2.15	2,15	23	53	27	2,15
A1212-2.2	2,2	23	53	27	2,2
A1212-2.3	2,3	23	53	27	2,3
A1212-2.4	2,4	26	57	30	2,4
A1212-2.5	2,5	26	57	30	2,5
A1212-2.55	2,55	26	57	30	2,55
A1212-2.6	2,6	26	57	30	2,6
A1212-2.7	2,7	28	61	33	2,7
A1212-2.75	2,75	28	61	33	2,75
A1212-2.8	2,8	28	61	33	2,8
A1212-2.9	2,9	28	61	33	2,9
A1212-3	3	28	61	33	3
A1212-3.1	3,1	30	65	36	3,1
A1212-3.2	3,2	30	65	36	3,2
A1212-3.3	3,3	30	65	36	3,3
A1212-3.35	3,35	30	65	36	3,35
A1212-3.4	3,4	33	70	39	3,4
A1212-3.5	3,5	33	70	39	3,5
A1212-3.6	3,6	33	70	39	3,6
A1212-3.65	3,65	33	70	39	3,65
A1212-3.7	3,7	33	70	39	3,7
A1212-3.8	3,8	36	75	43	3,8

Continued

D 1 | B 476 | B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1212-3.85	3,85	36	75	43	3,85
A1212-3.9	3,9	36	75	43	3,9
A1212-4	4	36	75	43	4
A1212-4.1	4,1	36	75	43	4,1
A1212-4.2	4,2	36	75	43	4,2
A1212-4.3	4,3	39	80	47	4,3
A1212-4.4	4,4	39	80	47	4,4
A1212-4.5	4,5	39	80	47	4,5
A1212-4.6	4,6	39	80	47	4,6
A1212-4.7	4,7	39	80	47	4,7
A1212-4.8	4,8	44	86	52	4,8
A1212-4.9	4,9	44	86	52	4,9
A1212-5	5	44	86	52	5
A1212-5.1	5,1	44	86	52	5,1
A1212-5.2	5,2	44	86	52	5,2
A1212-5.3	5,3	44	86	52	5,3
A1212-5.4	5,4	48	93	57	5,4
A1212-5.5	5,5	48	93	57	5,5
A1212-5.6	5,6	48	93	57	5,6
A1212-5.7	5,7	48	93	57	5,7
A1212-5.8	5,8	48	93	57	5,8
A1212-5.9	5,9	48	93	57	5,9
A1212-6	6	48	93	57	6
A1212-6.1	6,1	52	101	63	6,1
A1212-6.2	6,2	52	101	63	6,2
A1212-6.3	6,3	52	101	63	6,3
A1212-6.4	6,4	52	101	63	6,4
A1212-6.5	6,5	52	101	63	6,5
A1212-6.6	6,6	52	101	63	6,6
A1212-6.7	6,7	52	101	63	6,7
A1212-6.8	6,8	57	109	69	6,8
A1212-6.9	6,9	57	109	69	6,9
A1212-7	7	57	109	69	7
A1212-7.1	7,1	57	109	69	7,1
A1212-7.2	7,2	57	109	69	7,2
A1212-7.3	7,3	57	109	69	7,3
A1212-7.4	7,4	57	109	69	7,4
A1212-7.5	7,5	57	109	69	7,5
A1212-7.6	7,6	62	117	75	7,6
A1212-7.7	7,7	62	117	75	7,7
A1212-7.8	7,8	62	117	75	7,8
A1212-7.9	7,9	62	117	75	7,9
A1212-8	8	62	117	75	8
A1212-8.1	8,1	62	117	75	8,1
A1212-8.2	8,2	62	117	75	8,2
A1212-8.3	8,3	62	117	75	8,3
A1212-8.4	8,4	62	117	75	8,4
A1212-8.5	8,5	62	117	75	8,5
A1212-8.8	8,8	66	125	81	8,8
A1212-9	9	66	125	81	9
A1212-9.1	9,1	66	125	81	9,1
A1212-9.5	9,5	66	125	81	9,5
A1212-9.8	9,8	71	133	87	9,8
A1212-10	10	71	133	87	10
A1212-10.5	10,5	71	133	87	10,5
A1212-11	11	76	142	94	11
A1212-11.5	11,5	76	142	94	11,5
A1212-12	12	87	151	101	12

Continued

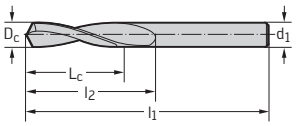
WALTER SELECT

●● Primary application

● Other application

D 1 B 476 B 482

Continued

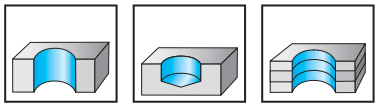
	Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank	A1212-12.5	12,5	87	151	101	12,5
	A1212-13	13	87	151	101	13
	A1212-14	14	94	160	108	14
	A1212-15	15	99	169	114	15
	A1212-16	16	104	178	120	16

D 1 B 476 B 482

HSS deep-hole drills
A1234
UFL®



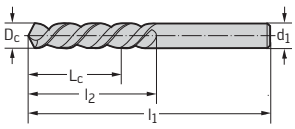
– Uncoated up to 1.9 mm



~8×D_c | DIN 338 |  | 130° | LH

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1234-NO60	1,016	No. 60	10	34	12	1,016
A1234-NO58	1,067	No. 58	12	36	14	1,067
A1234-NO57	1,092	No. 57	12	36	14	1,092
A1234-NO56	1,181	No. 56	14	38	16	1,181
A1234-NO55	1,321	No. 55	15	40	18	1,321
A1234-NO54	1,397	No. 54	15	40	18	1,397
A1234-1.5	1,5		15	40	18	1,5
A1234-1/16IN	1,588	1/16"	17	43	20	1,588
A1234-1.6	1,6		17	43	20	1,6
A1234-NO52	1,613	No. 52	17	43	20	1,613
A1234-1.7	1,7		17	43	20	1,7
A1234-NO51	1,702	No. 51	19	46	22	1,702
A1234-1.8	1,8		19	46	22	1,8
A1234-NO49	1,854	No. 49	19	46	22	1,854
A1234-1.9	1,9		19	46	22	1,9
A1234-NO48	1,93	No. 48	20	49	24	1,93
A1234-5/64IN	1,984	5/64"	20	49	24	1,984
A1234-2	2		20	49	24	2
A1234-NO46	2,057	No. 46	20	49	24	2,057
A1234-NO45	2,083	No. 45	20	49	24	2,083
A1234-2.1	2,1		20	49	24	2,1
A1234-NO44	2,184	No. 44	23	53	27	2,184
A1234-2.2	2,2		23	53	27	2,2
A1234-NO43	2,261	No. 43	23	53	27	2,261
A1234-2.3	2,3		23	53	27	2,3
A1234-NO42	2,375	No. 42	26	57	30	2,375
A1234-3/32IN	2,381	3/32"	26	57	30	2,381
A1234-2.4	2,4		26	57	30	2,4
A1234-NO41	2,438	No. 41	26	57	30	2,438
A1234-NO40	2,489	No. 40	26	57	30	2,489
A1234-2.5	2,5		26	57	30	2,5
A1234-NO39	2,527	No. 39	26	57	30	2,527
A1234-NO38	2,578	No. 38	26	57	30	2,578
A1234-2.6	2,6		26	57	30	2,6
A1234-NO37	2,642	No. 37	26	57	30	2,642
A1234-2.7	2,7		28	61	33	2,7
A1234-NO36	2,705	No. 36	28	61	33	2,705
A1234-7/64IN	2,778	7/64"	28	61	33	2,778
A1234-2.8	2,8		28	61	33	2,8
A1234-NO34	2,819	No. 34	28	61	33	2,819
A1234-2.9	2,9		28	61	33	2,9
A1234-NO32	2,946	No. 32	28	61	33	2,946
A1234-3	3		28	61	33	3
A1234-NO31	3,048	No. 31	30	65	36	3,048

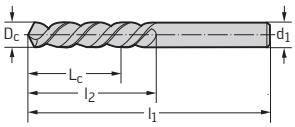
Continued

WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | B 476 | B 482

Continued

Parallel shank

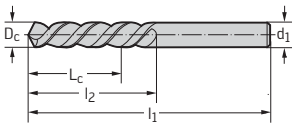


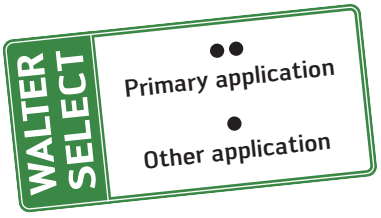
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1234-3.1	3,1		30	65	36	3,1
A1234-1/8IN	3,175	1/8"	30	65	36	3,175
A1234-3.2	3,2		30	65	36	3,2
A1234-NO30	3,264	No. 30	30	65	36	3,264
A1234-3.3	3,3		30	65	36	3,3
A1234-3.4	3,4		33	70	39	3,4
A1234-NO29	3,454	No. 29	33	70	39	3,454
A1234-3.5	3,5		33	70	39	3,5
A1234-NO28	3,569	No. 28	33	70	39	3,569
A1234-9/64IN	3,572	9/64"	33	70	39	3,572
A1234-3.6	3,6		33	70	39	3,6
A1234-NO27	3,658	No. 27	33	70	39	3,658
A1234-3.7	3,7		33	70	39	3,7
A1234-NO26	3,734	No. 26	33	70	39	3,734
A1234-NO25	3,797	No. 25	36	75	43	3,797
A1234-3.8	3,8		36	75	43	3,8
A1234-3.9	3,9		36	75	43	3,9
A1234-5/32IN	3,969	5/32"	36	75	43	3,969
A1234-4	4		36	75	43	4
A1234-NO21	4,039	No. 21	36	75	43	4,039
A1234-NO20	4,089	No. 20	36	75	43	4,089
A1234-4.1	4,1		36	75	43	4,1
A1234-4.2	4,2		36	75	43	4,2
A1234-NO19	4,216	No. 19	36	75	43	4,216
A1234-4.3	4,3		39	80	47	4,3
A1234-NO18	4,305	No. 18	39	80	47	4,305
A1234-11/64IN	4,366	11/64"	39	80	47	4,366
A1234-4.4	4,4		39	80	47	4,4
A1234-NO16	4,496	No. 16	39	80	47	4,496
A1234-4.5	4,5		39	80	47	4,5
A1234-NO15	4,572	No. 15	39	80	47	4,572
A1234-4.6	4,6		39	80	47	4,6
A1234-NO14	4,623	No. 14	39	80	47	4,623
A1234-4.7	4,7		39	80	47	4,7
A1234-4.8	4,8		44	86	52	4,8
A1234-4.9	4,9		44	86	52	4,9
A1234-NO9	4,978	No. 09	44	86	52	4,978
A1234-5	5		44	86	52	5
A1234-NO8	5,055	No. 08	44	86	52	5,055
A1234-5.1	5,1		44	86	52	5,1
A1234-13/64IN	5,159	13/64"	44	86	52	5,159
A1234-5.2	5,2		44	86	52	5,2
A1234-NO5	5,22	No. 05	44	86	52	5,22
A1234-5.3	5,3		44	86	52	5,3
A1234-5.4	5,4		48	93	57	5,4
A1234-NO3	5,41	No. 03	48	93	57	5,41
A1234-5.5	5,5		48	93	57	5,5
A1234-7/32IN	5,556	7/32"	48	93	57	5,556
A1234-5.6	5,6		48	93	57	5,6
A1234-5.7	5,7		48	93	57	5,7
A1234-NO1	5,791	No. 01	48	93	57	5,791
A1234-5.8	5,8		48	93	57	5,8
A1234-5.9	5,9		48	93	57	5,9
A1234-15/64IN	5,953	15/64"	48	93	57	5,953
A1234-6	6		48	93	57	6
A1234-6.1	6,1		52	101	63	6,1
A1234-6.2	6,2		52	101	63	6,2
A1234-6.3	6,3		52	101	63	6,3
A1234-1/4IN	6,35	1/4"	52	101	63	6,35
A1234-6.4	6,4		52	101	63	6,4
A1234-6.5	6,5		52	101	63	6,5
A1234-6.7	6,7		52	101	63	6,7

Continued

XIII D 1 B 476 B 482

Continued

	Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank	A1234-17/64IN	6,747	17/64"	57	109	69	6,747
	A1234-6.8	6,8		57	109	69	6,8
	A1234-6.9	6,9		57	109	69	6,9
	A1234-7	7		57	109	69	7
	A1234-9/32IN	7,144	9/32"	57	109	69	7,144
	A1234-7.2	7,2		57	109	69	7,2
	A1234-7.4	7,4		57	109	69	7,4
	A1234-7.5	7,5		57	109	69	7,5
	A1234-7.9	7,9		62	117	75	7,9
	A1234-5/16IN	7,938	5/16"	62	117	75	7,938
	A1234-8	8		62	117	75	8
	A1234-8.1	8,1		62	117	75	8,1
	A1234-8.2	8,2		62	117	75	8,2
	A1234-8.3	8,3		62	117	75	8,3
	A1234-8.5	8,5		62	117	75	8,5
	A1234-8.6	8,6		66	125	81	8,6
	A1234-8.7	8,7		66	125	81	8,7
	A1234-8.8	8,8		66	125	81	8,8
	A1234-9	9		66	125	81	9
	A1234-9.2	9,2		66	125	81	9,2
	A1234-9.5	9,5		66	125	81	9,5
	A1234-3/8IN	9,525	3/8"	71	133	87	9,525
	A1234-9.8	9,8		71	133	87	9,8
	A1234-25/64IN	9,922	25/64"	71	133	87	9,922
	A1234-10	10		71	133	87	10
	A1234-10.2	10,2		71	133	87	10,2
	A1234-13/32IN	10,319	13/32"	71	133	87	10,319
	A1234-10.5	10,5		71	133	87	10,5
	A1234-11	11		76	142	94	11
	A1234-29/64IN	11,509	29/64"	76	142	94	11,509
	A1234-12	12		87	151	101	12
	A1234-31/64IN	12,303	31/64"	87	151	101	12,303

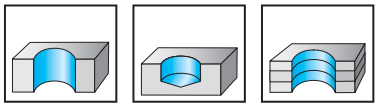


XIII D 1 B 476 B 482

HSS twist drills
A1231



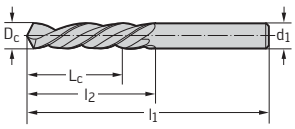
– Uncoated up to 3 mm
– Type N



~8×D_C | DIN 338 |  |  118° | LH

	P	M	K	N	S	H	O
Uncoated	●●		●●	●			●

Parallel shank



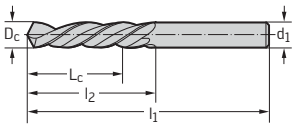
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1231-0.2	0,2	2,1	19	2,5	0,2
A1231-0.25	0,25	2,5	19	3	0,25
A1231-0.5	0,5	5,2	22	6	0,5
A1231-0.55	0,55	6,1	24	7	0,55
A1231-0.65	0,65	6,9	26	8	0,65
A1231-0.7	0,7	7,8	28	9	0,7
A1231-0.75	0,75	7,8	28	9	0,75
A1231-0.8	0,8	8,7	30	10	0,8
A1231-0.85	0,85	8,7	30	10	0,85
A1231-0.9	0,9	9,5	32	11	0,9
A1231-1	1	10	34	12	1
A1231-1.05	1,05	10	34	12	1,05
A1231-1.1	1,1	12	36	14	1,1
A1231-1.15	1,15	12	36	14	1,15
A1231-1.2	1,2	14	38	16	1,2
A1231-1.25	1,25	14	38	16	1,25
A1231-1.3	1,3	14	38	16	1,3
A1231-1.35	1,35	15	40	18	1,35
A1231-1.4	1,4	15	40	18	1,4
A1231-1.45	1,45	15	40	18	1,45
A1231-1.5	1,5	15	40	18	1,5
A1231-1.55	1,55	17	43	20	1,55
A1231-1.6	1,6	17	43	20	1,6
A1231-1.65	1,65	17	43	20	1,65
A1231-1.7	1,7	17	43	20	1,7
A1231-1.75	1,75	19	46	22	1,75
A1231-1.8	1,8	19	46	22	1,8
A1231-1.9	1,9	19	46	22	1,9
A1231-1.95	1,95	20	49	24	1,95
A1231-2	2	20	49	24	2
A1231-2.05	2,05	20	49	24	2,05
A1231-2.1	2,1	20	49	24	2,1
A1231-2.15	2,15	23	53	27	2,15
A1231-2.2	2,2	23	53	27	2,2
A1231-2.25	2,25	23	53	27	2,25
A1231-2.3	2,3	23	53	27	2,3
A1231-2.35	2,35	23	53	27	2,35
A1231-2.4	2,4	26	57	30	2,4
A1231-2.5	2,5	26	57	30	2,5
A1231-2.55	2,55	26	57	30	2,55
A1231-2.6	2,6	26	57	30	2,6
A1231-2.65	2,65	26	57	30	2,65
A1231-2.7	2,7	28	61	33	2,7
A1231-2.75	2,75	28	61	33	2,75
A1231-2.8	2,8	28	61	33	2,8
A1231-2.85	2,85	28	61	33	2,85
A1231-2.9	2,9	28	61	33	2,9
A1231-2.95	2,95	28	61	33	2,95

Continued

D 1 | B 476 | B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1231-3	3	28	61	33	3
A1231-3.05	3,05	30	65	36	3,05
A1231-3.1	3,1	30	65	36	3,1
A1231-3.15	3,15	30	65	36	3,15
A1231-3.2	3,2	30	65	36	3,2
A1231-3.25	3,25	30	65	36	3,25
A1231-3.3	3,3	30	65	36	3,3
A1231-3.35	3,35	30	65	36	3,35
A1231-3.4	3,4	33	70	39	3,4
A1231-3.5	3,5	33	70	39	3,5
A1231-3.6	3,6	33	70	39	3,6
A1231-3.65	3,65	33	70	39	3,65
A1231-3.7	3,7	33	70	39	3,7
A1231-3.75	3,75	33	70	39	3,75
A1231-3.8	3,8	36	75	43	3,8
A1231-3.85	3,85	36	75	43	3,85
A1231-3.9	3,9	36	75	43	3,9
A1231-4	4	36	75	43	4
A1231-4.05	4,05	36	75	43	4,05
A1231-4.1	4,1	36	75	43	4,1
A1231-4.15	4,15	36	75	43	4,15
A1231-4.2	4,2	36	75	43	4,2
A1231-4.25	4,25	36	75	43	4,25
A1231-4.3	4,3	39	80	47	4,3
A1231-4.35	4,35	39	80	47	4,35
A1231-4.4	4,4	39	80	47	4,4
A1231-4.5	4,5	39	80	47	4,5
A1231-4.6	4,6	39	80	47	4,6
A1231-4.65	4,65	39	80	47	4,65
A1231-4.7	4,7	39	80	47	4,7
A1231-4.8	4,8	44	86	52	4,8
A1231-4.9	4,9	44	86	52	4,9
A1231-5	5	44	86	52	5
A1231-5.1	5,1	44	86	52	5,1
A1231-5.2	5,2	44	86	52	5,2
A1231-5.3	5,3	44	86	52	5,3
A1231-5.5	5,5	48	93	57	5,5
A1231-5.7	5,7	48	93	57	5,7
A1231-5.8	5,8	48	93	57	5,8
A1231-5.9	5,9	48	93	57	5,9
A1231-6	6	48	93	57	6
A1231-6.1	6,1	52	101	63	6,1
A1231-6.2	6,2	52	101	63	6,2
A1231-6.3	6,3	52	101	63	6,3
A1231-6.4	6,4	52	101	63	6,4
A1231-6.5	6,5	52	101	63	6,5
A1231-6.8	6,8	57	109	69	6,8
A1231-6.9	6,9	57	109	69	6,9
A1231-7	7	57	109	69	7
A1231-7.1	7,1	57	109	69	7,1
A1231-7.4	7,4	57	109	69	7,4
A1231-7.5	7,5	57	109	69	7,5
A1231-7.6	7,6	62	117	75	7,6
A1231-7.7	7,7	62	117	75	7,7
A1231-8	8	62	117	75	8
A1231-8.1	8,1	62	117	75	8,1
A1231-8.3	8,3	62	117	75	8,3
A1231-8.4	8,4	62	117	75	8,4

Continued

WALTER SELECT

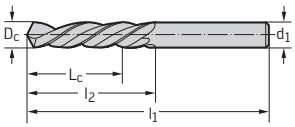
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Parallel shank



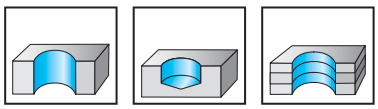
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1231-8.5	8,5	62	117	75	8,5
A1231-8.6	8,6	66	125	81	8,6
A1231-8.7	8,7	66	125	81	8,7
A1231-8.8	8,8	66	125	81	8,8
A1231-9	9	66	125	81	9
A1231-9.3	9,3	66	125	81	9,3
A1231-9.4	9,4	66	125	81	9,4
A1231-9.5	9,5	66	125	81	9,5
A1231-9.9	9,9	71	133	87	9,9
A1231-10	10	71	133	87	10
A1231-10.1	10,1	71	133	87	10,1
A1231-10.2	10,2	71	133	87	10,2
A1231-10.3	10,3	71	133	87	10,3
A1231-10.4	10,4	71	133	87	10,4
A1231-10.5	10,5	71	133	87	10,5
A1231-10.6	10,6	71	133	87	10,6
A1231-10.7	10,7	76	142	94	10,7
A1231-10.75	10,75	76	142	94	10,75
A1231-11	11	76	142	94	11
A1231-11.5	11,5	76	142	94	11,5
A1231-11.6	11,6	76	142	94	11,6
A1231-11.7	11,7	76	142	94	11,7
A1231-11.75	11,75	76	142	94	11,75
A1231-12	12	87	151	101	12
A1231-12.1	12,1	87	151	101	12,1
A1231-12.2	12,2	87	151	101	12,2
A1231-12.25	12,25	87	151	101	12,25
A1231-12.5	12,5	87	151	101	12,5
A1231-12.7	12,7	87	151	101	12,7
A1231-12.8	12,8	87	151	101	12,8
A1231-13	13	87	151	101	13
A1231-13.1	13,1	87	151	101	13,1
A1231-13.2	13,2	87	151	101	13,2
A1231-13.5	13,5	94	160	108	13,5
A1231-13.8	13,8	94	160	108	13,8
A1231-14	14	94	160	108	14
A1231-14.2	14,2	99	169	114	14,2
A1231-14.3	14,3	99	169	114	14,3
A1231-14.4	14,4	99	169	114	14,4
A1231-14.5	14,5	99	169	114	14,5
A1231-14.75	14,75	99	169	114	14,75
A1231-14.8	14,8	99	169	114	14,8
A1231-14.9	14,9	99	169	114	14,9
A1231-15	15	99	169	114	15
A1231-15.5	15,5	104	178	120	15,5
A1231-16	16	104	178	120	16
A1231-16.5	16,5	108	184	125	16,5
A1231-17	17	108	184	125	17
A1231-17.5	17,5	112	191	130	17,5
A1231-18	18	112	191	130	18
A1231-18.5	18,5	116	198	135	18,5
A1231-19	19	116	198	135	19
A1231-20	20	120	205	140	20

D 1 B 476 B 482

HSS-E deep-hole drills, long
A1549TFP
UFL®

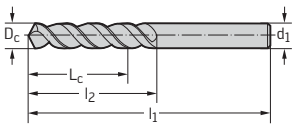


~12×D_c | DIN 340 |  |  130°



	P	M	K	N	S	H	O
TFP	●●	●●	●●	●●	●		●

Parallel shank



Designation TFP	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1549TFP-1	1	31	56	33	1
A1549TFP-1.1	1,1	35	60	37	1,1
A1549TFP-1.2	1,2	39	65	41	1,2
A1549TFP-1.3	1,3	39	65	41	1,3
A1549TFP-1.4	1,4	42	70	45	1,4
A1549TFP-1.5	1,5	42	70	45	1,5
A1549TFP-1.6	1,6	47	76	50	1,6
A1549TFP-1.7	1,7	47	76	50	1,7
A1549TFP-1.8	1,8	50	80	53	1,8
A1549TFP-1.9	1,9	50	80	53	1,9
A1549TFP-2	2	52	85	56	2
A1549TFP-2.1	2,1	52	85	56	2,1
A1549TFP-2.2	2,2	55	90	59	2,2
A1549TFP-2.3	2,3	55	90	59	2,3
A1549TFP-2.4	2,4	58	95	62	2,4
A1549TFP-2.5	2,5	58	95	62	2,5
A1549TFP-2.6	2,6	58	95	62	2,6
A1549TFP-2.7	2,7	61	100	66	2,7
A1549TFP-2.8	2,8	61	100	66	2,8
A1549TFP-2.9	2,9	61	100	66	2,9
A1549TFP-3	3	61	100	66	3
A1549TFP-3.1	3,1	63	106	69	3,1
A1549TFP-3.2	3,2	63	106	69	3,2
A1549TFP-3.3	3,3	63	106	69	3,3
A1549TFP-3.4	3,4	67	112	73	3,4
A1549TFP-3.5	3,5	67	112	73	3,5
A1549TFP-3.6	3,6	67	112	73	3,6
A1549TFP-3.7	3,7	67	112	73	3,7
A1549TFP-3.8	3,8	71	119	78	3,8
A1549TFP-3.9	3,9	71	119	78	3,9
A1549TFP-4	4	71	119	78	4
A1549TFP-4.1	4,1	71	119	78	4,1
A1549TFP-4.2	4,2	71	119	78	4,2
A1549TFP-4.3	4,3	74	126	82	4,3
A1549TFP-4.4	4,4	74	126	82	4,4
A1549TFP-4.5	4,5	74	126	82	4,5
A1549TFP-4.6	4,6	74	126	82	4,6
A1549TFP-4.7	4,7	74	126	82	4,7
A1549TFP-4.8	4,8	79	132	87	4,8
A1549TFP-4.9	4,9	79	132	87	4,9
A1549TFP-5	5	79	132	87	5
A1549TFP-5.1	5,1	79	132	87	5,1
A1549TFP-5.2	5,2	79	132	87	5,2
A1549TFP-5.3	5,3	79	132	87	5,3

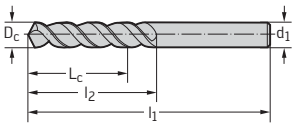
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WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | B 476 | B 482

Continued

Parallel shank



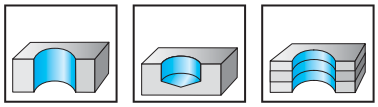
Designation TFP	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1549TFP-5.4	5,4	82	139	91	5,4
A1549TFP-5.5	5,5	82	139	91	5,5
A1549TFP-5.6	5,6	82	139	91	5,6
A1549TFP-5.7	5,7	82	139	91	5,7
A1549TFP-5.8	5,8	82	139	91	5,8
A1549TFP-5.9	5,9	82	139	91	5,9
A1549TFP-6	6	82	139	91	6
A1549TFP-6.1	6,1	86	148	97	6,1
A1549TFP-6.2	6,2	86	148	97	6,2
A1549TFP-6.3	6,3	86	148	97	6,3
A1549TFP-6.4	6,4	86	148	97	6,4
A1549TFP-6.5	6,5	86	148	97	6,5
A1549TFP-6.6	6,6	86	148	97	6,6
A1549TFP-6.7	6,7	86	148	97	6,7
A1549TFP-6.8	6,8	90	156	102	6,8
A1549TFP-6.9	6,9	90	156	102	6,9
A1549TFP-7	7	90	156	102	7
A1549TFP-7.1	7,1	90	156	102	7,1
A1549TFP-7.2	7,2	90	156	102	7,2
A1549TFP-7.3	7,3	90	156	102	7,3
A1549TFP-7.4	7,4	90	156	102	7,4
A1549TFP-7.5	7,5	90	156	102	7,5
A1549TFP-7.6	7,6	96	165	109	7,6
A1549TFP-7.7	7,7	96	165	109	7,7
A1549TFP-7.8	7,8	96	165	109	7,8
A1549TFP-7.9	7,9	96	165	109	7,9
A1549TFP-8	8	96	165	109	8
A1549TFP-8.1	8,1	96	165	109	8,1
A1549TFP-8.2	8,2	96	165	109	8,2
A1549TFP-8.3	8,3	96	165	109	8,3
A1549TFP-8.4	8,4	96	165	109	8,4
A1549TFP-8.5	8,5	96	165	109	8,5
A1549TFP-8.6	8,6	100	175	115	8,6
A1549TFP-8.7	8,7	100	175	115	8,7
A1549TFP-8.8	8,8	100	175	115	8,8
A1549TFP-8.9	8,9	100	175	115	8,9
A1549TFP-9	9	100	175	115	9
A1549TFP-9.1	9,1	100	175	115	9,1
A1549TFP-9.2	9,2	100	175	115	9,2
A1549TFP-9.3	9,3	100	175	115	9,3
A1549TFP-9.4	9,4	100	175	115	9,4
A1549TFP-9.5	9,5	100	175	115	9,5
A1549TFP-9.6	9,6	105	184	121	9,6
A1549TFP-9.7	9,7	105	184	121	9,7
A1549TFP-9.8	9,8	105	184	121	9,8
A1549TFP-9.9	9,9	105	184	121	9,9
A1549TFP-10	10	105	184	121	10
A1549TFP-10.2	10,2	105	184	121	10,2
A1549TFP-10.5	10,5	105	184	121	10,5
A1549TFP-11	11	110	195	128	11
A1549TFP-11.5	11,5	110	195	128	11,5
A1549TFP-12	12	120	205	134	12

XIII D 1 B 476 B 482

HSS-E twist drills, long
A1547
Alpha® XE



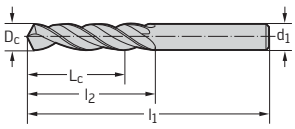
– Uncoated up to 1.9 mm



~12×D_c | DIN 340 |  |  130°

	P	M	K	N	S	H	O
Uncoated	●	●●	●●	●	●●		●

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1547-1	1		31	56	33	1
A1547-N060	1,016	No. 60	31	56	33	1,016
A1547-N059	1,041	No. 59	31	56	33	1,041
A1547-N058	1,067	No. 58	35	60	37	1,067
A1547-N057	1,092	No. 57	35	60	37	1,092
A1547-1.1	1,1		35	60	37	1,1
A1547-N056	1,181	No. 56	39	65	41	1,181
A1547-3/64IN	1,191	3/64"	39	65	41	1,191
A1547-1.2	1,2		39	65	41	1,2
A1547-1.3	1,3		39	65	41	1,3
A1547-N055	1,321	No. 55	42	70	45	1,321
A1547-N054	1,397	No. 54	42	70	45	1,397
A1547-1.4	1,4		42	70	45	1,4
A1547-1.5	1,5		42	70	45	1,5
A1547-N053	1,511	No. 53	47	76	50	1,511
A1547-1/16IN	1,588	1/16"	47	76	50	1,588
A1547-1.6	1,6		47	76	50	1,6
A1547-N052	1,613	No. 52	47	76	50	1,613
A1547-1.7	1,7		47	76	50	1,7
A1547-N051	1,702	No. 51	50	80	53	1,702
A1547-N050	1,778	No. 50	50	80	53	1,778
A1547-1.8	1,8		50	80	53	1,8
A1547-N049	1,854	No. 49	50	80	53	1,854
A1547-1.9	1,9		50	80	53	1,9
A1547-N048	1,93	No. 48	52	85	56	1,93
A1547-5/64IN	1,984	5/64"	52	85	56	1,984
A1547-N047	1,994	No. 47	52	85	56	1,994
A1547-2	2		52	85	56	2
A1547-N046	2,057	No. 46	52	85	56	2,057
A1547-N045	2,083	No. 45	52	85	56	2,083
A1547-2.1	2,1		52	85	56	2,1
A1547-N044	2,184	No. 44	55	90	59	2,184
A1547-2.2	2,2		55	90	59	2,2
A1547-N043	2,261	No. 43	55	90	59	2,261
A1547-2.3	2,3		55	90	59	2,3
A1547-N042	2,375	No. 42	58	95	62	2,375
A1547-3/32IN	2,381	3/32"	58	95	62	2,381
A1547-2.4	2,4		58	95	62	2,4
A1547-N041	2,438	No. 41	58	95	62	2,438
A1547-N040	2,489	No. 40	58	95	62	2,489
A1547-2.5	2,5		58	95	62	2,5
A1547-N039	2,527	No. 39	58	95	62	2,527
A1547-N038	2,578	No. 38	58	95	62	2,578
A1547-2.6	2,6		58	95	62	2,6

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WALTER SELECT

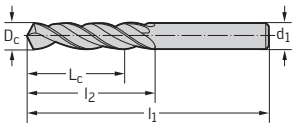
●● Primary application

● Other application

D 1 | B 476 | B 482

Continued

Parallel shank



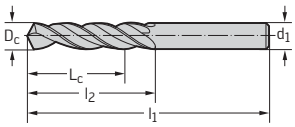
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1547-NO37	2,642	No. 37	58	95	62	2,642
A1547-2.7	2,7		61	100	66	2,7
A1547-NO36	2,705	No. 36	61	100	66	2,705
A1547-7/64IN	2,778	7/64"	61	100	66	2,778
A1547-NO35	2,794	No. 35	61	100	66	2,794
A1547-2.8	2,8		61	100	66	2,8
A1547-NO34	2,819	No. 34	61	100	66	2,819
A1547-NO33	2,87	No. 33	61	100	66	2,87
A1547-2.9	2,9		61	100	66	2,9
A1547-NO32	2,946	No. 32	61	100	66	2,946
A1547-3	3		61	100	66	3
A1547-NO31	3,048	No. 31	63	106	69	3,048
A1547-3.1	3,1		63	106	69	3,1
A1547-1/8IN	3,175	1/8"	63	106	69	3,175
A1547-3.2	3,2		63	106	69	3,2
A1547-NO30	3,264	No. 30	63	106	69	3,264
A1547-3.3	3,3		63	106	69	3,3
A1547-3.4	3,4		67	112	73	3,4
A1547-3.5	3,5		67	112	73	3,5
A1547-9/64IN	3,572	9/64"	67	112	73	3,572
A1547-3.6	3,6		67	112	73	3,6
A1547-3.7	3,7		67	112	73	3,7
A1547-3.8	3,8		71	119	78	3,8
A1547-3.9	3,9		71	119	78	3,9
A1547-5/32IN	3,969	5/32"	71	119	78	3,969
A1547-4	4		71	119	78	4
A1547-4.1	4,1		71	119	78	4,1
A1547-4.2	4,2		71	119	78	4,2
A1547-4.3	4,3		74	126	82	4,3
A1547-11/64IN	4,366	11/64"	74	126	82	4,366
A1547-4.4	4,4		74	126	82	4,4
A1547-4.5	4,5		74	126	82	4,5
A1547-4.6	4,6		74	126	82	4,6
A1547-4.7	4,7		74	126	82	4,7
A1547-3/16IN	4,763	3/16"	79	132	87	4,763
A1547-4.8	4,8		79	132	87	4,8
A1547-4.9	4,9		79	132	87	4,9
A1547-5	5		79	132	87	5
A1547-5.1	5,1		79	132	87	5,1
A1547-13/64IN	5,159	13/64"	79	132	87	5,159
A1547-5.2	5,2		79	132	87	5,2
A1547-5.3	5,3		79	132	87	5,3
A1547-5.4	5,4		82	139	91	5,4
A1547-5.5	5,5		82	139	91	5,5
A1547-7/32IN	5,556	7/32"	82	139	91	5,556
A1547-5.6	5,6		82	139	91	5,6
A1547-5.7	5,7		82	139	91	5,7
A1547-5.8	5,8		82	139	91	5,8
A1547-5.9	5,9		82	139	91	5,9
A1547-15/64IN	5,953	15/64"	82	139	91	5,953
A1547-6	6		82	139	91	6
A1547-6.1	6,1		86	148	97	6,1
A1547-6.2	6,2		86	148	97	6,2
A1547-6.3	6,3		86	148	97	6,3
A1547-1/4IN	6,35	1/4"	86	148	97	6,35
A1547-6.4	6,4		86	148	97	6,4
A1547-6.5	6,5		86	148	97	6,5
A1547-6.6	6,6		86	148	97	6,6
A1547-6.7	6,7		86	148	97	6,7
A1547-17/64IN	6,747	17/64"	90	156	102	6,747
A1547-6.8	6,8		90	156	102	6,8
A1547-7	7		90	156	102	7

Continued

D 1 B 476 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1547-7.1	7,1		90	156	102	7,1
A1547-9/32IN	7,144	9/32"	90	156	102	7,144
A1547-7.2	7,2		90	156	102	7,2
A1547-7.3	7,3		90	156	102	7,3
A1547-7.4	7,4		90	156	102	7,4
A1547-7.5	7,5		90	156	102	7,5
A1547-19/64IN	7,541	19/64"	96	165	109	7,541
A1547-7.6	7,6		96	165	109	7,6
A1547-7.7	7,7		96	165	109	7,7
A1547-7.8	7,8		96	165	109	7,8
A1547-7.9	7,9		96	165	109	7,9
A1547-5/16IN	7,938	5/16"	96	165	109	7,938
A1547-8	8		96	165	109	8
A1547-8.1	8,1		96	165	109	8,1
A1547-8.2	8,2		96	165	109	8,2
A1547-8.3	8,3		96	165	109	8,3
A1547-21/64IN	8,334	21/64"	96	165	109	8,334
A1547-8.4	8,4		96	165	109	8,4
A1547-8.5	8,5		96	165	109	8,5
A1547-8.6	8,6		100	175	115	8,6
A1547-8.7	8,7		100	175	115	8,7
A1547-11/32IN	8,731	11/32"	100	175	115	8,731
A1547-8.8	8,8		100	175	115	8,8
A1547-8.9	8,9		100	175	115	8,9
A1547-9	9		100	175	115	9
A1547-23/64IN	9,128	23/64"	100	175	115	9,128
A1547-3/8IN	9,525	3/8"	105	184	121	9,525
A1547-25/64IN	9,922	25/64"	105	184	121	9,922
A1547-10	10		105	184	121	10
A1547-10.2	10,2		105	184	121	10,2
A1547-13/32IN	10,319	13/32"	105	184	121	10,319
A1547-10.5	10,5		105	184	121	10,5
A1547-27/64IN	10,716	27/64"	110	195	128	10,716
A1547-11	11		110	195	128	11
A1547-7/16IN	11,113	7/16"	110	195	128	11,113
A1547-11.5	11,5		110	195	128	11,5
A1547-29/64IN	11,509	29/64"	110	195	128	11,509
A1547-15/32IN	11,906	15/32"	120	205	134	11,906
A1547-12	12		120	205	134	12
A1547-31/64IN	12,303	31/64"	120	205	134	12,303
A1547-1/2IN	12,7	1/2"	120	205	134	12,7

WALTER SELECT

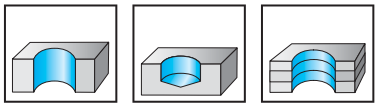
●● Primary application

● Other application

D 1 B 476 B 482

HSS-E twist drills, long
A1544
VA

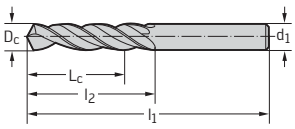




~12×D_c | DIN 340 |  |  130°

	P	M	K	N	S	H	O
Uncoated	●	●●		●	●●		

Parallel shank



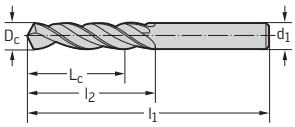
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1544-1	1	31	56	33	1
A1544-1.1	1,1	35	60	37	1,1
A1544-1.2	1,2	39	65	41	1,2
A1544-1.3	1,3	39	65	41	1,3
A1544-1.4	1,4	42	70	45	1,4
A1544-1.5	1,5	42	70	45	1,5
A1544-1.6	1,6	47	76	50	1,6
A1544-1.7	1,7	47	76	50	1,7
A1544-1.8	1,8	50	80	53	1,8
A1544-1.9	1,9	50	80	53	1,9
A1544-2	2	52	85	56	2
A1544-2.1	2,1	52	85	56	2,1
A1544-2.2	2,2	55	90	59	2,2
A1544-2.3	2,3	55	90	59	2,3
A1544-2.4	2,4	58	95	62	2,4
A1544-2.5	2,5	58	95	62	2,5
A1544-2.6	2,6	58	95	62	2,6
A1544-2.7	2,7	61	100	66	2,7
A1544-2.8	2,8	61	100	66	2,8
A1544-2.9	2,9	61	100	66	2,9
A1544-3	3	61	100	66	3
A1544-3.1	3,1	63	106	69	3,1
A1544-3.2	3,2	63	106	69	3,2
A1544-3.3	3,3	63	106	69	3,3
A1544-3.4	3,4	67	112	73	3,4
A1544-3.5	3,5	67	112	73	3,5
A1544-3.6	3,6	67	112	73	3,6
A1544-3.7	3,7	67	112	73	3,7
A1544-3.8	3,8	71	119	78	3,8
A1544-3.9	3,9	71	119	78	3,9
A1544-4	4	71	119	78	4
A1544-4.1	4,1	71	119	78	4,1
A1544-4.2	4,2	71	119	78	4,2
A1544-4.3	4,3	74	126	82	4,3
A1544-4.4	4,4	74	126	82	4,4
A1544-4.5	4,5	74	126	82	4,5
A1544-4.6	4,6	74	126	82	4,6
A1544-4.7	4,7	74	126	82	4,7
A1544-4.8	4,8	79	132	87	4,8
A1544-4.9	4,9	79	132	87	4,9
A1544-5	5	79	132	87	5
A1544-5.1	5,1	79	132	87	5,1
A1544-5.2	5,2	79	132	87	5,2
A1544-5.3	5,3	79	132	87	5,3
A1544-5.4	5,4	82	139	91	5,4
A1544-5.5	5,5	82	139	91	5,5
A1544-5.6	5,6	82	139	91	5,6
A1544-5.7	5,7	82	139	91	5,7

Continued

D 1 | B 476 | B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1544-5.8	5,8	82	139	91	5,8
A1544-5.9	5,9	82	139	91	5,9
A1544-6	6	82	139	91	6
A1544-6.1	6,1	86	148	97	6,1
A1544-6.2	6,2	86	148	97	6,2
A1544-6.3	6,3	86	148	97	6,3
A1544-6.4	6,4	86	148	97	6,4
A1544-6.5	6,5	86	148	97	6,5
A1544-6.6	6,6	86	148	97	6,6
A1544-6.7	6,7	86	148	97	6,7
A1544-6.8	6,8	90	156	102	6,8
A1544-6.9	6,9	90	156	102	6,9
A1544-7	7	90	156	102	7
A1544-7.1	7,1	90	156	102	7,1
A1544-7.2	7,2	90	156	102	7,2
A1544-7.3	7,3	90	156	102	7,3
A1544-7.4	7,4	90	156	102	7,4
A1544-7.5	7,5	90	156	102	7,5
A1544-7.6	7,6	96	165	109	7,6
A1544-7.7	7,7	96	165	109	7,7
A1544-7.8	7,8	96	165	109	7,8
A1544-7.9	7,9	96	165	109	7,9
A1544-8	8	96	165	109	8
A1544-8.1	8,1	96	165	109	8,1
A1544-8.2	8,2	96	165	109	8,2
A1544-8.3	8,3	96	165	109	8,3
A1544-8.4	8,4	96	165	109	8,4
A1544-8.5	8,5	96	165	109	8,5
A1544-8.6	8,6	100	175	115	8,6
A1544-8.7	8,7	100	175	115	8,7
A1544-8.8	8,8	100	175	115	8,8
A1544-8.9	8,9	100	175	115	8,9
A1544-9	9	100	175	115	9
A1544-9.1	9,1	100	175	115	9,1
A1544-9.2	9,2	100	175	115	9,2
A1544-9.3	9,3	100	175	115	9,3
A1544-9.4	9,4	100	175	115	9,4
A1544-9.5	9,5	100	175	115	9,5
A1544-9.6	9,6	105	184	121	9,6
A1544-9.7	9,7	105	184	121	9,7
A1544-9.8	9,8	105	184	121	9,8
A1544-9.9	9,9	105	184	121	9,9
A1544-10	10	105	184	121	10
A1544-10.2	10,2	105	184	121	10,2
A1544-10.5	10,5	105	184	121	10,5
A1544-10.8	10,8	110	195	128	10,8
A1544-11	11	110	195	128	11
A1544-11.2	11,2	110	195	128	11,2
A1544-11.5	11,5	110	195	128	11,5
A1544-11.8	11,8	110	195	128	11,8
A1544-12	12	120	205	134	12

WALTER SELECT

●● Primary application

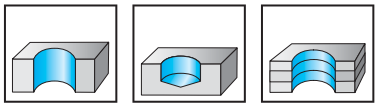
● Other application

D 1 B 476 B 482

HSS deep-hole drills, long
A1522
UFL®



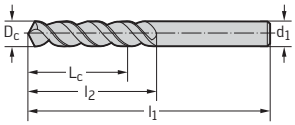
– Uncoated up to 1.9 mm



~12×D_c | DIN 340 |  | 
130°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Parallel shank



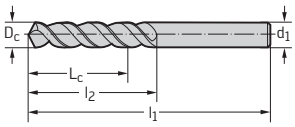
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1522-1	1		31	56	33	1
A1522-NO60	1,016	No. 60	31	56	33	1,016
A1522-NO59	1,041	No. 59	31	56	33	1,041
A1522-NO58	1,067	No. 58	35	60	37	1,067
A1522-NO57	1,092	No. 57	35	60	37	1,092
A1522-1.1	1,1		35	60	37	1,1
A1522-NO56	1,181	No. 56	39	65	41	1,181
A1522-3/64IN	1,191	3/64"	39	65	41	1,191
A1522-1.2	1,2		39	65	41	1,2
A1522-1.3	1,3		39	65	41	1,3
A1522-NO55	1,321	No. 55	42	70	45	1,321
A1522-NO54	1,397	No. 54	42	70	45	1,397
A1522-1.4	1,4		42	70	45	1,4
A1522-1.5	1,5		42	70	45	1,5
A1522-NO53	1,511	No. 53	47	76	50	1,511
A1522-1/16IN	1,588	1/16"	47	76	50	1,588
A1522-1.6	1,6		47	76	50	1,6
A1522-NO52	1,613	No. 52	47	76	50	1,613
A1522-1.7	1,7		47	76	50	1,7
A1522-NO51	1,702	No. 51	50	80	53	1,702
A1522-NO50	1,778	No. 50	50	80	53	1,778
A1522-1.8	1,8		50	80	53	1,8
A1522-NO49	1,854	No. 49	50	80	53	1,854
A1522-1.9	1,9		50	80	53	1,9
A1522-NO48	1,93	No. 48	52	85	56	1,93
A1522-5/64IN	1,984	5/64"	52	85	56	1,984
A1522-NO47	1,994	No. 47	52	85	56	1,994
A1522-2	2		52	85	56	2
A1522-NO46	2,057	No. 46	52	85	56	2,057
A1522-NO45	2,083	No. 45	52	85	56	2,083
A1522-2.1	2,1		52	85	56	2,1
A1522-NO44	2,184	No. 44	55	90	59	2,184
A1522-2.2	2,2		55	90	59	2,2
A1522-NO43	2,261	No. 43	55	90	59	2,261
A1522-2.3	2,3		55	90	59	2,3
A1522-NO42	2,375	No. 42	58	95	62	2,375
A1522-3/32IN	2,381	3/32"	58	95	62	2,381
A1522-2.4	2,4		58	95	62	2,4
A1522-NO41	2,438	No. 41	58	95	62	2,438
A1522-NO40	2,489	No. 40	58	95	62	2,489
A1522-2.5	2,5		58	95	62	2,5
A1522-NO39	2,527	No. 39	58	95	62	2,527
A1522-NO38	2,578	No. 38	58	95	62	2,578
A1522-2.6	2,6		58	95	62	2,6
A1522-NO37	2,642	No. 37	58	95	62	2,642
A1522-2.7	2,7		61	100	66	2,7
A1522-NO36	2,705	No. 36	61	100	66	2,705
A1522-7/64IN	2,778	7/64"	61	100	66	2,778

Continued

XIII | D 1 | B 476 | B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1522-NO35	2,794	No. 35	61	100	66	2,794
A1522-2.8	2,8		61	100	66	2,8
A1522-NO34	2,819	No. 34	61	100	66	2,819
A1522-NO33	2,87	No. 33	61	100	66	2,87
A1522-2.9	2,9		61	100	66	2,9
A1522-NO32	2,946	No. 32	61	100	66	2,946
A1522-3	3		61	100	66	3
A1522-NO31	3,048	No. 31	63	106	69	3,048
A1522-3.1	3,1		63	106	69	3,1
A1522-1/8IN	3,175	1/8"	63	106	69	3,175
A1522-3.2	3,2		63	106	69	3,2
A1522-NO30	3,264	No. 30	63	106	69	3,264
A1522-3.3	3,3		63	106	69	3,3
A1522-3.4	3,4		67	112	73	3,4
A1522-NO29	3,454	No. 29	67	112	73	3,454
A1522-3.5	3,5		67	112	73	3,5
A1522-NO28	3,569	No. 28	67	112	73	3,569
A1522-9/64IN	3,572	9/64"	67	112	73	3,572
A1522-3.6	3,6		67	112	73	3,6
A1522-NO27	3,658	No. 27	67	112	73	3,658
A1522-3.7	3,7		67	112	73	3,7
A1522-NO26	3,734	No. 26	67	112	73	3,734
A1522-NO25	3,797	No. 25	71	119	78	3,797
A1522-3.8	3,8		71	119	78	3,8
A1522-NO24	3,861	No. 24	71	119	78	3,861
A1522-3.9	3,9		71	119	78	3,9
A1522-NO23	3,912	No. 23	71	119	78	3,912
A1522-5/32IN	3,969	5/32"	71	119	78	3,969
A1522-NO22	3,988	No. 22	71	119	78	3,988
A1522-4	4		71	119	78	4
A1522-NO21	4,039	No. 21	71	119	78	4,039
A1522-NO20	4,089	No. 20	71	119	78	4,089
A1522-4.1	4,1		71	119	78	4,1
A1522-4.2	4,2		71	119	78	4,2
A1522-NO19	4,216	No. 19	71	119	78	4,216
A1522-4.3	4,3		74	126	82	4,3
A1522-NO18	4,305	No. 18	74	126	82	4,305
A1522-11/64IN	4,366	11/64"	74	126	82	4,366
A1522-NO17	4,394	No. 17	74	126	82	4,394
A1522-4.4	4,4		74	126	82	4,4
A1522-NO16	4,496	No. 16	74	126	82	4,496
A1522-4.5	4,5		74	126	82	4,5
A1522-NO15	4,572	No. 15	74	126	82	4,572
A1522-4.6	4,6		74	126	82	4,6
A1522-NO14	4,623	No. 14	74	126	82	4,623
A1522-NO13	4,699	No. 13	74	126	82	4,699
A1522-4.7	4,7		74	126	82	4,7
A1522-3/16IN	4,763	3/16"	79	132	87	4,763
A1522-4.8	4,8		79	132	87	4,8
A1522-NO12	4,801	No. 12	79	132	87	4,801
A1522-NO11	4,851	No. 11	79	132	87	4,851
A1522-4.9	4,9		79	132	87	4,9
A1522-NO10	4,915	No. 10	79	132	87	4,915
A1522-NO9	4,978	No. 09	79	132	87	4,978
A1522-5	5		79	132	87	5
A1522-NO8	5,055	No. 08	79	132	87	5,055
A1522-5.1	5,1		79	132	87	5,1
A1522-NO7	5,105	No. 07	79	132	87	5,105

Continued

WALTER SELECT

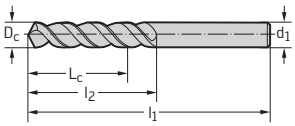
●● Primary application

● Other application

XIII D 1 B 476 B 482

Continued

Parallel shank

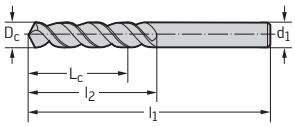


Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1522-13/64IN	5,159	13/64"	79	132	87	5,159
A1522-NO6	5,182	No. 06	79	132	87	5,182
A1522-5.2	5,2		79	132	87	5,2
A1522-NO5	5,22	No. 05	79	132	87	5,22
A1522-5.3	5,3		79	132	87	5,3
A1522-NO4	5,309	No. 04	82	139	91	5,309
A1522-5.4	5,4		82	139	91	5,4
A1522-NO3	5,41	No. 03	82	139	91	5,41
A1522-5.5	5,5		82	139	91	5,5
A1522-7/32IN	5,556	7/32"	82	139	91	5,556
A1522-5.6	5,6		82	139	91	5,6
A1522-NO2	5,613	No. 02	82	139	91	5,613
A1522-5.7	5,7		82	139	91	5,7
A1522-NO1	5,791	No. 01	82	139	91	5,791
A1522-5.8	5,8		82	139	91	5,8
A1522-5.9	5,9		82	139	91	5,9
A1522-15/64IN	5,953	15/64"	82	139	91	5,953
A1522-6	6		82	139	91	6
A1522-6.1	6,1		86	148	97	6,1
A1522-6.2	6,2		86	148	97	6,2
A1522-6.3	6,3		86	148	97	6,3
A1522-1/4IN	6,35	1/4"	86	148	97	6,35
A1522-6.4	6,4		86	148	97	6,4
A1522-6.5	6,5		86	148	97	6,5
A1522-6.6	6,6		86	148	97	6,6
A1522-6.7	6,7		86	148	97	6,7
A1522-17/64IN	6,747	17/64"	90	156	102	6,747
A1522-6.8	6,8		90	156	102	6,8
A1522-6.9	6,9		90	156	102	6,9
A1522-7	7		90	156	102	7
A1522-7.1	7,1		90	156	102	7,1
A1522-9/32IN	7,144	9/32"	90	156	102	7,144
A1522-7.2	7,2		90	156	102	7,2
A1522-7.3	7,3		90	156	102	7,3
A1522-7.4	7,4		90	156	102	7,4
A1522-7.5	7,5		90	156	102	7,5
A1522-19/64IN	7,541	19/64"	96	165	109	7,541
A1522-7.6	7,6		96	165	109	7,6
A1522-7.7	7,7		96	165	109	7,7
A1522-7.8	7,8		96	165	109	7,8
A1522-7.9	7,9		96	165	109	7,9
A1522-5/16IN	7,938	5/16"	96	165	109	7,938
A1522-8	8		96	165	109	8
A1522-8.1	8,1		96	165	109	8,1
A1522-8.2	8,2		96	165	109	8,2
A1522-8.3	8,3		96	165	109	8,3
A1522-21/64IN	8,334	21/64"	96	165	109	8,334
A1522-8.4	8,4		96	165	109	8,4
A1522-8.5	8,5		96	165	109	8,5
A1522-8.6	8,6		100	175	115	8,6
A1522-8.7	8,7		100	175	115	8,7
A1522-11/32IN	8,731	11/32"	100	175	115	8,731
A1522-8.8	8,8		100	175	115	8,8
A1522-8.9	8,9		100	175	115	8,9
A1522-9	9		100	175	115	9
A1522-9.1	9,1		100	175	115	9,1
A1522-23/64IN	9,128	23/64"	100	175	115	9,128
A1522-9.2	9,2		100	175	115	9,2
A1522-9.3	9,3		100	175	115	9,3
A1522-9.4	9,4		100	175	115	9,4
A1522-9.5	9,5		100	175	115	9,5
A1522-3/8IN	9,525	3/8"	105	184	121	9,525

Continued

XIII D 1 B 476 B 482

Continued

	Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank 	A1522-9.6	9,6		105	184	121	9,6
	A1522-9.7	9,7		105	184	121	9,7
	A1522-9.8	9,8		105	184	121	9,8
	A1522-9.9	9,9		105	184	121	9,9
	A1522-25/64IN	9,922	25/64"	105	184	121	9,922
	A1522-10	10		105	184	121	10
	A1522-10.2	10,2		105	184	121	10,2
	A1522-13/32IN	10,319	13/32"	105	184	121	10,319
	A1522-10.5	10,5		105	184	121	10,5
	A1522-27/64IN	10,716	27/64"	110	195	128	10,716
	A1522-10.8	10,8		110	195	128	10,8
	A1522-11	11		110	195	128	11
	A1522-7/16IN	11,113	7/16"	110	195	128	11,113
	A1522-11.2	11,2		110	195	128	11,2
	A1522-11.5	11,5		110	195	128	11,5
	A1522-29/64IN	11,509	29/64"	110	195	128	11,509
	A1522-11.8	11,8		110	195	128	11,8
	A1522-15/32IN	11,906	15/32"	120	205	134	11,906
	A1522-12	12		120	205	134	12
	A1522-31/64IN	12,303	31/64"	120	205	134	12,303
	A1522-1/2IN	12,7	1/2"	120	205	134	12,7
	A1522-9/16IN	14,288	9/16"	129	220	144	14,288
	A1522-37/64IN	14,684	37/64"	129	220	144	14,684
	A1522-39/64IN	15,478	39/64"	133	227	149	15,478
	A1522-5/8IN	15,875	5/8"	133	227	149	15,875
	A1522-21/32IN	16,669	21/32"	137	235	154	16,669
	A1522-11/16IN	17,463	11/16"	140	241	158	17,463
	A1522-3/4IN	19,05	3/4"	146	254	166	19,05
	A1522-25/32IN	19,844	25/32"	146	254	166	19,844
	A1522-13/16IN	20,638	13/16"	149	261	171	20,638
	A1522-7/8IN	22,225	7/8"	153	268	176	22,225

WALTER SELECT

●● Primary application

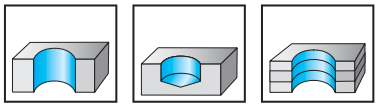
● Other application

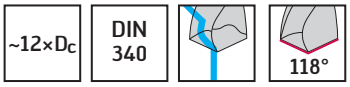
XIII D 1 B 476 B 482

HSS twist drills, long
A1511



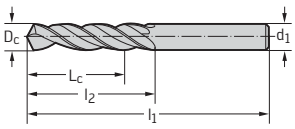
– Uncoated up to 3 mm
– Type N





	P	M	K	N	S	H	O
Uncoated	●	●	●	●	●		●

Parallel shank



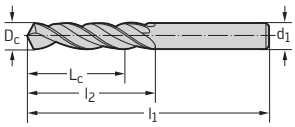
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1511-0.5	0,5	11,2	32	12	0,5
A1511-0.6	0,6	14,1	35	15	0,6
A1511-0.7	0,7	19,8	42	21	0,7
A1511-0.8	0,8	23,7	46	25	0,8
A1511-0.9	0,9	27,5	51	29	0,9
A1511-1	1	31	56	33	1
A1511-1.1	1,1	35	60	37	1,1
A1511-1.2	1,2	39	65	41	1,2
A1511-1.3	1,3	39	65	41	1,3
A1511-1.4	1,4	42	70	45	1,4
A1511-1.5	1,5	42	70	45	1,5
A1511-1.6	1,6	47	76	50	1,6
A1511-1.65	1,65	47	76	50	1,65
A1511-1.7	1,7	47	76	50	1,7
A1511-1.75	1,75	50	80	53	1,75
A1511-1.8	1,8	50	80	53	1,8
A1511-1.9	1,9	50	80	53	1,9
A1511-2	2	52	85	56	2
A1511-2.05	2,05	52	85	56	2,05
A1511-2.1	2,1	52	85	56	2,1
A1511-2.2	2,2	55	90	59	2,2
A1511-2.25	2,25	55	90	59	2,25
A1511-2.3	2,3	55	90	59	2,3
A1511-2.4	2,4	58	95	62	2,4
A1511-2.5	2,5	58	95	62	2,5
A1511-2.6	2,6	58	95	62	2,6
A1511-2.7	2,7	61	100	66	2,7
A1511-2.8	2,8	61	100	66	2,8
A1511-2.9	2,9	61	100	66	2,9
A1511-3	3	61	100	66	3
A1511-3.1	3,1	63	106	69	3,1
A1511-3.15	3,15	63	106	69	3,15
A1511-3.2	3,2	63	106	69	3,2
A1511-3.3	3,3	63	106	69	3,3
A1511-3.4	3,4	67	112	73	3,4
A1511-3.5	3,5	67	112	73	3,5
A1511-3.6	3,6	67	112	73	3,6
A1511-3.7	3,7	67	112	73	3,7
A1511-3.8	3,8	71	119	78	3,8
A1511-3.9	3,9	71	119	78	3,9
A1511-4	4	71	119	78	4
A1511-4.1	4,1	71	119	78	4,1
A1511-4.2	4,2	71	119	78	4,2
A1511-4.25	4,25	71	119	78	4,25
A1511-4.3	4,3	74	126	82	4,3
A1511-4.4	4,4	74	126	82	4,4
A1511-4.5	4,5	74	126	82	4,5
A1511-4.6	4,6	74	126	82	4,6

Continued

D 1 B 478 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1511-4.7	4,7	74	126	82	4,7
A1511-4.75	4,75	74	126	82	4,75
A1511-4.8	4,8	79	132	87	4,8
A1511-4.9	4,9	79	132	87	4,9
A1511-5	5	79	132	87	5
A1511-5.1	5,1	79	132	87	5,1
A1511-5.2	5,2	79	132	87	5,2
A1511-5.25	5,25	79	132	87	5,25
A1511-5.3	5,3	79	132	87	5,3
A1511-5.4	5,4	82	139	91	5,4
A1511-5.5	5,5	82	139	91	5,5
A1511-5.6	5,6	82	139	91	5,6
A1511-5.7	5,7	82	139	91	5,7
A1511-5.75	5,75	82	139	91	5,75
A1511-5.8	5,8	82	139	91	5,8
A1511-5.9	5,9	82	139	91	5,9
A1511-6	6	82	139	91	6
A1511-6.1	6,1	86	148	97	6,1
A1511-6.2	6,2	86	148	97	6,2
A1511-6.25	6,25	86	148	97	6,25
A1511-6.3	6,3	86	148	97	6,3
A1511-6.4	6,4	86	148	97	6,4
A1511-6.5	6,5	86	148	97	6,5
A1511-6.6	6,6	86	148	97	6,6
A1511-6.7	6,7	86	148	97	6,7
A1511-6.75	6,75	90	156	102	6,75
A1511-6.8	6,8	90	156	102	6,8
A1511-6.9	6,9	90	156	102	6,9
A1511-7	7	90	156	102	7
A1511-7.1	7,1	90	156	102	7,1
A1511-7.2	7,2	90	156	102	7,2
A1511-7.25	7,25	90	156	102	7,25
A1511-7.3	7,3	90	156	102	7,3
A1511-7.4	7,4	90	156	102	7,4
A1511-7.5	7,5	90	156	102	7,5
A1511-7.6	7,6	96	165	109	7,6
A1511-7.7	7,7	96	165	109	7,7
A1511-7.75	7,75	96	165	109	7,75
A1511-7.8	7,8	96	165	109	7,8
A1511-7.9	7,9	96	165	109	7,9
A1511-8	8	96	165	109	8
A1511-8.1	8,1	96	165	109	8,1
A1511-8.2	8,2	96	165	109	8,2
A1511-8.25	8,25	96	165	109	8,25
A1511-8.3	8,3	96	165	109	8,3
A1511-8.4	8,4	96	165	109	8,4
A1511-8.5	8,5	96	165	109	8,5
A1511-8.6	8,6	100	175	115	8,6
A1511-8.7	8,7	100	175	115	8,7
A1511-8.75	8,75	100	175	115	8,75
A1511-8.8	8,8	100	175	115	8,8
A1511-8.9	8,9	100	175	115	8,9
A1511-9	9	100	175	115	9
A1511-9.1	9,1	100	175	115	9,1
A1511-9.2	9,2	100	175	115	9,2
A1511-9.25	9,25	100	175	115	9,25
A1511-9.3	9,3	100	175	115	9,3
A1511-9.4	9,4	100	175	115	9,4

Continued

WALTER SELECT

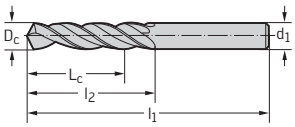
●● Primary application

● Other application

D 1 B 478 B 482

Continued

Parallel shank



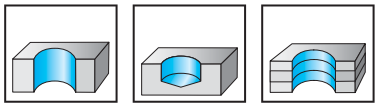
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1511-9.5	9,5	100	175	115	9,5
A1511-9.6	9,6	105	184	121	9,6
A1511-9.7	9,7	105	184	121	9,7
A1511-9.75	9,75	105	184	121	9,75
A1511-9.8	9,8	105	184	121	9,8
A1511-9.9	9,9	105	184	121	9,9
A1511-10	10	105	184	121	10
A1511-10.1	10,1	105	184	121	10,1
A1511-10.2	10,2	105	184	121	10,2
A1511-10.3	10,3	105	184	121	10,3
A1511-10.4	10,4	105	184	121	10,4
A1511-10.5	10,5	105	184	121	10,5
A1511-10.7	10,7	110	195	128	10,7
A1511-10.8	10,8	110	195	128	10,8
A1511-11	11	110	195	128	11
A1511-11.5	11,5	110	195	128	11,5
A1511-11.8	11,8	110	195	128	11,8
A1511-12	12	120	205	134	12
A1511-12.5	12,5	120	205	134	12,5
A1511-13	13	120	205	134	13
A1511-13.5	13,5	126	214	140	13,5
A1511-14	14	126	214	140	14
A1511-14.5	14,5	129	220	144	14,5
A1511-15	15	129	220	144	15
A1511-15.5	15,5	133	227	149	15,5
A1511-16	16	133	227	149	16
A1511-17	17	137	235	154	17
A1511-18	18	140	241	158	18
A1511-19	19	143	247	162	19
A1511-20	20	146	254	166	20
A1511-21	21	149	261	171	21
A1511-22	22	153	268	176	22

D 1 B 478 B 482

HSS deep-hole drills, extra long
A1622
UFL®

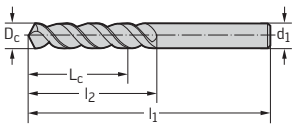


~16×D_c | DIN 1869-I | 130°



	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1622-2	2		81	125	85	2
A1622-2.1	2,1		81	125	85	2,1
A1622-2.2	2,2		86	135	90	2,2
A1622-2.3	2,3		86	135	90	2,3
A1622-3/32IN	2,381	3/32"	91	140	95	2,381
A1622-2.4	2,4		91	140	95	2,4
A1622-NO40	2,489	No. 40	91	140	95	2,489
A1622-2.5	2,5		91	140	95	2,5
A1622-NO39	2,527	No. 39	91	140	95	2,527
A1622-NO38	2,578	No. 38	91	140	95	2,578
A1622-2.6	2,6		91	140	95	2,6
A1622-NO37	2,642	No. 37	91	140	95	2,642
A1622-2.7	2,7		95	150	100	2,7
A1622-NO36	2,705	No. 36	95	150	100	2,705
A1622-7/64IN	2,778	7/64"	95	150	100	2,778
A1622-NO35	2,794	No. 35	95	150	100	2,794
A1622-2.8	2,8		95	150	100	2,8
A1622-NO34	2,819	No. 34	95	150	100	2,819
A1622-NO33	2,87	No. 33	95	150	100	2,87
A1622-2.9	2,9		95	150	100	2,9
A1622-NO32	2,946	No. 32	95	150	100	2,946
A1622-3	3		95	150	100	3
A1622-NO31	3,048	No. 31	99	155	105	3,048
A1622-3.1	3,1		99	155	105	3,1
A1622-1/8IN	3,175	1/8"	99	155	105	3,175
A1622-3.2	3,2		99	155	105	3,2
A1622-NO30	3,264	No. 30	99	155	105	3,264
A1622-3.3	3,3		99	155	105	3,3
A1622-3.4	3,4		109	165	115	3,4
A1622-NO29	3,454	No. 29	109	165	115	3,454
A1622-3.5	3,5		109	165	115	3,5
A1622-NO28	3,569	No. 28	109	165	115	3,569
A1622-9/64IN	3,572	9/64"	109	165	115	3,572
A1622-3.6	3,6		109	165	115	3,6
A1622-NO27	3,658	No. 27	109	165	115	3,658
A1622-3.7	3,7		109	165	115	3,7
A1622-NO26	3,734	No. 26	109	165	115	3,734
A1622-NO25	3,797	No. 25	113	175	120	3,797
A1622-3.8	3,8		113	175	120	3,8
A1622-NO24	3,861	No. 24	113	175	120	3,861
A1622-3.9	3,9		113	175	120	3,9
A1622-NO23	3,912	No. 23	113	175	120	3,912
A1622-5/32IN	3,969	5/32"	113	175	120	3,969
A1622-NO22	3,988	No. 22	113	175	120	3,988

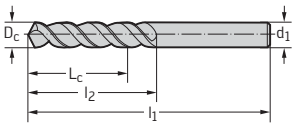
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WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | B 478 | B 482

Continued

Parallel shank



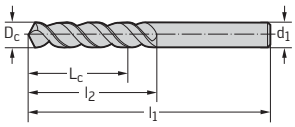
Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1622-4	4		113	175	120	4
A1622-NO21	4,039	No. 21	113	175	120	4,039
A1622-NO20	4,089	No. 20	113	175	120	4,089
A1622-4.1	4,1		113	175	120	4,1
A1622-4.2	4,2		113	175	120	4,2
A1622-NO19	4,216	No. 19	113	175	120	4,216
A1622-4.3	4,3		117	185	125	4,3
A1622-NO18	4,305	No. 18	117	185	125	4,305
A1622-11/64IN	4,366	11/64"	117	185	125	4,366
A1622-NO17	4,394	No. 17	117	185	125	4,394
A1622-4.4	4,4		117	185	125	4,4
A1622-NO16	4,496	No. 16	117	185	125	4,496
A1622-4.5	4,5		117	185	125	4,5
A1622-NO15	4,572	No. 15	117	185	125	4,572
A1622-4.6	4,6		117	185	125	4,6
A1622-NO14	4,623	No. 14	117	185	125	4,623
A1622-NO13	4,699	No. 13	117	185	125	4,699
A1622-4.7	4,7		117	185	125	4,7
A1622-3/16IN	4,763	3/16"	127	195	135	4,763
A1622-4.8	4,8		127	195	135	4,8
A1622-NO12	4,801	No. 12	127	195	135	4,801
A1622-NO11	4,851	No. 11	127	195	135	4,851
A1622-4.9	4,9		127	195	135	4,9
A1622-NO10	4,915	No. 10	127	195	135	4,915
A1622-NO9	4,978	No. 09	127	195	135	4,978
A1622-5	5		127	195	135	5
A1622-NO8	5,055	No. 08	127	195	135	5,055
A1622-5.1	5,1		127	195	135	5,1
A1622-NO7	5,105	No. 07	127	195	135	5,105
A1622-13/64IN	5,159	13/64"	127	195	135	5,159
A1622-NO6	5,182	No. 06	127	195	135	5,182
A1622-5.2	5,2		127	195	135	5,2
A1622-NO5	5,22	No. 05	127	195	135	5,22
A1622-5.3	5,3		127	195	135	5,3
A1622-NO4	5,309	No. 04	131	205	140	5,309
A1622-5.4	5,4		131	205	140	5,4
A1622-NO3	5,41	No. 03	131	205	140	5,41
A1622-5.5	5,5		131	205	140	5,5
A1622-7/32IN	5,556	7/32"	131	205	140	5,556
A1622-5.6	5,6		131	205	140	5,6
A1622-NO2	5,613	No. 02	131	205	140	5,613
A1622-5.7	5,7		131	205	140	5,7
A1622-NO1	5,791	No. 01	131	205	140	5,791
A1622-5.8	5,8		131	205	140	5,8
A1622-5.9	5,9		131	205	140	5,9
A1622-15/64IN	5,953	15/64"	131	205	140	5,953
A1622-6	6		131	205	140	6
A1622-6.1	6,1		139	215	150	6,1
A1622-6.2	6,2		139	215	150	6,2
A1622-6.3	6,3		139	215	150	6,3
A1622-1/4IN	6,35	1/4"	139	215	150	6,35
A1622-6.4	6,4		139	215	150	6,4
A1622-6.5	6,5		139	215	150	6,5
A1622-6.6	6,6		139	215	150	6,6
A1622-6.7	6,7		139	215	150	6,7
A1622-17/64IN	6,747	17/64"	143	225	155	6,747
A1622-6.8	6,8		143	225	155	6,8
A1622-6.9	6,9		143	225	155	6,9
A1622-7	7		143	225	155	7
A1622-7.1	7,1		143	225	155	7,1
A1622-9/32IN	7,144	9/32"	143	225	155	7,144
A1622-7.2	7,2		143	225	155	7,2

Continued

XIII D 1 B 478 B 482

Continued

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1622-7.3	7,3		143	225	155	7,3
A1622-7.4	7,4		143	225	155	7,4
A1622-7.5	7,5		143	225	155	7,5
A1622-19/64IN	7,541	19/64"	152	240	165	7,541
A1622-7.6	7,6		152	240	165	7,6
A1622-7.7	7,7		152	240	165	7,7
A1622-7.8	7,8		152	240	165	7,8
A1622-7.9	7,9		152	240	165	7,9
A1622-5/16IN	7,938	5/16"	152	240	165	7,938
A1622-8	8		152	240	165	8
A1622-8.1	8,1		152	240	165	8,1
A1622-8.2	8,2		152	240	165	8,2
A1622-8.3	8,3		152	240	165	8,3
A1622-21/64IN	8,334	21/64"	152	240	165	8,334
A1622-8.4	8,4		152	240	165	8,4
A1622-8.5	8,5		152	240	165	8,5
A1622-8.6	8,6		160	250	175	8,6
A1622-8.7	8,7		160	250	175	8,7
A1622-11/32IN	8,731	11/32"	160	250	175	8,731
A1622-8.8	8,8		160	250	175	8,8
A1622-8.9	8,9		160	250	175	8,9
A1622-9	9		160	250	175	9
A1622-9.1	9,1		160	250	175	9,1
A1622-23/64IN	9,128	23/64"	160	250	175	9,128
A1622-9.2	9,2		160	250	175	9,2
A1622-9.3	9,3		160	250	175	9,3
A1622-9.4	9,4		160	250	175	9,4
A1622-9.5	9,5		160	250	175	9,5
A1622-3/8IN	9,525	3/8"	169	265	185	9,525
A1622-9.6	9,6		169	265	185	9,6
A1622-9.7	9,7		169	265	185	9,7
A1622-9.8	9,8		169	265	185	9,8
A1622-9.9	9,9		169	265	185	9,9
A1622-25/64IN	9,922	25/64"	169	265	185	9,922
A1622-10	10		169	265	185	10
A1622-13/32IN	10,319	13/32"	169	265	185	10,319
A1622-10.5	10,5		169	265	185	10,5
A1622-27/64IN	10,716	27/64"	177	280	195	10,716
A1622-11	11		177	280	195	11
A1622-7/16IN	11,113	7/16"	177	280	195	11,113
A1622-11.5	11,5		177	280	195	11,5
A1622-29/64IN	11,509	29/64"	177	280	195	11,509
A1622-15/32IN	11,906	15/32"	191	295	205	11,906
A1622-12	12		191	295	205	12
A1622-31/64IN	12,303	31/64"	191	295	205	12,303
A1622-1/2IN	12,7	1/2"	191	295	205	12,7

WALTER SELECT

●● Primary application

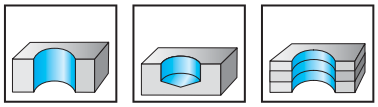
● Other application

XIII D 1 B 478 B 482

HSS deep-hole drills, extra long
A1722
UFL®

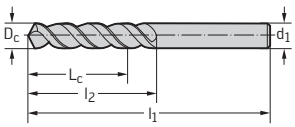


~22×D_c | DIN 1869-II | 130°



	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Parallel shank



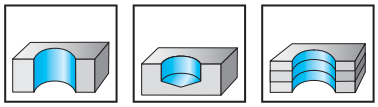
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1722-3	3	125	190	130	3
A1722-3.5	3,5	139	210	145	3,5
A1722-4	4	143	220	150	4
A1722-4.5	4,5	152	235	160	4,5
A1722-5	5	162	245	170	5
A1722-5.5	5,5	171	260	180	5,5
A1722-6	6	171	260	180	6
A1722-6.5	6,5	179	275	190	6,5
A1722-7	7	188	290	200	7
A1722-7.5	7,5	188	290	200	7,5
A1722-8	8	197	305	210	8
A1722-8.5	8,5	197	305	210	8,5
A1722-9	9	205	320	220	9
A1722-9.5	9,5	205	320	220	9,5
A1722-10	10	219	340	235	10
A1722-10.5	10,5	219	340	235	10,5
A1722-11	11	232	360	250	11
A1722-11.5	11,5	232	360	250	11,5
A1722-12	12	246	380	260	12

XIII | D 1 | B 478 | B 482

HSS deep-hole drills, extra long
A1822
UFL®

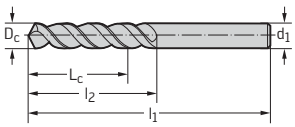


~30×D_c | DIN 1869-III | 130°



	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Parallel shank



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1822-3.5	3,5	174	265	180	3,5
A1822-4	4	183	280	190	4
A1822-4.5	4,5	192	295	200	4,5
A1822-5	5	202	315	210	5
A1822-5.5	5,5	216	330	225	5,5
A1822-6	6	216	330	225	6
A1822-6.5	6,5	224	350	235	6,5
A1822-7	7	238	370	250	7
A1822-7.5	7,5	238	370	250	7,5
A1822-8	8	252	390	265	8
A1822-8.5	8,5	252	390	265	8,5
A1822-9	9	265	410	280	9
A1822-9.5	9,5	265	410	280	9,5
A1822-10	10	279	430	295	10
A1822-10.5	10,5	279	430	295	10,5
A1822-11	11	287	450	305	11
A1822-11.5	11,5	287	450	305	11,5
A1822-12	12	291	480	305	12

WALTER SELECT

●● Primary application

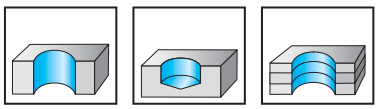
● Other application

XIII | D 1 | B 478 | B 482

HSS deep-hole drills, ultra long
A1922S
UFL®

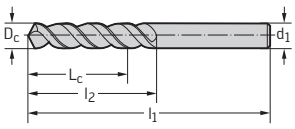






	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Parallel shank

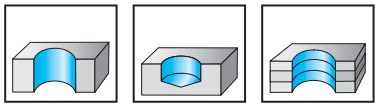


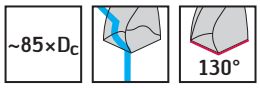
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
A1922S-6	6	389	500	400	6
A1922S-6.5	6,5	389	500	400	6,5
A1922S-7	7	389	500	400	7
A1922S-8	8	536	650	550	8
A1922S-9	9	536	650	550	9
A1922S-10	10	680	800	700	10
A1922S-11	11	680	800	700	11
A1922S-12	12	680	800	700	12
A1922S-13	13	680	800	700	13
A1922S-14	14	680	800	700	14

XIII D 1 B 478 B 482

HSS deep-hole drills, ultra long
A1922L
UFL®

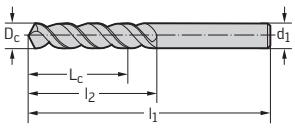






	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

	Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank	A1922L-8	8	685	800	700	8
	A1922L-10	10	769	1000	800	10
	A1922L-12	12	769	1000	800	12



WALTER SELECT

●● Primary application

● Other application

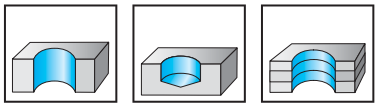
XIII D 1 B 478 B 482

HSS twist drills with Morse taper
A4211 / A4211TIN



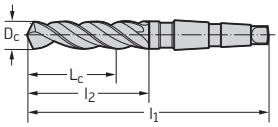
~8×D_c | DIN 345 | 118°

– Type N



	P	M	K	N	S	H	O
TIN	●●	●●	●●	●	●		●
Uncoated	●●	●	●●	●	●		●

Morse taper



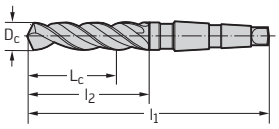
Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	MT
	A4211-3	3		28	114	33	MK1 B
	A4211-1/8IN	3,175	1/8“	30	117	36	MK1 B
	A4211-3.25	3,25		30	117	36	MK1 B
	A4211-3.5	3,5		33	120	39	MK1 B
	A4211-3.75	3,75		33	120	39	MK1 B
	A4211-4	4		36	124	43	MK1 B
	A4211-4.1	4,1		36	124	43	MK1 B
	A4211-4.2	4,2		36	124	43	MK1 B
	A4211-4.25	4,25		36	124	43	MK1 B
	A4211-4.3	4,3		39	128	47	MK1 B
	A4211-4.4	4,4		39	128	47	MK1 B
	A4211-4.5	4,5		39	128	47	MK1 B
	A4211-4.7	4,7		39	128	47	MK1 B
	A4211-4.75	4,75		39	128	47	MK1 B
	A4211-3/16IN	4,763	3/16“	44	133	52	MK1 B
	A4211-4.8	4,8		44	133	52	MK1 B
	A4211-4.9	4,9		44	133	52	MK1 B
	A4211-5	5		44	133	52	MK1 B
	A4211-5.1	5,1		44	133	52	MK1 B
	A4211-5.2	5,2		44	133	52	MK1 B
	A4211-5.25	5,25		44	133	52	MK1 B
	A4211-5.4	5,4		48	138	57	MK1 B
	A4211-5.5	5,5		48	138	57	MK1 B
	A4211-5.6	5,6		48	138	57	MK1 B
	A4211-5.7	5,7		48	138	57	MK1 B
	A4211-5.75	5,75		48	138	57	MK1 B
	A4211-5.8	5,8		48	138	57	MK1 B
	A4211-5.9	5,9		48	138	57	MK1 B
	A4211-6	6		48	138	57	MK1 B
	A4211-6.1	6,1		52	144	63	MK1 B
	A4211-6.2	6,2		52	144	63	MK1 B
	A4211-6.25	6,25		52	144	63	MK1 B
	A4211-6.3	6,3		52	144	63	MK1 B
	A4211-1/4IN	6,35	1/4“	52	144	63	MK1 B
	A4211-6.4	6,4		52	144	63	MK1 B
	A4211-6.5	6,5		52	144	63	MK1 B
	A4211-6.6	6,6		52	144	63	MK1 B
	A4211-6.7	6,7		52	144	63	MK1 B
	A4211-6.75	6,75		57	150	69	MK1 B
	A4211-6.8	6,8		57	150	69	MK1 B
	A4211-6.9	6,9		57	150	69	MK1 B
	A4211-7	7		57	150	69	MK1 B
	A4211-7.2	7,2		57	150	69	MK1 B
	A4211-7.25	7,25		57	150	69	MK1 B
	A4211-7.3	7,3		57	150	69	MK1 B
	A4211-7.4	7,4		57	150	69	MK1 B
	A4211-7.5	7,5		57	150	69	MK1 B
	A4211-7.7	7,7		62	156	75	MK1 B

Continued

D 1 | B 476 | B 482

Continued

Morse taper



Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	MT
	A4211-7.75	7,75		62	156	75	MK1 B
	A4211-7.8	7,8		62	156	75	MK1 B
	A4211-7.9	7,9		62	156	75	MK1 B
	A4211-5/16IN	7,938	5/16"	62	156	75	MK1 B
	A4211-8	8		62	156	75	MK1 B
	A4211-8.1	8,1		62	156	75	MK1 B
	A4211-8.2	8,2		62	156	75	MK1 B
	A4211-8.25	8,25		62	156	75	MK1 B
	A4211-8.3	8,3		62	156	75	MK1 B
	A4211-8.4	8,4		62	156	75	MK1 B
	A4211-8.5	8,5		62	156	75	MK1 B
	A4211-8.6	8,6		66	162	81	MK1 B
	A4211-8.7	8,7		66	162	81	MK1 B
	A4211-8.75	8,75		66	162	81	MK1 B
	A4211-8.8	8,8		66	162	81	MK1 B
	A4211-8.9	8,9		66	162	81	MK1 B
	A4211-9	9		66	162	81	MK1 B
	A4211-9.1	9,1		66	162	81	MK1 B
	A4211-23/64IN	9,128	23/64"	66	162	81	MK1 B
	A4211-9.2	9,2		66	162	81	MK1 B
	A4211-9.25	9,25		66	162	81	MK1 B
	A4211-9.3	9,3		66	162	81	MK1 B
	A4211-9.4	9,4		66	162	81	MK1 B
	A4211-9.5	9,5		66	162	81	MK1 B
	A4211-3/8IN	9,525	3/8"	71	168	87	MK1 B
	A4211-9.6	9,6		71	168	87	MK1 B
	A4211-9.7	9,7		71	168	87	MK1 B
	A4211-9.75	9,75		71	168	87	MK1 B
	A4211-9.8	9,8		71	168	87	MK1 B
	A4211-9.9	9,9		71	168	87	MK1 B
	A4211-25/64IN	9,922	25/64"	71	168	87	MK1 B
A4211TIN-10	A4211-10	10		71	168	87	MK1 B
	A4211-10.1	10,1		71	168	87	MK1 B
A4211TIN-10.2	A4211-10.2	10,2		71	168	87	MK1 B
	A4211-10.25	10,25		71	168	87	MK1 B
	A4211-10.3	10,3		71	168	87	MK1 B
	A4211-10.4	10,4		71	168	87	MK1 B
A4211TIN-10.5	A4211-10.5	10,5		71	168	87	MK1 B
	A4211-10.6	10,6		71	168	87	MK1 B
	A4211-10.7	10,7		76	175	94	MK1 B
	A4211-27/64IN	10,716	27/64"	76	175	94	MK1 B
	A4211-10.75	10,75		76	175	94	MK1 B
	A4211-10.8	10,8		76	175	94	MK1 B
	A4211-10.9	10,9		76	175	94	MK1 B
A4211TIN-11	A4211-11	11		76	175	94	MK1 B
	A4211-11.1	11,1		76	175	94	MK1 B
	A4211-7/16IN	11,113	7/16"	76	175	94	MK1 B
	A4211-11.2	11,2		76	175	94	MK1 B
	A4211-11.25	11,25		76	175	94	MK1 B
	A4211-11.3	11,3		76	175	94	MK1 B
	A4211-11.4	11,4		76	175	94	MK1 B
A4211TIN-11.5	A4211-11.5	11,5		76	175	94	MK1 B
	A4211-29/64IN	11,509	29/64"	76	175	94	MK1 B
	A4211-11.6	11,6		76	175	94	MK1 B
	A4211-11.7	11,7		76	175	94	MK1 B
	A4211-11.75	11,75		76	175	94	MK1 B
	A4211-11.8	11,8		76	175	94	MK1 B
	A4211-11.9	11,9		87	182	101	MK1 B

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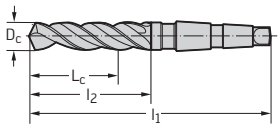
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Morse taper



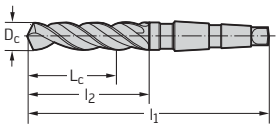
Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	MT
A4211TIN-12	A4211-12	12		87	182	101	MK1 B
	A4211-12.1	12,1		87	182	101	MK1 B
	A4211-12.2	12,2		87	182	101	MK1 B
	A4211-12.25	12,25		87	182	101	MK1 B
	A4211-12.3	12,3		87	182	101	MK1 B
	A4211-31/64IN	12,303	31/64"	87	182	101	MK1 B
	A4211-12.4	12,4		87	182	101	MK1 B
A4211TIN-12.5	A4211-12.5	12,5		87	182	101	MK1 B
	A4211-12.6	12,6		87	182	101	MK1 B
	A4211-1/2IN	12,7	1/2"	87	182	101	MK1 B
	A4211-12.75	12,75		87	182	101	MK1 B
	A4211-12.8	12,8		87	182	101	MK1 B
	A4211-12.9	12,9		87	182	101	MK1 B
A4211TIN-13	A4211-13	13		87	182	101	MK1 B
	A4211-33/64IN	13,097	33/64"	87	182	101	MK1 B
	A4211-13.1	13,1		87	182	101	MK1 B
	A4211-13.2	13,2		87	182	101	MK1 B
	A4211-13.25	13,25		94	189	108	MK1 B
	A4211-13.3	13,3		94	189	108	MK1 B
	A4211-17/32IN	13,494	17/32"	94	189	108	MK1 B
A4211TIN-13.5	A4211-13.5	13,5		94	189	108	MK1 B
	A4211-13.6	13,6		94	189	108	MK1 B
	A4211-13.7	13,7		94	189	108	MK1 B
	A4211-13.75	13,75		94	189	108	MK1 B
	A4211-13.8	13,8		94	189	108	MK1 B
	A4211-35/64IN	13,891	35/64"	94	189	108	MK1 B
	A4211-13.9	13,9		94	189	108	MK1 B
A4211TIN-14	A4211-14	14		94	189	108	MK1 B
	A4211-14.1	14,1		99	212	114	MK2 B
	A4211-14.2	14,2		99	212	114	MK2 B
	A4211-14.25	14,25		99	212	114	MK2 B
	A4211-9/16IN	14,288	9/16"	99	212	114	MK2 B
	A4211-14.3	14,3		99	212	114	MK2 B
	A4211-14.4	14,4		99	212	114	MK2 B
A4211TIN-14.5	A4211-14.5	14,5		99	212	114	MK2 B
	A4211-14.6	14,6		99	212	114	MK2 B
	A4211-37/64IN	14,684	37/64"	99	212	114	MK2 B
	A4211-14.7	14,7		99	212	114	MK2 B
	A4211-14.75	14,75		99	212	114	MK2 B
	A4211-14.8	14,8		99	212	114	MK2 B
	A4211-14.9	14,9		99	212	114	MK2 B
A4211TIN-15	A4211-15	15		99	212	114	MK2 B
	A4211-19/32IN	15,081	19/32"	104	218	120	MK2 B
	A4211-15.1	15,1		104	218	120	MK2 B
	A4211-15.2	15,2		104	218	120	MK2 B
	A4211-15.25	15,25		104	218	120	MK2 B
	A4211-15.3	15,3		104	218	120	MK2 B
	A4211-39/64IN	15,478	39/64"	104	218	120	MK2 B
A4211TIN-15.5	A4211-15.5	15,5		104	218	120	MK2 B
	A4211-15.7	15,7		104	218	120	MK2 B
	A4211-15.75	15,75		104	218	120	MK2 B
	A4211-15.8	15,8		104	218	120	MK2 B
	A4211-5/8IN	15,875	5/8"	104	218	120	MK2 B
	A4211-15.9	15,9		104	218	120	MK2 B
A4211TIN-16	A4211-16	16		104	218	120	MK2 B
	A4211-16.1	16,1		108	223	125	MK2 B
	A4211-16.2	16,2		108	223	125	MK2 B
	A4211-16.25	16,25		108	223	125	MK2 B
	A4211-16.3	16,3		108	223	125	MK2 B
	A4211-16.4	16,4		108	223	125	MK2 B
A4211TIN-16.5	A4211-16.5	16,5		108	223	125	MK2 B
	A4211-16.6	16,6		108	223	125	MK2 B

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D 1 B 476 B 482

Continued

Morse taper



Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	MT
	A4211-21/32IN	16,669	21/32"	108	223	125	MK2 B
	A4211-16.7	16,7		108	223	125	MK2 B
	A4211-16.75	16,75		108	223	125	MK2 B
	A4211-16.8	16,8		108	223	125	MK2 B
	A4211-16.9	16,9		108	223	125	MK2 B
A4211TIN-17	A4211-17	17		108	223	125	MK2 B
	A4211-17.1	17,1		112	228	130	MK2 B
	A4211-17.2	17,2		112	228	130	MK2 B
	A4211-17.25	17,25		112	228	130	MK2 B
	A4211-17.3	17,3		112	228	130	MK2 B
	A4211-17.4	17,4		112	228	130	MK2 B
	A4211-11/16IN	17,463	11/16"	112	228	130	MK2 B
A4211TIN-17.5	A4211-17.5	17,5		112	228	130	MK2 B
	A4211-17.6	17,6		112	228	130	MK2 B
	A4211-17.7	17,7		112	228	130	MK2 B
	A4211-17.75	17,75		112	228	130	MK2 B
	A4211-17.8	17,8		112	228	130	MK2 B
	A4211-45/64IN	17,859	45/64"	112	228	130	MK2 B
	A4211-17.9	17,9		112	228	130	MK2 B
A4211TIN-18	A4211-18	18		112	228	130	MK2 B
	A4211-18.1	18,1		116	233	135	MK2 B
	A4211-18.2	18,2		116	233	135	MK2 B
	A4211-18.25	18,25		116	233	135	MK2 B
	A4211-23/32IN	18,256	23/32"	116	233	135	MK2 B
	A4211-18.3	18,3		116	233	135	MK2 B
	A4211-18.4	18,4		116	233	135	MK2 B
A4211TIN-18.5	A4211-18.5	18,5		116	233	135	MK2 B
	A4211-18.6	18,6		116	233	135	MK2 B
	A4211-47/64IN	18,653	47/64"	116	233	135	MK2 B
	A4211-18.7	18,7		116	233	135	MK2 B
	A4211-18.75	18,75		116	233	135	MK2 B
	A4211-18.8	18,8		116	233	135	MK2 B
	A4211-18.9	18,9		116	233	135	MK2 B
A4211TIN-19	A4211-19	19		116	233	135	MK2 B
	A4211-3/4IN	19,05	3/4"	120	238	140	MK2 B
	A4211-19.1	19,1		120	238	140	MK2 B
	A4211-19.2	19,2		120	238	140	MK2 B
	A4211-19.25	19,25		120	238	140	MK2 B
	A4211-19.3	19,3		120	238	140	MK2 B
	A4211-19.4	19,4		120	238	140	MK2 B
	A4211-49/64IN	19,447	49/64"	120	238	140	MK2 B
A4211TIN-19.5	A4211-19.5	19,5		120	238	140	MK2 B
	A4211-19.7	19,7		120	238	140	MK2 B
	A4211-19.75	19,75		120	238	140	MK2 B
	A4211-19.8	19,8		120	238	140	MK2 B
	A4211-25/32IN	19,844	25/32"	120	238	140	MK2 B
	A4211-19.9	19,9		120	238	140	MK2 B
A4211TIN-20	A4211-20	20		120	238	140	MK2 B
	A4211-20.1	20,1		123	243	145	MK2 B
	A4211-20.2	20,2		123	243	145	MK2 B
	A4211-20.25	20,25		123	243	145	MK2 B
	A4211-20.3	20,3		123	243	145	MK2 B
	A4211-20.4	20,4		123	243	145	MK2 B
A4211TIN-20.5	A4211-20.5	20,5		123	243	145	MK2 B
	A4211-20.6	20,6		123	243	145	MK2 B
	A4211-13/16IN	20,638	13/16"	123	243	145	MK2 B
	A4211-20.7	20,7		123	243	145	MK2 B
	A4211-20.75	20,75		123	243	145	MK2 B

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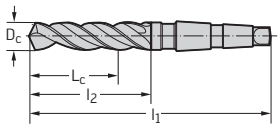
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Morse taper



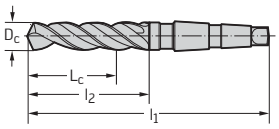
Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	MT
	A4211-20.8	20,8		123	243	145	MK2 B
	A4211-20.9	20,9		123	243	145	MK2 B
A4211TIN-21	A4211-21	21		123	243	145	MK2 B
	A4211-21.1	21,1		123	243	145	MK2 B
	A4211-21.2	21,2		123	243	145	MK2 B
	A4211-21.25	21,25		127	248	150	MK2 B
	A4211-27/32IN	21,431	27/32"	127	248	150	MK2 B
A4211TIN-21.5	A4211-21.5	21,5		127	248	150	MK2 B
	A4211-21.6	21,6		127	248	150	MK2 B
	A4211-21.7	21,7		127	248	150	MK2 B
	A4211-21.75	21,75		127	248	150	MK2 B
	A4211-21.8	21,8		127	248	150	MK2 B
	A4211-55/64IN	21,828	55/64"	127	248	150	MK2 B
A4211TIN-22	A4211-22	22		127	248	150	MK2 B
	A4211-22.1	22,1		127	248	150	MK2 B
	A4211-22.2	22,2		127	248	150	MK2 B
	A4211-7/8IN	22,225	7/8"	127	248	150	MK2 B
	A4211-22.25	22,25		127	248	150	MK2 B
	A4211-22.3	22,3		127	248	150	MK2 B
A4211TIN-22.5	A4211-22.5	22,5		131	253	155	MK2 B
	A4211-57/64IN	22,622	57/64"	131	253	155	MK2 B
	A4211-22.7	22,7		131	253	155	MK2 B
	A4211-22.75	22,75		131	253	155	MK2 B
A4211TIN-23	A4211-23	23		131	253	155	MK2 B
	A4211-29/32IN	23,019	29/32"	131	253	155	MK2 B
	A4211-23.25	23,25		131	276	155	MK3 B
	A4211-59/64IN	23,416	59/64"	131	276	155	MK3 B
	A4211-23.5	23,5		131	276	155	MK3 B
	A4211-23.75	23,75		135	281	160	MK3 B
	A4211-15/16IN	23,813	15/16"	135	281	160	MK3 B
A4211TIN-24	A4211-24	24		135	281	160	MK3 B
	A4211-24.25	24,25		135	281	160	MK3 B
	A4211-24.5	24,5		135	281	160	MK3 B
	A4211-31/32IN	24,606	31/32"	135	281	160	MK3 B
	A4211-24.75	24,75		135	281	160	MK3 B
A4211TIN-25	A4211-25	25		135	281	160	MK3 B
	A4211-25.25	25,25		138	286	165	MK3 B
	A4211-1IN	25,4	1"	138	286	165	MK3 B
	A4211-25.5	25,5		138	286	165	MK3 B
	A4211-25.75	25,75		138	286	165	MK3 B
A4211TIN-26	A4211-26	26		138	286	165	MK3 B
	A4211-1.1/32IN	26,194	1 1/32"	138	286	165	MK3 B
	A4211-26.25	26,25		138	286	165	MK3 B
	A4211-26.5	26,5		138	286	165	MK3 B
	A4211-26.75	26,75		142	291	170	MK3 B
	A4211-1.1/16IN	26,988	1 1/16"	142	291	170	MK3 B
A4211TIN-27	A4211-27	27		142	291	170	MK3 B
	A4211-27.25	27,25		142	291	170	MK3 B
	A4211-27.5	27,5		142	291	170	MK3 B
	A4211-27.75	27,75		142	291	170	MK3 B
A4211TIN-28	A4211-28	28		142	291	170	MK3 B
	A4211-1.7/64IN	28,178	1 7/64"	145	296	175	MK3 B
	A4211-28.25	28,25		145	296	175	MK3 B
	A4211-28.5	28,5		145	296	175	MK3 B
	A4211-1.1/8IN	28,575	1 1/8"	145	296	175	MK3 B
	A4211-28.75	28,75		145	296	175	MK3 B
A4211TIN-29	A4211-29	29		145	296	175	MK3 B
	A4211-29.25	29,25		145	296	175	MK3 B
	A4211-29.5	29,5		145	296	175	MK3 B
	A4211-29.75	29,75		145	296	175	MK3 B
A4211TIN-30	A4211-30	30		145	296	175	MK3 B
	A4211-1.3/16IN	30,163	1 3/16"	148	301	180	MK3 B

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D 1 B 476 B 482

Continued

Morse taper



Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	MT
	A4211-30.25	30,25		148	301	180	MK3 B
	A4211-30.5	30,5		148	301	180	MK3 B
	A4211-30.75	30,75		148	301	180	MK3 B
	A4211-31	31		148	301	180	MK3 B
	A4211-31.25	31,25		148	301	180	MK3 B
	A4211-31.5	31,5		148	301	180	MK3 B
	A4211-1.1/4IN	31,75	1 1/4"	153	306	185	MK3 B
	A4211-32	32		151	334	185	MK4 B
	A4211-32.5	32,5		151	334	185	MK4 B
	A4211-33	33		151	334	185	MK4 B
	A4211-1.5/16IN	33,338	1 5/16"	151	334	185	MK4 B
	A4211-33.5	33,5		151	334	185	MK4 B
	A4211-34	34		154	339	190	MK4 B
	A4211-1.11/32IN	34,131	1 11/32"	154	339	190	MK4 B
	A4211-34.5	34,5		154	339	190	MK4 B
	A4211-1.3/8IN	34,925	1 3/8"	154	339	190	MK4 B
	A4211-35	35		154	339	190	MK4 B
	A4211-35.5	35,5		154	339	190	MK4 B
	A4211-1.13/32IN	35,719	1 13/32"	157	344	195	MK4 B
	A4211-36	36		157	344	195	MK4 B
	A4211-36.5	36,5		157	344	195	MK4 B
	A4211-1.7/16IN	36,513	1 7/16"	157	344	195	MK4 B
	A4211-37	37		157	344	195	MK4 B
	A4211-37.5	37,5		157	344	195	MK4 B
	A4211-38	38		160	349	200	MK4 B
	A4211-1.1/2IN	38,1	1 1/2"	160	349	200	MK4 B
	A4211-38.5	38,5		160	349	200	MK4 B
	A4211-39	39		160	349	200	MK4 B
	A4211-39.5	39,5		160	349	200	MK4 B
	A4211-1.9/16IN	39,688	1 9/16"	160	349	200	MK4 B
	A4211-40	40		160	349	200	MK4 B
	A4211-40.5	40,5		162	354	205	MK4 B
	A4211-41	41		162	354	205	MK4 B
	A4211-1.5/8IN	41,275	1 5/8"	162	354	205	MK4 B
	A4211-41.5	41,5		162	354	205	MK4 B
	A4211-42	42		162	354	205	MK4 B
	A4211-42.5	42,5		162	354	205	MK4 B
	A4211-43	43		165	359	210	MK4 B
	A4211-43.5	43,5		165	359	210	MK4 B
	A4211-44	44		165	359	210	MK4 B
	A4211-44.5	44,5		165	359	210	MK4 B
	A4211-45	45		165	359	210	MK4 B
	A4211-45.5	45,5		167	364	215	MK4 B
	A4211-46	46		167	364	215	MK4 B
	A4211-46.5	46,5		167	364	215	MK4 B
	A4211-47	47		167	364	215	MK4 B
	A4211-47.5	47,5		167	364	215	MK4 B
	A4211-48	48		170	369	220	MK4 B
	A4211-48.5	48,5		170	369	220	MK4 B
	A4211-49	49		170	369	220	MK4 B
	A4211-49.5	49,5		170	369	220	MK4 B
	A4211-50	50		170	369	220	MK4 B
	A4211-50.5	50,5		174	374	225	MK4 B
	A4211-2IN	50,8	2"	174	374	225	MK4 B
	A4211-51	51		172	412	225	MK5 B
	A4211-52	52		172	412	225	MK5 B
	A4211-53	53		172	412	225	MK5 B
	A4211-54	54		174	417	230	MK5 B

Continued

WALTER SELECT

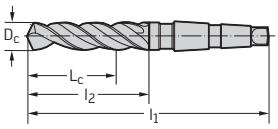
●● Primary application

● Other application

D 1 B 476 B 482

Continued

Morse taper

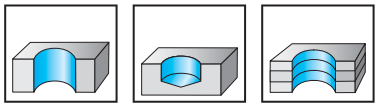


Designation TIN	Designation Uncoated	D_c h8 mm	D_c inches/ no.	L_c mm	l_1 mm	l_2 mm	MT
	A4211-55	55		174	417	230	MK5 B
	A4211-56	56		174	417	230	MK5 B
	A4211-57	57		175	422	235	MK5 B
	A4211-58	58		175	422	235	MK5 B
	A4211-59	59		175	422	235	MK5 B
	A4211-60	60		175	422	235	MK5 B
	A4211-61	61		177	427	240	MK5 B
	A4211-62	62		177	427	240	MK5 B
	A4211-63	63		177	427	240	MK5 B
	A4211-64	64		178	432	245	MK5 B
	A4211-65	65		178	432	245	MK5 B
	A4211-66	66		178	432	245	MK5 B
	A4211-67	67		178	432	245	MK5 B
	A4211-68	68		179	437	250	MK5 B
	A4211-69	69		179	437	250	MK5 B
	A4211-70	70		179	437	250	MK5 B
	A4211-71	71		179	437	250	MK5 B
	A4211-72	72		180	442	255	MK5 B
	A4211-73	73		180	442	255	MK5 B
	A4211-74	74		180	442	255	MK5 B
	A4211-75	75		180	442	255	MK5 B
	A4211-76	76		183	447	260	MK5 B
	A4211-77	77		180	514	260	MK6 B
	A4211-78	78		180	514	260	MK6 B
	A4211-79	79		180	514	260	MK6 B
	A4211-80	80		180	514	260	MK6 B
	A4211-81	81		180	519	265	MK6 B
	A4211-82	82		180	519	265	MK6 B
	A4211-84	84		180	519	265	MK6 B
	A4211-85	85		180	519	265	MK6 B
	A4211-90	90		180	524	270	MK6 B
	A4211-95	95		180	529	275	MK6 B
	A4211-100	100		180	534	280	MK6 B

D 1 B 476 B 482

HSS-E twist drills with Morse taper
A4244
VA

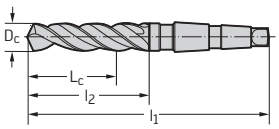




~8×D_c | DIN 345 |  |  130°

	P	M	K	N	S	H	O
Uncoated	●	●●		●	●●		

Morse taper



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4244-10	10	71	168	87	MK1 B
A4244-10.2	10,2	71	168	87	MK1 B
A4244-10.5	10,5	71	168	87	MK1 B
A4244-10.8	10,8	76	175	94	MK1 B
A4244-11	11	76	175	94	MK1 B
A4244-11.2	11,2	76	175	94	MK1 B
A4244-11.5	11,5	76	175	94	MK1 B
A4244-11.8	11,8	76	175	94	MK1 B
A4244-12	12	87	182	101	MK1 B
A4244-12.2	12,2	87	182	101	MK1 B
A4244-12.5	12,5	87	182	101	MK1 B
A4244-12.8	12,8	87	182	101	MK1 B
A4244-13	13	87	182	101	MK1 B
A4244-13.2	13,2	87	182	101	MK1 B
A4244-13.5	13,5	94	189	108	MK1 B
A4244-13.8	13,8	94	189	108	MK1 B
A4244-14	14	94	189	108	MK1 B
A4244-14.25	14,25	99	212	114	MK2 B
A4244-14.5	14,5	99	212	114	MK2 B
A4244-14.75	14,75	99	212	114	MK2 B
A4244-15	15	99	212	114	MK2 B
A4244-15.25	15,25	104	218	120	MK2 B
A4244-15.5	15,5	104	218	120	MK2 B
A4244-15.75	15,75	104	218	120	MK2 B
A4244-16	16	104	218	120	MK2 B
A4244-16.25	16,25	108	223	125	MK2 B
A4244-16.5	16,5	108	223	125	MK2 B
A4244-16.75	16,75	108	223	125	MK2 B
A4244-17	17	108	223	125	MK2 B
A4244-17.25	17,25	112	228	130	MK2 B
A4244-17.5	17,5	112	228	130	MK2 B
A4244-17.75	17,75	112	228	130	MK2 B
A4244-18	18	112	228	130	MK2 B
A4244-18.25	18,25	116	233	135	MK2 B
A4244-18.5	18,5	116	233	135	MK2 B
A4244-18.75	18,75	116	233	135	MK2 B
A4244-19	19	116	233	135	MK2 B
A4244-19.25	19,25	120	238	140	MK2 B
A4244-19.5	19,5	120	238	140	MK2 B
A4244-19.75	19,75	120	238	140	MK2 B
A4244-20	20	120	238	140	MK2 B
A4244-20.25	20,25	123	243	145	MK2 B
A4244-20.5	20,5	123	243	145	MK2 B
A4244-20.75	20,75	123	243	145	MK2 B

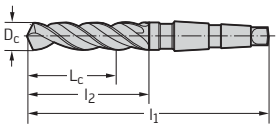
Continued

WALTER SELECT
●● Primary application
● Other application

D 1 | B 476 | B 482

Continued

Morse taper



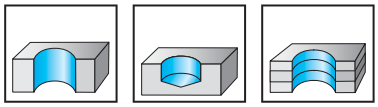
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4244-21	21	123	243	145	MK2 B
A4244-21.25	21,25	127	248	150	MK2 B
A4244-21.5	21,5	127	248	150	MK2 B
A4244-21.75	21,75	127	248	150	MK2 B
A4244-22	22	127	248	150	MK2 B
A4244-22.25	22,25	127	248	150	MK2 B
A4244-22.5	22,5	131	253	155	MK2 B
A4244-22.75	22,75	131	253	155	MK2 B
A4244-23	23	131	253	155	MK2 B
A4244-23.5	23,5	131	276	155	MK3 B
A4244-24	24	135	281	160	MK3 B
A4244-24.5	24,5	135	281	160	MK3 B
A4244-25	25	135	281	160	MK3 B
A4244-25.5	25,5	138	286	165	MK3 B
A4244-26	26	138	286	165	MK3 B
A4244-26.5	26,5	138	286	165	MK3 B
A4244-27	27	142	291	170	MK3 B
A4244-27.5	27,5	142	291	170	MK3 B
A4244-28	28	142	291	170	MK3 B
A4244-28.5	28,5	145	296	175	MK3 B
A4244-29	29	145	296	175	MK3 B
A4244-29.5	29,5	145	296	175	MK3 B
A4244-30	30	145	296	175	MK3 B
A4244-30.5	30,5	148	301	180	MK3 B
A4244-31	31	148	301	180	MK3 B
A4244-31.5	31,5	148	301	180	MK3 B
A4244-32	32	151	334	185	MK4 B

D 1 B 476 B 482

HSS-E twist drills with Morse taper
A4247
Alpha® XE



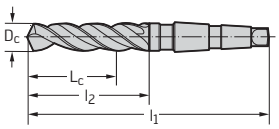
– Uncoated from 23.02 mm



~8×D_c | DIN 345 | 130°

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●

Morse taper



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4247-10	10	71	168	87	MK1 B
A4247-10.2	10,2	71	168	87	MK1 B
A4247-10.5	10,5	71	168	87	MK1 B
A4247-10.8	10,8	76	175	94	MK1 B
A4247-11	11	76	175	94	MK1 B
A4247-11.2	11,2	76	175	94	MK1 B
A4247-11.5	11,5	76	175	94	MK1 B
A4247-11.8	11,8	76	175	94	MK1 B
A4247-12	12	87	182	101	MK1 B
A4247-12.2	12,2	87	182	101	MK1 B
A4247-12.5	12,5	87	182	101	MK1 B
A4247-12.8	12,8	87	182	101	MK1 B
A4247-13	13	87	182	101	MK1 B
A4247-13.2	13,2	87	182	101	MK1 B
A4247-13.5	13,5	94	189	108	MK1 B
A4247-13.8	13,8	94	189	108	MK1 B
A4247-14	14	94	189	108	MK1 B
A4247-14.25	14,25	99	212	114	MK2 B
A4247-14.5	14,5	99	212	114	MK2 B
A4247-14.75	14,75	99	212	114	MK2 B
A4247-15	15	99	212	114	MK2 B
A4247-15.25	15,25	104	218	120	MK2 B
A4247-15.5	15,5	104	218	120	MK2 B
A4247-15.75	15,75	104	218	120	MK2 B
A4247-16	16	104	218	120	MK2 B
A4247-16.25	16,25	108	223	125	MK2 B
A4247-16.5	16,5	108	223	125	MK2 B
A4247-16.75	16,75	108	223	125	MK2 B
A4247-17	17	108	223	125	MK2 B
A4247-17.25	17,25	112	228	130	MK2 B
A4247-17.5	17,5	112	228	130	MK2 B
A4247-17.75	17,75	112	228	130	MK2 B
A4247-18	18	112	228	130	MK2 B
A4247-18.25	18,25	116	233	135	MK2 B
A4247-18.5	18,5	116	233	135	MK2 B
A4247-18.75	18,75	116	233	135	MK2 B
A4247-19	19	116	233	135	MK2 B
A4247-19.25	19,25	120	238	140	MK2 B
A4247-19.5	19,5	120	238	140	MK2 B
A4247-19.75	19,75	120	238	140	MK2 B
A4247-20	20	120	238	140	MK2 B
A4247-20.25	20,25	123	243	145	MK2 B
A4247-20.5	20,5	123	243	145	MK2 B
A4247-20.75	20,75	123	243	145	MK2 B

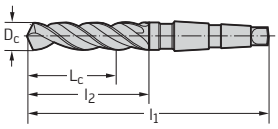
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WALTER SELECT
●● Primary application
● Other application

D 1 | B 474 | B 482

Continued

Morse taper



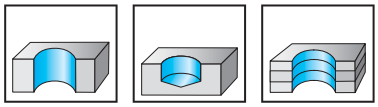
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4247-21	21	123	243	145	MK2 B
A4247-21.25	21,25	127	248	150	MK2 B
A4247-21.5	21,5	127	248	150	MK2 B
A4247-21.75	21,75	127	248	150	MK2 B
A4247-22	22	127	248	150	MK2 B
A4247-22.25	22,25	127	248	150	MK2 B
A4247-22.5	22,5	131	253	155	MK2 B
A4247-22.75	22,75	131	253	155	MK2 B
A4247-23	23	131	253	155	MK2 B
A4247-23.5	23,5	131	276	155	MK3 B
A4247-24	24	135	281	160	MK3 B
A4247-24.5	24,5	135	281	160	MK3 B
A4247-25	25	135	281	160	MK3 B
A4247-25.5	25,5	138	286	165	MK3 B
A4247-26	26	138	286	165	MK3 B
A4247-26.5	26,5	138	286	165	MK3 B
A4247-27	27	142	291	170	MK3 B
A4247-27.5	27,5	142	291	170	MK3 B
A4247-28	28	142	291	170	MK3 B
A4247-28.5	28,5	145	296	175	MK3 B
A4247-29	29	145	296	175	MK3 B
A4247-29.5	29,5	145	296	175	MK3 B
A4247-30	30	145	296	175	MK3 B
A4247-30.5	30,5	148	301	180	MK3 B
A4247-31	31	148	301	180	MK3 B
A4247-31.5	31,5	148	301	180	MK3 B
A4247-32	32	151	334	185	MK4 B
A4247-32.5	32,5	151	334	185	MK4 B
A4247-33	33	151	334	185	MK4 B
A4247-33.5	33,5	151	334	185	MK4 B
A4247-34	34	154	339	190	MK4 B
A4247-34.5	34,5	154	339	190	MK4 B
A4247-35	35	154	339	190	MK4 B
A4247-36	36	157	344	195	MK4 B
A4247-37	37	157	344	195	MK4 B
A4247-38	38	160	349	200	MK4 B
A4247-39	39	160	349	200	MK4 B
A4247-40	40	160	349	200	MK4 B

D 1 B 474 B 482

HSS twist drills with Morse taper, long
A4422
UFL®



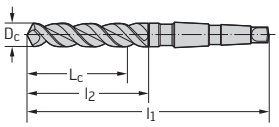
– Uncoated from 23.02 mm



~12×D_c | DIN 341 | 130°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Morse taper



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4422-10	10	100	197	116	MK1 B
A4422-10.2	10,2	100	197	116	MK1 B
A4422-10.5	10,5	100	197	116	MK1 B
A4422-10.8	10,8	107	206	125	MK1 B
A4422-11	11	107	206	125	MK1 B
A4422-11.2	11,2	107	206	125	MK1 B
A4422-11.5	11,5	107	206	125	MK1 B
A4422-11.8	11,8	107	206	125	MK1 B
A4422-12	12	120	215	134	MK1 B
A4422-12.2	12,2	120	215	134	MK1 B
A4422-12.5	12,5	120	215	134	MK1 B
A4422-12.8	12,8	120	215	134	MK1 B
A4422-13	13	120	215	134	MK1 B
A4422-13.2	13,2	120	215	134	MK1 B
A4422-13.5	13,5	128	223	142	MK1 B
A4422-13.8	13,8	128	223	142	MK1 B
A4422-14	14	128	223	142	MK1 B
A4422-14.25	14,25	132	245	147	MK2 B
A4422-14.5	14,5	132	245	147	MK2 B
A4422-14.75	14,75	132	245	147	MK2 B
A4422-15	15	132	245	147	MK2 B
A4422-15.25	15,25	137	251	153	MK2 B
A4422-15.5	15,5	137	251	153	MK2 B
A4422-15.75	15,75	137	251	153	MK2 B
A4422-16	16	137	251	153	MK2 B
A4422-16.25	16,25	142	257	159	MK2 B
A4422-16.5	16,5	142	257	159	MK2 B
A4422-16.75	16,75	142	257	159	MK2 B
A4422-17	17	142	257	159	MK2 B
A4422-17.25	17,25	147	263	165	MK2 B
A4422-17.5	17,5	147	263	165	MK2 B
A4422-17.75	17,75	147	263	165	MK2 B
A4422-18	18	147	263	165	MK2 B
A4422-18.25	18,25	152	269	171	MK2 B
A4422-18.5	18,5	152	269	171	MK2 B
A4422-18.75	18,75	152	269	171	MK2 B
A4422-19	19	152	269	171	MK2 B
A4422-19.25	19,25	157	275	177	MK2 B
A4422-19.5	19,5	157	275	177	MK2 B
A4422-19.75	19,75	157	275	177	MK2 B
A4422-20	20	157	275	177	MK2 B
A4422-20.5	20,5	162	282	184	MK2 B
A4422-21	21	162	282	184	MK2 B
A4422-21.5	21,5	168	289	191	MK2 B

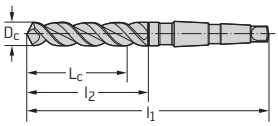
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WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | B 476 | B 482

Continued

Morse taper



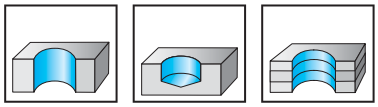
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4422-22	22	168	289	191	MK2 B
A4422-22.5	22,5	174	296	198	MK2 B
A4422-23	23	174	296	198	MK2 B
A4422-23.5	23,5	174	319	198	MK3 B
A4422-24	24	181	327	206	MK3 B
A4422-24.5	24,5	181	327	206	MK3 B
A4422-25	25	181	327	206	MK3 B
A4422-26	26	187	335	214	MK3 B
A4422-27	27	194	343	222	MK3 B
A4422-28	28	194	343	222	MK3 B
A4422-29	29	200	351	230	MK3 B
A4422-30	30	200	351	230	MK3 B
A4422-31	31	207	360	239	MK3 B

XIII D 1 B 476 B 482

HSS twist drills with Morse taper, long
A4411



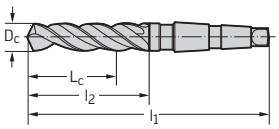
– Type N



~12×D_c | DIN 341 | 118°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●	●		●

Morse taper



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4411-5	5	66	155	74	MK1 B
A4411-5.5	5,5	71	161	80	MK1 B
A4411-6	6	71	161	80	MK1 B
A4411-6.5	6,5	75	167	86	MK1 B
A4411-6.8	6,8	81	174	93	MK1 B
A4411-7	7	81	174	93	MK1 B
A4411-7.5	7,5	81	174	93	MK1 B
A4411-8	8	87	181	100	MK1 B
A4411-8.1	8,1	87	181	100	MK1 B
A4411-8.2	8,2	87	181	100	MK1 B
A4411-8.25	8,25	87	181	100	MK1 B
A4411-8.3	8,3	87	181	100	MK1 B
A4411-8.4	8,4	87	181	100	MK1 B
A4411-8.5	8,5	87	181	100	MK1 B
A4411-8.7	8,7	92	188	107	MK1 B
A4411-8.75	8,75	92	188	107	MK1 B
A4411-8.8	8,8	92	188	107	MK1 B
A4411-9	9	92	188	107	MK1 B
A4411-9.1	9,1	92	188	107	MK1 B
A4411-9.5	9,5	92	188	107	MK1 B
A4411-9.7	9,7	100	197	116	MK1 B
A4411-9.8	9,8	100	197	116	MK1 B
A4411-9.9	9,9	100	197	116	MK1 B
A4411-10	10	100	197	116	MK1 B
A4411-10.1	10,1	100	197	116	MK1 B
A4411-10.2	10,2	100	197	116	MK1 B
A4411-10.25	10,25	100	197	116	MK1 B
A4411-10.3	10,3	100	197	116	MK1 B
A4411-10.4	10,4	100	197	116	MK1 B
A4411-10.5	10,5	100	197	116	MK1 B
A4411-10.6	10,6	100	197	116	MK1 B
A4411-10.7	10,7	107	206	125	MK1 B
A4411-10.8	10,8	107	206	125	MK1 B
A4411-10.9	10,9	107	206	125	MK1 B
A4411-11	11	107	206	125	MK1 B
A4411-11.1	11,1	107	206	125	MK1 B
A4411-11.2	11,2	107	206	125	MK1 B
A4411-11.5	11,5	107	206	125	MK1 B
A4411-11.6	11,6	107	206	125	MK1 B
A4411-11.7	11,7	107	206	125	MK1 B
A4411-11.75	11,75	107	206	125	MK1 B
A4411-11.8	11,8	107	206	125	MK1 B
A4411-11.9	11,9	120	215	134	MK1 B
A4411-12	12	120	215	134	MK1 B

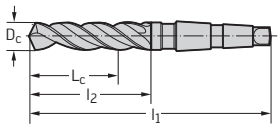
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WALTER SELECT
●● Primary application
● Other application

D 1 | B 478 | B 482

Continued

Morse taper

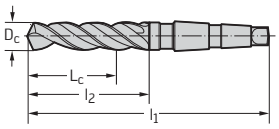


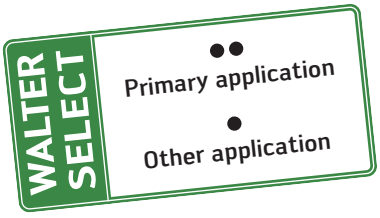
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4411-12.1	12,1	120	215	134	MK1 B
A4411-12.3	12,3	120	215	134	MK1 B
A4411-12.5	12,5	120	215	134	MK1 B
A4411-12.75	12,75	120	215	134	MK1 B
A4411-13	13	120	215	134	MK1 B
A4411-13.5	13,5	128	223	142	MK1 B
A4411-13.75	13,75	128	223	142	MK1 B
A4411-14	14	128	223	142	MK1 B
A4411-14.25	14,25	132	245	147	MK2 B
A4411-14.5	14,5	132	245	147	MK2 B
A4411-14.75	14,75	132	245	147	MK2 B
A4411-15	15	132	245	147	MK2 B
A4411-15.25	15,25	137	251	153	MK2 B
A4411-15.5	15,5	137	251	153	MK2 B
A4411-15.75	15,75	137	251	153	MK2 B
A4411-16	16	137	251	153	MK2 B
A4411-16.25	16,25	142	257	159	MK2 B
A4411-16.5	16,5	142	257	159	MK2 B
A4411-16.75	16,75	142	257	159	MK2 B
A4411-17	17	142	257	159	MK2 B
A4411-17.25	17,25	147	263	165	MK2 B
A4411-17.5	17,5	147	263	165	MK2 B
A4411-17.75	17,75	147	263	165	MK2 B
A4411-18	18	147	263	165	MK2 B
A4411-18.5	18,5	152	269	171	MK2 B
A4411-18.75	18,75	152	269	171	MK2 B
A4411-19	19	152	269	171	MK2 B
A4411-19.5	19,5	157	275	177	MK2 B
A4411-19.75	19,75	157	275	177	MK2 B
A4411-20	20	157	275	177	MK2 B
A4411-20.25	20,25	162	282	184	MK2 B
A4411-20.5	20,5	162	282	184	MK2 B
A4411-20.75	20,75	162	282	184	MK2 B
A4411-21	21	162	282	184	MK2 B
A4411-21.25	21,25	168	289	191	MK2 B
A4411-21.5	21,5	168	289	191	MK2 B
A4411-21.75	21,75	168	289	191	MK2 B
A4411-22	22	168	289	191	MK2 B
A4411-22.25	22,25	168	289	191	MK2 B
A4411-22.5	22,5	174	296	198	MK2 B
A4411-22.75	22,75	174	296	198	MK2 B
A4411-23	23	174	296	198	MK2 B
A4411-23.5	23,5	174	319	198	MK3 B
A4411-24	24	181	327	206	MK3 B
A4411-24.5	24,5	181	327	206	MK3 B
A4411-25	25	181	327	206	MK3 B
A4411-25.5	25,5	187	335	214	MK3 B
A4411-26	26	187	335	214	MK3 B
A4411-26.5	26,5	187	335	214	MK3 B
A4411-27	27	194	343	222	MK3 B
A4411-27.5	27,5	194	343	222	MK3 B
A4411-28	28	194	343	222	MK3 B
A4411-28.5	28,5	200	351	230	MK3 B
A4411-29	29	200	351	230	MK3 B
A4411-29.5	29,5	200	351	230	MK3 B
A4411-30	30	200	351	230	MK3 B
A4411-30.5	30,5	207	360	239	MK3 B
A4411-31	31	207	360	239	MK3 B
A4411-31.5	31,5	207	360	239	MK3 B
A4411-32	32	214	397	248	MK4 B
A4411-32.5	32,5	214	397	248	MK4 B
A4411-33	33	214	397	248	MK4 B

Continued

D 1 B 478 B 482

Continued

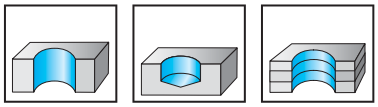
	Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
Morse taper 	A4411-34	34	221	406	257	MK4 B
	A4411-34.5	34,5	221	406	257	MK4 B
	A4411-35	35	221	406	257	MK4 B
	A4411-36	36	229	416	267	MK4 B
	A4411-37	37	229	416	267	MK4 B
	A4411-37.5	37,5	229	416	267	MK4 B
	A4411-38	38	237	426	277	MK4 B
	A4411-38.5	38,5	237	426	277	MK4 B
	A4411-39	39	237	426	277	MK4 B
	A4411-40	40	237	426	277	MK4 B
	A4411-41	41	244	436	287	MK4 B
	A4411-42	42	244	436	287	MK4 B
	A4411-43	43	253	447	298	MK4 B
	A4411-44	44	253	447	298	MK4 B
	A4411-45	45	253	447	298	MK4 B
	A4411-46	46	262	459	310	MK4 B
	A4411-47	47	262	459	310	MK4 B
	A4411-48	48	271	470	321	MK4 B
	A4411-50	50	271	470	321	MK4 B



HSS drills with Morse taper, extra long
A4622
UFL®



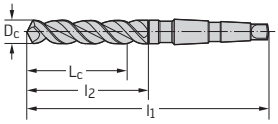
– Uncoated from 23.02 mm



~16×D_c | DIN 1870-I | 130°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Morse taper



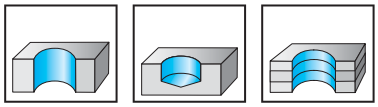
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4622-12	12	191	310	205	MK1 B
A4622-12.5	12,5	191	310	205	MK1 B
A4622-13	13	191	310	205	MK1 B
A4622-13.5	13,5	206	325	220	MK1 B
A4622-14	14	206	325	220	MK1 B
A4622-14.5	14,5	205	340	220	MK2 B
A4622-15	15	205	340	220	MK2 B
A4622-15.5	15,5	214	355	230	MK2 B
A4622-16	16	214	355	230	MK2 B
A4622-16.5	16,5	213	355	230	MK2 B
A4622-17	17	213	355	230	MK2 B
A4622-17.5	17,5	227	370	245	MK2 B
A4622-18	18	227	370	245	MK2 B
A4622-18.5	18,5	226	370	245	MK2 B
A4622-19	19	226	370	245	MK2 B
A4622-19.5	19,5	240	385	260	MK2 B
A4622-20	20	240	385	260	MK2 B
A4622-21	21	238	385	260	MK2 B
A4622-22	22	247	405	270	MK2 B
A4622-23	23	246	405	270	MK2 B
A4622-24	24	265	440	290	MK3 B
A4622-25	25	265	440	290	MK3 B
A4622-26	26	263	440	290	MK3 B
A4622-27	27	277	460	305	MK3 B
A4622-28	28	277	460	305	MK3 B
A4622-29	29	275	460	305	MK3 B
A4622-30	30	275	460	305	MK3 B

XIII | D 1 | B 478 | B 482

HSS drills with Morse taper, extra long
A4611



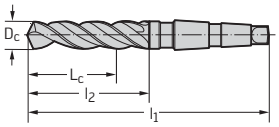
– Type N



~16×D_c | DIN 1870-I | 118°

	P	M	K	N	S	H	O
Uncoated	●	●	●	●	●		●

Morse taper



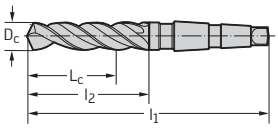
Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4611-8	8	152	265	165	MK1 B
A4611-8.5	8,5	152	265	165	MK1 B
A4611-9	9	160	275	175	MK1 B
A4611-9.5	9,5	160	275	175	MK1 B
A4611-10	10	169	285	185	MK1 B
A4611-10.5	10,5	169	285	185	MK1 B
A4611-11	11	177	300	195	MK1 B
A4611-11.5	11,5	177	300	195	MK1 B
A4611-12	12	191	310	205	MK1 B
A4611-12.5	12,5	191	310	205	MK1 B
A4611-13	13	191	310	205	MK1 B
A4611-13.5	13,5	206	325	220	MK1 B
A4611-14	14	206	325	220	MK1 B
A4611-14.5	14,5	205	340	220	MK2 B
A4611-15	15	205	340	220	MK2 B
A4611-15.5	15,5	214	355	230	MK2 B
A4611-16	16	214	355	230	MK2 B
A4611-16.5	16,5	213	355	230	MK2 B
A4611-17	17	213	355	230	MK2 B
A4611-17.5	17,5	227	370	245	MK2 B
A4611-18	18	227	370	245	MK2 B
A4611-18.5	18,5	226	370	245	MK2 B
A4611-19	19	226	370	245	MK2 B
A4611-19.5	19,5	240	385	260	MK2 B
A4611-20	20	240	385	260	MK2 B
A4611-20.5	20,5	238	385	260	MK2 B
A4611-21	21	238	385	260	MK2 B
A4611-21.5	21,5	247	405	270	MK2 B
A4611-22	22	247	405	270	MK2 B
A4611-22.5	22,5	246	405	270	MK2 B
A4611-23	23	246	405	270	MK2 B
A4611-23.5	23,5	246	425	270	MK3 B
A4611-24	24	265	440	290	MK3 B
A4611-24.5	24,5	265	440	290	MK3 B
A4611-25	25	265	440	290	MK3 B
A4611-25.5	25,5	263	440	290	MK3 B
A4611-26	26	263	440	290	MK3 B
A4611-26.5	26,5	263	440	290	MK3 B
A4611-27	27	277	460	305	MK3 B
A4611-28	28	277	460	305	MK3 B
A4611-29	29	275	460	305	MK3 B
A4611-30	30	275	460	305	MK3 B
A4611-31	31	288	480	320	MK3 B
A4611-32	32	286	505	320	MK4 B

Continued

WALTER SELECT
●● Primary application
● Other application

D 1 | B 478 | B 482

Continued

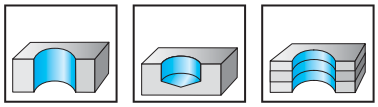
	Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
Morse taper 	A4611-33	33	286	505	320	MK4 B
	A4611-34	34	304	530	340	MK4 B
	A4611-35	35	304	530	340	MK4 B
	A4611-36	36	302	530	340	MK4 B
	A4611-37	37	302	530	340	MK4 B
	A4611-38	38	320	555	360	MK4 B
	A4611-39	39	320	555	360	MK4 B
	A4611-40	40	320	555	360	MK4 B
	A4611-41	41	317	555	360	MK4 B
	A4611-42	42	317	555	360	MK4 B
	A4611-45	45	340	585	385	MK4 B
	A4611-48	48	355	605	405	MK4 B
	A4611-50	50	355	605	405	MK4 B

D 1 B 478 B 482

HSS drills with Morse taper, extra long
A4722
UFL®



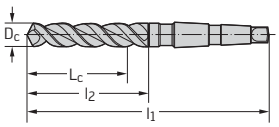
– Uncoated from 23.02 mm



~22×D_c | DIN 1870-II | 130°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●

Morse taper



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT
A4722-8	8	197	330	210	MK1 B
A4722-8.5	8,5	197	330	210	MK1 B
A4722-9	9	205	345	220	MK1 B
A4722-10	10	219	360	235	MK1 B
A4722-10.5	10,5	219	360	235	MK1 B
A4722-11	11	232	375	250	MK1 B
A4722-11.5	11,5	232	375	250	MK1 B
A4722-12	12	246	395	260	MK1 B
A4722-12.5	12,5	246	395	260	MK1 B
A4722-13	13	246	395	260	MK1 B
A4722-13.5	13,5	261	410	275	MK1 B
A4722-14	14	261	410	275	MK1 B
A4722-14.5	14,5	260	425	275	MK2 B
A4722-15	15	260	425	275	MK2 B
A4722-15.5	15,5	279	445	295	MK2 B
A4722-16	16	279	445	295	MK2 B
A4722-16.5	16,5	278	445	295	MK2 B
A4722-17	17	278	445	295	MK2 B
A4722-17.5	17,5	292	465	310	MK2 B
A4722-18	18	292	465	310	MK2 B
A4722-18.5	18,5	291	465	310	MK2 B
A4722-19	19	291	465	310	MK2 B
A4722-19.5	19,5	305	490	325	MK2 B
A4722-20	20	305	490	325	MK2 B
A4722-21	21	303	490	325	MK2 B
A4722-22	22	322	515	345	MK2 B
A4722-23	23	321	515	345	MK2 B
A4722-24	24	340	555	365	MK3 B
A4722-25	25	340	555	365	MK3 B
A4722-26	26	338	555	365	MK3 B
A4722-27	27	357	580	385	MK3 B
A4722-28	28	357	580	385	MK3 B
A4722-29	29	355	580	385	MK3 B
A4722-30	30	355	580	385	MK3 B
A4722-31	31	378	610	410	MK3 B
A4722-32	32	376	635	410	MK4 B
A4722-33	33	376	635	410	MK4 B
A4722-34	34	394	665	430	MK4 B
A4722-35	35	394	665	430	MK4 B
A4722-38	38	420	695	460	MK4 B
A4722-40	40	420	695	460	MK4 B

WALTER SELECT

●● Primary application

● Other application

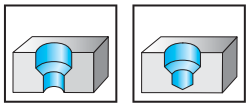
XIII | D 1 | B 478 | B 482

HSS multi diameter/chamfer drills
K6221



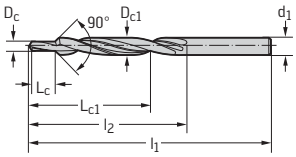
– Countersink DIN 74, form A – D_c for through holes DIN ISO 273

DIN 8374 | 118° | 90°



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



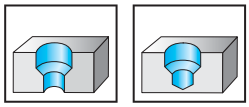
Designation Uncoated	Size	D_c h9 mm	D_{c1} h8 mm	L_c mm	L_{c1} mm	l_1 mm	l_2 mm	d_1 h8 mm
K6221-6	M 3	3,2	6	9	45	93	57	6
K6221-8	M 4	4,3	8	11	59	117	75	8
K6221-10	M 5	5,3	10	13	72	133	87	10
K6221-11.5	M 6	6,4	11,5	15	77	142	94	11,5
K6221-15	M 8	8,4	15	19	92	169	114	15

XIII | D 1 | B 478 | B 482

HSS multi diameter/chamfer drills
K6222



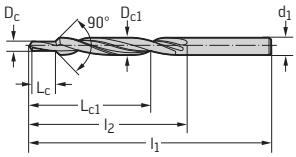
– For holes in accordance with DIN 336, Part 1
– D_c for through holes DIN ISO 273



DIN 8378 | 118° | 90°

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



Designation Uncoated	Size	D_c h9 mm	D_{c1} h8 mm	L_c mm	L_{c1} mm	l_1 mm	l_2 mm	d_1 h8 mm
K6222-3.4	M 3	2,5	3,4	9	32	70	39	3,4
K6222-4.5	M 4	3,3	4,5	11	38	80	47	4,5
K6222-5.5	M 5	4,2	5,5	14	46	93	57	5,5
K6222-6.6	M 6	5	6,6	17	50	101	63	6,6
K6222-9	M 8	6,8	9	21	68	125	81	9
K6222-11	M 10	8,5	11	26	78	142	94	11
K6222-13.5	M 12	10,2	13,5	30	88	160	108	13,5

WALTER SELECT
●● Primary application
● Other application

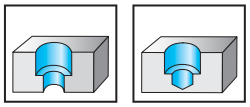
XIII | D 1 | B 478 | B 482

HSS multi diameter/chamfer drills
K6223



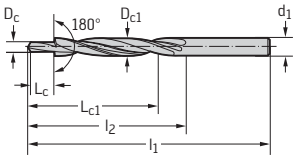
– Countersink DIN 74, T.2, form H – D_c for through holes DIN ISO 273

DIN 8376 | 118° | 180°



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



Designation Uncoated	Size	D_c h9 mm	D_{c1} h8 mm	L_c mm	L_{c1} mm	l_1 mm	l_2 mm	d_1 h8 mm
K6223-8	M 4	4,5	8	11	59	117	75	8
K6223-10	M 5	5,5	10	13	72	133	87	10
K6223-11	M 6	6,6	11	15	78	142	94	11
K6223-15	M 8	9	15	19	92	169	114	15
K6223-18	M 10	11	18	23	103	191	130	18

XIII | D 1 | B 479 | B 482

HSS Taper pin hole drills
K2929

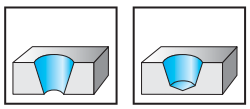


– For tapered pin hole in accordance with DIN 1, 258, 7977, 7978
– D_c corresponds to the nominal diameter of the tapered pin

DIN 1898A

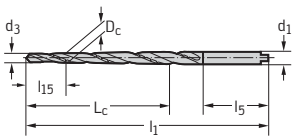


1:50



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



Designation Uncoated	D_c mm	d_3 mm	L_c mm	l_1 mm	l_5 mm	l_{15} mm	d_1 mm
K2929-2	2	1,9	48	86	29	5	3,15
K2929-3	3	2,9	58	100	32	5	4
K2929-4	4	3,9	68	112	34	5	5
K2929-5	5	4,9	73	122	38	5	6,3
K2929-6	6	5,9	105	160	42	5	8
K2929-8	8	7,9	145	207	46	5	10
K2929-10	10	9,9	175	245	50	5	12,5
K2929-12	12	11,8	210	290	58	10	16

WALTER SELECT

●● Primary application

● Other application

D 1 B 479 B 482

HSS Taper pin hole drills
K4929

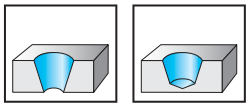


– For tapered pin hole in accordance with DIN 1; 258; 7977; 7978
– D_c corresponds to the nominal diameter of the tapered pin

DIN 1898 B

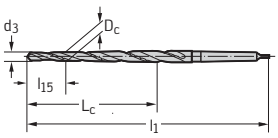


1:50



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Morse taper



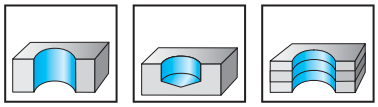
Designation Uncoated	D_c mm	d_3 mm	L_c mm	l_1 mm	l_{15} mm	MT
K4929-8	8	7,9	145	227	5	MK1 B
K4929-10	10	9,9	175	257	5	MK1 B
K4929-12	12	11,8	210	315	10	MK2 B
K4929-14	14	13,8	220	325	10	MK2 B
K4929-16	16	15,8	230	335	10	MK2 B
K4929-20	20	19,8	250	377	10	MK3 B
K4929-25	25	24,7	300	427	15	MK3 B

D 1 B 479 B 482

HSS-E A1244 twist drill – Set
Z3515, Z3516



– Type VA



~8×D_C | DIN 338 | 130°

	P	M	K	N	S	H	O
Uncoated	●	●●		●	●●		

	Designation Uncoated	Sets Dia. mm	Including pilot-hole drills	Pitch	Quantity
	Z3515-1-10.5	1,0–10,5	3,3 4,2 6,8 10,2	0,5	24

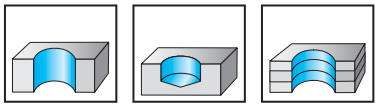
	Designation Uncoated	Sets Dia. mm	Pitch	Quantity
	Z3516-1-13	1,0–13,0	0,5	25

For the dimensions for the A1244 twist drill, please see page B 298

D 1 | B 371 | B 371

HSS-E A1222 twist drill – Set
Z3518
UFL®





~8×D_C | DIN 338 | 130°

	P	M	K	N	S	H	O
Uncoated	●	●●		●	●●		

	Designation Uncoated	Sets Dia. mm	Including pilot-hole drill	Pitch	Quantity
	Z3518-1-10.5	1,0–10,5	3,3 4,2 6,8 10,2	0,5	24

For the dimensions for the A1222 twist drill, please see page B 303

WALTER SELECT

●● Primary application

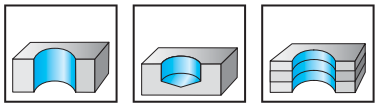
● Other application

XIII | D 1 | B 371 | B 371

A1211 HSS twist drill – Set
Z3213, Z3216



– Type N



~8×D_C | DIN 338 | 130°

	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●	●		●

	Designation Uncoated	Sets Dia. mm	Pitch	Quantity
	Z3213-1-6	1,0–6,0	0,1	51

	Designation Uncoated	Sets Dia. mm	Pitch	Quantity
	Z3216-6-10	6,0–10,0	0,1	41

For the dimensions for the A1211 twist drill, please see page B 308

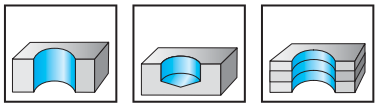
D 1 | B 371 | B 371

A1211TIN/A1211 HSS twist drill – Set Z3218TIN, Z3218, Z3219TIN, Z3219



~8×D_C | DIN 338 |  | 

– Type N

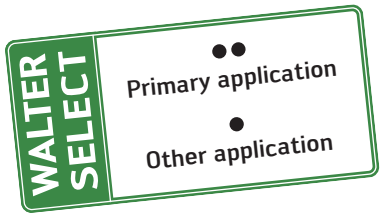


	P	M	K	N	S	H	O
TIN	●●	●	●●	●	●		●
Uncoated	●●	●	●●	●	●		●

	Designation TIN	Designation Uncoated	Sets Dia. mm	Including pilot-hole drill	Pitch	Quantity
	Z3218TIN-1-10.5	Z3218-1-10.5	1,0–10,5	3,3 4,2 6,8 10,2	0,5	24

	Designation TIN	Designation Uncoated	Sets Dia. mm	Pitch	Quantity
	Z3219TIN-1-13	Z3219-1-13	1,0–13,0	0,5	25

For the dimensions for the A1211TIN/A1211 twist drill, please see page B 308



D 1 | B 371 | B 371

Product range overview
Solid carbide and HSS NC centre drills

Machining								
Countersink angle	**90°**				**120°**			
Designation	**A1174**	**A1115**	**A1115S**	**A1115L**	**A1174C**	**A1114**	**A1114S**	**A1114L**
Cutting tool material	Solid carbide	HSS	HSS	HSS	Solid carbide	HSS	HSS	HSS
Coating	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Dia. range [mm]	3–20	4–20	2–25,4	4–25,4	3–16	4–20	2–25,4	4–12,7
Page	B 380	B 381	B 382	B 383	B 384	B 385	B 386	B 387
								

Walter Select – Solid carbide and HSS NC centre drills

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: K5.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

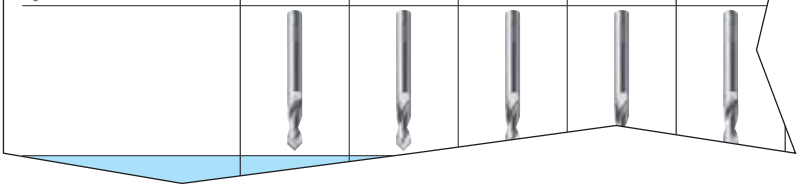
STEP 2

Select your tool from the table from page B 378 onwards:

– In accordance with the **form** (e.g. in accordance with 90° or 120° countersink angle)
– For the relevant **machining group** (see step 1: P1–P15; M1–M3; …; 01–06)

Walter Select
Solid carbide and HSS NC centre drills

Machining					
Countersink angle	**90°**				**120°**
Designation	**A1174**	**A1115**	**A1115S**	**A1115L**	**A1174C**
Cutting tool material	Solid carbide	HSS	HSS	HSS	Solid carbide
Coating	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Shank	Cylindrical	Cylindrical	Cylindrical	Cylindrical	Cylindrical
Dia. range [mm]	3–20	4–20	2–25,4	4–25,4	3–16
Page	B 380	B 381	B 382	B 383	B 384



STEP 3

Select your **cutting data** from the table from page B 487 onwards:

– **Cutting speed:** v_c
– **Feed:** VRR (feed rating chart)

Go to the row for your machining group (e.g. K5) and the column for your selected tool. You will find the cutting speed v_c and the VRR there.
The feed rating chart (**VRR**) can be found on page B 492.

Cutting data for solid carbide and HSS NC spot drills

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

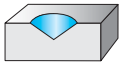
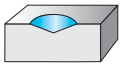
= Wet machining (E = emulsion, O = oil)
= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

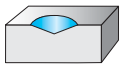
v_c = Cutting speed
VRR = Feed rating chart from page B 492 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Designation	A1174 A1174C				A1115 / A1114 A1115S / A1114S A1115L / A1114L			
						Countersink angle	**90° and 120°**				**90° and 120°**			
						Dia. range (mm)	3,00–20,00				2,00–25,40			
						Cutting tool material	K30F				HSS			
						Coating	Uncoated				Uncoated			
						Page	B 380; B 384				B 381–B 383; B 385–B 387			
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1					32	8	E O	
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2					32	9	E O	
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3					30	9	E O	
		C > 0.55%	Annealed	190	640	P4					32	9	E O	
		C > 0.55%	Heat-treated	300	1010	P5					21	8	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6					32	9	E O	
	Low-alloyed steel	Annealed		175	590	P7					32	9	E O	
		Heat-treated		285	960	P8					21	8	E O	
		Heat-treated		380	1280	P9					11	7	O E	
		Heat-treated		430	1480	P10					8	6	O E	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11					21	8	E O	
		Hardened and tempered		300	1010	P12					15	7	E O	
		Hardened and tempered		380	1280	P13					8	6	O E	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14					9	4	E O	

Walter Select
Solid carbide and HSS NC centre drills

Machining						
Countersink angle	**90°**				**120°**	
Designation	**A1174**	**A1115**	**A1115S**	**A1115L**	**A1174C**	
Cutting tool material	Solid carbide	HSS	HSS	HSS	Solid carbide	
Coating	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	
Shank	Cylindrical	Cylindrical	Cylindrical	Cylindrical	Cylindrical	
Dia. range [mm]	3–20	4–20	2–25,4	4–25,4	3–16	
Page	B 380	B 381	B 382	B 383	B 384	
						
P Steel		●●	●●	●●		
M Stainless steel		●	●	●		
K Cast iron	●	●●	●●	●●	●	
N NF metals	●●	●●	●●	●●	●●	
S Materials with difficult cutting properties	●●	●	●	●	●●	
H Hard materials						
O Other	●●	●●	●●	●●	●●	

			
	120°		
	A1114	**A1114S**	**A1114L**
	HSS	HSS	HSS
	Uncoated	Uncoated	Uncoated
	Cylindrical	Cylindrical	Cylindrical
	4–20	2–25,4	4–12,7
	B 385	B 386	B 387
			
	●●	●●	●●
	●	●	●
	●●	●●	●●
	●●	●●	●●
	●	●	●
	●●	●●	●●

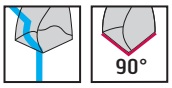
WALTER SELECT

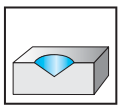
●● Primary application

● Other application

90° solid carbide NC spot drills
A1174

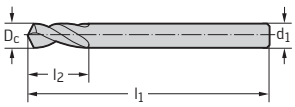






	P	M	K	N	S	H	O
Uncoated			●	●●	●●		●●

Parallel shank



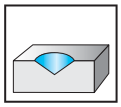
Designation Uncoated	D_c h6 mm	D_c inches/no.	l_1 mm	l_2 mm	d_1 h6 mm
A1174-3	3		46	11	3
A1174-4	4		55	15	4
A1174-5	5		62	16	5
A1174-6	6		66	17	6
A1174-1/4IN	6,35	1/4"	70	18	6,35
A1174-8	8		79	22	8
A1174-3/8IN	9,525	3/8"	89	26	9,525
A1174-10	10		89	26	10
A1174-12	12		102	30	12
A1174-16	16		115	34	16
A1174-20	20		131	40	20

D 1

B 487

90° HSS NC spot drills
A1115

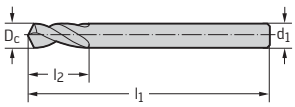


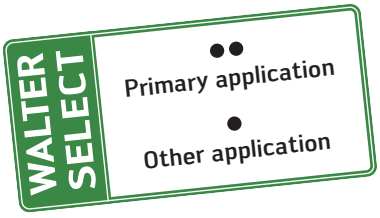






	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●●

	Designation Uncoated	D_c h8 mm	l_1 mm	l_2 mm	d_1 f11 mm
Parallel shank	A1115-4	4	55	18	4
	A1115-5	5	62	21	5
	A1115-6	6	66	22	6
	A1115-8	8	79	30	8
	A1115-10	10	89	34	10
	A1115-12	12	102	41	12
	A1115-16	16	115	46	16
	A1115-20	20	131	53	20



D 1

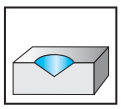
B 487

90° HSS NC spot drills
A1115S



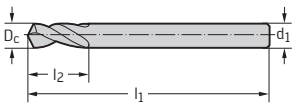






	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●●

Parallel shank



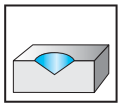
Designation Uncoated	D_c h8 mm	D_c inches/no.	l_1 mm	l_2 mm	d_1 h8 mm
A1115S-2	2		40	8	2
A1115S-3	3		50	10	3
A1115S-4	4		52	12	4
A1115S-5	5		60	15	5
A1115S-6	6		66	20	6
A1115S-1/4IN	6,35	1/4"	66	20	6,35
A1115S-8	8		79	25	8
A1115S-3/8IN	9,525	3/8"	89	25	9,525
A1115S-10	10		89	25	10
A1115S-12	12		102	30	12
A1115S-1/2IN	12,7	1/2"	102	35	12,7
A1115S-14	14		115	35	14
A1115S-5/8IN	15,875	5/8"	115	35	15,875
A1115S-16	16		115	35	16
A1115S-18	18		130	40	18
A1115S-3/4IN	19,05	3/4"	131	40	19,05
A1115S-20	20		131	40	20
A1115S-1IN	25,4	1"	138	45	25,4

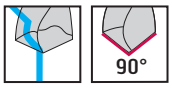

D 1


B 487

90° HSS NC spot drills
A1115L

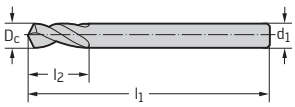






	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●●

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	l_1 mm	l_2 mm	d_1 h8 mm
A1115L-4	4		100	12	4
A1115L-5	5		120	15	5
A1115L-6	6		140	20	6
A1115L-1/4IN	6,35	1/4"	140	20	6,35
A1115L-8	8		140	25	8
A1115L-3/8IN	9,525	3/8"	170	25	9,525
A1115L-10	10		170	25	10
A1115L-12	12		170	30	12
A1115L-1/2IN	12,7	1/2"	170	30	12,7
A1115L-5/8IN	15,875	5/8"	200	35	15,875
A1115L-3/4IN	19,05	3/4"	200	40	19,05
A1115L-20	20		200	40	20
A1115L-1IN	25,4	1"	200	40	25,4

WALTER SELECT

●● Primary application

● Other application

D 1

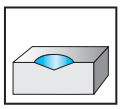
B 487

120° solid carbide NC spot drills
A1174C



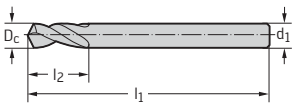






	P	M	K	N	S	H	O
Uncoated			●	●●	●●		●●

Parallel shank



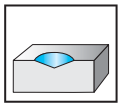
Designation Uncoated	D_c h6 mm	D_c inches/no.	l_1 mm	l_2 mm	d_1 h6 mm
A1174C-3	3		46	11	3
A1174C-4	4		55	15	4
A1174C-5	5		62	16	5
A1174C-6	6		66	17	6
A1174C-1/4IN	6,35	1/4"	70	18	6,35
A1174C-8	8		79	22	8
A1174C-10	10		89	26	10
A1174C-12	12		102	30	12
A1174C-1/2IN	12,7	1/2"	102	30	12,7
A1174C-5/8IN	15,875	5/8"	115	34	15,875
A1174C-16	16		115	34	16

D 1

B 487

120° HSS NC spot drills
A1114



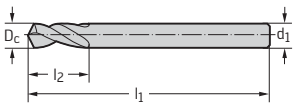




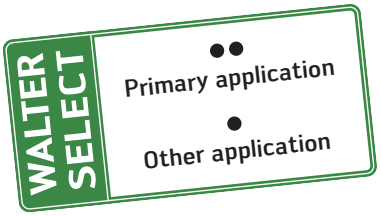


	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●●

Parallel shank



Designation Uncoated	D_c h8 mm	l_1 mm	l_2 mm	d_1 f11 mm
A1114-4	4	55	18	4
A1114-5	5	62	21	5
A1114-6	6	66	22	6
A1114-8	8	79	30	8
A1114-10	10	89	34	10
A1114-12	12	102	41	12
A1114-16	16	115	46	16
A1114-20	20	131	53	20



D 1

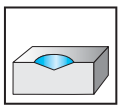
B 487

120° HSS NC spot drills
A1114S



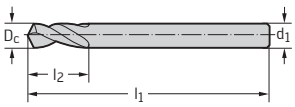






	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●●

Parallel shank



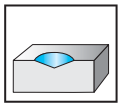
Designation Uncoated	D_c h8 mm	D_c inches/no.	l_1 mm	l_2 mm	d_1 h8 mm
A1114S-2	2		40	8	2
A1114S-3	3		50	10	3
A1114S-4	4		52	12	4
A1114S-5	5		60	15	5
A1114S-6	6		66	20	6
A1114S-1/4IN	6,35	1/4"	66	20	6,35
A1114S-8	8		79	25	8
A1114S-3/8IN	9,525	3/8"	89	25	9,525
A1114S-10	10		89	25	10
A1114S-12	12		102	30	12
A1114S-1/2IN	12,7	1/2"	102	35	12,7
A1114S-14	14		115	35	14
A1114S-5/8IN	15,875	5/8"	115	35	15,875
A1114S-3/4IN	19,05	3/4"	131	40	19,05
A1114S-1IN	25,4	1"	138	45	25,4

D 1

B 487

120° HSS NC spot drills
A1114L



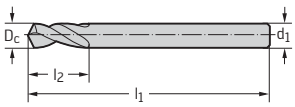




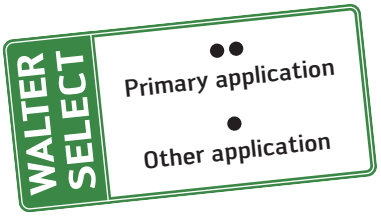


	P	M	K	N	S	H	O
Uncoated	●●	●	●●	●●	●		●●

Parallel shank



Designation Uncoated	D_c h8 mm	D_c inches/no.	l_1 mm	l_2 mm	d_1 h8 mm
A1114L-4	4		100	12	4
A1114L-5	5		120	15	5
A1114L-6	6		140	20	6
A1114L-1/4IN	6,35	1/4"	140	20	6,35
A1114L-8	8		140	25	8
A1114L-3/8IN	9,525	3/8"	170	25	9,525
A1114L-10	10		170	25	10
A1114L-12	12		170	30	12
A1114L-1/2IN	12,7	1/2"	170	30	12,7



D 1

B 487

Product range overview
Solid carbide and HSS centre drills

Machining									
Form	A								
Designation	**K1161XPL**	**K1161**	**K1111TIN**	**K1111**	**K1112**	**K1131**	**K1311**	**K1411S**	**K1411M**
Standard	DIN 333-A	DIN 333-A	DIN 333-A	DIN 333-A	DIN 333-A	DIN 333-A - LH	Walter	Walter	Walter
Cutting tool material	Solid carbide	Solid carbide	HSS	HSS	HSS	HSS	HSS	HSS	HSS
Coating	XPL	Uncoated	TIN	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Dia. range [mm]	0,5–6,3	0,5–6,3	1–5	0,5–12,5	1,6–5	0,5–6,3	0,63–6	0,75–5	0,75–4
Page	B 396	B 396	B 397	B 397	B 398	B 399	B 400	B 401	B 402
									

Machining									
Form	A			B	R				D
Designation	**K1411L**	**K1811**	**K1911**	**K1215**	**K1113TIN**	**K1113**	**K1114**	**K1313**	**K2511**
Standard	Walter	ANSI B 94.11	B.S. 328	DIN 333-B	DIN 333-R	DIN 333-R	DIN 333-R	Walter	Walter
Cutting tool material	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS
Coating	Uncoated	Uncoated	Uncoated	Uncoated	TIN	Uncoated	Uncoated	Uncoated	Uncoated
Dia. range [mm]	2–4	0,64–7,94	1,19–7,94	1–10	1–5	0,5–10	1,6–5	1–4	3,3–21
Page	B 403	B 404	B 405	B 406	B 407	B 407	B 408	B 409	B 410
									

Machining	
Form	DR
Designation	**K2513**
Standard	Walter
Cutting tool material	HSS
Coating	Uncoated
Dia. range [mm]	3,3–21
Page	B 411
	

LH = Left-hand cutting

Walter Select – Solid carbide and HSS centre drills

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: K5.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

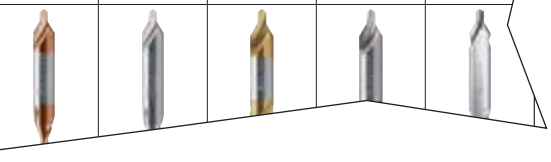
STEP 2

Select your tool from the table from page B 392 onwards

– In accordance with the **form** or **standard** (e.g. form R)
– For the relevant **machining group** (see step 1: P1–P15; M1–M3; …; 01–06)

Walter Select
Solid carbide and HSS centre drills

Machining					
Form	**A**				
Designation	**K1161XPL**	**K1161**	**K1111TIN**	**K1111**	**K1112**
Standard	DIN 333-A	DIN 333-A	DIN 333-A	DIN 333-A	DIN 333-A
Cutting tool material	Solid carbide	Solid carbide	HSS	HSS	HSS
Coating	XPL	Uncoated	TIN	Uncoated	Uncoated
Shank	Cylindrical	Cylindrical	Cylindrical	Cylindrical	Parallel shank with flat
Dia. range [mm]	0,5–6,3	0,5–6,3	1–5	0,5–12,5	1,6–5
Page	B 396	B 396	B 397	B 397	B 398



STEP 3

Select your **cutting data** from the table from page B 488 onwards:

– **Cutting speed:** v_c
– **Feed:** VRR (feed rating chart)

Go to the row for your machining group (e.g. K5) and the column for your selected tool. You will find the cutting speed v_c and the VRR there.
The feed rating chart (**VRR**) can be found on page B 492.

Cutting data for solid carbide and HSS centre drills

= Wet machining (E = emulsion, O = oil)
= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 492 onwards

* The classification of the machining groups can be found in the material group comparison table

						Standard	DIN 333											
						Designation	K1161XPL						K1161					
						Form	A						A					
						Dia. range (mm)	0,50–6,30						0,50–6,30					
						Cutting tool material	K10/20						K10/20					
						Coating	XPL						Uncoated					
						Page	B 396						B 396					
Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	v_c	VRR			v_c	VRR						
	Material																	
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	72	6	E	O	M	L	48	6	E	O	M	L
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	68	6	E	O	M	L	45	6	E	O	M	L
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	63	6	E	O	M	L	42	6	E	O	M	L
		C > 0.55%	Annealed	190	640	P4	68	6	E	O	M	L	45	6	E	O	M	L
		C > 0.55%	Heat-treated	300	1010	P5	48	5	E	O	M	L	32	5	E	O	M	L
		Free cutting steel (short-chipping)	Annealed	220	750	P6	72	6	E	O	M	L	48	6	E	O	M	L
	Low-alloyed steel	Annealed		175	590	P7	68	6	E	O	M	L	45	6	E	O	M	L
		Heat-treated		285	960	P8	48	5	E	O	M	L	32	5	E	O	M	L
		Heat-treated		380	1280	P9	32	3	O	E			21	3	O	E		
		Heat-treated		430	1480	P10	24	2	O	E			16	2	O	E		
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	42	4	E	O			28	4	E	O		
		Hardened and tempered		300	1010	P12	38	4	E	O			25	4	E	O		
				380	1280	P13	24	2	O	E			16	2	O	E		
	Stainless steel																	

Walter Select
Solid carbide and HSS centre drills

Machining						
Form	**A**					
Designation	**K1161XPL**	**K1161**	**K1111TIN**	**K1111**	**K1112**	
Standard	DIN 333-A	DIN 333-A	DIN 333-A	DIN 333-A	DIN 333-A	
Cutting tool material	Solid carbide	Solid carbide	HSS	HSS	HSS	
Coating	XPL	Uncoated	TIN	Uncoated	Uncoated	
Shank	Cylindrical	Cylindrical	Cylindrical	Cylindrical	Parallel shank with flat	
Dia. range [mm]	0,5–6,3	0,5–6,3	1–5	0,5–12,5	1,6–5	
Page	B 396	B 396	B 397	B 397	B 398	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●●	●●	●●	●●	●●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals	●●	●●	●●	●●	●●	
S Materials with difficult cutting properties	●●	●●	●●	●●	●●	
H Hard materials	●●	●				
O Other	●●	●●	●●	●●	●●	



	A						
	K1131	**K1311**	**K1411S**	**K1411M**	**K1411L**	**K1811**	**K1911**
	DIN 333-A - LH	Walter	Walter	Walter	Walter	ANSI B 94.11	B.S. 328
	HSS	HSS	HSS	HSS	HSS	HSS	HSS
	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
	Cylindrical	Cylindrical	Cylindrical	Cylindrical	Cylindrical	Cylindrical	Cylindrical
	0,5–6,3	0,63–6	0,75–5	0,75–4	2–4	0,64–7,94	1,19–7,94
	B 399	B 400	B 401	B 402	B 403	B 404	B 405
							
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●

LH = Left-hand cutting

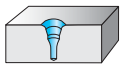
WALTER SELECT

●● Primary application

● Other application

Walter Select
Solid carbide and HSS centre drills

Machining						
Form	**B**	**R**				
Designation	**K1215**	**K1113TIN**	**K1113**	**K1114**	**K1313**	
Standard	DIN 333-B	DIN 333-R	DIN 333-R	DIN 333-R	Walter	
Cutting tool material	HSS	HSS	HSS	HSS	HSS	
Coating	Uncoated	TIN	Uncoated	Uncoated	Uncoated	
Shank	Cylindrical	Cylindrical	Cylindrical	Parallel shank with flat	Cylindrical	
Dia. range [mm]	1–10	1–5	0,5–10	1,6–5	1–4	
Page	B 406	B 407	B 407	B 408	B 409	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●●	●●	●●	●●	●●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals	●●	●●	●●	●●	●●	
S Materials with difficult cutting properties	●●	●●	●●	●●	●●	
H Hard materials						
O Other	●●	●●	●●	●●	●●	

		
	D	DR
	K2511	**K2513**
	Walter	Walter
	HSS	HSS
	Uncoated	Uncoated
	Parallel shank with flat	Parallel shank with flat
	3,3–21	3,3–21
	B 410	B 411
		
	●●	●●
	●●	●●
	●●	●●
	●●	●●
	●●	●●
	●●	●●

WALTER SELECT

●● Primary application

● Other application

Solid carbide centre drills
K1161XPL / K1161

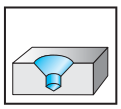


– For straight contact surfaces in accordance with DIN 332 A
– Form A

DIN 333

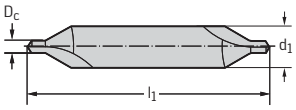


60°



	P	M	K	N	S	H	O
XPL	●●	●●	●●	●●	●●	●●	●●
Uncoated	●●	●●	●●	●●	●●	●	●●

Parallel shank



Designation XPL	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
K1161XPL-0.5	K1161-0.5	0,5	25	3,15
K1161XPL-0.8	K1161-0.8	0,8	25	3,15
K1161XPL-1	K1161-1	1	31,5	3,15
K1161XPL-1.25	K1161-1.25	1,25	31,5	3,15
K1161XPL-1.6	K1161-1.6	1,6	35,5	4
K1161XPL-2	K1161-2	2	40	5
K1161XPL-2.5	K1161-2.5	2,5	45	6,3
K1161XPL-3.15	K1161-3.15	3,15	50	8
K1161XPL-4	K1161-4	4	56	10
K1161XPL-5	K1161-5	5	63	12,5
K1161XPL-6.3	K1161-6.3	6,3	71	16

D_c 0.5/0.8 mm, single sided

D 1

B 488

HSS centre drills
K1111 / K1111TIN

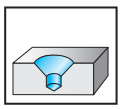


– For straight contact surfaces in accordance with DIN 332 A
– Form A

DIN 333

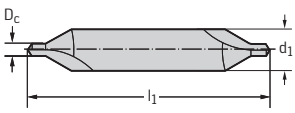


60°



	P	M	K	N	S	H	O
TIN	●●	●●	●●	●●	●●		●●
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



Designation TIN	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
	K1111-0.5	0,5	25	3,15
	K1111-0.8	0,8	25	3,15
K1111TIN-1	K1111-1	1	31,5	3,15
K1111TIN-1.25	K1111-1.25	1,25	31,5	3,15
K1111TIN-1.6	K1111-1.6	1,6	35,5	4
K1111TIN-2	K1111-2	2	40	5
K1111TIN-2.5	K1111-2.5	2,5	45	6,3
K1111TIN-3.15	K1111-3.15	3,15	50	8
K1111TIN-4	K1111-4	4	56	10
K1111TIN-5	K1111-5	5	63	12,5
	K1111-6.3	6,3	71	16
	K1111-8	8	80	20
	K1111-10	10	100	25
	K1111-12.5	12,5	125	31,5

D_c 0.5/0.8 mm, single sided

WALTER SELECT

●● Primary application

● Other application

D 1

B 488

HSS centre drills
K1112

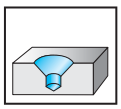


– For straight contact surfaces in accordance with DIN 332 A
– Form A with flat on shank

DIN 333

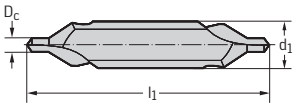


60°



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
Parallel shank with flat	K1112-1.6	1,6	35,5	4
	K1112-2	2	40	5
	K1112-2.5	2,5	45	6,3
	K1112-3.15	3,15	50	8
	K1112-4	4	56	10
	K1112-5	5	63	12,5



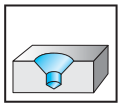
D 1

B 488

HSS centre drills, left hand
K1131



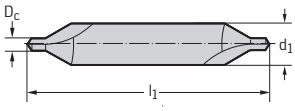
– For straight contact surfaces in accordance with DIN 332 A
– Form A



DIN 333 |  | 60° | LH

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
K1131-0.5	0,5	25	3,15
K1131-0.8	0,8	25	3,15
K1131-1	1	31,5	3,15
K1131-1.25	1,25	31,5	3,15
K1131-1.6	1,6	35,5	4
K1131-2	2	40	5
K1131-2.5	2,5	45	6,3
K1131-3.15	3,15	50	8
K1131-4	4	56	10
K1131-5	5	63	12,5
K1131-6.3	6,3	71	16

D_c 0.5/0.8 mm, single sided

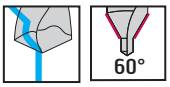
WALTER SELECT
●● Primary application
● Other application

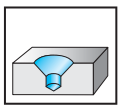
D 1
B 488

HSS centre drills
K1311

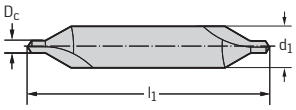


– For straight contact surfaces in accordance with DIN 332 A
– Form A





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
Parallel shank	K1311-0.63	0,63	20	3,15
	K1311-0.75	0,75	35	3,5
	K1311-1	1	31,5	4
	K1311-1.5	1,5	40	5
	K1311-1.6	1,6	40	5
	K1311-2	2	45	6
	K1311-2.5	2,5	50	8
	K1311-3	3	56	10
	K1311-3.15	3,15	56	10
	K1311-4	4	66	12
	K1311-5	5	78	14
	K1311-6	6	90	18

D_c 0.63 mm, single sided

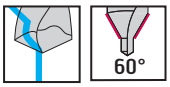
D 1

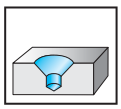
B 488

HSS centre drills, long
K1411S



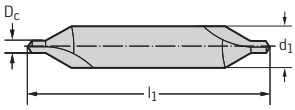
– For straight contact surfaces in accordance with DIN 332 A
– Form A





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
Parallel shank	K1411S-0.75X3.5	0,75	60	3,5
	K1411S-1X4	1	60	4
	K1411S-1.5X5	1,5	60	5
	K1411S-2X6	2	80	6
	K1411S-2.5X8	2,5	80	8
	K1411S-3X8	3	80	8
	K1411S-4X10	4	100	10
	K1411S-5X14	5	120	14



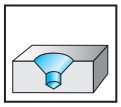
WALTER SELECT
●● Primary application
● Other application

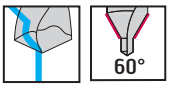
D 1
B 488

HSS centre drills, extra long
K1411M



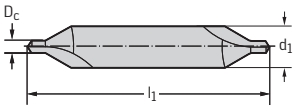
– For straight contact surfaces in accordance with DIN 332 A
– Form A





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
Parallel shank	K1411M-0.75X3.5	0,75	120	3,5
	K1411M-1X4	1	120	4
	K1411M-1.5X5	1,5	120	5
	K1411M-2X6	2	120	6
	K1411M-2.5X8	2,5	120	8
	K1411M-3X8	3	120	8
	K1411M-4X10	4	120	10

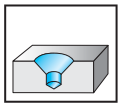


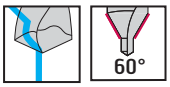
D 1
B 488

HSS centre drills, ultra long
K1411L



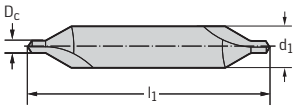
– For straight contact surfaces in accordance with DIN 332 A
– Form A





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
Parallel shank	K1411L-2X5	2	200	5
	K1411L-2.5X6.3	2,5	200	6,3
	K1411L-3.15X8	3,15	200	8
	K1411L-4X10	4	200	10



WALTER SELECT
●● Primary application
● Other application

D 1
B 488

HSS centre drills – Number
K1811

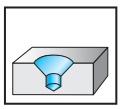


– For straight contact surfaces in accordance with DIN 332 A
– Form A

ANSI B 94.11

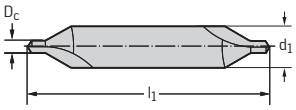


60°



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	Size	D_c k12 mm	D_c inches/no.	l_1 mm	d_1 h9 mm
Parallel shank	K1811-NO.00	NR. 00	0,635	No. 72	31,0	3,175
	K1811-NO.0	NR. 0	0,794	1/32"	31,0	3,175
	K1811-NO1	NR. 1	1,191	3/64"	31,8	3,175
	K1811-NO2	NR. 2	1,984	5/64"	47,6	4,763
	K1811-NO3	NR. 3	2,778	7/64"	50,8	6,35
	K1811-NO4	NR. 4	3,175	1/8"	54,0	7,938
	K1811-NO5	NR. 5	4,763	3/16"	69,9	11,113
	K1811-NO6	NR. 6	5,556	7/32"	76,2	12,7
	K1811-NO7	NR. 7	6,35	1/4"	82,6	15,875
	K1811-NO8	NR. 8	7,938	5/16"	88,9	19,05



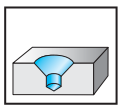
D 1

B 488

HSS centre drills – BS
K1911



– For straight contact surfaces in accordance with DIN 332 A
– Form A



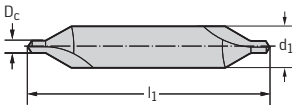
B.S. 328



60°

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



Designation Uncoated	Size	D_c k12 mm	D_c inches/no.	l_1 mm	d_1 h9 mm
K1911-BS1	B.S. 1	1,191	3/64"	38,1	3,175
K1911-BS2	B.S. 2	1,588	1/16"	44,5	4,763
K1911-BS3	B.S. 3	2,381	3/32"	50,8	6,35
K1911-BS4	B.S. 4	3,175	1/8"	57,2	7,938
K1911-BS5	B.S. 5	4,763	3/16"	63,5	11,113
K1911-BS6	B.S. 6	6,35	1/4"	76,2	15,875
K1911-BS7	B.S. 7	7,938	5/16"	88,9	19,05

WALTER SELECT

●● Primary application

● Other application

D 1

B 488

HSS centre drills
K1215

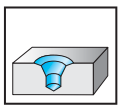


– For straight contact surfaces in accordance with DIN 332 B
– Form B

DIN 333

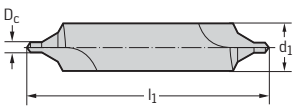


120°/60°



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
Parallel shank	K1215-1	1	35,5	4
	K1215-1.25	1,25	40	5
	K1215-1.6	1,6	45	6,3
	K1215-2	2	50	8
	K1215-2.5	2,5	56	10
	K1215-3.15	3,15	60	11,2
	K1215-4	4	67	14
	K1215-5	5	75	18
	K1215-6.3	6,3	80	20
	K1215-8	8	100	25
	K1215-10	10	125	31,5



D 1

B 488

HSS centre drills
K1113 / K1113TIN

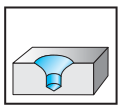


– For curved contact surfaces in accordance with DIN 332 R
– Form R

DIN 333

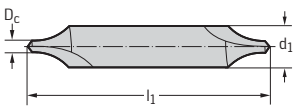


r



	P	M	K	N	S	H	O
TIN	●●	●●	●●	●●	●●		●●
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank



Designation TIN	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
	K1113-0.5	0,5	25	3,15
	K1113-0.8	0,8	25	3,15
K1113TIN-1	K1113-1	1	31,5	3,15
K1113TIN-1.25	K1113-1.25	1,25	31,5	3,15
K1113TIN-1.6	K1113-1.6	1,6	35,5	4
K1113TIN-2	K1113-2	2	40	5
K1113TIN-2.5	K1113-2.5	2,5	45	6,3
K1113TIN-3.15	K1113-3.15	3,15	50	8
K1113TIN-4	K1113-4	4	56	10
K1113TIN-5	K1113-5	5	63	12,5
	K1113-6.3	6,3	71	16
	K1113-8	8	80	20
	K1113-10	10	100	25

D_c 0.5/0.8 mm, single sided

WALTER SELECT

●● Primary application

● Other application

D 1

B 488

HSS centre drills
K1114

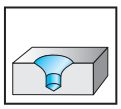


– For curved contact surfaces in accordance with DIN 332 R
– Form R with flat on shank

DIN 333

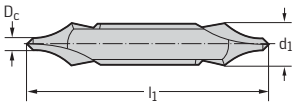






	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank with flat



Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
K1114-1.6	1,6	35,5	4
K1114-2	2	40	5
K1114-2.5	2,5	45	6,3
K1114-3.15	3,15	50	8
K1114-4	4	56	10
K1114-5	5	63	12,5

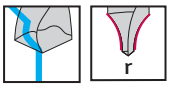
D 1

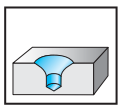
B 488

HSS centre drills
K1313



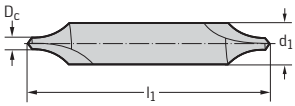
– For curved contact surfaces in accordance with DIN 332 R
– Form R

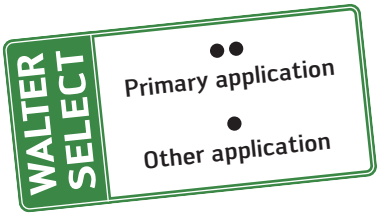




	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	D_c k12 mm	l_1 mm	d_1 h9 mm
Parallel shank	K1313-1	1	31,5	4
	K1313-1.5	1,5	40	5
	K1313-2	2	45	6
	K1313-2.5	2,5	50	8
	K1313-3	3	56	10
	K1313-4	4	66	12





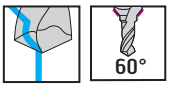
D 1

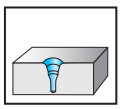
B 488

HSS step drills for centring
K2511



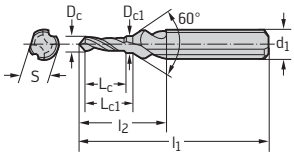
– Centring with thread (e.g. for shaft ends on electrical machines)
– Form D with flat on shank





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

	Designation Uncoated	Size	D_c h8 mm	D_{c1} h8 mm	L_c mm	L_{c1} mm	l_1 mm	l_2 mm	S mm	d_1 h7 mm
Parallel shank with flat	K2511-M4	M 4	3,3	4,3	11	12,6	63	23	6,75	8
	K2511-M5	M 5	4,2	5,3	13	15,1	67	27	8,45	10
	K2511-M6	M 6	5	6,4	16	18,9	71	33	10,45	12,5
	K2511-M8	M 8	6,8	8,4	19	23	88	41	12,5	14
	K2511-M10	M 10	8,5	10,5	23	27,7	94	47	14,85	16
	K2511-M12	M 12	10,2	13	28	34,5	105	59	18,45	20
	K2511-M16	M 16	14	17	33	41,3	132	67	23,4	22
	K2511-M20	M 20	17,5	21	38	48,3	145	77	29,35	31,5
	K2511-M24	M 24	21	25	45	57	160	90	36,5	40

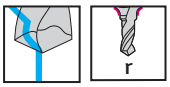


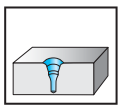
D 1
B 488

HSS step drills for centring
K2513



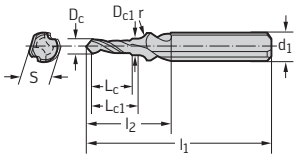
– Centring with thread (e.g. for shaft ends on electrical machines)
– Form DR (radius) with flat on shank





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●		●●

Parallel shank with flat



Designation Uncoated	Size	D_c h8 mm	D_{c1} h8 mm	L_c mm	L_{c1} mm	l_1 mm	l_2 mm	S mm	r mm	d_1 h7 mm
K2513-M4	M 4	3,3	4,3	11	12,6	63	23	6,75	5	8
K2513-M5	M 5	4,2	5,3	13	15,1	67	27	8,45	6,3	10
K2513-M6	M 6	5	6,4	16	18,9	71	33	10,45	8	12,5
K2513-M8	M 8	6,8	8,4	19	23	88	41	12,5	10	14
K2513-M10	M 10	8,5	10,5	23	27,7	94	47	14,85	16	16
K2513-M12	M 12	10,2	13	28	34,5	105	59	18,45	20	20
K2513-M16	M 16	14	17	33	41,3	132	67	23,4	25	22
K2513-M20	M 20	17,5	21	38	48,3	145	77	29,35	31,5	31,5
K2513-M24	M 24	21	25	45	57	160	90	36,5	40	40

WALTER SELECT
●● Primary application
● Other application

D 1
B 488

Cutting data
Solid carbide drills with internal coolant

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth				Drilling depth			
							Designation				Designation			
							K3299XPL K3899XPL X·treme Step 90				DC170 Supreme			
							Standard				Standard			
							Walter				DIN 6537 K			
							Coating/grade				Coating/grade			
							XPL				WJ30EJ			
							Dia. range [mm]				Dia. range [mm]			
							3,3–14				3–20			
							Page				Page			
														
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	140	10	E O		200	16	E O	M
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	120	12	E O		180	12	E O	M
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	120	12	E O		180	12	E O	M
		C > 0.55%	Annealed	190	640	P4	120	9	E O		180	12	E O	M
		C > 0.55%	Heat-treated	300	1010	P5	100	9	E O		140	12	E O	M
		Free cutting steel (short-chipping)	Annealed	220	750	P6	140	12	E O		200	16	E O	M
	Low-alloyed steel	Annealed		175	590	P7	140	10	E O		180	12	E O	M
		Heat-treated		285	960	P8	90	9	E O		120	16	E O	M
		Heat-treated		380	1280	P9	50	7	E O		100	12	E O	M
		Heat-treated		430	1480	P10	56	5	E O		80	8	E O	M
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	90	9	E O		140	9	E O	M
		Hardened and tempered		300	1010	P12	100	9	E O		140	12	E O	M
		Hardened and tempered		380	1280	P13	45	7	E O		56	8	E O	M
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	110	12	E O		160	12	E O	M
		Martensitic, heat-treated		330	1110	P15	56	9	E O		71	12	E O	M
M	Stainless steel	Austenitic, quench hardened		200	680	M1	50	6	E O					
		Austenitic, precipitation hardened (PH)		300	1010	M2	45	6	E O					
		Austenitic/ferritic, duplex		230	780	M3	36	4	E O					
K	Malleable cast iron	Ferritic		200	400	K1	100	16	E O		140	16	E O	M
		Pearlitic		260	700	K2	90	16	E O		140	16	E O	M
	Grey cast iron	Low tensile strength		180	200	K3	120	16	E O		160	16	E O	M
		High tensile strength/austenitic		245	350	K4	100	16	E O		140	16	E O	M
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	140	16	E O		180	20	E O	M
		Pearlitic		265	700	K6	90	16	E O		140	16	E O	M
	GGV (CGI)			230	400	K7	100	16	E O		140	16	E O	M
N	Wrought aluminium alloys	Not hardenable		30	-	N1	400	16	E O	M				
		Hardenable, hardened		100	340	N2	400	16	E O	M				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	250	16	E O	M				
		≤ 12% Si, hardenable, hardened		90	310	N4	220	16	E O	M				
		> 12% Si, not hardenable		130	450	N5	180	16	E O	M				
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	180	8	E O					
		Brass, bronze, red brass		90	310	N8	160	10	E O					
		Cu-alloys, short-chipping		110	380	N9	180	12	E O					
		High-tensile, Ampco		300	1010	N10	71	5	E O					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	40	4	E O					
			Hardened	280	940	S2	28	4	E O					
		Ni or Co base	Annealed	250	840	S3	32	5	E O					
			Hardened	350	1180	S4	12	4	E O					
			Cast	320	1080	S5	25	4	E O					
	Titanium alloys	Pure titanium		200	680	S6	50	6	E O					
		α and β alloys, hardened		375	1260	S7	36	4	E O					
		β alloys		410	1400	S8	32	4	E O					
	Tungsten alloys			300	1010	S9	45	5	E O					
	Molybdenum alloys			300	1010	S10	45	5	E O					
H	Hardened steel	Hardened and tempered		50 HRC	-	H1	40	3	O E		40	3	O E	M
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1	100	16	E O					
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	3 × D_c																5 × D_c											
	A3289DPL X-treme Plus				**A3293TTP X-treme Inox**				**A3299XPL A3899XPL X-treme**				**DC150 Perform**				**DC170 Supreme**				**A3389AML X-treme M**				**A3389DPL X-treme Plus**			
	DIN 6537 K				DIN 6537 K				DIN 6537 K				DIN 6537 K				DIN 6537 L				Walter				DIN 6537 L			
	DPL				TTP				XPL				WJ30RE				WJ30EJ				AML				DPL			
	3–20				3–20				3–20				3–20				3–20				2–2,95				3–20			
	B 31				B 34				B 37				B 43				B 47				B 50				B 51			
																												
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			VCRR	VRR			v_c	VRR		
	200	16	**E** O		140	10	**E** O		140	10	**E** O		120	12	**E** O		200	16	**E** O	M	C100	12	**E** O		200	16	**E** O	
	180	12	**E** O						120	12	**E** O		100	10	**E** O		180	12	**E** O	M	C80	12	**E** O		160	12	**E** O	
	160	12	**E** O						120	12	**E** O		80	9	**E** O		180	12	**E** O	M	C80	12	**E** O		160	12	**E** O	
	160	12	**E** O						120	9	**E** O		90	9	**E** O		180	12	**E** O	M	C80	12	**E** O		160	12	**E** O	
	140	12	**E** O						100	9	**E** O		71	8	**E** O		140	12	**E** O	M	C63	16	**E** O		120	12	**E** O	
	200	16	**E** O		140	12	**E** O		140	12	**E** O		120	12	**E** O		200	16	**E** O	M	C100	12	**E** O		200	16	**E** O	
	180	12	**E** O		120	10	**E** O		140	10	**E** O		100	12	**E** O		180	12	**E** O	M					180	12	**E** O	
	110	12	**E** O						90	9	**E** O		71	9	**E** O		120	16	**E** O	M	C63	16	**E** O		110	12	**E** O	
	90	8	**E** O						50	7	**E** O		45	6	**E** O		100	12	**E** O	M	C50	12	**E** O		90	8	**E** O	
	71	6	**E** O						56	5	**E** O		40	4	**E** O		80	8	**E** O	M	C40	6	**E** O		71	6	**E** O	
	120	9	**E** O						90	9	**E** O		80	9	**E** O		140	9	**E** O	M	C80	10	**E** O		120	9	**E** O	
	140	12	**E** O						100	9	**E** O		63	10	**E** O		140	12	**E** O	M	C63	16	**E** O		120	12	**E** O	
	56	8	**E** O						45	7	**E** O		50	6	**E** O		56	8	**E** O	M	C50	12	**E** O		56	8	**E** O	
	140	12	**E** O		120	12	**E** O		110	12	**E** O		80	12	**E** O		160	12	**E** O	M	C80	12	**E**		140	12	**E** O	
	63	12	**E** O						56	9	**E** O		50	9	**E** O		71	12	**E** O	M	C63	12	**E** O		63	12	**E** O	
	45	6	**E** O		63	6	**E** O		50	6	**E** O		40	5	**E** O						C40	8	**E** O		45	6	**E** O	
	63	6	**E** O		63	6	**E** O		45	6	**E** O		56	6	**E** O						C63	12	**E** O		63	6	**E** O	
	45	6	**E** O		45	5	**E** O		36	4	**E** O		32	4	**E** O						C32	6	**E** O		45	6	**E** O	
	120	16	**E** O						100	16	**E** O		100	16	**E** O		140	16	**E** O	M	C125	25	**E** O		120	16	**E** O	
	120	16	**E** O						90	16	**E** O		71	16	**E** O		140	16	**E** O	M	C125	20	**E** O		110	16	**E** O	
	160	16	**E** O						120	16	**E** O		110	16	**E** O		160	16	**E** O	M	C160	25	**E** O		140	16	**E** O	
	120	16	**E** O						100	16	**E** O		90	16	**E** O		140	16	**E** O	M	C125	25	**E** O		120	16	**E** O	
	140	20	**E**						140	16	**E** O		110	16	**E** O		180	20	**E** O	M	C160	30	**E** O		140	20	**E**	
	120	16	**E** O						90	16	**E** O		71	16	**E** O		140	16	**E** O	M	C125	20	**E** O		110	16	**E** O	
	120	16	**E** O						100	16	**E** O		80	16	**E** O		140	16	**E** O	M	C125	20	**E** O		110	16	**E** O	
	450	16	**E** O	M	450	16	**E** O	M	400	16	**E** O	M	400	16	**E** O						C160	25	**E** O	M	450	16	**E** O	M
	450	16	**E** O	M	450	16	**E** O	M	400	16	**E** O	M	400	16	**E** O						C160	25	**E** O	M	450	16	**E** O	M
	320	16	**E** O	M	250	16	E O	**M**	250	16	**E** O	M	250	16	**E** O	M					C160	25	**E** O	M	320	16	**E** O	M
	320	16	**E** O	M	250	16	**E** O	M	220	16	**E** O	M	220	16	**E** O	M					C160	25	**E** O	M	320	16	**E** O	M
	250	16	**E** O	M	200	16	**E** O	M	180	16	**E** O	M	200	16	**E** O	M					C125	20	**E** O	M	250	16	**E** O	M
	250	12	**E** O		200	9	**E** O		180	8	**E** O		180	8	**E** O						C100	6	**E** O		220	12	**E** O	
	220	16	**E** O						160	10	**E** O		160	10	**E** O						C100	10	**E** O		200	16	**E** O	
	250	20	**E** O		200	16	**E** O		180	12	**E** O		180	16	**E** O						C100	20	**E** O		250	20	**E** O	
	80	7	**E** O		63	6	**E** O		71	5	**E** O		63	5	**E** O						C50	10	**E** O		80	7	**E** O	
	36	5	**E** O		50	5	**E** O		40	4	**E** O		32	4	**E** O						C32	6	**E** O		36	5	**E** O	
	25	3	**E** O		36	4	**E** O		28	4	**E** O		22	3	**E** O						C25	6	**E** O		25	3	**E** O	
	40	5	**E** O		40	5	**E** O		32	5	**E** O		32	4	**E** O						C32	5	**E** O		40	5	**E** O	
	18	4	**E** O		22	4	**E** O		12	4	**E** O		11	3	**E** O						C16	5	**E** O		18	4	**E** O	
	28	4	**E** O		32	4	**E** O		25	4	**E** O		18	3	**E** O						C16	6	**E** O		28	4	**E** O	
	63	6	**E** O		50	6	**E** O		50	6	**E** O		45	6	**E** O						C50	6	**E** O		56	6	**E** O	
	40	4	**E** O		36	4	**E** O		36	4	**E** O		32	4	**E** O						C25	4	**E** O		40	4	**E** O	
	36	4	**E** O		32	4	**E** O		32	4	**E** O		28	4	**E** O						C25	4	**E** O		36	4	**E** O	
	28	4	**E** O		32	4	**E** O		45	5	**E** O		18	3	**E** O						C16	6	**E** O		28	4	**E** O	
	28	4	**E** O		32	4	**E** O		45	5	**E** O		18	3	**E** O						C16	6	**E** O		28	4	**E** O	
	50	4	**O** E						40	3	**O** E		28	3	**O** E		40	3	**O** E	M	C40	3	**E** O		50	4	**O** E	
	40	4	**O** E																						36	4	**O** E	
	28	4	**O** E																						25	4	**O** E	
	40	4	**O** E																						36	4	**O** E	
	140	16	**E** O		100	16	**E** O		100	16	**E** O		90	16	**E** O						C100	25	**E** O		140	16	**E** O	

Cutting data
Solid carbide drills with internal coolant

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth				5 × D_c			
							Designation				A3393TTP X-treme Inox			
							Standard				DIN 6537 L			
							Coating/grade				TTP			
							Dia. range [mm]				3–20			
							Page				B 54			
											v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1					120	10	E O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2								
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3								
		C > 0.55%	Annealed	190	640	P4								
		C > 0.55%	Heat-treated	300	1010	P5								
		Free cutting steel (short-chipping)	Annealed	220	750	P6					140	12	E O	
	Low-alloyed steel	Annealed		175	590	P7					120	10	E O	
		Heat-treated		285	960	P8								
		Heat-treated		380	1280	P9								
		Heat-treated		430	1480	P10								
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11								
		Hardened and tempered		300	1010	P12								
		Hardened and tempered		380	1280	P13								
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14					120	12	E O	
		Martensitic, heat-treated		330	1110	P15								
M	Stainless steel	Austenitic, quench hardened		200	680	M1					63	6	E O	
		Austenitic, precipitation hardened (PH)		300	1010	M2					63	6	E O	
		Austenitic/ferritic, duplex		230	780	M3					45	5	E O	
K	Malleable cast iron	Ferritic		200	400	K1								
		Pearlitic		260	700	K2								
	Grey cast iron	Low tensile strength		180	200	K3								
		High tensile strength/austenitic		245	350	K4								
	Cast iron with spheroidal graphite	Ferritic		155	400	K5								
		Pearlitic		265	700	K6								
	GGV (CGI)			230	400	K7								
N	Wrought aluminium alloys	Not hardenable		30	-	N1					450	16	E O	M
		Hardenable, hardened		100	340	N2					450	16	E O	M
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3					250	16	E O	**M**
		≤ 12% Si, hardenable, hardened		90	310	N4					250	16	E O	M
		> 12% Si, not hardenable		130	450	N5					200	16	E O	M
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7					180	9	E O	
		Brass, bronze, red brass		90	310	N8								
		Cu-alloys, short-chipping		110	380	N9					200	16	E O	
		High-tensile, Ampco		300	1010	N10					63	6	E O	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1					50	5	E O	
			Hardened	280	940	S2					32	4	E O	
		Ni or Co base	Annealed	250	840	S3					40	5	E O	
			Hardened	350	1180	S4					22	4	E O	
			Cast	320	1080	S5					28	4	E O	
	Titanium alloys	Pure titanium		200	680	S6					50	6	E O	
		α and β alloys, hardened		375	1260	S7					32	4	E O	
		β alloys		410	1400	S8					28	4	E O	
	Tungsten alloys			300	1010	S9					28	4	E O	
	Molybdenum alloys			300	1010	S10					28	4	E O	
H	Hardened steel	Hardened and tempered		50 HRC	-	H1								
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1					100	16	E O	
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	5 × D_c							
							A3382XPL X-treme CI							
							DIN 6537 L							
							XPL							
							3–20							
							B 57							
							v_c	VRR						
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	120	20	E O					
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2								
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3								
		C > 0.55%	Annealed	190	640	P4								
		C > 0.55%	Heat-treated	300	1010	P5								
		Free cutting steel (short-chipping)	Annealed	220	750	P6	140	20	E O					
	Low-alloyed steel	Annealed		175	590	P7	120	20	E O					
		Heat-treated		285	960	P8								
		Heat-treated		380	1280	P9								
		Heat-treated		430	1480	P10								
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11								
		Hardened and tempered		300	1010	P12								
		Hardened and tempered		380	1280	P13								
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	120	20	E O					
		Martensitic, heat-treated		330	1110	P15								
M	Stainless steel	Austenitic, quench hardened		200	680	M1								
		Austenitic, precipitation hardened (PH)		300	1010	M2								
		Austenitic/ferritic, duplex		230	780	M3								
K	Malleable cast iron	Ferritic		200	400	K1	140	20	E O					
		Pearlitic		260	700	K2	120	16	E O					
	Grey cast iron	Low tensile strength		180	200	K3	160	20	E O					
		High tensile strength/austenitic		245	350	K4	140	20	E O					
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	180	20	E O					
		Pearlitic		265	700	K6	120	16	E O					
	GGV (CGI)			230	400	K7	140	16	E O					
N	Wrought aluminium alloys	Not hardenable		30	-	N1								
		Hardenable, hardened		100	340	N2								
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3								
		≤ 12% Si, hardenable, hardened		90	310	N4								
		> 12% Si, not hardenable		130	450	N5								
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7								
		Brass, bronze, red brass		90	310	N8								
		Cu-alloys, short-chipping		110	380	N9								
		High-tensile, Ampco		300	1010	N10	71	5	E O					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1								
			Hardened	280	940	S2								
		Ni or Co base	Annealed	250	840	S3								
			Hardened	350	1180	S4								
			Cast	320	1080	S5								
	Titanium alloys	Pure titanium		200	680	S6								
		α and β alloys, hardened		375	1260	S7								
		β alloys		410	1400	S8								
	Tungsten alloys			300	1010	S9								
	Molybdenum alloys			300	1010	S10								
H	Hardened steel	Hardened and tempered		50 HRC	-	H1								
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1								
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	5×D_c												8×D_c															
	A3399XPL A3999XPL X·treme				A3387 Alpha® Jet				DC150 Perform				DC170 Supreme				A6489AMP X·treme DM8				A6488TML Alpha® 4 Plus Micro				A6489DPP X·treme D8			
	DIN 6537 L				DIN 6537 L				DIN 6537 L				Walter				Walter				Walter				Walter			
	XPL				Uncoated				WJ30RE				WJ30EJ				AMP				TML				DPP			
	3–25				4–20				3–20				3–20				2–2,95				0,75–1,984				3–20			
	B 60				B 67				B 68				B 74				B 77				B 78				B 79			
																												
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			VCRR	VRR			VCRR	VRR			v_c	VRR		
	120	10	**E** O						110	12	**E** O		200	16	**E** O	M	C80	12	**E** O		C80	12	**E** O		180	16	**E** O	
	120	12	**E** O						100	10	**E** O		180	12	**E** O	M	C80	12	**E** O		C80	12	**E** O		160	12	**E** O	
	120	12	**E** O						80	9	**E** O		180	12	**E** O	M	C63	12	**E** O		C80	12	**E** O		160	12	**E** O	
	120	9	**E** O						90	9	**E** O		180	12	**E** O	M	C80	12	**E** O		C80	12	**E** O		160	12	**E** O	
	100	9	**E** O						71	8	**E** O		140	12	**E** O	M	C50	16	**E** O		C63	10	**E** O		120	12	**E** O	
	140	12	**E** O						110	12	**E** O		200	16	**E** O	M	C80	12	**E** O		C80	12	**E** O		180	16	**E** O	
	120	10	**E** O						100	12	**E** O		180	12	**E** O	M					C80	12	**E** O		160	12	**E** O	
	90	9	**E** O						71	9	**E** O		120	16	**E** O	M	C50	16	**E** O		C50	10	**E** O		110	12	**E** O	
	50	7	**E** O						45	6	**E** O		100	12	**E** O	M	C50	12	**E** O		C40	7	**E** O		80	8	**E** O	
	56	5	**E** O						36	4	**E** O		80	8	**E** O	M	C40	6	**E** O		C32	6	**E** O		63	6	**E** O	
	80	9	**E** O						80	9	**E** O		140	9	**E** O	M	C80	10	**E** O		C63	10	**E** O		120	9	**E** O	
	100	9	**E** O						63	10	**E** O		140	12	**E** O	M	C50	16	**E** O		C63	10	**E** O		120	12	**E** O	
	45	7	**E** O						50	6	**E** O		56	8	**E** O	M	C50	12	**E** O		C40	7	**E** O		50	8	**E** O	
	110	12	**E** O						80	12	**E** O		160	12	**E** O	M	C63	12	**E**		C63	12	**E**		140	12	**E** O	
	56	9	**E** O						50	9	**E** O		71	12	**E** O	M	C50	12	**E** O		C50	10	**E** O		63	12	**E** O	
	50	6	**E** O						40	5	**E** O						C40	8	**E** O		C32	8	**E** O		45	6	**E** O	
	45	6	**E** O						56	6	**E** O						C50	12	**E** O		C40	6	**E** O		56	6	**E** O	
	36	4	**E** O						32	4	**E** O						C32	6	**E** O		C25	6	**E** O		40	6	**E** O	
	100	16	**E** O		100	12	**E** O		100	16	**E** O		140	16	**E** O	M	C100	25	**E** O		C80	16	**E** O		120	16	**E** O	
	90	16	**E** O						71	16	**E** O		140	16	**E** O	M	C100	20	**E** O		C63	12	**E** O		110	16	**E** O	
	120	16	**E** O		120	12	**E** O		110	16	**E** O		160	16	**E** O	M	C125	25	**E** O		C100	16	**E** O		140	16	**E** O	
	100	16	**E** O		100	12	**E** O		90	16	**E** O		140	16	**E** O	M	C100	25	**E** O		C80	12	**E** O		120	16	**E** O	
	140	16	**E** O		110	8	**E** O		100	16	**E** O		180	20	**E** O	M	C125	30	**E** O		C80	16	**E** O		160	20	**E** O	
	90	16	**E** O						71	16	**E** O		140	16	**E** O	M	C100	20	**E** O		C63	12	**E** O		110	16	**E** O	
	100	16	**E** O		45	3	**E** O		80	16	**E** O		140	16	**E** O	M	C100	20	**E** O		C63	12	**E** O		120	16	**E** O	
	400	16	**E** O	M	400	9	**E** O	M	400	16	**E** O						C160	25	**E** O	M	C125	20	E O	**M**	450	16	**E** O	M
	400	16	**E** O	M	400	9	**E** O	M	400	16	**E** O						C160	25	**E** O	M	C125	20	E O	**M**	450	16	**E** O	M
	250	16	**E** O	M	250	9	**E** O	M	250	16	**E** O	M					C160	25	**E** O	M	C125	20	**E** O	M	320	16	**E** O	M
	220	16	**E** O	M	250	9	**E** O	M	220	16	**E** O	M					C160	25	**E** O	M	C125	20	**E** O	M	320	16	**E** O	M
	180	16	**E** O	M	200	9	**E** O	M	200	16	**E** O	M					C125	20	**E** O	M	C100	16	E O	**M**	250	16	**E** O	M
	180	8	**E** O						180	8	**E** O						C80	6	**E** O		C80	6	**E** O		200	12	**E** O	
	160	10	**E** O						160	10	**E** O						C80	10	**E** O		C80	9	**E** O		180	16	**E** O	
	180	12	**E** O		220	16	**E** O		180	16	**E** O						C80	20	**E** O		C80	16	**E** O		250	20	**E** O	
	71	5	**E** O						63	5	**E** O						C50	10	**E** O		C40	5	**E** O		80	7	**E** O	
	40	4	**E** O						32	4	**E** O						C32	6	**E** O		C25	6	**E** O		36	5	**E** O	
	28	4	**E** O						22	3	**E** O						C20	6	**E** O		C20	4	**E** O		25	3	**E** O	
	32	5	**E** O						32	4	**E** O						C25	5	**E** O		C20	6	**E** O		36	5	**E** O	
	12	4	**E** O						11	3	**E** O						C16	5	**E** O		C12	5	**E** O		16	4	**E** O	
	25	4	**E** O						18	3	**E** O						C16	6	**E** O		C12	6	**E** O		25	4	**E** O	
	50	6	**E** O						45	6	**E** O						C40	6	**E** O		C40	6	**E** O		50	6	**E** O	
	36	4	**E** O						32	4	**E** O						C25	4	**E** O		C25	4	**E** O		36	4	**E** O	
	32	4	**E** O						25	4	**E** O						C20	4	**E** O		C25	4	**E** O		32	4	**E** O	
	45	5	**E** O						18	3	**E** O						C16	6	**E** O		C12	6	**E** O		25	4	**E** O	
	45	5	**E** O						18	3	**E** O						C16	6	**E** O		C12	6	**E** O		25	4	**E** O	
	40	3	**O** E						28	3	**O** E		40	3	**O** E	M	C32	3	**E** O		C32	3	**E** O		40	4	**O** E	
																									32	4	**O** E	
																									22	4	**O** E	
																									32	4	**O** E	
	100	16	**E** O		80	8	**E** O		90	16	**E** O						C100	25	**E** O		C100	20	**E** O		140	16	**E** O	

Cutting data
Solid carbide drills with internal coolant

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth Designation	v_c	VRR			Drilling depth Designation	v_c	VRR		
							Standard					Walter				
							Coating/grade					TTP				
							Dia. range [mm]					3–16				
							Page					B 82				
								$8 \times D_c$				A6493TTP X·treme Inox				
												A3487 Alpha® Jet				
												Standard				
												Walter				
												Coating/grade				
												Uncoated				
												Dia. range [mm]				
												5–20				
												Page				
												B 84				
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		120	10	E	O					
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2										
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3										
		C > 0.55%	Annealed	190	640	P4										
		C > 0.55%	Heat-treated	300	1010	P5										
		Free cutting steel (short-chipping)	Annealed	220	750	P6		140	12	E	O					
	Low-alloyed steel	Annealed		175	590	P7		120	10	E	O					
		Heat-treated		285	960	P8										
		Heat-treated		380	1280	P9										
		Heat-treated		430	1480	P10										
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11										
		Hardened and tempered		300	1010	P12										
		Hardened and tempered		380	1280	P13										
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		120	12	E	O					
		Martensitic, heat-treated		330	1110	P15										
M	Stainless steel	Austenitic, quench hardened		200	680	M1		56	6	E	O					
		Austenitic, precipitation hardened (PH)		300	1010	M2		63	6	E	O					
		Austenitic/ferritic, duplex		230	780	M3		40	5	E	O					
K	Malleable cast iron	Ferritic		200	400	K1						80	12	E	O	
		Pearlitic		260	700	K2										
	Grey cast iron	Low tensile strength		180	200	K3						100	12	E	O	
		High tensile strength/austenitic		245	350	K4						80	12	E	O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5										
		Pearlitic		265	700	K6										
	GGV (CGI)			230	400	K7										
N	Wrought aluminium alloys	Not hardenable		30	-	N1		450	16	E	O	M	400	9	E	O M
		Hardenable, hardened		100	340	N2		450	16	E	O	M	400	9	E	O M
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		250	16	E	O	**M**	250	9	E	O M
		≤ 12% Si, hardenable, hardened		90	310	N4		250	16	E	O	M	250	9	E	O M
		> 12% Si, not hardenable		130	450	N5		200	16	E	O	M	200	9	E	O M
	Magnesium-based alloys			70	250	N6										
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7		160	9	E	O					
		Brass, bronze, red brass		90	310	N8										
		Cu-alloys, short-chipping		110	380	N9		200	16	E	O		220	16	E	O
		High-tensile, Ampco		300	1010	N10		63	6	E	O					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		45	5	E	O					
			Hardened	280	940	S2		32	4	E	O					
		Ni or Co base	Annealed	250	840	S3		40	5	E	O					
			Hardened	350	1180	S4		20	4	E	O					
			Cast	320	1080	S5		28	4	E	O					
	Titanium alloys	Pure titanium		200	680	S6		40	6	E	O					
		α and β alloys, hardened		375	1260	S7		28	4	E	O					
		β alloys		410	1400	S8		25	4	E	O					
	Tungsten alloys			300	1010	S9		28	4	E	O					
	Molybdenum alloys			300	1010	S10		28	4	E	O					
H	Hardened steel	Hardened and tempered		50 HRC	-	H1										
		Hardened and tempered		55 HRC	-	H2										
		Hardened and tempered		60 HRC	-	H3										
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4										
O	Thermoplastics	Without abrasive fillers				O1		100	16	E	O		80	8	E	O
	Thermosetting plastics	Without abrasive fillers				O2										
	Plastic, glass fibre reinforced	GFRP				O3										
	Plastic, carbon fibre reinforced	CFRP				O4										
	Plastic, aramid fibre reinforced	AFRP				O5										
	Graphite (technical)			80 Shore		O6										

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	8 × D_c								12 × D_c															
	A3486TIP A3586TIP Alpha® 44				DC150 Perform				DC170 Supreme				A6589AMP X·treme DM12				A6588TML Alpha® 4 Plus Micro				A6589DPP X·treme D12				A3687 Alpha® Jet			
	Walter				Walter				Walter				Walter				Walter				Walter				Walter			
	TIP				WJ30TA				WJ30EJ				AMP				TML				DPP				Uncoated			
	5–12				3–20				3–20				2–2,9				1–1,9				3–20				5–20			
	B 85				B 86				B 89				B 92				B 93				B 94				B 97			
																												
	v_c	VRR			v_c	VRR			v_c	VRR			VCRR	VRR			VCRR	VRR			v_c	VRR			v_c	VRR		
	90	10	**E** O		110	12	**E** O		180	16	**E** O	M	C80	12	**E** O		C80	12	**E** O		160	16	**E** O					
	71	10	**E** O		90	10	**E** O		160	12	**E** O	M	C80	12	**E** O		C63	12	**E** O		140	12	**E** O					
	63	8	**E** O		71	9	**E** O		160	12	**E** O	M	C63	12	**E** O		C63	12	**E** O		140	12	**E** O					
	80	8	**E** O		80	9	**E** O		160	12	**E** O	M	C80	12	**E** O		C63	12	**E** O		140	12	**E** O					
	50	7	**E** O		71	9	**E** O		120	12	**E** O	M	C50	16	**E** O		C50	10	**E** O		110	12	**E** O					
	90	12	**E** O		110	12	**E** O		180	16	**E** O	M	C80	12	**E** O		C80	12	**E** O		160	16	**E** O					
	90	10	**E** O		90	12	**E** O		160	12	**E** O	M	C80	12	**E** O		C63	12	**E** O		140	12	**E** O					
	50	8	**E** O		63	9	**E** O		110	16	**E** O	M	C40	16	**E** O		C50	10	**E** O		100	12	**E** O					
	28	3	**E** O		36	7	**E** O		90	12	**E** O	M	C50	12	**E** O		C32	7	**E** O		63	8	**E** O					
					28	6	**E** O		71	8	**E** O	M	C40	6	**E** O		C32	6	**E** O		50	6	**E** O					
	56	8	**E** O		80	9	**E** O		120	9	**E** O	M	C80	10	**E** O		C63	10	**E** O		100	9	**E** O					
	71	10	**E** O		50	10	**E** O		120	12	**E** O	M	C50	16	**E** O		C50	10	**E** O		110	12	**E** O					
	20	3	**E** O		45	7	**E** O		50	8	**E** O	M	C50	12	**E** O		C32	7	**E** O		45	8	**E** O					
	71	10	**E** O		90	12	**E** O		140	12	**E** O	M	C63	12	**E**		C63	12	**E**		120	12	**E** O					
	56	9	**E** O		45	9	**E** O		63	12	**E** O	M	C50	12	**E** O		C50	10	**E** O		56	12	**E** O					
	28	5	**E** O		40	5	**E** O						C40	8	**E** O		C32	8	**E** O		40	6	**E** O					
	36	5	**E** O		50	6	**E** O						C50	12	**E** O		C40	6	**E** O		50	6	**E** O					
	18	4	**E** O		32	4	**E** O						C32	6	**E** O		C20	6	**E** O		36	6	**E** O					
	63	16	**E** O		90	16	**E** O		120	16	**E** O	M	C80	25	**E** O		C80	16	**E** O		110	16	**E** O		71	12	**E** O	
	50	12	**E** O		71	16	**E** O		120	16	**E** O	M	C63	20	**E** O		C50	12	**E** O		100	16	**E** O					
	80	16	**E** O		110	16	**E** O		140	16	**E** O	M	C100	25	**E** O		C80	16	**E** O		120	16	**E** O		80	12	**E** O	
	63	16	**E** O		90	16	**E** O		120	16	**E** O	M	C80	25	**E** O		C80	12	**E** O		110	16	**E** O		71	12	**E** O	
	71	16	**E** O		90	16	**E** O		160	20	**E** O	M	C80	30	**E** O		C80	16	**E** O		140	20	**E** O					
	50	12	**E** O		63	16	**E** O		120	16	**E** O	M	C63	20	**E** O		C50	12	**E** O		100	16	**E** O					
	56	12	**E** O		71	16	**E** O		120	16	**E** O	M	C63	20	**E** O		C63	12	**E** O		100	16	**E** O					
	280	12	**E** O	M	400	16	**E** O	M					C125	25	**E** O	M	C125	20	E O	**M**	400	16	**E** O	M	360	9	**E** O	M
	280	12	**E** O	M	400	16	**E** O	M					C125	25	**E** O	M	C125	20	E O	**M**	400	16	**E** O	M	360	9	**E** O	M
	220	12	**E** O	M	250	16	**E** O	M					C125	25	**E** O	M	C125	20	**E** O	M	280	16	**E** O	M	250	9	**E** O	M
	200	12	**E** O	M	220	16	**E** O	M					C125	25	**E** O	M	C100	20	**E** O	M	280	16	**E** O	M	220	9	**E** O	M
	160	12	**E** O	M	200	16	**E** O	M					C100	20	**E** O	M	C100	16	E O	**M**	220	16	**E** O	M	180	9	**E** O	M
	140	6	**E** O		160	8	**E** O						C63	6	**E** O		C63	6	**E** O		160	12	**E** O					
	110	9	**E** O		140	10	**E** O						C80	10	**E** O		C80	9	**E** O		140	16	**E** O					
	120	16	**E** O		180	12	**E** O						C80	20	**E** O		C80	16	**E** O		250	20	**E** O		200	16	**E** O	
					63	5	**E** O						C50	10	**E** O		C40	5	**E** O		71	7	**E** O					
	22	4	**E** O		36	4	**E** O						C32	6	**E** O		C25	6	**E** O		32	5	**E** O					
					22	3	**E** O						C20	6	**E** O		C20	4	**E** O		25	3	**E** O					
	16	4	**E** O		32	4	**E** O						C25	5	**E** O		C20	6	**E** O		32	5	**E** O					
													C16	5	**E** O		C12	5	**E** O		12	4	**E** O					
					18	3	**E** O						C16	6	**E** O		C12	6	**E** O		20	4	**E** O					
	32	5	**E** O		45	6	**E** O						C40	6	**E** O		C40	6	**E** O		36	6	**E** O					
	22	3	**E** O		28	4	**E** O						C25	4	**E** O		C20	4	**E** O		25	4	**E** O					
	18	3	**E** O		22	4	**E** O						C20	4	**E** O		C25	4	**E** O		22	4	**E** O					
					18	3	**E** O						C16	6	**E** O		C12	6	**E** O		20	4	**E** O					
					18	3	**E** O						C16	6	**E** O		C12	6	**E** O		20	4	**E** O					
					25	3	**O** E		36	3	**O** E	M	C32	3	**E** O		C25	3	**E** O		32	4	**O** E					
																					22	4	**O** E					
																					16	4	**O** E					
																					22	4	**O** E					
	100	16	**E** O		90	16	**E** O						C100	25	**E** O		C80	20	**E** O		120	16	**E** O		71	8	**E** O	

Cutting data
Solid carbide drills with internal coolant

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth	$12 \times D_c$			$16 \times D_c$			
							Designation	DC150 Perform			DC170 Supreme			
							Standard	Walter			Walter			
							Coating/grade	WJ30TA			WJ30EJ			
							Dia. range [mm]	3–20			3–16			
							Page	B 98			B 101			
														
								v_c	VRR		v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		100	12	E O		140	12	E O M
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		80	10	E O		120	12	E O M
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		63	9	E O		100	10	E O M
		C > 0.55%	Annealed	190	640	P4		71	9	E O		110	10	E O M
		C > 0.55%	Heat-treated	300	1010	P5		63	9	E O		80	10	E O M
		Free cutting steel (short-chipping)	Annealed	220	750	P6		100	12	E O		140	12	E O M
	Low-alloyed steel	Annealed		175	590	P7		80	12	E O		120	12	E O M
		Heat-treated		285	960	P8		50	9	E O		71	10	E O M
		Heat-treated		380	1280	P9		25	7	E O		56	8	E O M
		Heat-treated		430	1480	P10		22	6	E O		40	7	E O M
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		71	9	E O		100	9	E O M
		Hardened and tempered		300	1010	P12		36	10	E O		80	10	E O M
		Hardened and tempered		380	1280	P13		40	7	E O		56	8	E O M
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		80	12	E O		110	12	E O M
		Martensitic, heat-treated		330	1110	P15		36	9	E O		63	9	E O M
M	Stainless steel	Austenitic, quench hardened		200	680	M1		36	5	E O				
		Austenitic, precipitation hardened (PH)		300	1010	M2		45	6	E O				
		Austenitic/ferritic, duplex		230	780	M3		28	4	E O				
K	Malleable cast iron	Ferritic		200	400	K1		80	16	E O		120	16	E O M
		Pearlitic		260	700	K2		63	16	E O		100	16	E O M
	Grey cast iron	Low tensile strength		180	200	K3		90	16	E O		140	16	E O M
		High tensile strength/austenitic		245	350	K4		80	16	E O		120	16	E O M
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		71	16	E O		140	16	E O M
		Pearlitic		265	700	K6		50	16	E O		100	16	E O M
	GGV (CGI)			230	400	K7		50	16	E O		100	16	E O M
N	Wrought aluminium alloys	Not hardenable		30	-	N1		360	16	E O M				
		Hardenable, hardened		100	340	N2		360	16	E O M				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		220	16	E O M				
		≤ 12% Si, hardenable, hardened		90	310	N4		200	16	E O M				
		> 12% Si, not hardenable		130	450	N5		180	16	E O M				
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7		120	8	E O				
		Brass, bronze, red brass		90	310	N8		110	10	E O				
		Cu-alloys, short-chipping		110	380	N9		160	12	E O				
		High-tensile, Ampco		300	1010	N10		56	5	E O				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		32	4	E O				
			Hardened	280	940	S2		22	3	E O				
		Ni or Co base	Annealed	250	840	S3		28	4	E O				
			Hardened	350	1180	S4								
			Cast	320	1080	S5		16	3	E O				
	Titanium alloys	Pure titanium		200	680	S6		36	6	E O				
		α and β alloys, hardened		375	1260	S7		20	4	E O				
		β alloys		410	1400	S8		16	4	E O				
	Tungsten alloys			300	1010	S9		16	3	E O				
	Molybdenum alloys			300	1010	S10		16	3	E O				
H	Hardened steel	Hardened and tempered		50 HRC	-	H1		18	3	O E		40	3	O E M
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1		80	16	E O				
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	16 × D_c								20 × D_c														25 × D_c			
	A6689AMP X-treme DM16				A6685TFP Alpha® 4 XD16				DC170 Supreme				A6789AMP X-treme DM20				A6794TFP X-treme DH20				A6785TFP Alpha® 4 XD20				DC170 Supreme			
	Walter				Walter				Walter				Walter				Walter				Walter				Walter			
	AMP				TFP				WJ30EJ				AMP				TFP				TFP				WJ30EJ			
	2–2,9				3–16				3–16				2–2,9				3–10				3–16				3–12			
	B 102				B 103				B 104				B 105				B 106				B 107				B 108			
	VCRR	VRR			v_c	VRR			v_c	VRR			VCRR	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	C80	12	**E** O		120	12	**E** O		140	12	**E** O	M	C63	12	**E** O						120	12	**E** O		140	12	**E** O	M
	C63	12	**E** O		100	12	**E** O		120	12	**E** O	M	C63	12	**E** O						100	12	**E** O		120	12	**E** O	M
	C63	12	**E** O		80	10	**E** O		100	10	**E** O	M	C50	12	**E** O						80	10	**E** O		100	10	**E** O	M
	C63	12	**E** O		90	10	**E** O		110	10	**E** O	M	C63	12	**E** O						90	10	**E** O		110	10	**E** O	M
	C40	16	**E** O		71	10	**E** O		80	10	**E** O	M	C32	16	**E** O		71	10	**E** O		71	10	**E** O		80	10	**E** O	M
	C80	12	**E** O		120	12	**E** O		140	12	**E** O	M	C63	12	**E** O						120	12	**E** O		140	12	**E** O	M
	C63	12	**E** O		100	12	**E** O		120	12	**E** O	M	C63	12	**E** O						100	12	**E** O		120	12	**E** O	M
	C40	16	**E** O		63	10	**E** O		71	10	**E** O	M	C32	16	**E** O		63	10	**E** O		63	10	**E** O		71	10	**E** O	M
	C40	12	**E** O		50	8	**E** O		56	8	**E** O	M	C40	12	**E** O		50	8	**E** O		50	8	**E** O		56	8	**E** O	M
	C32	6	**E** O		36	7	**E** O		40	7	**E** O	M	C32	6	**E** O		40	7	**E** O		36	7	**E** O		40	7	**E** O	M
	C63	10	**E** O		90	9	**E** O		100	9	**E** O	M	C63	10	**E** O		90	9	**E** O		90	9	**E** O		100	9	**E** O	M
	C40	16	**E** O		71	10	**E** O		80	10	**E** O	M	C32	16	**E** O		71	10	**E** O		71	10	**E** O		80	10	**E** O	M
	C40	12	**E** O		50	8	**E** O		56	8	**E** O	M	C40	12	**E** O		50	8	**E** O		50	8	**E** O		56	8	**E** O	M
	C63	12	**E**		90	12	**E** O		110	12	**E** O	M	C50	12	**E**						90	12	**E** O		110	12	**E** O	M
	C40	12	**E** O		56	9	**E** O		63	9	**E** O	M	C32	12	**E** O		71	10	**E** O		56	9	**E** O		63	9	**E** O	M
	C32	8	**E** O		45	6	**E** O						C32	8	**E** O						45	6	**E** O					
	C40	12	**E** O		56	6	**E** O						C32	12	**E** O		56	6	**E** O		56	6	**E** O					
	C25	6	**E** O		36	4	**E** O						C25	6	**E** O						36	4	**E** O					
	C63	25	**E** O		100	16	**E** O		120	16	**E** O	M	C50	25	**E** O						100	16	**E** O		120	16	**E** O	M
	C63	20	**E** O		80	16	**E** O		100	16	**E** O	M	C50	20	**E** O		80	16	**E** O		80	16	**E** O		100	16	**E** O	M
	C80	25	**E** O		120	16	**E** O		140	16	**E** O	M	C63	25	**E** O						120	16	**E** O		140	16	**E** O	M
	C63	25	**E** O		100	16	**E** O		120	16	**E** O	M	C50	25	**E** O						100	16	**E** O		120	16	**E** O	M
	C63	30	**E** O		110	16	**E** O		140	16	**E** O	M	C63	30	**E** O						110	16	**E** O		140	16	**E** O	M
	C63	20	**E** O		80	16	**E** O		100	16	**E** O	M	C50	20	**E** O		80	16	**E** O		80	16	**E** O		100	16	**E** O	M
	C50	20	**E** O		80	16	**E** O		100	16	**E** O	M	C50	20	**E** O		36	7	**E** O		80	16	**E** O		100	16	**E** O	M
	C125	25	E O	**M**	120	20	**E** O	M					C125	25	E O	**M**					110	20	**E** O	M				
	C125	25	E O	**M**	120	20	**E** O	M					C125	25	E O	**M**					110	20	**E** O	M				
	C125	25	E O	**M**	120	20	**E** O	M					C125	25	E O	**M**					110	20	**E** O	M				
	C125	25	E O	**M**	120	20	**E** O	M					C125	25	E O	**M**					110	20	**E** O	M				
	C100	20	E O	**M**	120	16	**E** O	M					C100	20	E O	**M**					110	16	**E** O	M				
	C63	6	**E** O		160	8	**E** O						C50	6	**E** O						160	8	**E** O					
	C80	10	**E** O		140	10	**E** O						C63	10	**E** O						140	10	**E** O					
	C80	20	**E** O		160	12	**E** O						C63	20	**E** O						160	12	**E** O					
	C50	10	**E** O		56	5	**E** O						C40	10	**E** O		50	5	**E** O		50	5	**E** O					
	C25	6	**E** O		36	4	**E** O						C25	6	**E** O						36	4	**E** O					
	C20	6	**E** O		20	2	**E** O						C16	6	**E** O		20	2	**E** O		20	2	**E** O					
	C25	5	**E** O		32	4	**E** O						C20	5	**E** O						32	4	**E** O					
	C12	5	**E** O		12	3	**E** O						C12	5	**E** O		12	3	**E** O		12	3	**E** O					
	C12	6	**E** O		20	3	**E** O						C12	6	**E** O		20	3	**E** O		20	3	**E** O					
	C40	6	**E** O		56	6	**E** O						C32	6	**E** O						56	6	**E** O					
	C20	4	**E** O		40	4	**E** O						C20	4	**E** O						40	4	**E** O					
	C20	4	**E** O		32	4	**E** O						C16	4	**E** O						32	4	**E** O					
	C12	6	**E** O		20	3	**E** O						C12	6	**E** O		20	3	**E** O		20	3	**E** O					
	C12	6	**E** O		20	3	**E** O						C12	6	**E** O		20	3	**E** O		20	3	**E** O					
	C32	3	**E** O		36	3	**O** E		40	3	**O** E	M	C32	3	**E** O		36	3	**O** E		36	3	**O** E		40	3	**O** E	M
	C80	25	**E** O		100	16	**E** O						C80	25	**E** O						100	16	**E** O					

Cutting data
Solid carbide drills with internal coolant

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth 25 × D_c Designation A6889AMP X-treme DM25 Standard Walter Coating/grade AMP Dia. range [mm] 2–2,9 Page B 109				Drilling depth 25 × D_c Designation A6885TFP Alpha® 4 XD25 Standard Walter Coating/grade TFP Dia. range [mm] 3–12 Page B 110			
							VCRR	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	C63	12	E O		120	12	E O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	C50	12	E O		100	12	E O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	C50	12	E O		80	10	E O	
		C > 0.55%	Annealed	190	640	P4	C50	12	E O		90	10	E O	
		C > 0.55%	Heat-treated	300	1010	P5	C25	16	E O		71	10	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	C63	12	E O		120	12	E O	
	Low-alloyed steel	Annealed		175	590	P7	C50	12	E O		100	12	E O	
		Heat-treated		285	960	P8	C20	16	E O		63	10	E O	
		Heat-treated		380	1280	P9	C32	12	E O		50	8	E O	
		Heat-treated		430	1480	P10	C25	6	E O		36	7	E O	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	C50	10	E O		90	9	E O	
		Hardened and tempered		300	1010	P12	C25	16	E O		71	10	E O	
		Hardened and tempered		380	1280	P13	C32	12	E O		50	8	E O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	C40	12	E		90	12	E O	
		Martensitic, heat-treated		330	1110	P15	C25	12	E O		56	9	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1	C25	8	E O		45	6	E O	
		Austenitic, precipitation hardened (PH)		300	1010	M2	C25	12	E O		56	6	E O	
		Austenitic/ferritic, duplex		230	780	M3	C20	6	E O		36	4	E O	
K	Malleable cast iron	Ferritic		200	400	K1	C50	25	E O		100	16	E O	
		Pearlitic		260	700	K2	C40	20	E O		80	16	E O	
	Grey cast iron	Low tensile strength		180	200	K3	C50	25	E O		120	16	E O	
		High tensile strength/austenitic		245	350	K4	C50	25	E O		100	16	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	C50	30	E O		110	16	E O	
		Pearlitic		265	700	K6	C40	20	E O		80	16	E O	
	GGV (CGI)			230	400	K7	C40	20	E O		80	16	E O	
N	Wrought aluminium alloys	Not hardenable		30	-	N1	C100	25	E O	M	100	20	E O	M
		Hardenable, hardened		100	340	N2	C100	25	E O	M	100	20	E O	M
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	C100	25	E O	M	100	20	E O	M
		≤ 12% Si, hardenable, hardened		90	310	N4	C100	25	E O	M	100	20	E O	M
		> 12% Si, not hardenable		130	450	N5	C80	20	E O	M	100	16	E O	M
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	C32	6	E O		120	8	E O	
		Brass, bronze, red brass		90	310	N8	C63	10	E O		110	10	E O	
		Cu-alloys, short-chipping		110	380	N9	C63	20	E O		120	12	E O	
		High-tensile, Ampco		300	1010	N10	C32	10	E O		40	5	E O	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	C20	6	E O		36	4	E O	
			Hardened	280	940	S2	C16	6	E O		20	2	E O	
		Ni or Co base	Annealed	250	840	S3	C20	5	E O		32	4	E O	
			Hardened	350	1180	S4	C12	5	E O		12	3	E O	
			Cast	320	1080	S5	C12	6	E O		20	3	E O	
	Titanium alloys	Pure titanium		200	680	S6	C32	6	E O		56	6	E O	
		α and β alloys, hardened		375	1260	S7	C16	4	E O		40	4	E O	
		β alloys		410	1400	S8	C16	4	E O		32	4	E O	
	Tungsten alloys			300	1010	S9	C12	6	E O		20	3	E O	
	Molybdenum alloys			300	1010	S10	C12	6	E O		20	3	E O	
H	Hardened steel	Hardened and tempered		50 HRC	-	H1	C25	3	E O		36	3	O E	
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1	C63	25	E O		100	16	E O	
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	30 × D_c																40 × D_c				50 × D_c				2 × D_c			
	DC170 Supreme				**A6989AMP X·treme DM30**				**A6994TFP X·treme DH30**				**A6985TFP Alpha® 4 XD30**				**A7495TTP X·treme D40**				**A7595TTP X·treme D50**				**K3281TFT X·treme Pilot Step 90**			
	Walter				Walter				Walter				Walter				Walter				Walter				Walter			
	WJ30EJ				AMP				TFP				TFP				TTP				TTP				TFT			
	3–12				2–2,9				3–10				3–12				3–11				3–9				3–16			
	B 111				B 112				B 113				B 114				B 115				B 116				B 117			
																												
	v_c	VRR			VCRR	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	140	12	**E** O	M	C63	12	**E** O						120	12	**E** O		90	10	**E** O		90	10	**E** O		120	12	**E** O	
	120	12	**E** O	M	C50	12	**E** O						100	12	**E** O		90	10	**E** O		90	10	**E** O		100	10	**E** O	
	100	10	**E** O	M	C50	12	**E** O						80	10	**E** O		90	10	**E** O		90	10	**E** O		80	9	**E** O	
	110	10	**E** O	M	C50	12	**E** O						90	10	**E** O		90	10	**E** O		90	10	**E** O		90	9	**E** O	
	80	10	**E** O	M	C25	16	**E** O		71	10	**E** O		71	10	**E** O		71	10	**E** O		71	10	**E** O		71	8	**E** O	
	140	12	**E** O	M	C63	12	**E** O						120	12	**E** O		90	10	**E** O		90	10	**E** O		120	12	**E** O	
	120	12	**E** O	M	C50	12	**E** O						100	12	**E** O		90	10	**E** O		90	10	**E** O		100	12	**E** O	
	71	10	**E** O	M	C20	16	**E** O		63	10	**E** O		63	10	**E** O		63	8	**E** O		63	8	**E** O		71	9	**E** O	
	56	8	**E** O	M	C32	12	**E** O		50	8	**E** O		50	8	**E** O										45	6	**E** O	
	40	7	**E** O	M	C25	6	**E** O		40	7	**E** O		36	7	**E** O										40	4	**E** O	
	100	9	**E** O	M	C50	10	**E** O		90	9	**E** O		90	9	**E** O		90	10	**E** O		90	10	**E** O		80	9	**E** O	
	80	10	**E** O	M	C25	16	**E** O		71	10	**E** O		71	10	**E** O		71	10	**E** O		71	10	**E** O		63	10	**E** O	
	56	8	**E** O	M	C32	12	**E** O		50	8	**E** O		50	8	**E** O										50	6	**E** O	
	110	12	**E** O	M	C40	12	**E**						90	12	**E** O		80	10	**E** O		80	10	**E** O		80	12	**E** O	
	63	9	**E** O	M	C25	12	**E** O		71	10	**E** O		56	9	**E** O		56	8	**E** O		56	8	**E** O		50	9	**E** O	
					C25	8	**E** O						45	6	**E** O		63	6	**E** O		63	6	**E** O		40	5	**E** O	
					C25	12	**E** O		56	6	**E** O		56	6	**E** O										56	6	**E** O	
					C20	6	**E** O						36	4	**E** O										32	4	**E** O	
	120	16	**E** O	M	C50	25	**E** O						100	16	**E** O		90	12	**E** O		90	12	**E** O		100	16	**E** O	
	100	16	**E** O	M	C40	20	**E** O		80	16	**E** O		80	16	**E** O		80	9	**E** O		80	9	**E** O		71	16	**E** O	
	140	16	**E** O	M	C50	25	**E** O						120	16	**E** O		90	12	**E** O		90	12	**E** O		120	16	**E** O	
	120	16	**E** O	M	C50	25	**E** O						100	16	**E** O		90	12	**E** O		90	12	**E** O		100	16	**E** O	
	140	16	**E** O	M	C50	30	**E** O						110	16	**E** O		90	12	**E** O		90	12	**E** O		90	25	**E**	
	100	16	**E** O	M	C40	20	**E** O		80	16	**E** O		80	16	**E** O		80	9	**E** O		80	9	**E** O		71	16	**E** O	
	100	16	**E** O	M	C40	20	**E** O		36	7	**E** O		80	16	**E** O		80	9	**E** O		80	9	**E** O		71	16	**E** O	
					C100	25	**E** O	M					100	20	**E** O	M	90	12	**E** O		90	12	**E** O		400	16	**E** O	M
					C100	25	**E** O	M					100	20	**E** O	M	90	12	**E** O		90	12	**E** O		400	16	**E** O	M
					C100	25	**E** O	M					100	20	**E** O	M	90	12	**E** O		90	12	**E** O		250	16	**E** O	M
					C100	25	**E** O	M					100	20	**E** O	M	90	12	**E** O		90	12	**E** O		220	16	**E** O	M
					C80	20	**E** O	M					100	16	**E** O	M	90	12	**E** O		90	12	**E** O		200	16	**E** O	M
					C32	6	**E** O						120	8	**E** O		90	12	**E** O		90	12	**E** O		180	8	**E** O	
					C63	10	**E** O						110	10	**E** O		90	12	**E** O		90	12	**E** O		160	10	**E** O	
					C63	20	**E** O						120	12	**E** O		90	12	**E** O		90	12	**E** O		200	16	**E** O	
					C32	10	**E** O		40	5	**E** O		40	5	**E** O		71	5	**E** O		71	5	**E** O		63	5	**E** O	
					C20	6	**E** O						36	4	**E** O										32	4	**E** O	
					C16	6	**E** O		20	2	**E** O		20	2	**E** O													
					C20	5	**E** O						32	4	**E** O										32	4	**E** O	
					C12	5	**E** O		12	3	**E** O		12	3	**E** O										11	3	**E** O	
					C12	6	**E** O		20	3	**E** O		20	3	**E** O										18	3	**E** O	
					C32	6	**E** O						56	6	**E** O										45	6	**E** O	
					C16	4	**E** O						40	4	**E** O										32	4	**E** O	
					C16	4	**E** O						32	4	**E** O										28	4	**E** O	
					C12	6	**E** O		20	3	**E** O		20	3	**E** O										18	3	**E** O	
					C12	6	**E** O		20	3	**E** O		20	3	**E** O										18	3	**E** O	
	40	3	**O** E	M	C25	3	**E** O		36	3	**O** E		36	3	**O** E										32	3	**O** E	
					C63	25	**E** O						100	16	**E** O										100	16	**E** O	

Cutting data
Solid carbide drills with internal coolant

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth	2 × D_c							
							Designation	A6181AML X·treme Pilot 150				A6181TFT XD Pilot			
							Standard	Walter				Walter			
							Coating/grade	AML				TFT			
							Dia. range [mm]	2–2,95				3–16			
							Page	B 118				B 119			
															
								VCRR	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		C100	12	E O		120	12	E O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		C80	12	E O		100	10	E O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		C80	12	E O		80	9	E O	
		C > 0.55%	Annealed	190	640	P4		C80	12	E O		90	9	E O	
		C > 0.55%	Heat-treated	300	1010	P5		C63	16	E O		71	8	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6		C100	12	E O		120	12	E O	
	Low-alloyed steel	Annealed		175	590	P7		C80	12	E O		100	12	E O	
		Heat-treated		285	960	P8		C63	16	E O		71	9	E O	
		Heat-treated		380	1280	P9		C50	12	E O		45	6	E O	
		Heat-treated		430	1480	P10		C40	6	E O		40	4	E O	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		C80	10	E O		80	9	E O	
		Hardened and tempered		300	1010	P12		C63	16	E O		63	10	E O	
		Hardened and tempered		380	1280	P13		C50	12	E O		50	6	E O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		C63	12	E		80	12	E O	
		Martensitic, heat-treated		330	1110	P15		C63	16	E O		50	9	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1		C40	8	E O		40	5	E O	
		Austenitic, precipitation hardened (PH)		300	1010	M2		C63	1	E O		56	6	E O	
		Austenitic/ferritic, duplex		230	780	M3		C32	6	E O		32	4	E O	
K	Malleable cast iron	Ferritic		200	400	K1		C160	25	E O		100	16	E O	
		Pearlitic		260	700	K2		C125	20	E O		71	16	E O	
	Grey cast iron	Low tensile strength		180	200	K3		C160	25	E O		120	16	E O	
		High tensile strength/austenitic		245	350	K4		C160	25	E O		100	16	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		C160	30	E O		90	25	E	
		Pearlitic		265	700	K6		C125	20	E O		71	16	E O	
	GGV (CGI)			230	400	K7		C125	20	E O		71	16	E O	
N	Wrought aluminium alloys	Not hardenable		30	-	N1		C160	25	E O	M	400	16	E O	M
		Hardenable, hardened		100	340	N2		C160	25	E O	M	400	16	E O	M
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		C160	25	E O	M	250	16	E O	M
		≤ 12% Si, hardenable, hardened		90	310	N4		C160	25	E O	M	220	16	E O	M
		> 12% Si, not hardenable		130	450	N5		C125	20	E O	M	200	16	E O	M
	Magnesium-based alloys			70	250	N6									
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7		C100	6	E O		180	8	E O	
		Brass, bronze, red brass		90	310	N8		C100	10	E O		160	10	E O	
		Cu-alloys, short-chipping		110	380	N9		C100	20	E O		200	16	E O	
		High-tensile, Ampco		300	1010	N10		C63	10	E O		63	5	E O	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		C32	6	E O		32	4	E O	
			Hardened	280	940	S2		C25	6	E O					
		Ni or Co base	Annealed	250	840	S3		C32	5	E O		32	4	E O	
			Hardened	350	1180	S4		C16	5	E O		11	3	E O	
			Cast	320	1080	S5		C16	6	E O		18	3	E O	
	Titanium alloys	Pure titanium		200	680	S6		C50	6	E O		45	6	E O	
		α and β alloys, hardened		375	1260	S7		C25	4	E O		32	4	E O	
		β alloys		410	1400	S8		C25	4	E O		28	4	E O	
	Tungsten alloys			300	1010	S9		C16	6	E O		18	3	E O	
	Molybdenum alloys			300	1010	S10		C16	6	E O		18	3	E O	
H	Hardened steel	Hardened and tempered		50 HRC	-	H1		C32	3	O E		32	3	O E	
		Hardened and tempered		55 HRC	-	H2									
		Hardened and tempered		60 HRC	-	H3									
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4									
O	Thermoplastics	Without abrasive fillers				O1		C100	25	E O		100	16	E O	
	Thermosetting plastics	Without abrasive fillers				O2									
	Plastic, glass fibre reinforced	GFRP				O3									
	Plastic, carbon fibre reinforced	CFRP				O4									
	Plastic, aramid fibre reinforced	AFRP				O5									
	Graphite (technical)			80 Shore		O6									

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	$2 \times D_c$							
	A7191TFT X·treme Pilot 180				**K5191TFT X·treme Pilot 180 C**			
	Walter				Walter			
	TFT				TFT			
	3–20				4–7			
	B 120				B 122			
								
	v_c	VRR			v_c	VRR		
	120	9	**E** O		120	9	**E** O	
	100	8	**E** O		100	8	**E** O	
	80	7	**E** O		80	7	**E** O	
	90	7	**E** O		90	7	**E** O	
	71	6	**E** O		71	6	**E** O	
	120	9	**E** O		120	9	**E** O	
	100	8	**E** O		100	8	**E** O	
	63	6	**E** O		63	6	**E** O	
	50	4	**E** O		50	4	**E** O	
	40	2	**E** O		40	2	**E** O	
	90	6	**E** O		90	6	**E** O	
	71	6	**E** O		71	6	**E** O	
	50	4	**E** O		50	4	**E** O	
	90	8	**E** O		90	8	**E** O	
	71	6	**E** O		71	6	**E** O	
	45	4	**E** O		45	4	**E** O	
	56	4	**E** O		56	4	**E** O	
	36	3	**E** O		36	3	**E** O	
	100	12	**E** O		100	12	**E** O	
	80	10	**E** O		80	10	**E** O	
	120	12	**E** O		120	12	**E** O	
	100	12	**E** O		100	12	**E** O	
	110	12	**E** O		110	12	**E** O	
	80	10	**E** O		80	10	**E** O	
	80	10	**E** O		80	10	**E** O	
	400	12	**E** O	M	400	12	**E** O	M
	400	12	**E** O	M	400	12	**E** O	M
	250	12	**E** O	M	250	12	**E** O	M
	220	12	**E** O	M	220	12	**E** O	M
	200	10	**E** O	M	200	10	**E** O	M
	220	6	**E** O		220	6	**E** O	
	200	7	**E** O		200	7	**E** O	
	200	12	**E** O		200	12	**E** O	
	71	5	**E** O		71	5	**E** O	
	36	3	**E** O		36	3	**E** O	
	11	3	**E** O		11	3	**E** O	
	32	3	**E** O		32	3	**E** O	
	12	2	**E** O		12	2	**E** O	
	20	2	**E** O		20	2	**E** O	
	56	5	**E** O		56	5	**E** O	
	40	3	**E** O		40	3	**E** O	
	32	3	**E** O		32	3	**E** O	
	20	2	**E** O		20	2	**E** O	
	20	2	**E** O		20	2	**E** O	
	36	2	**O** E		36	2	**O** E	
	100	12	**E** O		100	12	**E** O	

Cutting data
Solid carbide drills without internal coolant

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth $3 \times D_c$ Designation: K3879XPL X·treme Step 90 — v_c	VRR			Designation: A3279XPL A3879XPL X·treme — v_c	VRR		
							Standard: Walter				Standard: DIN 6537 K			
							Coating/grade: XPL				Coating/grade: XPL			
							Dia. range [mm]: 3,3–14,5				Dia. range [mm]: 3–20			
							Page: B 123				Page: B 124			
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	100	12	E O		100	12	E O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	110	12	E O		110	12	E O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	100	12	E O		100	12	E O	
		C > 0.55%	Annealed	190	640	P4	100	10	E O		100	10	E O	
		C > 0.55%	Heat-treated	300	1010	P5	71	10	E O		71	10	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	100	12	E O		100	12	E O	
	Low-alloyed steel	Annealed		175	590	P7	110	12	E O		110	12	E O	
		Heat-treated		285	960	P8	63	10	E O		63	10	E O	
		Heat-treated		380	1280	P9	50	7	E O		50	7	E O	
		Heat-treated		430	1480	P10	40	5	E O		40	5	E O	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	71	9	E O		71	9	E O	
		Hardened and tempered		300	1010	P12	71	10	E O		71	10	E O	
		Hardened and tempered		380	1280	P13	40	7	E O		40	7	E O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	90	12	E O		90	12	E O	
		Martensitic, heat-treated		330	1110	P15	50	10	E O		50	10	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1								
		Austenitic, precipitation hardened (PH)		300	1010	M2								
		Austenitic/ferritic, duplex		230	780	M3								
K	Malleable cast iron	Ferritic		200	400	K1	80	16	E O		80	16	E O	
		Pearlitic		260	700	K2	80	12	E O		80	12	E O	
	Grey cast iron	Low tensile strength		180	200	K3	100	16	E O		100	16	E O	
		High tensile strength/austenitic		245	350	K4	80	16	E O		80	16	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	100	16	E O		100	16	E O	
		Pearlitic		265	700	K6	80	12	E O		80	12	E O	
	GGV (CGI)			230	400	K7	90	2	E O		90	2	E O	
N	Wrought aluminium alloys	Not hardenable		30	-	N1								
		Hardenable, hardened		100	340	N2								
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	220	16	E O	M	220	16	E O	M
		≤ 12% Si, hardenable, hardened		90	310	N4	220	16	E O	M	220	16	E O	M
		> 12% Si, not hardenable		130	450	N5	180	12	E O	M	180	12	E O	M
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	180	6	E O		180	6	E O	
		Brass, bronze, red brass		90	310	N8	160	10	E O		160	10	E O	
		Cu-alloys, short-chipping		110	380	N9	200	16	E O		200	16	E O	
		High-tensile, Ampco		300	1010	N10	63	5	E O		63	5	E O	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1								
			Hardened	280	940	S2								
		Ni or Co base	Annealed	250	840	S3								
			Hardened	350	1180	S4								
			Cast	320	1080	S5								
	Titanium alloys	Pure titanium		200	680	S6	32	5	E O		32	5	E O	
		α and β alloys, hardened		375	1260	S7	25	3	E O		25	3	E O	
		β alloys		410	1400	S8	20	3	E O		20	3	E O	
	Tungsten alloys			300	1010	S9								
	Molybdenum alloys			300	1010	S10								
H	Hardened steel	Hardened and tempered		50 HRC	-	H1	28	3	O E		28	3	O E	
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1	90	16	E O		90	16	E O	
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	$3 \times D_c$																											
	A1164TIN Alpha® 2				**A1163**				**A1166TIN**				**A1166**				**A1167A**				**A1167B**				**DC150 Perform**			
	DIN 6539				DIN 6539				Walter				Walter				Walter				Walter				DIN 6537 K			
	TIN				Uncoated				TIN				Uncoated				Uncoated				Uncoated				WJ30RE			
	1,5–20				1–12				3–20				3–20				3–20				3–20				3–20			
	B 130				B 134				B 136				B 136				B 139				B 142				B 145			
																												
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	80	12	**E** O																						90	12	**E** O	
	80	10	**E** O						56	6	**E** O														80	10	**E** O	
	71	10	**E** O						56	6	**E** O														80	10	**E** O	
	71	9	**E** O						71	6	**E** O														71	9	**E** O	
	56	8	**E** O						63	7	**E** O		50	5	**E** O										56	8	**E** O	
	80	12	**E** O																						90	12	**E** O	
	80	12	**E** O																						80	12	**E** O	
	45	8	**E** O						50	7	**E** O		45	5	**E** O										50	8	**E** O	
	32	6	**E** O						40	4	**E** O		36	4	**E** O										36	6	**E** O	
	25	4	**E** O						36	4	**E** O		32	4	**E** O										28	4	**E** O	
	63	9	**E** O						71	8	**E** O														63	9	**E** O	
	56	8	**E** O						63	7	**E** O		50	5	**E** O										56	8	**E** O	
	36	6	**E** O						45	4	**E** O		36	4	**E** O										40	6	**E** O	
	71	12	**E** O																						71	12	**E** O	
	50	8	**E** O						45	7	**E** O		45	5	**E** O										56	8	**E** O	
	40	5	**E** O																						40	5	**E** O	
	71	16	**E** O		40	7	**E** O										71	12	**E** O						71	16	**E** O	
	50	12	**E** O		28	5	**E** O										56	10	**E** O						56	12	**E** O	
	80	16	**E** O		50	7	**E** O										90	12	**E** O						90	16	**E** O	
	71	16	**E** O		40	7	**E** O										71	12	**E** O						71	16	**E** O	
	71	16	**E** O		40	8	**E** O										80	12	**E** O						80	16	**E** O	
	50	12	**E** O		28	5	**E** O										56	10	**E** O						56	12	**E** O	
	56	12	**E** O		32	6	**E** O										63	10	**E** O						63	12	**E** O	
	250	10	**E** O	M	200	9	**E** O	M													200	10	**E** O	M	250	10	**E** O	M
	250	10	**E** O	M	200	9	**E** O	M													200	10	**E** O	M	250	10	**E** O	M
	200	16	**E** O	M	160	9	**E** O	M													160	10	**E** O	M	220	16	**E** O	M
	180	16	**E** O	M	140	9	**E** O	M									140	10	**E** O	M					200	16	**E** O	M
	140	12	**E** O	M	90	8	**E** O	M									90	9	**E** O	M					160	12	**E** O	M
					180	9		**M** L													180	10		**M** L				
	140	6	**E** O		120	6	**E** O														160	8	**E** O		160	6	**E** O	
	140	10	**E** O		100	8	**E** O														140	10	**E** O		140	10	**E** O	
	160	16	**E** O		100	10	**E** O										140	12	**E** O						180	16	**E** O	
	50	5	**E** O		40	3	**E** O						32	4	**E** O		32	4	**E** O						63	5	**E** O	
													18	4	**E** O													
													8	3	**E** O													
					5,6	3	**E** O																					
	28	5	**E** O		22	3	**E** O						25	3	**E** O										32	5	**E** O	
	20	3	**E** O		12	2	**E** O						16	2	**E** O										22	3	**E** O	
	18	3	**E** O		10	1	**E** O						14	1	**E** O										20	3	**E** O	
					5,6	3	**E** O																					
					5,6	3	**E** O																					
	20	3	**O** E						28	3	**O** E		25	3	**O** E										22	3	**O** E	
	90	16	**E** O		36	12	**E** O																		90	16	**E** O	
					63	8		**L**									50	8		**L**								
					63	8		**L**									50	8		**L**								
					63	8		**L**									50	8		**L**								
					63	8		**L**									50	8		**L**								
					63	8		**L**									50	8		**L**								

Cutting data
Solid carbide drills without internal coolant

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

VCRR = v_c rating chart from page B 428 onwards

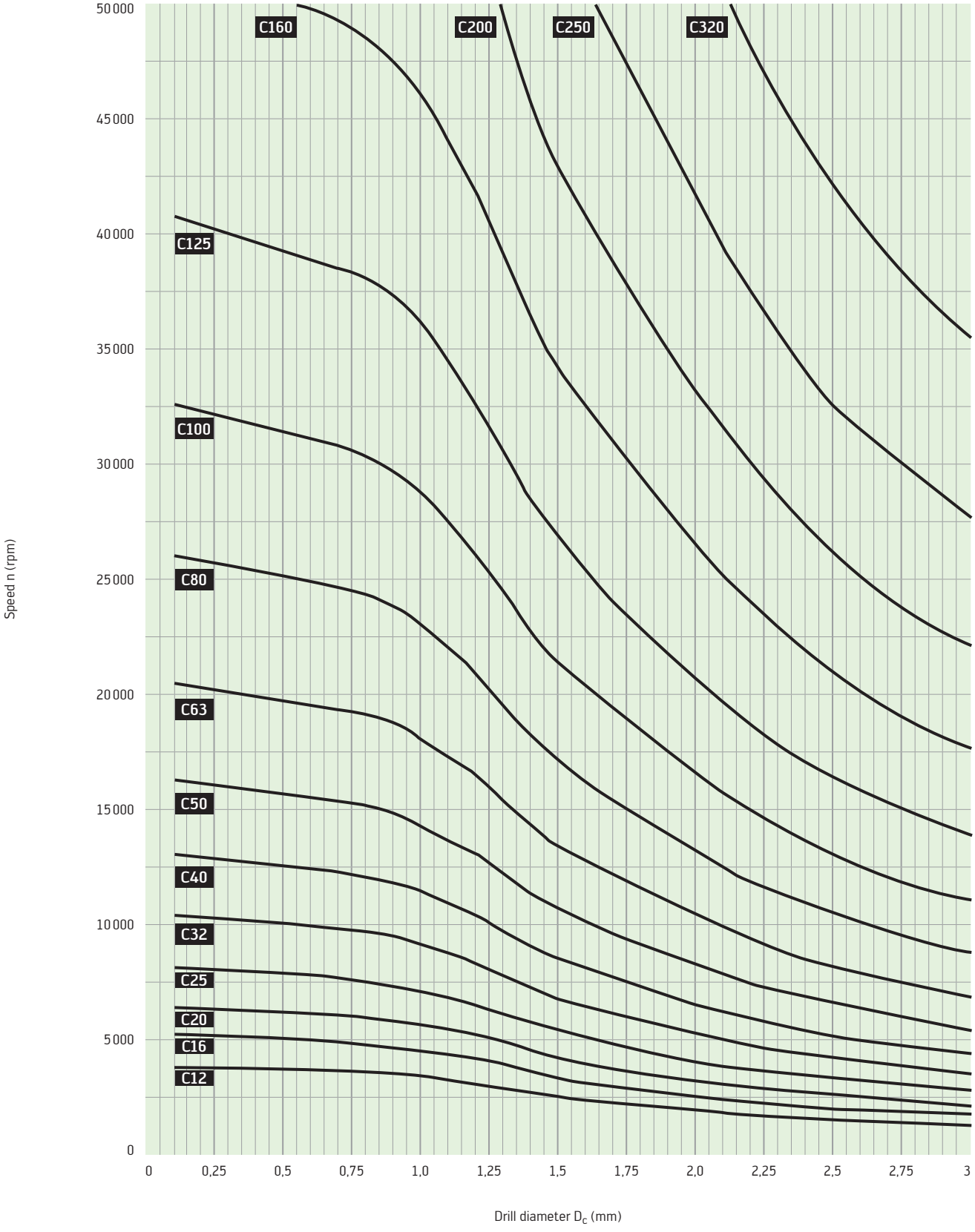
* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth: Designation	$5 \times D_c$: DB133 Supreme				$5 \times D_c$: A3162			
							Standard	Walter				DIN 1899			
							Coating/grade	WJ30EL				Uncoated			
							Dia. range [mm]	0,5–2,95				0,1–1,45			
							Page	B 150				B 152			
															
								VCRR	VRR			VCRR	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		C100	16	E O		C63	5	E O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		C100	16	E O		C63	6	E O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		C63	12	E O		C63	6	E O	
		C > 0.55%	Annealed	190	640	P4		C80	12	E O		C50	5	E O	
		C > 0.55%	Heat-treated	300	1010	P5		C63	12	E O		C40	5	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6		C100	20	E O		C63	6	E O	
	Low-alloyed steel	Annealed		175	590	P7		C100	16	E O		C63	6	E O	
		Heat-treated		285	960	P8		C63	12	E O		C40	5	E O	
		Heat-treated		380	1280	P9		C40	7	E O		C25	4	E O	
		Heat-treated		430	1480	P10		C40	6	E O		C20	3	E O	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		C80	10	E O		C32	4	E O	
		Hardened and tempered		300	1010	P12		C63	12	E O		C40	5	E O	
		Hardened and tempered		380	1280	P13		C40	7	E O		C25	4	E O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		C80	16	E O		C50	6	E O	
		Martensitic, heat-treated		330	1110	P15		C63	12	E O		C40	5	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1						C12	3	E O	
		Austenitic, precipitation hardened (PH)		300	1010	M2						C20	3	E O	
		Austenitic/ferritic, duplex		230	780	M3						C12	2	E O	
K	Malleable cast iron	Ferritic		200	400	K1		C80	20	E O		C50	6	E O	
		Pearlitic		260	700	K2		C63	20	E O		C40	4	E O	
	Grey cast iron	Low tensile strength		180	200	K3		C100	20	E O		C63	7	E O	
		High tensile strength/austenitic		245	350	K4		C80	20	E O		C50	6	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		C100	25	E O		C63	7	E O	
		Pearlitic		265	700	K6		C63	20	E O		C40	4	E O	
	GGV (CGI)			230	400	K7		C80	20	E O		C50	5	E O	
N	Wrought aluminium alloys	Not hardenable		30	-	N1		C125	16	E O	M	C160	9	E O	M
		Hardenable, hardened		100	340	N2		C125	16	E O	M	C160	9	E O	M
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		C125	20	E O	M	C125	9	E O	M
		≤ 12% Si, hardenable, hardened		90	310	N4		C125	20	E O	M	C100	9	E O	M
		> 12% Si, not hardenable		130	450	N5		C125	20	E O	M	C63	8	E O	M
	Magnesium-based alloys			70	250	N6						C125	9		M L
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7		C125	10	E O		C100	6	E O	
		Brass, bronze, red brass		90	310	N8		C100	12	E O		C80	8	E O	
		Cu-alloys, short-chipping		110	380	N9		C125	20	E O		C80	8	E O	
		High-tensile, Ampco		300	1010	N10		C50	9	E O		C32	3	E O	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		C25	4	E O		C12	2	E O	
			Hardened	280	940	S2		C20	4	E O					
		Ni or Co base	Annealed	250	840	S3		C20	3	E O		C12	2	E O	
			Hardened	350	1180	S4		C16	2	E O					
			Cast	320	1080	S5									
	Titanium alloys	Pure titanium		200	680	S6		C50	9	E O		C20	3	E O	
		α and β alloys, hardened		375	1260	S7		C32	6	E O		C12	2	E O	
		β alloys		410	1400	S8		C32	6	E O		C12	1	E O	
	Tungsten alloys			300	1010	S9									
	Molybdenum alloys			300	1010	S10									
H	Hardened steel	Hardened and tempered		50 HRC	-	H1		C32	3	O E					
		Hardened and tempered		55 HRC	-	H2									
		Hardened and tempered		60 HRC	-	H3									
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4									
O	Thermoplastics	Without abrasive fillers				O1		C63	20	E O		C25	12	E O	
	Thermosetting plastics	Without abrasive fillers				O2		C63	20	E O		C40	8		L
	Plastic, glass fibre reinforced	GFRP				O3						C40	8		L
	Plastic, carbon fibre reinforced	CFRP				O4						C40	8		L
	Plastic, aramid fibre reinforced	AFRP				O5						C40	8		L
	Graphite (technical)			80 Shore		O6		C100	20		L	C40	8		L

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	5 × D_c								8 × D_c											
	A3379XPL A3979XPL X·treme				**A3367 A3967 BSX**				**DB133 Supreme**				**A1276TFL Alpha® 22**				**A1263**			
	DIN 6537 L				DIN 6537 L				Walter				DIN 338				DIN 338			
	XPL				Uncoated				WJ30ER				TFL				Uncoated			
	3–25				3–16				0,5–2,95				3–12				0,6–12			
	B 154				B 161				B 164				B 166				B 167			
																				
	v_c	VRR			v_c	VRR			VCRR	VRR			v_c	VRR			v_c	VRR		
	90	12	**E** O						C100	16	**E** O		71	10	**E** O					
	100	12	**E** O						C100	16	**E** O		63	10	**E** O					
	100	12	**E** O						C63	12	**E** O		50	8	**E** O					
	100	10	**E** O						C80	12	**E** O		63	8	**E** O					
	71	10	**E** O						C63	12	**E** O		63	8	**E** O					
	100	12	**E** O						C100	20	**E** O		71	12	**E** O					
	100	12	**E** O						C100	16	**E** O		63	10	**E** O					
	63	10	**E** O						C50	12	**E** O		56	8	**E** O					
	45	7	**E** O						C40	7	**E** O									
	36	5	**E** O						C32	6	**E** O									
	63	9	**E** O						C63	10	**E** O		63	9	**E** O					
	71	10	**E** O						C63	12	**E** O		63	8	**E** O					
	40	7	**E** O						C40	7	**E** O									
	90	12	**E** O						C80	16	**E** O		56	10	**E** O					
	45	10	**E** O						C63	12	**E** O		56	8	**E** O					
	71	16	**E** O		71	16	**E** O		C80	20	**E** O		63	16	**E** O		32	7	**E** O	
	71	12	**E** O		56	16	**E** O		C63	20	**E** O		50	12	**E** O		25	5	**E** O	
	90	16	**E** O		90	16	**E** O		C100	20	**E** O		71	16	**E** O		40	7	**E** O	
	71	16	**E** O		71	16	**E** O		C80	20	**E** O		63	16	**E** O		32	7	**E** O	
	100	16	**E** O		80	16	**E** O		C100	25	**E** O		63	16	**E** O		36	8	**E** O	
	71	12	**E** O		56	16	**E** O		C63	20	**E** O		50	12	**E** O		25	5	**E** O	
	90	2	**E** O		63	16	**E** O		C63	20	**E** O		50	12	**E** O		25	6	**E** O	
					320	10	**E** O	M	C125	16	**E** O	M					180	9	**E** O	M
					320	10	**E** O	M	C125	16	**E** O	M					180	9	**E** O	M
	220	16	**E** O	M	200	16	**E** O	M	C125	20	**E** O	M	220	16	**E** O	M	140	9	**E** O	M
	220	16	**E** O	M	180	16	**E** O	M	C125	20	**E** O	M	160	16	**E** O	M	120	9	**E** O	M
	180	12	**E** O	M	140	16	**E** O	M	C125	20	**E** O	M	120	12	**E** O	M	80	8	**E** O	M
					180	16		**M** L									140	9		**M** L
	160	6	**E** O		180	8	**E** O		C125	10	**E** O		120	6	**E** O		100	6	**E** O	
	140	10	**E** O		140	12	**E** O		C100	12	**E** O		110	10	**E** O		80	8	**E** O	
	200	16	**E** O		140	16	**E** O		C100	20	**E** O		120	16	**E** O		80	10	**E** O	
	63	5	**E** O						C50	9	**E** O		40	5	**E** O		40	3	**E** O	
									C25	4	**E** O									
									C20	4	**E** O									
									C20	3	**E** O									
									C16	2	**E** O									
																	4	3	**E** O	
	32	5	**E** O		28	4	**E** O		C50	9	**E** O		32	5	**E** O		18	3	**E** O	
	22	3	**E** O		18	2	**E** O		C32	6	**E** O		20	3	**E** O		10	2	**E** O	
	18	3	**E** O		16	2	**E** O		C25	6	**E** O		25	3	**E** O		8	1	**E** O	
																	4	3	**E** O	
																	4	3	**E** O	
	25	3	**O** E						C32	3	**O** E									
	90	16	**E** O		40	16	**E** O		C63	20	**E** O						32	12	**E** O	
					50	8		**L**	C63	20	**E** O						56	8		**L**
					71	10		**L**									56	8		**L**
					71	10		**L**									56	8		**L**
					71	10		**L**									56	8		**L**
					71	10		**L**	C80	20		**L**					56	8		**L**

VCRR: Speed diagram
Solid carbide micro drills



VRR: Feed rating charts for solid carbide drilling and reaming tools and Xtra·tec® Point Drill

	Feed f [mm] for diameter [mm]															
VRR	0,05	0,06	0,08	0,1	0,12	0,15	0,2	0,25	0,4	0,5	0,6	0,8	1	1,2	1,5	2
1	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,004	0,005	0,007
2	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	0,003	0,003	0,004	0,005	0,007	0,008	0,010	0,013
3	0,001	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,012	0,015	0,020
4	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,005	0,007	0,008	0,011	0,013	0,016	0,020	0,027
5	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,004	0,007	0,008	0,010	0,013	0,017	0,020	0,025	0,033
6	0,001	0,001	0,002	0,002	0,002	0,003	0,004	0,005	0,008	0,010	0,012	0,016	0,020	0,024	0,030	0,040
7	0,001	0,001	0,002	0,002	0,003	0,004	0,005	0,006	0,009	0,012	0,014	0,019	0,023	0,028	0,035	0,047
8	0,001	0,002	0,002	0,003	0,003	0,004	0,005	0,007	0,011	0,013	0,016	0,021	0,027	0,032	0,040	0,053
9	0,002	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,012	0,015	0,018	0,024	0,030	0,036	0,045	0,060
10	0,002	0,002	0,003	0,003	0,004	0,005	0,007	0,008	0,013	0,017	0,020	0,027	0,033	0,040	0,050	0,067
12	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,016	0,020	0,024	0,032	0,040	0,048	0,060	0,080
16	0,003	0,003	0,004	0,005	0,006	0,008	0,011	0,013	0,021	0,027	0,032	0,043	0,053	0,064	0,080	0,11
20	0,003	0,004	0,005	0,007	0,008	0,010	0,013	0,017	0,027	0,033	0,040	0,053	0,067	0,080	0,10	0,13
25	0,004	0,005	0,007	0,008	0,010	0,013	0,017	0,021	0,033	0,042	0,050	0,067	0,083	0,100	0,125	0,167
30	0,005	0,006	0,008	0,010	0,012	0,015	0,020	0,025	0,040	0,050	0,060	0,080	0,100	0,120	0,150	0,200

	Feed f [mm] for diameter [mm]														
VRR	2,5	4	5	6	8	10	12	15	20	25	40	50	60	80	100
1	0,008	0,013	0,017	0,018	0,021	0,024	0,026	0,029	0,033	0,037	0,047	0,053	0,058	0,067	0,075
2	0,017	0,027	0,033	0,037	0,042	0,047	0,052	0,058	0,067	0,075	0,094	0,11	0,12	0,13	0,15
3	0,025	0,040	0,050	0,055	0,063	0,071	0,077	0,087	0,10	0,11	0,14	0,16	0,17	0,20	0,22
4	0,033	0,053	0,067	0,073	0,084	0,094	0,10	0,12	0,13	0,15	0,19	0,21	0,23	0,27	0,30
5	0,042	0,067	0,083	0,091	0,11	0,12	0,13	0,14	0,17	0,19	0,24	0,26	0,29	0,33	0,37
6	0,050	0,080	0,10	0,11	0,13	0,14	0,15	0,17	0,20	0,22	0,28	0,32	0,35	0,40	0,45
7	0,058	0,093	0,12	0,13	0,15	0,16	0,18	0,20	0,23	0,26	0,33	0,37	0,40	0,47	0,52
8	0,067	0,11	0,13	0,15	0,17	0,19	0,21	0,23	0,27	0,30	0,38	0,42	0,46	0,53	0,60
9	0,075	0,12	0,15	0,16	0,19	0,21	0,23	0,26	0,30	0,34	0,42	0,47	0,52	0,60	0,67
10	0,083	0,13	0,17	0,18	0,21	0,24	0,26	0,29	0,33	0,37	0,47	0,53	0,58	0,67	0,75
12	0,10	0,16	0,20	0,22	0,25	0,28	0,31	0,35	0,40	0,45	0,57	0,63	0,69	0,80	0,89
16	0,13	0,21	0,27	0,29	0,34	0,38	0,41	0,46	0,53	0,60	0,75	0,84	0,92	1,07	1,19
20	0,17	0,27	0,33	0,37	0,42	0,47	0,52	0,58	0,67	0,75	0,94	1,05	1,15	1,33	1,49
25	0,21	0,33	0,42	0,46	0,53	0,59	0,65	0,72	0,83	0,93	1,18	1,32	1,44	1,67	1,86
30	0,25	0,40	0,50	0,55	0,63	0,71	0,77	0,87	1,00	1,12	1,41	1,58	1,73	2,00	2,24

Cutting tool materials and coatings

Cutting tool materials for drilling and threading tools

Carbides mainly consist of tungsten carbide (WC) as the hard material and cobalt (Co) as the binding material.
In the majority of cases, the cobalt content is between 6 and 12%. The following rule generally applies:
The higher the cobalt content, the tougher the material – but the lower the wear resistance, and vice-versa.
Another determining factor in carbides is the grain size. The hardness increases as the grain size becomes finer.

		Co in %	Grain size	Hardness HV
K05	– Extremely wear-resistant substrate – For use in solid carbide thread milling cutters	4	Fine	1800
K10	– Extremely wear-resistant substrate – For use in solid carbide centre drills	6	Normal	1650
K20F	– Extremely wear-resistant substrate with fine grain size – For use with short-chipping materials, e.g. cast iron workpieces	6–7	Fine	1650–1800
K30F	– Micrograin substrate, extremely tough and wear-resistant – Universal application for a variety of materials	10	Finest	1550

Surface treatment and hard material coatings for increased performance

Surface coating has developed into a proven technological process for improving the performance of metal cutting tools. In contrast to surface treatments, the tool surface remains chemically unaltered and a thin layer is applied.

For Walter Titex high-speed steel and carbide tools, the coating is applied using PVD processes, which work at process temperatures of below 600 °C and therefore do not result in any change to the base material. Hard material layers have a higher hardness and wear resistance than the cutting tool material itself.

In addition
– they separate the cutting tool material and the material to be cut from each other
– they act as a thermal insulation layer

Advantages:
This also means that coated tools not only have a longer tool life, but can also be used with higher cutting speeds and feed rates.

Surface treatment/ coating	Process/ coating	Properties	Tool example
Uncoated	No treatment	–	
TiN	TiN coating	Universal coating	
TIP	TiN point coating	Special coating for optimum chip evacuation	
TFT	Tinal TOP coating	High-performance coating with particularly low friction	
TFP	Tinal point coating	High-performance coating for optimum chip evacuation	
TTP	Tinal TOP point coating	High-performance coating with particularly low friction	
TML	Tinal micro coating	Special coating for small drills with extremely low friction	
XPL	AlCrN coating	High-performance coating for maximum wear resistance	
DPL	Double coating	High-performance coating for maximum wear resistance	
DPP	Double point coating	High-performance coating for maximum wear resistance	
AML	AlTiN micro coating	Special coating for small drills with extremely low friction	
AMP	AlTiN micro point coating	Special coating for small drills with extremely low friction	

Grade description

Coated carbide

Walter grade description	Standard designation	Materials P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating process	Coating composition	Tool example
WJ30EJ	HC – P 30	●●								PVD	Tinal/AlCrN multi-layer coating	
	HC – K 30			●●								
WJ30RE	HC – 30	●●	●●	●●	●●	●●	●	●●		PVD	Tinal multi-layer coating	
WJ30TA	HC – 30	●●	●●	●●	●●	●●	●	●●		PVD	Tinal multi-layer coating with post-treatment	
WJ30EL	HC – 30	●●		●●	●●	●	●	●		PVD	AlCrN single-layer coating	
WJ30ER	HC – 30	●●		●●	●●	●	●	●		PVD	AlCrN single layer point coating	

HC = Coated carbide

●● Primary application
● Additional application



Type description

Tool families and tool types	Field of application/remarks	Materials						
		P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other
DC170 	– Solid carbide high-performance drill, **with** internal coolant – For interrupted cuts and inclined exits	●●		●●			●	
DC150 	– Solid carbide drill, **with** and **without** internal coolant – Can be used universally	●●	●	●●	●●	●●	●	●
DB133	– Solid carbide micro drill, **without** internal coolant	●●		●●	●●	●	●	●
X·treme Pilot 150	– Pilot drill, specially designed for X·treme DM . . – 150° point angle	●●	●●	●●	●●	●●	●	●
X·treme M / DM8 . . DM30	– Solid carbide micro deep-hole drill, diameter 2.00–2.95 mm, 5–30 × D_C, **with** internal coolant – D stands for "Deep" – M stands for "Micro" – Can be used universally	●●	●●	●●	●●	●●	●	●
X·treme Step 90 	– Solid carbide chamfer drill, **with** internal coolant – Step length in accordance with DIN 8378 – Can be used universally, with high cutting data	●●	●	●●	●●	●●	●	●
X·treme Step 90 	– Solid carbide chamfer drill, **without** internal coolant – Step length in accordance with DIN 8378 – Can be used universally, with high cutting data	●●	●	●●	●	●	●	●
X·treme 	– Solid carbide drill in accordance with DIN 6537 short/long, **with** internal coolant – Can be used universally, with high cutting data	●●	●	●●	●●	●●	●	●
X·treme 	– Solid carbide drill in accordance with DIN 6537 short/long, **without** internal coolant – Can be used universally, with high cutting data	●●	●	●●	●	●	●	●
X·treme Plus 	– Solid carbide high-performance drill in accordance with DIN 6537 short/long, **with** internal coolant – Can be used universally, with maximum cutting data	●●	●●	●●	●●	●●	●●	●
X·treme Inox 	– Solid carbide drill in accordance with DIN 6537 short/long, **with** internal coolant – Specially developed for stainless steels	●	●●		●	●●		●
X·treme CI 	– Solid carbide high-performance drill in accordance with DIN 6537 long, **with** internal coolant – Specially developed for cast iron workpieces – CI stands for "cast iron"			●●	●			

●● Primary application
● Additional application

	Drilling depth										
	2 × D_c	3 × D_c	5 × D_c	8 × D_c	12 × D_c	16 × D_c	20 × D_c	25 × D_c	30 × D_c	40 × D_c	50 × D_c
		DC170-03-A1	DC170-05-A1	DC170-08-A1	DC170-12-A1	DC170-16-A1	DC170-20-A1	DC170-25-A1	DC170-30-A1		
		DC150-03-A0 DC150-03-A1 DC150-03-F0 DC150-03-F1	DC150-05-A1 DC150-05-F1	DC150-08-A1	DC150-12-A1						
			DB133-05-A0	DB133-08-A0							
	A6181AML										
			A3389AML	A6489AMP	A6589AMP	A6689AMP	A6789AMP	A6889AMP	A6989AMP		
		K3299XPL K3899XPL									
		K3879XPL									
		A3299XPL A3899XPL	A3399XPL A3999XPL								
		A3279XPL A3879XPL	A3379XPL A3979XPL								
		A3289DPL	A3389DPL								
		A3293TTP	A3393TTP	A6493TTP							
			A3382XPL								

Type description (continued)

Tool families and tool types	Field of application/remarks	Materials						
		P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other
Alpha® Jet 	– Straight-fluted solid carbide drill in accordance with DIN 6537 long, 8 and 12 × D_c, **with** internal coolant – For short-chipping cast iron and aluminium materials			●	●			●
X·treme D8 / D12 	– Solid carbide deep-hole drill, 8 × D_c/12 × D_c, **with** internal coolant – D stands for "Deep" – Can be used universally, with high cutting data	●●	●●	●●	●●	●●	●●	●
Alpha® 44 	– Solid carbide drill, 8 × D_c, **with** internal coolant – UFL® profile – Can be used universally	●●	●	●	●●	●		●
Alpha® 22 	– Solid carbide drill, 8 × D_c, **without** internal coolant – UFL® profile – Can be used universally	●●		●●	●●	●		
X·treme Pilot Step 90 	– Stepped pilot drill, specially designed for Alpha® 4 XD, X·treme D/DH and XD70 technology, **with** internal coolant – 150° point angle – 90° countersink angle	●●	●●	●●	●●	●●	●	●
XD Pilot 	– Pilot drill, specially designed for Alpha® 4 XD, X·treme D/DH and XD70 technology, **with** internal coolant – 150° point angle	●●	●●	●●	●●	●●	●	●
X·treme Pilot 180 	– Pilot drill, specially designed for Alpha® 4 XD, X·treme D/DH and XD70 technology, **with** internal coolant – 180° point angle – Specially developed for inclined and convex surfaces	●●	●●	●●	●●	●●	●	●
X·treme Pilot 180C 	– Pilot drill, specially designed for Alpha® 4 XD, X·treme D/DH and XD70 technology, **with** internal coolant – Specially developed for inclined and convex surfaces – The conical design means that there is no shoulder between the pilot hole and the deep drilled hole (important for crankshafts) – 180° point angle	●●	●●	●●	●●	●●	●	●
Alpha® 4 XD16–30	– Solid carbide deep-hole drill, 16–30 × D_c, **with** internal coolant – Can be used universally	●●	●	●●	●●	●●	●	●
X·treme DH20 / DH30	– Solid carbide deep-hole drill, 20 × D_c/30 × D_c, **with** internal coolant – D stands for "Deep" – H stands for "Heavy-duty materials" (steel with difficult cutting properties), e.g. as used in crankshafts	●●	●	●	●	●	●	
X·treme D40 / D50	– Solid carbide deep-hole drill, 40 × D_c/50 × D_c, **with** internal coolant – Can be used universally	●●	●	●●	●●			

●● Primary application
● Additional application

	Drilling depth										
	2 × D_c	3 × D_c	5 × D_c	8 × D_c	12 × D_c	16 × D_c	20 × D_c	25 × D_c	30 × D_c	40 × D_c	50 × D_c
			A3387	A3487	A3687						
				A6489DPP	A6589DPP						
				A3486TIP A3586TIP							
				A1276TFL							
	K3281TFT										
	A6181TFT										
	A7191TFT										
	K5191TFT										
						A6685TFP	A6785TFP	A6885TFP	A6985TFP		
							A6794TFP		A6994TFP		
										A7495TTP	A7595TTP

Drilling strategies

XD Technology
≤ 30 × D_c

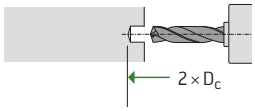
P	M	K	N	S	H	O
✓	✓	✓		✓	✓	✓

Pilot drilling



10–50 bar
on

2 × D_c
A6181TFT
A7191TFT
K5191TFT
K3281TFT

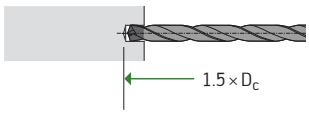


Piloting



off

XD Technology



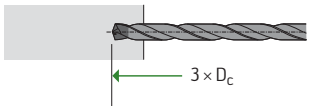
n_{max} = 100 rpm
v_f = 1000 mm/min

Spot drilling



10–50 bar
on

XD Technology



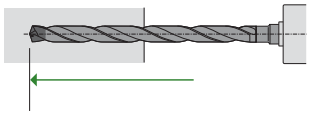
v_c = 25–50%
v_f = 25–50%

Deep-hole drilling



10–50 bar
on

XD Technology



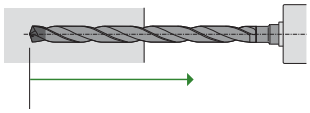
v_c = 100%
v_f = 100%

Retracting



off

XD Technology



n_{max} = 100 rpm
v_f = 1000 mm/min

Recommended cutting data can be found in Walter GPS.

XD Technology
≤ 30 × D_c

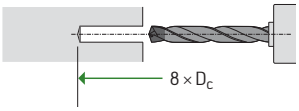
P	M	K	N	S	H	O
			✓			

Pilot drilling



10–50 bar
on

8 × D_c
A6489DPP

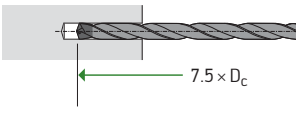


Piloting



off

XD Technology



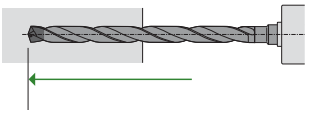
n_{max} = 100 rpm
v_f = 1000 mm/min

Deep-hole drilling



10–50 bar
on

XD Technology



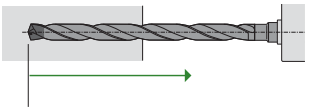
v_c = 100%
v_f = 100%

Retracting



off

XD Technology



n_{max} = 100 rpm
v_f = 1000 mm/min

Recommended cutting data can be found in Walter GPS.

XD Technology
≤ 50 × D_c

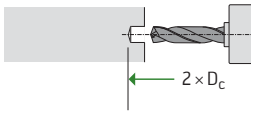
P	M	K	N	S	H	O
✓		✓	✓			

Pilot drilling no. 1



10–50 bar
on

$2 \times D_c$
A6181TFT
A7191TFT
K3281TFT

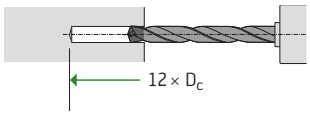


Pilot drilling no. 2



10–50 bar
on

$12 \times D_c$
A6589DPP

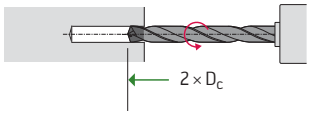


Piloting



off

XD Technology



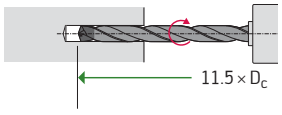
With anticlockwise rotation:
n_{max} = 100 rpm
v_f = 1000 mm/min

Piloting



off

XD Technology



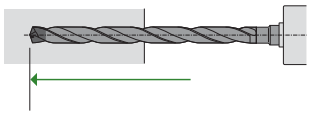
Continue operation with clockwise rotation:
n_{max} = 100 rpm
v_f = 1000 mm/min

Deep-hole drilling



10–50 bar
on

XD Technology



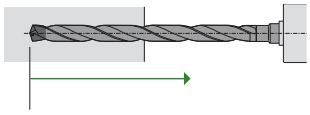
v_c = 100%
v_f = 100%

Retracting



off

XD Technology



n_{max} = 100 rpm
v_f = 1000 mm/min

Recommended cutting data can be found in Walter GPS.

XD Technology
≤ 50 × D_c – 70 × D_c

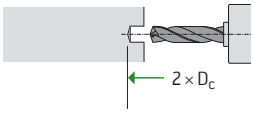
P	M	K	N	S	H	O
✓		✓	✓			

Pilot drilling no. 1



10–50 bar
on

$2 \times D_c$
A6181TFT
A7191TFT
K3281TFT

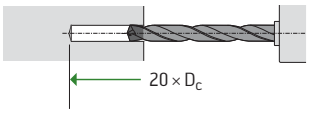


Pilot drilling no. 2



10–50 bar
on

$20 \times D_c$
A6785TFP

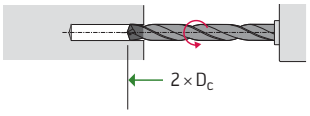


Piloting



off

XD Technology



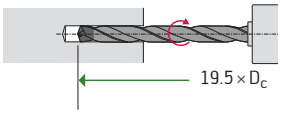
With anticlockwise rotation:
n_{max} = 100 rpm
v_f = 1000 mm/min

Piloting



off

XD Technology



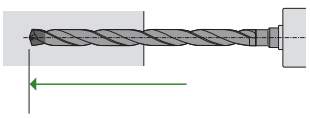
Continue operation with clockwise rotation:
n_{max} = 100 rpm
v_f = 1000 mm/min

Deep-hole drilling



10–50 bar
on

XD Technology



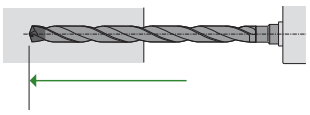
v_c = 100%
v_f = 100%

Retracting



off

XD Technology



n_{max} = 100 rpm
v_f = 1000 mm/min

Drilling strategies

(continued)

XD Technology micro
≤ 30 × D_c

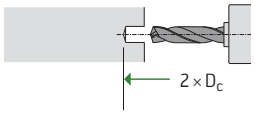
P	M	K	N	S	H	O
✓	✓	✓	✓	✓	✓	✓

Pilot drilling



10–50 bar
on

2 × D_c
A6181AML

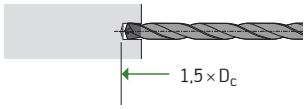


Piloting



off

XD Technology



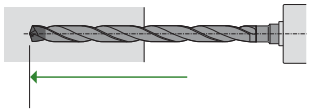
n_{max} = 100 rpm
v_f = 1000 mm/min

Deep-hole drilling



10–50 bar
on

XD Technology

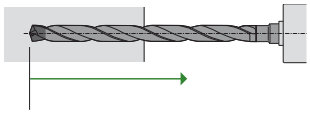


Retracting



off

XD Technology

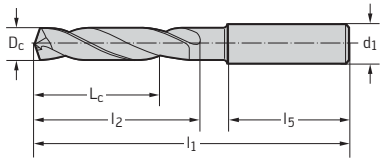


n_{max} = 100 rpm
v_f = 1000 mm/min

Dimensions

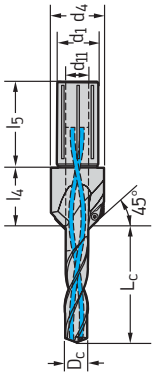
Solid carbide twist drill with standard shank

Walter Designation		A32 . . / A38 . . / D . . . . –03– . . . . DIN 6537 K				A33 . . / A39 . . / D . . . . –05– . . . . DIN 6537 L			
D_c mm (m7)		Short twist drills (K)				Long twist drills (L)			
above – to	d_1 h6	l_1	l_2 max	L_c min	l_5	l_1	l_2 max	L_c min	l_5
2,90–3,75	6	62	20	14	36	66	28	23	36
3,75–4,75	6	66	24	17	36	74	36	29	36
4,75–6,00	6	66	28	20	36	82	44	35	36
6,00–7,00	8	79	34	24	36	91	53	43	36
7,00–8,00	8	79	41	29	36	91	53	43	36
8,00–10,00	10	89	47	35	40	103	61	49	40
10,00–12,00	12	102	55	40	45	118	71	56	45
12,00–14,00	14	107	60	43	45	124	77	60	45
14,00–16,00	16	115	65	45	48	133	83	63	48
16,00–18,00	18	123	73	51	48	143	93	71	48
18,00–20,00	20	131	79	55	50	153	101	77	50



Dimensions
D4580

Xtra·tec®

Tool	L_C [min–max] metric			
	D_C mm	DIN 6537 K $3 \times D_C$ mm	DIN 6537 L $5 \times D_C$ mm	$8 \times D_C$ mm
	4,00 – 4,75	4,0 – 16,0	4,0 – 24,0	8,0 – 35,0
	4,75 – 6,00	5,0 – 16,0	5,0 – 32,0	20,0 – 47,0
	6,00 – 7,00	6,0 – 24,0	13,0 – 39,0	28,0 – 54,0
	7,00 – 8,00	7,0 – 27,0	13,0 – 39,0	38,0 – 64,0
	8,00 – 10,00	8,0 – 35,0	21,0 – 49,0	57,0 – 80,0
	10,00 – 12,00	14,0 – 40,0	30,0 – 56,0	75,0 – 96,0
	12,00 – 14,00	19,0 – 43,0	36,0 – 60,0	94,0 – 119,0
	14,00 – 16,00	14,0 – 45,0	30,0 – 63,0	101,0 – 136,0

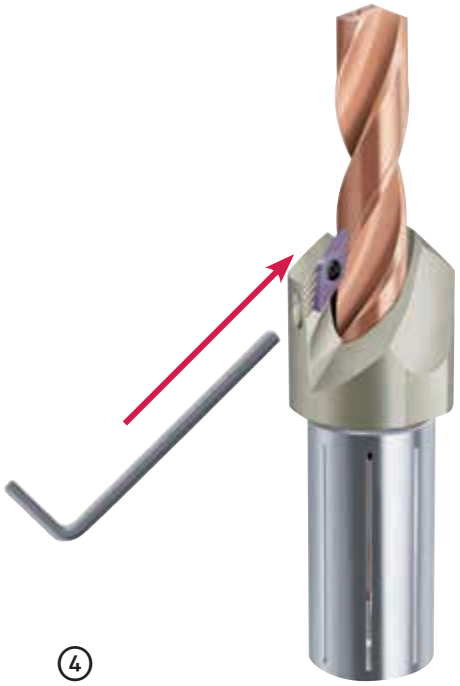
Assembly instructions for D4580 chamfering tool



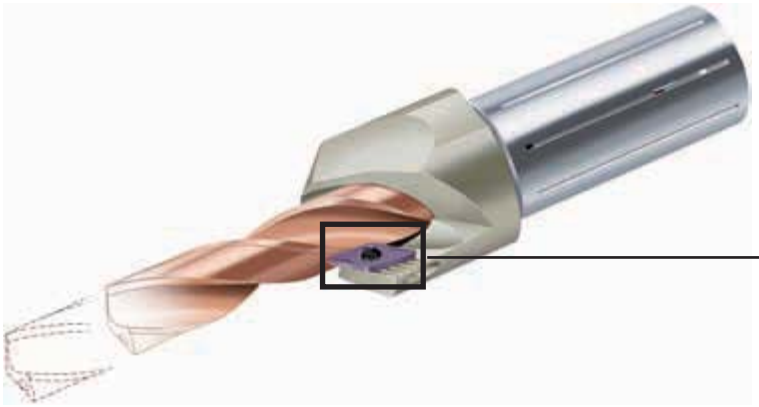
① Release the indexable insert, insert the drill



② Position the drill



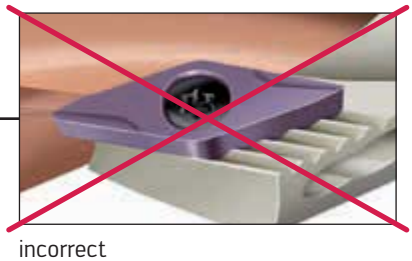
④ Slightly tighten the fastening screw, slide the indexable insert up to the drill and tighten it



③ The indexable insert cutting edge must be fitted significantly below and behind the land



correct



incorrect

Cutting data for solid drilling using the Xtra·tec® Point Drill

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Drilling depth			1,3×D_c							
				Designation			B4011							
				Diameter range			12–25							
				Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	P6001 WPP45C				P6003 WMP35			
							vc	VRR			vc	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	120	7	E O		120	7	E O	
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	120	7	E O		120	7	E O	
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	120	7	E O		120	7	E O	
		C > 0.55%	Annealed	190	640	P4	110	6	E O		110	6	E O	
		C > 0.55%	Heat-treated	300	1010	P5	90	7	E O		90	7	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	120	7	E O		120	7	E O	
	Low-alloyed steel	Annealed		175	590	P7	120	7	E O		120	7	E O	
		Heat-treated		285	960	P8	71	7	E O		71	7	E O	
		Heat-treated		380	1280	P9	32	3	O E		32	3	O E	
		Heat-treated		430	1480	P10								
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	90	6	E O		90	6	E O	
		Hardened and tempered		300	1010	P12	90	7	E O		90	7	E O	
		Hardened and tempered		380	1280	P13	63	5	E O		63	5	E O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	100	7	E O		100	7	E O	
		Martensitic, heat-treated		330	1110	P15	80	7	E O		80	7	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1					71	4	E O	
		Austenitic, precipitation hardened (PH)		300	1010	M2								
		Austenitic/ferritic, duplex		230	780	M3					32	5	E O	
K	Malleable cast iron	Ferritic		200	400	K1	120	8	E O		120	8	E O	
		Pearlitic		260	700	K2	120	8	E O		120	8	E O	
	Grey cast iron	Low tensile strength		180	200	K3	140	9	E O		140	9	E O	
		High tensile strength/austenitic		245	350	K4	140	9	E O		140	9	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	140	8	E O		140	8	E O	
		Pearlitic		265	700	K6	120	8	E O		120	8	E O	
	GGV (CGI)			230	400	K7	110	7	E O		110	7	E O	
N	Wrought aluminium alloys	Not hardenable		30	–	N1								
		Hardenable, hardened		100	340	N2								
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3								
		≤ 12% Si, hardenable, hardened		90	310	N4								
		> 12% Si, not hardenable		130	450	N5								
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7								
		Brass, bronze, red brass		90	310	N8								
		Cu-alloys, short-chipping		110	380	N9								
		High-tensile, Ampco		300	1010	N10								
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1					56	3	E O	
			Hardened	280	940	S2								
		Ni or Co base	Annealed	250	840	S3					32	5	E O	
			Hardened	350	1180	S4					12	2	E O	
			Cast	320	1080	S5					20	5	E O	
	Titanium alloys	Pure titanium		200	680	S6					71	4	E O	
		α and β alloys, hardened		375	1260	S7					63	4	E O	
		β alloys		410	1400	S8					63	3	E O	
	Tungsten alloys			300	1010	S9					20	5	E O	
	Molybdenum alloys			300	1010	S10					20	5	E O	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1								
		Hardened and tempered		55 HRC	–	H2								
		Hardened and tempered		60 HRC	–	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4								
O	Thermoplastics	Without abrasive fillers				O1								
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	1,3 × D_c								2,5 × D_c															
	B4011								B4012C															
	12–25								0															
																								
	 P6004 WPP45C				 P6005 WMP35				 P6001 WPP45C				 P6003 WMP35				 P6004 WPP45C				 P6005 WMP35			
	vc	VRR			vc	VRR			vc	VRR			vc	VRR			vc	VRR			vc	VRR		
									120	7	E O		120	7	E O									
									120	7	E O		120	7	E O									
									120	7	E O		120	7	E O									
									110	6	E O		110	6	E O									
									90	7	E O		90	7	E O									
									120	7	E O		120	7	E O									
									120	7	E O		120	7	E O									
									71	7	E O		71	7	E O									
									32	3	O E		32	3	O E									
									90	6	E O		90	6	E O									
									90	7	E O		90	7	E O									
									63	5	E O		63	5	E O									
									100	7	E O		100	7	E O									
									80	7	E O		80	7	E O									
													71	4	E O									
													32	5	E O									
					120	8	E O		120	8	E O		120	8	E O						120	8	E O	
					110	8	E O		120	8	E O		120	8	E O						110	8	E O	
					160	9	E O		140	9	E O		140	9	E O						160	9	E O	
					160	9	E O		140	9	E O		140	9	E O						160	9	E O	
					140	8	E O		140	8	E O		140	8	E O						140	8	E O	
					110	8	E O		120	8	E O		120	8	E O						110	8	E O	
					110	7	E O		110	7	E O		110	7	E O						110	7	E O	
	320	16	E O														320	16	E O					
	320	16	E O														320	16	E O					
	400	9	E O	M													400	9	E O	M				
	320	9	E O	M													320	9	E O	M				
	220	9	E O	M													220	9	E O	M				
	120	4	E O														120	4	E O					
	250	10	E O														250	10	E O					
	250	10	E O														250	10	E O					
	90	5	E O														90	5	E O					
													56	3	E O									
													32	5	E O									
													12	2	E O									
													20	5	E O									
													71	4	E O									
													63	4	E O									
													63	3	E O									
													20	5	E O									
													20	5	E O									

HC = Coated carbide

Cutting data for solid drilling using the Xtra·tec® Point Drill

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth				Drilling depth			
							Designation				Designation			
							Diameter range				Diameter range			
														
							 P6001 WPP45C				 P6003 WMP35			
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	110	7	E O		110	7	E O	
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	110	7	E O		110	7	E O	
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	100	7	E O		100	7	E O	
		C > 0.55%	Annealed	190	640	P4	100	6	E O		100	6	E O	
		C > 0.55%	Heat-treated	300	1010	P5	80	7	E O		80	7	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	110	7	E O		110	7	E O	
	Low-alloyed steel	Annealed		175	590	P7	110	7	E O		110	7	E O	
		Heat-treated		285	960	P8	71	7	E O		71	7	E O	
		Heat-treated		380	1280	P9	32	3	O E		32	3	O E	
		Heat-treated		430	1480	P10								
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	80	6	E O		80	6	E O	
		Hardened and tempered		300	1010	P12	80	7	E O		80	7	E O	
		Hardened and tempered		380	1280	P13	63	5	E O		63	5	E O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	90	7	E O		90	7	E O	
		Martensitic, heat-treated		330	1110	P15	71	7	E O		71	7	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1					63	4	E O	
		Austenitic, precipitation hardened (PH)		300	1010	M2								
		Austenitic/ferritic, duplex		230	780	M3					28	5	E O	
K	Malleable cast iron	Ferritic		200	400	K1	110	8	E O		110	8	E O	
		Pearlitic		260	700	K2	110	8	E O		110	8	E O	
	Grey cast iron	Low tensile strength		180	200	K3	140	9	E O		140	9	E O	
		High tensile strength/austenitic		245	350	K4	120	9	E O		120	9	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	120	8	E O		120	8	E O	
		Pearlitic		265	700	K6	110	8	E O		110	8	E O	
	GGV (CGI)			230	400	K7	110	7	E O		110	7	E O	
N	Wrought aluminium alloys	Not hardenable		30	–	N1								
		Hardenable, hardened		100	340	N2								
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3								
		≤ 12% Si, hardenable, hardened		90	310	N4								
		> 12% Si, not hardenable		130	450	N5								
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7								
		Brass, bronze, red brass		90	310	N8								
		Cu-alloys, short-chipping		110	380	N9								
		High-tensile, Ampco		300	1010	N10								
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1					50	3	E O	
			Hardened	280	940	S2								
		Ni or Co base	Annealed	250	840	S3					28	5	E O	
			Hardened	350	1180	S4					11	2	E O	
			Cast	320	1080	S5					18	5	E O	
	Titanium alloys	Pure titanium		200	680	S6					63	4	E O	
		α and β alloys, hardened		375	1260	S7					56	4	E O	
		β alloys		410	1400	S8					56	3	E O	
	Tungsten alloys			300	1010	S9					18	5	E O	
	Molybdenum alloys			300	1010	S10					18	5	E O	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1								
		Hardened and tempered		55 HRC	–	H2								
		Hardened and tempered		60 HRC	–	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4								
O	Thermoplastics	Without abrasive fillers				O1								
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	3×D_c								5×D_c															
	B4013								B4015															
	12–37								12–37															
																								
	 P6004 WPP45C				 P6005 WMP35				 P6001 WPP45C				 P6003 WMP35				 P6004 WPP45C				 P6005 WMP35			
	vc	VRR			vc	VRR			vc	VRR			vc	VRR			vc	VRR			vc	VRR		
									100	7	E O		100	7	E O									
									100	7	E O		100	7	E O									
									100	7	E O		100	7	E O									
									90	6	E O		90	6	E O									
									71	7	E O		71	7	E O									
									100	7	E O		100	7	E O									
									100	7	E O													
									63	7	E O		63	7	E O									
									32	3	O E		32	3	O E									
									80	6	E O		80	6	E O									
									71	7	E O		71	7	E O									
									63	5	E O		63	5	E O									
									90	7	E O		90	7	E O									
									71	7	E O		71	7	E O									
													63	4	E O									
													28	5	E O									
					110	8	E O		110	8	E O		110	8	E O						110	8	E O	
					100	8	E O		110	8	E O		110	8	E O						100	8	E O	
					160	9	E O		140	9	E O		140	9	E O						160	9	E O	
					140	9	E O		120	9	E O		120	9	E O						140	9	E O	
					120	8	E O		120	8	E O		120	8	E O						120	8	E O	
					100	8	E O		110	8	E O		110	8	E O						100	8	E O	
					100	7	E O		110	7	E O		110	7	E O						100	7	E O	
	250	16	E O														250	16	E O					
	250	16	E O														250	16	E O					
	400	9	E O	M													360	9	E O	M				
	320	9	E O	M													320	9	E O	M				
	200	9	E O	M													200	9	E O	M				
	110	4	E O														110	4	E O					
	220	10	E O														220	10	E O					
	220	10	E O														220	10	E O					
	80	5	E O														71	5	E O					
													50	3	E O									
													25	5	E O									
													10	2	E O									
													18	5	E O									
													63	4	E O									
													50	4	E O									
													50	3	E O									
													18	5	E O									
													18	5	E O									

HC = Coated carbide

Cutting data for solid drilling using the Xtra·tec® Point Drill

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 429 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth				Drilling depth			
							Designation				Designation			
							Diameter range				Diameter range			
							7 × D_c				7 × D_c			
							B4017				B4017			
							12–37				12–37			
							P6001 WPP45C				P6003 WMP35			
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	100	7	E O		100	7	E O	
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	100	7	E O		100	7	E O	
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	100	7	E O		100	7	E O	
		C > 0.55%	Annealed	190	640	P4	90	6	E O		90	6	E O	
		C > 0.55%	Heat-treated	300	1010	P5	71	7	E O		71	7	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	100	7	E O		100	7	E O	
	Low-alloyed steel	Annealed		175	590	P7	100	7	E O		100	7	E O	
		Heat-treated		285	960	P8	63	7	E O		63	7	E O	
		Heat-treated		380	1280	P9	32	3	O E		32	3	O E	
		Heat-treated		430	1480	P10								
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	80	6	E O		80	6	E O	
		Hardened and tempered		300	1010	P12	71	7	E O		71	7	E O	
		Hardened and tempered		380	1280	P13	63	5	E O		63	5	E O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	90	7	E O		90	7	E O	
		Martensitic, heat-treated		330	1110	P15	71	7	E O		71	7	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1					63	4	E O	
		Austenitic, precipitation hardened (PH)		300	1010	M2								
		Austenitic/ferritic, duplex		230	780	M3					28	5	E O	
K	Malleable cast iron	Ferritic		200	400	K1	110	8	E O		110	8	E O	
		Pearlitic		260	700	K2	110	8	E O		110	8	E O	
	Grey cast iron	Low tensile strength		180	200	K3	120	9	E O		120	9	E O	
		High tensile strength/austenitic		245	350	K4	120	9	E O		120	9	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	120	8	E O		120	8	E O	
		Pearlitic		265	700	K6	110	8	E O		110	8	E O	
	GGV (CGI)			230	400	K7	110	7	E O		110	7	E O	
N	Wrought aluminium alloys	Not hardenable		30	–	N1								
		Hardenable, hardened		100	340	N2								
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3								
		≤ 12% Si, hardenable, hardened		90	310	N4								
		> 12% Si, not hardenable		130	450	N5								
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7								
		Brass, bronze, red brass		90	310	N8								
		Cu-alloys, short-chipping		110	380	N9								
		High-tensile, Ampco		300	1010	N10								
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1					50	3	E O	
			Hardened	280	940	S2								
		Ni or Co base	Annealed	250	840	S3					25	5	E O	
			Hardened	350	1180	S4					10	2	E O	
			Cast	320	1080	S5					18	5	E O	
	Titanium alloys	Pure titanium		200	680	S6					63	4	E O	
		α and β alloys, hardened		375	1260	S7					50	4	E O	
		β alloys		410	1400	S8					50	3	E O	
	Tungsten alloys			300	1010	S9					18	5	E O	
	Molybdenum alloys			300	1010	S10					18	5	E O	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1								
		Hardened and tempered		55 HRC	–	H2								
		Hardened and tempered		60 HRC	–	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4								
O	Thermoplastics	Without abrasive fillers				O1								
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	7×D_c								10×D_c															
	B4017								B4015															
	12–37								12–37															
																								
	 P6004 WPP45C				 P6005 WMP35				 P6001 WPP45C				 P6003 WMP35				 P6004 WPP45C				 P6005 WMP35			
	vc	VRR			vc	VRR			vc	VRR			vc	VRR			vc	VRR			vc	VRR		
									90	7	E O		90	7	E O									
									90	7	E O		90	7	E O									
									80	7	E O		80	7	E O									
									80	6	E O		80	6	E O									
									63	7	E O		63	7	E O									
									90	7	E O		90	7	E O									
													90	7	E O									
									56	7	E O		56	7	E O									
									32	3	O E		32	3	O E									
									63	6	E O		63	6	E O									
									63	7	E O		63	7	E O									
									63	5	E O		63	5	E O									
									71	7	E O		71	7	E O									
									56	7	E O		56	7	E O									
													50	4	E O									
													25	5	E O									
					110	8	E O		100	8	E O		100	8	E O						100	8	E O	
					100	8	E O		100	8	E O		100	8	E O						90	8	E O	
					140	9	E O		120	9	E O		120	9	E O						140	9	E O	
					140	9	E O		110	9	E O		110	9	E O						120	9	E O	
					120	8	E O		110	8	E O		110	8	E O						110	8	E O	
					100	8	E O		100	8	E O		100	8	E O						90	8	E O	
					100	7	E O		100	7	E O		100	7	E O						90	7	E O	
	220	16	E O														160	16	E O					
	220	16	E O														160	16	E O					
	360	9	E O	M																				
	280	9	E O	M													200	9	E O	M				
	200	9	E O	M													180	9	E O	M				
	110	4	E O														100	4	E O					
	220	10	E O														200	10	E O					
	220	10	E O														200	10	E O					
	71	5	E O														63	5	E O					
													40	3	E O									
													22	5	E O									
													9	2	E O									
													14	5	E O									
													50	4	E O									
													45	4	E O									
													45	3	E O									
													14	5	E O									
													14	5	E O									

HC = Coated carbide

Cutting data for solid drilling using the Xtra·tec® Insert Drill

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *			Indexable insert geometry					
									Starting values for feed f [mm/rev]					
									A 57					
									Grade 1	Grade 2	Grade 3	Grade 4	Grade 5 Grade 6	Grade 7 Grade 8
									D_c [mm]					
									13,5–16,4	16,5–20,4	20,5–24,4	24,5–29,4	29,5–42,4	42,5–59,4
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●		0,05	0,06	0,06	0,09	0,12	0,13
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	●●		0,07	0,09	0,10	0,13	0,18	0,19
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	●●		0,07	0,09	0,10	0,13	0,18	0,19
		C > 0.55%	Annealed	190	640	P4	●●		0,07	0,09	0,10	0,13	0,18	0,19,
		C > 0.55%	Heat-treated	300	1010	P5	●●		0,07	0,09	0,10	0,13	0,18	0,19
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●	0,07	0,09	0,10	0,13	0,18	0,19,
	Low-alloyed steel	Annealed		175	590	P7	●●		0,08	0,10	0,12	0,15	0,20	0,21
		Heat-treated		285	960	P8	●●		0,07	0,09	0,10	0,13	0,15	0,16
		Heat-treated		380	1280	P9	●●		0,07	0,09	0,10	0,13	0,15	0,16
		Heat-treated		430	1480	P10	●●		0,05	0,06	0,06	0,09	0,12	0,13
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●		0,08	0,10	0,12	0,15	0,18	0,19
		Hardened and tempered		300	1010	P12	●●		0,07	0,09	0,10	0,13	0,15	0,16
		Hardened and tempered		380	1280	P13	●●		0,06	0,08	0,09	0,12	0,14	0,15
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●		0,07	0,09	0,10	0,13	0,15	0,16
		Martensitic, heat-treated		330	1110	P15	●●		0,06	0,08	0,09	0,12	0,14	0,15
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●		0,06	0,07	0,08	0,10	0,13	0,14
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●		0,06	0,07	0,08	0,10	0,13	0,14
		Austenitic/ferritic, duplex		230	780	M3	●●		0,06	0,07	0,08	0,10	0,13	0,14
K	Malleable cast iron	Ferritic		200	400	K1	●●	●	0,09	0,12	0,14	0,17	0,22	0,23
		Pearlitic		260	700	K2	●●	●	0,07	0,09	0,11	0,14	0,19	0,20
	Grey cast iron	Low tensile strength		180	200	K3	●●	●	0,10	0,13	0,15	0,18	0,23	0,24
		High tensile strength/austenitic		245	350	K4	●●	●	0,08	0,10	0,12	0,15	0,20	0,21
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●	0,10	0,13	0,15	0,18	0,23	0,24
		Pearlitic		265	700	K6	●●		0,08	0,10	0,12	0,18	0,23	0,24
	GGV (CGI)			230	400	K7	●●	●	0,09	0,12	0,14	0,17	0,22	0,23
N	Wrought aluminium alloys	Not hardenable		30	–	N1								
		Hardenable, hardened		100	340	N2	●●							
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●							
		≤ 12% Si, hardenable, hardened		90	310	N4	●●							
		> 12% Si, not hardenable		130	450	N5	●●	●						
	Magnesium-based alloys			70	250	N6	●●							
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7								
		Brass, bronze, red brass		90	310	N8	●●							
		Cu-alloys, short-chipping		110	380	N9	●●	●						
		High-tensile, Ampco		300	1010	N10	●●	●	0,06	0,07	0,08	0,10	0,13	0,14
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●							
			Hardened	280	940	S2	●●							
		Ni or Co base	Annealed	250	840	S3	●●							
			Hardened	350	1180	S4	●●							
			Cast	320	1080	S5	●●							
	Titanium alloys	Pure titanium		200	680	S6								
		α and β alloys, hardened		375	1260	S7	●●							
		β alloys		410	1400	S8	●●							
	Tungsten alloys			300	1010	S9	●●		0,05	0,06	0,06	0,09	0,11	0,12
	Molybdenum alloys			300	1010	S10	●●		0,05	0,06	0,06	0,09	0,11	0,12
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●●		0,05	0,06	0,06	0,09	0,10	0,10
		Hardened and tempered		55 HRC	–	H2	●●		0,05	0,06	0,06	0,09	0,10	0,10
		Hardened and tempered		60 HRC	–	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●●		0,05	0,06	0,06	0,09	0,10	0,10
O	Thermoplastics	Without abrasive fillers				O1	●●	●						
	Thermosetting plastics	Without abrasive fillers				O2	●●	●						
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6	●●	●	0,09	0,12	0,14	0,17	0,22	0,23

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application. Limited to 2 × D_c drilling depth. MQL (minimum quantity lubrication) or compressed air is recommended.

When using drills > 3 × D, the following reductions are recommended:
> 3 × D: Cutting speed v_c –20%, feed f –30% when spot drilling, feed f –50% when spot drilling on inclined surfaces.
> 4 × D: Cutting speed v_c –30%, feed f –40% when spot drilling.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Indexable insert geometry													Cutting material grade Outer insert [P484.P..]								
Starting values for feed f [mm/rev]													Starting values for cutting speed v_c [m/min]								
E 57							E 67						HC								
													WKP25S f [mm/U]			WKP35S f [mm/U]			WSP45 f [mm/U]		
Grade 1	Grade 2	Grade 3	Grade 4	Grade 5 Grade 6	Grade 7 Grade 8	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5 Grade 6	Grade 7 Grade 8										
D_c [mm]							D_c [mm]														
13,5–16,4	16,5–20,4	20,5–24,4	24,5–29,4	29,5–42,4	42,5–59,4	13,5–16,4	16,5–20,4	20,5–24,4	24,5–29,4	29,5–42,4	42,5–59,4		0,06	0,10	0,16	0,06	0,10	0,16	0,06	0,10	0,16
0,05	0,06	0,06	0,09	0,12	0,13	0,05	0,06	0,06	0,09	0,12	0,13		350	320		300	270		250	220	
0,06	0,07	0,08	0,11	0,17	0,18	0,06	0,07	0,08	0,11	0,17	0,18		260	240	220	220	200	180	170	160	150
0,06	0,07	0,08	0,11	0,17	0,18								240	220	200	200	180	150	150	140	130
0,06	0,07	0,08	0,11	0,17	0,18								220	200	180	180	150	140	140	130	120
0,06	0,07	0,08	0,11	0,17	0,18								190	170	150	150	130	120	130	120	110
0,06	0,07	0,08	0,11	0,17	0,18								220	200	180	180	150	140	140	130	120
0,06	0,08	0,10	0,13	0,19	0,20	0,06	0,08	0,10	0,14	0,20	0,21		260	240	220	220	200	180	170	160	160
0,06	0,07	0,08	0,11	0,14	0,15								230	210	190	190	170	140	140	130	120
0,06	0,07	0,08	0,11	0,14	0,15								210	190	170	180	160	130	140	120	110
0,05	0,06	0,06	0,09	0,11	0,12								190	170	160	170	140	130	140	120	110
0,06	0,08	0,10	0,13	0,17	0,18	0,06	0,08	0,10	0,12	0,16	0,17		220	200	180	200	170	150	140	130	120
0,06	0,07	0,08	0,11	0,14	0,15								200	170	150	180	140	130	130	120	110
0,05	0,06	0,07	0,10	0,13	0,14								190	160	140	170	130	120	120	110	100
0,06	0,07	0,08	0,11	0,14	0,15	0,06	0,07	0,08	0,11	0,14	0,15					190	170	150	140	130	120
0,05	0,06	0,07	0,10	0,13	0,14	0,05	0,06	0,07	0,10	0,13	0,15					150	130	120	120	110	100
0,06	0,07	0,08	0,10	0,13	0,14	0,06	0,07	0,09	0,12	0,14	0,15					220	200	180	180	170	150
0,06	0,07	0,08	0,10	0,13	0,14	0,06	0,07	0,09	0,12	0,14	0,15					150	130	110	130	110	100
0,06	0,07	0,08	0,10	0,13	0,14	0,06	0,07	0,09	0,12	0,14	0,15					120	100	80	100	80	70
0,07	0,09	0,11	0,14	0,21	0,22	0,07	0,09	0,11	0,14	0,21	0,22		210	190	170	190	180	160	170	140	120
0,05	0,07	0,08	0,11	0,18	0,19	0,05	0,07	0,09					190	140	120	130	120	110	130	120	110
0,08	0,10	0,12	0,15	0,22	0,23	0,08	0,10	0,12	0,15	0,22	0,23		220	200	180	200	190	170	180	160	130
0,06	0,08	0,09	0,12	0,19	0,20								180	150	130	150	130	110	150	130	110
0,08	0,10	0,12	0,15	0,22	0,23	0,08	0,10	0,12	0,15	0,22	0,23		150	140	130	140	120	110	150	130	120
0,06	0,08	0,09	0,12	0,22	0,23	0,06	0,08						140	130	120	120	110	100	120	110	110
0,07	0,09	0,11	0,14	0,21	0,22	0,07	0,09	0,11	0,14	0,21	0,22		180	150	130	150	130	110	150	130	110
0,07	0,09	0,10	0,12	0,17	0,18	0,07	0,09	0,11	0,12	0,17	0,18								450	450	450
0,08	0,10	0,12	0,15	0,17	0,18	0,08	0,10	0,12	0,15	0,17	0,18								300	300	300
0,08	0,10	0,12	0,15	0,17	0,18	0,08	0,10	0,12	0,15	0,17	0,18								250	250	250
0,08	0,10	0,12	0,15	0,17	0,18	0,08	0,10	0,12	0,15	0,17	0,18								200	200	200
0,08	0,10	0,12	0,15	0,17	0,18	0,08	0,10	0,12	0,15	0,17	0,18								300	300	300
0,10	0,12	0,14	0,17	0,22	0,23	0,10	0,12	0,14	0,17	0,22	0,23								300	250	200
0,10	0,12	0,14	0,17	0,22	0,23	0,10	0,12	0,14	0,17	0,22	0,23								350	300	250
0,06	0,07	0,08	0,10	0,13	0,14	0,06	0,07	0,09	0,12	0,14	0,15					150	130	110	130	110	100
0,05	0,06	0,07	0,10	0,13	0,14	0,05	0,06	0,07	0,10	0,13	0,14		100	100		100	100		90	90	
0,05	0,06	0,06	0,09	0,11	0,12	0,05	0,06	0,06	0,09	0,11	0,12		80	80		80	80		70	70	
0,05	0,06	0,07	0,10	0,12	0,13	0,05	0,06	0,07	0,10	0,12	0,13		60	60		60	60		50	50	
0,05	0,06	0,06	0,09	0,11	0,12	0,05	0,06	0,06	0,09	0,11	0,12		50	50		50	50		40	40	
0,05	0,06	0,06	0,09	0,11	0,12	0,05	0,06	0,06	0,09	0,11	0,12		50	50		50	50		40	40	
0,05	0,06	0,07	0,10	0,12	0,13	0,05	0,06	0,07	0,10	0,12	0,13					50	50		50	45	
0,05	0,06	0,06	0,09	0,11	0,12	0,05	0,06	0,06	0,09	0,11	0,12					50	50		40	40	
0,05	0,06	0,06	0,09	0,11	0,12	0,05	0,06	0,06	0,09	0,11	0,12		70	60							
0,05	0,06	0,06	0,09	0,11	0,12	0,05	0,06	0,06	0,09	0,11	0,12		70	60							
0,05	0,06	0,06	0,09	0,10	0,10								70	60	50						
0,05	0,06	0,06	0,09	0,10	0,10								60	50	50						
0,05	0,06	0,06	0,09	0,10	0,10								60	50	50						
0,16	0,18	0,20	0,25	0,30	0,30	0,16	0,18	0,20	0,25	0,30	0,30					400	400	400	400	400	400
0,12	0,14	0,18	0,20	0,25	0,25	0,12	0,14	0,18	0,20	0,25	0,25		300	300	300	300	300	300	300	300	300
0,07	0,09	0,11	0,14	0,21	0,22								300	250	200	250	200	150	250	200	150

HC = Coated carbide

Cutting data for solid drilling using the B321x Stardrill

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *			Indexable insert geometry Starting values for feed f [mm/rev] LCMX . . –B57 D_C [mm] 10,0–12,0	D_C [mm] 12,1–18,0
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●		0,05	0,06
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	●●		0,06	0,08
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	●●			
		C > 0.55%	Annealed	190	640	P4	●●			
		C > 0.55%	Heat-treated	300	1010	P5	●●			
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●		
	Low-alloyed steel	Annealed		175	590	P7	●●		0,06	0,07
		Heat-treated		285	960	P8	●●			
		Heat-treated		380	1280	P9	●●			
		Heat-treated		430	1480	P10	●●			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●			
		Hardened and tempered		300	1010	P12	●●			
		Hardened and tempered		380	1280	P13	●●			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●			
		Martensitic, heat-treated		330	1110	P15	●●			
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●		0,05	0,06
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●		0,05	0,06
		Austenitic/ferritic, duplex		230	780	M3	●●		0,05	0,06
K	Malleable cast iron	Ferritic		200	400	K1	●●	●	0,09	0,10
		Pearlitic		260	700	K2	●●	●	0,07	0,08
	Grey cast iron	Low tensile strength		180	200	K3	●●	●	0,09	0,10
		High tensile strength/austenitic		245	350	K4	●●	●	0,07	0,08
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●	0,07	0,09
		Pearlitic		265	700	K6	●●		0,06	0,08
	GGV (CGI)			230	400	K7	●●	●	0,09	0,10
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2	●●			
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●			
		≤ 12% Si, hardenable, hardened		90	310	N4	●●			
		> 12% Si, not hardenable		130	450	N5	●●	●		
	Magnesium-based alloys			70	250	N6	●●			
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8	●●			
		Cu-alloys, short-chipping		110	380	N9	●●	●		
		High-tensile, Ampco		300	1010	N10	●●	●		
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●		0,05	0,06
			Hardened	280	940	S2	●●			
		Ni or Co base	Annealed	250	840	S3	●●			
			Hardened	350	1180	S4	●●			
			Cast	320	1080	S5	●●			
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7	●●		0,05	0,06
		β alloys		410	1400	S8	●●		0,05	0,06
	Tungsten alloys			300	1010	S9	●●			
	Molybdenum alloys			300	1010	S10	●●			
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●●			
		Hardened and tempered		55 HRC	–	H2	●●			
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●●			
O	Thermoplastics	Without abrasive fillers				O1	●●	●		
	Thermosetting plastics	Without abrasive fillers				O2	●●	●		
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6	●●	●	0,07	0,09

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application. Limited to 2 × D_C drilling depth. MQL (minimum quantity lubrication) or compressed air is recommended.

When using drills > 3 × D, the following reductions are recommended:
> 3 × D: Cutting speed v_c –20%, feed f –30% when spot drilling, feed f –50% when spot drilling on inclined surfaces.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Indexable insert geometry				Cutting material grades							
Starting values for feed f [mm/rev]				Starting values for cutting speed v_c [m/min]							
LCMX . . –D57		LCMX . . –E57		HC							
D_c [mm]		D_c [mm]		WKP25S f [mm/U]		WKP35S f [mm/U]		WSP45S f [mm/U]		WXP40 f [mm/U]	
10,0–12,0	12,1–18,0	10,0–12,0	12,1–18,0	0,06	0,1	0,06	0,1	0,06	0,1	0,06	0,1
0,06	0,07	0,07	0,10	290	260	260	240	220	200	200	180
0,06	0,08	0,08	0,12	260	240	220	200	160	150	150	140
0,06	0,08	0,08	0,12	260	240	220	200	160	150	150	140
0,06	0,08	0,08	0,12	260	240	220	200	160	150	150	140
0,05	0,06	0,07	0,10	200	180	150	130	130	120	120	110
0,05	0,06	0,07	0,10	200	180	150	130	130	120	120	110
0,07	0,08	0,08	0,12	260	240	220	200	180	170	150	140
0,07	0,08	0,08	0,10	220	200	190	170	150	130	140	120
0,07	0,08	0,08	0,10	220	200	190	170	150	130	140	120
0,05	0,06	0,06	0,08	200	180	150	130	130	120	120	110
0,06	0,08	0,07	0,10	220	200	180	170	140	130	130	120
0,05	0,07	0,06	0,08	180	170	150	140	130	120	120	110
0,06	0,07	0,07	0,09	170	160	140	130	120	110	110	100
0,06	0,08	0,07	0,10			180	170	140	130	130	120
0,06	0,07	0,07	0,09	170	160	140	130	120	110	110	100
0,06	0,07					220	200	180	160	160	150
0,06	0,07					150	130	130	110	110	100
0,06	0,07					120	100	100	80	80	70
0,10	0,12	0,10	0,14	240	220	220	200	170	150	160	140
0,08	0,10	0,08	0,12	180	170	180	150	140	130	130	120
0,10	0,12	0,10	0,14	240	220	220	200	170	150	160	140
0,08	0,10	0,08	0,12	180	170	180	150	140	130	130	120
0,08	0,10	0,10	0,12	170	150	150	140	140	130	130	120
0,07	0,08	0,08	0,10	140	130	140	130	120	110	110	100
0,10	0,12	0,10	0,14	180	170	180	150	140	130	130	120
0,08	0,10							450	450		
0,08	0,10							300	300		
0,08	0,10							250	250		
0,08	0,10							200	200		
0,08	0,10							300	300		
0,08	0,10	0,08	0,10								
0,07	0,09	0,07	0,09								
0,06	0,08										
0,05	0,06	0,05	0,06			100	100			80	80
0,04	0,05	0,04	0,05			80	80			60	60
0,04	0,05	0,04	0,05			60	60			50	50
0,04	0,05	0,04	0,05			50	50			40	40
0,04	0,05	0,04	0,05			50	50			40	40
0,05	0,06							50	40		
0,05	0,06					50	50	40	40		
0,05	0,06			70	60						
0,05	0,06			70	60						
0,04	0,05			70	60						
0,04	0,05			60	50						
0,04	0,05			60	50						
0,12	0,14	0,12	0,14			400	400	400	400	400	400
0,10	0,12	0,10	0,12	300	300	300	300	300	300	300	300
0,06	0,08	0,06	0,08	300	250	250	200	250	200	250	200

HC = Coated carbide

Cutting data for solid drilling with WOMX-/WOEX indexable inserts

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *			Indexable insert geometry Starting values for feed f [mm/rev] WOMX–B57 D_c [mm]			
									14–19,9	20–24,9	25–44,9	>45
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●		0,05	0,07	0,08	0,10
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	●●		0,05	0,07	0,08	0,10
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	●●		0,05	0,07	0,08	0,10
		C > 0.55%	Annealed	190	640	P4	●●		0,05	0,07	0,08	0,10
		C > 0.55%	Heat-treated	300	1010	P5	●●		0,05	0,07	0,08	0,10
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●	0,06	0,07	0,08	0,10
	Low-alloyed steel	Annealed		175	590	P7	●●		0,06	0,07	0,08	0,10
		Heat-treated		285	960	P8	●●		0,06	0,07	0,08	0,10
		Heat-treated		380	1280	P9	●●		0,06	0,07	0,08	0,10
		Heat-treated		430	1480	P10	●●		0,04	0,05	0,06	0,09
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●		0,04	0,05	0,06	0,09
		Hardened and tempered		300	1010	P12	●●		0,04	0,05	0,06	0,09
		Hardened and tempered		380	1280	P13	●●		0,04	0,05	0,06	0,09
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●		0,04	0,05	0,08	0,10
		Martensitic, heat-treated		330	1110	P15	●●		0,04	0,05	0,08	0,10
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●		0,04	0,06	0,07	0,10
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●		0,04	0,06	0,07	0,10
		Austenitic/ferritic, duplex		230	780	M3	●●		0,04	0,06	0,07	0,10
K	Malleable cast iron	Ferritic		200	400	K1	●●	●	0,05	0,07	0,09	0,12
		Pearlitic		260	700	K2	●●	●	0,05	0,07	0,09	0,12
	Grey cast iron	Low tensile strength		180	200	K3	●●	●	0,05	0,07	0,09	0,12
		High tensile strength/austenitic		245	350	K4	●●	●	0,05	0,07	0,09	0,12
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●	0,04	0,05	0,09	0,12
		Pearlitic		265	700	K6	●●		0,04	0,05	0,09	0,12
	GGV (CGI)			230	400	K7	●●	●	0,05	0,07	0,09	0,12
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●					
		Hardenable, hardened		100	340	N2	●●					
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●					
		≤ 12% Si, hardenable, hardened		90	310	N4	●●					
		> 12% Si, not hardenable		130	450	N5	●●					
	Magnesium-based alloys			70	250	N6	●●					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●					
		Brass, bronze, red brass		90	310	N8	●●					
		Cu-alloys, short-chipping		110	380	N9	●●					
		High-tensile, Ampco		300	1010	N10	●●					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●		0,04	0,05	0,06	0,06
			Hardened	280	940	S2	●●		0,04	0,05	0,06	0,06
		Ni or Co base	Annealed	250	840	S3	●●					
			Hardened	350	1180	S4	●●					
			Cast	320	1080	S5	●●					
	Titanium alloys	Pure titanium		200	680	S6	●●					
		α and β alloys, hardened		375	1260	S7	●●					
		β alloys		410	1400	S8	●●					
	Tungsten alloys			300	1010	S9	●●					
	Molybdenum alloys			300	1010	S10	●●					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●●					
		Hardened and tempered		55 HRC	–	H2	●●					
		Hardened and tempered		60 HRC	–	H3	●●					
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●●					
O	Thermoplastics	Without abrasive fillers				O1	●●	●				
	Thermosetting plastics	Without abrasive fillers				O2	●●	●				
	Plastic, glass fibre reinforced	GFRP				O3	●●					
	Plastic, carbon fibre reinforced	CFRP				O4	●●					
	Plastic, aramid fibre reinforced	AFRP				O5	●●					
	Graphite (technical)			80 Shore		O6	●●	●				

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application. Limited to 2 × D_c drilling depth. MQL (minimum quantity lubrication) or compressed air is recommended.

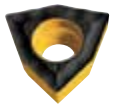
The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Indexable insert geometry										Cutting material grades												
Starting values for feed f [mm/rev]										Starting values for cutting speed v_c [m/min]												
WOMX–D57						WOEX–E57				HC												
D_c [mm]						D_c [mm]				WKP25S f [mm/U]			WKP35S f [mm/U]			WAK15 f [mm/U]			WXP40 f [mm/U]		
12–13,9	14–19,9	20–24,9	25–44,9	>45	14–19,9	20–24,9	25–44,9	>45	up to 0.04	up to 0.08	up to 0.16	up to 0.04	up to 0.08	up to 0.16	up to 0.04	up to 0.08	up to 0.16	up to 0.04	up to 0.08	up to 0.16
0,05	0,06	0,08	0,10	0,12	0,06	0,08	0,10	0,12	240	230	200	220	200	180				140	130	120
0,05	0,06	0,08	0,10	0,12	0,06	0,08	0,10	0,12	240	230	200	220	200	180				140	130	120
0,05	0,06	0,08	0,10	0,12	0,06	0,08	0,10	0,12	240	230	200	220	200	180				140	130	120
0,05	0,06	0,08	0,10	0,12	0,06	0,08	0,10	0,12	240	230	200	220	200	180				140	130	120
0,05	0,06	0,08	0,10	0,12	0,06	0,08	0,10	0,12	240	230	200	220	200	180				140	130	120
0,06	0,07	0,08	0,10	0,14	0,07	0,08	0,10	0,14	240	230	200	220	200	180				140	130	120
0,06	0,07	0,08	0,10	0,14	0,07	0,08	0,10	0,14	230	220	190	210	200	170				130	120	110
0,06	0,07	0,08	0,10	0,14	0,07	0,08	0,10	0,14	230	220	190	210	200	170				130	120	110
0,06	0,07	0,08	0,10	0,14	0,07	0,08	0,10	0,14	230	220	190	210	200	170				130	120	110
0,05	0,05	0,06	0,07	0,10	0,05	0,06	0,07	0,10	200	180	170	190	170	150				130	120	110
0,05	0,05	0,06	0,07	0,10	0,05	0,06	0,07	0,10	200	180	170	190	170	150				130	120	110
0,05	0,05	0,06	0,07	0,10	0,05	0,06	0,07	0,10	200	180	170	190	170	150				130	120	110
0,05	0,05	0,06	0,07	0,10	0,05	0,06	0,07	0,10	200	180	170	190	170	150				130	120	110
0,05	0,06	0,08	0,09	0,12	0,06	0,08	0,09	0,12	180	160	150	160	140	120				130	120	110
0,05	0,06	0,08	0,09	0,12	0,06	0,08	0,09	0,12	180	160	150	160	140	120				130	120	110
0,05	0,06	0,08	0,09	0,12	0,06	0,08	0,09	0,12				200	180	160				160	150	140
0,05	0,06	0,08	0,09	0,12	0,06	0,08	0,09	0,12				150	130	110				130	110	100
0,05	0,06	0,08	0,09	0,12	0,06	0,08	0,09	0,12				120	100	80				100	100	70
0,07	0,09	0,10	0,12	0,16	0,09	0,10	0,12	0,16	150	140	130	140	130	120	180	160	150	120	120	110
0,07	0,09	0,10	0,12	0,16	0,09	0,10	0,12	0,16	150	140	130	140	130	120	180	160	150	120	120	110
0,07	0,10	0,12	0,14	0,16	0,10	0,12	0,14	0,16	150	140	130	140	130	120	200	180	160	120	120	110
0,07	0,10	0,12	0,14	0,16	0,10	0,12	0,14	0,16	150	140	130	140	130	120	200	180	160	120	120	110
0,06	0,08	0,12	0,14	0,16	0,08	0,12	0,14	0,16	130	120	120	120	120	110	160	150	140	110	110	100
0,06	0,08	0,12	0,14	0,16	0,08	0,12	0,14	0,16	130	120	120	120	120	110	160	150	140	110	110	100
0,07	0,09	0,10	0,12	0,16	0,09	0,10	0,12	0,16	150	140	130	140	130	120	200	180	160	120	120	110
0,05	0,06	0,06	0,06	0,08	0,06	0,06	0,06	0,08				80	70	70				60	60	60
0,05	0,06	0,06	0,06	0,08	0,06	0,06	0,06	0,08				80	70	70				60	60	60
		0,06	0,06	0,08		0,06	0,06	0,08				50	40	40				40	40	40
		0,06	0,06	0,08		0,06	0,06	0,08				50	40	40				40	40	40
		0,06	0,06	0,08		0,06	0,06	0,08				50	40	40				40	40	40
0,05	0,05	0,06	0,08	0,10											60	50	50			
0,05	0,05	0,06	0,08	0,10											60	50	50			
0,05	0,05	0,06	0,08	0,10											60	50	50			
0,16	0,18	0,20	0,30	0,30								400	400	400				400	400	400
0,12	0,14	0,18	0,20	0,25								300	300	300				300	300	300
0,07	0,09	0,11	0,21	0,22								150	150	150				150	150	150

HC = Coated carbide

Cutting tool material application charts – Drilling

Grades for solid drilling

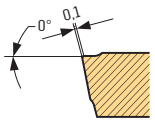
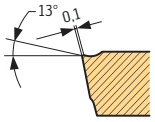
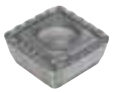
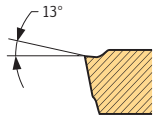
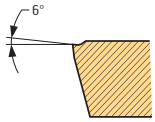
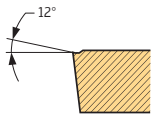
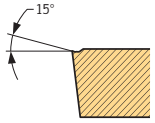
Walter grade designation	Standard designation	Material group P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating process	Coating composition	Indexable insert example
WAK15	HC – K 15			●●						CVD	$TiCN + Al_2O_3$ (+TiN)	
WKP25S	HC – P 25	●●								CVD	$TiCN + Al_2O_3$ (+TiCN)	
	HC – K 25			●●								
WKP35S	HC – P 35	●●								CVD	$TiCN + Al_2O_3$ (+TiCN)	
	HC – K 35			●●								
WSP45S	HC – P 45	●●								PVD	$TiAlN + Al_2O_3$ (+Al)	
	HC – M 45		●●									
	HC – S 45					●●						
WSP45	HC – P 45	●●								PVD	$TiAlN + Al_2O_3$ (+ZrN)	
	HC – M 45		●●									
	HC – S 45					●●						
WXP40	HC – P 40	●●								PVD	TiCN	
	HC – M 30		●●									
	HC – K 40			●●								
	HC – S 30					●						
WXP30	HC – P 30	●●								PVD	TiAlN / TiSiN	
	HC – M 30		●									
	HC – K 30			●●								
	HC – N 30				●							
	HC – S 30					●						
WPP45C	HC – P 45	●●								PVD	TiAlN / TiAl	
	HC – K 45			●								
WKK45C	HC – P 45	●								PVD	TiAlN / TiSiAlCrN / TiSiN	
	HC – K 45			●●								
WMP35	HC – P 35	●●								PVD	TiAlN	
	HC – M 35		●●									
	HC – S 35					●●						
WNN25	HC – N 25				●●					PVD	ta-C (DLC)	
	HC – O 25							●				

HC = Coated carbide
HW = Uncoated carbide

●● Primary application
● Additional application

Geometry overview – Indexable inserts

Solid drilling

Geometry	Remarks on field of applications	Material group P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge
	**A57 – The stable one** – 0° rake angle – For unfavourable machining conditions, mainly for cast iron and steel materials	●●	●	●●		●			
	**E57 – The universal one** – 13° rake angle – For medium machining – For cast iron and steel, but also for stainless materials and materials with difficult cutting properties	●●	●●	●●	●	●			
	**E67 – The easy-cutting one** – 13° rake angle – Special geometry for optimum chip formation – For long-chipping materials, e.g. St37 and stainless materials as well as materials with difficult cutting properties and aluminium	●●	●●		●	●●			
	**LCMX–B57 – The stable one** – 6° rake angle – For unfavourable machining conditions – For long-chipping materials	●●		●●					
	**LCMX–D57 – The universal one** – 12° rake angle – For medium machining	●●	●●	●●	●	●			
	**LCMX–E57 – The easy-cutting one** – 15° rake angle – For good machining conditions – For short-chipping materials	●●	●●		●●	●●			

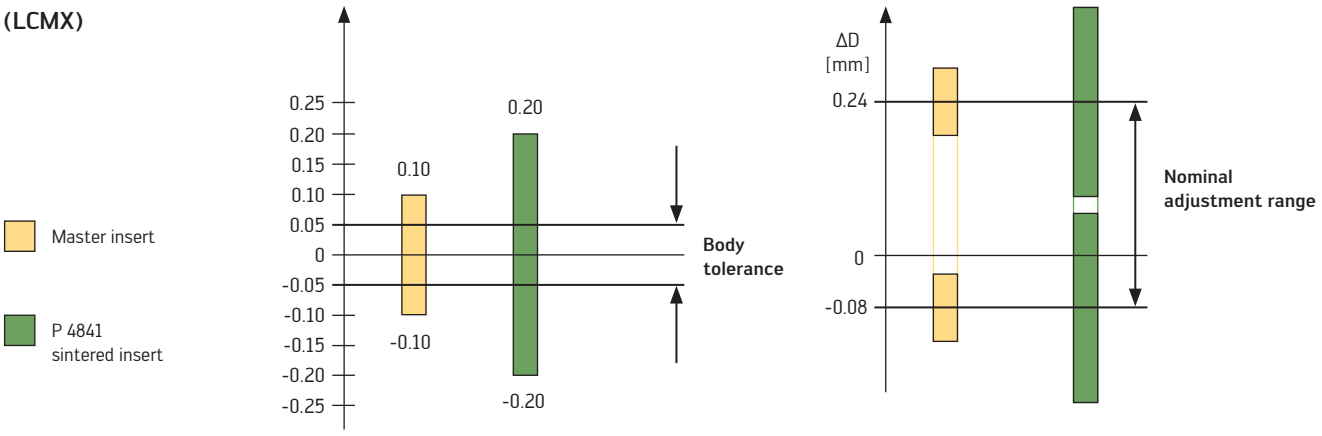
●● Primary application
● Additional application

Tool diameter tolerance ranges for Walter B421 . . /B321 . . DF Insert Drill

Drill type	Tolerance range without eccentric sleeve	Tolerance range with eccentric sleeve
Walter B421 . . Insert Drill Dia. 13.5–59 mm	* for indexable insert grade 7 ** for indexable insert grade 8	FS 2131, 2132, 2133, 2165 eccentric sleeve

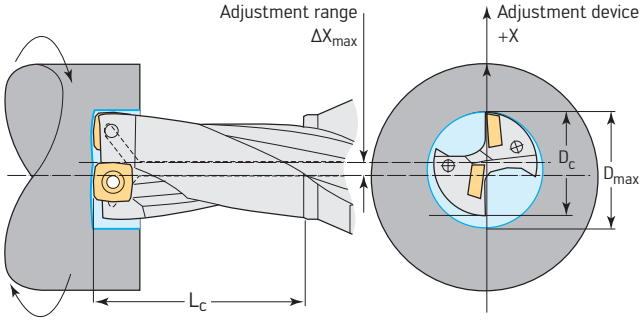


Drill type	Tolerance range without eccentric sleeve	Tolerance range with eccentric sleeve
Walter B321 . . DF Stardrill Dia. 10–18 mm (LCMX)		Eccentric sleeve FS 1207



The resulting workpiece diameter may differ due to the drilling depth, workpiece material, feed rate and chip removal conditions, etc.

Drilling with X offset
using a stationary drill with rotating workpiece



Walter B321 . . DF Stardrill with LCMX . indexable inserts

ΔX = +0,2 mm/-0,1 mm → ΔD = +0,4 mm/-0,2 mm

Xtra·tec® B421 . . Insert Drill

$D = D_c + 2 \times \Delta X$

Indexable insert size	D_c	$(L_c \div D_c) \geq 4$		$(L_c \div D_c) < 4$	
		ΔX	D_{max}	ΔX_{max}	D_{max}
	mm	mm	mm	mm	mm
1	13,5	0,5	14,5	0,7	14,9
	14	0,35	14,7	0,6	15,2
	14,5	0,3	15,1	0,5	15,5
	15	0,2	15,4	0,45	15,9
	15,5	0,15	15,8	0,35	16,2
	16	0,05	16,1	0,3	16,6
	16,4	0	–	0,2	16,8
2	16,5	0,6	17,7	0,9	18,3
	17	0,5	18	0,75	18,5
	17,5	0,35	18,2	0,6	18,7
	18	0,3	18,6	0,55	19,1
	18,5	0,2	18,9	0,45	19,4
	19	0,15	19,3	0,4	19,8
	19,5	0,07	19,64	0,3	20,1
	20	0	20	0,25	20,5
	20,4*	0	–	0,15	20,7
3	20,5	0,35	21,2	0,7	21,9
	21	0,3	21,6	0,6	22,2
	21,5	0,17	21,84	0,45	22,4
	22	0,15	22,3	0,45	22,9
	22,5	0,02	22,54	0,3	23,1
	23	0	–	0,3	23,6
	23,5*	0	–	0,18	23,86
	24*	0	–	0,15	24,3
	24,4*	0	–	0	–
4	24,5	0,5	25,5	0,85	26,2
	25	0,35	25,7	0,75	26,5
	25,5	0,25	26	0,6	26,7
	26	0,15	26,3	0,55	27,1
	26,5	0,05	26,6	0,4	27,3
	27	0	–	0,4	27,8
	27,5	0	–	0,25	28
	28*	0	–	0,25	28,5
	28,5*	0	–	0,12	28,74
	29*	0	–	0,1	29,2
	29,4*	0	–	0	–

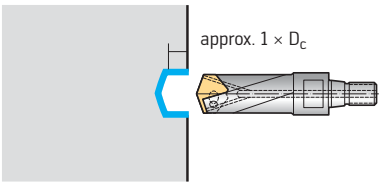
Indexable insert size	D_c	$(L_c \div D_c) \geq 4$		$(L_c \div D_c) < 4$	
		ΔX	D_{max}	ΔX_{max}	D_{max}
	mm	mm	mm	mm	mm
5	29,5	0,7	30,9	1,1	31,7
	30	0,6	31,2	1	32
	31	0,45	31,9	0,8	32,6
	32	0,3	32,6	0,7	33,4
	33	0,15	33,3	0,5	34
	34	0	–	0,4	34,8
	35*	0	–	0,3	35,6
	35,4*	0	–	0,2	35,8
6	35,5	0,8	37,1	1,4	38,3
	36	0,7	37,4	1,25	38,5
	37	0,55	38,1	1,1	39,2
	38	0,4	38,8	0,95	39,9
	39	0,25	39,5	0,8	40,6
	40	0,1	40,2	0,65	41,3
	41	0	–	0,55	42,1
	42	0	–	0,4	42,8
	42,4	0	–	0,3	43
7	42,5	0,95	44,4	1,65	45,8
	43	0,85	44,7	1,5	46
	44	0,7	45,4	1,35	46,7
	45	0,55	46,1	1,2	47,4
	46	0,4	46,8	1,1	48,2
	47	0,25	47,5	0,95	48,9
	48	0,15	48,3	0,8	49,6
	49	0	–	0,65	50,3
	50	0	–	0,55	51,1
	50,4	0	–	0,45	51,3
8	50,5	1,05	52,6	1,85	54,2
	51	0,95	52,9	1,75	54,5
	52	0,8	53,6	1,6	55,2
	53	0,65	54,3	1,45	55,9
	54	0,55	55,1	1,35	56,7
	55	0,4	55,8	1,2	57,4
	56	0,3	56,6	1,1	58,2
	57	0,15	57,3	0,95	58,9
	58	0	–	0,8	59,6
	59	0	–	0,7	60,4
	59,4	0	–	0,6	60,6

* Outer insert with wiper edge (P4840P.) can only be used 2x.

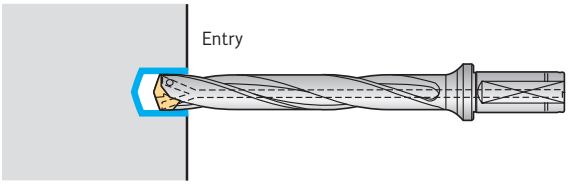
Xtra·tec® B401 Point Drill drilling strategy

Drilling depth > 5 × D_c - 10 × D_c

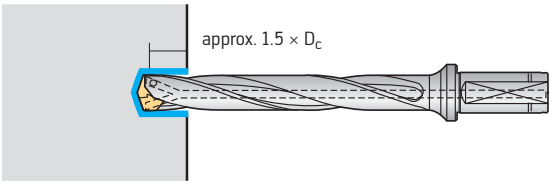
Pilot hole
B4011 . / B4013 .



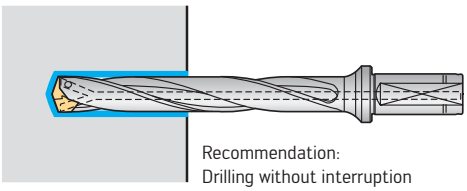
max. approx. 500 rpm



n = – 20%
f = – 50 %

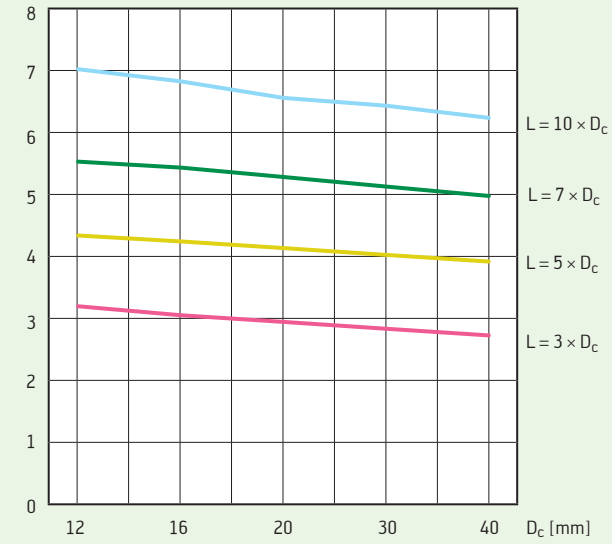


n = 100%
f = 100%

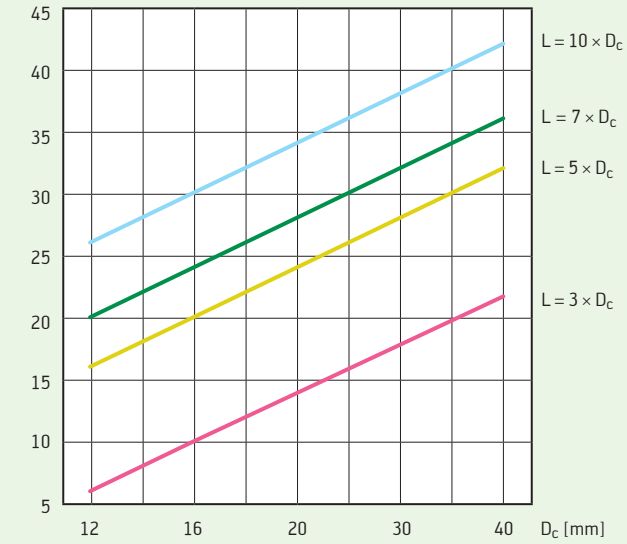


Standard values for Xtra·tec® B401 Point Drill

Coolant pressure
for horizontal machining direction

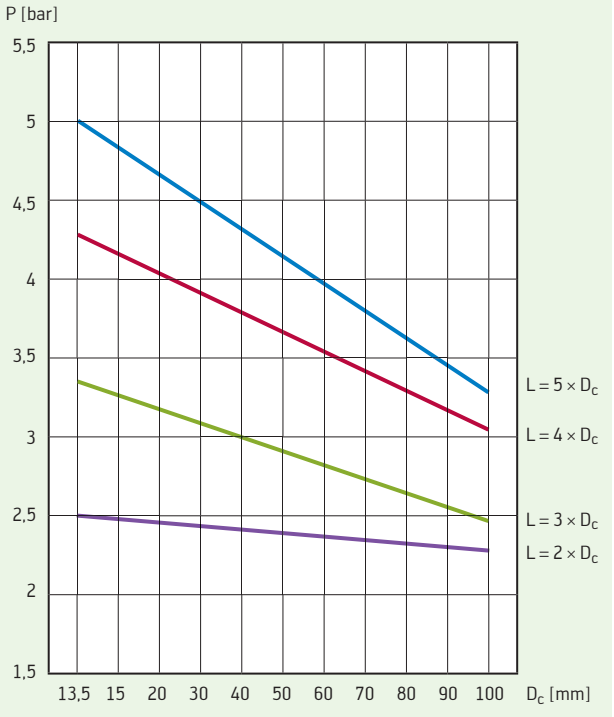


Coolant quantity
for horizontal machining direction

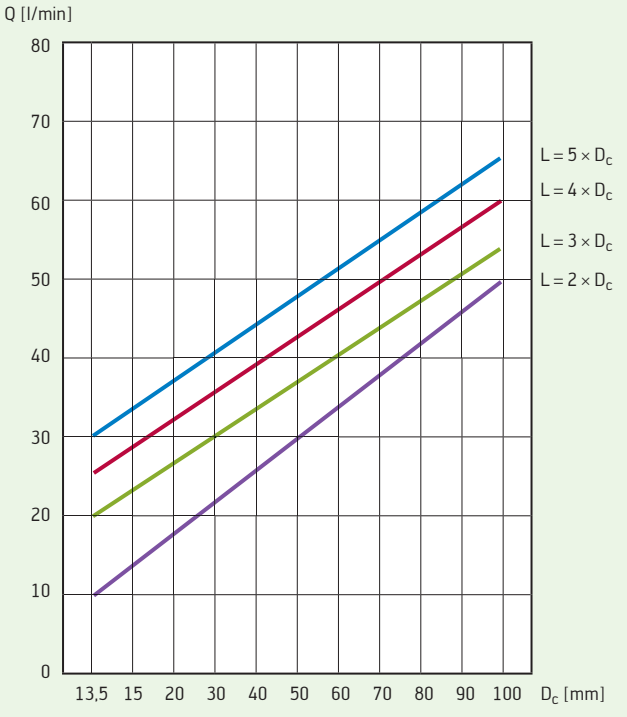


Standard values for Xtra·tec® B421 Insert Drill

Coolant pressure
for horizontal machining direction



Coolant quantity
for horizontal machining direction



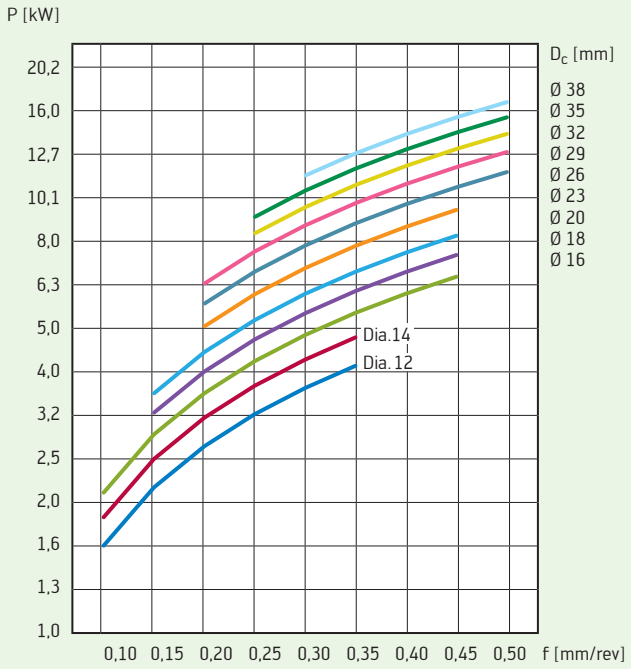
Increase or reduction of coolant quantity Q and coolant pressure P compared with minimum values:

Poor chip breaking characteristics:	Increase by up to +50%
Vertical machining direction:	Increase by 30–40%

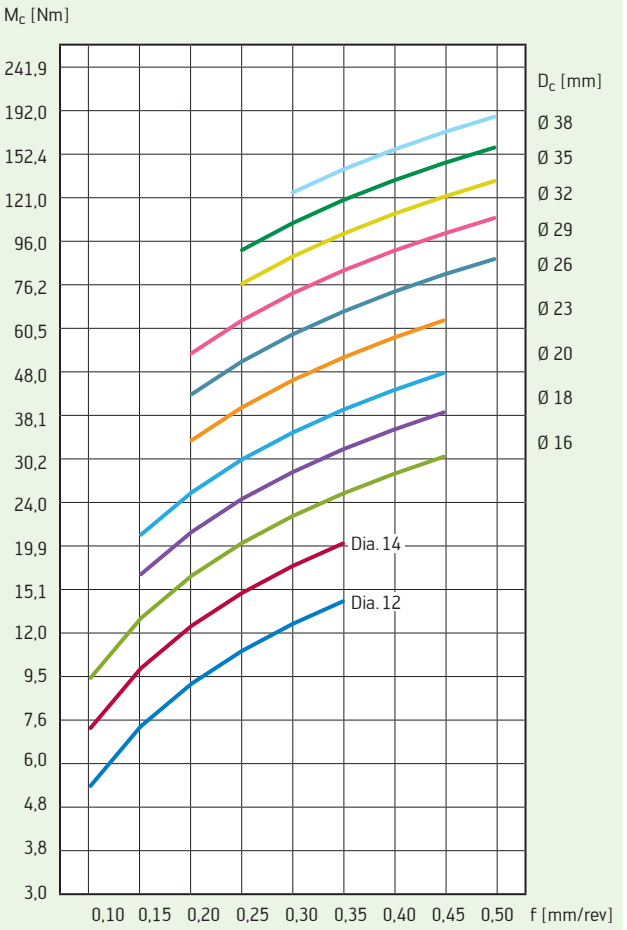
Standard values for solid drilling
Xtra·tec® B401 Point Drill

Material: C45 – (1.0503) steel, steel casting [Rm = 650 N/mm²]

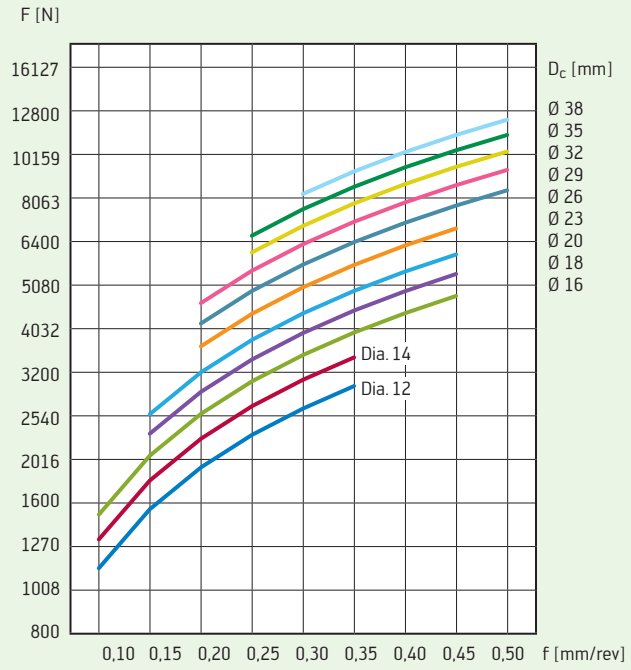
Power requirement [1]



Torque



Feed force



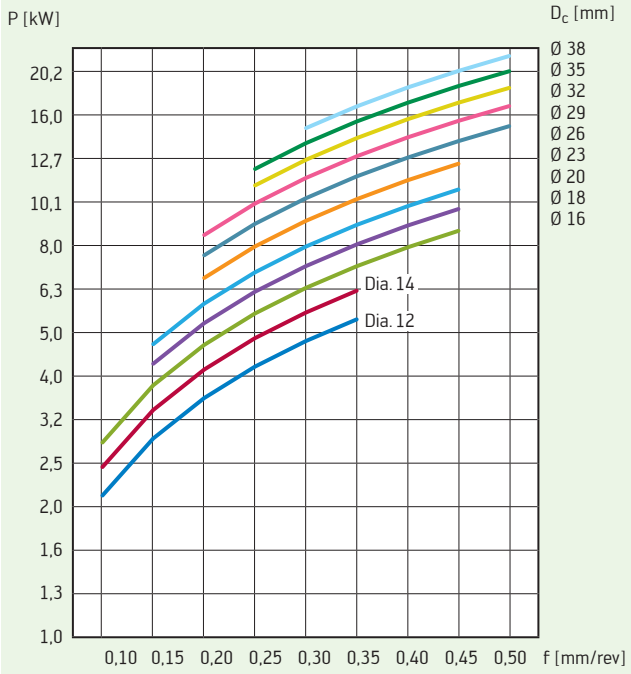
The power requirement [1] data is based on a cutting speed of 100 m/min.

If the cutting speed is doubled, the power requirement also doubles, i.e. the power requirement is directly proportional to the cutting speed.

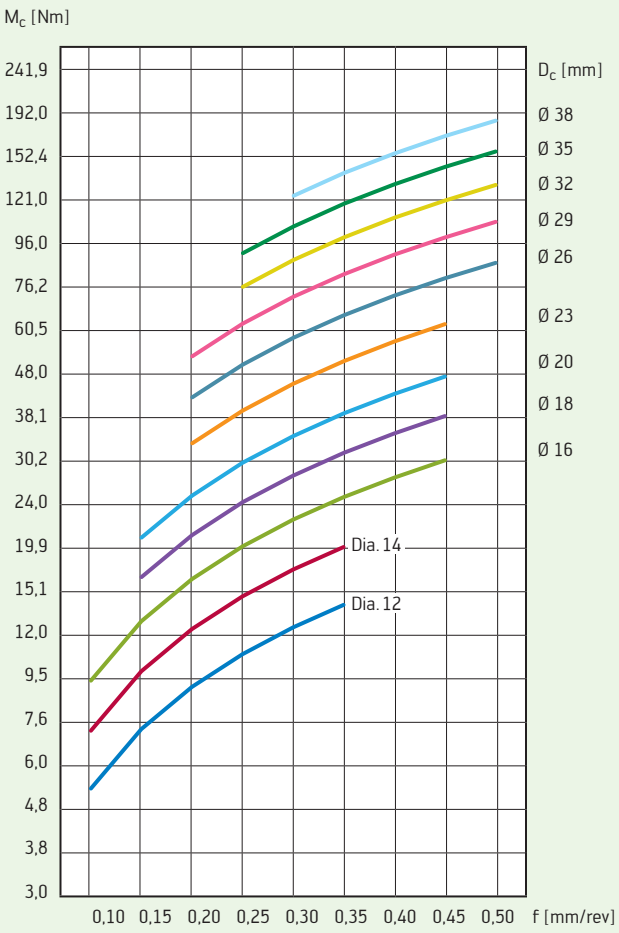
For steels with a higher tensile strength, the power and torque required are correspondingly higher.

Material: 42CrMo4 – Cr-Mo alloyed heat treatable steel [Rm = 750–900 N/mm²]

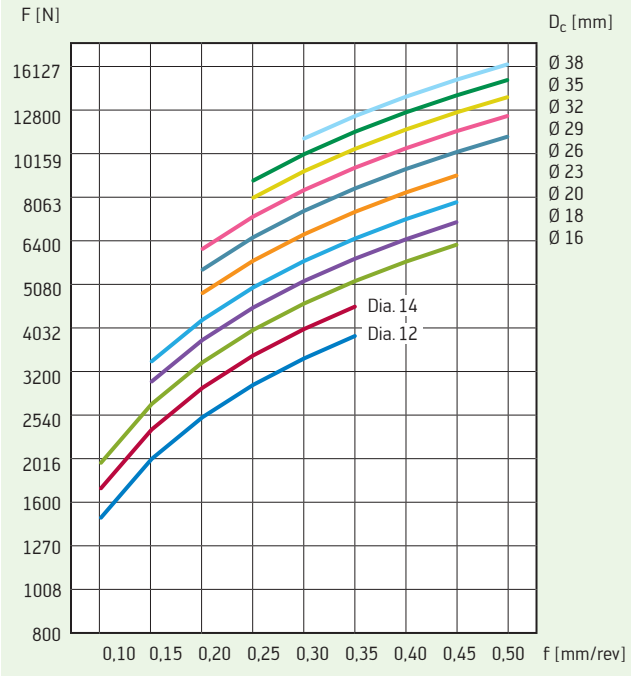
Power requirement [1]



Torque



Feed force



The power requirement [1] data is based on a cutting speed of 100 m/min.

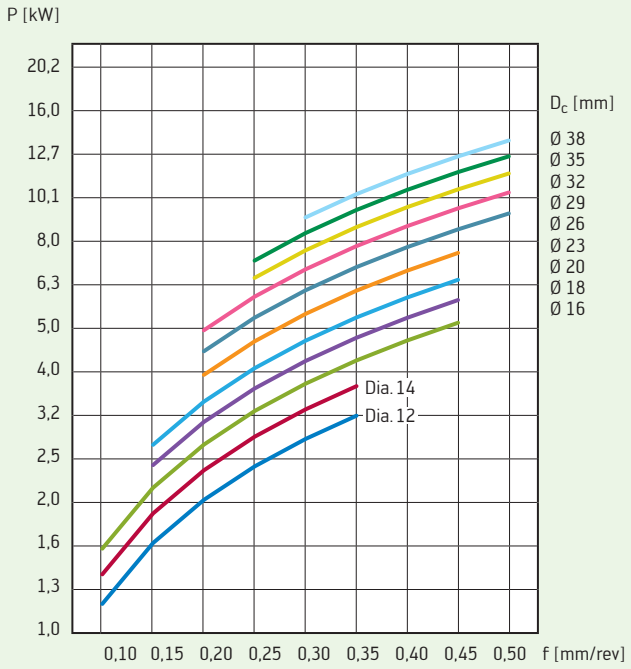
If the cutting speed is doubled, the power requirement also doubles, i.e. the power requirement is directly proportional to the cutting speed.

For steels with a higher tensile strength, the power and torque required are correspondingly higher.

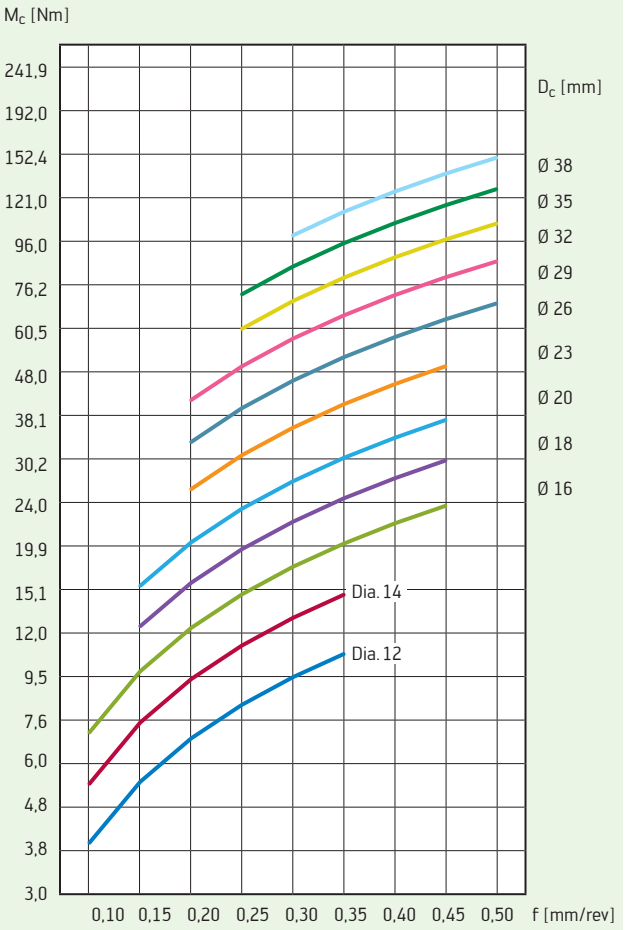
Standard values for solid drilling
Xtra·tec® B401 Point Drill

Material: GG25 – (0.6025) cast iron, ferritic [180-200 HB]

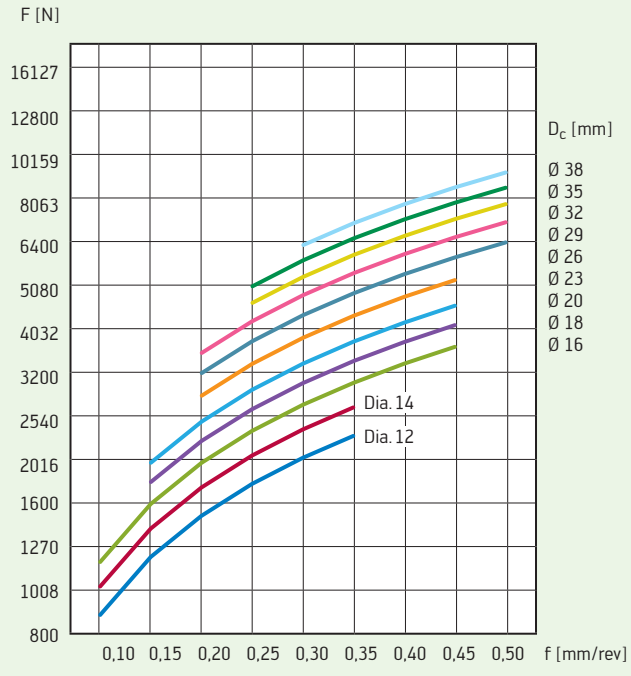
Power requirement[1]



Torque



Feed force



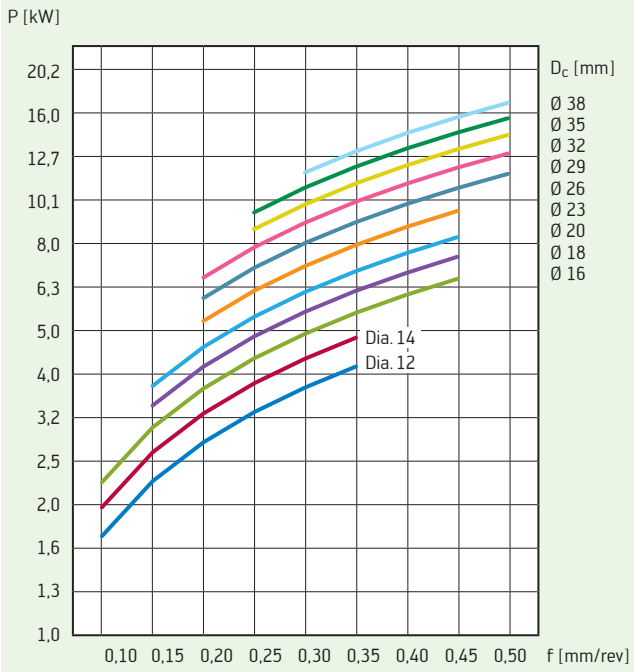
The power requirement[1] data is based on a cutting speed of 100 m/min.

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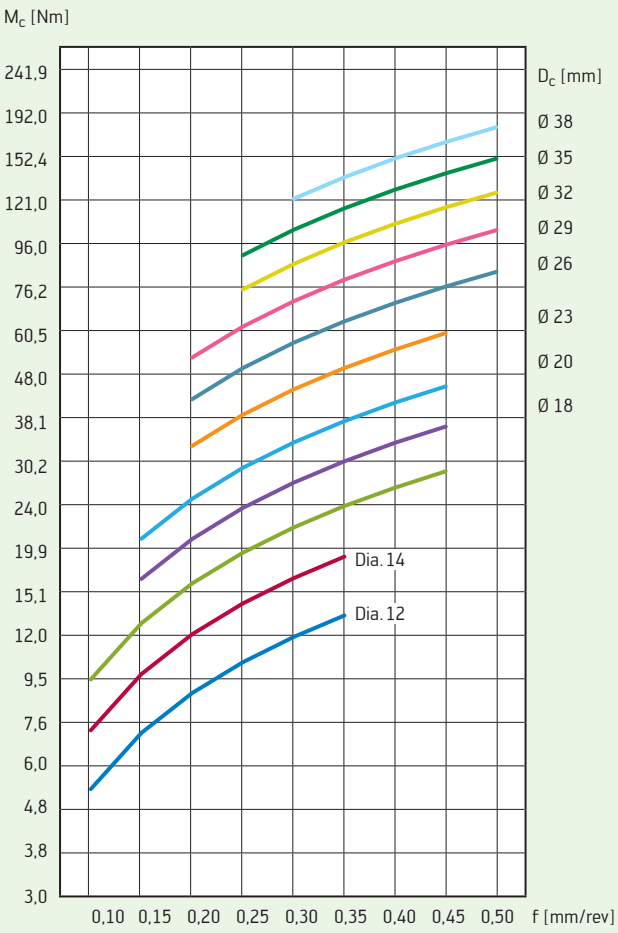
For cast iron with greater hardness, the power and torque required are correspondingly higher.

Material: GGG70 – (0.7070) cast iron with spheroidal graphite [Rm = 690 N/mm²]

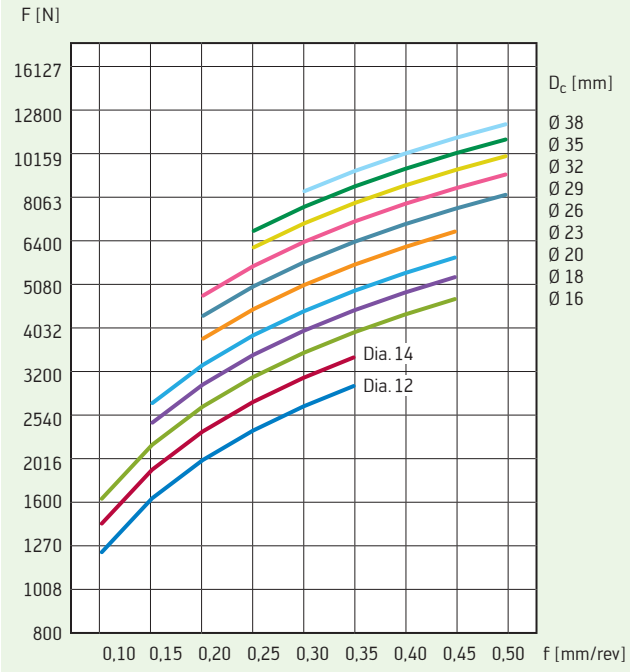
Power requirement [1]



Torque



Feed force



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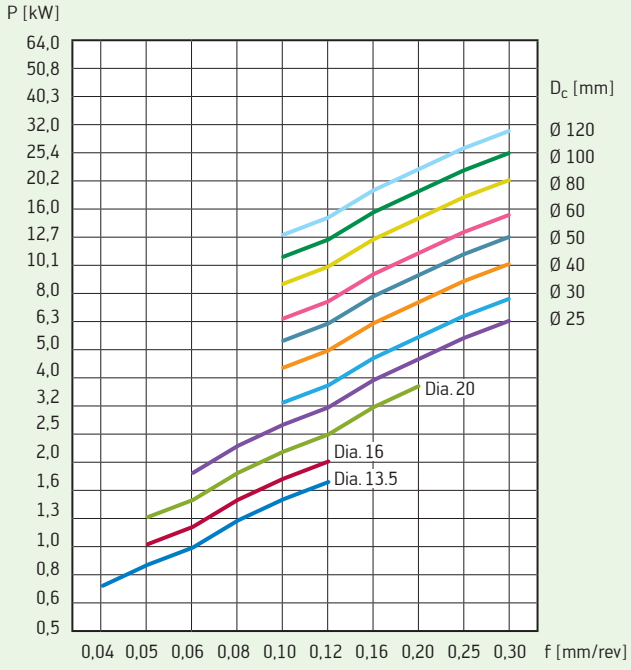
If the cutting speed is doubled, the power requirement also doubles, i.e. the power requirement is directly proportional to the cutting speed.

For cast iron with greater hardness, the power and torque required are correspondingly higher.

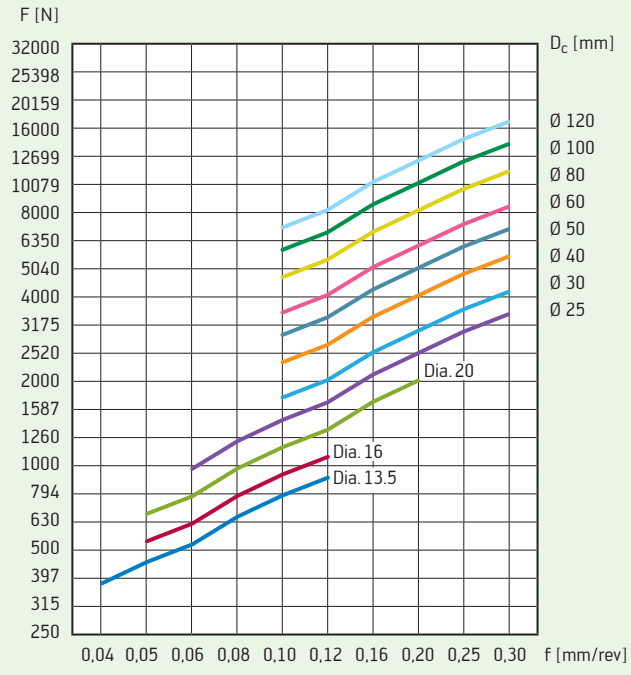
Standard values for solid drilling
Xtra·tec® B421 Insert Drill

Material: C45 – (1.0503) steel, steel casting [Rm = 650 N/mm²]

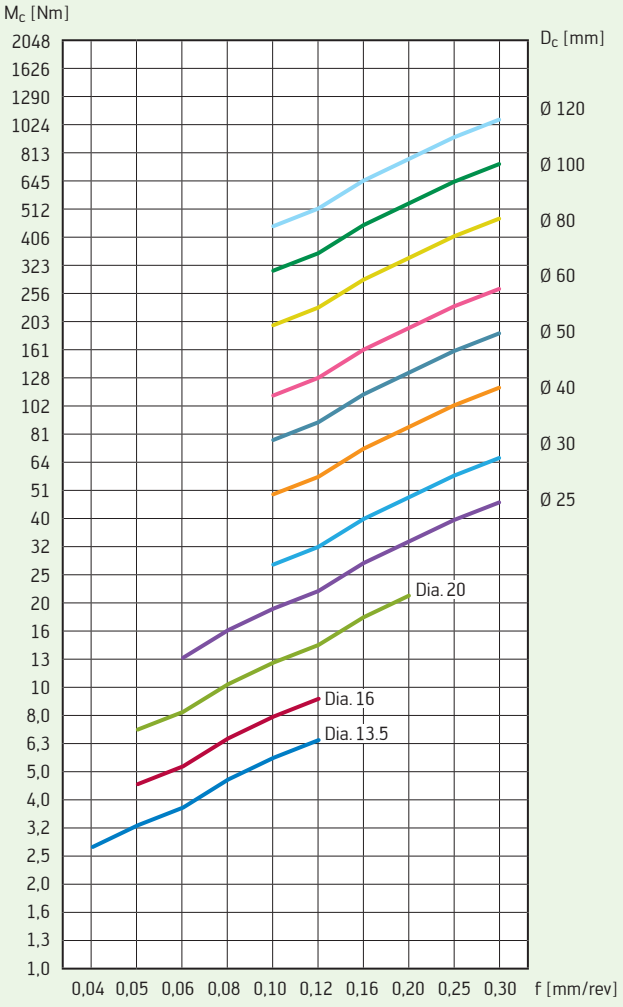
Power requirement [1]



Feed force



Torque



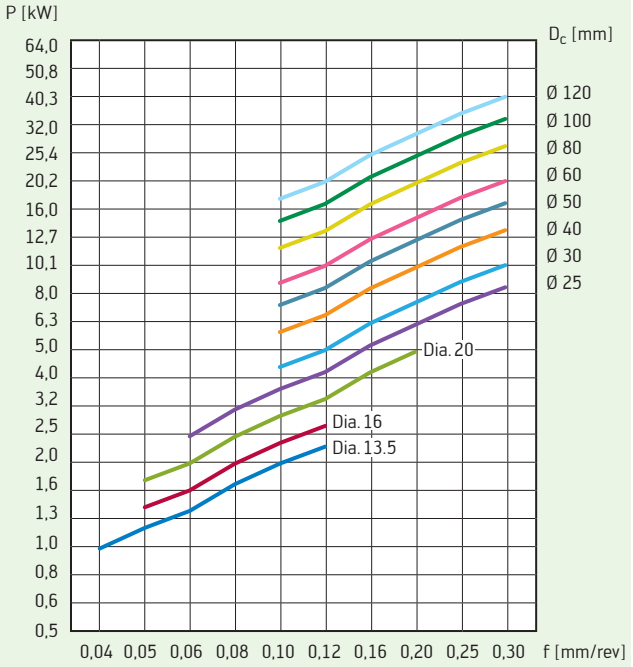
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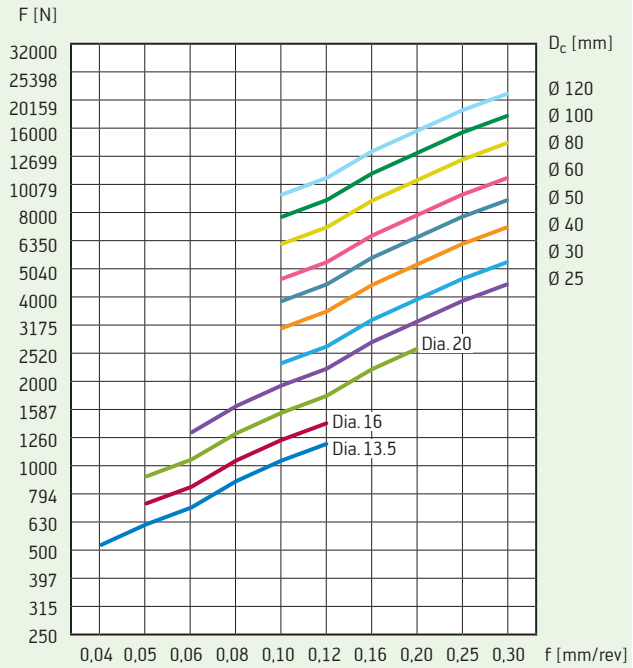
For steels with a higher tensile strength, the power and torque required are correspondingly higher.

Material: 42CrMo4 – Cr-Mo alloyed heat treatable steel [Rm = 750–900 N/mm²]

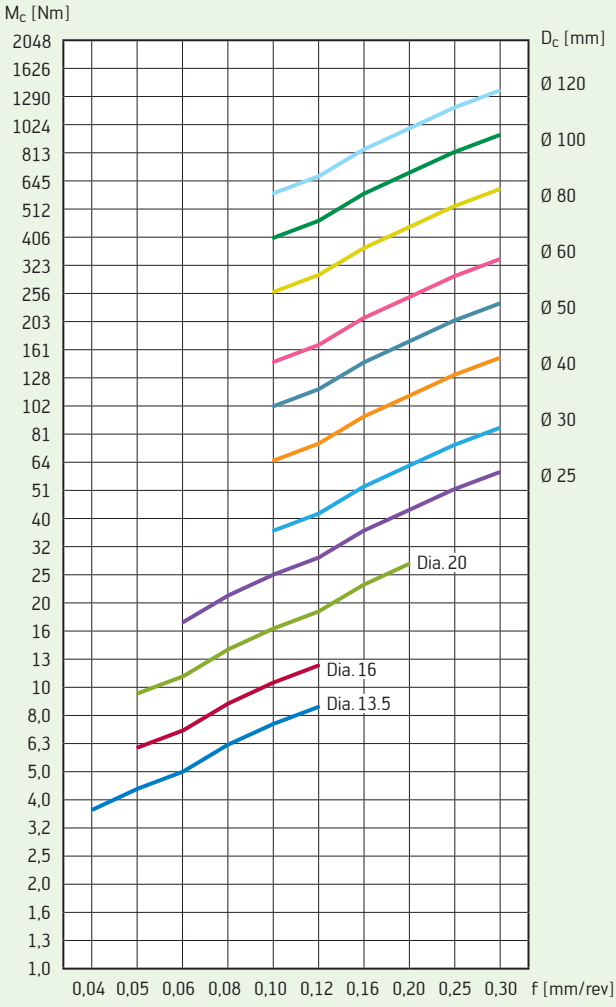
Power requirement[1]



Feed force



Torque



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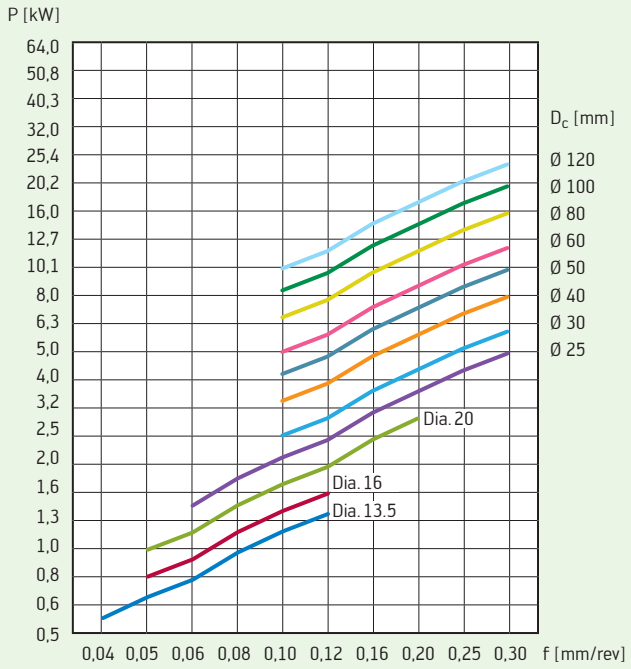
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For steels with a higher tensile strength, the required power and the torque are correspondingly higher.

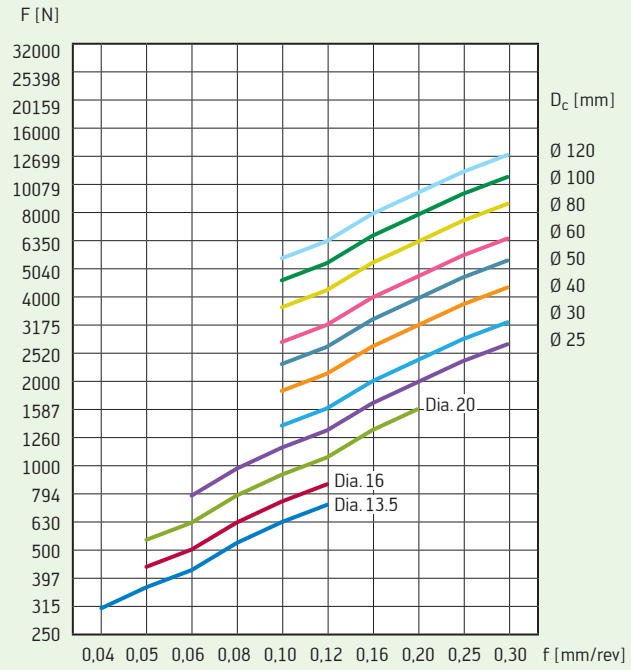
Standard values for solid drilling
Xtra·tec® B421 Insert Drill

Material: GG25 – (0.6025) cast iron, ferritic [180–200 HB]

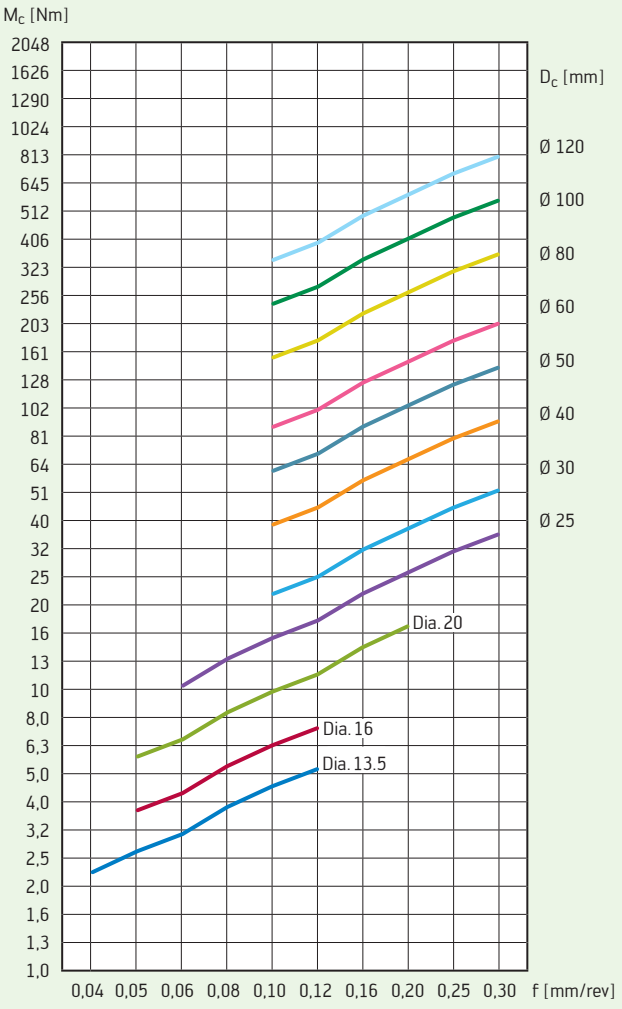
Power requirement [1]



Feed force



Torque



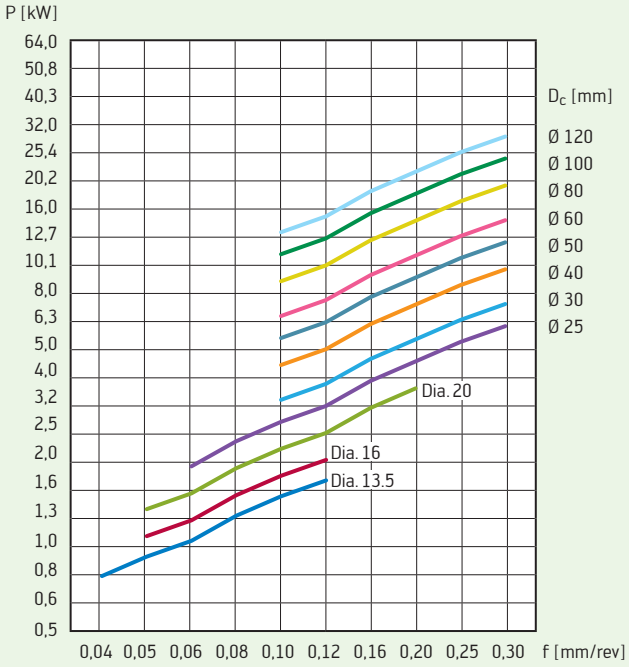
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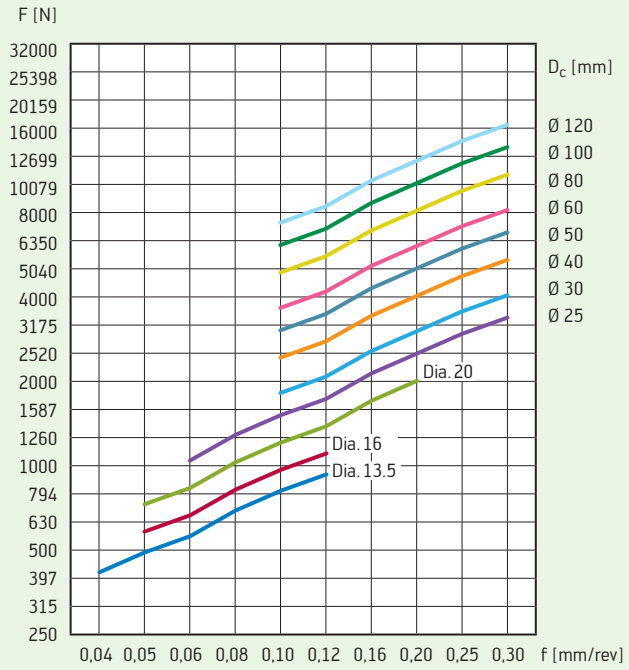
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Material: GGG70 – (0.7070) cast iron with spheroidal graphite [Rm = 690 N/mm²]

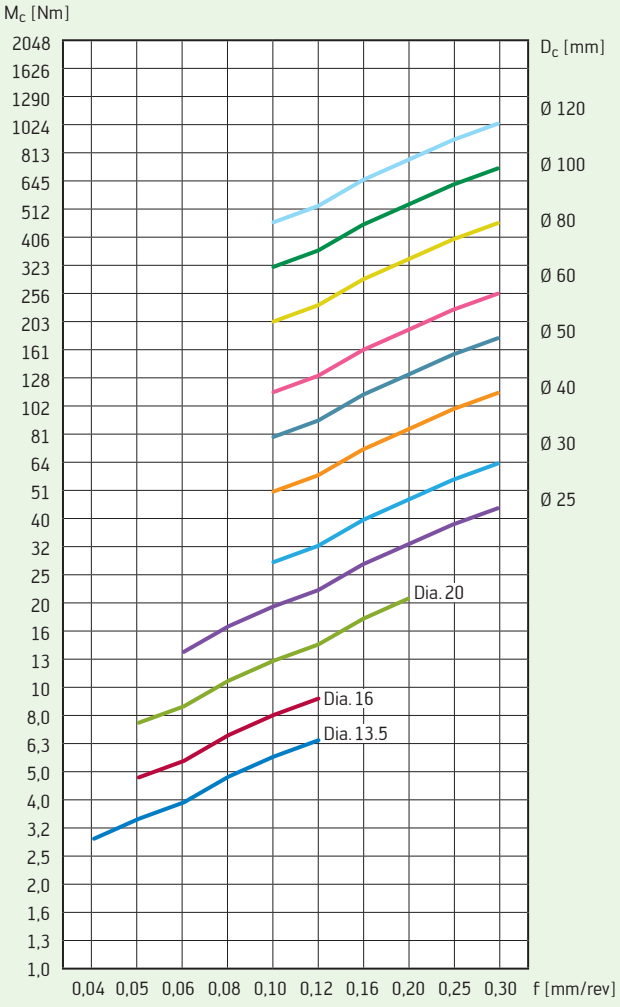
Power requirement [1]



Feed force



Torque

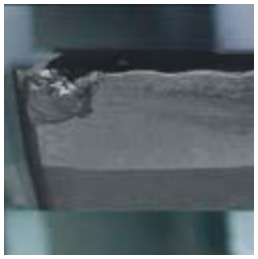


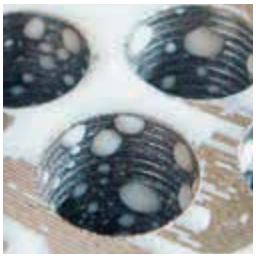
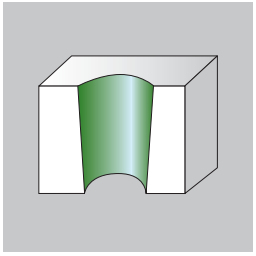
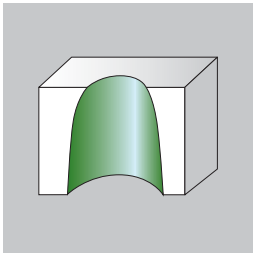
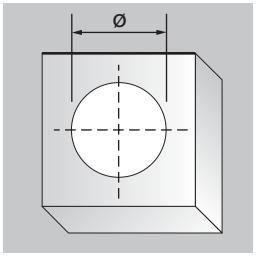
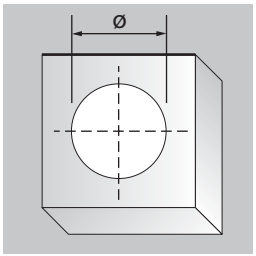
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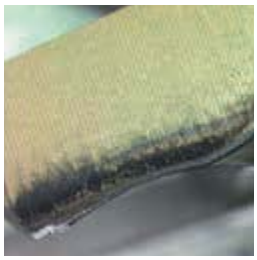
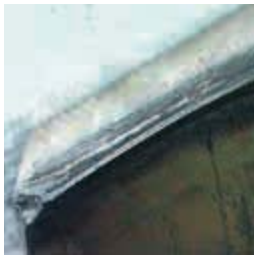
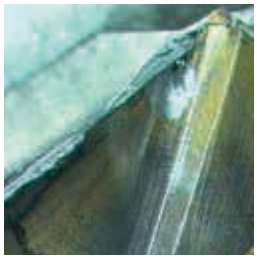
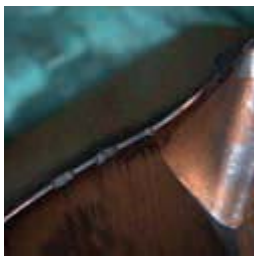
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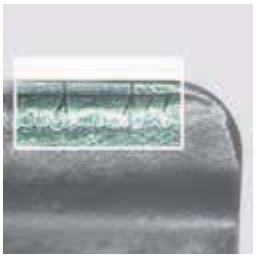
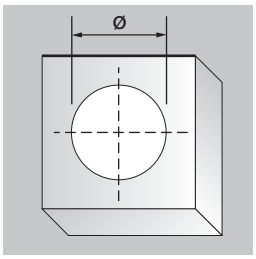
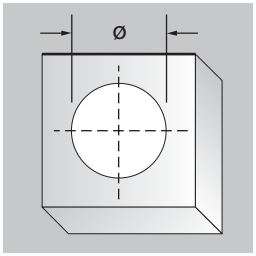
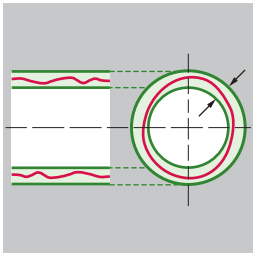
Problem solving expertise for Insert Drills

Types of wear		Characteristics	Measures
Low tool edge life, high wear on indexable inserts		1. Incorrect cutting parameters 2. The cutting tool material has insufficient wear resistance 3. Insufficient coolant 4. Damaged insert seat 5. The drill body is longer than necessary 6. Unstable clamping 7. Setting error (on lathes)	1. Correct the cutting parameters 2. Select a more wear-resistant grade 3. Check the coolant pressure. If it is too low, increase the volume flow rate 4. Check the drill body and replace it if necessary 5. If possible, use a shorter tool 6. Increase the stability of the clamping fixture 7. Check the machine alignment
Chipping on the inner indexable insert		1. The centre height of the tool is too high/too low (on lathes) 2. The feed rate is too high 3. The cutting edge grade is too hard 4. The indexable insert geometry encourages high forces 5. Unstable clamping	1. Check and adjust the centre height 2. Reduce the feed rate 3. Use a harder cutting tool material 4. Use a geometry with a sharper cutting edge 5. Check the accuracy. If it is not possible to improve the drill clamping and/or it is not possible to ensure optimum stability: Reduce the feed rate
Chipping on the outer indexable inserts		1. The feed rate is too high 2. Interrupted cuts 3. The indexable insert geometry encourages high forces	1. Reduce the feed rate 2. Use a harder cutting edge grade and a stronger geometry 3. Use an indexable insert with sharper geometry
Build-up on the cutting edge		1. Insufficient coolant 2. Incorrect cutting parameters	1. Check the coolant pressure. If it is too low, increase the volume flow rate 2. Increase the cutting speed and reduce the feed rate
Chip removal and/or chip breaking is not ideal		1. Insufficient coolant 2. Incorrect cutting parameters	1. Increase the coolant pressure and volume (for better chip removal and cooling of the cutting edges) 2. Improve the cutting parameters and chip control to suit the specified application. Increase the cutting speed and reduce the feed rate
Friction marks on the drill body		1. The drilling diameter is too small 2. Poor chip removal 3. High bending forces due to rounded cutting edge	1. Check the setting 2. Improve the cutting parameters and check the indexable insert geometry 3. Select a sharper geometry

Types of wear		Characteristics	Measures
Poor drilled hole quality		1. Insufficient coolant 2. Incorrect cutting parameters 3. Unstable clamping 4. Setting error (on lathes)	1. Increase the coolant pressure and volume 2. Increase the cutting speed and reduce the feed rate 2b. Check the clamping accuracy (for the tool and the workpiece) and improve it if necessary 3. Improve the clamping stability 4. Check the machine alignment
The drilled hole tapers off		1. Chips accumulating in the external indexable insert groove 2. The material is very soft	1. Select an alternative chip breaking geometry and increase the feed rate if necessary 2a. Increase the cutting speed and reduce the feed rate 2b. Use a different cutting geometry
The drilled hole is bell-shaped		1. Chips accumulating in the central indexable insert groove	1. Select a different geometry and increase the feed rate if necessary
The drilled hole is too small/too large		1. The machine is not running at the zero position (on lathes) 2. The machine axis has shifted (on lathes) 3. Incorrect setting on the eccentric sleeve	1. Check and correct the setting 2. Check and correct the setting 3. Check and correct the setting
The drilled hole is too small/too large – for cartridge type drills		1. Setting error (on the outer cartridge)	1. Check and correct the setting

Problem-solving expertise for Point Drills

Types of wear		Characteristics	Measures
Wear on the corners		1. Incorrect drill 2. Poor cutting conditions 3. Insufficient coolant 4. Workpiece moving	1. Check the drill type, drilling depth, cooling system and workpiece material 2a. Reduce the cutting speed and increase the feed rate 2b. Check the cutting parameters at entry and exit and reduce the feed rate by 15–20% before finishing 3. Check the cooling lubricant. For an internal coolant supply, increase the coolant pressure. For an external coolant supply, adjust the position of the coolant jet. Ensure cooling from both sides 4. Stabilise the workpiece clamping and check the stability of the machine tool
Breakage at the corners		1. Fault in the chuck 2. Workpiece moving 3. Incorrect drill 4. Insufficient coolant 5. Poor cutting conditions	1. Check the torque transmission. Use a hydraulic chuck or a high-precision clamping system 2. Stabilise the workpiece clamping and check the stability of the machine tool 3. Check the drill type, drilling depth, cooling system and workpiece material; if necessary, use a longer drill 4. Check the cooling lubricant. For an internal coolant supply, increase the coolant pressure. For an external coolant supply, adjust the position of the coolant jet. Ensure cooling from both sides 5. Check the cutting parameters and reduce the feed rate if necessary
Breakage on the chisel edge		1. Fault in the chuck 2. Cutting conditions	1. Check the accuracy of the clamping. Use a hydraulic chuck or a high-precision clamping system 2 Increase the feed rate
Breakage on the cutting edges		1. Fault in the chuck 2. Poor cutting conditions due to a built-up edge	1. Check the accuracy of the clamping and the transmission torque. Use a hydraulic chuck or a high-precision clamping system 2a. Check the cutting parameters and increase the cutting speed if required 2b. Regularly check for built-up edges
Build-up on the cutting edge		1. Insufficient coolant 2. Poor cutting conditions	1. Check the cooling lubricant. For an internal coolant supply, increase the coolant pressure. For an external coolant supply, adjust the position of the coolant jet. Ensure cooling from both sides 2. Increase the cutting speed by 20–30%

Types of wear	Characteristics	Measures
Formation of hairline cracks 	1. Poor cutting conditions	1. Inconsistent/insufficient coolant supply
Drilled hole too large 	1. Poor cutting conditions 2. Fault in the chuck 3. Incorrect drill	1. Check the cutting data, increase the cutting speed or reduce the feed rate 2. Check the accuracy of the clamping and the torque transmission. Use a hydraulic chuck or a high-precision clamping system 3a. Check the drill diameter 3b. Check the drill tolerance 3c. Check whether the drill is running concentrically
Drilled hole too small 	1. Insufficient coolant 2. Poor cutting conditions 3. Incorrect drill	1. Check the cooling lubricant. For an internal coolant supply, increase the coolant pressure. For an external coolant supply, adjust the position of the coolant jet. Ensure cooling from both sides 2. Reduce the cutting speed and increase the feed rate 3. Check the drill diameter
Drilled hole is not cylindrical 	1. Fault in the chuck 2. Workpiece moving 3. Incorrect drill 4. Poor cutting conditions	1. Check the accuracy of the clamping and the torque transmission. Use a hydraulic chuck or a high-precision clamping system 2. Stabilise the workpiece clamping and check the stability of the machine tool 3. Check the drill type and drilling depth and use a longer drill 4. Reduce the feed rate at entry

Cutting data
HSS drills

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 481 onwards

VCRR = v_c rating chart from page B 480 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth ~3 × D_c							
							Designation				A1149XPL UFL®			
							Standard				DIN 1897			
							Coating				XPL			
							Dia. range [mm]				1–20			
							Page				B 262			
														
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	56	12	**E** O		56	12	**E** O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	63	12	**E** O		56	12	**E** O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	63	12	**E** O					
		C > 0.55%	Annealed	190	640	P4	63	10	**E** O					
		C > 0.55%	Heat-treated	300	1010	P5	50	10	**E** O					
		Free cutting steel (short-chipping)	Annealed	220	750	P6	56	12	**E** O		56	12	**E** O	
	Low-alloyed steel	Annealed		175	590	P7	56	12	**E** O		56	12	**E** O	
		Heat-treated		285	960	P8	45	10	**E** O					
		Heat-treated		380	1280	P9	28	7	**E** O					
		Heat-treated		430	1480	P10	18	5	**E** O					
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	32	5	**E** O					
		Hardened and tempered		300	1010	P12	50	10	**E** O					
		Hardened and tempered		380	1280	P13	25	7	**E** O					
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	50	12	**E** O					
		Martensitic, heat-treated		330	1110	P15	50	10	**E** O					
M	Stainless steel	Austenitic, quench hardened		200	680	M1	14	5	**O** E		16	9	**O** E	
		Austenitic, precipitation hardened (PH)		300	1010	M2	22	6	**E** O					
		Austenitic/ferritic, duplex		230	780	M3	18	4	**O** E		14	7	**O** E	
K	Malleable cast iron	Ferritic		200	400	K1	45	16	**E** O					
		Pearlitic		260	700	K2	40	12	**E** O					
	Grey cast iron	Low tensile strength		180	200	K3	56	16	**E** O					
		High tensile strength/austenitic		245	350	K4	45	16	**E** O					
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	50	16	**E** O					
		Pearlitic		265	700	K6	40	12	**E** O					
	GGV (CGI)			230	400	K7	40	12	**E** O					
N	Wrought aluminium alloys	Not hardenable		30	-	N1					110	12	**E** O	M
		Hardenable, hardened		100	340	N2					110	12	**E** O	M
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	71	12	**E** O	M	63	12	**E** O	M
		≤ 12% Si, hardenable, hardened		90	310	N4	71	12	**E** O	M				
		> 12% Si, not hardenable		130	450	N5								
	Magnesium-based alloys			70	250	N6								
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	80	5	**E** O		71	5	**E** O	
		Brass, bronze, red brass		90	310	N8	80	12	**E** O		71	12	**E** O	
		Cu-alloys, short-chipping		110	380	N9	120	12	**E** O					
		High-tensile, Ampco		300	1010	N10								
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	11	4	**O** E		14	7	**O** E	
			Hardened	280	940	S2	6,3	3	**E** O					
		Ni or Co base	Annealed	250	840	S3	16	4	**E** O					
			Hardened	350	1180	S4								
			Cast	320	1080	S5								
	Titanium alloys	Pure titanium		200	680	S6					16	4	**O** E	
		α and β alloys, hardened		375	1260	S7								
		β alloys		410	1400	S8								
	Tungsten alloys			300	1010	S9								
	Molybdenum alloys			300	1010	S10								
H	Hardened steel	Hardened and tempered		50 HRC	-	H1								
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1	45	12	**E** O		40	12	**E** O	
	Thermosetting plastics	Without abrasive fillers				O2	45	8		**L**	40	8		**L**
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	~3 × D_c								~5 × D_c								~8 × D_c											
	A1148 A2258 UFL®				**A1111**				**A3143 A3153**				**A6292TIN MegaJet**				**A1249XPL UFL®**				**A1254TFT VA Inox**				**A1247 A4247 Alpha® XE**			
	DIN 1897 / Walter				DIN 1897				DIN 1899				Walter				DIN 338				DIN 338				DIN 338 / DIN 345			
	Uncoated				Uncoated				Uncoated				TIN				XPL				TFT				Uncoated			
	1–20				0,5–32				0,05–1,45				5–24				1–20				3–16				1–40			
	B 270; B 279				B 275				B 282; B 284				B 286				B 288				B 292				B 294; B 355			
																												
	v_c	VRR			v_c	VRR			VCRR	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	36	9	**E** O		32	8	**E** O		H22	8	**E** O		50	9	**E** O		45	12	**E** O		40	12	**E** O		28	9	**E** O	
	36	10	**E** O		32	9	**E** O		H22	9	**E** O		50	9	**E** O		45	12	**E** O		40	12	**E** O		28	10	**E** O	
	36	10	**E** O		32	9	**E** O		H22	9	**E** O		50	10	**E** O		40	12	**E** O						25	10	**E** O	
	36	9	**E** O		28	7	**E** O		H18	6	**E** O		50	10	**E** O		40	10	**E** O						22	9	**E** O	
	28	8	**E** O		22	8	**E** O		H14	8	**E** O		36	10	**E** O		32	10	**E** O						14	8	**E** O	
	36	10	**E** O		32	9	**E** O		H22	9	**E** O		50	12	**E** O		45	12	**E** O		40	12	**E** O		28	10	**E** O	
	36	10	**E** O		32	9	**E** O		H22	9	**E** O		50	9	**E** O		45	12	**E** O		40	12	**E** O		28	10	**E** O	
	25	8	**E** O		20	8	**E** O		H14	8	**E** O		32	10	**E** O		28	10	**E** O						12	8	**E** O	
	16	6	**O** E		11	6	**O** E										12	7	**E** O						7,1	6	**O** E	
	12	5	**O** E		8	5	**O** E										7,1	5	**E** O						5	5	**O** E	
	16	5	**E** O		11	4	**E** O		H12	4	**E** O		32	5	**E** O		20	5	**E** O						12	5	**E** O	
	28	8	**E** O		22	8	**E** O		H14	8	**E** O		36	10	**E** O		32	10	**E** O						14	8	**E** O	
	14	6	**O** E		10	6	**O** E		H8	6	**O** E		18	7	**E** O		16	7	**E** O						9	6	**E** O	
	32	10	**E** O		28	9	**E** O		H20	9	**E** O		45	9	**E** O		40	12	**E** O						25	10	**E** O	
	25	8	**E** O		22	8	**E** O		H14	8	**E** O		36	10	**E** O		28	10	**E** O						14	8	**E** O	
	11	4	**O** E		6,3	3	**O** E		H6	4	**O** E		20	5	**E** O		9	5	**O** E		10	9	**O** E		6,3	4	**O** E	
	11	5	**E** O		8	5	**E** O		H8	5	**E** O		22	5	**E** O		14	6	**E** O						7,1	5	**E** O	
	11	4	**O** E		7,1	3	**O** E						14	4	**E** O		10	4	**O** E		8	7	**O** E		5,6	4	**O** E	
	25	16	**E** O		25	12	**E** O		H16	12	**E** O		40	16	**E** O		32	16	**E** O						18	16	**E** O	
	18	12	**E** O		18	10	**E** O		H12	10	**E** O		28	12	**E** O		28	12	**E** O						14	12	**E** O	
	32	16	**E** O		28	12	**E** O		H20	12	**E** O		50	16	**E** O		40	16	**E** O						22	16	**E** O	
	25	16	**E** O		25	12	**E** O		H16	12	**E** O		40	16	**E** O		32	16	**E** O						18	16	**E** O	
	28	16	**E** O		25	12	**E** O		H18	12	**E** O		45	16	**E** O		36	16	**E** O						20	16	**E** O	
	18	12	**E** O		18	10	**E** O		H12	10	**E** O		28	12	**E** O		28	12	**E** O						14	12	**E** O	
	22	12	**E** O		20	10	**E** O		H14	10	**E** O		32	12	**E** O		28	12	**E** O						16	12	**E** O	
	71	12	**E** O	M	63	12	**E** O	M	H50	12	**E** O	M	110	12	**E** O	M					80	12	**E** O	M				
	71	12	**E** O	M	63	12	**E** O	M	H50	12	**E** O	M	110	12	**E** O	M					80	12	**E** O	M				
	50	12	**E** O	M	40	12	**E** O	M	H36	12	**E** O	M	80	12	**E** O	M	50	12	**E** O	M	50	12	**E** O	M	40	12	**E** O	M
	36	10	**E** O	M	28	10	**E** O	M	H25	10	**E** O	M	56	12	**E** O	M	50	12	**E** O	M					28	10	**E** O	M
	90	12		**M** L																					56	12		**M** L
	56	5	**E** O		45	5	**E** O		H36	5	**E** O		71	8	**E** O		56	5	**E** O		50	5	**E** O		40	5	**E** O	
	40	10	**E** O		36	10	**E** O		H28	10	**E** O		63	12	**E** O		56	12	**E** O		50	12	**E** O		32	10	**E** O	
	71	12	**E** O		63	12	**E** O		H45	12	**E** O		80	12	**E** O		80	12	**E** O						50	12	**E** O	
					16	5	**E** O																		11	5	**E** O	
	8	3	**O** E		5	2	**O** E		H6	3	**O** E		16	4	**E** O		7,1	4	**O** E		8	7	**O** E		5	3	**O** E	
	7,1	3	**O** E		5	2	**O** E		H4	2	**O** E						6,3	3	**E** O						5	2	**O** E	
	10	4	**E** O		6,3	3	**E** O						12	4	**E** O		9	4	**E** O						5,6	4	**E** O	
																									1,6	3	**E** O	
	5	3	**E** O						H4	3	**E** O														2	3	**E** O	
	12	4	**O** E		10	4	**E** O		H6	4	**E** O										8	4	**O** E		6,3	4	**O** E	
	8	3	**E** O		5	3	**E** O																		4,5	3	**E** O	
	7,1	3	**O** E		4,5	3	**O** E																		3,6	3	**O** E	
	5	3	**E** O						H4	3	**E** O														2	3	**E** O	
	5	3	**E** O						H4	3	**E** O														2	3	**E** O	
	40	12	**E** O		40	12	**E** O		H28	12	**E** O						28	12	**E** O		25	12	**E** O		25	10	**E** O	
	25	8		**L**	25	8		**L**	H18	8		**L**					36	8		**L**	32	8		**L**				

Cutting data
HSS drills

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 481 onwards

VCRR = v_c rating chart from page B 480 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth ~8 × D_c							
	Designation						A1244 A4244 VA				A1222 A1234 UFL®			
							Standard: DIN 338 / DIN 345				Standard: DIN 338			
							Coating: Uncoated				Coating: Uncoated			
							Dia. range [mm]: 0,3–32				Dia. range [mm]: 1–16			
							Page: B 298; B 353				Page: B 303; B 319			
														
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1					28	9	**E** O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	25	7	**E** O		28	10	**E** O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	25	7	**E** O		25	10	**E** O	
		C > 0.55%	Annealed	190	640	P4	22	7	**E** O		20	9	**E** O	
		C > 0.55%	Heat-treated	300	1010	P5	14	8	**E** O		14	8	**E** O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6					28	10	**E** O	
	Low-alloyed steel	Annealed		175	590	P7					28	10	**E** O	
		Heat-treated		285	960	P8	12	8	**E** O		12	8	**E** O	
		Heat-treated		380	1280	P9	6,3	5	**O** E		6,3	3	**O** E	
		Heat-treated		430	1480	P10	5	5	**O** E					
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	12	4	**E** O		10	5	**E** O	
		Hardened and tempered		300	1010	P12	14	8	**E** O		14	8	**E** O	
		Hardened and tempered		380	1280	P13	8	5	**O** E		4	3	**O** E	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14					22	10	**E** O	
		Martensitic, heat-treated		330	1110	P15	14	8	**E** O		14	8	**E** O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1	6,3	4	**O** E		5	4	**O** E	
		Austenitic, precipitation hardened (PH)		300	1010	M2	7,1	5	**E** O		5,6	5	**E** O	
		Austenitic/ferritic, duplex		230	780	M3	5,6	4	**O** E		3,6	3	**O** E	
K	Malleable cast iron	Ferritic		200	400	K1					16	16	**E** O	
		Pearlitic		260	700	K2					12	12	**E** O	
	Grey cast iron	Low tensile strength		180	200	K3					20	16	**E** O	
		High tensile strength/austenitic		245	350	K4					16	16	**E** O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5					18	16	**E** O	
		Pearlitic		265	700	K6					12	12	**E** O	
	GGV (CGI)			230	400	K7					14	12	**E** O	
N	Wrought aluminium alloys	Not hardenable		30	-	N1					56	12	**E** O	M
		Hardenable, hardened		100	340	N2					56	12	**E** O	M
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3					36	12	**E** O	M
		≤ 12% Si, hardenable, hardened		90	310	N4					25	10	**E** O	M
		> 12% Si, not hardenable		130	450	N5								
	Magnesium-based alloys			70	250	N6					50	12		**M** L
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7					36	5	**E** O	
		Brass, bronze, red brass		90	310	N8					28	10	**E** O	
		Cu-alloys, short-chipping		110	380	N9					45	12	**E** O	
		High-tensile, Ampco		300	1010	N10	11	5	**E** O					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	5	3	**O** E		4	3	**O** E	
			Hardened	280	940	S2	5	2	**O** E		4	2	**O** E	
		Ni or Co base	Annealed	250	840	S3	5,6	4	**E** O		3,2	3	**E** O	
			Hardened	350	1180	S4	1,6	3	**E** O					
			Cast	320	1080	S5	2	3	**E** O					
	Titanium alloys	Pure titanium		200	680	S6	6,3	4	**O** E					
		α and β alloys, hardened		375	1260	S7	4,5	3	**E** O					
		β alloys		410	1400	S8	3,6	3	**O** E					
	Tungsten alloys			300	1010	S9	2	3	**E** O					
	Molybdenum alloys			300	1010	S10	2	3	**E** O					
H	Hardened steel	Hardened and tempered		50 HRC	-	H1								
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1					25	12	**E** O	
	Thermosetting plastics	Without abrasive fillers				O2					18	8		**L**
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	~8 × D_c												~12 × D_c															
	A1211TIN A4211TIN				**A1211 A1231 A4211**				**A1212**				**A1549TFP UFL®**				**A1547 Alpha® XE**				**A1544 VA**				**A1522 A4422 UFL®**			
	DIN 338 / DIN 345				DIN 338 / DIN 345				DIN 338				DIN 340				DIN 340				DIN 340				DIN 340 / DIN 341			
	TIN				Uncoated				Uncoated				TFP				Uncoated				Uncoated				Uncoated			
	0,5–30				0,2–100				0,4–16				1–12				1–12,7				1–12				1–31			
	B 308; B 346				B 308; B 322; B 346				B 316				B 325				B 327				B 330				B 332; B 357			
																												
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	32	9	**E** O		25	8	**E** O						32	12	**E** O		25	9	**E** O						22	9	**E** O	
	32	10	**E** O		25	9	**E** O						32	12	**E** O		25	10	**E** O		18	7	**E** O		22	10	**E** O	
	25	10	**E** O		20	9	**E** O						25	12	**E** O		18	10	**E** O		18	7	**E** O		22	10	**E** O	
	25	8	**E** O		18	7	**E** O						25	9	**E** O		18	9	**E** O		16	7	**E** O		18	9	**E** O	
	18	8	**E** O		12	8	**E** O						20	10	**E** O		10	8	**E** O		10	8	**E** O		10	8	**E** O	
	32	10	**E** O		25	9	**E** O						32	12	**E** O		25	10	**E** O						22	10	**E** O	
	32	10	**E** O		25	9	**E** O						32	12	**E** O		25	10	**E** O						22	10	**E** O	
	16	8	**E** O		10	8	**E** O						18	10	**E** O		9	8	**E** O		9	8	**E** O		9	8	**E** O	
	12	3	**E** O		4,5	6	**O** E						6,3	7	**E** O		4,5	6	**O** E		4	5	**O** E		6,3	3	**O** E	
					3,2	5	**O** E						4	5	**E** O		3,2	5	**O** E		3,2	5	**O** E					
	9	4	**E** O		8	4	**E** O						12	5	**E** O		10	5	**E** O		10	4	**E** O		8	5	**E** O	
	18	8	**E** O		12	8	**E** O						20	10	**E** O		10	8	**E** O		10	8	**E** O		10	8	**E** O	
	7,1	3	**E** O		5,6	6	**O** E						9	7	**E** O		6,3	6	**E** O		5,6	5	**O** E		2,8	3	**O** E	
	25	10	**E** O		22	9	**E** O						32	12	**E** O		22	10	**E** O						20	10	**E** O	
	18	8	**E** O		11	8	**E** O						20	10	**E** O		10	8	**E** O		9	8	**E** O		10	8	**E** O	
	5,6	4	**O** E		4	3	**O** E						5,6	5	**O** E		4,5	4	**O** E		4,5	4	**O** E		3,6	4	**O** E	
	10	5	**E** O		5	5	**E** O						7,1	5	**E** O		5	5	**E** O		5	5	**E** O		4,5	5	**E** O	
					3,6	3	**O** E						6,3	4	**O** E		4	4	**O** E		4	4	**O** E		2,5	3	**O** E	
	28	12	**E** O		16	12	**E** O						25	16	**E** O		16	16	**E** O						14	16	**E** O	
	22	10	**E** O		12	10	**E** O						20	12	**E** O		11	12	**E** O						11	12	**E** O	
	36	12	**E** O		20	12	**E** O						32	16	**E** O		20	16	**E** O						18	16	**E** O	
	28	12	**E** O		16	12	**E** O						25	16	**E** O		16	16	**E** O						14	16	**E** O	
	32	12	**E** O		18	12	**E** O						28	16	**E** O		18	16	**E** O						16	16	**E** O	
	22	10	**E** O		12	10	**E** O						20	12	**E** O		11	12	**E** O						11	12	**E** O	
	25	10	**E** O		14	10	**E** O						22	12	**E** O		12	12	**E** O						12	12	**E** O	
					50	12	**E** O	M					63	12	**E** O	M									45	12	**E** O	M
					50	12	**E** O	M					63	12	**E** O	M									45	12	**E** O	M
					32	12	**E** O	M					36	12	**E** O	M	32	12	**E** O	M					32	12	**E** O	M
					22	10	**E** O	M					28	12	**E** O	M	25	10	**E** O	M					22	10	**E** O	M
									50	12		**M** L					45	12		**M** L					40	12		**M** L
	45	5	**E** O		36	5	**E** O						40	5	**E** O		36	5	**E** O						32	5	**E** O	
					28	10	**E** O						45	12	**E** O		28	10	**E** O						25	10	**E** O	
	56	12	**E** O		45	12	**E** O		50	12	**E** O		56	12	**E** O		45	12	**E** O						40	12	**E** O	
					9	5	**E** O										8	5	**E** O		8	5	**E** O					
	4,5	3	**O** E		3,2	2	**O** E						4,5	4	**O** E		3,6	3	**O** E		3,6	3	**O** E		3,2	3	**O** E	
					5	2	**O** E						4	2	**E** O		5	2	**O** E		5	2	**O** E		4	2	**O** E	
					3,2	3	**E** O						5,6	4	**E** O		3,6	4	**E** O		3,6	4	**E** O		2,5	3	**E** O	
																	1	3	**E** O		1	3	**E** O					
																	1,4	3	**E** O		1,4	3	**E** O					
					5,6	4	**E** O										4,5	4	**O** E		4,5	4	**O** E					
					2,8	3	**E** O										3,2	3	**E** O		3,2	3	**E** O					
					2,2	3	**O** E										2,5	3	**O** E		2,5	3	**O** E					
																	1,4	3	**E** O		1,4	3	**E** O					
																	1,4	3	**E** O		1,4	3	**E** O					
	25	12	**E** O		25	12	**E** O		25	10	**E** O		20	12	**E** O		20	10	**E** O						20	12	**E** O	
	28	8		**L**	18	8		**L**	18	8		**L**													16	8		**L**

Cutting data
HSS drills

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

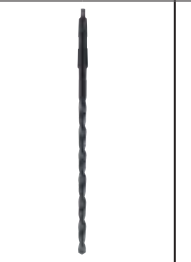
v_c = Cutting speed
VRR = Feed rating chart from page B 481 onwards

VCRR = v_c rating chart from page B 480 onwards

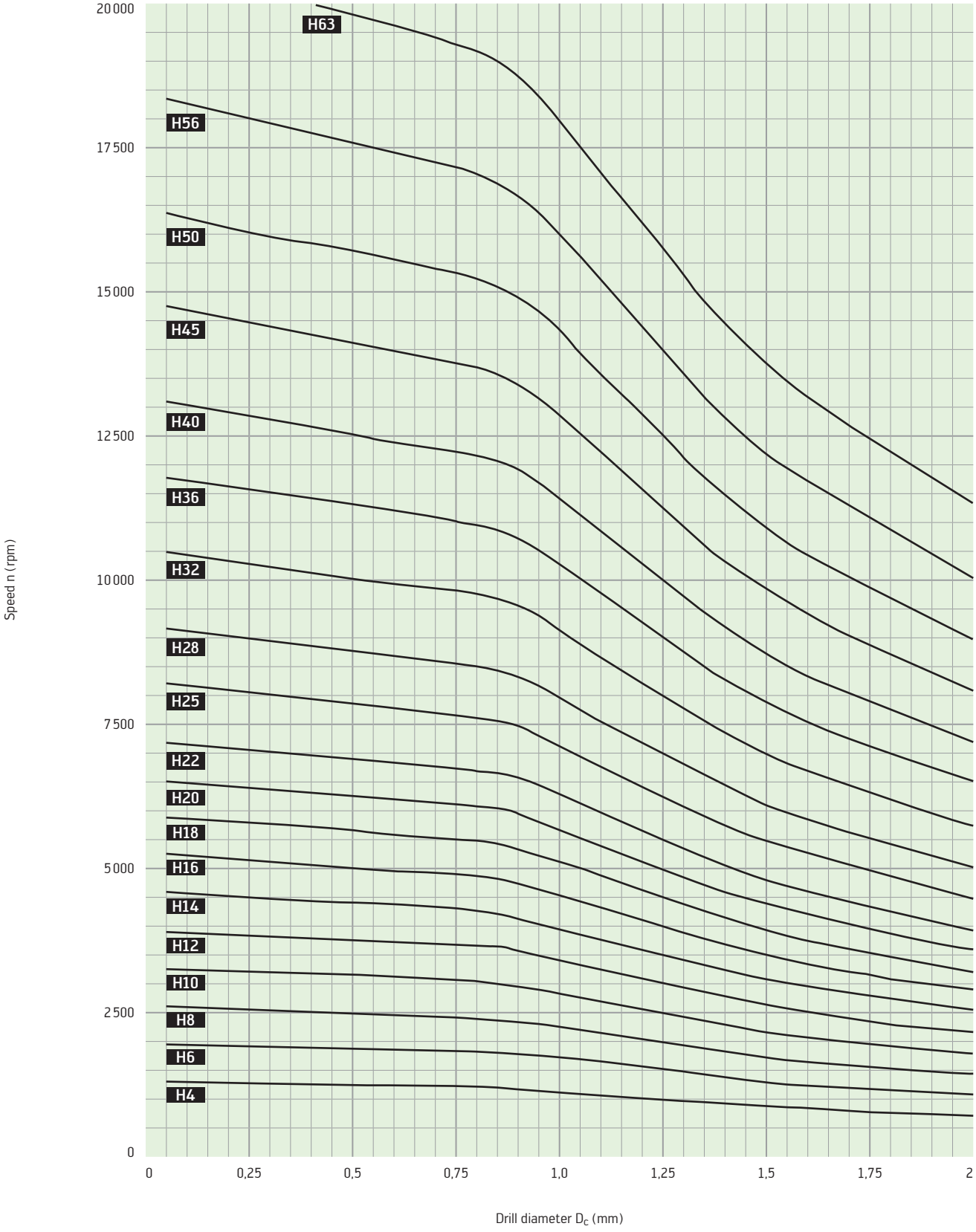
* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Drilling depth ~12 × D_c Designation A1511 A4411 v_c	VRR			Drilling depth ~16 × D_c Designation A1622 A4622 UFL® v_c	VRR		
							Standard: DIN 340 / DIN 341				Standard: DIN 1869 I / DIN 1870 I			
							Coating: Uncoated				Coating: Uncoated			
							Dia. range [mm]: 0,5–50				Dia. range [mm]: 2–30			
							Page: B 336; B 359				Page: B 339; B 362			
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	22	8	**E** O		20	9	**E** O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	22	9	**E** O		20	10	**E** O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	16	9	**E** O		20	10	**E** O	
		C > 0.55%	Annealed	190	640	P4	14	7	**E** O		16	9	**E** O	
		C > 0.55%	Heat-treated	300	1010	P5	8	8	**E** O		9	8	**E** O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	22	9	**E** O		20	10	**E** O	
	Low-alloyed steel	Annealed		175	590	P7	22	9	**E** O		20	10	**E** O	
		Heat-treated		285	960	P8	7,1	8	**E** O		8	8	**E** O	
		Heat-treated		380	1280	P9	2,8	6	**O** E		5,6	3	**O** E	
		Heat-treated		430	1480	P10	2	5	**O** E					
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	6,3	4	**E** O		7,1	5	**E** O	
		Hardened and tempered		300	1010	P12	8	8	**E** O		9	8	**E** O	
		Hardened and tempered		380	1280	P13	4,5	6	**O** E		2,2	3	**O** E	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	18	9	**E** O		18	10	**E** O	
		Martensitic, heat-treated		330	1110	P15	8	8	**E** O		9	8	**E** O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1	2,8	3	**O** E		2,8	4	**O** E	
		Austenitic, precipitation hardened (PH)		300	1010	M2	3,6	5	**E** O		3,2	5	**E** O	
		Austenitic/ferritic, duplex		230	780	M3	2,5	3	**O** E		2	3	**O** E	
K	Malleable cast iron	Ferritic		200	400	K1	14	12	**E** O		12	16	**E** O	
		Pearlitic		260	700	K2	11	10	**E** O		9	12	**E** O	
	Grey cast iron	Low tensile strength		180	200	K3	18	12	**E** O		16	16	**E** O	
		High tensile strength/austenitic		245	350	K4	14	12	**E** O		12	16	**E** O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	16	12	**E** O		14	16	**E** O	
		Pearlitic		265	700	K6	11	10	**E** O		9	12	**E** O	
	GGV (CGI)			230	400	K7	12	10	**E** O		10	12	**E** O	
N	Wrought aluminium alloys	Not hardenable		30	-	N1	45	12	**E** O	M	40	12	**E** O	M
		Hardenable, hardened		100	340	N2	45	12	**E** O	M	40	12	**E** O	M
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	28	12	**E** O	M	28	12	**E** O	M
		≤ 12% Si, hardenable, hardened		90	310	N4	20	10	**E** O	M	20	10	**E** O	M
		> 12% Si, not hardenable		130	450	N5								
	Magnesium-based alloys			70	250	N6					36	12		**M** L
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	32	5	**E** O		28	5	**E** O	
		Brass, bronze, red brass		90	310	N8	25	10	**E** O		22	10	**E** O	
		Cu-alloys, short-chipping		110	380	N9	40	12	**E** O		36	12	**E** O	
		High-tensile, Ampco		300	1010	N10	6,3	5	**E** O					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	2,2	2	**O** E		2,5	3	**O** E	
			Hardened	280	940	S2	4,5	2	**O** E		3,6	2	**O** E	
		Ni or Co base	Annealed	250	840	S3	2,5	3	**E** O		1,8	3	**E** O	
			Hardened	350	1180	S4								
			Cast	320	1080	S5								
	Titanium alloys	Pure titanium		200	680	S6	3,6	4	**E** O					
		α and β alloys, hardened		375	1260	S7	1,8	3	**E** O					
		β alloys		410	1400	S8	1,6	3	**O** E					
	Tungsten alloys			300	1010	S9								
	Molybdenum alloys			300	1010	S10								
H	Hardened steel	Hardened and tempered		50 HRC	-	H1								
		Hardened and tempered		55 HRC	-	H2								
		Hardened and tempered		60 HRC	-	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	-	H4								
O	Thermoplastics	Without abrasive fillers				O1	20	12	**E** O		18	12	**E** O	
	Thermosetting plastics	Without abrasive fillers				O2	16	8		**L**	14	8		**L**
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	~22 × D_c				~30 × D_c				~60 × D_c				~85 × D_c				~16 × D_c											
	A1722 A4722 UFL®				**A1822 UFL®**				**A1922S UFL®**				**A1922L UFL®**				**A4611**				**K6221 K6222 K6223**				**K2929 K4929**			
	DIN 1869 II / DIN 1870 II				DIN 1869 III				Walter				Walter				DIN 1870 I				DIN 8374 / DIN 8378 / DIN 8376				DIN 1898			
	Uncoated				Uncoated				Uncoated				Uncoated				Uncoated				Uncoated				Uncoated			
	3–40				3,5–12				6–14				8–12				8–50				2,5–11				2–25			
	B 342; B 365				B 343				B 344				B 345				B 363				B 366; B 367; B 368				B 369; B 370			
																												
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	20	9	**E** O		16	9	**E** O		16	9	**E** O		16	9	**E** O		18	8	**E** O		25	8	**E** O		25	8	**E** O	
	18	10	**E** O		16	10	**E** O		16	10	**E** O		16	10	**E** O		18	9	**E** O		25	9	**E** O		25	9	**E** O	
	18	10	**E** O		14	10	**E** O		14	10	**E** O		14	10	**E** O		14	9	**E** O		20	9	**E** O		20	9	**E** O	
	16	9	**E** O		12	9	**E** O		12	9	**E** O		12	9	**E** O		11	7	**E** O		18	7	**E** O		18	7	**E** O	
	8	8	**E** O		7,1	8	**E** O		7,1	8	**E** O		7,1	8	**E** O		6,3	8	**E** O		12	8	**E** O		12	8	**E** O	
	20	10	**E** O		16	10	**E** O		16	10	**E** O		16	10	**E** O		18	9	**E** O		25	9	**E** O		25	9	**E** O	
	20	10	**E** O		16	10	**E** O		16	10	**E** O		16	10	**E** O		18	9	**E** O		25	9	**E** O		25	9	**E** O	
	7,1	8	**E** O		6,3	8	**E** O		6,3	8	**E** O		6,3	8	**E** O		5,6	8	**E** O		10	8	**E** O		10	8	**E** O	
	5	3	**O** E		4	3	**O** E		4	3	**O** E		4	3	**O** E		2,2	6	**O** E		4,5	6	**O** E		4,5	6	**O** E	
																	1,4	5	**O** E		3,2	5	**O** E		3,2	5	**O** E	
	7,1	5	**E** O		5,6	5	**E** O		5,6	5	**E** O		5,6	5	**E** O		5,6	4	**E** O		8	4	**E** O		8	4	**E** O	
	8	8	**E** O		7,1	8	**E** O		7,1	8	**E** O		7,1	8	**E** O		6,3	8	**E** O		12	8	**E** O		12	8	**E** O	
	1,8	3	**O** E		1,2	3	**O** E		1,2	3	**O** E		1,2	3	**O** E		3,2	6	**O** E		5,6	6	**O** E		5,6	6	**O** E	
	16	10	**E** O		14	10	**E** O		14	10	**E** O		14	10	**E** O		16	9	**E** O		22	9	**E** O		22	9	**E** O	
	8	8	**E** O		6,3	8	**E** O		6,3	8	**E** O		6,3	8	**E** O		6,3	8	**E** O		11	8	**E** O		11	8	**E** O	
	2,5	4	**O** E		1,8	4	**O** E		1,8	4	**O** E		1,8	4	**O** E		2,2	3	**O** E		4	3	**O** E		4	3	**O** E	
	2,8	5	**E** O		2	5	**E** O		2	5	**E** O		2	5	**E** O		2,8	5	**E** O		5	5	**E** O		5	5	**E** O	
	1,6	3	**O** E		1,2	3	**O** E		1,2	3	**O** E		1,2	3	**O** E		2	3	**O** E		3,6	3	**O** E		3,6	3	**O** E	
	11	16	**E** O		9	16	**E** O		9	16	**E** O		9	16	**E** O		12	12	**E** O		16	12	**E** O		16	12	**E** O	
	8	12	**E** O		7,1	12	**E** O		7,1	12	**E** O		7,1	12	**E** O		9	10	**E** O		12	10	**E** O		12	10	**E** O	
	14	16	**E** O		12	16	**E** O		12	16	**E** O		12	16	**E** O		14	12	**E** O		20	12	**E** O		20	12	**E** O	
	11	16	**E** O		9	16	**E** O		9	16	**E** O		9	16	**E** O		12	12	**E** O		16	12	**E** O		16	12	**E** O	
	12	16	**E** O		10	16	**E** O		10	16	**E** O		10	16	**E** O		14	12	**E** O		18	12	**E** O		18	12	**E** O	
	8	12	**E** O		7,1	12	**E** O		7,1	12	**E** O		7,1	12	**E** O		9	10	**E** O		12	10	**E** O		12	10	**E** O	
	9	12	**E** O		8	12	**E** O		8	12	**E** O		8	12	**E** O		10	10	**E** O		14	10	**E** O		14	10	**E** O	
	40	12	**E** O	M	32	12	**E** O	M	32	12	**E** O	M	32	12	**E** O	M	36	12	**E** O	M	50	12	**E** O	M	50	12	**E** O	M
	40	12	**E** O	M	32	12	**E** O	M	32	12	**E** O	M	32	12	**E** O	M	36	12	**E** O	M	50	12	**E** O	M	50	12	**E** O	M
	25	12	**E** O	M	20	12	**E** O	M	20	12	**E** O	M	20	12	**E** O	M	22	12	**E** O	M	32	12	**E** O	M	32	12	**E** O	M
	18	10	**E** O	M	14	10	**E** O	M	14	10	**E** O	M	14	10	**E** O	M	16	10	**E** O	M	22	10	**E** O	M	22	10	**E** O	M
	32	12		**M** L	25	12		**M** L	25	12		**M** L	25	12		**M** L												
	25	5	**E** O		22	5	**E** O		22	5	**E** O		22	5	**E** O		28	5	**E** O		36	5	**E** O		36	5	**E** O	
	22	10	**E** O		18	10	**E** O		18	10	**E** O		18	10	**E** O		22	10	**E** O		28	10	**E** O		28	10	**E** O	
	32	12	**E** O		28	12	**E** O		28	12	**E** O		28	12	**E** O		32	12	**E** O		45	12	**E** O		45	12	**E** O	
																	5	5	**E** O		9	5	**E** O		9	5	**E** O	
	2	3	**O** E		1,4	3	**O** E		1,4	3	**O** E		1,4	3	**O** E		1,8	2	**O** E		3,2	2	**O** E		3,2	2	**O** E	
	3,2	2	**O** E		2,8	2	**O** E		2,8	2	**O** E		2,8	2	**O** E		3,6	2	**O** E		5	2	**O** E		5	2	**O** E	
	1,6	3	**E** O		1,1	3	**E** O		1,1	3	**E** O		1,1	3	**E** O		1,8	3	**E** O		3,2	3	**E** O		3,2	3	**E** O	
																	2,8	4	**E** O		5,6	4	**E** O		5,6	4	**E** O	
																	1,4	3	**E** O		2,8	3	**E** O		2,8	3	**E** O	
																	1,2	3	**O** E		2,2	3	**O** E		2,2	3	**O** E	
	16	12	**E** O		14	12	**E** O		14	12	**E** O		14	12	**E** O		16	12	**E** O		25	12	**E** O		25	12	**E** O	
	14	8		**L**	11	8		**L**	11	8		**L**	11	8		**L**	14	8		**L**	18	8		**L**	18	8		**L**

VCRR: Speed diagram
HSS micro drills



VRR: Feed rating charts for HSS drilling and reaming tools

	Feed f [mm] for diameter [mm]															
VRR	0,05	0,06	0,08	0,1	0,12	0,15	0,2	0,25	0,4	0,5	0,6	0,8	1	1,2	1,5	2
1	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,004	0,005	0,007
2	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	0,003	0,003	0,004	0,005	0,007	0,008	0,010	0,013
3	0,001	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,012	0,015	0,020
4	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,005	0,007	0,008	0,011	0,013	0,016	0,020	0,027
5	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,004	0,007	0,008	0,010	0,013	0,017	0,020	0,025	0,033
6	0,001	0,001	0,002	0,002	0,002	0,003	0,004	0,005	0,008	0,010	0,012	0,016	0,020	0,024	0,030	0,040
7	0,001	0,001	0,002	0,002	0,003	0,004	0,005	0,006	0,009	0,012	0,014	0,019	0,023	0,028	0,035	0,047
8	0,001	0,002	0,002	0,003	0,003	0,004	0,005	0,007	0,011	0,013	0,016	0,021	0,027	0,032	0,040	0,053
9	0,002	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,012	0,015	0,018	0,024	0,030	0,036	0,045	0,060
10	0,002	0,002	0,003	0,003	0,004	0,005	0,007	0,008	0,013	0,017	0,020	0,027	0,033	0,040	0,050	0,067
12	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,016	0,020	0,024	0,032	0,040	0,048	0,060	0,080
16	0,003	0,003	0,004	0,005	0,006	0,008	0,011	0,013	0,021	0,027	0,032	0,043	0,053	0,064	0,080	0,11
20	0,003	0,004	0,005	0,007	0,008	0,010	0,013	0,017	0,027	0,033	0,040	0,053	0,067	0,080	0,10	0,13
25	0,004	0,005	0,007	0,008	0,010	0,013	0,017	0,021	0,033	0,042	0,050	0,067	0,083	0,100	0,125	0,167
30	0,005	0,006	0,008	0,010	0,012	0,015	0,020	0,025	0,040	0,050	0,060	0,080	0,100	0,120	0,150	0,200

	Feed f [mm] for diameter [mm]														
VRR	2,5	4	5	6	8	10	12	15	20	25	40	50	60	80	100
1	0,008	0,013	0,017	0,018	0,021	0,024	0,026	0,029	0,033	0,037	0,047	0,053	0,058	0,067	0,075
2	0,017	0,027	0,033	0,037	0,042	0,047	0,052	0,058	0,067	0,075	0,094	0,11	0,12	0,13	0,15
3	0,025	0,040	0,050	0,055	0,063	0,071	0,077	0,087	0,10	0,11	0,14	0,16	0,17	0,20	0,22
4	0,033	0,053	0,067	0,073	0,084	0,094	0,10	0,12	0,13	0,15	0,19	0,21	0,23	0,27	0,30
5	0,042	0,067	0,083	0,091	0,11	0,12	0,13	0,14	0,17	0,19	0,24	0,26	0,29	0,33	0,37
6	0,050	0,080	0,10	0,11	0,13	0,14	0,15	0,17	0,20	0,22	0,28	0,32	0,35	0,40	0,45
7	0,058	0,093	0,12	0,13	0,15	0,16	0,18	0,20	0,23	0,26	0,33	0,37	0,40	0,47	0,52
8	0,067	0,11	0,13	0,15	0,17	0,19	0,21	0,23	0,27	0,30	0,38	0,42	0,46	0,53	0,60
9	0,075	0,12	0,15	0,16	0,19	0,21	0,23	0,26	0,30	0,34	0,42	0,47	0,52	0,60	0,67
10	0,083	0,13	0,17	0,18	0,21	0,24	0,26	0,29	0,33	0,37	0,47	0,53	0,58	0,67	0,75
12	0,10	0,16	0,20	0,22	0,25	0,28	0,31	0,35	0,40	0,45	0,57	0,63	0,69	0,80	0,89
16	0,13	0,21	0,27	0,29	0,34	0,38	0,41	0,46	0,53	0,60	0,75	0,84	0,92	1,07	1,19
20	0,17	0,27	0,33	0,37	0,42	0,47	0,52	0,58	0,67	0,75	0,94	1,05	1,15	1,33	1,49
25	0,21	0,33	0,42	0,46	0,53	0,59	0,65	0,72	0,83	0,93	1,18	1,32	1,44	1,67	1,86
30	0,25	0,40	0,50	0,55	0,63	0,71	0,77	0,87	1,00	1,12	1,41	1,58	1,73	2,00	2,24

Cutting tool materials, surface treatment and coatings

Cutting tool materials for drilling and threading tools

Three groups of high-speed steel are used for Walter tools:

HSS	High-speed steel for general applications (Twist drills, core drills, countersinks, centre drills, multi-chamfer step drills and, in some cases, reaming tools and manual taps and threading dies)
HSS-E	High-speed steel with 5% Co for increased stress, particularly high thermal loads (High-performance twist drills, machine taps, formers and, in some cases, reaming tools)
HSS-E-PM	High-speed steel manufactured using powder metallurgy with an extremely high content of alloy elements **Advantages:** – High degree of purity and uniformity of the microstructure – High wear resistance and heat resistance (High-performance machine taps and special tools)

	Material no.	Short name	Old standard designation	AISI ASTM	AFNOR	B.S.	UNI	Alloy table C	Cr	W	Molyb-denum	V	CO
HSS	1.3343	S 6-5-2	DMo5	M2	–	BM2	HS 6-5-2	0,82	4,0	6,5	5,0	2,0	–
HSS-E	1.3243	S 6-5-2-5	EMo5 Co5	M35	6.5.2.5	–	HS 6-5-2-5	0,82	4,5	6,0	5,0	2,0	5,0
HSS-E-PM	Trade name ASP												

Surface treatment and hard material coatings for increased performance

	Steam treatment of HSS tools	Nitriding of HSS tools
Implementation	Dry steam atmosphere, 520 to 580 °C	Treatment in media emitting nitrogen, 520 °C to 570 °C
Effect	Adherent oxide layer consisting of Fe_3O_4 approx. 0.003 to 0.010 mm deep	Enrichment of surface with nitrogen and partially with carbon
Properties	– Reduced tendency to cause galling – Increased surface hardness and therefore improved wear resistance – Increased corrosion resistance – Improved sliding properties thanks to better lubricant adhesion as a result of FeO crystals – Reduction in grinding stress	– Reduced tendency to cause galling and built-up edges – Increased hardness and therefore greater wear resistance

Surface coating has developed into a proven technological process for improving the performance of metal cutting tools. In contrast to surface treatment, the tool surface remains chemically unaltered and a thin layer is applied.

For Walter Titex high-speed steel and carbide tools, the coating is applied using PVD processes, which work at process temperatures of below 600 °C and therefore do not result in any change to the base material. Hard material layers have a greater hardness and wear resistance than the cutting tool material itself.

In addition
– they separate the cutting tool material and the material to be cut from each other
– they act as a thermal insulation layer

Advantages:
This also means that coated tools not only have a longer tool life, but they can also be used with higher cutting speeds and feed rates.

Surface treatment/ coating	Process/coating	Properties	Tool example
Uncoated	No treatment	–	
Steam-treated	Steam treatment	Universal treatment for HSS	
Fibre-steamed	Steam treatment	Universal treatment of lands for HSS	
TiN	TiN coating	Universal coating	
TFT	Tinal TOP coating	High-performance coating with particularly low friction	
TFP	Tinal point coating	High-performance coating for optimum chip evacuation	
XPL	AlCrN coating	High-performance coating for maximum wear resistance	

Dimensions

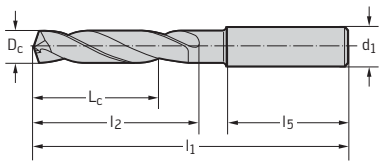
Twist drill with Morse taper

Walter Designation	A42 . .			A44 . .			A46 . .			A47 . .		
D_c mm	DIN 345		MT**	DIN 341		MT**	DIN 1870 series 1		MT**	DIN 1870 series 2		MT**
above – to	l_1	L_c		l_1	L_c		l_1	L_c		l_1	L_c	
2,65–3,00	114	33	1									
3,00–3,35	117	36	1									
3,35–3,75	120	39	1									
3,75–4,25	124	43	1									
4,25–4,75	128	47	1									
4,75–5,30	133	52	1	155	74	1						
5,30–6,00	138	57	1	161	80	1						
6,00–6,70	144	63	1	167	86	1						
6,70–7,50	150	69	1	174	93	1						
7,50–8,50	156	75	1	181	100	1	265	165	1	330	210	1
8,50–9,50	162	81	1	188	107	1	275	175	1	345	220	1
9,50–10,60	168	87	1	197	116	1	285	185	1	360	235	1
10,60–11,80	175	94	1	206	125	1	300	195	1	375	250	1
11,80–13,20	182	101	1	215	134	1	310	205	1	395	260	1
13,20–14,00	189	108	1	223	142	1	325	220	1	410	275	1
14,00–15,00	212	114	2	245	147	2	340	220	2	425	275	2
15,00–16,00	218	120	2	251	153	2	355	230	2	445	295	2
16,00–17,00	223	125	2	257	159	2	355	230	2	445	295	2
17,00–18,00	228	130	2	263	165	2	370	245	2	465	310	2
18,00–19,00	233	135	2	269	171	2	370	245	2	465	310	2
19,00–20,00	238	140	2	275	177	2	385	260	2	490	325	2
20,00–21,20	243	145	2	282	184	2	385	260	2	490	325	2
21,20–22,40	248	150	2	289	191	2	405	270	2	515	345	2
22,40–23,02	253	155	2	296	198	2	405	270	2	515	345	2
23,02–23,60	276	155	3	319	198	3	425	270	3	535	345	3
23,60–25,00	281	160	3	327	206	3	440	290	3	555	365	3
25,00–26,50	286	165	3	335	214	3	440	290	3	555	365	3
26,50–28,00	291	170	3	343	222	3	460	305	3	580	385	3
28,00–30,00	296	175	3	351	230	3	460	305	3	580	385	3
30,00–31,50	301	180	3	360	239	3	480	320	3	610	410	3
31,50–31,75	306	185	3	369	248	3	480	320	3	610	410	3
31,75–33,50	334	185	4	397	248	4	505	320	4	635	410	4
33,50–35,50	339	190	4	406	257	4	530	340	4	665	430	4
35,50–37,50	344	195	4	416	267	4	530	340	4	665	430	4
37,50–40,00	349	200	4	426	277	4	555	360	4	695	460	4
40,00–42,50	354	205	4	436	287	4	555	360	4	695	460	4
42,50–45,00	359	210	4	447	298	4	585	385	4	735	490	4
45,00–47,50	364	215	4	459	310	4	585	385	4	735	490	4
47,50–50,00	369	220	4	470	321	4	605	405	4	765	510	4
50,00–50,80	374	225	4	485*	336*	4						
50,80–53,00	412	225	5	523*	336*	5						
53,00–56,00	417	230	5	534*	347*	5						
56,00–60,00	422	235	5	550*	363*	5						
60,00–63,00	427	240	5	566*	379*	5						
63,00–67,00	432	245	5	581*	394*	5						
67,00–71,00	437	250	5	599*	412*	5						
71,00–75,00	442	255	5	617*	430*	5						
75,00–76,20	447	260	5	637*	450*	5						
76,20–80,00	514	260	6	704*	450*	6						
80,00–85,00	519	265	6	727*	473*	6						
85,00–90,00	524	270	6	750*	496*	6						
90,00–95,00	529	275	6									
95,00–100,00	534	280	6									

* Walter standard ** MT = Morse taper

HSS-E twist drill with standard shank

Walter Designation	A62 . . Walter standard				
D_c mm (h8) above – to	l_1 mm	l_2 mm	L_c	d_1 (h6) mm	l_5 mm
4,9–6,0	82	44	35	6	36
6,0–8,0	91	53	41	8	36
8,0–10,0	103	61	46	10	40
10,0–12,0	122	75	57	12	45
12,0–14,0	134	87	73	14	45
14,0–16,0	150	100	84	16	48
16,0–18,0	162	112	94	18	48
18,0–20,0	176	124	104	20	50
20,0–24,0	207	145	120	25	56



Cutting data for solid carbide and HSS NC spot drills

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 492 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Designation	A1174 A1174C				A1115 / A1114 A1115S / A1114S A1115L / A1114L			
							Countersink angle	**90° and 120°**				**90° and 120°**			
							Dia. range (mm)	3,00–20,00				2,00–25,40			
							Cutting tool material	K30F				HSS			
							Coating	Uncoated				Uncoated			
							Page	B 380; B 384				B 381–B 383; B 385–B 387			
															
								v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1						32	8	**E O**	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2						32	9	**E O**	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3						30	9	**E O**	
		C > 0.55%	Annealed	190	640	P4						32	9	**E O**	
		C > 0.55%	Heat-treated	300	1010	P5						21	8	**E O**	
		Free cutting steel (short-chipping)	Annealed	220	750	P6						32	9	**E O**	
	Low-alloyed steel	Annealed		175	590	P7						32	9	**E O**	
		Heat-treated		285	960	P8						21	8	**E O**	
		Heat-treated		380	1280	P9						11	7	**O E**	
		Heat-treated		430	1480	P10						8	6	**O E**	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11						21	8	**E O**	
		Hardened and tempered		300	1010	P12						15	7	**E O**	
		Hardened and tempered		380	1280	P13						8	6	**O E**	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14						9	4	**E O**	
		Martensitic, heat-treated		330	1110	P15						8	4	**E O**	
M	Stainless steel	Austenitic, quench hardened		200	680	M1						6	3	**O E**	
		Austenitic, precipitation hardened (PH)		300	1010	M2						8	5	**O E**	
		Austenitic/ferritic, duplex		230	780	M3						5	3	**O E**	
K	Malleable cast iron	Ferritic		200	400	K1		45	8	**E O**		24	12	**E O**	
		Pearlitic		260	700	K2		34	6	**E O**		18	12	**E O**	
	Grey cast iron	Low tensile strength		180	200	K3		56	8	**E O**		30	12	**E O**	
		High tensile strength/austenitic		245	350	K4		45	8	**E O**		24	12	**E O**	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		45	8	**E O**		24	12	**E O**	
		Pearlitic		265	700	K6		34	6	**E O**		18	12	**E O**	
	GGV (CGI)			230	400	K7		40	7	**E O**		21	12	**E O**	
N	Wrought aluminium alloys	Not hardenable		30	–	N1		220	10	**E O**	**M**	63	16	**E O**	
		Hardenable, hardened		100	340	N2		220	10	**E O**	**M**	63	16	**E O**	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		170	10	**E O**	**M**	42	12	**E O**	
		≤ 12% Si, hardenable, hardened		90	310	N4		150	10	**E O**	**M**	30	12	**E O**	
		> 12% Si, not hardenable		130	450	N5		100	9	**E O**					
	Magnesium-based alloys			70	250	N6		210	10		**M L**	30	12		**M L**
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7		140	7	**E O**		48	6	**E O**	
		Brass, bronze, red brass		90	310	N8		100	9	**E O**		38	12	**E O**	
		Cu-alloys, short-chipping		110	380	N9		110	12	**E O**	**M L**	67	12	**E O**	**M L**
		High-tensile, Ampco		300	1010	N10		50	6	**E O**	**M L**	15	7	**E O**	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1						6	3	**O E**	
			Hardened	280	940	S2		7	3	**O E**					
		Ni or Co base	Annealed	250	840	S3						6	3	**O E**	
			Hardened	350	1180	S4		7	3	**O E**					
			Cast	320	1080	S5		7	3	**O E**					
	Titanium alloys	Pure titanium		200	680	S6		25	3	**O E**		10	4	**E O**	
		α and β alloys, hardened		375	1260	S7		17	2	**O E**		6	4	**O E**	
		β alloys		410	1400	S8									
	Tungsten alloys			300	1010	S9						15	7	**E O**	
	Molybdenum alloys			300	1010	S10						15	7	**E O**	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1									
		Hardened and tempered		55 HRC	–	H2									
		Hardened and tempered		60 HRC	–	H3									
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4									
O	Thermoplastics	Without abrasive fillers				O1		40	12	**E O**		40	12	**E O**	
	Thermosetting plastics	Without abrasive fillers				O2		67	5		**L**	24	8		**L**
	Plastic, glass fibre reinforced	GFRP				O3		30	5		**L**				
	Plastic, carbon fibre reinforced	CFRP				O4		20	5		**L**				
	Plastic, aramid fibre reinforced	AFRP				O5		67	5		**L**	24	8		**L**
	Graphite (technical)			80 Shore		O6		20	5		**L**				

Cutting data for solid carbide and HSS centre drills

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 492 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters: Material			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Standard: Designation				DIN 333: Designation			
							K1161XPL				K1161			
							Form: A				A			
							Dia. range (mm): 0,50–6,30				0,50–6,30			
							Cutting tool material: K10/20				K10/20			
							Coating: XPL				Uncoated			
							Page: B 396				B 396			
														
							v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	72	6	E O	M L	48	6	E O	M L
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	68	6	E O	M L	45	6	E O	M L
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	63	6	E O	M L	42	6	E O	M L
		C > 0.55%	Annealed	190	640	P4	68	6	E O	M L	45	6	E O	M L
		C > 0.55%	Heat-treated	300	1010	P5	48	5	E O	M L	32	5	E O	M L
		Free cutting steel (short-chipping)	Annealed	220	750	P6	72	6	E O	M L	48	6	E O	M L
	Low-alloyed steel	Annealed		175	590	P7	68	6	E O	M L	45	6	E O	M L
		Heat-treated		285	960	P8	48	5	E O	M L	32	5	E O	M L
		Heat-treated		380	1280	P9	32	3	O E		21	3	O E	
		Heat-treated		430	1480	P10	24	2	O E		16	2	O E	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	42	4	E O		28	4	E O	
		Hardened and tempered		300	1010	P12	38	4	E O		25	4	E O	
		Hardened and tempered		380	1280	P13	24	2	O E		16	2	O E	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	42	4	E O		28	4	E O	
		Martensitic, heat-treated		330	1110	P15	32	3	E O		21	3	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1								
		Austenitic, precipitation hardened (PH)		300	1010	M2	21	3	E O		21	3	E O	
		Austenitic/ferritic, duplex		230	780	M3								
K	Malleable cast iron	Ferritic		200	400	K1	72	8	E O	M L	40	8	E O	M L
		Pearlitic		260	700	K2	58	7	E O	M L	32	7	E O	M L
	Grey cast iron	Low tensile strength		180	200	K3	86	8	E O	M L	48	8	E O	M L
		High tensile strength/austenitic		245	350	K4	72	8	E O	M L	40	8	E O	M L
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	72	8	E O	M L	40	8	E O	M L
		Pearlitic		265	700	K6	58	7	E O	M L	32	7	E O	M L
	GGV (CGI)			230	400	K7	65	8	E O	M L	36	8	E O	M L
N	Wrought aluminium alloys	Not hardenable		30	–	N1	130	5	E O		130	5	E O	
		Hardenable, hardened		100	340	N2	130	5	E O		130	5	E O	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	105	7	E O		105	7	E O	
		≤ 12% Si, hardenable, hardened		90	310	N4	90	7	E O		90	7	E O	
		> 12% Si, not hardenable		130	450	N5	71	7	E O		71	7	E O	
	Magnesium-based alloys			70	250	N6	90	7		M L	90	7		M L
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	90	3	E O	M	90	3	E O	M
		Brass, bronze, red brass		90	310	N8	75	6	E O		75	6	E O	
		Cu-alloys, short-chipping		110	380	N9	80	8	E O	M L	80	8	E O	M L
		High-tensile, Ampco		300	1010	N10	48	5	E O		32	5	E O	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	33	2	O E		22	2	O E	
			Hardened	280	940	S2	15	2	O E		15	2	O E	
		Ni or Co base	Annealed	250	840	S3	27	2	O E		18	2	O E	
			Hardened	350	1180	S4	10	1	O E		10	1	O E	
			Cast	320	1080	S5	12	1	O E		12	1	O E	
	Titanium alloys	Pure titanium		200	680	S6								
		α and β alloys, hardened		375	1260	S7								
		β alloys		410	1400	S8								
	Tungsten alloys			300	1010	S9	48	5	E O		32	5	E O	
	Molybdenum alloys			300	1010	S10	48	5	E O		32	5	E O	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	19	2	O E		12,5	2	O E	
		Hardened and tempered		55 HRC	–	H2								
		Hardened and tempered		60 HRC	–	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4								
O	Thermoplastics	Without abrasive fillers				O1	45	7	E O		45	7	E O	
	Thermosetting plastics	Without abrasive fillers				O2	45	7	E O		45	7	E O	
	Plastic, glass fibre reinforced	GFRP				O3	35	6		L	35	6		L
	Plastic, carbon fibre reinforced	CFRP				O4	25	5		L	25	5		L
	Plastic, aramid fibre reinforced	AFRP				O5	45	7		L	45	7		L
	Graphite (technical)			80 Shore		O6	25	5		L	25	5		L

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	DIN 333								DIN 333															
	K1111TIN				K1111				K1112				K1131				K1113TIN				K1113				K1114				K1215			
	A				A				A				A				R				R				R				B			
	1,00–5,00				0,50–12,50				1,60–5,00				0,50–6,30				1,00–5,00				0,50–12,50				1,60–5,00				1,00–10,00			
	HSS				HSS				HSS				HSS left				HSS				HSS				HSS				HSS			
	TiN				Uncoated				Uncoated				Uncoated				TiN				Uncoated				Uncoated				Uncoated			
	B 397				B 397				B 398				B 399				B 407				B 407				B 408				B 406			
																																
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	38	8	E	O	30	7	E	O	30	7	E	O	30	7	E	O	38	8	E	O	30	7	E	O	30	7	E	O	30	7	E	O
	38	9	E	O	30	8	E	O	30	8	E	O	30	8	E	O	38	9	E	O	30	8	E	O	30	8	E	O	30	8	E	O
	36	9	E	O	28	8	E	O	28	8	E	O	28	8	E	O	36	9	E	O	28	8	E	O	28	8	E	O	28	8	E	O
	38	9	E	O	30	8	E	O	30	8	E	O	30	8	E	O	38	9	E	O	30	8	E	O	30	8	E	O	30	8	E	O
	28	8	E	O	20	7	E	O	20	7	E	O	20	7	E	O	28	8	E	O	20	7	E	O	20	7	E	O	20	7	E	O
	38	9	E	O	30	8	E	O	30	8	E	O	30	8	E	O	38	9	E	O	30	8	E	O	30	8	E	O	30	8	E	O
	38	9	E	O	30	8	E	O	30	8	E	O	30	8	E	O	38	9	E	O	30	8	E	O	30	8	E	O	30	8	E	O
	28	8	E	O	20	7	E	O	20	7	E	O	20	7	E	O	28	8	E	O	20	7	E	O	20	7	E	O	20	7	E	O
	13	6	E	O	11	6	O	E	11	6	O	E	11	6	O	E	13	6	E	O	11	6	O	E	11	6	O	E	11	6	O	E
					7	5	O	E	7	5	O	E	7	5	O	E					7	5	O	E	7	5	O	E	7	5	O	E
	9	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O	9	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O
	21	6	E	O	14	6	E	O	14	6	E	O	14	6	E	O	21	6	E	O	14	6	E	O	14	6	E	O	14	6	E	O
					7	5	O	E	7	5	O	E	7	5	O	E					7	5	O	E	7	5	O	E	7	5	O	E
	9	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O	9	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O
					7	4	E	O	7	4	E	O	7	4	E	O					7	4	E	O	7	4	E	O	7	4	E	O
	7	4	O	E	6	3	O	E	6	3	O	E	6	3	O	E	7	4	O	E	6	3	O	E	6	3	O	E	6	3	O	E
	13	5	O	E	8	5	O	E	8	5	O	E	8	5	O	E	13	5	O	E	8	5	O	E	8	5	O	E	8	5	O	E
	6	4	O	E	5	3	O	E	5	3	O	E	5	3	O	E	6	4	O	E	5	3	O	E	5	3	O	E	5	3	O	E
	34	12	E	O	22	12	E	O	22	12	E	O	22	12	E	O	34	12	E	O	22	12	E	O	22	12	E	O	22	12	E	O
	26	10	E	O	17	10	E	O	17	10	E	O	17	10	E	O	26	10	E	O	17	10	E	O	17	10	E	O	17	10	E	O
	42	12	E	O	28	12	E	O	28	12	E	O	28	12	E	O	42	12	E	O	28	12	E	O	28	12	E	O	28	12	E	O
	34	12	E	O	22	12	E	O	22	12	E	O	22	12	E	O	34	12	E	O	22	12	E	O	22	12	E	O	22	12	E	O
	34	12	E	O	22	12	E	O	22	12	E	O	22	12	E	O	34	12	E	O	22	12	E	O	22	12	E	O	22	12	E	O
	26	10	E	O	17	10	E	O	17	10	E	O	17	10	E	O	26	10	E	O	17	10	E	O	17	10	E	O	17	10	E	O
	30	12	E	O	20	12	E	O	20	12	E	O	20	12	E	O	30	12	E	O	20	12	E	O	20	12	E	O	20	12	E	O
	79	12	E	O	63	12	E	O	63	12	E	O	63	12	E	O	79	12	E	O	63	12	E	O	63	12	E	O	63	12	E	O
	79	12	E	O	63	12	E	O	63	12	E	O	63	12	E	O	79	12	E	O	63	12	E	O	63	12	E	O	63	12	E	O
	50	12	E	O	40	12	E	O	40	12	E	O	40	12	E	O	50	12	E	O	40	12	E	O	40	12	E	O	40	12	E	O
	35	10	E	O	28	10	E	O	28	10	E	O	28	10	E	O	35	10	E	O	28	10	E	O	28	10	E	O	28	10	E	O
	35	10		M L	28	10		M L	28	10		M L	28	10		M L	35	10		M L	28	10		M L	28	10		M L	28	10		M L
	56	5	E	O	45	5	E	O	45	5	E	O	45	5	E	O	56	5	E	O	45	5	E	O	45	5	E	O	45	5	E	O
					36	10	E	O	36	10	E	O	36	10	E	O					36	10	E	O	36	10	E	O	36	10	E	O
	71	12	E	O M L	63	12	E	O M L	63	12	E	O M L	63	12	E	O M L	71	12	E	O M L	63	12	E	O M L	63	12	E	O M L	63	12	E	O M L
	21	6	E	O	14	6	E	O	14	6	E	O	14	6	E	O	21	6	E	O	14	6	E	O	14	6	E	O	14	6	E	O
	7	4	O	E	6	3	O	E	6	3	O	E	6	3	O	E	7	4	O	E	6	3	O	E	6	3	O	E	6	3	O	E
	4	3	O	E	4	3	O	E	[6	[3	O	E	4	3	O	E	4	3	O	E	4	3	O	E	4	3	O	E	4	3	O	E
					6	3	O	E	6	3	O	E	6	3	O	E					6	3	O	E	6	3	O	E	6	3	O	E
	8	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O	8	4	E	O
	6	4	O	E	6	4	O	E	6	4	O	E	6	4	O	E	6	4	O	E	6	4	O	E	6	4	O	E	6	4	O	E
	21	6	E	O	14	6	E	O	14	6	E	O	14	6	E	O	21	6	E	O	14	6	E	O	14	6	E	O	14	6	E	O
	21	6	E	O	14	6	E	O	14	6	E	O	14	6	E	O	21	6	E	O	14	6	E	O	14	6	E	O	14	6	E	O
					38	12	E	O	38	12	E	O	38	12	E	O					38	12	E	O	38	12	E	O	38	12	E	O
	34	8		L	22	7		L	22	7		L	22	7		L	34	8		L	22	7		L	22	7		L	22	7		L
	34	8		L	22	7		L	22	7		L	22	7		L	34	8		L	22	7		L	22	7		L	22	7		L

Cutting data for solid carbide and HSS centre drills

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart from page B 492 onwards

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters: Material			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Standard: Designation				Walter: Designation K1313				Walter: Designation K1311			
							Form				R				A			
							Dia. range (mm)				1,00–4,00				0,63–6,00			
							Cutting tool material				HSS				HSS			
							Coating				Uncoated				Uncoated			
							Page				B 409				B 400			
											v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1					30	7	E O		30	7	E O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2					30	8	E O		30	8	E O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3					28	8	E O		28	8	E O	
		C > 0.55%	Annealed	190	640	P4					30	8	E O		30	8	E O	
		C > 0.55%	Heat-treated	300	1010	P5					20	7	E O		20	7	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6					30	8	E O		30	8	E O	
	Low-alloyed steel	Annealed		175	590	P7					30	8	E O		30	8	E O	
		Heat-treated		285	960	P8					20	7	E O		20	7	E O	
		Heat-treated		380	1280	P9					11	6	O E		11	6	O E	
		Heat-treated		430	1480	P10					7	5	O E		7	5	O E	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11					8	4	E O		8	4	E O	
		Hardened and tempered		300	1010	P12					14	6	E O		14	6	E O	
		Hardened and tempered		380	1280	P13					7	5	O E		7	5	O E	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14					8	4	E O		8	4	E O	
		Martensitic, heat-treated		330	1110	P15					7	4	E O		7	4	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1					6	3	O E		6	3	O E	
		Austenitic, precipitation hardened (PH)		300	1010	M2					8	5	O E		8	5	O E	
		Austenitic/ferritic, duplex		230	780	M3					4,8	3	O E		4,8	3	O E	
K	Malleable cast iron	Ferritic		200	400	K1					22	12	E O		22	12	E O	
		Pearlitic		260	700	K2					17	10	E O		17	10	E O	
	Grey cast iron	Low tensile strength		180	200	K3					28	12	E O		28	12	E O	
		High tensile strength/austenitic		245	350	K4					22	12	E O		22	12	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5					22	12	E O		22	12	E O	
		Pearlitic		265	700	K6					17	10	E O		17	10	E O	
	GGV (CGI)			230	400	K7					20	12	E O		20	12	E O	
N	Wrought aluminium alloys	Not hardenable		30	–	N1					63	12	E O		63	12	E O	
		Hardenable, hardened		100	340	N2					63	12	E O		63	12	E O	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3					40	12	E O		40	12	E O	
		≤ 12% Si, hardenable, hardened		90	310	N4					28	10	E O		28	10	E O	
		> 12% Si, not hardenable		130	450	N5												
	Magnesium-based alloys			70	250	N6					28	10		M L	28	10		M L
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7					45	5	E O		45	5	E O	
		Brass, bronze, red brass		90	310	N8					36	10	E O		36	10	E O	
		Cu-alloys, short-chipping		110	380	N9					63	12	E O	M L	63	12	E O	M L
		High-tensile, Ampco		300	1010	N10					14	6	E O		14	6	E O	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1					6	3	O E		6	3	O E	
			Hardened	280	940	S2					4	3	O E		4	3	O E	
		Ni or Co base	Annealed	250	840	S3					6	3	O E		6	3	O E	
			Hardened	350	1180	S4												
			Cast	320	1080	S5												
	Titanium alloys	Pure titanium		200	680	S6					8	4	E O		8	4	E O	
		α and β alloys, hardened		375	1260	S7					6	4	O E		6	4	O E	
		β alloys		410	1400	S8												
	Tungsten alloys			300	1010	S9					14	6	E O		14	6	E O	
	Molybdenum alloys			300	1010	S10					14	6	E O		14	6	E O	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1												
		Hardened and tempered		55 HRC	–	H2												
		Hardened and tempered		60 HRC	–	H3												
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4												
O	Thermoplastics	Without abrasive fillers				O1					38	12	E O		38	12	E O	
	Thermosetting plastics	Without abrasive fillers				O2					22	7		L	22	7		L
	Plastic, glass fibre reinforced	GFRP				O3												
	Plastic, carbon fibre reinforced	CFRP				O4												
	Plastic, aramid fibre reinforced	AFRP				O5					22	7		L	22	7		L
	Graphite (technical)			80 Shore		O6												

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Walter												ANSI B 94.11 M-1979				B.S. 328				Step centre drills							
	K1411S				K1411M				K1411L				K1811				K1911				K2511				K2513			
	A				A				A				A				A				60°				Radius			
	0,75–5,00				0,75–4,00				2,00–4,00				0,64–7,97				1,19–7,94				3,30–21,00				3,30–21,00			
	HSS				HSS				HSS				HSS				HSS				HSS				HSS			
	Uncoated				Uncoated				Uncoated				Uncoated				Uncoated				Uncoated				Uncoated			
	B 401				B 402				B 403				B 404				B 405				B 410				B 411			
																												
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	30	7	E O		30	7	E O		30	7	E O		30	7	E O		30	7	E O		30	7	E O		30	7	E O	
	30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O	
	28	8	E O		28	8	E O		28	8	E O		28	8	E O		28	8	E O		28	8	E O		28	8	E O	
	30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O	
	20	7	E O		20	7	E O		20	7	E O		20	7	E O		20	7	E O		20	7	E O		20	7	E O	
	30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O	
	30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O		30	8	E O	
	20	7	E O		20	7	E O		20	7	E O		20	7	E O		20	7	E O		20	7	E O		20	7	E O	
	11	6	O E		11	6	O E		11	6	O E		11	6	O E		11	6	O E		11	6	O E		11	6	O E	
	7	5	O E		7	5	O E		7	5	O E		7	5	O E		7	5	O E		7	5	O E		7	5	O E	
	8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O	
	14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O	
	7	5	O E		7	5	O E		7	5	O E		7	5	O E		7	5	O E		7	5	O E		7	5	O E	
	8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O	
	7	4	E O		7	4	E O		7	4	E O		7	4	E O		7	4	E O		7	4	E O		7	4	E O	
	6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E	
	8	5	O E		8	5	O E		8	5	O E		8	5	O E		8	5	O E		8	5	O E		8	5	O E	
	4,8	3	O E		4,8	3	O E		4,8	3	O E		4,8	3	O E		5	3	O E		4,8	3	O E		4,8	3	O E	
	22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O	
	17	10	E O		17	10	E O		17	10	E O		17	10	E O		17	10	E O		17	10	E O		17	10	E O	
	28	12	E O		28	12	E O		28	12	E O		28	12	E O		28	12	E O		28	12	E O		28	12	E O	
	22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O	
	22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O		22	12	E O	
	17	10	E O		17	10	E O		17	10	E O		17	10	E O		17	10	E O		17	10	E O		17	10	E O	
	20	12	E O		20	12	E O		20	12	E O		20	12	E O		20	12	E O		20	12	E O		20	12	E O	
	63	12	E O		63	12	E O		63	12	E O		63	12	E O		63	12	E O		63	12	E O		63	12	E O	
	63	12	E O		63	12	E O		63	12	E O		63	12	E O		63	12	E O		63	12	E O		63	12	E O	
	40	12	E O		40	12	E O		40	12	E O		40	12	E O		40	12	E O		40	12	E O		40	12	E O	
	28	10	E O		28	10	E O		28	10	E O		28	10	E O		28	10	E O		28	10	E O		28	10	E O	
	28	10		M L	28	10		M L	28	10		M L	28	10		M L	28	10		M L	28	10		M L	28	10		M L
	45	5	E O		45	5	E O		45	5	E O		45	5	E O		45	5	E O		45	5	E O		45	5	E O	
	36	10	E O		36	10	E O		36	10	E O		36	10	E O		36	10	E O		36	10	E O		36	10	E O	
	63	12	E O	M L	63	12	E O	M L	63	12	E O	M L	63	12	E O	M L	63	12	E O	M L	63	12	E O	M L	63	12	E O	M L
	14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O	
	6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E	
	4	3	O E		4	3	O E		4	3	O E		4	3	O E		4	3	O E		4	3	O E		4	3	O E	
	6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E		6	3	O E	
	8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O		8	4	E O	
	6	4	O E		6	4	O E		6	4	O E		6	4	O E		6	4	O E		6	4	O E		6	4	O E	
	14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O	
	14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O		14	6	E O	
	38	12	E O		38	12	E O		38	12	E O		38	12	E O		38	12	E O		38	12	E O		38	12	E O	
	22	7		L	22	7		L	22	7		L	22	7		L	22	7		L	22	7		L	22	7		L
	22	7		L	22	7		L	22	7		L	22	7		L	22	7		L	22	7		L	22	7		L

VRR: Feed rating charts for NC and centre drills

	Feed f [mm] for diameter [mm]															
VRR	0,05	0,06	0,08	0,1	0,12	0,15	0,2	0,25	0,4	0,5	0,6	0,8	1	1,2	1,5	2
1	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,004	0,005	0,007
2	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	0,003	0,003	0,004	0,005	0,007	0,008	0,010	0,013
3	0,001	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,012	0,015	0,020
4	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,005	0,007	0,008	0,011	0,013	0,016	0,020	0,027
5	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,004	0,007	0,008	0,010	0,013	0,017	0,020	0,025	0,033
6	0,001	0,001	0,002	0,002	0,002	0,003	0,004	0,005	0,008	0,010	0,012	0,016	0,020	0,024	0,030	0,040
7	0,001	0,001	0,002	0,002	0,003	0,004	0,005	0,006	0,009	0,012	0,014	0,019	0,023	0,028	0,035	0,047
8	0,001	0,002	0,002	0,003	0,003	0,004	0,005	0,007	0,011	0,013	0,016	0,021	0,027	0,032	0,040	0,053
9	0,002	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,012	0,015	0,018	0,024	0,030	0,036	0,045	0,060
10	0,002	0,002	0,003	0,003	0,004	0,005	0,007	0,008	0,013	0,017	0,020	0,027	0,033	0,040	0,050	0,067
12	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,016	0,020	0,024	0,032	0,040	0,048	0,060	0,080
16	0,003	0,003	0,004	0,005	0,006	0,008	0,011	0,013	0,021	0,027	0,032	0,043	0,053	0,064	0,080	0,11
20	0,003	0,004	0,005	0,007	0,008	0,010	0,013	0,017	0,027	0,033	0,040	0,053	0,067	0,080	0,10	0,13
25	0,004	0,005	0,007	0,008	0,010	0,013	0,017	0,021	0,033	0,042	0,050	0,067	0,083	0,100	0,125	0,167
30	0,005	0,006	0,008	0,010	0,012	0,015	0,020	0,025	0,040	0,050	0,060	0,080	0,100	0,120	0,150	0,200

	Feed f [mm] for diameter [mm]														
VRR	2,5	4	5	6	8	10	12	15	20	25	40	50	60	80	100
1	0,008	0,013	0,017	0,018	0,021	0,024	0,026	0,029	0,033	0,037	0,047	0,053	0,058	0,067	0,075
2	0,017	0,027	0,033	0,037	0,042	0,047	0,052	0,058	0,067	0,075	0,094	0,11	0,12	0,13	0,15
3	0,025	0,040	0,050	0,055	0,063	0,071	0,077	0,087	0,10	0,11	0,14	0,16	0,17	0,20	0,22
4	0,033	0,053	0,067	0,073	0,084	0,094	0,10	0,12	0,13	0,15	0,19	0,21	0,23	0,27	0,30
5	0,042	0,067	0,083	0,091	0,11	0,12	0,13	0,14	0,17	0,19	0,24	0,26	0,29	0,33	0,37
6	0,050	0,080	0,10	0,11	0,13	0,14	0,15	0,17	0,20	0,22	0,28	0,32	0,35	0,40	0,45
7	0,058	0,093	0,12	0,13	0,15	0,16	0,18	0,20	0,23	0,26	0,33	0,37	0,40	0,47	0,52
8	0,067	0,11	0,13	0,15	0,17	0,19	0,21	0,23	0,27	0,30	0,38	0,42	0,46	0,53	0,60
9	0,075	0,12	0,15	0,16	0,19	0,21	0,23	0,26	0,30	0,34	0,42	0,47	0,52	0,60	0,67
10	0,083	0,13	0,17	0,18	0,21	0,24	0,26	0,29	0,33	0,37	0,47	0,53	0,58	0,67	0,75
12	0,10	0,16	0,20	0,22	0,25	0,28	0,31	0,35	0,40	0,45	0,57	0,63	0,69	0,80	0,89
16	0,13	0,21	0,27	0,29	0,34	0,38	0,41	0,46	0,53	0,60	0,75	0,84	0,92	1,07	1,19
20	0,17	0,27	0,33	0,37	0,42	0,47	0,52	0,58	0,67	0,75	0,94	1,05	1,15	1,33	1,49
25	0,21	0,33	0,42	0,46	0,53	0,59	0,65	0,72	0,83	0,93	1,18	1,32	1,44	1,67	1,86
30	0,25	0,40	0,50	0,55	0,63	0,71	0,77	0,87	1,00	1,12	1,41	1,58	1,73	2,00	2,24



		Page
Indexable inserts for counterboring and precision boring	Product range overview	B 497
	Designation key	B 497
	Walter Select – Counterboring	B 500
	Walter Select – Precision boring	B 503
	Indexable inserts for counterboring and precision boring tools	B 506
Tools for counterboring and precision boring	Product range overview	B 516
	Modularity of the Walter Precision system	B 518
	ScrewFit system overview	B 520
	Designation key	B 522
	Walter Select – Counterboring and precision boring	B 524
	Walter Capto™/ScrewFit two flute boring tools	B 526
	Walter NCT two flute boring tools	B 534
	Walter Capto™/ScrewFit precision boring tools	B 542
	Walter NCT precision boring tools	B 568
	Setting device for B3230 and B4030	B 588
Cartridges	Product range overview	B 590
	ISO cartridges	B 592
	Walter mini cartridges	B 600
	Walter precision boring cartridges	B 605
HSS core drills and countersinkers	Product range overview	B 608
	Designation key	B 609
	Walter Select – HSS core drills and countersinkers	B 610
	HSS core drills and countersinkers	B 614

		Page
Technical information – Counterboring and precision boring tools	Cutting data	B 622
	Cutting tool material application charts	B 634
	Geometry overview	B 636
	Setting and assembly instructions	B 639
	Precision boring cartridges: How it works	B 641
	Application information	B 644
	Information on high-speed applications	B 646
	Usage recommendations	B 647
Technical information – HSS core drills and countersinkers	Cutting data	B 648



Product range overview of indexable inserts for counterboring and precision boring



Machining	Insert shape		Description	Page
Solid drilling		**W**	For solid drilling	B 189

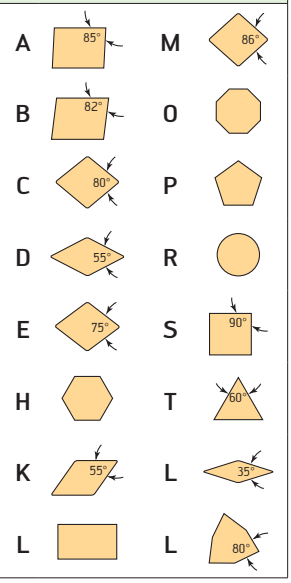
Machining	Insert shape		Description	Page
Counterboring **Precision boring**		**S**	For counterboring	B 508
		**C**	For counterboring For precision boring	B 497 B 510
		**W**	For counterboring For precision boring	B 509 B 514
		**T**	For precision boring	B 513

Designation key
for indexable inserts for counterboring and precision boring

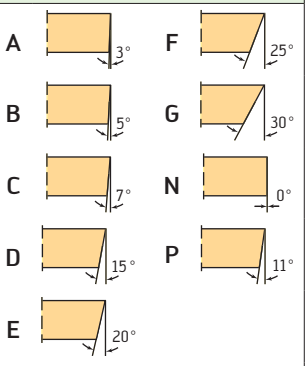
B2

C	C	M	T	06	02	04	–	E47
1	2	3	4	5	6	7		8

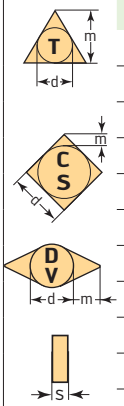
1 Insert shape



2 Clearance angle



3 Tolerances



Permissible deviation in mm for

	d	m	s
A	± 0,025	± 0,005	± 0,025
C	± 0,025	± 0,013	± 0,025
E	± 0,025	± 0,025	± 0,025
F	± 0,013	± 0,005	± 0,025
G	± 0,025	± 0,025	± 0,130
H	± 0,013	± 0,013	± 0,025
J[1]	± 0,05–0,15[2]	± 0,005	± 0,025
K[1]	± 0,05–0,15[2]	± 0,013	± 0,025
L[1]	± 0,05–0,15[2]	± 0,025	± 0,025
M	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,130
N	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,025
U	± 0,08–0,25[2]	± 0,13–0,38[2]	± 0,130

[1] Inserts with ground planar cutting edges
[2] Depending on the insert size (see ISO standard 1832)

7 Corner radius

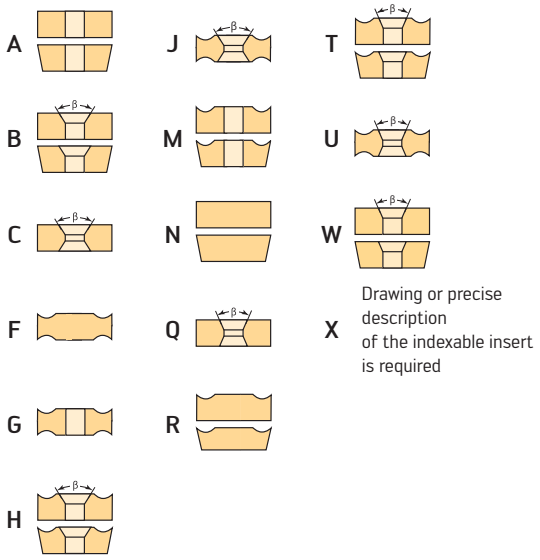


01	r = 0,1
02	r = 0,2
04	r = 0,4
08	r = 0,8
12	r = 1,2
16	r = 1,6
24	r = 2,4
00	for diameters converted from imperial units to mm
R M0	for diameters in metric units

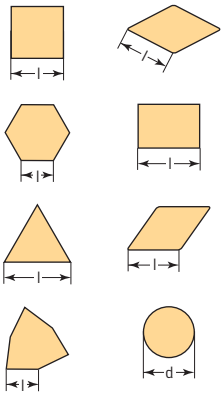
8 Geometry

X5	Tough
X15	Universal
X25	Easy-cutting
E47	Counterboring

4
Machining and fastening features



5
Cutting edge length



6	
Insert thickness	
01	s = 1,59
T1	s = 1,98
T2	s = 2,78
03	s = 3,18
T3	s = 3,97
04	s = 4,76
05	s = 5,56
06	s = 6,35
07	s = 7,94
09	s = 9,52

Designation key for cutting material grades – Drilling

W	K	P	25	S
Walter	1	2	3	4

1	
1. Primary application or coating type	
P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials
A	CVD aluminium coating
X	PVD coating

2	
2. Primary application	
P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials

3	
ISO range of applications	
Wear resistance	
01	
10	
15	
20	
25	
30	
35	
45	
Toughness	

4	
Generation	
S	Tiger·tec® Silver
C	Color Select

Walter Select for indexable inserts for counterboring

Step by step to the right indexable insert

STEP 1

Determine the **material** to be machined from page B 1174 onwards.

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining group	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**High-temperature alloys and titanium alloys**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

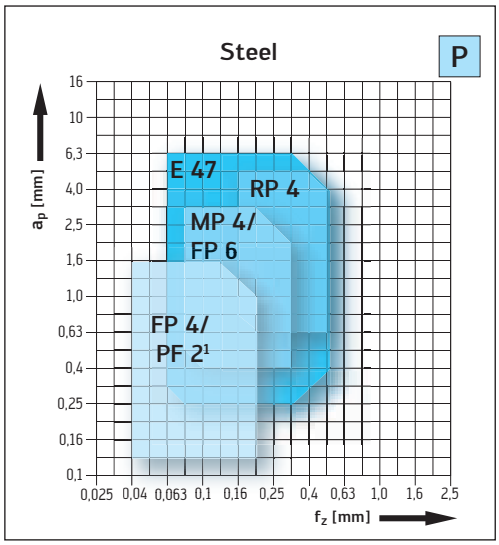
STEP 2

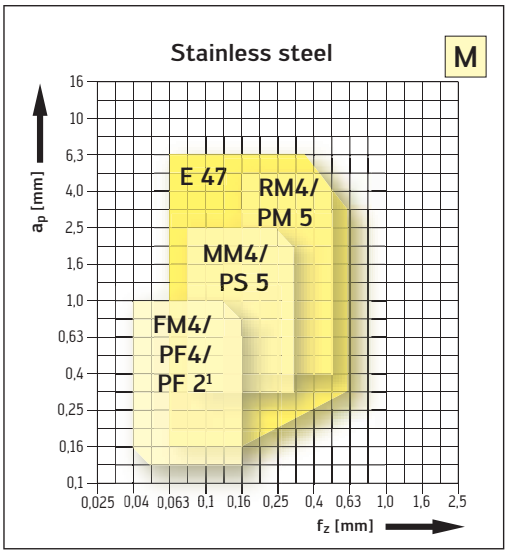
Select the **machining conditions:**

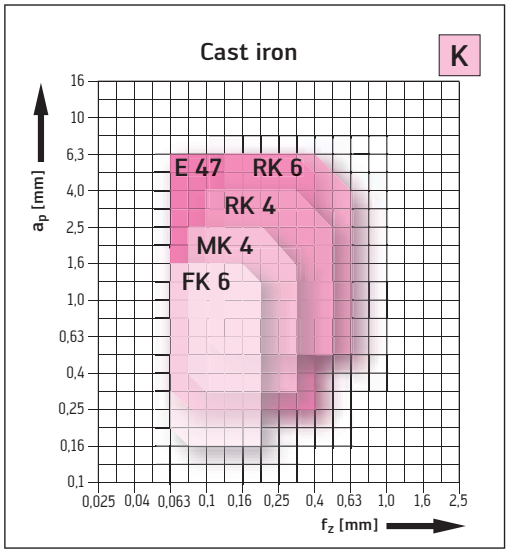
Type of cutting action	Machine stability, clamping system and workpiece		
	very good	good	moderate
Smooth cut, Premachined surface			
Cast iron or forged skin Variable depths of cut Slightly interrupted cuts			
Moderately interrupted cuts			
Heavily interrupted cuts			

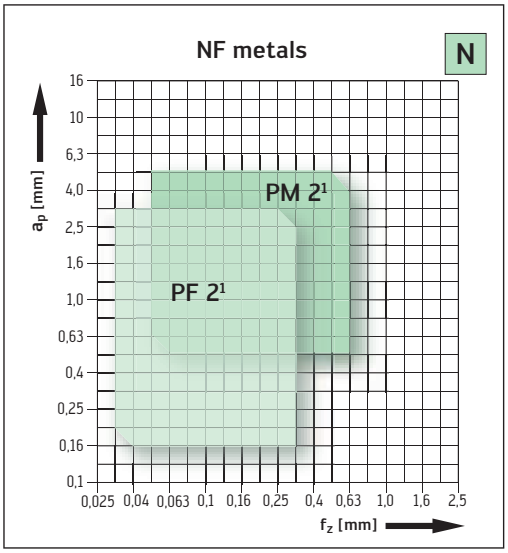
STEP 3

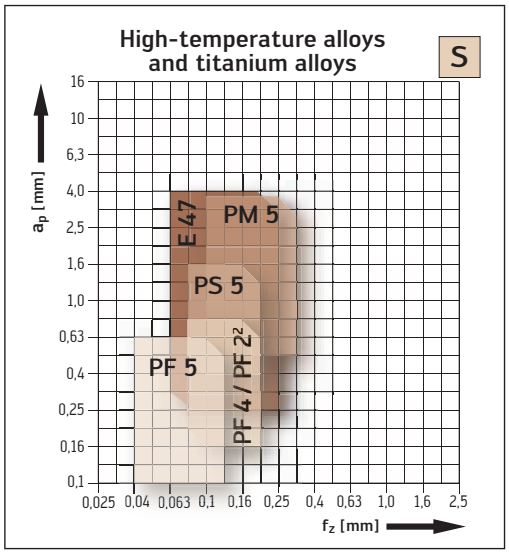
Determine the **indexable insert geometry** via the depth of cut (a_p) and the feed (f_z).











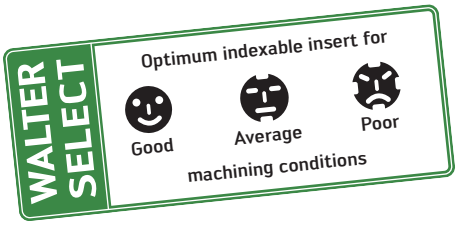
[2] circumference fully ground

Walter Select for indexable inserts for counterboring

Step by step to the right indexable insert

STEP 4

Determine the **cutting tool material** via the indexable insert geometry and the machining conditions:



Code letters	Machining group	Diameter accuracy	Walter indexable insert geometry	Machining conditions		
				☺	😐	☹
P	P1–P15	average	E47	WPP20	WPP20	WSM20
			MP4	WPP10S	WPP20S	WPP20S
			RP4	WPP10S	WPP20S	WPP30S
			FP6	WPP10S	WPP20S	WPP20S
			FP4	WPP10S	WPP20S	WPP20S
			PM5	WPP10	WPP20	WPP30 / WSM20
			PS5	WPP10	WPP20	WPP20 / WSM20
			PF4	WPP10	WPP20	WPP20 / WSM20
		high	MP4	WPP10S	WPP20S	
			PF5	WPP20	WPP20	WPP30 / WSM20
			PF2	WSM20	WSM20	WSM20
M	M1–M3	average	E47	WSM20	WSM20	WSM20
			MM4	WMP20S	WMP20S	WMP20S
			RM4 / PM5	WSM10	WSM20 / WMP20S	WSM30
			PS5	WSM20	WSM20	WSM30
			FM4 / PF4	WSM10	WSM20 / WMP20S	WSM30
		high	MM4	WMP20S	WMP20S	WMP20S
			PF5	WSM30	WSM30	WSM30
			PF2	WSM20	WSM20	WSM20
K	K1–K7	average	E47	WPP20	WPP20	WPP20
			MK4	WKK10S	WKK20S	
			RK4	WKK10S	WKK20S	
			FK6	WKK10S	WKK20S	
		high	MK4	WKK10S	WKK20S	
			PF5	WPP20	WPP20	WPP20
N	N1–N10	high	PM2	WK1 / WXN10	WK1 / WXN10	WK1 / WXN10
			PF2	WK1 / WXN10	WK1 / WXN10	WK1 / WXN10
S	S1–S10	average	E47	WSM20	WSM20	—
			PM5	WSM10	WSM20	WSM30
			PS5	WSM20	WSM20	WSM30
			PF4	WSM10	WSM20	WSM30
		high	PF5	WSM30	WSM30	WSM30
			PF2	WSM20	WSM20	—
O	O1–O6	high	PM2	WK1 / WXN10	WK1 / WXN10	WK1 / WXN10
			PF2	WK1 / WXN10	WK1 / WXN10	WK1 / WXN10

STEP 5

Select the **cutting data** from page B 622 onwards.

Cutting data for counterboring

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group¹			Indexable insert geometry					
									Starting values for feed f [mm/rev]					
									–E47 / –MP4 / –MK4 / –MM4 D_c [mm]			–PM5 / –RP4 / –RK4 / –RM4 D_c [mm]		
									<44	>44-73	>73	<44	>44-73	>73
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	428	P1	●●		0,20	0,30	0,40	0,22	0,30	0,40
		C > 0.25% to ≤ 0.55%	Annealed	190	639	P2	●●		0,16	0,24	0,40	0,16	0,24	0,40
		C > 0.25% to ≤ 0.55%	Heat-treated	210	708	P3	●●		0,15	0,22	0,35	0,15	0,22	0,35
		C > 0.55%	Annealed	190	639	P4	●●		0,14	0,20	0,30	0,14	0,20	0,30
		C > 0.55%	Heat-treated	300	1013	P5	●●		0,12	0,18	0,25	0,12	0,18	0,25
		Free cutting steel (short-chipping)	Annealed	220	745	P6	●●	●	0,15	0,22	0,35	0,15	0,22	0,35
	Low-alloyed steel		Annealed	175	591	P7	●●		0,20	0,30	0,40	0,20	0,30	0,40
			Heat-treated	300	1013	P8	●●		0,14	0,20	0,30	0,14	0,20	0,30
			Heat-treated	380	1282	P9	●●		0,12	0,18	0,25	0,12	0,18	0,25
				430	1477	P10	●●		0,10	0,15	0,20	0,10	0,15	0,20

Walter Select for indexable inserts for precision boring

Step by step to the right indexable insert

STEP 1

Determine the **material** to be machined from page B 1174 onwards.

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining group	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**High-temperature alloys and titanium alloys**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Select the **machining conditions**:

Type of cutting action	Machining conditions
Smooth cut, level entry or exit surfaces	
Bores with joint faces/laminates Cast and forged inclines < 5°	
Bores with interrupted cuts Cast and forged inclines > 5°	

STEP 3

Determine the **indexable insert geometry** via the material and the projection length.

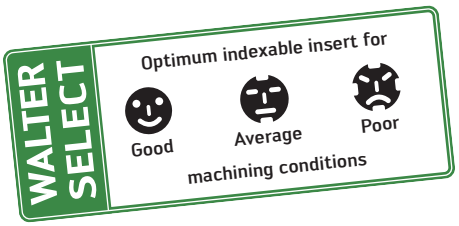
Code letters	Machining group	Projection length		
		< $3 \times D_c$	< $4 \times D_c$	< $5 \times D_c$ – $6 \times D_c$
P	P1–P15	PF2 / PF5 / PF4	X5 / X15	—
M	M1–M3	PF4 / PF5	X5 / X15	—
K	K1–K7	PF4 / CCMW / WCMW	X5 / CCMW / WCMW	X15
N	N1–N6	PM2 / PF2 / WCMW	X25 / PF2 / WCMW	X25 / PF2
	N7–N10	PM2 / PF2	X15 / X25	X25
S	S1–S10	PM2 / PF2 / PF5	X5 / X15	—
H	H1–H4	CCMW / WCMW	CCMW / WCMW	—
O	O1–O6	PM2 / PF2 / WCMW / W...FS1 / FSL-9 / FSR-9 / FSM1	X25 / WCMW T...FS1	T...FS1

Walter Select for indexable inserts for precision boring

Step by step to the right indexable insert

STEP 4

Determine the **cutting tool material** via the indexable insert geometry and the machining conditions:



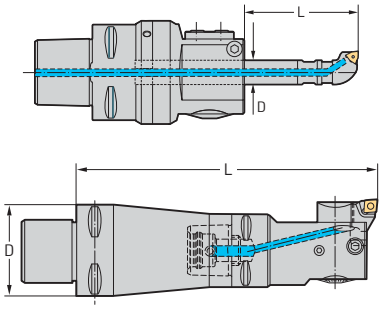
Code letters	Machining group	Walter indexable insert geometry	Machining conditions		
			☺	😐	☹
P	P1–P15	MP4	WPP10S	WPP20S	WPP20S
		FP4	WPP10S	WPP20S	WPP20S
		X5 / X15	WAK15	WXM15	WTP35
		PF2	WSM20	WSM20	WSM20
		PF5	WPP20	WPP20	WPP20
		PF4*	WPP10	WPP20	WPP20
M	M1–M3	X5 / X15	WTP35 / WXM15	WTP35 / WXM15	WTP35 / WXM15
		FM4	WSM10	WSM20 / WMP20S	WSM30
		PF2	WSM20	WSM20	—
		PF5	—	WSM30	WSM30
K	K1–K7	X5 / X15	WAK15	WXM15	WTP35
		CCMW / WCMW	WCB80	WCB50	—
		PF4*	WPP10	WPP20	WPP20
N	N1–N6	X25	WK1	WK1	WK1
		PM2	WK1 / WXN10	WK1 / WXN10	WK1 / WXN10
		PF2	WK1 / WXN10	WK1 / WXN10	WK1 / WXN10
		WCMW	WCD10	WCD10	—
		W...FS1	WDN10	—	—
		T...FS1	WDN10	—	—
		FSR-9	WDN10	—	—
		FSL-9	WDN10	—	—
		FS-M1	WDN10	—	—
	N7–N10	X15 / X25	WK1	WK1	WK1
		PM2	WK1 / WXN10	WK1 / WXN10	WK1 / WXN10
		PF2	WK1 / WXN10	WK1 / WXN10	WK1 / WXN10
		W...FS1	WDN10	—	—
		T...FS1	WDN10	—	—
		FSR-9	WDN10	—	—
		FSL-9	WDN10	—	—
		FS-M1	WDN10	—	—
S	S1–S10	X5 / X 15	WK1	WK1	WK1
		PM2	WXN10	—	—
		PF2	WSM20	WSM20	—
		PF5	WSM30	WSM30	WSM30
H	H1–H4	CCMW	WCB30	WCB50	WCB50
		WCMW	WCB50	WCB50	WCB50
O	O1–O6	X 25	WK1	WK1	WK1
		PM2	WK1	WK1	WK1
		PF2	WK1	WK1	WK1
		WCMW	WCD10	WCD10	—
		W...FS1	WDN10	—	—
		T...FS1	WDN10	—	—
		FSR-9	WDN10	—	—
		FSL-9	WDN10	—	—
		FS-M1	WDN10	—	—

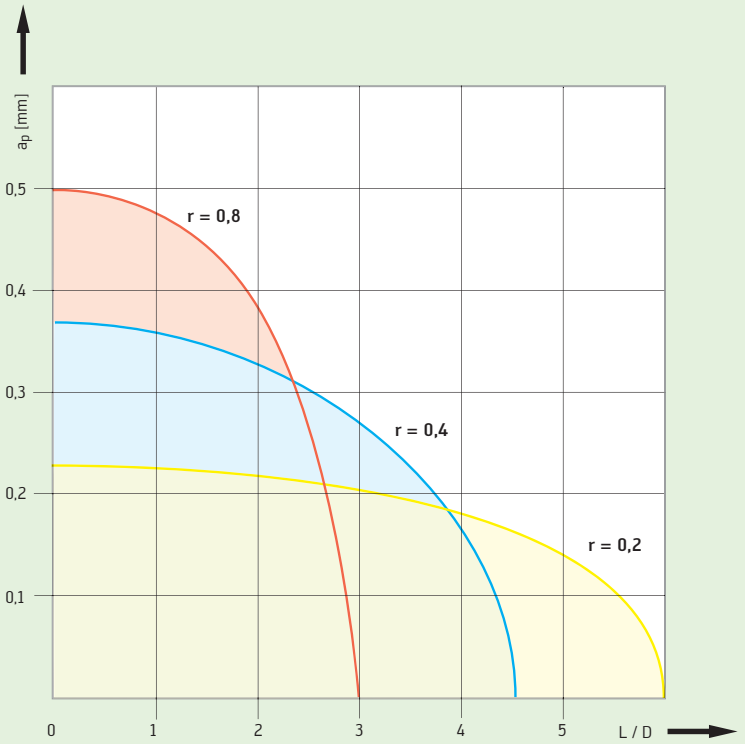
* Indexable insert with sintered circumference

STEP 5

Now select the corner radius r and the depth of cut **a_p on the basis of the adjacent diagram.**

Choose the maximum possible corner radius with reference to the relevant length-to-diameter ratio (L/D).
The optimal depths of cut ap are around two-thirds of the specified maximum a_p values.





STEP 6

Now select the maximum feed rate depending on the specified surface quality of the workpiece and the corner radius of the indexable insert selected in step 5.

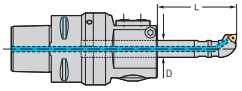
Corner radius Indexable insert r [mm]	Depth of surface roughness [µm] Max. feed f [mm/rev]									
	0,03		0,06		0,09		0,12		0,15	
	R_{max}	R_a	R_{max}	R_a	R_{max}	R_a	R_{max}	R_a	R_{max}	R_a
0,2	0,56	0,14	2,26	0,58	5,13	1,32	9,21	3,38	14,60	3,79
0,4	0,28	0,07	1,13	0,29	2,54	0,65	4,53	1,16	7,09	1,83

STEP 7

Select the **cutting data** from page B 626 onwards.

Cutting data for precision boring (boring bars)

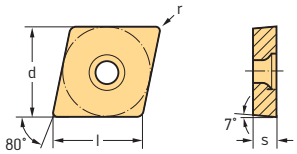
= Cutting data for wet machining
= Dry machining is possible



Overview of the main material groups and code letters

Material group			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group			Cutting material grade HW WK1	Starting values for cutting speed v_c [m/min] L/D 3 × D_c	4 × D_c	6 × D_c
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	428	P1	●●				
		C > 0.25% to ≤ 0.55%	Annealed	190	639	P2	●●				
		C > 0.25% to ≤ 0.55%	Heat-treated	210	708	P3	●●				
		C > 0.55%	Annealed	190	639	P4	●●				
		C > 0.55%	Heat-treated	300	1013	P5	●●				
		Free cutting steel (short-chipping)	Annealed	220	745	P6	●●	●			
	Low-alloyed steel		Annealed	175	591	P7	●●				
			Heat-treated	300	1013	P8	●●				
			Heat-treated	380	1282	P9	●●				
			Heat-treated	430	1477	P10	●●				
	High-alloyed steel and high-alloyed tool steel		Annealed	200	675	P11	●●				
			Hardened and tempered	300	1013	P12	●●				
			Hardened and tempered	400	1361	P13	●●				
	Stainless steel		Ferritic/martensitic, annealed	200	675	P14	●●				
			Martensitic, heat-treated	330	1114	P15	●●				
M	Stainless steel		Austenitic, quench hardened	200	675	M1	●●				
			Austenitic, precipitation hardened (PH)	300	1013	M2	●●				
			Austenitic/ferritic, duplex	230	778	M3	●●				

Positive rhombic 80°
CCMT / CCGT
Tiger·tec® Silver



B 2

Indexable inserts

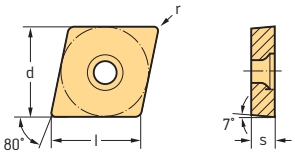
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	CCMT060202-E47	6,45	0,2				✗						☺	✗								☺	✗
	CCMT060204-E47	6,45	0,4				✗						☺	✗								☺	✗
	CCMT09T302-E47	9,67	0,2				✗						☺	✗								☺	✗
	CCMT09T304-E47	9,67	0,4				✗						☺	✗								☺	✗
	CCMT09T308-E47	9,67	0,8				✗						☺	✗								☺	✗
	CCMT120404-E47	12,9	0,4				✗						☺	✗								☺	✗
	CCMT120408-E47	12,9	0,8				✗						☺	✗								☺	✗
	CCMT120412-E47	12,9	1,2				✗						☺	✗								☺	✗
	CCMT060204-MP4	6,45	0,4	☺	☺																		
	CCMT060208-MP4	6,45	0,8	☺	☺																		
	CCMT09T304-MP4	9,67	0,4	☺	☺																		
	CCMT09T308-MP4	9,67	0,8	☺	☺																		
	CCMT120404-MP4	12,90	0,4	☺	☺																		
	CCMT120408-MP4	12,90	0,8	☺	☺																		
	CCGT060204-MP4	6,45	0,4	☺	☺																		
	CCGT060208-MP4	6,45	0,8	☺	☺																		
	CCGT09T304-MP4	9,67	0,4	☺	☺																		
	CCGT09T308-MP4	9,67	0,8	☺	☺																		
	CCGT120408-MP4	12,90	0,8	☺	☺																		
	CCMT060204-FP6	6,45	0,4	☺	☺																		
	CCMT060208-FP6	6,45	0,8		☺																		
	CCMT09T304-FP6	9,67	0,4	☺	☺																		
	CCMT09T308-FP6	9,67	0,8	☺	☺																		
	CCMT120404-FP6	12,90	0,4		☺																		
	CCMT120408-FP6	12,90	0,8		☺																		
	CCMT060204-FK6	6,45	0,4												☺	☺							
	CCMT060208-FK6	6,45	0,8												☺	☺							
	CCMT09T304-FK6	9,67	0,4												☺	☺							
	CCMT09T308-FK6	9,67	0,8												☺	☺							
	CCMT120404-FK6	12,90	0,4												☺	☺							
	CCMT120408-FK6	12,90	0,8												☺	☺							
	CCMT060204-MM4	6,45	0,4					☺	☺	☺	☺								☺	☺			
	CCMT060208-MM4	6,45	0,8					☺	☺		☺									☺			
	CCMT09T304-MM4	9,67	0,4					☺	☺	☺	☺								☺	☺			
	CCMT09T308-MM4	9,67	0,8					☺	☺	☺	☺								☺	☺			
	CCMT120404-MM4	12,90	0,4								☺									☺			
	CCMT120408-MM4	12,90	0,8							☺	☺								☺	☺			
	CCMT060204-MK4	6,45	0,4												☺	☺							
	CCMT060208-MK4	6,45	0,8												☺	☺							
	CCMT09T304-MK4	9,67	0,4												☺	☺							
	CCMT09T308-MK4	9,67	0,8												☺	☺							
	CCMT120404-MK4	12,90	0,4												☺	☺							
	CCMT120408-MK4	12,90	0,8												☺	☺							

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

B 622 B 634

Positive rhombic 80°
CCMT / CCGT
Tiger·tec® Silver

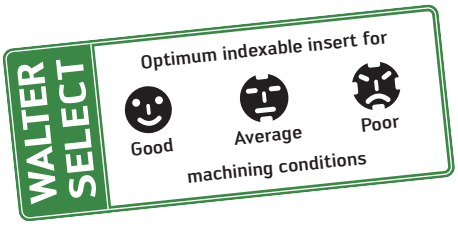


Indexable inserts

	Designation	l mm	r mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WPP20	P HC WMP20S	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10S	S HC WSM20S	S HC WSM30S	S HC WSM20	S HC WSM30
	CCMT060204-RP4	6,45	0,4	☺	😐	☹																	
	CCMT060208-RP4	6,45	0,8	☺	😐	☹																	
	CCMT09T304-RP4	9,67	0,4	☺	😐	☹																	
	CCMT09T308-RP4	9,67	0,8	☺	😐	☹																	
	CCMT120404-RP4	12,90	0,4	☺	😐	☹																	
	CCMT120408-RP4	12,90	0,8	☺	😐	☹																	
	CCMT120412-RP4	12,90	1,2	☺	😐	☹																	
	CCMT060204-RM4	6,45	0,4				😐	😐	☺	😐	☹								☺	😐	☹		
	CCMT060208-RM4	6,45	0,8				😐	😐	☺	😐	☹								☺	😐	☹		
	CCMT09T304-RM4	9,67	0,4				😐	😐	☺	😐	☹								☺	😐	☹		
	CCMT09T308-RM4	9,67	0,8				😐	😐	☺	😐	☹								☺	😐	☹		
	CCMT120404-RM4	12,90	0,4				😐	😐	☺	😐	☹								☺	😐	☹		
	CCMT120408-RM4	12,90	0,8				😐	😐	☺	😐	☹								☺	😐	☹		
	CCMT120412-RM4	12,90	1,2				😐	😐		😐	☹									😐	☹		
	CCMT060204-RK4	6,45	0,4												☺	😐							
	CCMT060208-RK4	6,45	0,8												☺	😐							
	CCMT09T304-RK4	9,67	0,4												☺	😐							
	CCMT09T308-RK4	9,67	0,8												☺	😐							
	CCMT120404-RK4	12,90	0,4												☺	😐							
	CCMT120408-RK4	12,90	0,8												☺	😐							
	CCMT120412-RK4	12,90	1,2												☺	😐							

See the ISO 1832 designation key for dimensions

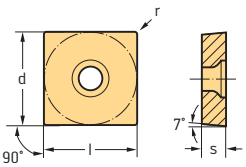
HC = Coated carbide
HW = Uncoated carbide



B 622
B 634

Positive square
SCMT

Tiger·tec®



B 2

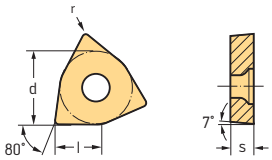
Indexable inserts

	Designation	l mm	r mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WPP20	P HC WMP20S	M HC WPP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HC WK10	S HC WSM10	S HC WSM20	S HC WSM30
	SCMT060204-E47	6,35	0,4				☹			☺	😐	☹					☺	😐	☹
	SCMT09T304-E47	9,53	0,4				☹			☺	😐	☹					☺	😐	☹
	SCMT09T308-E47	9,53	0,8				☹			☺	😐	☹					☺	😐	☹
	SCMT120408-E47	12,7	0,8				☹			☺	😐	☹					☺	😐	☹

HC = Coated carbide

B 622 B 634

Positive Trigon 80°
WCMT
Tiger·tec® Silver

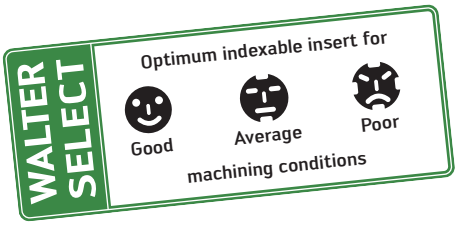


Indexable inserts

	Designation	l mm	r mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WPP20	M HC WMP20S	M HC WSM10S	M HC WSM20S	M HC WSM30S	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WAK10	S HC WSM20	S HC WSM30
	WCMT030204-E47	3,5	0,4				☹					😐	☹				😐	☹
	WCMT040204-E47	4,3	0,4				☹					😐	☹				😐	☹
	WCMT06T304-E47	6,5	0,4				☹					😐	☹				😐	☹
	WCMT06T308-E47	6,5	0,8				☹					😐	☹				😐	☹
	WCMT080408-E47	8,7	0,8				☹					😐	☹				😐	☹
	WCMT06T304-MP4	6,52	0,4		😐													
	WCMT06T308-MP4	6,52	0,8		😐													
	WCMT06T304-MK4	6,52	0,4												😐			
	WCMT06T308-MK4	6,52	0,8												😐			
	WCMT030202-RP4	3,91	0,2	☺	😐	☹												
	WCMT040204-RP4	4,34	0,4	☺	😐	☹												
	WCMT06T304-RP4	6,52	0,4	☺	😐	☹												
	WCMT06T308-RP4	6,52	0,8	☺	😐	☹												
	WCMT080404-RP4	8,69	0,4	☺	😐	☹												
	WCMT080408-RP4	8,69	0,8	☺	😐	☹												
	WCMT080412-RP4	8,69	1,2	☺	😐	☹												
	WCMT030202-RK4	3,91	0,2												😐			
	WCMT040204-RK4	4,34	0,4												😐			
	WCMT06T304-RK4	6,52	0,4											☺	😐			
	WCMT06T308-RK4	6,52	0,8											☺	😐			
	WCMT080404-RK4	8,69	0,4												😐			
	WCMT080408-RK4	8,69	0,8												😐			
	WCMT080412-RK4	8,69	1,2												😐			

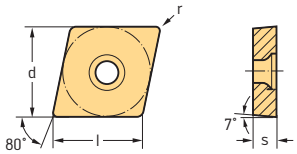
See the ISO 1832 designation key for dimensions

HC = Coated carbide



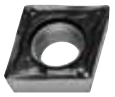
B 622
B 634

Positive rhombic 80°
CCGT / CPGT / CCMT
Tiger·tec® Silver



B 2

Indexable inserts

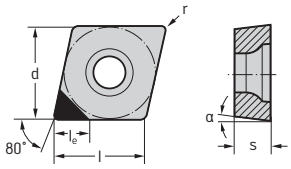
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	CCGT060204-X5	6,45	0,4					☺							☺					
	CCGT060202-X15	6,45	0,2					☺							☺					
	CCGT060204-X15	6,45	0,4					☺							☺					
	CPGT050202-X5	5,65	0,2					☺							☺					
	CPGT050204-X5	5,65	0,4					☺							☺					
	CPGT050202-X15	5,65	0,2					☺							☺					
	CPGT050204-X15	5,65	0,4					☺							☺		☺			
	CPGT050204-X25	5,65	0,4														☺			
	CCMT060202-FP4	6,45	0,2	☺	☺															
	CCMT060204-FP4	6,45	0,4	☺	☺															
	CCMT060208-FP4	6,45	0,8	☺	☺															
	CCMT09T302-FP4	9,67	0,2	☺	☺															
	CCMT09T304-FP4	9,67	0,4	☺	☺															
	CCMT09T308-FP4	9,67	0,8	☺	☺															
	CCMT120404-FP4	12,90	0,4	☺	☺															
	CCMT120408-FP4	12,90	0,8	☺	☺															
	CCGT060201-PF2	6,45	0,1								☺					☺			☺	
	CCGT060202-PF2	6,45	0,2								☺					☺	☺		☺	
	CCGT060204-PF2	6,45	0,4								☺					☺	☺		☺	
	CCGT09T301-PF2	9,67	0,1								☺					☺			☺	
	CCGT09T302-PF2	9,67	0,2								☺					☺	☺		☺	
	CCGT09T304-PF2	9,67	0,4							☺	☺					☺	☺	☺	☺	
	CCGT09T308-PF2	9,67	0,8							☺	☺					☺	☺	☺	☺	
	CCGT120404-PF2	12,90	0,4								☺					☺	☺		☺	
	CCGT120408-PF2	12,90	0,8								☺					☺	☺		☺	
	CCGT060201-PM2	6,45	0,1													☺	☺			
	CCGT060202-PM2	6,45	0,2													☺	☺			
	CCGT060204-PM2	6,45	0,4													☺	☺			
	CCGT09T301-PM2	9,67	0,1													☺	☺			
	CCGT09T302-PM2	9,67	0,2													☺	☺			
	CCGT09T304-PM2	9,67	0,4													☺	☺			
	CCGT09T308-PM2	9,67	0,8													☺	☺			
	CCGT120402-PM2	12,90	0,2													☺	☺			
	CCGT120404-PM2	12,90	0,4													☺	☺			
	CCGT120408-PM2	12,90	0,8													☺	☺			

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide

B 626 B 634

CBN – Positive rhombic 80°
CCMW

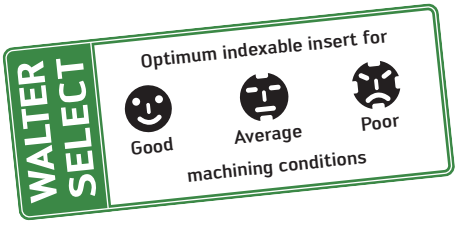


Indexable inserts

	Designation	l_e mm	r mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	S HC WSM10	S HC WSM20	S HC WSM30	H BH WCB50
	CCMW060208	2,4	0,8																●
	CCMW060204	2,5	0,4																●
	CCMW09T308	2,3	0,8																●
	CCMW060208-2	2,4	0,8																●
	CCMW060204-2	2,5	0,4																●
	CCMW09T308-2	2,3	0,8																●
	CCMW09T304-2	2,4	0,4																●

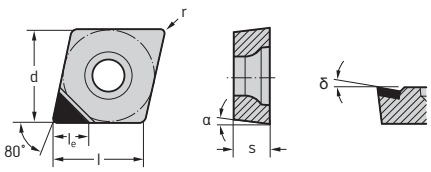
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide
BH = CBN with high CBN content

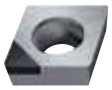


B 626
B 634

PCD – Positive rhombic 80°
CCGT / CCGW



Indexable inserts

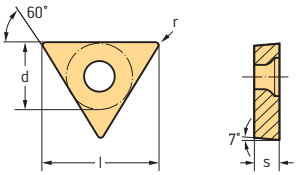
	Designation	l_e mm	r mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM30	K HC WKK10S	K HC WKK20S	N HC WXN10	N HW WK1	N DP WDN10	S HC WSM10	S HC WSM20	S HC WSM30	O GC WDN10
	CCGT060202FS-1	3,5	0,2													☺				☺
	CCGT060204FS-1	3,5	0,4													☺				☺
	CCGT060208FS-1	3,5	0,8													☺				☺
	CCGT09T304FS-1	4	0,4													☺				☺
	CCGT09T308FS-1	4	0,8													☺				☺
	CCGW060204FS-1	3,5	0,4													☺				☺
	CCGW060208FS-1	3,5	0,8													☺				☺
	CCGW060202FS-1	3,6	0,2													☺				☺
	CCGW09T308FS-1	4	0,8													☺				☺
	CCGW120408FS-1	4	0,8													☺				☺
	CCGW09T302FS-1	4,1	0,2													☺				☺
	CCGW09T304FS-1	4,1	0,4													☺				☺
	CCGW120404FS-1	4,1	0,4													☺				☺
	CCGT060204FS-M1	3,5	0,4													☺				☺
	CCGT09T304FS-M1	4	0,4													☺				☺
	CCGW060204FSL-9	6,4	0,4													☺				☺
	CCGW09T304FSL-9	9,7	0,4													☺				☺
	CCGW09T308FSL-9	9,7	0,8													☺				☺
	CCGW060204FSR-9	6,4	0,4													☺				☺
	CCGW09T304FSR-9	9,7	0,4													☺				☺
	CCGW09T308FSR-9	9,7	0,8													☺				☺

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide
DP = Polycrystalline diamond

B 626 B 634

Positive triangular 60°
TCGT
Tiger·tec® Silver

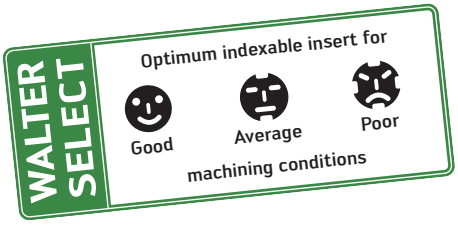


Indexable inserts

	Designation	l mm	r mm	P HC				M HC				K HC		N HC		S HC		
				WPP10S	WPP20S	WPP30S	WMP20S	WMP20S	WSM10S	WSM20S	WSM30S	WKK10S	WKK20S	WXN10	WK10	WSM10S	WSM20S	WSM30S
	TCGT110204-MP4	10,74	0,4	☺	😐													
	TCGT110208-MP4	10,74	0,8	☺	😐													
	TCGT16T308-MP4	16,50	0,8	☺	😐													
	TCGT110204-MM4	10,74	0,4							😐							😐	
	TCGT110208-MM4	10,74	0,8							😐							😐	
	TCGT16T308-MM4	16,50	0,8							😐							😐	
	TCGT110204-MK4	10,74	0,4										😐					
	TCGT110208-MK4	10,74	0,8										😐					
	TCGT16T308-MK4	16,50	0,8										😐					
	TCGT110201-PF2	10,74	0,1											☺				
	TCGT110202-PF2	10,74	0,2											☺				
	TCGT110204-PF2	10,74	0,4											☺				
	TCGT16T308-PF2	16,50	0,8											☺				
	TCGT110201-PM2	10,74	0,1											☺				
	TCGT110202-PM2	10,74	0,2											☺				
	TCGT110204-PM2	10,74	0,4											☺				
	TCGT16T308-PM2	16,50	0,8											☺				

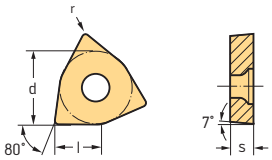
See the ISO 1832 designation key for dimensions

HC = Coated carbide



B 626
B 634

Positive Trigon 80°
WCGT / WCMT / WCMW
Tiger·tec® Silver



B 2

Indexable inserts

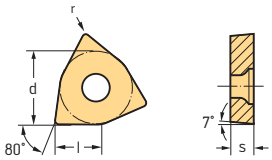
	Designation	l mm	r mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	P HC WTP35	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM21	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WAK15	N HC WXN10	N HW WK1	S HC WSM10	S HC WSM20	S HC WSM30	H BH WCB50
	WCGT020102-X5	2,7	0,2					●								●		●				
	WCGT020104-X5	2,7	0,4					●								●						
	WCGT030202-X5	3,5	0,2					●								●						
	WCGT030204-X5	3,5	0,4					●								●						
	WCGT040202-X5	4,3	0,2					●								●		●				
	WCGT040204-X5	4,3	0,4					●								●						
	WCGT050304-X5	5,43	0,4					●								●		●				
	WCGT020102-X15	2,7	0,2					●								●		●				
	WCGT020104-X15	2,7	0,4					●								●						
	WCGT030202-X15	3,5	0,2					●								●		●				
	WCGT030204-X15	3,5	0,4					●								●						
	WCGT040202-X15	4,3	0,2					●								●						
	WCGT040204-X15	4,3	0,4					●								●						
	WCGT050304-X15	5,43	0,4					●								●						
	WCGT020102-X25	2,7	0,2															●				
	WCGT030202-X25	3,5	0,2															●				
	WCGT030204-X25	3,5	0,4															●				
	WCGT040204-X25	4,3	0,4															●				
	WCGT050304-X25	5,43	0,4															●				
	WCGT030202-PF2	3,91	0,2									●					●					
	WCGT030204-PF2	3,91	0,4									●					●					
	WCGT040202-PF2	4,34	0,2									●					●					
	WCGT040204-PF2	4,34	0,4									●					●					
	WCGT06T301-PF2	6,52	0,1														●					
	WCGT06T302-PF2	6,52	0,2														●					
	WCGT06T304-PF2	6,52	0,4														●					
	WCGT06T308-PF2	6,52	0,8														●	●				
	WCMT040202-FP4	4,34	0,2	●	●																	
	WCMT040204-FP4	4,34	0,4	●	●																	
	WCMT040208-FP4	4,34	0,8	●	●																	
	WCMT06T302-FP4	6,52	0,2	●	●																	
	WCMT06T304-FP4	6,52	0,4	●	●																	
	WCMT06T308-FP4	6,52	0,8		●																	
	WCMT080404-FP4	8,69	0,4		●																	
	WCMT080408-FP4	8,69	0,8		●																	
	WCMT06T304-MK4	6,52	0,4												●							
	WCMT06T308-MK4	6,52	0,8												●							

See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide
BH = CBN with high CBN content

B 626 B 634

Positive Trigon 80°
WCGT / WCMT / WCMW
Tiger·tec® Silver

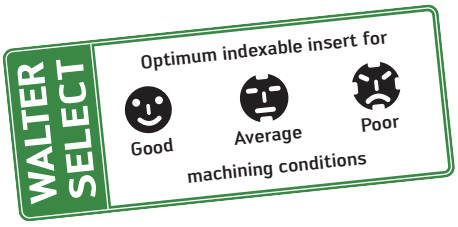


Indexable inserts

	Designation	l mm	r mm	P HC WPP10S	P HC WPP20S	P HC WPP30S	P HC WMP20S	P HC WTP35	M HC WMP20S	M HC WSM10	M HC WSM20	M HC WSM21	M HC WSM30	K HC WKK10S	K HC WKK20S	K HC WAK15	N HC WXN10	N HW WK1	S HC WSM10	S HC WSM20	S HC WSM30	H BH WCB50
	WCGT030202-PM2	3,91	0,2														☺	☺				
	WCGT030204-PM2	3,91	0,4														☺	☺				
	WCGT040202-PM2	4,34	0,2														☺	☺				
	WCGT040204-PM2	4,34	0,4														☺	☺				
	WCGT06T302-PM2	6,52	0,2														☺	☺				
	WCGT06T304-PM2	6,52	0,4														☺	☺				
	WCGT080404-PM2	8,69	0,4														☺	☺				
	WCGT080408-PM2	8,69	0,8														☺	☺				
	WCMW020102	2,7	0,2																			☺
	WCMW020104	2,7	0,4																			☺
	WCMW030202	3,5	0,2																			☺
	WCMW030204	3,5	0,4																			☺
	WCMW040202	4,3	0,2																			☺
	WCMW040204	4,3	0,4																			☺
	WCMW050304	5,43	0,4																			☺

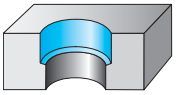
See the ISO 1832 designation key for dimensions

HC = Coated carbide
HW = Uncoated carbide
BH = CBN with high CBN content

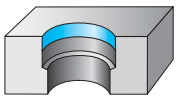


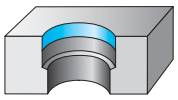
B 626
B 634

Product range overview of boring tools with indexable inserts: Boring

Machining			
Diameter range D_C [mm]	**20–153**	**20–153**	**150–640**
Designation	**B3220 / B3221** **Walter Boring^{MEDIUM}**	**B3220 / B3221** **Walter Boring^{MEDIUM}**	**B3220 / B3224** **Walter Boring^{MAXI}**
Shank (page)	ScrewFit | B 526 NCT | B 534	Walter Capto™ | B 526	Walter Capto™ | B 530 NCT | B 538
			

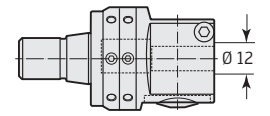
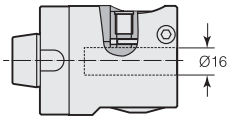
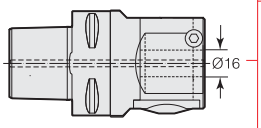
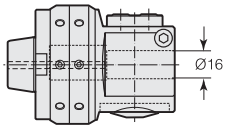
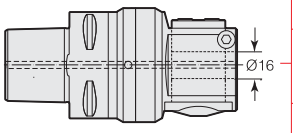
Product range overview of Boring tools with indexable inserts: Precision Boring

Machining					
Diameter range D_c [mm]	**2–45**	**2–45**	**15–203**	**33–153**	**150–640**
Designation	**B3230** **Walter Precision^{MIN}**	**B4030** **Walter Precision^{MIN}**	**B3230** **Walter Precision^{MEDIUM}**	**B4030** **Walter Precision^{MEDIUM}**	**B3230 / B3234** **Walter Precision^{MAXI}**
Shank (page)	Walter Capto™ | B 542 ScrewFit | B 542 NCT | B 568	Walter Capto™ | B 542 ScrewFit | B 542 NCT | B 568	Walter Capto™ | B 552 ScrewFit | B 550 NCT | B 574	Walter Capto™ | B 554 ScrewFit | B 554 NCT | B 576	Walter Capto™ | B 558 NCT | B 578
Balance type	Standard	Balanceable	Standard	Standard	Standard
Analogue/digital	Analogue	Analogue	Analogue	Analogue	Analogue
					

Machining					
Diameter range D_c [mm]	**3–32**	**32–68**	**68–124**	**90–153**	
Designation	**B4035** **Walter Precision^{DIGITAL}**	**B4035** **Walter Precision^{DIGITAL}**	**B4035** **Walter Precision^{DIGITAL}**	**B4031.C** **Walter Precision^{MEDIUM}**	
Shank (page)	Walter Capto™ | B 562 ScrewFit | B 582	Walter Capto™ | B 562 ScrewFit | B 582	Walter Capto™ | B 562 ScrewFit | B 582	Walter Capto™ | B 556	
Design				Reduced-weight	
Balance type	Diameter optimised	Diameter optimised	Diameter optimised		
Analogue/digital	Digital	Digital	Digital	Analogue	
					

Modularity of the B3230 and B4030 Walter Precision^{MINI} system

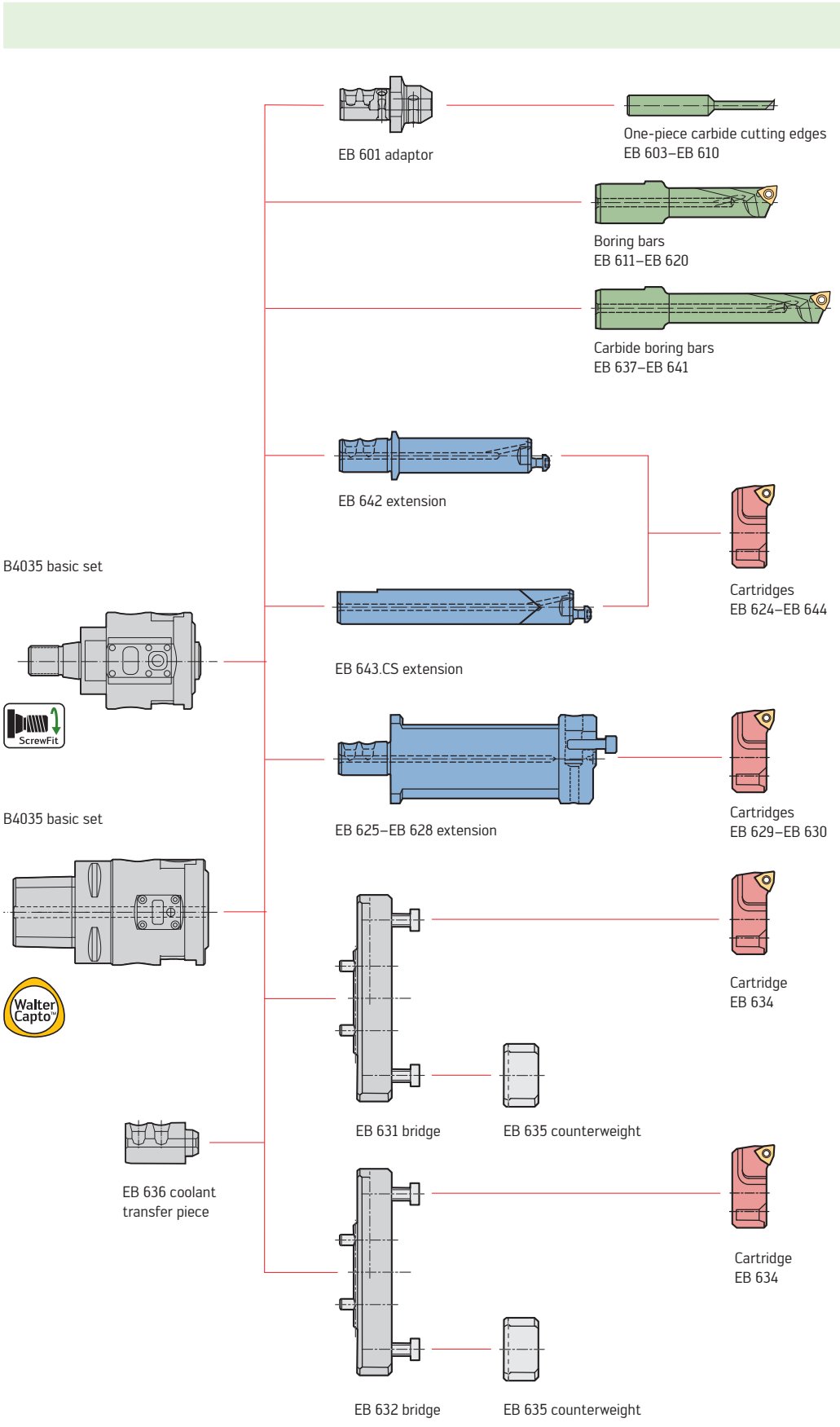
B 2

	Reducers	Extensions	Insert holder	Dia. range [mm]	Page
ScrewFit					
 B4030G.T45.02–20.Z1 **Balanceable**	EB 501		EB 301 …	2,0–3,5	B 542
			EB 302 …	3,0–6,0	
	EB 502	EB 303 …		5,8–7,5	
	EB 503	EB 304 …		7,3–9,5	
	EB 504	EB 106 / EB 107.CS	EB 305 …	8,8–12,5	B 542
	EB 505	EB 108 / EB 109.CS	EB 306 …	11,8–14,5	
	EB 508		EB 307 …	13,8–16,5	
	EB 509.CS		EB 512 …	15,8–20,0	
Walter Capto™/NCT					
 B3230G.N6.002–045.Z1 **Standard**	EB 101		EB 301 …	2,0–3,5	Walter Capto™ B 542
			EB 302 …	3,0–6,0	
	EB 102	EB 303 …		5,8–7,5*	NCT B 568
	EB 103	EB 304 …		7,3–9,5*	
 B3230G.C6.002–045.Z1 **Standard**	EB 104	EB 106 / EB 107.CS	EB 305 …	8,8–12,5*	
	EB 105	EB 108 / EB 109.CS	EB 306 …	11,8–14,5*	Walter Capto™ B 544
 B4030G.N6.02–45.Z1 **Balanceable**	EB 506	EB 508 / EB 509.CS	EB 307 …	13,8–16,5*	NCT B 570
	EB 507	EB 510 / EB 511.CS	EB 512 …	15,8–20,0	
 B4030G.C6.02–45.Z1 **Balanceable**	EB 110		EB 308	17,8–22,5	Walter Capto™ B 546
			EB 309	21,8–25,5	
	EB 111.CS		EB 310	24,8–28,5	
			EB 311	27,8–32,5	NCT B 572
			EB 312	31,8–36,5	
	EB 112.CS		EB 313	35,8–40,5	
			EB 314	39,8–45,5	

EB . . CS = Solid carbide shank

* For alternative, one-piece boring bars, see page B 548

Modularity of the B4035 Walter Precision^{DIGITAL} system



	Dia. range [mm]	Page
EB 601 adaptor, One-piece carbide cutting edges EB 603–EB 610	3–9 ($D_{c\ opt.}$ = 3–15 mm)	B 564
Boring bars EB 611–EB 620	10–20 ($D_{c\ opt.}$ = 10–26 mm)	B 564
Carbide boring bars EB 637–EB 641	10–20	B 564
EB 642 extension, EB 643.CS extension, Cartridges EB 624–EB 644	20–32 ($D_{c\ opt.}$ = 20–32 mm)	B 566
EB 625–EB 628 extension, Cartridges EB 629–EB 630	32–68	B 566
Cartridge EB 634, EB 631 bridge, EB 635 counterweight, EB 636 coolant transfer piece	68–96	B 566
Cartridge EB 634, EB 632 bridge, EB 635 counterweight	96–124	B 566

ScrewFit for drilling, boring and circular interpolation milling system overview

ScrewFit

B 2

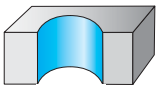
AK530
Page D 101

AK531
Page D 103

AK540
Page D 104

AK541
Page D 107

AK580
Page D 108



Solid drilling/ circular interpolation milling

B4011
Page B 200
Xtra·tec®

F2330
Page C 392

F4042
Page C 446
Xtra·tec®

F4080
Page C 414
Xtra·tec®

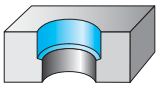
M2131
Page C 464

M4002
Page C 424

AK300.T
Page D 109



Solid carbide and HSS drills from page B 248 onwards

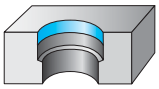


Counterboring

B322 .
Page B 526
Walter BoringMEDIUM

F4042
Page C 446
Xtra·tec®

M2131
Page C 464



Precision boring

B4030*
Page B 554
Walter PrecisionMEDIUM

B3230*
Page B 550

B4030*
Page B 542
Walter PrecisionMINI

B4035*
Page B 562
Walter PrecisionDIGITAL

* Only in combination with AK53 . CO and AK54 . CO.
For cutting edge orientation for ScrewFit precision boring tools, see page B 645.

ScrewFit

B 2

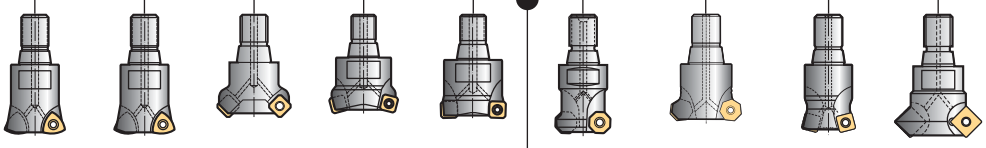
AK510
Page D 98

AK512
Page D 99

AK520
Page D 100

AK521
Page D 96

AK522
Page D 96



F2330
Page C 392

F4030
Page C 394
Xtra·tec®

F4033
Page C 396
Xtra·tec®

F4047
Page C 404
Xtra·tec®

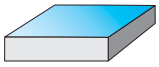
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Xtra·tec®

F4080
Page C 414
Xtra·tec®

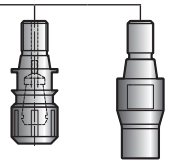
M3024
Page C 422
Walter BLAXX

M4002
Page C 424

M4574**
Page C 564

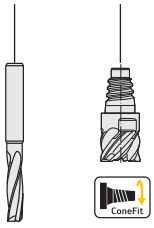


Face milling



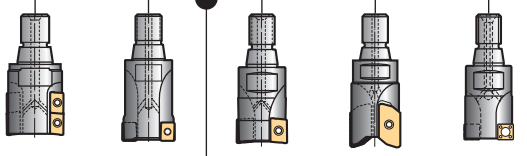
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Page D 109

AK523.T
Page D 97



Solid carbide and HSS milling cutters from page C 7 onwards

Solid carbide milling cutters from page C 128 onwards



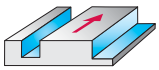
F4 . 38
Page C 470
Xtra·tec®

F4041
Page C 444
Xtra·tec®

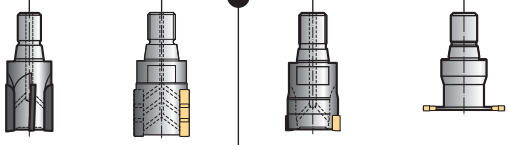
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Page C 446
Xtra·tec®

M2131
Page C 464

M4132
Page C 466



Shoulder/slot milling

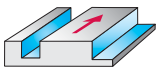


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Page C 219

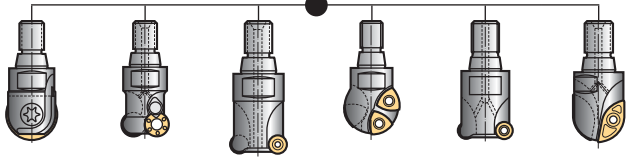
F5038
Page C 480
Walter BLAXX

F5 . 41
Page C 458
Walter BLAXX

F5055***
Page C 534
Walter BLAXX



Shoulder/slot milling



F2139
Page C 538

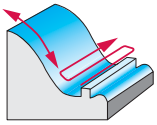
F2231
Page C 540

F2234
Page C 544

F2239
Page C 554

F2334 .
Page C 548

F2339
Page C 554



Copy milling

** for chamfering 45°
*** for slot milling and slitting

Designation key for counterboring and precision boring tools

B	4030	.	T	45	.	55–70	.	Z1	.	CC06
1	2		3	4		5		6		7

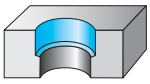
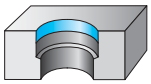
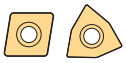
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Tool range	
B	Drilling and reaming tools

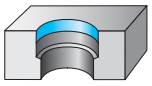
2	
Tool type	
3220	Walter Boring
3221	Walter Boring
3224	Walter Boring Cutting edge orientation rotated by 90°
3230	Walter Precision
3234	Walter Precision cutting edge orientation rotated by 90°
4030	Walter Precision, balanceable, self-balancing
4031	Walter LWS
4035	Walter Precision digital

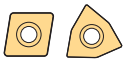
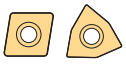
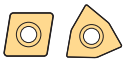
3	
Interface	
T	ScrewFit
C	Walter Capto™
N	NCT

4	5	6	7
Interface size	**Diameter range**	**Number of teeth**	**Insert type and size**

Walter Select counterboring/precision boring tools with indexable inserts
Indexable insert boring tools

					
Designation	**B3220 / B3221**	**B3220**	**B3220 / B3224**	**B3230**	**B4030**
	Walter Boring^{MEDIUM}		**Walter Boring**^{MAXI}	**Walter Precision**^{MINI}	
Shank (page)	ScrewFit (B 526) NCT (B 534) Walter Capto™ (B 526)	Walter Capto™ (B 528) ScrewFit (B 528) NCT (B 536)	Walter Capto™ (B 530) NCT (B 538)	Walter Capto™ (B 542) ScrewFit (B 542) NCT (B 568)	Walter Capto™ (B 542) ScrewFit (B 542) NCT (B 568)
Dia. range [mm]	20–41	41–153	150–640	2–45	2–45
Design					
Balance type				Standard	Balanceable
Analogue/digital				Analogue	Analogue
					
P Steel	●●	●●	●●	●●	●●
M Stainless steel	●●	●●	●●	●●	●●
K Cast iron	●●	●●	●●	●●	●●
N NF metals	●	●	●	●	●●
S Materials with difficult cutting properties	●●	●●	●●	●	●●
H Hard materials					●
O Other					●
Indexable insert basic shape					
Indexable insert types	CC . . 0602 . . CC . . 09T3 . . CC . . 1204 . . WC . . 0302 . . WC . . 0402 . . WC . . 06T3 . . WC . . 0804 . .		CC . . 1204 . .	WC . . 0201 . . WC . . 0302 . . WC . . 0402 . .	WC . . 0201 . . WC . . 0302 . . WC . . 0402 . .



	B3230	B4030	B4031.C	B3230 / B3234	B4035	B4035	B4035
	Walter Precision^{MEDIUM}			Walter Precision^{MAXI}	Walter Precision^{DIGITAL}		
	Walter Capto™ (B 552) ScrewFit (B 550) NCT (B 574)	Walter Capto™ (B 554) ScrewFit (B 554) NCT (B 576)	Walter Capto™ (B 556)	Walter Capto™ (B 558) NCT (B 578)	Walter Capto™ (B 562) ScrewFit (B 582)	Walter Capto™ (B 562) ScrewFit (B 582)	Walter Capto™ (B 562) ScrewFit (B 582)
	15–203	33–153	90–153	150–640	3–32	32–68	68–124
			Reduced-weight				
	Standard	Standard		Standard	Diameter optimised	Diameter optimised	Diameter optimised
	Analogue	Analogue	Analogue	Analogue	Digital	Digital	Digital
							
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●	●	●	●	●	●	●
	●	●	●	●	●	●	●
							
	CP . . 0502 . . CC . . 0602 . . WC . . 0201 . . WC . . 0302 . . WC . . 0402 . . WC . . 0502 . .	CC . . 0602 . . WC . . 0302 . . WC . . 0402 .	CC . . 0602 . . WC . . 0402 .	CCGT 06 . . WCGT 05 . .	WC . . 0302 . .	WC . . 0402 . .	WC . . 0402 . .

WALTER SELECT

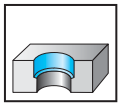
●● Primary application

● Other application

Two flute boring tool
B3220 / B3221

Walter Boring[MEDIUM]

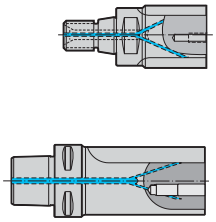
B2

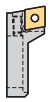


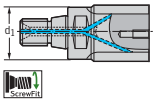
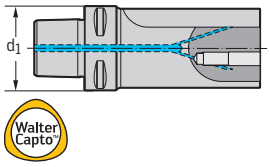
D_c 20–41	κ=90°	Z=2

	P	M	K	N	S	H	O
B3220 / B3221	●●	●●	●●	●	●●		

Basic body **Cartridge with C insert**





Tool	Basic body Designation	d_1 mm	D_c mm	Cartridge ① Designation	ARS cartridge ② Designation	Type
NCT ScrewFit 	B3221G.T18.20-27.Z2	T18	20–24	EB401.CC06	EB401-1.CC06	CC . . 0602 . .
			23–27	EB402.CC06	EB402-1.CC06	
	B3221G.T22.26-33.Z2	T22	26–33	EB403.CC06	EB403-1.CC06	
	B3220G.T28.33-41.Z2	T28	33–41	EB205-206.CC06	EB205-206-1.CC06	
Walter Capto™ 	B3221G.C3.020-027.Z2	C3	20–24	EB401.CC06	EB401-1.CC06	CC . . 0602 . .
			23–27	EB402.CC06	EB402-1.CC06	
	B3221G.C3.026-035.Z2	C3	26–33	EB403.CC06	EB403-1.CC06	
	B3220G.C3.033-044.Z2	C3	33–41	EB205-206.CC06	EB205-206-1.CC06	

For assembly aids, see page D 1.
② ARS cartridge for axially and radially offset roughing. For this, a cartridge ① of the complete tool with CC insert seat must be replaced.
$l_{4.1}$ For the projection length when using the ARS counterboring method, see Technical information, page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

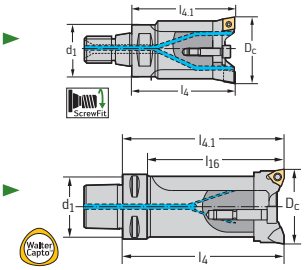
		$D_{c\ min–max}$ [mm] 20–27	26–33	33–41
	Adjusting screw	FS1103 (SW 1,3)	FS1104 (SW 1,3)	FS1105 (SW 1,5)
	Conical spring washer	FS1098		FS1099
	Clamping screw for cartridge	FS1093 (SW 3)		FS1094 (SW 4)
	Tightening torque	4 Nm		7 Nm
	Clamping screw for CC . . 0602 + WC . . 0402 indexable insert	FS1454 (Torx 8IP)		
	Tightening torque	0,8 Nm		
	Clamping screw for WC . . 0302 indexable insert	FS2084 (Torx 7IP)		
	Tightening torque	0,9 Nm		



Cartridge with W insert



Complete tool



Cartridge Designation	Type	d_1 mm	l_4 mm	$l_{4.1}$ mm	l_{16} mm	kg	Complete tool Designation with C insert	Complete tool Designation with W insert
EB421.WC03	WC . . 0302 . .	19	35	35,2		0,1	B3221.T18.20-24.Z2.CC06	B3221.T18.20-24.Z2.WC03*
EB422.WC03		19	35	35,2		0,1	B3221.T18.23-27.Z2.CC06	B3221.T18.23-27.Z2.WC03*
EB423.WC03		22	40	40,2		0,1	B3221.T22.26-33.Z2.CC06	B3221.T22.26-33.Z2.WC03*
EB225-226.WC04	WC . . 0402 . .	28	55	55,2		0,3	B3220.T28.33-41.Z2.CC06	B3220.T28.33-41.Z2.WC04*
EB421.WC03	WC . . 0302 . .	32	80	80,2	60	0,3	B3221.C3.020-024.Z2.CC06	B3221.C3.020-024.Z2.WC03
EB422.WC03		32	80	80,2	60	0,3	B3221.C3.023-027.Z2.CC06	B3221.C3.023-027.Z2.WC03
EB423.WC03		32	80	80,2	60	0,4	B3221.C3.026-033.Z2.CC06	B3221.C3.026-033.Z2.WC03
EB225-226.WC04	WC . . 0402 . .	32	80	80,2		0,6	B3220.C3.033-041.Z2.CC06	B3220.C3.033-041.Z2.WC04

* Important: The projection of the cartridges must be sufficient for chip removal when used with extension in blind holes.

Accessories

		$D_{c\ min-max}$ [mm] 20–33 (CC . . 0602 + WC . . 0402)	33–41 (WC . . 0302)
	Screwdriver for FS1454 clamping screw	FS1483 (Torx 8IP)	FS1490 (Torx 7IP)
	Screwdriver for FS2084 clamping screw	FS1490 (Torx 7IP)	FS1490 (Torx 7IP)
	DIN 911 hex key	SW 1,3 / SW 3	SW 1,5 / SW 4

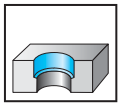
For torque screwdriver with interchangeable blades, see page B 702.

B 506 D 1 B 622 B 622

Two flute boring tool
B3220

Walter Boring^MEDIUM

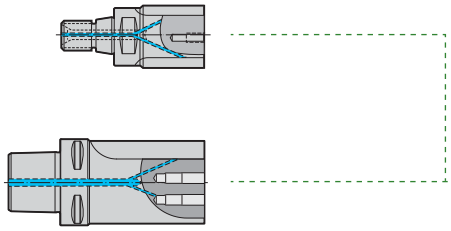
B2

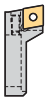


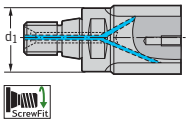
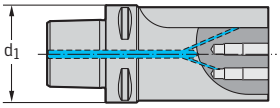
D_c 41–153	κ=90°	Z=2

	P	M	K	N	S	H	O
B3220 / B3221	●●	●●	●●	●	●●		

Basic body **Cartridge with C insert**





Tool	Basic body Designation	d_1 mm	D_c mm	Cartridge ① Designation	ARS cartridge ② Designation	Type
NCT ScrewFit 	B3220G.T36.41-55.Z2	T36	41–55	EB207-208.CC09	EB207-208-1.CC09	CC . . 09T3 . .
	B3220G.T45.55-70.Z2	T45	55–70	EB209-210.CC09	EB209-210-1.CC09	
Walter Capto™ 	B3220G.C4.041-056.Z2	C4	41–55	EB207-208.CC09	EB207-208-1.CC09	CC . . 09T3 . .
	B3220G.C5.055-073.Z2	C5	55–70	EB209-210.CC09	EB209-210-1.CC09	
	B3220G.C6.070-93.Z2	C6	70–90	EB211-212.CC12	EB211-212-1.CC12	CC . . 1204 . .
	B3220G.C8.090-113.Z2	C8	90–110	EB213-214.CC12	EB213-214-1.CC12	
	B3220G.C8.110-153.Z2	C8	110–133	EB215.CC12	EB215-1.CC12	
			130–153	EB216.CC12	EB216-1.CC12	

For assembly aids, see page D 1.
② ARS cartridge for axially and radially offset roughing. For this, a cartridge ① of the complete tool with CC insert seat must be replaced.
$l_{4.1}$ For the projection length when using the ARS counterboring method, see Technical information, page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

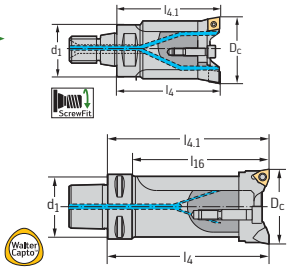
		$D_{c\ min–max}$ [mm] 41–70	70–90	90–110	110–153
	Adjusting screw	FS1106 (SW 2)	FS1107 (SW 2,5)		FS1108 (SW 2,5)
	Conical spring washer	FS1100	FS1101	FS1102	
	Clamping screw for cartridge	FS1095 (SW 5)	FS1096 (SW 6)	FS1097 (SW 8)	
	Tightening torque	12 Nm	30 Nm	50 Nm	
	Clamping screw for indexable insert	FS2062 (Torx 15IP)	FS1495 (Torx 20IP)		
	Tightening torque	3,0 Nm	5,0 Nm		



Cartridge with W insert



Complete tool



Cartridge Designation	Type	d_1 mm	l_4 mm	$l_{4.1}$ mm	kg	Complete tool Designation with C insert	Complete tool Designation with W insert
EB227-228.WC06	WC . . 06T3 . .	36	65	65,3	0,5	B3220.T36.41-55.Z2.CC09	B3220.T36.41-55.Z2.WC06*
EB229-230.WC06		45	80	80,3	0,9	B3220.T45.55-70.Z2.CC09	B3220.T45.55-70.Z2.WC06*
EB227-228.WC06	WC . . 06T3 . .	40	80	80,3	1,0	B3220.C4.041-055.Z2.CC09	B3220.C4.041-055.Z2.WC06
EB229-230.WC06		50	100	100,3	1,8	B3220.C5.055-070.Z2.CC09	B3220.C5.055-070.Z2.WC06
EB231-232.WC08	WC . . 0804 . .	63	110	110,3	2,7	B3220.C6.070-090.Z2.CC12	B3220.C6.070-090.Z2.WC08
EB233-234.WC08		80	110	110,3	4,2	B3220.C8.090-110.Z2.CC12	B3220.C8.090-110.Z2.WC08
EB235.WC08		80	110	110,3	5,2	B3220.C8.110-133.Z2.CC12	B3220.C8.110-133.Z2.WC08
EB236.WC08		80	110	110,3	5,3	B3220.C8.130-153.Z2.CC12	B3220.C8.130-153.Z2.WC08

* Important: The projection of the cartridges must be sufficient for chip removal when used with extension in blind holes.

Accessories

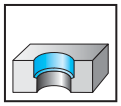
		$D_{c\ min-max}$ [mm] 41–70	70–153	
	Screwdriver for clamping screw	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)	
	DIN 911 hex key	SW 2 / SW 5	SW 2,5 / SW 6 / SW 8	

B 506 D 1 B 622 B 622

Two flute boring tool with bridge design
B3220

Walter Boring^{MAXI}

B2

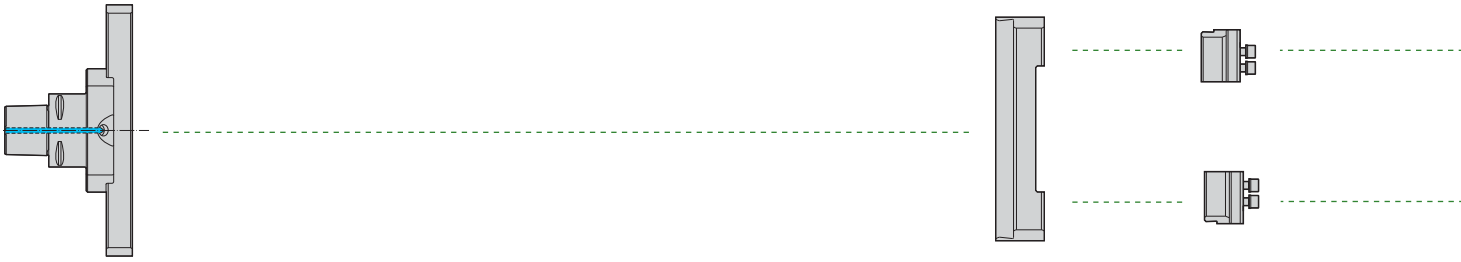


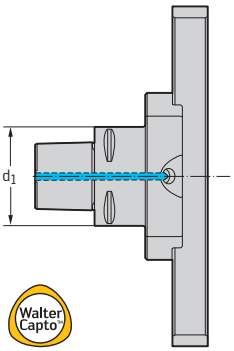
– Aluminium bridge

D_c 150–640	κ=90°	Z=2

	P	M	K	N	S	H	O
B3220	●●	●●	●●	●	●●		

Basic body



Tool	Basic body Designation	d_1 mm	D_c mm	Bridge Designation	Cartridge holder Designation	
Walter Capto™ 	B3223G.C8.150-640	C8	150–220	EB134AL	EB122	
			220–290	EB135AL		
			290–360	EB136AL		
			360–430	EB137AL		
			430–500	EB138AL		
			500–570	EB139AL		
			570–640	EB140AL		

For assembly aids, see page D 1.
② ARS cartridge for axially and radially offset roughing. For this, a cartridge ① of the complete tool with CC insert seat must be replaced.
$l_{4.1}$ For the projection length when using the ARS counterboring method, see Technical information, page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

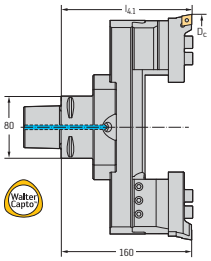
	Designation	Tightening torque
 Clamping screw for bridge	FS1114 (SW 10)	120 Nm
 Clamping screw for cartridge holder	FS1113 (SW 6)	15 Nm
 Fitting screw	FS1097 (SW 8)	50 Nm
 Conical spring washer	FS1102	
 Adjusting screw	FS1109 (SW 2,5)	
 Clamping screw for indexable insert	FS1495 (Torx 20IP)	5 Nm



Cartridge with C insert



Complete tool



Cartridge ① Designation	ARS cartridge ② Designation	$l_{4.1}$ mm	Type	kg	Complete tool Designation with C insert
EB217.CC12	EB217-1.CC12	160,3	CCMT 12 . .	6,3	B3220.C8.150-220.Z2.CC12
				6,8	B3220.C8.220-290.Z2.CC12
				7,2	B3220.C8.290-360.Z2.CC12
				7,5	B3220.C8.360-430.Z2.CC12
				7,9	B3220.C8.430-500.Z2.CC12
				8,2	B3220.C8.500-570.Z2.CC12
				8,4	B3220.C8.570-640.Z2.CC12

Accessories

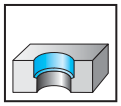
	Screwdriver for clamping screw	FS1486 (Torx 20IP)
	DIN 911 hex key	SW 2,5 / SW 6 / SW 8 / SW 10

For torque screwdriver with interchangeable blades, see page B 702.

B 506 D 1 B 622 B 622

Two flute boring tool with bridge design
B3224

Walter Boring^{MAXI}

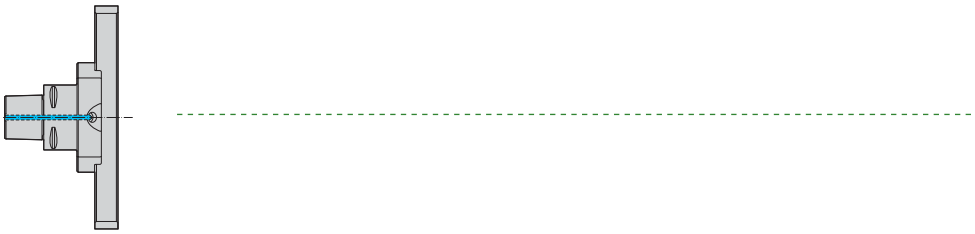


– Cutting edge orientation rotated by 90° in relation to B3220
– Aluminium bridge

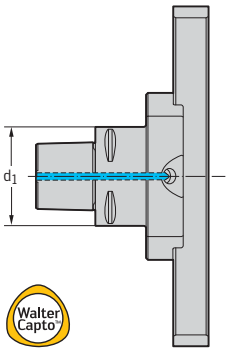
D_c 150–640	κ=90°	Z=2

	P	M	K	N	S	H	O
B3224	●●	●●	●●	●	●●		

Basic body



Tool

Basic body Designation	d_1 mm	D_c mm	Bridge Designation	Cartridge holder Designation
Walter Capto™  B3224G.C8.150-640	C8	150–220	EB134AL	EB122
		220–290	EB135AL	
		290–360	EB136AL	
		360–430	EB137AL	
		430–500	EB138AL	
		500–570	EB139AL	
		570–640	EB140AL	

For assembly aids, see page D 1.
② ARS cartridge for axially and radially offset roughing. For this, a cartridge ① of the complete tool with CC insert seat must be replaced.
$l_{4.1}$ For the projection length when using the ARS counterboring method, see Technical information, page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

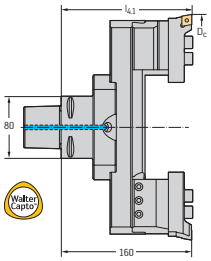
	Designation	Tightening torque
 Clamping screw for bridge	FS1114 (SW 10)	120 Nm
 Clamping screw for cartridge holder	FS1113 (SW 6)	15 Nm
 Fitting screw	FS1097 (SW 8)	50 Nm
 Conical spring washer	FS1102	
 Adjusting screw	FS1109 (SW 2,5)	
 Clamping screw for indexable insert	FS1495 (Torx 20IP)	5 Nm



Cartridge with C insert



Complete tool



	Cartridge ① Designation	ARS cartridge ② Designation	$l_{4.1}$ mm	Type	kg	Complete tool Designation with C insert
	EB217.CC12	EB217-1.CC12	160,3	CCMT 12 . .	6,3	B3224.C8.150-220.Z2.CC12
					6,8	B3224.C8.220-290.Z2.CC12
					7,2	B3224.C8.290-360.Z2.CC12
					7,5	B3224.C8.360-430.Z2.CC12
					7,9	B3224.C8.430-500.Z2.CC12
					8,2	B3224.C8.500-570.Z2.CC12
					8,4	B3224.C8.570-640.Z2.CC12

Accessories

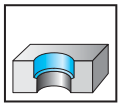
	Screwdriver for clamping screw	FS1486 (Torx 20IP)
	DIN 911 hex key	SW 2,5 / SW 6 / SW 8 / SW 10

For torque screwdriver with interchangeable blades, see page B 702.

B 506 D 1 B 622 B 622

Two flute boring tool
B3220 / B3221

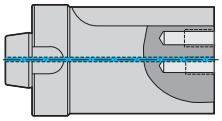
Walter Boring MEDIUM



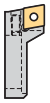
D_c 20–41	κ=90°	Z=2

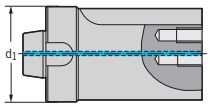
	P	M	K	N	S	H	O
B3220 / B3221	●●	●●	●●	●	●●		

Basic body



Cartridge with C insert



Tool	Designation	d_1 mm	D_c mm	Cartridge ① Designation	ARS cartridge ② Designation	Type	
NCT 	B3221G.N2.020-027.Z2	NCT25	20–24	EB401.CC06	EB401-1.CC06	CC . . 0602 . .	
			23–27	EB402.CC06	EB402-1.CC06		
	B3221G.N2.026-035.Z2	NCT25	26–33	EB403.CC06	EB403-1.CC06		
	B3220G.N3.033-044.Z2	NCT32	33–41	EB205-206.CC06	EB205-206-1.CC06		

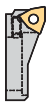
For assembly aids, see page D 1.
② ARS cartridge for axially and radially offset roughing. For this, a cartridge ① of the complete tool with CC insert seat must be replaced.
$l_{4.1}$ For the projection length when using the ARS counterboring method, see Technical information, page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

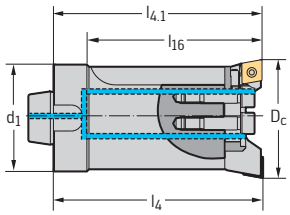
		$D_{c\ min–max}$ [mm] 20–27	26–33	33–41
	Adjusting screw	FS1103 (SW 1,3)	FS1104 (SW 1,3)	FS1105 (SW 1,5)
	Conical spring washer	FS1098		FS1099
	Clamping screw for cartridge	FS1093 (SW 3)		FS1094 (SW 4)
	Tightening torque	4 Nm		7 Nm
	Drive pin	FK311		FK312
	Screw for drive pin	FS502		FS503
	Clamping screw for CC . . 0602 + WC . . 0402 indexable insert	FS923 (Torx 8)		
	Tightening torque	0,8 Nm		
	Clamping screw for WC . . 0302 indexable insert	FS1020 (Torx 7)		
	Tightening torque	0,6 Nm		

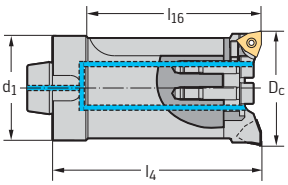


Cartridge with W insert



Complete tool





Cartridge Designation	Type	d_1 mm	l_4 mm	$l_{4.1}$ mm	l_{16} mm	kg	Complete tool Designation with C insert	Complete tool Designation with W insert
EB421.WC03	WC . . 0302 . .	25	80	80,2	63	0,2	B3221.N2.020-024.Z2.CC06	B3221.N2.020-024.Z2.WC03
EB422.WC03		25	80	80,2	63	0,2	B3221.N2.023-027.Z2.CC06	B3221.N2.023-027.Z2.WC03
EB423.WC03		25	80	80,2		0,3	B3221.N2.026-033.Z2.CC06	B3221.N2.026-033.Z2.WC03
EB225–226.WC04	WC . . 0402 . .	32	80	80,2		0,5	B3220.N3.033-041.Z2.CC06	B3220.N3.033-041.Z2.WC04

Accessories

		$D_{c\ min-max}$ [mm] 20–33	33–41	
	Screwdriver for FS923 clamping screw	FS230 (Torx 8)	FS230 (Torx 8)	
	Screwdriver for FS1020 clamping screw	FS309 (Torx 7)	FS309 (Torx 7)	
	DIN 911 hex key	SW 1,3 / SW 3	SW 1,5 / SW 4	

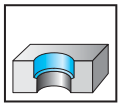
For torque screwdriver with interchangeable blades, see page B 702.

B 506 D 1 B 622 B 622

Two flute boring tool
B3220

Walter Boring^{MEDIUM}

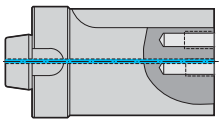
B2



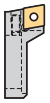
D_c 41–153	κ=90°	Z=2

	P	M	K	N	S	H	O
B3220 / B3221	●●	●●	●●	●	●●		

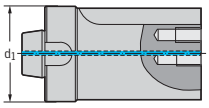
Basic body



Cartridge with C insert



Tool

Basic body Designation	d_1 mm	D_c mm	Cartridge ① Designation	ARS cartridge ② Designation	Type
NCT 					
B3220G.N4.041-056.Z2	NCT40	41–55	EB207–208.CC09	EB207-208-1.CC09	CC . . 09T3 . .
B3220G.N5.055-073.Z2	NCT50	55–70	EB209–210.CC09	EB209-210-1.CC09	
B3220G.N6.070-93.Z2	NCT63	70–90	EB211–212.CC12	EB211-212-1.CC12	CC . . 1204 . .
B3220G.N8.090-113.Z2	NCT80	90–110	EB213–214.CC12	EB213-214-1.CC12	
B3220G.N8.110-153.Z2	NCT80	110–133	EB215.CC12	EB215-1.CC12	
		130–153	EB216.CC12	EB216-1.CC12	

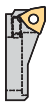
For assembly aids, see page D 1.
② ARS cartridge for axially and radially offset roughing. For this, a cartridge ① of the complete tool with CC insert seat must be replaced.
$l_{4.1}$ For the projection length when using the ARS counterboring method, see Technical information, page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

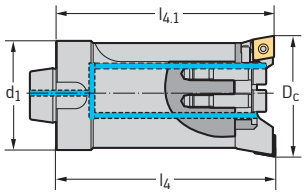
	$D_{c\ min–max}$ [mm] 41–70	70–90	90–110	110–153
Adjusting screw	FS1106 (SW 2)	FS1107 (SW 2,5)		FS1108 (SW 2,5)
Conical spring washer	FS1100	FS1101	FS1102	
Clamping screw for cartridge	FS1095 (SW 5)	FS1096 (SW 6)	FS1097 (SW 8)	
Tightening torque	12 Nm	30 Nm	50 Nm	
Drive pin (only with NCT 40)	FK313			
Screw for drive pin (only with NCT 40)	FS504			
Clamping screw for indexable insert	FS359 (Torx 15)	FS1030 (Torx 20)		
Tightening torque	2,5 Nm	5,0 Nm		

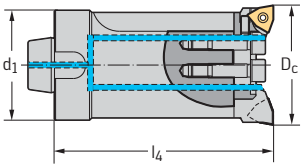


Cartridge with W insert



Complete tool





Cartridge Designation	Type	d_1 mm	l_4 mm	$l_{4.1}$ mm	kg	Complete tool Designation with C insert	Complete tool Designation with W insert
EB227-228.WC06	WC . . 06T3 . .	40	80	80,3	0,8	B3220.N4.041-055.Z2.CC09	B3220.N4.041-055.Z2.WC06
EB229-230.WC06		50	100	100,3	1,6	B3220.N5.055-070.Z2.CC09	B3220.N5.055-070.Z2.WC06
EB231-232.WC08	WC . . 0804 . .	63	100	100,3	2,5	B3220.N6.070-090.Z2.CC12	B3220.N6.070-090.Z2.WC08
EB233-234.WC08		80	100	100,3	4,0	B3220.N8.090-110.Z2.CC12	B3220.N8.090-110.Z2.WC08
EB235.WC08		80	100	100,3	5,0	B3220.N8.110-133.Z2.CC12	B3220.N8.110-133.Z2.WC08
EB236.WC08		80	100	100,3	5,0	B3220.N8.130-153.Z2.CC12	B3220.N8.130-153.Z2.WC08

Accessories

		$D_{c\ min-max}$ [mm] 41–70	70–153	
	Screwdriver for clamping screw	FS229 (Torx 15)	FS228 (Torx 20)	
	DIN 911 hex key	SW 2 / SW 5	SW 2,5 / SW 6 / SW 8	

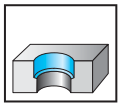
For torque screwdriver with interchangeable blades, see page B 702.

B 506 D 1 B 622 B 622

Two flute boring tool with bridge design
B3220

Walter Boring^{MAXI}

B2

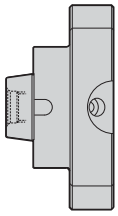


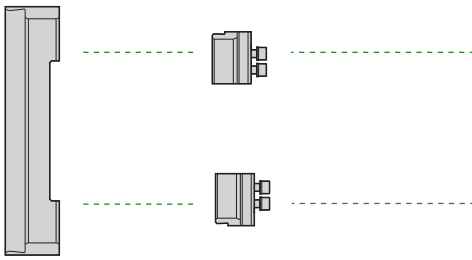
– Aluminium bridge

D_c 150–640	κ=90°	Z=2

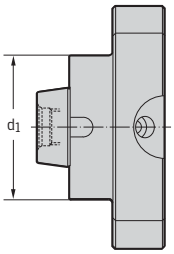
	P	M	K	N	S	H	O
B3220	●●	●●	●●	●	●●		

Basic body





Tool

Designation	d_1 mm	D_c mm	Bridge	Cartridge holder
NCT		150–220	EB134AL	
 B3223G.N8.150-640	NCT80	220–290	EB135AL	EB122
		290–360	EB136AL	
		360–430	EB137AL	
		430–500	EB138AL	
		500–570	EB139AL	
		570–640	EB140AL	

For assembly aids, see page D 1.
② ARS cartridge for axially and radially offset roughing. For this, a cartridge ① of the complete tool with CC insert seat must be replaced.
$l_{4.1}$ For the projection length when using the ARS counterboring method, see Technical information, page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

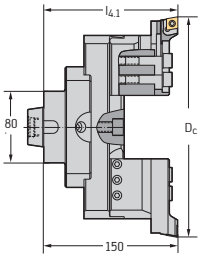
	Designation	Tightening torque
 Clamping screw for bridge	FS1114 (SW 10)	120 Nm
 Clamping screw for cartridge holder	FS1113 (SW 6)	15 Nm
 Fitting screw	FS1097 (SW 8)	50 Nm
 Conical spring washer	FS1102	
 Adjusting screw	FS1109 (SW 2,5)	
 Clamping screw for indexable insert	FS1030 (Torx 20)	5 Nm



Cartridge with C insert



Complete tool



	Cartridge ① Designation	ARS cartridge ② Designation	Type	$l_{4.1}$ mm	kg	Complete tool Designation with C insert
	EB217.CC12	EB217-1.CC12	CCMT 12 . .	150,3	7,9	B3220.N8.150-220.Z2.CC12
					9,2	B3220.N8.220-290.Z2.CC12
					10,5	B3220.N8.290-360.Z2.CC12
					11,7	B3220.N8.360-430.Z2.CC12
					13,0	B3220.N8.430-500.Z2.CC12
					14,3	B3220.N8.500-570.Z2.CC12
					15,5	B3220.N8.570-640.Z2.CC12

Accessories

	Screwdriver for clamping screw	FS228 (Torx 20)
	DIN 911 hex key	SW 2,5 / SW 6 / SW 8 / SW 10

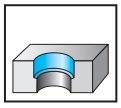
For torque screwdriver with interchangeable blades, see page B 702.

B 506 D 1 B 622 B 622

Two flute boring tool with bridge design
B3224

Walter Boring^{MAXI}

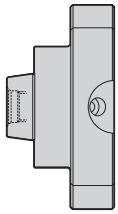
D_c 150–640	κ=90°	Z=2

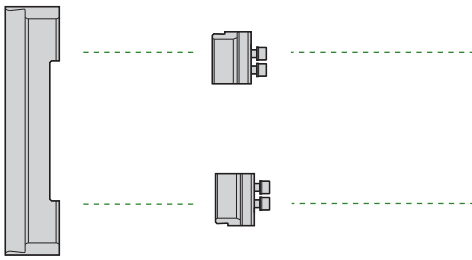


– Cutting edge orientation rotated by 90° in relation to B3220
– Aluminium bridge

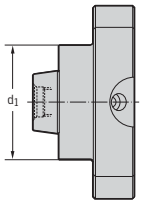
	P	M	K	N	S	H	O
B3224	●●	●●	●●	●	●●		

Basic body



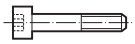


Tool

Designation	d_1 mm	D_c mm	Bridge	Cartridge holder
NCT		150–220	EB134AL	
		220–290	EB135AL	
B3224G.N8.150-640	NCT80	290–360	EB136AL	EB122
		360–430	EB137AL	
		430–500	EB138AL	
		500–570	EB139AL	
		570–640	EB140AL	

For assembly aids, see page D 1.
② ARS cartridge for axially and radially offset roughing. For this, a cartridge ① of the complete tool with CC insert seat must be replaced.
$l_{4.1}$ For the projection length when using the ARS counterboring method, see Technical information, page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

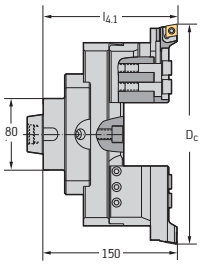
	Designation	Tightening torque
	Clamping screw for bridge	FS1114 (SW 10)	120 Nm
	Clamping screw for cartridge holder	FS1113 (SW 6)	15 Nm
	Fitting screw	FS1097 (SW 8)	50 Nm
	Conical spring washer	FS1102	
	Adjusting screw	FS1109 (SW 2,5)	
	Clamping screw for indexable insert	FS1030 (Torx 20)	5 Nm



Cartridge with C insert



Complete tool



	Cartridge ① Designation	ARS cartridge ② Designation	Type	$l_{4.1}$ mm	kg	Complete tool Designation with C insert
	EB217.CC12	EB217-1.CC12	CCMT 12 . .	150,3	7,9	B3224.N8.150-220.Z2.CC12
					9,2	B3224.N8.220-290.Z2.CC12
					10,5	B3224.N8.290-360.Z2.CC12
					11,7	B3224.N8.360-430.Z2.CC12
					13,0	B3224.N8.430-500.Z2.CC12
					14,3	B3224.N8.500-570.Z2.CC12
					15,5	B3224.N8.570-640.Z2.CC12

Accessories

	Screwdriver for clamping screw	FS228 (Torx 20)
	DIN 911 hex key	SW 2,5 / SW 6 / SW 8 / SW 10

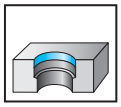
For torque screwdriver with interchangeable blades, see page B 702.

B 506 D 1 B 622 B 622

Precision boring tool
B3230 / B4030

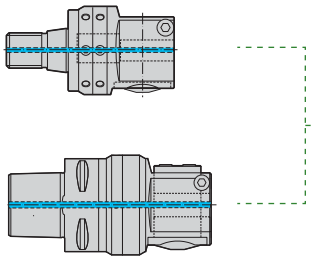
Walter Precision^{MINI}

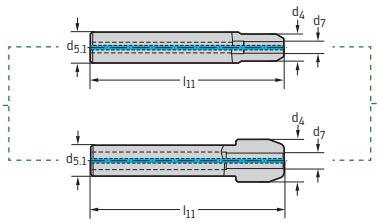
D_c 2,0–9,5	κ=93°	Z=1

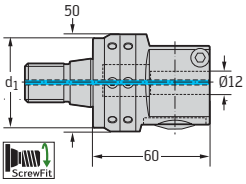
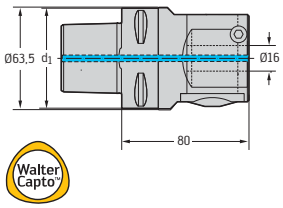
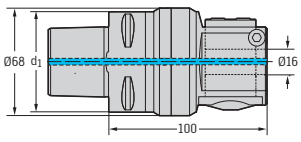


	P	M	K	N	S	H	O
B3230	●●	●●	●●	●	●		
B4030	●●	●●	●●	●●	●●	●	●

Basic body **Reducer**

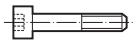




Tool	Basic body Designation	d_1 mm	D_c mm	Designation	d_7 mm	d_4 mm	$d_{5.1}$ mm	l_{11} mm
NCT ScrewFit 	B4030G.T45.02-20.Z1 Balanceable	T45	2,0–3,5	EB501	4	12	12	85
			3,0–6,0					
			5,8–7,5	EB502	5	12	12	85
			7,3–9,5	EB503	6	22	12	85
Walter Capto™ 	B3230G.C6.02-45.Z1 Standard	C6	2,0–3,5	EB101	4	12	16	100
			3,0–6,0					
	B4030G.C6.02-45.Z1 Balanceable		5,8–7,5	EB102	5	13	16	100
			7,3–9,5	EB103	6	14	16	100

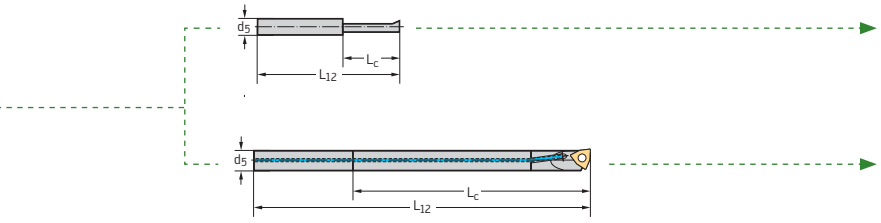
For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

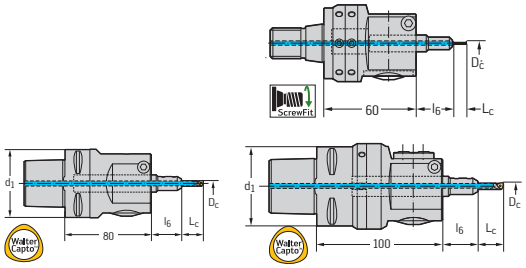
		d_1 = T45		d_1 = C6	
		Designation	Tightening torque	Designation	Tightening torque
	Clamping screw	FS1084 (SW 4)	6,0 Nm	FS1085 (SW 5)	10 Nm
	Clamping screw for reducer	FS2039 (SW 4)	5,0 Nm	FS2040 (SW 5)	10 Nm
	Clamping screw for insert holder	FS1110 (SW 2)	1,0 Nm	FS1110 (SW 2)	1,0 Nm
	Clamping screw for indexable insert with D_c = 5.8–9.5 mm	FS2245 (Torx 6IP)	0,5 Nm	FS2245 (Torx 6IP)	0,6 Nm
	Clamping screw for balancing rings	FS2037 (SW 2)		FS2246 (SW 2) for B4030	0,5 Nm



Insert holder



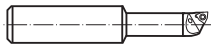
Complete tool



Designation	d_5 mm	L_{12} mm	Type	$L_{c\,min}$ mm	$L_{c\,max}$ mm	l_6 mm	kg	Complete tool Designation	Complete tool, balanceable Designation
EB301 WK10*	4	30	—	9	—	30–53	0,8		B4030.T45.02-03.Z1.WK10
EB302 WK10*	4	35	—	14	—	30–53	0,8		B4030.T45.03-06.Z1.WK10
EB303.WC02.CS	5	85	WC . . 0201 . .	20	60	30–53	0,8		B4030.T45.06-07.Z1.WC02
EB304.WC02.CS	6	95	WC . . 0201 . .	20	65	30–53	0,8		B4030.T45.07-09.Z1.WC02
EB301 WK10*	4	30	—	9	—	28–60	1,8	B3230.C6.02-03.Z1.WK10	B4030.C6.02-03.Z1.WK10
EB302 WK10*	4	35	—	14	—	28–60	1,8	B3230.C6.03-06.Z1.WK10	B4030.C6.03-06.Z1.WK10
EB303.WC02.CS	5	85	WC . . 0201 . .	20	60	28–60	1,8	B3230.C6.06-07.Z1.WC02	B4030.C6.06-07.Z1.WC02
EB304.WC02.CS	6	95	WC . . 0201 . .	20	65	28–60	1,8	B3230.C6.07-09.Z1.WC02	B4030.C6.07-09.Z1.WC02

* Solid carbide boring bar
EB . . . CS = Solid carbide shank
Advantages: Increased rigidity, reduced deflection, neutralised vibration.

Accessories

	Screwdriver for clamping screw	FS2086 (Torx 6IP)
	DIN 911 hex key	SW 2 / SW 4 / SW 5
	One-piece boring bar	D_C 5.8-9.5, see page B 548

For torque screwdriver with interchangeable blades, see page B 702.

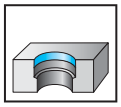
B 510 D 1 B 639 B 626

Precision boring tool
B3230 / B4030

Walter Precision^{MINI}

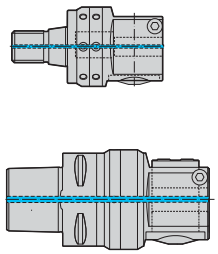
B2

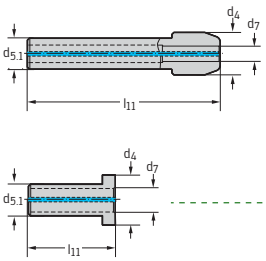
D_c 8,8–20	κ=93°	Z=1



	P	M	K	N	S	H	O
B3230	●●	●●	●●	●	●		
B4030	●●	●●	●●	●●	●●	●	●

Basic body **Reducer** **Extension**





Tool	Basic body Designation	d_1 mm	D_c mm	Designation	d_7 mm	d_4 mm	$d_{5.1}$ mm	l_{11} mm	Designation	d_5 mm	l_{11} mm
NCT ScrewFit	B4030G.T45.02-20.Z1 Balanceable	T45	8,8–12,5	EB504	8	14	12	30	EB106	8	47
									EB107.CS	8	87
			11,8–14,5	EB505	10	14	12	30	EB108	10	52
									EB109.CS	10	97
			13,8–16,5	—					EB508	12	77
									EB509.CS	12	97
			15,8–20,0	—					EB508	12	77
									EB509.CS	12	97
Walter Capto™	B3230G.C6.02-45.Z1 Standard	C6	8,8–12,5	EB104	8	22	16	100	EB106	8	47
									EB107.CS	8	87
			11,8–14,5	EB105	10	24	16	100	EB108	10	52
									EB109.CS	10	97
	B4030G.C6.02-45.Z1 Balanceable		13,8–16,5	EB506	12	17	16	36	EB508	12	77
									EB509.CS	12	97
			15,8–20,0	EB507	14	17	16	36	EB510	14	87
									EB511.CS	14	117

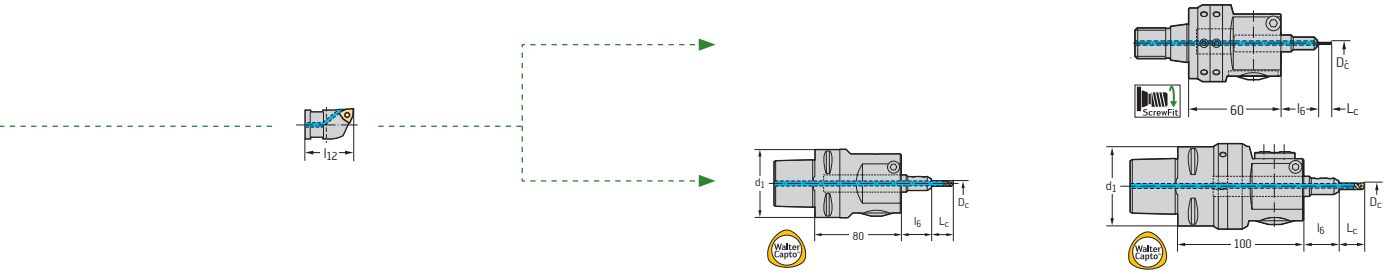
EB . . . CS = Solid carbide shank
Advantages: Increased rigidity, reduced deflection, neutralised vibration

Assembly parts

		d_1 = T45		d_1 = C6	
		Designation	Tightening torque	Designation	Tightening torque
	Clamping screw	FS1084 (SW 4)	6,0 Nm	FS1085 (SW 5)	10 Nm
	Clamping screw for reducer	FS2039 (SW 4)	5,0 Nm	FS2240	10 Nm
	Clamping screw for extension	FS1110 (SW 2)	1,0 Nm	FS1111 (SW 3)	2,5 Nm
	Clamping screw for indexable insert	FS2084 (Torx 7IP)	0,9 Nm	FS2084 (Torx 7IP)	0,9 Nm
	Clamping screw for balancing rings	FS2037 (SW 2)	0,5 Nm	FS2246 (SW 2) for B4030	0,5 Nm



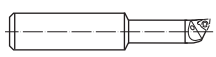
Insert holder | **Complete tool**



Designation	l_{12} mm	Type	$L_{c\,min}$ mm	$L_{c\,max}$ mm	l_6 mm	kg	Complete tool Designation	Complete tool, balanceable Designation
EB305.WC03	18	WC . . 0302 . .	18	33	2	0,8		B4030.T45.09-12.Z1.WC03.S*
			35	73	2	0,8		B4030.T45.09-12.Z1.WC03.L*
EB306.WC03	23	WC . . 0302 . .	23	43	2	0,8		B4030.T45.12-14.Z1.WC03.S
			45	68	2	0,8		B4030.T45.12-14.Z1.WC03.L
EB307.WC03	23	WC . . 0302 . .	45	68	—	0,8		B4030.T45.14-16.Z1.WC03.S
			65	88	—	0,9		B4030.T45.14-16.Z1.WC03.L
EB512.WC03	23	WC . . 0302 . .	45	68	—	0,8		B4030.T45.16-20.Z1.WC03.S
			65	88	—	0,9		B4030.T45.16-20.Z1.WC03.L
EB305.WC03	18	WC . . 0302 . .	20	35	34–60	1,9	B3230.C6.09-12.Z1.WC03.S*	B4030.C6.09-12.Z1.WC03.S*
			20	73	34–60	1,9	B3230.C6.09-12.Z1.WC03.L*	B4030.C6.09-12.Z1.WC03.L*
EB306.WC03	23	WC . . 0302 . .	25	45	34–60	1,9	B3230.C6.12-14.Z1.WC03.S	B4030.C6.12-14.Z1.WC03.S
			25	70	34–60	1,9	B3230.C6.12-14.Z1.WC03.L	B4030.C6.12-14.Z1.WC03.L
EB307 . WC03	23	WC . . 0302 . .	34	60	2	1,9	B3230.C6.14-16.Z1.WC03.S	B4030.C6.14-16.Z1.WC03.S
			54	80	2	1,9	B3230.C6.14-16.Z1.WC03.L	B4030.C6.14-16.Z1.WC03.L
EB512 . WC03	23	WC . . 0302 . .	44	70	2	1,9	B3230.C6.16-20.Z1.WC03.S	B4030.C6.16-20.Z1.WC03.S
			74	100	2	1,9	B3230.C6.16-20.Z1.WC03.L	B4030.C6.16-20.Z1.WC03.L

* When using the WC . . 0302 . .-PM2 indexable insert, manually shorten the indexable insert clamping screw by 1 mm.

Accessories

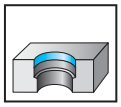
	Screwdriver for clamping screw	FS2088 (Torx 7IP)
	DIN 911 hex key	SW 2 / SW 4 / SW 5
	One-piece boring bar	D_c 8.8-15.8, see page B 548

For torque screwdriver with interchangeable blades, see page B 702.

B 510 D 1 B 639 B 626

Precision boring tool
B3230 / B4030

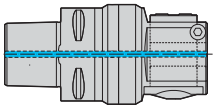
Walter Precision^{MINI}

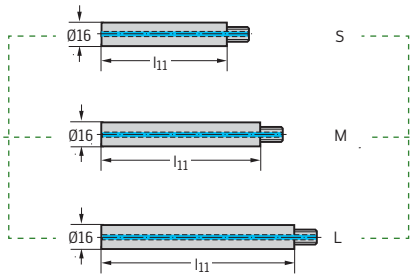


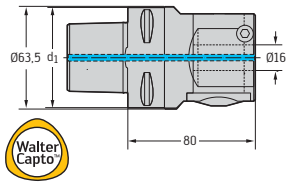
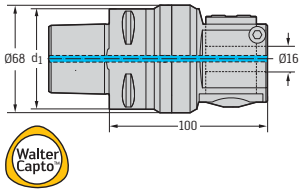
D_c 17,8–45,5	κ=93°	Z=1

	P	M	K	N	S	H	O
B3230 / B4030	●●	●●	●●	●●	●●	●	●

Basic body **Extension**

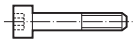




Tool	Basic body Designation	d_1 mm	D_c mm	Designation	l_{11} mm		
Walter Capto™							
	B3230G.C6.02-45.Z1 Standard	C6	17,8–22,5	EB110	88	(S)	
				EB111.CS	108	(M)	
				EB112.CS	168	(L)	
			21,8–25,5	EB110	88	(S)	
				EB111.CS	108	(M)	
				EB112.CS	168	(L)	
			24,8–28,5	EB110	88	(S)	
				EB111.CS	108	(M)	
				EB112.CS	168	(L)	
			27,8–32,5	EB110	88	(S)	
				EB111.CS	108	(M)	
				EB112.CS	168	(L)	
	B4030G.C6.02-45.Z1 Balanceable		31,8–36,5	EB110	88	(S)	
				EB111.CS	108	(M)	
				EB112.CS	168	(L)	
			35,8–40,5	EB110	88	(S)	
				EB111.CS	108	(M)	
				EB112.CS	168	(L)	
			39,8–45,5	EB110	88	(S)	
				EB111.CS	108	(M)	
				EB112.CS	168	(L)	

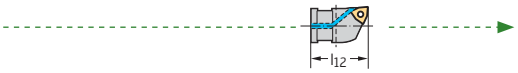
EB . . . CS = Solid carbide shank
Advantages: Increased rigidity, reduced deflection, neutralised vibration

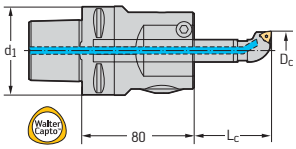
Assembly parts

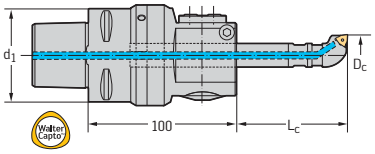
		Designation	Tightening torque
	Clamping screw	FS1085 (SW 5)	10 Nm
	Clamping screw for extension	FS2040	10 Nm
	Clamping screw for indexable insert	FS1454 (Torx 8IP)	1,2 Nm
	Clamping screw for balancing rings	FS2246 for B4030	



Insert holder | Complete tool







Designation	l_{12} mm	Type	$L_{c\ min}$ mm	$L_{c\ max}$ mm	kg	Complete tool Designation	Complete tool, balanceable Designation
EB308.WC04	27	WC . . 0402 . .	55	80	1,8	B3230.C6.18-22.Z1.WC04.S	B4030.C6.18-22.Z1.WC04.S
			75	100	2,0	B3230.C6.18-22.Z1.WC04.M	B4030.C6.18-22.Z1.WC04.M
			135	160	2,2	B3230.C6.18-22.Z1.WC04.L	B4030.C6.18-22.Z1.WC04.L
EB309.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.C6.22-25.Z1.WC04.S	B4030.C6.22-25.Z1.WC04.S
			75	100	2,5	B3230.C6.22-25.Z1.WC04.M	B4030.C6.22-25.Z1.WC04.M
			135	160	2,7	B3230.C6.22-25.Z1.WC04.L	B4030.C6.22-25.Z1.WC04.L
EB310.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.C6.25-28.Z1.WC04.S	B4030.C6.25-28.Z1.WC04.S
			75	100	2,5	B3230.C6.25-28.Z1.WC04.M	B4030.C6.25-28.Z1.WC04.M
			135	160	2,7	B3230.C6.25-28.Z1.WC04.L	B4030.C6.25-28.Z1.WC04.L
EB311.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.C6.28-32.Z1.WC 04.S	B4030.C6.28-32.Z1.WC04.S
			75	100	2,5	B3230.C6.28-32.Z1.WC04.M	B4030.C6.28-32.Z1.WC04.M
			135	160	2,7	B3230.C6.28-32.Z1.WC04.L	B4030.C6.28-32.Z1.WC04.L
EB312.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.C6.32-36.Z1.WC04.S	B4030.C6.32-36.Z1.WC04.S
			75	100	2,5	B3230.C6.32-36.Z1.WC04.M	B4030.C6.32-36.Z1.WC04.M
			135	160	2,7	B3230.C6.32-36.Z1.WC04.L	B4030.C6.32-36.Z1.WC04.L
EB313.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.C6.36-40.Z1.WC04.S	B4030.C6.36-40.Z1.WC04.S
			75	100	2,5	B3230.C6.36-40.Z1.WC04.M	B4030.C6.36-40.Z1.WC04.M
			135	160	2,7	B3230.C6.36-40.Z1.WC04.L	B4030.C6.36-40.Z1.WC04.L
EB314.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.C6.40-45.Z1.WC04.S	B4030.C6.40-45.Z1.WC04.S
			75	100	2,5	B3230.C6.40-45.Z1.WC04.M	B4030.C6.40-45.Z1.WC04.M
			135	160	2,7	B3230.C6.40-45.Z1.WC04.L	B4030.C6.40-45.Z1.WC04.L

For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Accessories

	Screwdriver	FS1483 (Torx 8IP)
	DIN 911 hex key	SW 5

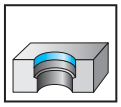
For torque screwdriver with interchangeable blades, see page B 702.

B 510 | D 1 | B 639 | B 626

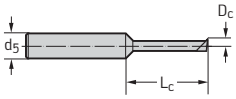
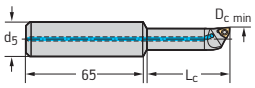
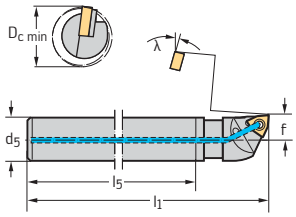
EB . . . boring bar

B 2

κ=93°



Tool

	Designation	$D_{c\ min}$ mm	d_5 mm	f mm	l_1 mm	l_5 mm	L_c mm	λ	Type
One-piece 	EB301 WK10	2,0	4	1,0	30	21			VHM WK10
	EB302 WK10	3,0	4	1,5	35	21			
One-piece 	EB513	5,8	16				17		WC . . 0201 . .
	EB514.CS	5,8	16				30		
	EB515	7,3	16				21		
	EB516.CS	7,3	16				36		
	EB517	8,8	16				28		WC . . 0302 . .
	EB518.CS	8,8	16				47		
	EB519	11,8	16				35		
	EB520.CS	11,8	16				60		
	EB521	13,8	16				42		
	EB522.CS	13,8	16				72		
with insert holder 	EB303.WC02.CS	5,8	5	2,9	85	70			WC . . 0201 . .
	EB304.WC02.CS	7,3	6	3,65	95	75			
	EB353.WC03	8,8	8	4,5	65	47		−10°	WC . . 0302 . .
	EB354.WC03.CS	8,8	8	4,5	105	87		−10°	
	EB355.WC03	11,8	10	6,0	75	52		−7°	
	EB356.WC03.CS	11,8	10	6,0	120	97		−7°	
	EB357.WC03	13,8	10	6,9	75	52		−5°	
	EB358.WC03.CS	13,8	10	6,9	120	97		−5°	
	EB359.WC04	17,8	16	8,9	115	88		−3°	WC . . 0402 . .
	EB360.WC04.CS	17,8	16	8,9	135	108		−3°	
	EB361.WC04.CS	17,8	16	8,9	195	168		−3°	
	EB362.WC04	21,8	16	10,9	115	88		−2,5°	
	EB363.WC04.CS	21,8	16	10,9	135	108		−2,5°	
	EB364.WC04.CS	21,8	16	10,9	195	168		−2,5°	
	EB365.WC04	24,8	16	12,4	115	88		0°	
	EB366.WC04.CS	24,8	16	12,4	135	108		0°	
	EB367.WC04.CS	24,8	16	12,4	195	168		0°	
	EB368.WC04	27,8	16	13,9	115	88		0°	
	EB369.WC04.CS	27,8	16	13,9	135	108		0°	
	EB370.WC04.CS	27,8	16	13,9	195	168		0°	
	EB371.WC04	31,8	16	15,9	115	88		0°	
	EB372.WC04.CS	31,8	16	15,9	135	108		0°	
	EB373.WC04.CS	31,8	16	15,9	195	168		0°	
	EB374.WC04	35,8	16	17,9	115	88		0°	
	EB375.WC04.CS	35,8	16	17,9	135	108		0°	
	EB376.WC04.CS	35,8	16	17,9	195	168		0°	
	EB377.WC04	39,8	16	19,9	115	88		0°	
	EB378.WC04.CS	39,8	16	19,9	135	108		0°	
	EB379.WC04.CS	39,8	16	19,9	195	168		0°	

Bodies and assembly parts are included in the scope of delivery.



B 2

Assembly parts				Accessories
Tool holder	Insert holder	Clamping screw for indexable insert	Tightening torque	Screwdriver
		FS2245 (Torx 6IP)	0,6 Nm	FS2086 (Torx 6IP)
		FS2084 (Torx 7IP)	0,9 Nm	FS2088 (Torx 7IP)
—	EB303.WC02.CS	FS2245 (Torx 6IP)	0,6 Nm	FS2086 (Torx 6IP)
—	EB304.WC02.CS			
EB106	EB305.WC03*	FS2084 (Torx 7IP)	0,9 Nm	FS2088 (Torx 7IP)
EB107.CS	EB305.WC03*			
EB108	EB306.WC03			
EB109.CS	EB306.WC03			
EB108	EB307.WC03			
EB109.CS	EB307.WC03			
EB110	EB308.WC04	FS1454 (Torx 8IP)	1,2 Nm	FS1483 (Torx 8IP)
EB111.CS	EB308.WC04			
EB112.CS	EB308.WC04			
EB110	EB309.WC04			
EB111.CS	EB309.WC04			
EB112.CS	EB309.WC04			
EB110	EB310.WC04			
EB111.CS	EB310.WC04			
EB112.CS	EB310.WC04			
EB110	EB311.WC04			
EB111.CS	EB311.WC04			
EB112.CS	EB311.WC04			
EB110	EB312.WC04			
EB111.CS	EB312.WC04			
EB112.CS	EB312.WC04			
EB110	EB313.WC04			
EB111.CS	EB313.WC04			
EB112.CS	EB313.WC04			
EB110	EB314.WC04			
EB111.CS	EB314.WC04			
EB112.CS	EB314.WC04			

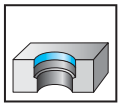
EB . . . CS = Solid carbide shank
Advantages: Increased rigidity, reduced deflection, neutralised vibration
* When using the WC . . 0302 . .-PM2 indexable insert,
manually shorten the indexable insert clamping screw by 1 mm.

B 510 D 1 B 639 B 626

Precision boring tool
B3230

Walter Precision^{MEDIUM}

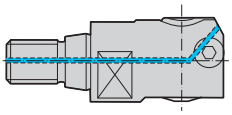
B2



D_c 15–33	κ=95°	κ=93°	Z=1

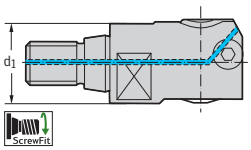
	P	M	K	N	S	H	O
B3230	●●	●●	●●	●●	●●	●	●

Basic body | **Cartridge with C insert**



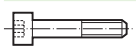


Tool

Basic body Designation	d_1 mm	D_c mm	Cartridge No.	Designation	Type
NCT/ScrewFit 					
B3230G.T14.15-21.Z1	T14	15–18,5	1		
		18–21,5	2		
B3230G.T18.20-26.Z1	T18	20–26	1	EB321.CP05	CP . . 0502 . .
B3230G.T22.26-33.Z1	T22	26–33	1	EB323.CP05	CP . . 0502 . .

For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

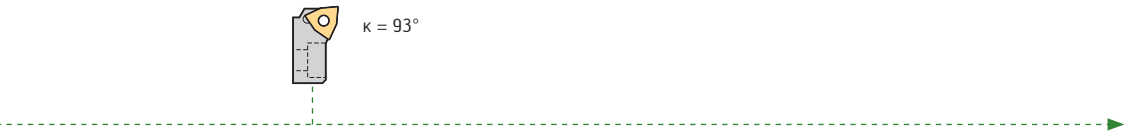
Assembly parts

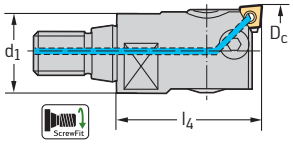
	T14	T18	T22
	for $D_{c\ min–max}$ [mm]		
	15–21,5	20–26	26–33
 Clamping screw	FS2244 (SW 1,5)	FS2251 (Torx 9IP)	FS1082 (SW 2,5)
Tightening torque			2,0 Nm
 Clamping screw for cartridge	FS2066 (Torx 7IP)	FS1457 (Torx 9IP)	FS2080 (Torx 15IP)
Tightening torque	0,9 Nm	0,9 Nm	2,0 Nm
 Clamping screw for indexable insert	FS2245 (Torx 6IP)	FS2084 (Torx 7IP)	
Tightening torque	0,6 Nm	0,8 Nm	



B 2

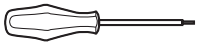
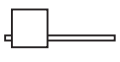
Cartridge with W insert | **Complete tool**





Designation	Type	d_1 mm	l_4 mm	kg	Complete tool Designation with C insert	Complete tool Designation with W insert
EB549.WC02	WC . . 0201 . .	14	30	0,10		B3230.T14.15-18.Z1.WC02
EB550.WC02	WC . . 0201 . .	14	30	0,10		B3230.T14.18-21.Z1.WC02
EB341.WC03	WC . . 0302 . .	18	35	0,10	B3230.T18.20-26.Z1.CP05	B3230.T18.20-26.Z1.WC03
EB343.WC03	WC . . 0302 . .	22	40	0,15	B3230.T22.26-33.Z1.CP05	B3230.T22.26-33.Z1.WC03

Accessories

		T14	T18	T22
		for $D_{c\ min-max}$ [mm]		
		15–21,5	20–26	26–33
	Screwdriver for clamping screw	FS2086 (Torx 6IP)	FS2088 (Torx 7IP)	
	Torx key for clamping screw	FS1484 (Torx 9IP)		
	DIN 911 hex key for clamping screw	SW 1,5		SW 2,5
	Key for cartridge clamping	FS1484 (Torx 9IP)	FS1486 (Torx 20IP)	FS1485 (Torx 15IP)

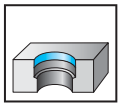
For torque screwdriver with interchangeable blades, see page B 702.

B 510 | D 1 | B 639 | B 626

Precision boring tool
B3230

Walter Precision[MEDIUM]

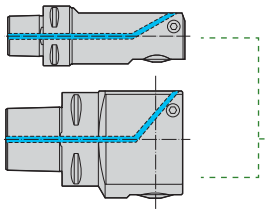
B2



D_c 20–203	κ=95°	κ=93°	Z=1

	P	M	K	N	S	H	O
B3230	●●	●●	●●	●●	●●	●	●

Basic body



Cartridge with C and W insert





Tool

Basic body Designation	d_1 mm	D_c mm	Cartridge No.	Designation	Type	Designation	Type
Walter Capto™							
B3230G.C3.20-38.Z1	C3	20–26,5	1	EB321.CP05	CP . . 0502 . .	EB341.WC03	WC . . 0302 . .
		(28)[1] 26–32,5*	2	EB523.CP05		EB536.WC03	
		32–38,5*	3	EB524.CP05		EB537.WC03	
B3230G.C3.26-47.Z1	C3	26–33,5	1	EB323.CP05	CP . . 0502 . .	EB343.WC03	WC . . 0302 . .
		(34)[1] 33–40,5*	2	EB525.CP05		EB538.WC03	
		40–47,5*	3	EB526.CP05		EB539.WC03	
B3230G.C3.33-57.Z1	C3	33–41,5	1	EB325.CP05	CP . . 0502 . .	EB345.WC03	WC . . 0302 . .
		41–49,5*	2	EB527.CP05		EB540.WC03	
		49–57,5*	3	EB528.CP05		EB541.WC03	
B3230G.C4.41-83.Z1	C4	41–55,5	1	EB327.CC06	CC . . 0602 . .	EB347.WC04	WC . . 0402 . .
		55–69,5*	2	EB532.CC06		EB545.WC04	
		69–83,5*	3	EB533.CC06		EB546.WC04	
B3230G.C5.55-100.Z1	C5	55–70,5	1	EB329.CC06	CC . . 0602 . .	EB349.WC05	WC . . 0503 . .
		70–85,5*	2	EB534.CC06		EB547.WC05	
		85–100,5*	3	EB535.CC06		EB548.WC05	
B3230G.C6.070-120.Z1	C6	70–90,5	1	EB329.CC06	CC . . 0602 . .	EB349.WC05	WC . . 0503 . .
		85–105,5*	2	EB534.CC06		EB547.WC05	
		100–120,5*	3	EB535.CC06		EB548.WC05	
B3230G.C6.090-166.Z1	C6	90–116*	1	EB529.CC06	CC . . 0602 . .	EB542.WC05	WC . . 0503 . .
		115–141*	2	EB530.CC06		EB543.WC05	
		140–166*	3	EB531.CC06		EB544.WC05	
B3230G.C8.090-166.Z1	C8	90–116*	1	EB529.CC06	CC . . 0602 . .	EB542.WC05	WC . . 0503 . .
		115–141*	2	EB530.CC06		EB543.WC05	
		140–166*	3	EB531.CC06		EB544.WC05	
B3230G.C6.110-203.Z1	C6	110–153*	1	EB529.CC06	CC . . 0602 . .	EB542.WC05	WC . . 0503 . .
		135–178*	2	EB530.CC06		EB543.WC05	
		160–203*	3	EB531.CC06		EB544.WC05	
B3230G.C8.110-203.Z1	C8	110–153*	1	EB529.CC06	CC . . 0602 . .	EB542.WC05	WC . . 0503 . .
		135–178*	2	EB530.CC06		EB543.WC05	
		160–203*	3	EB531.CC06		EB544.WC05	

[1] D_{min} for reverse machining.
For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

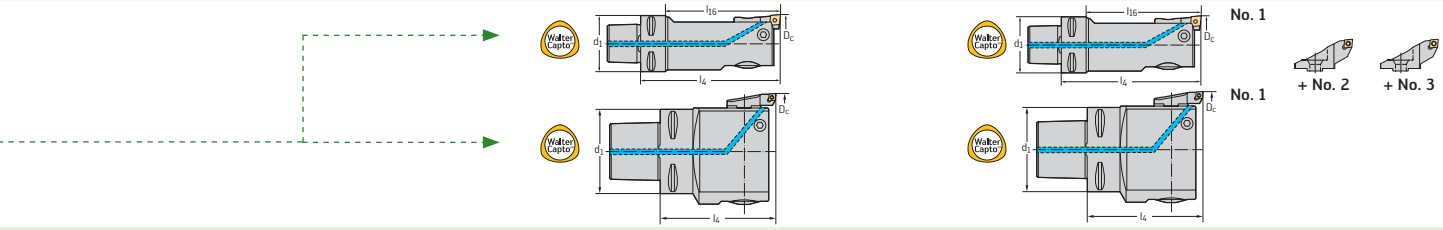
* Reverse machining possible

Assembly parts

		C3			C4	C5	C6	C6 / C8
		for $D_{c\ min–max}$ [mm]						
		20–38,5	26–47,5	33–57,5	41–83,5	55–100,5	70–120,5	90–203
	Clamping screw	FS2251 (Torx 9IP)	FS1082 (SW 3)	FS1083 (SW 3)	FS1084 (SW 4)	FS1085 (SW 5)	FS1086 (SW 6)	FS1087 (SW 6)
	Tightening torque		2,5 Nm	2,5 Nm	4,0 Nm	10,0 Nm	25,0 Nm	25,0 Nm
	Clamping screw for cartridge	FS1457 (Torx 9IP)	FS2080 (Torx 15IP)	FS1495 (Torx 20IP)	FS1091 (SW 3)	FS1092 (SW 5)	FS1092 (SW 5)	FS2150 (Torx 30IP)
	Tightening torque	1,5 Nm	2,5 Nm	5,0 Nm	2,5 Nm	12,0 Nm	12,0 Nm	10,0 Nm
	Clamping screw for indexable insert	for CP . . 05/WC . . 03 = FS2084 (Torx 7IP)			for CC . . 06/WC . . 04 = FS1454 (Torx 8IP) for WC . .05 = FS1457 (Torx 9IP)			
	Tightening torque	0,8 Nm			FS1454 = 0,8 Nm / FS1457 = 1,5 Nm			







d_1 mm	l_4 mm	l_{16} mm	kg	Complete tool Designation with C insert	Complete tool Designation with W insert	Precision set Designation with C insert	Precision set Designation with W insert
32	80	60	0,23	B3230.C3.020-026.Z1.CP05	B3230.C3.020-026.Z1.WC03	B3230.C3.020-038.Z1.CP05	B3230.C3.020-038.Z1.WC03
			0,23	B3230.C3.026-032.Z1.CP05	B3230.C3.026-032.Z1.WC03		
			0,24	B3230.C3.032-038.Z1.CP05	B3230.C3.032-038.Z1.WC03		
32	80		0,29	B3230.C3.026-033.Z1.CP05	B3230.C3.026-033.Z1.WC03	B3230.C3.026-047.Z1.CP05	B3230.C3.026-047.Z1.WC03
			0,30	B3230.C3.033-040.Z1.CP05	B3230.C3.033-040.Z1.WC03		
			0,30	B3230.C3.040-047.Z1.CP05	B3230.C3.040-047.Z1.WC03		
32	80		0,42	B3230.C3.033-041.Z1.CP05	B3230.C3.033-041.Z1.WC03	B3230.C3.033-057.Z1.CP05	B3230.C3.033-057.Z1.WC03
			0,42	B3230.C3.041-049.Z1.CP05	B3230.C3.041-049.Z1.WC03		
			0,42	B3230.C3.049-057.Z1.CP05	B3230.C3.049-057.Z1.WC03		
40	80		0,7	B3230.C4.041-055.Z1.CC06	B3230.C4.041-055.Z1.WC04	B3230.C4.041-083.Z1.CC06	B3230.C4.041-083.Z1.WC04
			0,7	B3230.C4.055-069.Z1.CC06	B3230.C4.055-069.Z1.WC04		
			0,7	B3230.C4.069-083.Z1.CC06	B3230.C4.069-083.Z1.WC04		
50	100		1,4	B3230.C5.055-070.Z1.CC06	B3230.C5.055-070.Z1.WC05	B3230.C5.055-100.Z1.CC06	B3230.C5.055-100.Z1.WC05
			1,4	B3230.C5.070-085.Z1.CC06	B3230.C5.070-085.Z1.WC05		
			1,4	B3230.C5.085-100.Z1.CC06	B3230.C5.085-100.Z1.WC05		
63	100		2,1	B3230.C6.070-090.Z1.CC06	B3230.C6.070-090.Z1.WC05	B3230.C6.070-120.Z1.CC06	B3230.C6.070-120.Z1.WC05
			2,2	B3230.C6.085-105.Z1.CC06	B3230.C6.085-105.Z1.WC05		
			2,1	B3230.C6.100-120.Z1.CC06	B3230.C6.100-120.Z1.WC05		
63	110		3,2	B3230.C6.090-116.Z1.CC06	B3230.C6.090-116.Z1.WC05	B3230.C6.090-166.Z1.CC06	B3230.C6.090-166.Z1.WC05
			3,2	B3230.C6.115-141.Z1.CC06	B3230.C6.115-141.Z1.WC05		
			3,2	B3230.C6.140-166.Z1.CC06	B3230.C6.140-166.Z1.WC05		
80	110		4,0	B3230.C8.090-116.Z1.CC06	B3230.C8.090-116.Z1.WC05	B3230.C8.090-166.Z1.CC06	B3230.C8.090-166.Z1.WC05
			4,0	B3230.C8.115-141.Z1.CC06	B3230.C8.115-141.Z1.WC05		
			4,0	B3230.C8.140-166.Z1.CC06	B3230.C8.140-166.Z1.WC05		
63	110		4,1	B3230.C6.110-153.Z1.CC06	B3230.C6.110-153.Z1.WC05	B3230.C6.110-203.Z1.CC06	B3230.C6.110-203.Z1.WC05
			4,1	B3230.C6.135-178.Z1.CC06	B3230.C6.135-178.Z1.WC05		
			4,1	B3230.C6.160-203.Z1.CC06	B3230.C6.160-203.Z1.WC05		
63	110		4,8	B3230.C8.110-153.Z1.CC06	B3230.C8.110-153.Z1.WC05	B3230.C8.110-203.Z1.CC06	B3230.C8.110-203.Z1.WC05
			4,8	B3230.C8.135-178.Z1.CC06	B3230.C8.135-178.Z1.WC05		
			4,8	B3230.C8.160-203.Z1.CC06	B3230.C8.160-203.Z1.WC05		

Accessories

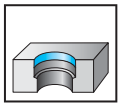
	C3		C4	C5	C6	C6 / C8
	for $D_{c\ min-max}$ [mm]					
	20–38,5	26–47,5	33–57,5	41–83,5	55–100,5	70–120,5	90–203
Screwdriver for clamping screw	FS2088 (Torx 7IP)			for CC . . 06/WC . . 04 = FS1483 (Torx 8IP) for WC . .05 = FS1484 (Torx 9IP)			
Screwdriver for clamping screw	FS1484 (Torx 9IP)						
DIN 911 hex key for clamping screw		SW 2,5	SW 3	SW 4	SW 5	SW 6	SW 6
Key for cartridge clamping	FS1484 (Torx 9IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)				FS2108 (Torx 30IP)
DIN 911 hex key for cartridge clamping				SW 3	SW 5	SW 5	

B 510 D 1 B 639 B 626

Self-balancing precision boring tool B4030

Walter Precision^{MEDIUM}

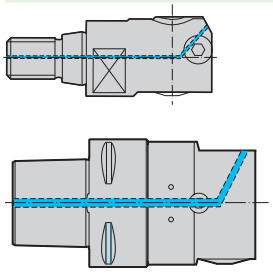
B 2



D_c 33–153	κ=95°	κ=93°	Z=1

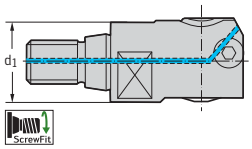
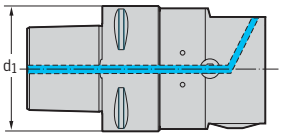
	P	M	K	N	S	H	O
B4030	●●	●●	●●	●●	●●	●	●

Basic body | **Cartridge with C insert**





κ = 95°

Tool	Basic body Designation	d_1 mm	D_c mm	Designation	Type
NCT/ScrewFit 	B4030G.T28.33-41.Z1	T 28	33–41	EB323.CP 05	CP . . 0502 . .
	B4030G.T36.41-55.Z1	T 36	41–55	EB325.CP05	CP . . 0502 . .
	B4030G.T45.55-70.Z1	T 45	55–70	EB327.CC06	CC . . 0602 . .
Walter Capto™ 	B4030G.C3.33-41.Z1	C3	33–41	EB323.CP05	CP . . 0502 . .
	B4030G.C4.41-55.Z1	C4	41–55	EB325.CP05	CP . . 0502 . .
	B4030G.C5.55-70.Z1	C5	55–70	EB327.CC06	CC . . 0602 . .
	B4030G.C6.070-090.Z1	C6	70–90		
	B4030G.C6.090-110.Z1	C6	90–110		
	B4030G.C8.090-110.Z1	C8	90–110		
	B4030G.C6.110-153.Z1	C6	110–153		
	B4030G.C8.110-153.Z1	C8	110–153		

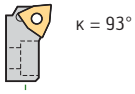
For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

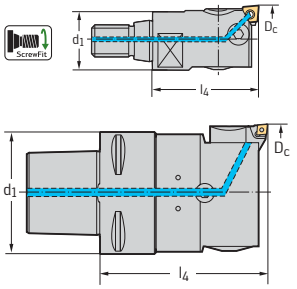
		$D_{c\ min–max}$ [mm] 33–41	41–55	55–70	70–90	90–110	110–153
	Clamping screw	FS2031 (SW 2,5)	FS2032 (SW 3)	FS2033 (SW 4)	FS2034 (SW 5)	FS2035 (SW 6)	FS2036 (SW 6)
	Tightening torque	2,5 Nm	3,0 Nm	6,0 Nm	12 Nm	15 Nm	15 Nm
	Clamping screw for cartridge	FS2080 (Torx 15IP)	FS1495 (Torx 20IP)	FS1091 (SW 3)			
	Tightening torque	2,5 Nm	2,5 Nm	2,5 Nm			
	Clamping screw for indexable insert	FS2084 (Torx 7IP)		FS1454 (Torx 8IP)			
	Tightening torque	0,8 Nm		0,8 Nm			



Cartridge with W insert



Complete tool



Designation	Type	d_1 mm	l_1 mm	kg	Complete tool, balanceable Designation with C insert	Complete tool, balanceable Designation with W insert
EB343.WC03	WC . . 0302 . .	28	55	0,3	B4030.T28.33-41.Z1.CP05	B4030.T28.33-41.Z1.WC03
EB345.WC03	WC . . 0302 . .	36	65	0,6	B4030.T36.41-55.Z1.CP05	B4030.T36.41-55.Z1.WC03
EB347.WC04	WC . . 0402 . .	45	80	1,0	B4030.T45.55-70.Z1.CC06	B4030.T45.55-70.Z1.WC04
EB343.WC03	WC . . 0302 . .	32	80	0,4	B4030.C3.033-041.Z1.CP05	B4030.C3.033-041.Z1.WC03
EB345.WC03	WC . . 0302 . .	40	80	0,75	B4030.C4.041-055.Z1.CP05	B4030.C4.041-055.Z1.WC03
EB347.WC04	WC . . 0402 . .	50	100	1,4	B4030.C5.055-070.Z1.CP05	B4030.C5.055-070.Z1.WC04
		63	100	1,5	B4030.C6.070-090.Z1.CC06	B4030.C6.070-090.Z1.WC04
		63	110	1,6	B4030.C6.090-110.Z1.CC06	B4030.C6.090-110.Z1.WC04
		80	110	1,6	B4030.C8.090-110.Z1.CC06	B4030.C8.090-110.Z1.WC04
		63	110	2,0	B4030.C6.110-153.Z1.CC06	B4030.C6.110-153.Z1.WC04
		80	110	2,0	B4030.C8.110-153.Z1.CC06	B4030.C8.110-153.Z1.WC04

Accessories

		for $D_{c\ min-max}$ [mm]				
		33–41	41–55	55–70	70–90	90–153
	Screwdriver for clamping screw	FS1484 (Torx 7IP)		FS1483 (Torx 8IP)		
	DIN 911 hex key for clamping screw	SW 2,5	SW 3	SW 4	SW 5	SW 6
	Key for cartridge clamping	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)			
	DIN 911 hex key for cartridge clamping			SW 3		

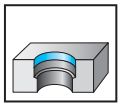
For torque screwdriver with interchangeable blades, see page B 702.

B 510 D 1 B 639 B 626

Self-balancing precision boring tool
B4031.C LWS

Walter Precision MEDIUM

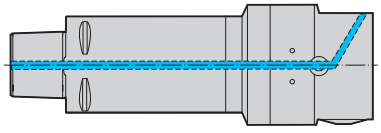
B2



D_c 90–153	κ=95°	κ=93°	Z=1

	P	M	K	N	S	H	O
B4031.C	●●	●●	●●	●●	●●	●	●

Basic body | **Cartridge with C insert**



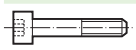


Tool

Basic body Designation	d_1 mm	D_c mm	Designation	Type
B4031G.C6.090-110.Z1.AL*	C6	90–110	EB327.CC06	CC . . 0602 . .
B4031G.C6.110-153.Z1.AL*	C6	110–153		

* Reduced-weight aluminium version
For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

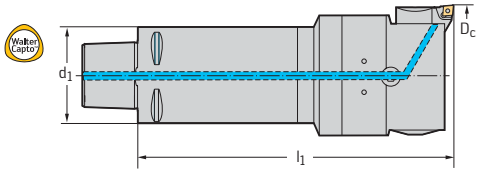
		$D_{c\ min–max}$ [mm] 90–110	110–153
	Clamping screw	FS2035 (SW 6)	FS2036 (SW 6)
	Tightening torque	15 Nm	15 Nm



Cartridge with W insert

Complete tool





Designation	Type	d_1 mm	l_1 mm	kg	Complete tool Designation with C insert	Complete tool Designation with W insert
EB347.WC04	WC . . 0402 . .	60	230	3,4	B4031.C6.090-110Z1.CC06	B4031.C6.090-110.Z1.WC04
		60	230	3,8	B4031.C6.110-153Z1.CC06	B4031.C6.110-153.Z1.WC04

Accessories

		for $D_{c\ min-max}$ [mm]	
		70–90	90–153
	Screwdriver for clamping screw	FS1483 (Torx 8IP)	
	DIN 911 hex key for clamping screw	SW 5	SW 6

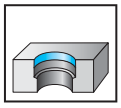
For torque screwdriver with interchangeable blades, see page B 702.

B 510 D 1 B 639 B 626

Precision boring tool with bridge design
B3230

Walter Precision^{MAXI}

B2



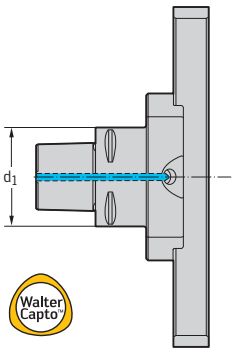
– Aluminium bridge

D_c 150–640	κ=95°	κ=93°	Z=1

	P	M	K	N	S	H	O
B3230	●●	●●	●●	●●	●●	●	●

Basic body



Tool	Basic body Designation	d_1 mm	D_c mm	Bridge	Balance weight	Cartridge holder
Walter Capto™ 	B3223G.C8.150-640	C8	150–220	EB134AL	EB121	EB123
			220–290	EB135AL		
			290–360	EB136AL		
			360–430	EB137AL		
			430–500	EB138AL		
			500–570	EB139AL		
			570–640	EB140AL		

For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Designation	Tightening torque
 Clamping screw for bridge	FS1114 (SW 10)	120 Nm
 Clamping screw for balance compensation slide	FS1086 (SW 6)	25 Nm
 Clamping screw for cartridge holder and balance compensation	FS1113 (SW 6)	25 Nm
 Clamping screw for cartridge	FS1092 (SW 5)	12 Nm
 Clamping screw for indexable insert	FS1457 (Torx 9IP)	2,5 Nm



Cartridge with C insert



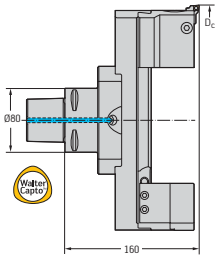
κ = 95°

Cartridge with W insert



κ = 93°

Complete tool



Cartridge Designation	Type	Cartridge Designation	Type	kg	Complete tool Designation with C insert	Complete tool Designation with W insert
EB329.CC06	CCGT 06 . .	EB349.WC05	WCGT 05 . .	6,3	B3230.C8.150-220.Z1.CC06	B3230.C8.150-220.Z1.WC05
				6,8	B3230.C8.220-290.Z1.CC06	B3230.C8.220-290.Z1.WC05
				7,2	B3230.C8.290-360.Z1.CC06	B3230.C8.290-360.Z1.WC05
				7,5	B3230.C8.360-430.Z1.CC06	B3230.C8.360-430.Z1.WC05
				7,9	B3230.C8.430-500.Z1.CC06	B3230.C8.430-500.Z1.WC05
				8,2	B3230.C8.500-570.Z1.CC06	B3230.C8.500-570.Z1.WC05
				8,4	B3230.C8.570-640.Z1.CC06	B3230.C8.570-640.Z1.WC05

Accessories

	Screwdriver for clamping screw	FS1484 (Torx 9IP)
	DIN 911 hex key	SW 5 / SW 6 / SW 10

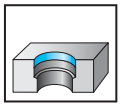
For torque screwdriver with interchangeable blades, see page B 702.

B 510 D 1 B 642 B 626

Precision boring tool with bridge design
B3234

Walter Precision^{MAXI}

D_c 150–640	κ=95°	κ=93°	Z=1



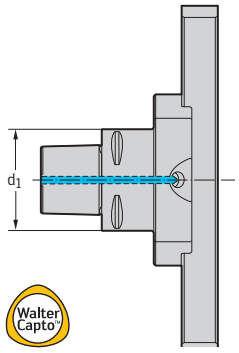
– Cutting edge orientation rotated by 90° in relation to B3230G.C …
– Aluminium bridge

	P	M	K	N	S	H	O
B3234	●●	●●	●●	●●	●●	●	●

Basic body

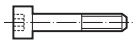


Tool	Basic body Designation	d_1 mm	D_c mm	Bridge	Balance weight	Cartridge holder
Walter Capto™	B3224G.C8.150-640	C8	150–220	EB134AL	EB121	EB123
			220–290	EB135AL		
			290–360	EB136AL		
			360–430	EB137AL		
			430–500	EB138AL		
			500–570	EB139AL		
			570–640	EB140AL		



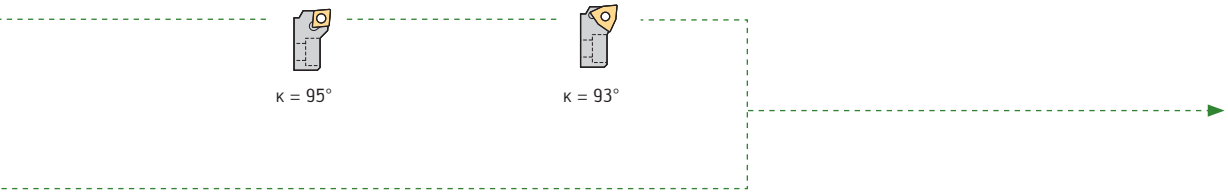
For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

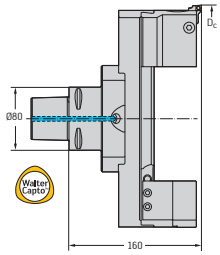
Assembly parts

		Designation	Tightening torque
	Clamping screw for bridge	FS1114 (SW 10)	120 Nm
	Clamping screw for balance compensation slide	FS1086 (SW 6)	25 Nm
	Clamping screw for cartridge holder and balance compensation	FS1113 (SW 6)	25 Nm
	Clamping screw for cartridge	FS1092 (SW 5)	12 Nm
	Clamping screw for indexable insert	FS1457 (Torx 9IP)	2,5 Nm



Cartridge with C insert | Cartridge with W insert | Complete tool





Cartridge Designation	Type	Cartridge Designation	Type	kg	Complete tool Designation with C insert	Complete tool Designation with W insert
EB329.CC06	CCGT 06 . .	EB349.WC05	WCGT 05 . .	6,3	B3234.C8.150-220.Z1.CC06	B3234.C8.150-220.Z1.WC05
				6,8	B3234.C8.220-290.Z1.CC06	B3234.C8.220-290.Z1.WC05
				7,2	B3234.C8.290-360.Z1.CC06	B3234.C8.290-360.Z1.WC05
				7,5	B3234.C8.360-430.Z1.CC06	B3234.C8.360-430.Z1.WC05
				7,9	B3234.C8.430-500.Z1.CC06	B3234.C8.430-500.Z1.WC05
				8,2	B3234.C8.500-570.Z1.CC06	B3234.C8.500-570.Z1.WC05
				8,4	B3234.C8.570-640.Z1.CC06	B3234.C8.570-640.Z1.WC05

Accessories

	Screwdriver for clamping screw	FS1484 (Torx 9IP)
	DIN 911 hex key	SW 5 / SW 6 / SW 10

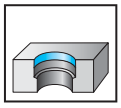
For torque screwdriver with interchangeable blades, see page B 702.

B 510 D 1 B 642 B 626

Precision boring tool set supplied in a case B4035

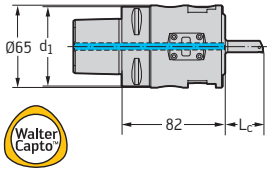
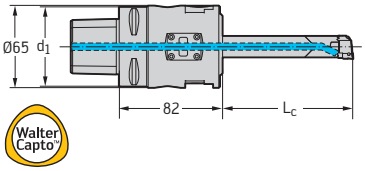
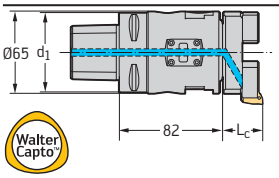
Walter Precision^{DIGITAL}

B2



D_c 3–124	κ=93°	Z=1

	P	M	K	N	S	H	O
B4035	●●	●●	●●	●●	●●	●	●

Tool	D_c mm	Set Designation	d_1	Set contents Toolholder	Designation
	3–32	B4035 Walter Capto™ set 1	C6	Boring bar	EB611.WC03
					EB615.WC03
					EB619.WC03
				Extension	EB642
				Basic body	B4035 basic body
	32–68	B4035 Walter Capto™ set 2	C6	Extension	EB625
					EB627
				Basic body	B4035 basic body
	68–124	B4035 Walter Capto™ set 3	C6	Bridge	EB631
					EB632
				Counterweight	EB635
				Basic body	B4035 basic body

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Designation	Tightening torque
 Clamping screw for indexable insert	FS2084 (IP 7) for WC . . 0302 . . FS1454 (IP 8) for WC . . 0402 . .	0,9 Nm 0,9 Nm
 Clamping screw for basic body	FS2101 (SW 4)	8,0 Nm
 Clamping threaded pin for boring bars	FS2102 (SW 4)	8,0 Nm
 Screwdriver	FS2088 (IP 7) for FS2084 FS1483 (IP 8) for FS1454	
 Coolant transfer	EB636	
Battery	FS2122	
Battery compartment gasket	FS2121	
Battery compartment cover	FS2123	



Set 1



Set 2



Set 3

Insert holder	Designation	$D_{c\ opt.}$* mm	D_c mm	L_C mm	Type
		10–11	10–17	27	WC . . 0302 . .
		14–15	14–21	47	
		18–19	18–25	65	
Cartridge	EB644.WC04	20–22	20–24	81	WC . . 0402 . .
	EB621.WC04	24–26	24–28	81	
	EB623.WC04	28–30	28–32	81	
Cartridge	EB629.WC04		32–41	63	WC . . 0402 . .
	EB630.WC04		41–50	63	
Cartridge	EB629.WC04		50–59	72	
	EB630.WC04		59–68	72	
Cartridge	EB634.WC04		68–96	32,5	WC . . 0402 . .
	EB634.WC04		96–124	32,5	

* $D_{c\ opt.}$ = Optimally balanced diameter range, for maximum speeds.
– Radial adjustment -0.1/+3.5 mm
– Coolant pressure max. 40 bar

Accessories

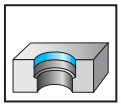
	DIN 911 hex key	SW 1,5 / SW 3
	T-handle	FS1174 (T 25)

B 510 D 1 B 640 B 626

Expansion components and individual parts
B4035

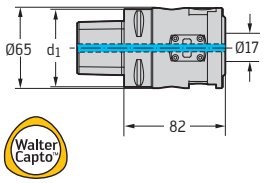
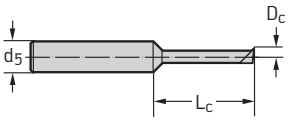
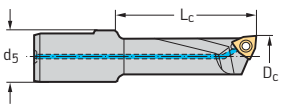
Walter Precision[DIGITAL]

B2



D_c 3–20 | Z=1

	P	M	K	N	S	H	O
B4035	●●	●●	●●	●●	●●	●	●

Tool	Designation	$D_{c\ opt.}$* mm	d_1 mm	D_c mm	d_5 mm	L_c mm	Type
Basic body 	B4035 Walter Capto™ basic set metric		C6				
One-piece insert holder 	EB603.WXP15	3–4		3–10	6	10	—
	EB604.WXP15	4–5		4–11	6	10	
	EB605.WXP15	5–6		5–12	6	10	
	EB606.WXP15	5–6		5–12	6	20	
	EB607.WXP15	6–7		6–13	6	20	
	EB608.WXP15	6–7		6–13	6	30	
	EB609.WXP15	8–9		8–15	8	23	
	EB610.WXP15	8–9		8–15	8	48	
Boring bar 	EB611.WC03	10–11		10–17	17	30	WC . . 0302 . .
	EB612.WC03	11–12		11–18	17	30	
	EB613.WC03	12–13		12–19	17	45	
	EB614.WC03	13–14		13–20	17	45	
	EB615.WC03	14–15		14–21	17	50	
	EB616.WC03	15–16		15–22	17	50	
	EB617.WC03	16–17		16–23	17	60	
	EB618.WC03	17–18		17–24	17	60	
	EB619.WC03	18–19		18–25	17	68	
	EB620.WC03	19–20		19–26	17	68	
	EB637.WC03.CS			10–12	17	55	
	EB638.WC03.CS			12–14	17	65	
	EB639.WC03.CS			14–16	17	75	
	EB640.WC03.CS			16–18	17	85	
	EB641.WC03.CS			18–20	17	95	

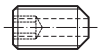
* $D_{c\ opt.}$ = Tool is optimally balanced → suitable for maximum speeds.

EB . . . CS = Solid carbide shank:
Advantages: Increased rigidity, reduced deflection, neutralised vibration
Bodies and assembly parts are included in the scope of delivery.



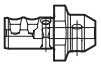
Set 1

Assembly parts

		d_5 = 6 mm	d_5 = 8 mm	d_5 = 17 mm
	Threaded pin	FS2093 (SW 3)	FS2093 (SW 3)	
	Tightening torque	4 Nm	4 Nm	
	Clamping screw for indexable insert			FS2084 (Torx 7IP)
	Tightening torque			0,9 Nm

For assembly parts for basic bodies, see page B 567.

Accessories

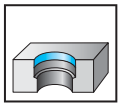
		d_5 = 6 mm	d_5 = 8 mm	d_5 = 17 mm
	Intermediate adaptors	EB601	EB602	—
	Screwdriver	DIN 911 (SW 3)	DIN 911 (SW 3)	FS2088 (Torx 7IP)

B 510 D 1 B 640 B 626

Expansion components and individual parts
B4035

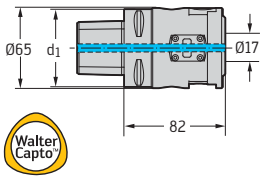
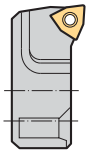
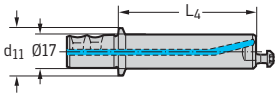
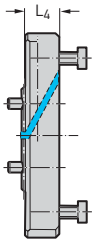
Walter Precision[DIGITAL]

B2



D_c 20–124 | Z=1

	P	M	K	N	S	H	O
B4035	●●	●●	●●	●●	●●	●	●

Tool	Designation	d_1	$D_{c\ opt.}$* mm	for D_c mm	d_{11} mm	L_4 mm	Type
Basic body 	B4035 Walter Capto™ basic set metric	C6					
Cartridges 	EB644.WC04		20–22	20–24		12	WC . . 0402 . .
	EB645.WC04		22–24	22–26		12	
	EB621.WC04		24–26	24–28		12	
	EB622.WC04		26–28	26–30		12	
	EB623.WC04		28–30	28–32		12	
	EB624.WC04		30–32	30–34		12	
	EB629.WC04			32–41[1] 50–59[2]		14	
	EB630.WC04			41–50[1] 59–68[2]		14	
	EB634.WC04			68–124		16,5	
Extension 	EB642			20–32	25	72	—
	EB643.CS			20–32	—	108	
	EB625			32–50	28,5	52	
	EB626			32–50	28,5	88	
	EB627			50–68	46	61	
	EB628			50–68	46	106	
Bridge 	EB631			68–96		16	—
	EB632			96–124		16	
	EB635 (counterweight)						

* $D_{c\ opt.}$ = Tool is optimally balanced → suitable for maximum speeds.

[1] = In combination with EB625/EB626
[2] = In combination with EB627/EB628

EB . . . CS = Solid carbide shank:
Advantages: Increased rigidity, reduced deflection, neutralised vibration.
Bodies and assembly parts are included in the scope of delivery.


Set 2

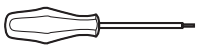
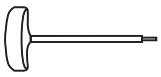
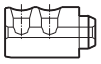

Set 3

Assembly parts

		D_c = 20–32 mm	D_c = 32–68 mm	D_c = 68–124 mm
	Clamping screw for indexable insert	FS1454 (Torx 8IP)		
	Tightening torque	0,9 Nm		
	Clamping screw for cartridge	FS2094 (T 25)	FS2096 (SW 4)	
	Tightening torque	8,0 Nm	8,0 Nm	
	Clamping bolt for extension		FS2095	
	Clamping screw for bridge			FS2100 (SW 4)
	Tightening torque			8,0 Nm
	Clamping screw for cartridge/counterweight			FS2097 (SW 4)
	Tightening torque			8,0 Nm
	Threaded pin for coolant			FS2098 (SW 1,5)
	Gasket for bridge			FS2099

For assembly parts for basic bodies, see page B 562.

Accessories

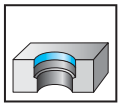
	Screwdriver for indexable insert	FS1483 (Torx 8IP)
	Screwdriver for extension	FS1174 (T25)
	DIN 911 hex key	SW 1,5 / SW 4
	Coolant transfer for bridge	EB636

B 510 D 1 B 640 B 626

Precision boring tool
B3230 / B4030

Walter Precision^{MINI}

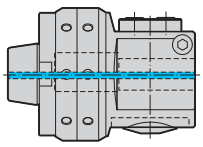
B2



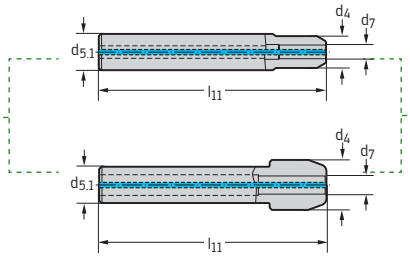
D_c 2,0–9,5	κ=93°	Z=1

	P	M	K	N	S	H	O
B3230 / B4030	●●	●●	●●	●●	●●	●	●

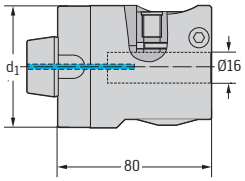
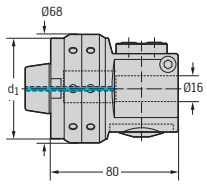
Basic body



Reducer

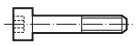


Tool

	Designation	d_1 mm	D mm	Designation	d_7 mm	d_4 mm	$d_{5.1}$ mm	l_{11} mm
NCT 	B3230G.N6.002-045.Z1 Standard	NCT63	2,0–3,5	EB101	4	12	16	100
			3,0–6,0					
	B4030G. N6.02-45.Z1 Balanceable	NCT63	5,8–7,5	EB102	5	13	16	100
			7,3–9,5	EB103	6	14	16	100

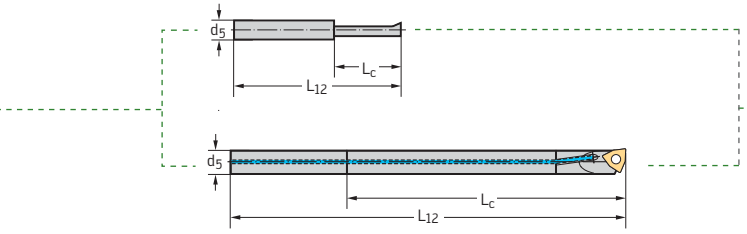
For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

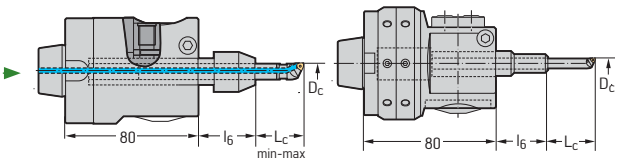
		Designation	Tightening torque
	Clamping screw	FS1085 (SW 5)	10 Nm
	Clamping screw for reducer	FS2040	10 Nm
	Clamping screw for insert holder	FS1110 (SW 2)	1,9 Nm
	Clamping screw for indexable insert with D_c = 5.8-9.5 mm	FS2245 (Torx 6IP)	0,6 Nm
	Clamping screw for balancing rings	FS2246 for B4030	0,5 Nm



Insert holder



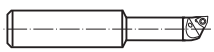
Complete tool



Designation	d_5 mm	L_{12} mm	Type	$L_{c\ min}$ mm	$L_{c\ max}$ mm	l_6 mm	kg	Standard Designation	Balanceable Designation
EB301 WK10*	4	30	—	9	—	28–60	1,8	B3230.N6.02-03.Z1.WK10	B4030.N6.02-03.Z1.WK10
EB302 WK10*	4	35	—	14	—	28–60	1,8	B3230.N6.03-06.Z1.WK10	B4030.N6.03-06.Z1.WK10
EB303.WC02.CS	5	85	WC . . 0201 . .	20	60	28–60	1,8	B3230.N6.06-07.Z1.WC02	B4030.N6.06-07.Z1.WC02
EB304.WC02.CS	6	95	WC . . 0201 . .	20	65	28–60	1,8	B3230.N6.07-09.Z1.WC02	B4030.N6.07-09.Z1.WC02

* Solid carbide boring bar
EB . . . CS = Solid carbide shank
Advantages: Increased rigidity, reduced deflection, neutralised vibration

Accessories

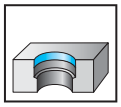
	Screwdriver for clamping screw	FS1063 (Torx 6)
	DIN 911 hex key	SW 2 / SW 4 / SW 5
	One-piece boring bar	D_c 5.8-9.5, see page B 548

B 510 D 1 B 639 B 626

Precision boring tool
B3230 / B4030

Walter Precision^{MINI}

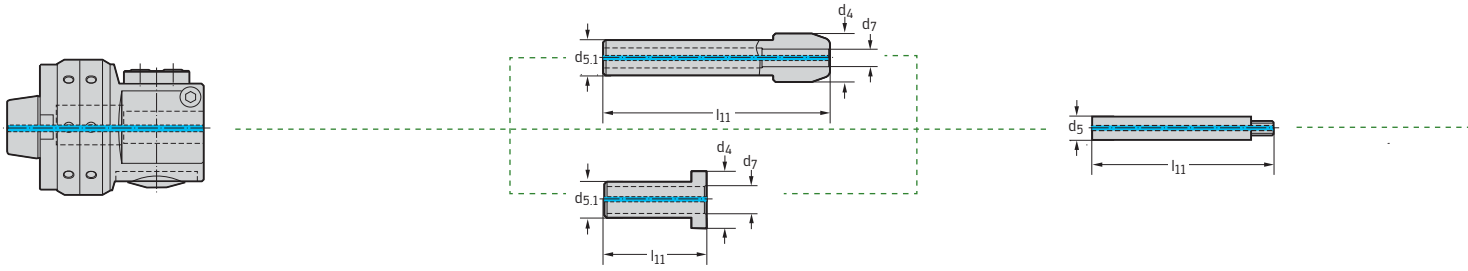
B2



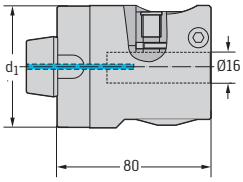
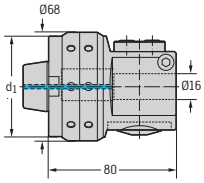
D_c 8,8–20	κ=93°	Z=1

	P	M	K	N	S	H	O
B3230 / B4030	●●	●●	●●	●●	●●	●●	●●

Basic body **Reducer** **Extension**



Tool

Designation	d_1 mm	D_c mm	Designation	d_7 mm	d_4 mm	$d_{5.1}$ mm	l_{11} mm	Designation	d_5 mm	l_{11} mm
NCT										
 B3230G.N6.002-045.Z1 Standard	NCT63	8,8–12,5	EB104	8	22	16	100	EB106	8	47
								EB107.CS	8	87
		11,8–14,5	EB105	10	24	16	100	EB108	10	52
								EB109.CS	10	97
 B4030G.N6.02-45.Z1 Balanceable		13,8–16,5	EB506	12	17	16	36	EB508	12	77
								EB509.CS	12	97
		15,8–20,0	EB507	14	17	16	36	EB510	14	87
								EB511.CS	14	117

EB . . . CS = Solid carbide shank
Advantages: Increased rigidity, reduced deflection, neutralised vibration

Assembly parts

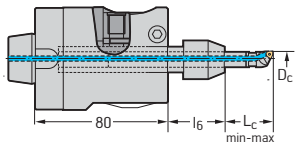
		Designation	Tightening torque
	Clamping screw	FS1085 (SW 5)	10 Nm
	Clamping screw for reducer	FS2040	10 Nm
	Clamping screw for extension	FS1111 (SW 3)	2,5 Nm
	Clamping screw for indexable insert	FS2084 (Torx 7IP)	0,9 Nm
	Clamping screw for balancing rings	FS2246 (SW 2) for B4030	0,5 Nm

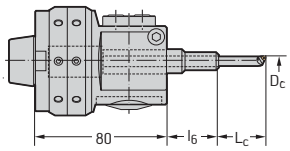


Insert holder



Complete tool

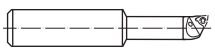




Designation	l_{12} mm	Type	$L_{c\,min}$ mm	$L_{c\,max}$ mm	l_6 mm	kg	Standard Designation	Balanceable Designation
EB305.WC03	18	WC . . 0302 . .	20	35	34–60	1,9	B3230.N6.09-12.Z1.WC03.S*	B4030.N6.09-12.Z1.WC03.S*
			20	73	34–60	1,9	B3230.N6.09-12.Z1.WC03.L*	B4030.N6.09-12.Z1.WC03.L
EB306.WC03	23	WC . . 0302 . .	25	45	34–60	1,9	B3230.N6.12-14.Z1.WC03.S	B4030.N6.12-14.Z1.WC03.S*
			25	70	34–60	1,9	B3230.N6.12-14.Z1.WC03.L	B4030.N6.12-14.Z1.WC03.L
EB307.WC03	23	WC . . 0302 . .	34	60	2	1,9	B3230.N6.14-16.Z1.WC03.S	B4030.N6.14-16.Z1.WC03.S
			54	80	2	1,9	B3230.N6.14-16.Z1.WC03.L	B4030.N6.14-16.Z1.WC03.L
EB512.WC03	23	WC . . 0302 . .	44	70	2	1,9	B3230.N6.16-20.Z1.WC03.S	B4030.N6.16-20.Z1.WC03.S
			74	100	2	1,9	B3230.N6.16-20.Z1.WC03.L	B4030.N6.16-20.Z1.WC03.L

* When using the WC . . 0302 . .-PM2 indexable insert, manually shorten the indexable insert clamping screw by 1 mm.

Accessories

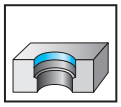
	Screwdriver for clamping screw	FS2088 (Torx 7IP)
	DIN 911 hex key	SW 2 / SW 4 / SW 5
	One-piece boring bar	D_c 8.8-15.8, see page B 548

B 510 D 1 B 639 B 626

Precision boring tool
B3230 / B4030

Walter Precision^{MINI}

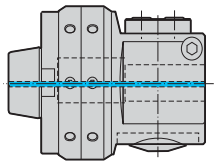
B2



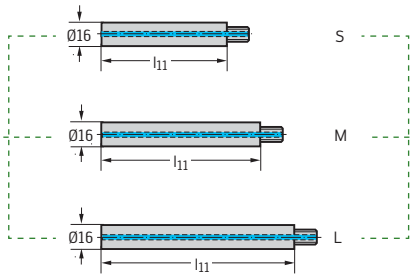
D_c 17,8–45,5	κ=93°	Z=1

	P	M	K	N	S	H	O
B3230 / B4030	●●	●●	●●	●●	●●	●	●

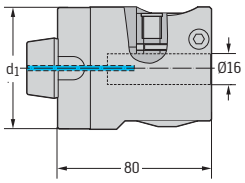
Basic body



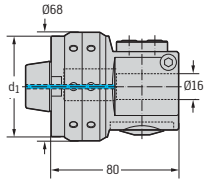
Extension



Tool	Designation	d_1 mm	D_c mm	Designation	l_{11} mm	
NCT			17,8–22,5	EB110	88	(S)
				EB111.CS	108	(M)
				EB112.CS	168	(L)
			21,8–25,5	EB110	88	(S)
				EB111.CS	108	(M)
				EB112.CS	168	(L)
			24,8–28,5	EB110	88	(S)
				EB111.CS	108	(M)
				EB112.CS	168	(L)
			27,8–32,5	EB110	88	(S)
				EB111.CS	108	(M)
				EB112.CS	168	(L)
			31,8–36,5	EB110	88	(S)
				EB111.CS	108	(M)
				EB112.CS	168	(L)
			35,8–40,5	EB110	88	(S)
				EB111.CS	108	(M)
				EB112.CS	168	(L)
			39,8–45,5	EB110	88	(S)
				EB111.CS	108	(M)
				EB112.CS	168	(L)



B3230G.N6.02-45.Z1
Standard

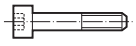


B4030G.N6.02-45.Z1
Balanceable

NCT63

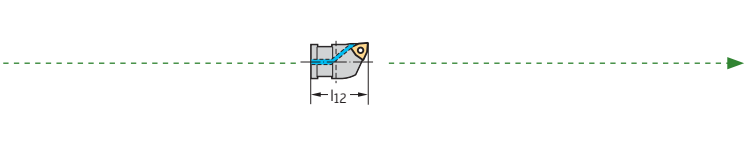
EB . . . CS = Solid carbide shank
Advantages: Increased rigidity, reduced deflection, neutralised vibration

Assembly parts

	Designation	Tightening torque
 Clamping screw	FS1085 (SW 5)	10 Nm
 Clamping screw for extension	FS2040	10 Nm
 Clamping screw for indexable insert	FS1454 (Torx 8IP)	1,2 Nm
 Clamping screw for balancing rings	FS2246 (SW 2) for B4030	0,5 Nm



Insert holder | Complete tool



Designation	l_{12} mm	Type	$L_{c\ min}$ mm	$L_{c\ max}$ mm	kg	Standard Designation	Balanceable Designation
EB308.WC04	27	WC . . 0402 . .	55	80	1,8	B3230.N6.18-22.Z1.WC04.S	B4030.N6.18-22.Z1.WC04.S
			75	100	2,0	B3230.N6.18-22.Z1.WC04.M	B4030.N6.18-22.Z1.WC04.M
			135	160	2,2	B3230.N6.18-22.Z1.WC04.L	B4030.N6.18-22.Z1.WC04.L
EB309.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.N6.22-25.Z1.WC04.S	B4030.N6.22-25.Z1.WC04.S
			75	100	2,5	B3230.N6.22-25.Z1.WC04.M	B4030.N6.22-25.Z1.WC04.M
			135	160	2,7	B3230.N6.22-25.Z1.WC04.L	B4030.N6.22-25.Z1.WC04.L
EB310.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.N6.25-28.Z1.WC04.S	B4030.N6.25-28.Z1.WC04.S
			75	100	2,5	B3230.N6.25-28.Z1.WC04.M	B4030.N6.25-28.Z1.WC04.M
			135	160	2,7	B3230.N6.25-28.Z1.WC04.L	B4030.N6.25-28.Z1.WC04.L
EB311.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.N6.28-32.Z1.WC 04.S	B4030.N6.28-32.Z1.WC04.S
			75	100	2,5	B3230.N6.28-32.Z1.WC04.M	B4030.N6.28-32.Z1.WC04.M
			135	160	2,7	B3230.N6.28-32.Z1.WC04.L	B4030.N6.28-32.Z1.WC04.L
EB312.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.N6.32-36.Z1.WC04.S	B4030.N6.32-36.Z1.WC04.S
			75	100	2,5	B3230.N6.32-36.Z1.WC04.M	B4030.N6.32-36.Z1.WC04.M
			135	160	2,7	B3230.N6.32-36.Z1.WC04.L	B4030.N6.32-36.Z1.WC04.L
EB313.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.N6.36-40.Z1.WC04.S	B4030.N6.36-40.Z1.WC04.S
			75	100	2,5	B3230.N6.36-40.Z1.WC04.M	B4030.N6.36-40.Z1.WC04.M
			135	160	2,7	B3230.N6.36-40.Z1.WC04.L	B4030.N6.36-40.Z1.WC04.L
EB314.WC04	27	WC . . 0402 . .	55	80	2,3	B3230.N6.40-45.Z1.WC04.S	B4030.N6.40-45.Z1.WC04.S
			75	100	2,5	B3230.N6.40-45.Z1.WC04.M	B4030.N6.40-45.Z1.WC04.M
			135	160	2,7	B3230.N6.40-45.Z1.WC04.L	B4030.N6.40-45.Z1.WC04.L

For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Accessories

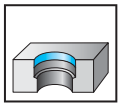
	Screwdriver	FS1483 (Torx 8IP)
	DIN 911 hex key	SW 5

B 510 D 1 B 639 B 626

Precision boring tool
B3230

Walter Precision^{MEDIUM}

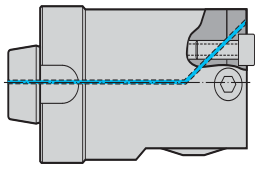
B2



D_c 20–153	κ=95°	κ=93°	Z=1

	P	M	K	N	S	H	O
B3230	●●	●●	●●	●●	●●	●	●

Basic body

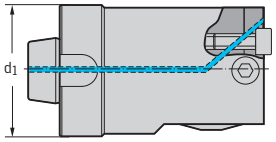


Cartridge with C insert



Tool

Designation	d_1 mm	D_c mm	Designation	Type
NCT				
B3230G.N2.020-026.Z1	NCT25	20–26	EB321.CP05	CP . . 0502 . .
B3230G.N2.026-033.Z1	NCT25	26–33	EB323.CP05	CP . . 0502 . .
B3230G.N3.033-041.Z1	NCT32	33–41	EB325.CP05	CP . . 0502 . .
B3230G.N4.041-055.Z1	NCT40	41–55	EB327.CC06	CC . . 0602 . .
B3230G.N5.055-070.Z1	NCT50	55–70	EB329.CC06	CC . . 0602 . .
B3230G.N6.070-090.Z1	NCT63	70–90		
B3230G.N8.090-110.Z1	NCT80	90–110		
B3230G.N8.110-153.Z1	NCT80	110–153		



For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

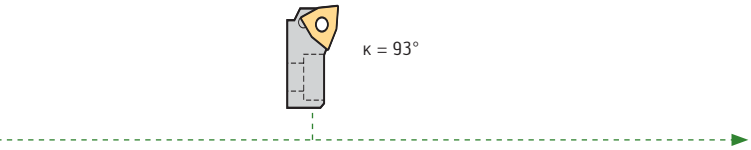
Assembly parts

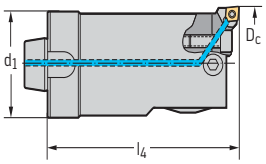
		$D_{c\ min–max}$ [mm] 20–26	26–33	33–41	41–55	55–70	70–90	90–153
	Clamping screw	FS2251 (Torx 9IP)	FS1082 (SW 2,5)	FS1083 (SW 3)	FS1084 (SW 4)	FS1085 (SW 5)	FS1086 (SW 6)	FS1087 (SW 6)
	Tightening torque	1,2 Nm	2,0 Nm	3,0 Nm	4,0 Nm	10,0 Nm	25,0 Nm	25,0 Nm
	Clamping screw for cartridge	FS1457 (Torx 9IP)	FS2080 (Torx 15IP)	FS1495 (Torx 20IP)	FS1091 (SW 3)	FS1092 (SW 5)		
	Tightening torque	0,9 Nm	2,0 Nm	2,5 Nm	2,5 Nm	12,0 Nm		
	Drive pin (only with NCT 25)	FK311		FK312	FK313			
	Screw for drive pin (only with NCT 25)	FS502		FS503	FS504			
	Clamping screw for indexable insert	for CP . . 05/WC . . 03 = FS2084 (Torx 7IP)			FS923 (Torx 8)	for CC . . 06/WC . . 04 = FS1454 (Torx 8IP) for WC . . 05 = FS1457 (Torx 9IP)		
	Tightening torque	0,8 Nm			0,8 Nm	FS1454 = 0,8 Nm / FS1457 = 1,5 Nm		

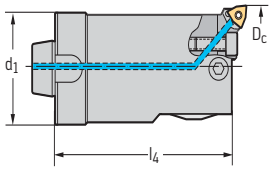


B 2

Cartridge with W insert | **Complete tool**



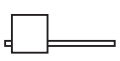




Designation	Type	d_1 mm	l_4 mm	kg	Standard Designation with C insert	Standard Designation with W insert
EB341.WC03	WC . . 0302 . .	25*	80	0,2	B3230.N2.020-026.Z1.CP05	B3230.N2.020-026.Z1.WC03
EB343.WC03	WC . . 0302 . .	25	80	0,3	B3230.N2.026-033.Z1.CP05	B3230.N2.026-033.Z1.WC03
EB345.WC03	WC . . 0302 . .	32	80	0,5	B3230.N3.033-041.Z1.CP05	B3230.N3.033-041.Z1.WC03
EB347.WC04	WC . . 0402 . .	40	80	0,8	B3230.N4.041-055.Z1.CC06	B3230.N4.041-055.Z1.WC04
EB349.WC05	WC . . 0503 . .	50	100	1,6	B3230.N5.055-070.Z1.CC06	B3230.N5.055-070.Z1.WC05
		63	100	2,5	B3230.N6.070-090.Z1.CC06	B3230.N6.070-090.Z1.WC05
		80	100	4,0	B3230.N8.090-110.Z1.CC06	B3230.N8.090-110.Z1.WC05
		80	100	5,0	B3230.N8.110-153.Z1.CC06	B3230.N8.110-153.Z1.WC05

* Maximum drilling depth = 65 mm

Accessories

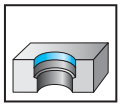
		for $D_{c\ min-max}$ [mm]					
		20–26	26–33	33–41	41–55	55–70	70–153
	Screwdriver for clamping screw	FS2088 (Torx 7IP)			for CC . . 06/WC . . 04 = FS1483 (Torx 8IP) for WC . . 05 = FS1484 (Torx 9IP)		
	Torx key for clamping screw	FS1484 (Torx 9IP)					
	DIN 911 hex key for clamping screw		SW 2,5	SW 3	SW 4	SW 5	SW 6
	Key for cartridge clamping	FS1484 (Torx 9IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)			FS2108 (Torx 30IP)
	DIN 911 hex key for cartridge clamping				SW 3	SW 5	SW 5

B 510 D 1 B 639 B 626

Self-balancing precision boring tool B4030

Walter Precision^{MEDIUM}

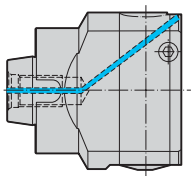
B 2



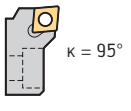
D_c 70–153	κ=95°	κ=93°	Z=1

	P	M	K	N	S	H	O
B4030	●●	●●	●●	●●	●●		●

Basic body

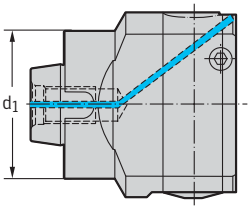


Cartridge with C insert



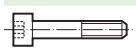
Tool

Designation	d_1 mm	D_c mm	Designation	Type	
NCT					
B4030G.N6.070-090.Z1	NCT63	70–90	EB327.CC06	CC . . 0602 . .	
B4030G.N8.090-110.Z1*	NCT80	90–110			
B4030G.N8.110-153.Z1*	NCT80	110–153			



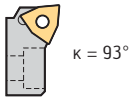
* Aluminium design
For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

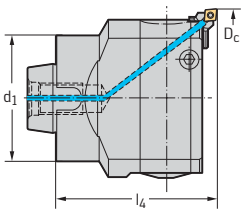
		$D_{c\ min–max}$ [mm] 33–41	41–55	55–70	70–90	90–110	110–153
	Clamping screw	FS2031 (SW 2,5)	FS2032 (SW 3)	FS2033 (SW 4)	FS2034 (SW 5)	FS2035 (SW 6)	FS2036 (SW 6)
	Tightening torque	2,5 Nm	3,0 Nm	6,0 Nm	10 Nm	12 Nm	12 Nm
	Clamping screw for cartridge	FS2080 (Torx 15IP)	FS1495 (Torx 20IP)	FS1091 (SW 3)			
	Tightening torque	2,5 Nm	2,5 Nm	2,5 Nm			
	Clamping screw for indexable insert	FS1004 (Torx 7)		FS923 (Torx 8)			
	Tightening torque	0,6 Nm		0,8 Nm			

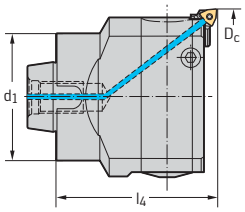


Cartridge with W insert



Complete tool





Designation	Type	d_1 mm	l_4 mm	kg	Designation with C insert	Designation with W insert
EB347.WC04	WC . . 0402 . .	63	100	2,5	B4030.N6.070-090.Z1.CC06	B4030.N6.070-090.Z1.WC04
		80	100	1,6	B4030.N8.090-110.Z1.CC06	B4030.N8.090-110.Z1.WC04
		80	100	2,0	B4030.N8.110-153.Z1.CC06	B4030.N8.110-153.Z1.WC04

Accessories

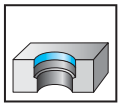
		for $D_{c\ min-max}$ [mm]				
		33–41	41–55	55–70	70–90	90–153
	Screwdriver for clamping screw	FS1484 (Torx 7IP)		FS1483 (Torx 8IP)		
	DIN 911 hex key for clamping screw	SW 2,5	SW 3	SW 4	SW 5	SW 6
	Key for cartridge clamping	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)			
	DIN 911 hex key for cartridge clamping			SW 3		

B 510 D 1 B 639 B 626

Precision boring tool with bridge design
B3230

Walter Precision^{MAXI}

B2

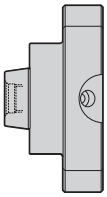


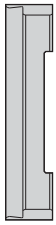
– 0.01 mm adjustment accuracy

	D_c 150–640	κ=95°	κ=93°	Z=1

	P	M	K	N	S	H	O
B3230	●●	●●	●●	●●	●●	●	●

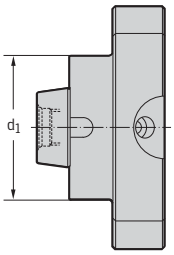
Basic body









Tool	Designation	d_1 mm	D_c mm	Bridge	Balance weight	Cartridge holder	
NCT			150–220	EB 124			
			220–290	EB 125			
			290–360	EB 126			
	B3223G.N8.150-640	NCT80	360–430	EB 127	EB121	EB123	
			430–500	EB 128			
			500–570	EB 129			
			570–640	EB 130			

For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

		Designation	Tightening torque
	Clamping screw for bridge	FS1114 (SW 10)	120 Nm
	Clamping screw for balance compensation slide	FS1086 (SW 6)	25 Nm
	Clamping screw for cartridge holder and balance compensation	FS1113 (SW 6)	15 Nm
	Clamping screw for cartridge	FS1092 (SW 5)	12 Nm
	Clamping screw for indexable insert	FS1457 (Torx 9IP)	1,5 Nm



Cartridge with C insert | Cartridge with W insert | Complete tool



Designation	Type	Designation	Type		Standard Designation with C insert	Standard Designation with W insert
EB329.CC06	CCGT 06 . .	EB 349.WC05	WCGT 05 . .	7,9	B3230.N8.150-220.Z1.CC06	B3230.N8.150-220.Z1.WC05
				9,2	B3230.N8.220-290.Z1.CC06	B3230.N8.220-290.Z1.WC05
				10,5	B3230.N8.290-360.Z1.CC06	B3230.N8.290-360.Z1.WC05
				11,7	B3230.N8.360-430.Z1.CC06	B3230.N8.360-430.Z1.WC05
				13,0	B3230.N8.430-500.Z1.CC06	B3230.N8.430-500.Z1.WC05
				14,3	B3230.N8.500-570.Z1.CC06	B3230.N8.500-570.Z1.WC05
				15,5	B3230.N8.570-640.Z1.CC06	B3230.N8.570-640.Z1.WC05

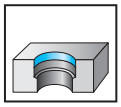
Accessories

	Screwdriver for clamping screw	FS1484 (Torx 9IP)
	DIN 911 hex key	SW 5 / SW 6 / SW 10

B 510 D 1 B 642 B 626

Precision boring tool with bridge design
B3234

Walter Precision^{MAXI}

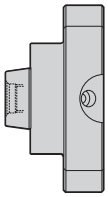


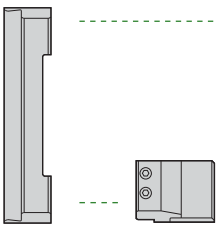
– 0.01 mm adjustment accuracy
– Cutting edge orientation rotated by 90° in relation to B3230

D_c 150–640	κ=95°	κ=93°	Z=1

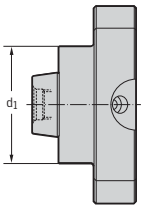
	P	M	K	N	S	H	O
B3224	●●	●●	●●	●●	●●	●	●

Basic body



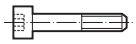


Tool

Designation	d_1 mm	D_c mm	Bridge	Balance weight	Cartridge holder
NCT 		150–220	EB124		
		220–290	EB125		
		290–360	EB126		
B3224G.N8.150-640	NCT80	360–430	EB127	EB121	EB123
		430–500	EB128		
		500–570	EB129		
		570–640	EB130		

For assembly aids, see page D 1.
Bodies and assembly parts are included in the scope of delivery.

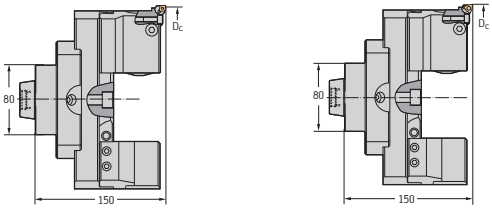
Assembly parts

	Designation	Tightening torque
 Clamping screw for bridge	FS1114 (SW 10)	120 Nm
 Clamping screw for balance compensation slide	FS1086 (SW 6)	25 Nm
 Clamping screw for cartridge holder and balance compensation	FS1113 (SW 6)	15 Nm
 Clamping screw for cartridge	FS1092 (SW 5)	12 Nm
 Clamping screw for indexable insert	FS1457 (Torx 9IP)	1,5 Nm



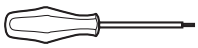
Cartridge with C insert | Cartridge with W insert | Complete tool





Designation	Type	Designation	Type	kg	Standard Designation with C insert	Standard Designation with W insert
EB329.CC06	CCGT 06 . .	EB349.WC05	WCGT 05 . .	7,9	B3234.N8.150-220.Z1.CC06	B3234.N8.150-220.Z1.WC05
				9,2	B3234.N8.220-290.Z1.CC06	B3234.N8.220-290.Z1.WC05
				10,5	B3234.N8.290-360.Z1.CC06	B3234.N8.290-360.Z1.WC05
				11,7	B3234.N8.360-430.Z1.CC06	B3234.N8.360-430.Z1.WC05
				13,0	B3234.N8.430-500.Z1.CC06	B3234.N8.430-500.Z1.WC05
				14,3	B3234.N8.500-570.Z1.CC06	B3234.N8.500-570.Z1.WC05
				15,5	B3234.N8.570-640.Z1.CC06	B3234.N8.570-640.Z1.WC05

Accessories

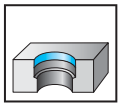
	Screwdriver for clamping screw	FS1484 (Torx 9IP)
	DIN 911 hex key	SW 5 / SW 6 / SW 10

B 510 D 1 B 642 B 626

Precision boring tool set supplied in a case B4035

Walter Precision^{DIGITAL}

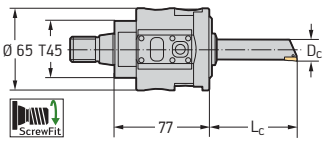
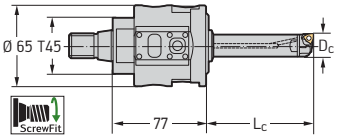
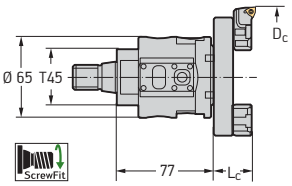
B 2



– Radial adjustment range –0.1/+0.35 mm

D_c 10–124	κ=93°	Z=1

	P	M	K	N	S	H	O
B4035	●●	●●	●●	●●	●●	●	●

Tool	D_c mm	Set Designation	Set contents Toolholder	Designation
	10–32	B4035 set 1	Boring bar	EB611.WC03
				EB615.WC03
				EB619.WC03
			Extension	EB 642
			Basic body	B4035 basic body
	32–68	B4035 set 2	Extension	EB625
				EB627
			Basic body	B4035 basic body
	68–124	B4035 set 3	Bridge	EB631
				EB632
			Counterweight	EB635
			Basic body	B4035 basic body

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Designation	Tightening torque
 Clamping screw for indexable insert	FS2084 (Torx 7IP) for WC . . 0302 . . FS1454 (Torx 8IP) for WC . . 0402 . .	0,9 Nm 0,9 Nm
 Clamping screw for basic body	FS2101 (SW 4)	8,0 Nm
 Clamping threaded pin for boring bars	FS2102 (SW 4)	8,0 Nm
 Screwdriver	FS2088 (Torx 7IP) for FS2084 FS1483 (Torx 8IP) for FS1454	
 Coolant transfer	EB636	
Battery	FS2122	
Battery compartment gasket	FS2121	
Battery compartment cover	FS2123	


Set 1


Set 2


Set 3

Insert holder	Designation	$D_{c\ opt.}$* mm	D_c mm	L_C mm	Type
		10–11	10–17	27	WC . . 0302 . .
		14–15	14–21	47	
		18–19	18–25	65	
Cartridge	EB644.WC04	20–22	20–24	81	WC . . 0402 . .
	EB621.WC04	24–26	24–28	81	
	EB623.WC04	28–30	28–32	81	
Cartridge	EB629.WC04		32–41	63	WC . . 0402 . .
	EB630.WC04		41–50	63	
Cartridge	EB629.WC04		50–59	72	
	EB630.WC04		59–68	72	
Cartridge	EB634.WC04		68–96	32,5	WC . . 0402 . .
	EB634.WC04		96–124	32,5	

* $D_{c\ opt.}$ = Optimally balanced diameter range, for maximum speeds.
– Radial adjustment –0.1/+3.5 mm
– Coolant pressure max. 40 bar

Accessories

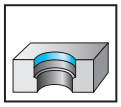
	DIN 911 hex key	SW 1,5 / SW 3
	T-handle	FS1174 (T25)

B 506 D 1 B 640 B 626

Expansion components and individual parts
B4035

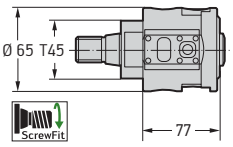
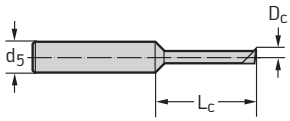
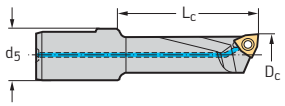
Walter Precision[DIGITAL]

B2



D_c 3–20	Z=1

	P	M	K	N	S	H	O
B4035	●●	●●	●●	●●	●●	●	●

Tool	Designation	$D_{c\ opt.}$* mm	D_c mm	d_5 mm	d_2 mm	L_c mm	Type
Basic body 	B4035 basic set metric						
One-piece insert holder 	EB603.WXP15	3–4	3–10	6		10	—
	EB604.WXP15	4–5	4–11	6		10	
	EB605.WXP15	5–6	5–12	6		10	
	EB606.WXP15	5–6	5–12	6		20	
	EB607.WXP15	6–7	6–13	6		20	
	EB608.WXP15	6–7	6–13	6		30	
	EB609.WXP15	8–9	8–15	8		23	
	EB610.WXP15	8–9	8–15	8		48	
Boring bar 	EB611.WC03	10–11	10–17	17		30	WC . . 0302 . .
	EB612.WC03	11–12	11–18	17		30	
	EB613.WC03	12–13	12–19	17		45	
	EB614.WC03	13–14	13–20	17		45	
	EB615.WC03	14–15	14–21	17		50	
	EB616.WC03	15–16	15–22	17		50	
	EB617.WC03	16–17	16–23	17		60	
	EB618.WC03	17–18	17–24	17		60	
	EB619.WC03	18–19	18–25	17		68	
	EB620.WC03	19–20	19–26	17		68	
	EB637.WC03.CS		10–12	17		55	
	EB638.WC03.CS		12–14	17		65	
	EB639.WC03.CS		14–16	17		75	
	EB640.WC03.CS		16–18	17		85	
	EB641.WC03.CS		18–20	17		95	

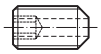
* $D_{c\ opt.}$ = Tool is optimally balanced → suitable for maximum speeds.

EB . . . CS = Solid carbide shank:
Advantages: Increased rigidity, reduced deflection, neutralised vibration
Bodies and assembly parts are included in the scope of delivery.



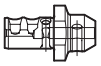
Set 1

Assembly parts

		d_5 = 6 mm	d_5 = 8 mm	d_5 = 17 mm
	Threaded pin	FS2093 (SW 3)	FS2093 (SW3)	
	Tightening torque	4 Nm	4 Nm	
	Clamping screw for indexable insert			FS2084 (Torx 7IP)
	Tightening torque			0,9 Nm

For assembly parts for basic bodies, see page B 587.

Accessories

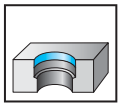
		d_1 = 6 mm	d_1 = 8 mm	d_1 = 17 mm
	Intermediate adaptors	EB601	EB602	—
	Screwdriver	DIN 911 (SW 3)	DIN 911 (SW 3)	FS2088 (Torx 7IP)

B 510 D 1 B 640 B 626

Expansion components and individual parts
B4035

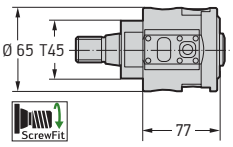
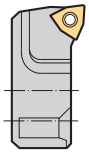
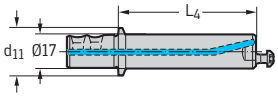
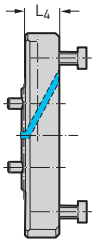
Walter Precision^DIGITAL

B 2



D_c 20–124 | Z=1

	P	M	K	N	S	H	O
B4035	●●	●●	●●	●●	●●	●	●

Tool	Designation	$D_{c\ opt.}$* mm	for D_c mm	d_{11} mm	L_4 mm	Type
Basic body 	B4035 basic set metric					
Cartridges 	EB644.WC04	20–22	20–24		12	WC . . 0402 . .
	EB645.WC04	22–24	22–26		12	
	EB621.WC04	24–26	24–28		12	
	EB622.WC04	26–28	26–30		12	
	EB623.WC04	28–30	28–32		12	
	EB624.WC04	30–32	30–34		12	
	EB629.WC04		32–41[1] 50–59[2]		14	
	EB630.WC04		41–50[1] 59–68[2]		14	
	EB634.WC04		68–124		16,5	
Extension 	EB642		20–32	25	72	—
	EB643.CS		20–32	—	108	
	EB625		32–50	28,5	52	
	EB626		32–50	28,5	88	
	EB627		50–68	46	61	
	EB628		50–68	46	106	
Bridge 	EB631		68–96		16	—
	EB632		96–124		16	
	EB 635 (counterweight)					

* $D_{c\ opt.}$ = Tool is optimally balanced → suitable for maximum speeds.

[1] = In combination with EB625/EB626
[2] = In combination with EB627/EB628

EB . . . CS = Solid carbide shank:
Advantages: Increased rigidity, reduced deflection, neutralised vibration.
Bodies and assembly parts are included in the scope of delivery.



Set 2



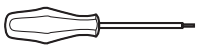
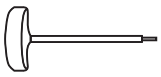
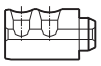
Set 3

Assembly parts

		D_c = 20–32 mm	D_c = 32–68 mm	D_c = 68–124 mm
	Clamping screw for indexable insert Tightening torque	FS1454 (Torx 8IP) 0,9 Nm		
	Clamping screw for cartridge Tightening torque	FS2094 (T 25) 8,0 Nm	FS2096 (SW 4) 8,0 Nm	
	Clamping bolt for extension		FS2095	
	Clamping screw for bridge Tightening torque			FS2100 (SW 4) 8,0 Nm
	Clamping screw for cartridge/counterweight Tightening torque			FS2097 (SW 4) 8,0 Nm
	Threaded pin for coolant			FS2098 (SW 1,5)
	Gasket for bridge			FS2099

For assembly parts for basic bodies, see page C 116.

Accessories

	Screwdriver for indexable insert	FS1483 (Torx 8IP)
	Screwdriver for extension	FS1174 (T25)
	DIN 911 hex key	SW 1,5 / SW 4
	Coolant transfer for bridge	EB636

B 510 D 1 B 640 B 626

Walter Precision^{MINI}
Setting device for B3230 and B4030

The application

For cutting edge orientation and presetting the projection length and the boring diameter of the B3230 and B4030 precision boring tools.

Operation

The measuring slide is adjusted to the required tool holder projection length and clamped. The tool holder is then raised until the cutting edge touches the lower edge of the measuring slide, and the insert corner can be aligned with the edge of the slide. The scale on the measuring slide permits the boring diameter to be preset approximately.

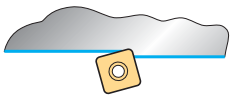
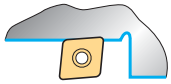
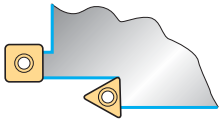
Benefits for you

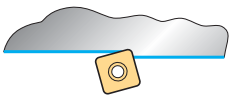
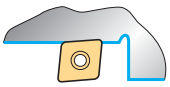
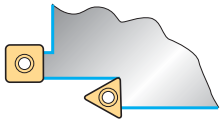
– Precise cutting edge orientation on the spindle boring bar
– Easy adjustment of the projection length
– Quick approximate setting of the boring diameter

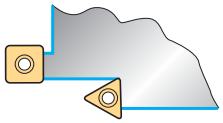


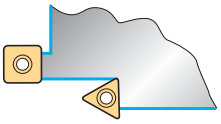
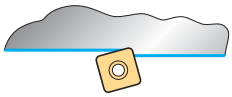
Setting device for B3230 and B4030	Designation	
	EG-FB-160	Setting device for cutting edge orientation

Cartridges product range overview

Machining	Through boring and step boring   					
Lead angle κ [°]	**75°**		**90°**			
Designation	**PSKN R/L**	**SSKC R/L**	**FR/FL 670 FR/FL 671**	**FR/FL 672**	**FR 679 FR 680**	**SCFC R/L**
Standard	ISO 5611		Walter			ISO 5611
$D_{c\ min}$ [mm]	50	40	14,5 / 20	20	14,5 / 20	50
Page	B 593	B 596	B 600	B 602	B 600	B 595
						

Machining	Through boring and step boring   				
Lead angle κ [°]	**90°/95°**				
Designation	**PTFN R/L**	**STFC R/L PTFC R/L**	**SWFC R/L**	**PCLN R/L**	**SCLC R/L**
Standard	ISO 5611				
$D_{c\ min}$ [mm]	50	40 / 50	40	50	40
Page	B 594	B 598	B 599	B 592	B 595
					

Machining	Spotfacing, Chamfering and counterboring 						
Lead angle κ [°]	**15°**	**30°**	**45°**			**60°**	
Designation	**FR 701 FR/FL 702**	**FR 675**	**FR 699 FR/FL 704**	**FR 673**	**SSSC R/L PSSC R/L**	**FR/FL 698 FR 705**	**FR 674**
Standard	Walter				ISO 5611	Walter	
$D_{c\ min}$ [mm]	20 /25	20	20 / 25	20	40 / 60	20 / 25	20
Page	B 603	B 601	B 603	B 601	B 597	B 604	B 601
							

Machining	Spotfacing, Chamfering and counterboring 			Precision boring 						
Lead angle κ [°]	**75°**			**90°**				**95°**		
Designation	**FR 697 FR 706**	**FR/FL 707**	**SSRC R/L**	**FR/FL 710**	**FR/FL 709**	**FR 760**	**FR 761**	**FR/FL 711**	**FR/FL 717**	**FR 763**
Standard	Walter		ISO 5611	Walter						
Adjustment accuracy [mm]				0,01		0,002		0,01		0,002
$D_{c\ min}$ [mm]	20 / 25	20	40	28	36	28				
Page	B 604	B 602	B 596	B 605	B 606	B 606	B 605	B 606	B 605	B 605
										

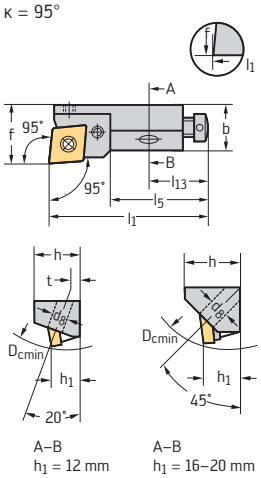
ISO cartridges
PCLN



B 2

Tool

κ = 95°



Designation	h_1	b mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h mm	l_1 mm	l_5 mm	t mm	Indexable insert type
PCLNR/L12CA-12	12	16	50	7	20	20	20	55	28	6	CNM . 1204 . .
PCLNR/L16CA-12	16	20	60	9	25	25	25	63	35		
PCLNR/L20CA-16	20	20	70	9	30	25	30	70	40		CNM . 1606 . .

Measured with CNM . 120408/CNM . 160612 master insert.
For radial/axial adjustment range, see page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Indexable insert type h_1	CNM . 1204 . . 12	CNM . 1204 . . 16	CNM . 1606 . . 20
Shim		AP134-CN1216	AP135-CN1624
Lever	KN109	KN102	KN104
Clamping screw for indexable insert	FS332 (SW 2,5)	FS352 (SW 3)	FS354 (SW 3)
Shim pin		RS102	RS103
Tapered assembly pin		MD101	MD102
Axial adjusting screw	FS335	FS338	FS339
Radial adjusting screw	FS334	FS337	FS337

Accessories

Indexable insert type h_1	CNM . 1204 . . 12	CNM . 1204 . . 16	CNM . 1606 . . 20
ISO 7380 screw	FS977 (Torx 30)	FS975 (Torx 40)	FS975 (Torx 40)
ISO 2936 key	ISO 2936-2,5 (SW 2,5)	ISO 2936-3 (SW 3)	ISO 2936-3 (SW 3)
Handle key, large	FS1175 (Torx 30)	FS1176 (Torx 40)	FS1176 (Torx 40)

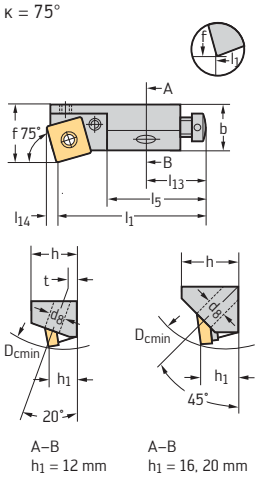
A 20 A 234

ISO cartridges
PSKN



Tool

κ = 75°



Designation	l_{14} mm	h_1	b mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h mm	l_1 mm	l_5 mm	t mm	Indexable insert type
PSKNR/L12CA-12	3,1	12	15	50	7	20	20	20	55	32	6	SNM . 1204 . .
PSKNR/L16CA-12	3,1	16	20	60	9	25	25	25	63	37		
PSKNR/L20CA-15	3,8	20	20	70	9	30	25	30	70	40		SNM . 1506 . .

Measured with SNM . 120408/SNM . 150612 master insert.
For radial/axial adjustment range, see page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Indexable insert type h_1	SNM . 1204 . . 12	SNM . 1204 . . 16	SNM . 1506 . . 20
Shim		AP141-SN1216	AP142-SN1524
Lever	KN109	KN102	KN104
Clamping screw for indexable insert	FS332 (SW 2,5)	FS352 (SW 3)	FS354 (SW 3)
Shim pin		RS102	RS103
Tapered assembly pin		MD101	MD102
Axial adjusting screw	FS335	FS338	FS339
Radial adjusting screw	FS333	FS337	FS337

Accessories

Indexable insert type h_1	CNM . 1204 . . 12	CNM . 1204 . . 16	CNM . 1606 . . 20
ISO 7380 screw	FS977 (Torx 30)	FS975 (Torx 40)	FS975 (Torx 40)
ISO 2936 key	ISO 2936-2,5 (SW 2,5)	ISO 2936-3 (SW 3)	ISO 2936-3 (SW 3)
Handle key, large	FS1175 (Torx 30)	FS1176 (Torx 40)	FS1176 (Torx 40)

A 27 A 234

ISO cartridges
PTFN

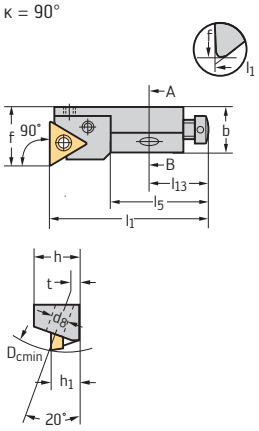


B 2

Tool

Designation	h_1	b mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h mm	l_1 mm	l_5 mm	t mm	Indexable insert type
PTFNR/L12CA-16	12	15	50	7	20	20	20	55	32,5	6	TNM . 1604 . .

κ = 90°



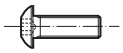
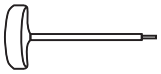
A–B
h_1 = 12 mm

Measured with TNM . 160408 master insert.
For radial/axial adjustment range, see page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Indexable insert type h_1	TNM . 1604 . . 12
	Lever	KN108
	Clamping screw for indexable insert	FS331 (SW 2)
	Axial adjusting screw	FS335
	Radial adjusting screw	FS333

Accessories

	Indexable insert type h_1	TNM . 1604 . . 12
	ISO 7380 screw	FS977 (Torx 30)
	ISO 2936 key	ISO 2936-2 (SW 2)
	Handle key, large	FS1175 (Torx 30)

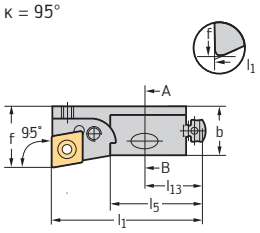
A 30 A 234

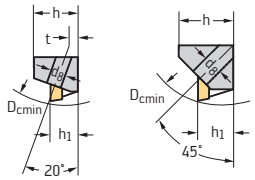
ISO cartridges
SCLC/SCFC



Tool

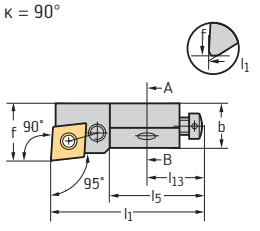
	Designation	h_1	b mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h mm	l_1 mm	l_5 mm	t mm	Indexable insert type
κ = 95°	SCLCR/L10CA-09	10	11	40	7	20	14	5	50	33	5	CC . . 09T3 . .
	SCLCR/L12CA-12	12	16	50	7	20	20	20	55	32	6	CC . . 1204 . .
κ = 90°	SCFCR/L10CA-09	10	11	40	7	20	14	15	50	33	5	CC . . 09T3 . .
	SCFCR/L12CA-12	12	16	50	7	20	20	20	55	32	6	CC . . 1204 . .

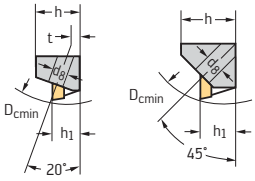




A–B
h_1 = 10, 12 mm

A–B
h_1 = 16 mm





A–B
h_1 = 10, 12 mm

A–B
h_1 = 16 mm

Measured with CC . . 09T308/CC . . 120408 master insert.
For radial/axial adjustment range, see page B 645. Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Indexable insert type h_1	CC . . 09T3 . . 10	CC . . 1204 . . 12
	Clamping screw for indexable insert Tightening torque	FS359 (Torx 15) 2,5 Nm	FS1029 (Torx 20) 5,0 Nm
	Radial adjusting screw	FS369	FS334
	Axial adjusting screw	FS335	FS335

Accessories

	Indexable insert type h_1	CC . . 09T3 . . 10	CC . . 1204 . . 12
	ISO 7380 screw	FS976 (Torx 30)	FS977 (Torx 30)
	Screwdriver	FS229 (Torx 15)	FS228 (Torx 20)
	Handle key, large	FS1175 (Torx 30)	FS1176 (Torx 40)

B 510 B 622

ISO cartridges
SSRC/SSKC

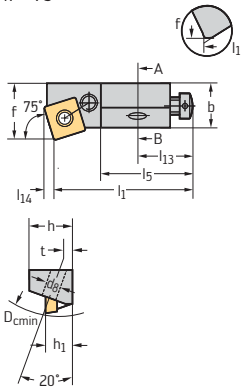


B 2

Tool

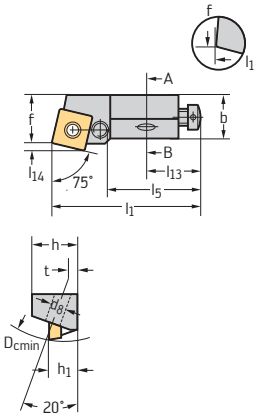
Designation	l_{14} mm	h_1	b mm	$D_{c\,min}$ mm	d_8 mm	l_{13} mm	f mm	h mm	l_1 mm	l_5 mm	t mm	Indexable insert type
SSKCR/L10CA-09	2,2	10	11	40	7	20	14	15	50	33	5	SC . . 09T3 . .
SSRCR/L10CA-09		10	11	40	7	20	14	15	50	33	5	SC . . 09T3 . .

κ = 75°



A–B
h_1 = 10 mm

κ = 75°



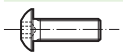
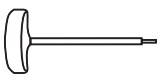
A–B
h_1 = 10 mm

Measured with SC . . 09T308/SC . . 120408 master insert.
For radial/axial adjustment range, see page B 645. Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Indexable insert type h_1	SC . . 09T3 . . 10
	Clamping screw for indexable insert	FS359 (Torx 15) 2,5 Nm
	Radial adjusting screw	FS369
	Axial adjusting screw	FS335

Accessories

	Indexable insert type h_1	SC . . 09T3 . . 10
	ISO 7380 screw	FS976 (Torx 30)
	Screwdriver	FS229 (Torx 15)
	Handle key, large	FS1175 (Torx 30)

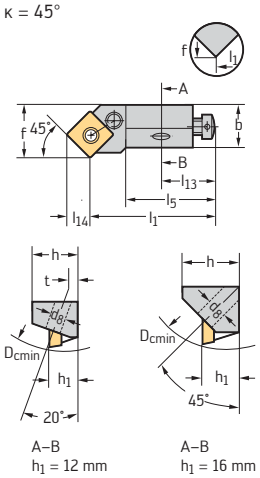
B 510 B 622

ISO cartridges
SSSC/PSSC



Tool

κ = 45°



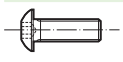
Designation	l_{14} mm	h_1	b mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h mm	l_1 mm	l_5 mm	t mm	Indexable insert type
PSSCR/L16CA-12	8,3	16	20	60	9	25	25	25	53	39		SC . . 1204 . .
SSSCR/L10CA-09	6,1	10	11	40	7	20	14	15	44	33	5	SC . . 09T3 . .

Measured with SC . . 09T308/SC . . 120408 master insert.
For radial/axial adjustment range, see page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Indexable insert type h_1	SC . . 09T3 . . 10	SC . . 1204 . . 16
	Lever		KN116
	Clamping screw for indexable insert	FS359 (Torx 15) 2,5 Nm	FS376
	Axial adjusting screw	FS335	FS335
	Radial adjusting screw	FS369	FS337

Accessories

	Indexable insert type h_1	SC . . 09T3 . . 10	SC . . 1204 . . 16
	ISO 7380 screw	FS976 (Torx 30)	FS975 (Torx 40)
	Screwdriver	FS229 (Torx 15)	
	ISO 2936 key		ISO 2936-2,5 (SW 2,5)
	Handle key, large	FS1175 (Torx 30)	FS1176 (Torx 40)

B 510 B 622

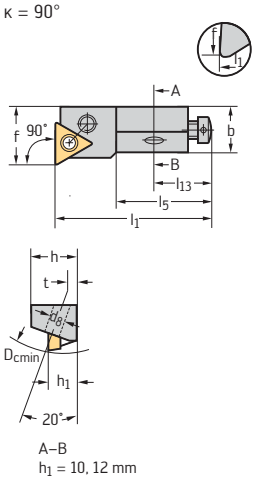
ISO cartridges
STFC/PTFC



B 2

Tool

κ = 90°



A–B
h_1 = 10, 12 mm

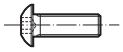
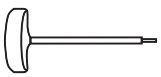
Designation	h_1	b mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h mm	l_1 mm	l_5 mm	t mm	Indexable insert type
STFCR/L10CA-11	10	11	40	7	20	14	15	50	33	5	TC . . 1102 . .
PTFCR/L12CA-16	12	16	50	7	20	20	20	55	34	6	TC . . 16T3 . .

Measured with TC . . 110204/TC . . 16T308 master insert.
For radial/axial adjustment range, see page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Indexable insert type h_1	TC . . 1102 . . 10	TC . . 16T3 . . 12
	Lever		KN115
	Clamping screw for indexable insert	FS375 (Torx 7) 0,8 Nm	FS346 (SW 2)
	Radial adjusting screw	FS369	FS333
	Axial adjusting screw	FS335	FS335

Accessories

	Indexable insert type h_1	TC . . 1102 . . 10	TC . . 16T3 . . 12
	ISO 7380 screw	FS976 (Torx 30)	FS977 (Torx 30)
	Screwdriver	FS309 (Torx 7)	
	ISO 2937 key		ISO 2936-2 (SW 2)
	Handle key, large	FS1175 (Torx 30)	FS1175 (Torx 30)

B 510 B 622

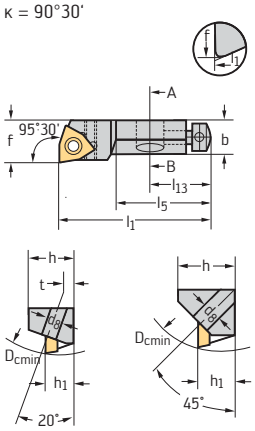
ISO cartridges
SWFC



Tool

Designation	h_1	b mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h mm	l_1 mm	l_5 mm	t mm	Indexable insert type
SWFCR/L10CA-06	10	11	40	7	20	14	15	50	33	5	WC . . 06T3 . .

κ = 90°30'



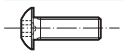
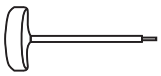
A–B
h_1 = 10 mm

Measured with WC . . 06T308 master insert.
For radial/axial adjustment range, see page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Indexable insert type h_1	WC . . 06T3 . . 10
	Clamping screw for indexable insert	FS359 (Torx 15)
	Radial adjusting screw	FS369
	Axial adjusting screw	FS335

Accessories

	Indexable insert type h_1	WC . . 06T3 . . 10
	ISO 7380 screw	FS976 (Torx 30)
	Screwdriver	FS229 (Torx 15)
	Handle key, large	FS1175 (Torx 30)

B 510 B 622

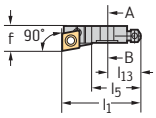
Mini cartridges

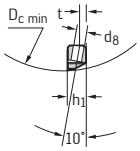


B 2

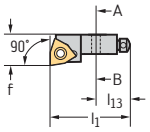
Tool

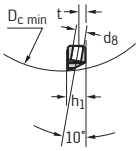
Designation	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h_1 mm	l_1 mm	t mm	Indexable insert type
κ = 90°								
FR670 / FL670	14,5	3,4	10,5	8	6	25	2,3	CP . . 0502 . .
FR671 / FL671	20	3,4	10,5	9,7	6	25	2,3	CC . . 0602 . .
κ = 90°								
FR679	14,5	3,4	10,5	8	6	25	2,3	WC . . 0302 . .
FR680	20	3,4	10,5	9,7	6	25	2,3	WC . . 0402 . .





A–B





A–B

Measured with CP..050202/CC..060202 master insert.
For radial/axial adjustment range, see page B 645.
Bodies, assembly parts and wrenches are included in the scope of delivery.

Assembly parts

Indexable insert type	WC . . 0302 . .	WC . . 0402 . .
Clamping screw for indexable insert Tightening torque	FS1020 (Torx 7) 0,6 Nm	FS924 (Torx 8)
Radial adjusting screw	FS493	FS493
Axial adjusting screw	FS1023	FS1023
Fastening screw	FS1024	FS1024

Accessories

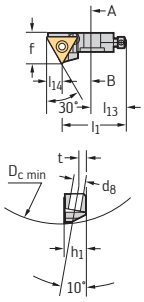
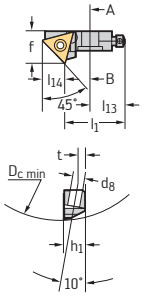
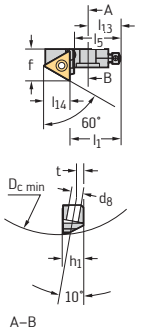
Indexable insert type	WC . . 0302 . .	WC . . 0402 . .
Screwdriver	FS309 (Torx 7)	FS230 (Torx 8)

B 510 B 622

Mini cartridges



Tool

Designation	l_{14} mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h_1 mm	l_1 mm	t mm	Indexable insert type
κ = 30°  FR675	5,2	20	4,5	12	10,8	8	22,8	3,2	TC . . 1102 . .
κ = 45°  FR673	7,4	20	4,5	12	10,8	8	20,6	3,2	TC . . 1102 . .
κ = 60°  FR674	9,1	20	4,5	12	11	8	18,9	3,2	TC . . 1102 . .

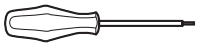
Measured with TC..110202 master insert.

For radial/axial adjustment range, see page B 645. Bodies, assembly parts and wrenches are included in the scope of delivery.

Assembly parts

	Indexable insert type	TC . . 1102 . .
	Clamping screw for indexable insert	FS375 (Torx 7)
	Radial adjusting screw	FS494
	Axial adjusting screw	FS1023
	Fastening screw	FS2106

Accessories

	Indexable insert type	TC . . 1102 . .
	Screwdriver	FS309 (Torx 7)

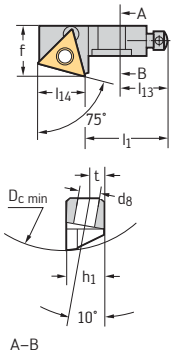
B 510 B 622

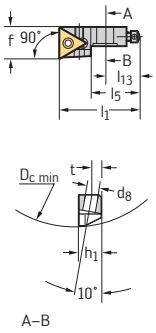
Mini cartridges



B 2

Tool	Designation	l_{14} mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h_1 mm	l_1 mm	t mm	Indexable insert type
κ = 75°	FR707 / FL707	10,1	20	4,5	12	11	8	17,9	3,2	TC . . 1102 . .
κ = 90°	FR672 / FL672		20	4,5	12	11	8	28	3,2	TC . . 1102 . .





Measured with TC..110202 master insert.

For radial/axial adjustment range, see page B 645.

Bodies, assembly parts and wrenches are included in the scope of delivery.

Assembly parts

	Indexable insert type	TC . . 1102 . .
	Clamping screw for indexable insert	FS375 (Torx 7)
	Radial adjusting screw	FS494
	Axial adjusting screw	FS1023
	Fastening screw	FS2106

Accessories

	Indexable insert type	TC . . 1102 . .
	Screwdriver	FS309 (Torx 7)

B 510 B 622

Mini cartridges



Tool

	Designation	l_{14} mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h_1 mm	l_1 mm	t mm	Indexable insert type
κ = 15°	FR701	1,4	20	3,4	10,5	9,7	6	23,6	2,3	P 284 . . - 1
	FR702 / FL702	1,7	25	4,5	12	11,5	8	26,3	3,2	P 284 . . - 2
A–B										
κ = 45°	FR699	3,7	20	3,4	10,5	9,7	6	22,2	2,3	P 284 . . - 1
	FR704 / FL704	4,6	25	4,5	12	11,5	8	23,4	3,2	P 284 . . - 2
A–B										

Measured with P 284.. master insert. - 1/P 284.. - 2.
For radial/axial adjustment range, see page B 645.
Bodies, assembly parts and wrenches are included in the scope of delivery.

Assembly parts

	Indexable insert type	P 284 . . - 1	P 284 . . - 2
	Radial adjusting screw	FS493	FS494
	Axial adjusting screw	FS1023	FS1023
	Fastening screw	FS1024	FS2106
	Clamping screw for indexable insert Tightening torque	FS924 (Torx 8)	FS1005 (Torx 8) 1,0 Nm

Accessories

	Indexable insert type	P 284 . . - 1	P 284 . . - 2
	Screwdriver	FS230 (Torx 8)	FS230 (Torx 8)

B 510 B 622

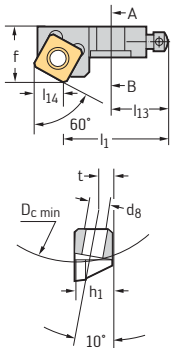
Mini cartridges

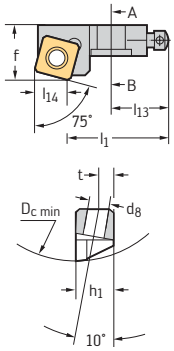


B 2

Tool

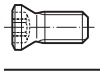
Tool	Designation	l_{14} mm	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h_1 mm	l_1 mm	t mm	Indexable insert type
κ = 60°	FR698 / FL698	4,8	20	3,4	10,5	9,7	6	20,2	2,3	P 284 . . - 1
	FR705	5,9	25	4,5	12	11,5	8	22,1	3,2	P 284 . . - 2
κ = 75°	FR697	5,5	20	3,4	10,5	9,7	6	19,5	2,3	P 284 . . - 1
	FR706	6,8	25	4,5	12	11,5	8	21,2	3,2	P 284 . . - 2





Measured with P 284.. master insert. - 1/P 284.. - 2.
For radial/axial adjustment range, see page B 645.
Bodies, assembly parts and wrenches are included in the scope of delivery.

Assembly parts

	Indexable insert type	P 284 . . - 1	P 284 . . - 2
	Radial adjusting screw	FS493	FS494
	Axial adjusting screw	FS1023	FS1023
	Fastening screw	FS1024	FS2106
	Clamping screw for indexable insert Tightening torque	FS924 (Torx 8)	FS1005 (Torx 8) 1,0 Nm

Accessories

	Indexable insert type	P 284 . . - 1	P 284 . . - 2
	Screwdriver	FS230 (Torx 8)	FS230 (Torx 8)

B 510 B 622

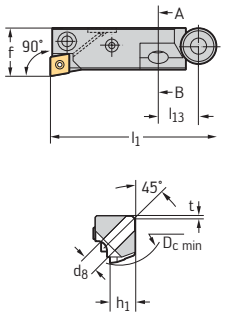
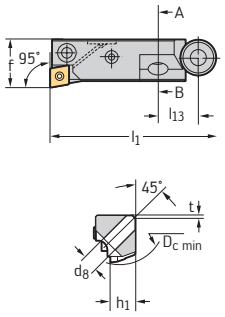
Precision boring cartridges



B 2

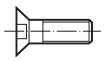
– 0.01 and 0.002 mm adjustment accuracy

Tool

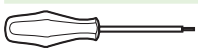
Tool	Designation	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h_1 mm	l_1 mm	t mm	Set mm	Indexable insert type
κ = 90°	FR710 / FL710	28	4,5	9,25	16	8,5	49,5	1	0,01	CC . . 0602 . .
	FR761	28	5,5	13,5	16	8,5	49,5	1	0,002	CC . . 0602 . .
A–B										
κ = 95°	FR717 / FL717	28	4,5	9,25	16	8,5	49,5	1	0,01	CC . . 0602 . .
	FR763	28	5,5	13,5	16	8,5	49,5	1	0,002	CC . . 0602 . .
A–B										

Measured with CC..060204 master insert.
For radial/axial adjustment range, see page B 645.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Indexable insert type	CC . . 0602 . .
	Clamping screw	FS1129 (Torx 8)
	Clamping screw for cartridge	FS1354
	Compression piece	FK369
	Axial adjusting screw	FS1355
	Radial adjusting screw	FS1356

Accessories

	Indexable insert type	CC . . 0602 . .
	Screwdriver	FS230 (Torx 8)

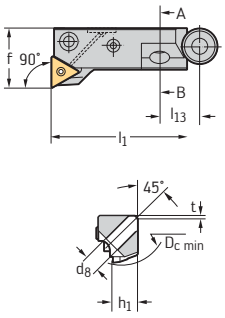
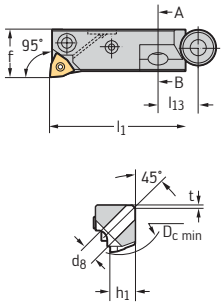
B 510 B 622 B 641

Precision boring cartridges



B 2

– 0.01 and 0.002 mm adjustment accuracy

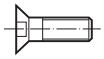
Tool	Designation	$D_{c\ min}$ mm	d_8 mm	l_{13} mm	f mm	h_1 mm	l_1 mm	t mm	Set mm	Indexable insert type
κ = 90°	FR709 / FL709	36	4,5	9,25	20	8,5	49,8	1	0,01	TC . . 1102 . .
	FR760	28	5,5	13,5	16	8,5	49,8	1	0,002	TC . . 1102 . .
A–B										
κ = 95°	FR711 / FL711	28	4,5	9,25	16	8,5	49,8	1	0,01	WC . . 0402 . .
										
A–B										

Measured with TC..110204 master insert.

For radial/axial adjustment range, see page B 645.

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Indexable insert type	TC . . 1102 . .
	Clamping screw	FS1129 (Torx 8)
	Clamping screw for cartridge	FS1354
	Compression piece	FK369
	Axial adjusting screw	FS1355
	Radial adjusting screw	FS1356

Accessories

	Indexable insert type	TC . . 1102 . .
	Screwdriver	FS230 (Torx 8)

B 510 B 622 B 641

Product range overview
HSS core drills and countersinks

Machining						
Standard	**DIN 343**	**DIN 335**			**DIN 334**	
Designation	**E3111**	**E6819TIN**	**E6819**	**E7819**	**E6818**	**E7818**
Countersink angle		90°	90°	90°	60°	60°
Coating	Uncoated	TIN	Uncoated	Uncoated	Uncoated	Uncoated
Dia. range [mm]	7,8–49,6	6–31	4,3–31	15–80	6,3–25	16–80
Page	B 614	B 616	B 616	B 617	B 618	B 619
						

Machining	
Standard	**DIN 335**
Designation	**Z3711TIN**
Countersink angle	90°
Coating	TIN
Dia. range [mm]	6,3–20,5
Page	B 620
	

Designation key – HSS core drills and countersinks

Example:

E	68	19	TIN
1	2	3	4

1	
Tool type	
E	Core drills and countersinks
Z	Tool set, countersinks

2	
Shank shape	
11	Cylindrical
68	Cylindrical
31	With Morse taper
78	With Morse taper

3	
Tool type	
11	Core drills
18	60° countersink
19	90° countersink

4	
Coating	
TIN	TiN coating

Walter Select – HSS core drills and countersinks

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: K5.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

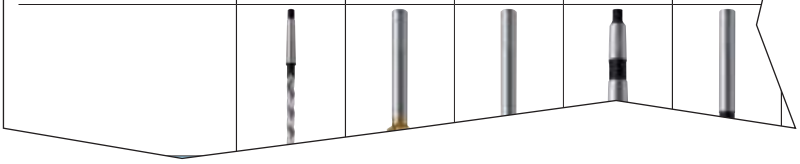
STEP 2

Select your tool from the table from page B 612 onwards:

– In accordance with **DIN** and **countersink angle** (e.g. DIN 345, 60°, 90°)
– For the relevant **machining group** (see step 1: P1–P15; M1–M3; …; 01-06)

Walter Select
HSS core drills and countersinks

Machining					
Standard	**DIN 343**	**DIN 335**			**DIN 334**
Designation	**E3111**	**E6819TIN**	**E6819**	**E7819**	**E6818**
Countersink angle		90°	90°	90°	60°
Cutting tool material	HSS	HSS	HSS	HSS	HSS
Coating	Uncoated	TIN	Uncoated	Uncoated	Uncoated
Shank	Morse taper	Cylindrical	Cylindrical	Morse taper	Cylindrical
Dia. range [mm]	7,8–49,6	6–31	4,3–31	15–80	6,3–25
Page	B 614	B 616	B 616	B 617	B 618



STEP 3

Select your **cutting data** from the table from page B 648 onwards:

– **Cutting speed:** v_c
– **Feed:** VRR (feed rating chart)

Go to the row for your machining group (e.g. K5) and the column for your selected tool. You will find the cutting speed v_c and the VRR there.
The feed rating chart (**VRR**) can be found on page B 650.

Cutting data for HSS core drills and countersinks

= Wet machining (E = emulsion, O = oil)
= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart on page B 650.

Material group	Material		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group ¹	Standard	DIN 343			
						Designation	E3111			
						Form				
						Type	N			
						Dia. range (mm)	7,80–49,60			
						Cutting tool material	HSS			
						Coating	Uncoated			
						Page	B 614			
	Overview of the main material groups and code letters						v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	28	7	E O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	28	8	E O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	26	8	E O	
		C > 0.55%	Annealed	190	640	P4	28	8	E O	
		C > 0.55%	Heat-treated	300	1010	P5	17	7	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	28	7	E O	
	Low-alloyed steel	Annealed		175	590	P7	28	8	E O	
		Heat-treated		285	960	P8	17	7	E O	
		Heat-treated		380	1280	P9	6	5	O E	
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	7	3	E O	
		Hardened and tempered		300	1010	P12	9	5	E O	

Walter Select
HSS core drills and countersinks

Machining						
Standard	**DIN 343**	**DIN 335**			**DIN 334**	
Designation	**E3111**	**E6819TIN**	**E6819**	**E7819**	**E6818**	
Countersink angle		90°	90°	90°	60°	
Cutting tool material	HSS	HSS	HSS	HSS	HSS	
Coating	Uncoated	TIN	Uncoated	Uncoated	Uncoated	
Shank	Morse taper	Cylindrical	Cylindrical	Morse taper	Cylindrical	
Dia. range [mm]	7,8–49,6	6–31	4,3–31	15–80	6,3–25	
Page	B 614	B 616	B 616	B 617	B 618	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●●	●●	●●	●●	●●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals	●●	●●	●●	●●	●●	
S Materials with difficult cutting properties	●	●	●	●	●	
H Hard materials						
O Other	●●	●●	●●	●●	●●	

	
	DIN 334
	E7818
	60°
	HSS
	Uncoated
	Morse taper
	16–80
	B 619
	
	●●
	●●
	●●
	●●
	●
	●●

WALTER SELECT

●● Primary application

● Other application

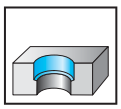
HSS core drills
E3111



B 2

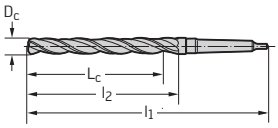
DIN 343





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●		●●

Morse taper



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT	D_3 * mm
E3111-7.8	7,8	63	156	75	MK1 B	5,6
E3111-8	8	63	156	75	MK1 B	5,6
E3111-8.8	8,8	72	162	81	MK1 B	6,3
E3111-9	9	72	162	81	MK1 B	6,3
E3111-9.8	9,8	77	168	87	MK1 B	7
E3111-10	10	77	168	87	MK1 B	7
E3111-10.75	10,75	83	175	94	MK1 B	7,7
E3111-11	11	83	175	94	MK1 B	7,7
E3111-11.75	11,75	89	182	101	MK1 B	8,4
E3111-12	12	89	182	101	MK1 B	8,4
E3111-12.75	12,75	88	182	101	MK1 B	9,1
E3111-13	13	88	182	101	MK1 B	9,1
E3111-13.75	13,75	94	189	108	MK1 B	9,8
E3111-14	14	94	189	108	MK1 B	9,8
E3111-14.75	14,75	99	212	114	MK2 B	10,5
E3111-15	15	99	212	114	MK2 B	10,5
E3111-15.75	15,75	104	218	120	MK2 B	11,2
E3111-16	16	104	218	120	MK2 B	11,2
E3111-16.75	16,75	108	223	125	MK2 B	11,9
E3111-17	17	108	223	125	MK2 B	11,9
E3111-17.75	17,75	112	228	130	MK2 B	12,6
E3111-18	18	112	228	130	MK2 B	12,6
E3111-18.7	18,7	116	233	135	MK2 B	13,3
E3111-19	19	116	233	135	MK2 B	13,3
E3111-19.7	19,7	120	238	140	MK2 B	14
E3111-20	20	120	238	140	MK2 B	14
E3111-20.7	20,7	124	243	145	MK2 B	14,6
E3111-21	21	124	243	145	MK2 B	14,6
E3111-21.7	21,7	128	248	150	MK2 B	15,3
E3111-22	22	128	248	150	MK2 B	15,3
E3111-22.7	22,7	132	253	155	MK2 B	16
E3111-23	23	132	253	155	MK2 B	16
E3111-23.7	23,7	136	281	160	MK3 B	16,6
E3111-24	24	136	281	160	MK3 B	16,6
E3111-24.7	24,7	135	281	160	MK3 B	17,3
E3111-25	25	135	281	160	MK3 B	17,3
E3111-25.7	25,7	139	286	165	MK3 B	18
E3111-26	26	139	286	165	MK3 B	18
E3111-26.7	26,7	143	291	170	MK3 B	18,6
E3111-27	27	143	291	170	MK3 B	18,6
E3111-27.7	27,7	142	291	170	MK3 B	19,3
E3111-28	28	142	291	170	MK3 B	19,3
E3111-28.7	28,7	146	296	175	MK3 B	20
E3111-29	29	146	296	175	MK3 B	20
E3111-29.7	29,7	145	296	175	MK3 B	20,5
E3111-30	30	145	296	175	MK3 B	20,5
E3111-30.6	30,6	149	301	180	MK3 B	21

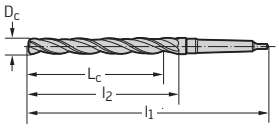
* D_3 minimum pre-drilled diameter

Continued

D 1 B 648

Continued

Morse taper



Designation Uncoated	D_c h8 mm	L_c mm	l_1 mm	l_2 mm	MT	D_3 * mm
E3111-31	31	149	301	180	MK3 B	21
E3111-31.6	31,6	153	306	185	MK4 B	22
E3111-32	32	153	334	185	MK4 B	22
E3111-32.6	32,6	152	334	185	MK4 B	23
E3111-33	33	152	334	185	MK4 B	23
E3111-33.6	33,6	156	339	190	MK4 B	24
E3111-34	34	156	339	190	MK4 B	24
E3111-34.6	34,6	155	339	190	MK4 B	25
E3111-35	35	155	339	190	MK4 B	25
E3111-35.6	35,6	159	344	195	MK4 B	25,5
E3111-36	36	159	344	195	MK4 B	25,5
E3111-36.6	36,6	158	344	195	MK4 B	26
E3111-37	37	158	344	195	MK4 B	26
E3111-37.6	37,6	162	349	200	MK4 B	26,5
E3111-38	38	162	349	200	MK4 B	26,5
E3111-38.6	38,6	161	349	200	MK4 B	27
E3111-39	39	161	349	200	MK4 B	27
E3111-39.6	39,6	160	349	200	MK4 B	28
E3111-40	40	160	349	200	MK4 B	28
E3111-40.6	40,6	164	354	205	MK4 B	28,5
E3111-41	41	164	354	205	MK4 B	28,5
E3111-41.6	41,6	163	354	205	MK4 B	29
E3111-42	42	163	354	205	MK4 B	29
E3111-42.6	42,6	167	359	210	MK4 B	30
E3111-43	43	167	359	210	MK4 B	30
E3111-43.6	43,6	166	359	210	MK4 B	30
E3111-44.6	44,6	165	359	210	MK4 B	31
E3111-49.6	49,6	170	369	220	MK4 B	34,5

* D_3 minimum pre-drilled diameter

WALTER SELECT

●● Primary application

● Other application

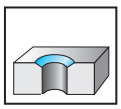
90° HSS countersinks
E6819 / E6819TIN



B 2

– E6819TIN available as a set

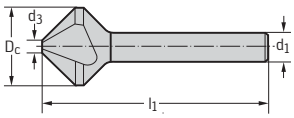
DIN 335



	P	M	K	N	S	H	O
TIN	●●	●●	●●	●●	●		●●
Uncoated	●●	●●	●●	●●	●		●●

Tool

Parallel shank



Designation TIN	Designation Uncoated	D_c z9 mm	d_3 mm	l_1 mm	d_1 mm
	E6819-4.3	4,3	1,3	40	4
	E6819-5	5	1,5	40	4
	E6819-5.3	5,3	1,5	40	4
	E6819-5.8	5,8	1,5	45	5
E6819TIN-6	E6819-6	6	1,5	45	5
E6819TIN-6.3	E6819-6.3	6,3	1,5	45	5
E6819TIN-7	E6819-7	7	1,8	50	6
	E6819-7.3	7,3	1,8	50	6
E6819TIN-8	E6819-8	8	2	50	6
E6819TIN-8.3	E6819-8.3	8,3	2	50	6
	E6819-9.4	9,4	2,2	50	6
E6819TIN-10	E6819-10	10	2,5	50	6
E6819TIN-10.4	E6819-10.4	10,4	2,5	50	6
E6819TIN-11.5	E6819-11.5	11,5	2,8	56	8
E6819TIN-12.4	E6819-12.4	12,4	2,8	56	8
	E6819-13.4	13,4	2,9	56	8
E6819TIN-15	E6819-15	15	3,2	60	10
E6819TIN-16.5	E6819-16.5	16,5	3,2	60	10
E6819TIN-19	E6819-19	19	3,5	63	10
E6819TIN-20.5	E6819-20.5	20,5	3,5	63	10
E6819TIN-23	E6819-23	23	3,8	67	10
E6819TIN-25	E6819-25	25	3,8	67	10
	E6819-30	30	4,2	71	12
E6819TIN-31	E6819-31	31	4,2	71	12

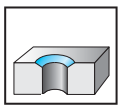
D 1 B 648

90° HSS countersinks
E7819

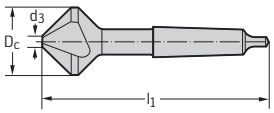


DIN 335





	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●		●●

Tool	Designation Uncoated	D_c z9 mm	d_3 mm	l_1 mm	MT
Morse taper	E7819-15	15	3,2	85	MK1 B
	E7819-16.5	16,5	3,2	85	MK1 B
	E7819-19	19	3,5	100	MK2 B
	E7819-20.5	20,5	3,5	100	MK2 B
	E7819-23	23	3,8	106	MK2 B
	E7819-25	25	3,8	106	MK2 B
	E7819-26	26	3,8	106	MK2 B
	E7819-28	28	4	112	MK2 B
	E7819-30	30	4,2	112	MK2 B
	E7819-31	31	4,2	112	MK2 B
	E7819-34	34	4,5	118	MK2 B
	E7819-37	37	4,8	118	MK2 B
	E7819-40	40	10	140	MK3 B
	E7819-50	50	14	150	MK3 B
	E7819-63	63	16	180	MK4 B
	E7819-80	80	22	190	MK4 B

WALTER SELECT

●● Primary application

● Other application

D 1 B 648

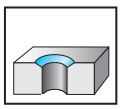
60° HSS countersinks
E6818



B 2

DIN 334

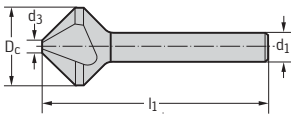




	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●		●●

Tool

Parallel shank



Designation Uncoated	D_c mm	d_3 mm	l_1 mm	d_1 mm
E6818-6.3	6,3	1,6	45	5
E6818-8	8	2	50	6
E6818-12.5	12,5	3,2	56	8
E6818-16	16	4	63	10
E6818-20	20	5	67	10
E6818-25	25	6,3	71	10

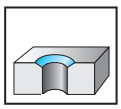
D 1 B 648

60° HSS countersinks
E7818



DIN 334

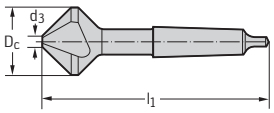




	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●		●●

Tool

Morse taper



Designation Uncoated	D_c mm	d_3 mm	l_1 mm	MT
E7818-16	16	4	90	MK1 B
E7818-20	20	5	106	MK2 B
E7818-25	25	6,3	112	MK2 B
E7818-31.5	31,5	10	118	MK2 B
E7818-40	40	12,5	150	MK3 B
E7818-50	50	16	160	MK3 B
E7818-63	63	20	190	MK4 B
E7818-80	80	25	200	MK4 B

WALTER SELECT

●● Primary application

● Other application

D 1 B 648

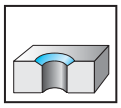
E6819TIN 90° HSS countersinks – Set Z3711TIN



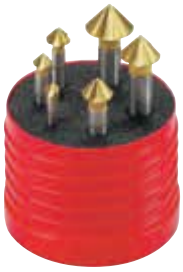
B 2

DIN 335





	P	M	K	N	S	H	O
TIN	●●	●●	●●	●●	●		●●

	Designation TIN	Largest countersinker dia. mm	Smallest countersinker dia. mm	Quantity
	Z3711TIN-6.3-20.5	6,3	1,5	6
		8,3	2,0	
		10,4	2,5	
		12,4	2,8	
		16,5	3,2	
		20,5	3,5	

For the dimensions for the E6819TIN countersinker, please see page B 616

D 1 B 648

Cutting data for counterboring

B2

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Indexable insert geometry: Starting values for feed f [mm/rev] –E47 / –MP4 / –MK4 / –MM4 D_c [mm] <44	>44-73	>73	–PM5 / –RP4 / –RK4 / –RM4 D_c [mm] <44	>44-73	>73
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	428	P1	●●		0,20	0,30	0,40	0,22	0,30	0,40
		C > 0.25% to ≤ 0.55%	Annealed	190	639	P2	●●		0,16	0,24	0,40	0,16	0,24	0,40
		C > 0.25% to ≤ 0.55%	Heat-treated	210	708	P3	●●		0,15	0,22	0,35	0,15	0,22	0,35
		C > 0.55%	Annealed	190	639	P4	●●		0,14	0,20	0,30	0,14	0,20	0,30
		C > 0.55%	Heat-treated	300	1013	P5	●●		0,12	0,18	0,25	0,12	0,18	0,25
		Free cutting steel (short-chipping)	Annealed	220	745	P6	●●	●	0,15	0,22	0,35	0,15	0,22	0,35
	Low-alloyed steel	Annealed		175	591	P7	●●		0,20	0,30	0,40	0,20	0,30	0,40
		Heat-treated		300	1013	P8	●●		0,14	0,20	0,30	0,14	0,20	0,30
		Heat-treated		380	1282	P9	●●		0,12	0,18	0,25	0,12	0,18	0,25
		Heat-treated		430	1477	P10	●●		0,10	0,15	0,20	0,10	0,15	0,20
	High-alloyed steel and high-alloyed tool steel	Annealed		200	675	P11	●●		0,14	0,20	0,30	0,14	0,20	0,30
		Hardened and tempered		300	1013	P12	●●		0,13	0,18	0,27	0,13	0,18	0,27
		Hardened and tempered		400	1361	P13	●●		0,10	0,15	0,20	0,10	0,15	0,20
	Stainless steel	Ferritic/martensitic, annealed		200	675	P14	●●		0,12	0,16	0,24	0,12	0,16	0,24
		Martensitic, heat-treated		330	1114	P15	●●		0,12	0,16	0,24	0,12	0,16	0,24
M	Stainless steel	Austenitic, quench hardened		200	675	M1	●●		0,12	0,16	0,24	0,12	0,16	0,24
		Austenitic, precipitation hardened (PH)		300	1013	M2	●●		0,12	0,16	0,24	0,12	0,16	0,24
		Austenitic/ferritic, duplex		230	778	M3	●●		0,12	0,16	0,24	0,12	0,16	0,24
K	Malleable cast iron	Ferritic		200	675	K1	●●	●	0,18	0,26	0,34	0,18	0,26	0,34
		Pearlitic		260	867	K2	●●	●	0,16	0,24	0,30	0,16	0,24	0,30
	Grey cast iron	Low tensile strength		180	602	K3	●●	●	0,20	0,30	0,40	0,20	0,30	0,40
		High tensile strength/austenitic		245	825	K4	●●	●	0,16	0,24	0,30	0,16	0,24	0,30
	Cast iron with spheroidal graphite	Ferritic		155	518	K5	●●	●	0,20	0,30	0,40	0,20	0,30	0,40
		Pearlitic		265	885	K6	●●		0,16	0,24	0,30	0,16	0,24	0,30
	GGV (CGI)			200	675	K7	●●	●	0,18	0,26	0,34	0,18	0,26	0,34
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●							
		Hardenable, hardened		100	343	N2	●●							
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●	●						
		≤ 12% Si, hardenable, hardened		90	314	N4	●●	●						
		> 12% Si, not hardenable		130	447	N5	●●	●						
	Magnesium-based alloys			70	250	N6	●●	●						
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	343	N7	●●		0,16	0,24	0,40	0,16	0,24	0,40
		Brass, bronze, red brass		90	314	N8	●●	●	0,16	0,24	0,40	0,16	0,24	0,40
		Cu-alloys, short-chipping		110	382	N9	●●	●	0,16	0,24	0,40	0,16	0,24	0,40
		High-tensile, Ampco		300	1013	N10	●●							
S	Heat-resistant alloys	Fe-based	Annealed	200	675	S1	●●		0,10	0,15	0,20	0,10	0,15	0,20
			Hardened	280	943	S2	●●		0,10	0,15	0,20	0,10	0,15	0,20
		Ni or Co base	Annealed	250	839	S3	●●		0,10	0,15	0,20	0,10	0,15	0,20
			Hardened	350	1177	S4	●●		0,10	0,15	0,20	0,10	0,15	0,20
			Cast	320	1076	S5	●●		0,10	0,15	0,20	0,10	0,15	0,20
	Titanium alloys	Pure titanium		200	675	S6								
		α and β alloys, hardened		375	1262	S7	●●		0,14	0,16	0,24	0,14	0,16	0,24
		β alloys		410	1396	S8	●●		0,12	0,14	0,22	0,12	0,14	0,22
	Tungsten alloys			300	1013	S9								
	Molybdenum alloys			300	1013	S10								
H	Hardened steel	Hardened and tempered		50 HRC	–	H1								
		Hardened and tempered		55 HRC	–	H2								
		Hardened and tempered		60 HRC	–	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4								
O	Thermoplastics	Without abrasive fillers				O1								
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

[1] The classification of the machining groups can be found from page B 1174 onwards.

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application).
● Possible application. Cutting speed v_c –30%, with compressed air or MQL (minimum quantity lubrication).

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Indexable insert geometry							Cutting material grade																	
Starting values for feed f [mm/rev]							Starting values for cutting speed v_c [m/min]																	
							HC																	
–PF2 / –PM2			–PF4 / –PS5 / –FP4 / –FP6 / –FK6				WPP01 / WPP10			WPP20			WPP30			WSM10 / WSM10S			WSM20 / WSM20S			WSM30 / WSM30S		
D_c [mm]			D_c [mm]				f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]		
<44	>44-73	>73	<44	>44-73	>73		0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4
			0,16	0,24	0,32		300	280		280	260	240	260	240	220				240	220		220	20	
			0,13	0,19	0,32		280	260		260	240	220	220	200	180				180	160		160	140	
			0,12	0,18	0,28		260	240		240	220	200	200	180	160				140	120		120	100	
			0,11	0,16	0,24		250	220		220	200	180	180	160	140				160	140		140	120	
			0,10	0,14	0,20		220	200		200	180	160	140	130	120									
			0,12	0,18	0,28		260	240		240	220	200	200	180	160				160	140		140	120	
			0,16	0,24	0,32		280	260		260	240	220	220	200	180									
			0,11	0,16	0,24		240	220		220	200	180	180	160	150									
			0,10	0,14	0,20		210	190		190	170	150	130	120	110									
			0,08	0,12	0,16		180	160		160	120	100	120	100	80									
			0,11	0,16	0,24		220	200		220	200		180	160	150									
			0,11	0,16	0,24		180	160		180	160		160	150	140									
			0,08	0,12	0,16		180	160		160	120	100	120	100	80									
			0,10	0,13	0,19					220	200		160	130										
			0,10	0,13	0,19					170	150		130	110										
			0,10	0,13	0,19								220	200		220	170		200	180		140	100	70
			0,10	0,13	0,19								180	160		160	120		150	120		110	100	50
			0,10	0,13	0,19								200	180		180	140		170	140		130	120	60
			0,14	0,22	0,30		220	200	160	200	180	140	180	160	120									
			0,13	0,19	0,24		170	150	140	160	150	130	160	140	120									
			0,16	0,24	0,32		240	220	180	220	200	160	200	180	140									
			0,13	0,19	0,24		170	150	140	160	150	130	160	140	120									
			0,16	0,24	0,32		200	180	160	180	160	140	150	140	120									
			0,13	0,19	0,24		180	160	140	160	140	130	160	130	110									
			0,14	0,22	0,30		165	150	130															
0,24	0,30	0,40																						
0,24	0,30	0,40																						
0,24	0,30	0,40																						
0,24	0,30	0,40																						
0,24	0,30	0,40																						
0,24	0,30	0,40																						
0,24	0,30	0,40	0,13	0,19	0,32		300	250	220	300	250	200												
0,24	0,30	0,40	0,13	0,19	0,32		350	300	250	330	300	250												
0,24	0,30	0,40	0,13	0,19	0,32		400	360	300	350	330	300												
			0,08	0,12	0,16											90	90		80	80		60	35	
			0,08	0,12	0,16											70	70		60	60		40	30	
			0,08	0,12	0,16											60	60		50	50		40	20	
			0,08	0,12	0,16											50	50		40	40		35	20	
			0,08	0,12	0,16											50	50		40	40		30	10	
			0,11	0,13	0,19											60	60		50	50				
			0,09	0,11	0,16											50	50		40	40				

HC = Coated carbide

B2

Cutting data for counterboring

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grade: HC					
									Starting values for cutting speed v_c [m/min]: WPP10S			WPP20S		
									f [mm/U]: 0,1	0,2	0,4	0,1	0,2	0,4
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	428	P1	●●		310	290		290	270	250
		C > 0.25% to ≤ 0.55%	Annealed	190	639	P2	●●		290	270		270	250	230
		C > 0.25% to ≤ 0.55%	Heat-treated	210	708	P3	●●		270	250		250	230	210
		C > 0.55%	Annealed	190	639	P4	●●		260	230		230	210	190
		C > 0.55%	Heat-treated	300	1013	P5	●●		230	210		210	190	170
		Free cutting steel (short-chipping)	Annealed	220	745	P6	●●	●	270	250		250	230	210
	Low-alloyed steel	Annealed		175	591	P7	●●		290	270		270	250	230
		Heat-treated		300	1013	P8	●●		250	230		230	210	190
		Heat-treated		380	1282	P9	●●		220	200		200	180	160
		Heat-treated		430	1477	P10	●●		190	170		170	130	110
	High-alloyed steel and high-alloyed tool steel	Annealed		200	675	P11	●●		230	210		230	210	
		Hardened and tempered		300	1013	P12	●●		190	170		190	170	
		Hardened and tempered		400	1361	P13	●●		190	170		170	130	110
	Stainless steel	Ferritic/martensitic, annealed		200	675	P14	●●					230	210	
		Martensitic, heat-treated		330	1114	P15	●●					180	160	
M	Stainless steel	Austenitic, quench hardened		200	675	M1	●●							
		Austenitic, precipitation hardened (PH)		300	1013	M2	●●							
		Austenitic/ferritic, duplex		230	778	M3	●●							
K	Malleable cast iron	Ferritic		200	675	K1	●●	●	230	210	170	210	190	150
		Pearlitic		260	867	K2	●●	●	180	160	150	170	160	140
	Grey cast iron	Low tensile strength		180	602	K3	●●	●	250	230	190	230	210	170
		High tensile strength/austenitic		245	825	K4	●●	●	180	160	150	170	160	140
	Cast iron with spheroidal graphite	Ferritic		155	518	K5	●●	●	210	190	170	190	170	150
		Pearlitic		265	885	K6	●●		190	170	150	170	150	140
	GGV (CGI)			200	675	K7	●●	●	175	160	140			
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●							
		Hardenable, hardened		100	343	N2	●●							
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●	●						
		≤ 12% Si, hardenable, hardened		90	314	N4	●●	●						
		> 12% Si, not hardenable		130	447	N5	●●	●						
	Magnesium-based alloys			70	250	N6	●●	●						
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	343	N7	●●		310	260	230	310	260	210
		Brass, bronze, red brass		90	314	N8	●●	●	360	310	260	340	310	260
		Cu-alloys, short-chipping		110	382	N9	●●	●	410	370	310	360	340	310
		High-tensile, Ampco		300	1013	N10	●●							
S	Heat-resistant alloys	Fe-based	Annealed	200	675	S1	●●							
			Hardened	280	943	S2	●●							
		Ni or Co base	Annealed	250	839	S3	●●							
			Hardened	350	1177	S4	●●							
			Cast	320	1076	S5	●●							
	Titanium alloys	Pure titanium		200	675	S6								
		α and β alloys, hardened		375	1262	S7	●●							
		β alloys		410	1396	S8	●●							
	Tungsten alloys			300	1013	S9								
	Molybdenum alloys			300	1013	S10								
H	Hardened steel	Hardened and tempered		50 HRC	–	H1								
		Hardened and tempered		55 HRC	–	H2								
		Hardened and tempered		60 HRC	–	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4								
O	Thermoplastics	Without abrasive fillers				O1								
	Thermosetting plastics	Without abrasive fillers				O2								
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

[1] The classification of the machining groups can be found from page B 1174 onwards.

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application).
● Possible application. Cutting speed v_c –30%, with compressed air or MQL (minimum quantity lubrication).

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Cutting material grade																											
Starting values for cutting speed v_c [m/min]																											
HC																									HW		
WPP30S			WMP20S			WAK10			WAK20			WAK30			WXN10			WKK10S			WKK20S			WK1		
f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]			f [mm/U]		
0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4
270	250	230	195	180	170																					
230	210	190	180	170	155																					
210	190	170	170	155	140																					
190	170	150	155	140	125																					
150	140	130	140	125	110																					
210	190	170	170	155	140																					
230	210	190	180	170	155																					
190	170	160	155	140	125																					
140	130	120	130	120	105																					
130	110	90	110	85	70																					
190	170	160	155	140	140																					
170	160	150	125	110	130																					
130	110	90	110	85	70																					
170	140		155	140																						
140	120		120	105																						
230	210		150	110	80																					
190	170		120	110																						
210	190		140	130	70																					
190	170	130				280	250	210	210	190	180	140	125	110				280	250	210	210	190	180			
170	150	130				220	200	150	170	150	110	120	100	70				220	200	150	170	150	110			
210	190	150				390	350	260	350	320	200	310	290	140				390	350	260	350	320	200			
170	150	130				250	220	170	190	170	130	130	120	90				250	220	170	190	170	130			
160	150	130				260	230	190	200	180	150	140	130	110				260	230	190	200	180	150			
170	140	120				190	170	150	150	130	110	110	90	70				190	170	150	150	130	110			
						190	160	120	160	140	120	120	100	80				190	160	120	160	140	120			
															1000*	1000*	1000*							1000*	1000*	
															900	900	900							800	800	
															500	500	500							500	500	500
															400	400	400							400	400	400
															300	300	300							300	300	300
															500	500	500							500	500	500
															450	400	350							450	400	350
															400	350	300							400	350	300
															350	300	250							350	300	250
			70	70																						
			50	50																						
			40	40																						
			30	30																						
			30	30																						
			40	40																				45	45	
			30	30																				40	40	

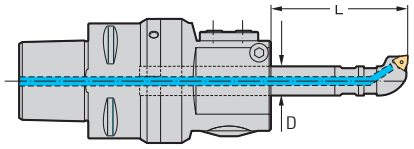
HC = Coated carbide
HW = Uncoated carbide

* Comply with limit speeds.

Cutting data for precision boring (boring bars)

B2

= Cutting data for wet machining
= Dry machining is possible



Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grade: Starting values for cutting speed v_c [m/min] HC WPP01 / WPP10 L/D: 3 × D_c	4 × D_c	5 × D_c
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	428	P1	●●		355	230	100
		C > 0.25% to ≤ 0.55%	Annealed	190	639	P2	●●		335	210	80
		C > 0.25% to ≤ 0.55%	Heat-treated	210	708	P3	●●		300	190	80
		C > 0.55%	Annealed	190	639	P4	●●		290	180	70
		C > 0.55%	Heat-treated	300	1013	P5	●●		255	160	60
		Free cutting steel (short-chipping)	Annealed	220	745	P6	●●	●	300	190	80
	Low-alloyed steel	Annealed		175	591	P7	●●		330	210	80
		Heat-treated		300	1013	P8	●●		275	170	70
		Heat-treated		380	1282	P9	●●		245	150	60
		Heat-treated		430	1477	P10	●●		200	120	40
	High-alloyed steel and high-alloyed tool steel	Annealed		200	675	P11	●●		275	170	70
		Hardened and tempered		300	1013	P12	●●		230	140	60
		Hardened and tempered		400	1361	P13	●●		210	130	50
	Stainless steel	Ferritic/martensitic, annealed		200	675	P14	●●		275	170	70
		Martensitic, heat-treated		330	1114	P15	●●		210	130	50
M	Stainless steel	Austenitic, quench hardened		200	675	M1	●●				
		Austenitic, precipitation hardened (PH)		300	1013	M2	●●				
		Austenitic/ferritic, duplex		230	778	M3	●●				
K	Malleable cast iron	Ferritic		200	675	K1	●●	●	280	170	70
		Pearlitic		260	867	K2	●●	●	220	140	60
	Grey cast iron	Low tensile strength		180	602	K3	●●	●	300	190	80
		High tensile strength/austenitic		245	825	K4	●●	●	220	140	60
	Cast iron with spheroidal graphite	Ferritic		155	518	K5	●●		275	170	70
		Pearlitic		265	885	K6	●●		255	160	60
	GGV (CGI)			200	675	K7	●●		235	140	50
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●				
		Hardenable, hardened		100	343	N2	●●				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●				
		≤ 12% Si, hardenable, hardened		90	314	N4	●●				
		> 12% Si, not hardenable		130	447	N5	●●				
	Magnesium-based alloys			70	250	N6	●●				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	343	N7	●●		285	160	
		Brass, bronze, red brass		90	314	N8	●●		345	190	
		Cu-alloys, short-chipping		110	382	N9	●●				
		High-tensile, Ampco		300	1013	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	675	S1	●●				
			Hardened	280	943	S2	●●				
		Ni or Co base	Annealed	250	839	S3	●●				
			Hardened	350	1177	S4	●●				
			Cast	320	1076	S5	●●				
	Titanium alloys	Pure titanium		200	675	S6					
		α and β alloys, hardened		375	1262	S7	●●				
		β alloys		410	1396	S8	●●				
	Tungsten alloys			300	1013	S9					
	Molybdenum alloys			300	1013	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●●	●			
		Hardened and tempered		55 HRC	–	H2	●●	●			
		Hardened and tempered		60 HRC	–	H3	●●	●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●●				
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

[1] The classification of the machining groups can be found from page B 1174 onwards.

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application).
● Possible application. MQL (minimum quantity lubrication) or compressed air is recommended.

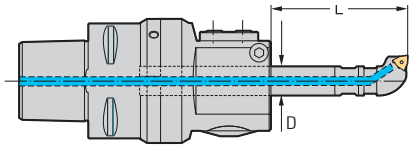
The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grade																														
	Starting values for cutting speed v_c [m/min]																														
	HC																														
	WPP20 / WPP30			WTP35			WSM10			WSM20 / WSM30			WAK10 / WAK15			WXN10			WXM15			WPP10S			WPP20S / WPP30S			WMP20S		
	L/D			L/D			L/D			L/D			L/D			L/D			L/D			L/D			L/D			L/D		
	3 × D_c	4 × D_c	5 × D_c

Cutting data for precision boring (boring bars)

B2

= Cutting data for wet machining
= Dry machining is possible



Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grade: Starting values for cutting speed v_c [m/min] HW WK1 L/D: 3 × D_c	4 × D_c	6 × D_c
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	428	P1	●●				
		C > 0.25% to ≤ 0.55%	Annealed	190	639	P2	●●				
		C > 0.25% to ≤ 0.55%	Heat-treated	210	708	P3	●●				
		C > 0.55%	Annealed	190	639	P4	●●				
		C > 0.55%	Heat-treated	300	1013	P5	●●				
		Free cutting steel (short-chipping)	Annealed	220	745	P6	●●	●			
	Low-alloyed steel	Annealed		175	591	P7	●●				
		Heat-treated		300	1013	P8	●●				
		Heat-treated		380	1282	P9	●●				
		Heat-treated		430	1477	P10	●●				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	675	P11	●●				
		Hardened and tempered		300	1013	P12	●●				
		Hardened and tempered		400	1361	P13	●●				
	Stainless steel	Ferritic/martensitic, annealed		200	675	P14	●●				
		Martensitic, heat-treated		330	1114	P15	●●				
M	Stainless steel	Austenitic, quench hardened		200	675	M1	●●				
		Austenitic, precipitation hardened (PH)		300	1013	M2	●●				
		Austenitic/ferritic, duplex		230	778	M3	●●				
K	Malleable cast iron	Ferritic		200	675	K1	●●	●	160	120	90
		Pearlitic		260	867	K2	●●	●	150	120	90
	Grey cast iron	Low tensile strength		180	602	K3	●●	●	210	170	120
		High tensile strength/austenitic		245	825	K4	●●	●	150	120	90
	Cast iron with spheroidal graphite	Ferritic		155	518	K5	●●		170	140	100
		Pearlitic		265	885	K6	●●		140	110	70
	GGV (CGI)			200	675	K7	●●				
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●		750	600	400
		Hardenable, hardened		100	343	N2	●●		600	480	330
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●		600	480	330
		≤ 12% Si, hardenable, hardened		90	314	N4	●●		450	360	250
		> 12% Si, not hardenable		130	447	N5	●●		350	350	200
	Magnesium-based alloys			70	250	N6	●●		550	450	300
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	343	N7	●●		300	240	170
		Brass, bronze, red brass		90	314	N8	●●		250	180	130
		Cu-alloys, short-chipping		110	382	N9	●●		300	240	170
		High-tensile, Ampco		300	1013	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	675	S1	●●				
			Hardened	280	943	S2	●●				
		Ni or Co base	Annealed	250	839	S3	●●				
			Hardened	350	1177	S4	●●				
			Cast	320	1076	S5	●●				
	Titanium alloys	Pure titanium		200	675	S6					
		α and β alloys, hardened		375	1262	S7	●●				
		β alloys		410	1396	S8	●●				
	Tungsten alloys			300	1013	S9					
	Molybdenum alloys			300	1013	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●●	●			
		Hardened and tempered		55 HRC	–	H2	●●	●			
		Hardened and tempered		60 HRC	–	H3	●●	●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●●				
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

[1] The classification of the machining groups can be found from page B 1174 onwards.

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application).
● Possible application. MQL (minimum quantity lubrication) or compressed air is recommended.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Cutting material grade											
Starting values for cutting speed v_c [m/min]											
HC						BH			DP		
WKK10S			WKK20S			WCB30 / WCB50 / WCB80			WCD10	WDN10	
L/D			L/D			L/D					
$3 \times D_c$	$4 \times D_c$	$5 \times D_c$	$3 \times D_c$	$4 \times D_c$	$5 \times D_c$	$3 \times D_c$	$4 \times D_c$	$5 \times D_c$			
320	290	180	300	270	160						
300	240	150	280	220	130						
270	220	140	250	200	120						
260	210	130	240	190	110						
230	190	120	210	170	100						
270	220	140	250	200	120						
300	240	150	280	220	130						
250	200	130	230	180	110						
220	180	110	200	160	90						
190	150	80	170	130	60						
250	190	130	230	170	110						
210	180	110	190	160	90						
200	160	90	180	140	70						
250	200	130	230	180	110						
190	170	90	170	150	70						
240	190		220	170							
190	140		160	120							
220	170		180	140							
300	250	140	280	230	120	600*	420				
240	200	120	220	180	100	700*	360				
320	270	160	300	250	140	2000*	1080				
240	200	120	220	180	100	900*	480				
290	240	150	270	220	130	800*	420				
270	210	130	250	190	110	700*	360				
250	190	110	230	170	90						
									1800*	1800*	
									1800*	1800*	
									900*	900*	
									700*	700*	
									600*	600*	
									700*	700*	
250	200								600*	600*	
300	240								700*	700*	
90	70	50	80	60	40						
80	60	45	70	50	35						
80	60	45	70	50	35						
60	50	35	50	40	25						
60	50	35	50	40	25						
						300	250				
						200	150				
						100	60				
						250	200				

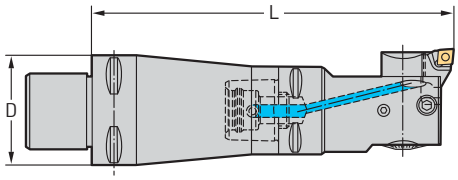
HC = Coated carbide
HW = Uncoated carbide
BH = CBN with high CBN content
DP = Polycrystalline diamond

* Comply with limit speeds.
The ideal cutting speed for PCD machining is determined via the factors of the maximum possible and/or permitted speed, the tool length and the chip control. The specified cutting speeds are rough standard values.
These must be clarified via testing.

Cutting data for precision boring (cartridges)

B2

= Cutting data for wet machining
= Dry machining is possible



Overview of the main material groups and code letters

Material group				Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grade: Starting values for cutting speed v_c [m/min] HC WPP01 / WPP10 L/D: 3 × D_c	4 × D_c	6 × D_c
							●●	●			
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	428	P1	●●		355	320	195
		C > 0.25% to ≤ 0.55%	Annealed	190	639	P2	●●		335	265	160
		C > 0.25% to ≤ 0.55%	Heat-treated	210	708	P3	●●		300	240	150
		C > 0.55%	Annealed	190	639	P4	●●		290	230	140
		C > 0.55%	Heat-treated	300	1013	P5	●●		255	205	125
		Free cutting steel (short-chipping)	Annealed	220	745	P6	●●	●	300	240	150
	Low-alloyed steel	Annealed		175	591	P7	●●		330	265	160
		Heat-treated		300	1013	P8	●●		275	220	140
		Heat-treated		380	1282	P9	●●		245	195	115
		Heat-treated		430	1477	P10	●●		200	160	80
	High-alloyed steel and high-alloyed tool steel	Annealed		200	675	P11	●●		275	220	140
		Hardened and tempered		300	1013	P12	●●		230	195	115
		Hardened and tempered		400	1361	P13	●●		210	170	90
	Stainless steel	Ferritic/martensitic, annealed		200	675	P14	●●		275	205	140
		Martensitic, heat-treated		330	1114	P15	●●		210	180	100
M	Stainless steel	Austenitic, quench hardened		200	675	M1	●●				
		Austenitic, precipitation hardened (PH)		300	1013	M2	●●				
		Austenitic/ferritic, duplex		230	778	M3	●●				
K	Malleable cast iron	Ferritic		200	675	K1	●●	●	280	235	130
		Pearlitic		260	867	K2	●●	●	220	185	115
	Grey cast iron	Low tensile strength		180	602	K3	●●	●	300	255	150
		High tensile strength/austenitic		245	825	K4	●●	●	220	185	115
	Cast iron with spheroidal graphite	Ferritic		155	518	K5	●●		275	220	140
		Pearlitic		265	885	K6	●●		255	195	125
	GGV (CGI)			200	675	K7	●●		235	175	105
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●				
		Hardenable, hardened		100	343	N2	●●				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●				
		≤ 12% Si, hardenable, hardened		90	314	N4	●●				
		> 12% Si, not hardenable		130	447	N5	●●				
	Magnesium-based alloys			70	250	N6	●●				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	343	N7	●●		285	230	
		Brass, bronze, red brass		90	314	N8	●●		345	275	
		Cu-alloys, short-chipping		110	382	N9	●●				
		High-tensile, Ampco		300	1013	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	675	S1	●●				
			Hardened	280	943	S2	●●				
		Ni or Co base	Annealed	250	839	S3	●●				
			Hardened	350	1177	S4	●●				
			Cast	320	1076	S5	●●				
	Titanium alloys	Pure titanium		200	675	S6					
		α and β alloys, hardened		375	1262	S7	●●				
		β alloys		410	1396	S8	●●				
	Tungsten alloys			300	1013	S9					
	Molybdenum alloys			300	1013	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●●	●			
		Hardened and tempered		55 HRC	–	H2	●●	●			
		Hardened and tempered		60 HRC	–	H3	●●	●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●●				
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

[1] The classification of the machining groups can be found from page B 1174 onwards.

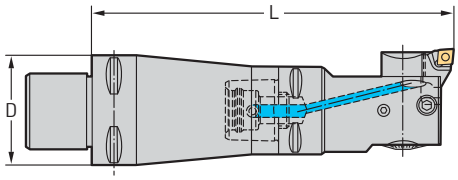
●● Recommended application (the specified cutting data is regarded as starting values for the recommended application).
● Possible application. MQL (minimum quantity lubrication) or compressed air is recommended.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grade																														
	Starting values for cutting speed v_c [m/min]																														
	HC																														
	WPP20 / WPP30			WTP35			WSM10			WSM20 / WSM30			WAK10 / WAK15			WXN10			WXM15			WPP10S			WPP20S / WPP30S			WMP20S		
	L/D			L/D			L/D			L/D			L/D			L/D			L/D			L/D			L/D			L/D		
	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	5 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c
	310	280	170	260	210	130							310	280	170				260	210	130	355	320	195	320	290	180	260	210	130
	290	230	140	220	180	110							290	230	140				220	180	110	335	265	160	300	240	150	220	180	110
	260	210	130	200	160	100							260	210	130				200	160	100	300	240	150	270	220	140	200	160	100
	250	200	120	190	150	90							250	200	120				190	150	90	290	230	140	260	210	130	190	150	90
	220	180	110	140	110	70							220	180	110				140	110	70	255	205	125	230	190	120	140	110	70
	260	210	130	200	160	100							260	210	130				200	160	100	300	240	150	270	220	140	200	160	100
	290	230	140	220	170	110							290	230	140				220	170	110	330	265	160	300	240	150	220	170	110
	240	190	120	180	150	90							240	190	120				180	150	90	275	220	140	250	200	130	180	150	90
	210	170	100	130	100	60							210	170	100				130	100	60	245	195	115	220	180	110	130	100	60
	180	140	70	100	75	50							180	140	70				100	75	50	200	160	80	190	150	80	100	75	50
	240	180	120	180	150	90							240	180	120				180	150	90	275	220	140	250	190	130	180	150	90
	200	170	100	160	130	80							200	170	100				160	130	80	230	195	115	210	180	110	160	130	80
	190	150	80	110	85	60							190	150	80				110	85	60	210	170	90	200	160	90	110	85	60
	240	190	120	160	130	80							240	190	120				160	130	80	275	205	140	250	200	130	160	130	80
	180	160	90	150	120	70							180	160	80				150	120	70	210	180	100	190	170	100	150	120	70
	220	170	110	200	160	100	220	170	110	200	160	100	240	190					200	160	100				230	180	120	200	160	100
	160	120	100	150	110	80	160	120	100	150	110	90	190	140					150	110	60				170	130	110	150	110	90
	180	140	80	180	140	100	180	140	90	170	130	80	220	170					180	140	80				190	150	90	170	130	80
	240	200	110	180	140	80							240	200	110				180	140	80	280	235	130	250	210	120			
	190	160	100	160	130	80							190	160	100				160	130	80	220	185	115	200	170	110			
	260	220	130	220	160	100							260	220	130				200	160	100	300	255	150	270	230	140			
	190	160	100	160	130	80							190	160	100				160	130	80	220	185	115	200	170	110			
	240	190	120	180	140	90							240	190	120				180	140	90	275	220	140	250	200	130			
	220	170	110	160	130	80							220	170	110				160	130	80	255	195	125	230	180	120			
													200	150	100							235	175	105						
				600	480	330										940	750	500	600	480	330									
				500	400	280										750	600	410	500	400	280									
				500	400	280										750	600	410	500	400	280									
				400	320	220										560	450	310	400	320	220									
				300	250	200										440	440	250	300	250	200									
				450	350	250										700	550	350	450	350	250									
				350	280	180										380	300	210	350	280	180	285	**230**							
	250	200								250	200		250	200		310	230	160				345	275		260	210		250	200	
	300	240								300	240		300	240		380	280	210							310	250		300	240	
	80	60	40				90	70	50	80	60	40	80	60	40										90	70	50	80	60	40
	70	50	35				80	60	45	70	50	35	70	50	35										80	60	45	70	50	35
	70	50	35				80	60	45	70	50	35	70	50	35										80	60	45	70	50	35
	50	40	25				60	50	35	50	40	25	50	40	25										60	50	35	50	40	25
	50	40	25				60	50	35	50	40	25	50	40	25										60	50	35	50	40	25
							60	50	40	50	40	30																50	40	30

Cutting data for precision boring (cartridges)

= Cutting data for wet machining
= Dry machining is possible



Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grade: Starting values for cutting speed v_c [m/min] HW WK1 L/D: 3 × D_c	4 × D_c	6 × D_c
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	428	P1	●●				
		C > 0.25% to ≤ 0.55%	Annealed	190	639	P2	●●				
		C > 0.25% to ≤ 0.55%	Heat-treated	210	708	P3	●●				
		C > 0.55%	Annealed	190	639	P4	●●				
		C > 0.55%	Heat-treated	300	1013	P5	●●				
		Free cutting steel (short-chipping)	Annealed	220	745	P6	●●	●			
	Low-alloyed steel	Annealed		175	591	P7	●●				
		Heat-treated		300	1013	P8	●●				
		Heat-treated		380	1282	P9	●●				
		Heat-treated		430	1477	P10	●●				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	675	P11	●●				
		Hardened and tempered		300	1013	P12	●●				
		Hardened and tempered		400	1361	P13	●●				
	Stainless steel	Ferritic/martensitic, annealed		200	675	P14	●●				
		Martensitic, heat-treated		330	1114	P15	●●				
M	Stainless steel	Austenitic, quench hardened		200	675	M1	●●				
		Austenitic, precipitation hardened (PH)		300	1013	M2	●●				
		Austenitic/ferritic, duplex		230	778	M3	●●				
K	Malleable cast iron	Ferritic		200	675	K1	●●	●	160	120	90
		Pearlitic		260	867	K2	●●	●	150	120	90
	Grey cast iron	Low tensile strength		180	602	K3	●●	●	210	170	120
		High tensile strength/austenitic		245	825	K4	●●	●	150	120	90
	Cast iron with spheroidal graphite	Ferritic		155	518	K5	●●		170	140	100
		Pearlitic		265	885	K6	●●		140	110	70
	GGV (CGI)			200	675	K7	●●				
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●		750	600	400
		Hardenable, hardened		100	343	N2	●●		600	480	330
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●		600	480	330
		≤ 12% Si, hardenable, hardened		90	314	N4	●●		450	360	250
		> 12% Si, not hardenable		130	447	N5	●●		350	350	200
	Magnesium-based alloys			70	250	N6	●●		550	450	300
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	343	N7	●●		300	240	170
		Brass, bronze, red brass		90	314	N8	●●		250	180	130
		Cu-alloys, short-chipping		110	382	N9	●●		300	240	170
		High-tensile, Ampco		300	1013	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	675	S1	●●				
			Hardened	280	943	S2	●●				
		Ni or Co base	Annealed	250	839	S3	●●				
			Hardened	350	1177	S4	●●				
			Cast	320	1076	S5	●●				
	Titanium alloys	Pure titanium		200	675	S6					
		α and β alloys, hardened		375	1262	S7	●●				
		β alloys		410	1396	S8	●●				
	Tungsten alloys			300	1013	S9					
	Molybdenum alloys			300	1013	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	●●	●			
		Hardened and tempered		55 HRC	–	H2	●●	●			
		Hardened and tempered		60 HRC	–	H3	●●	●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	●●				
O	Thermoplastics	Without abrasive fillers				O1					
	Thermosetting plastics	Without abrasive fillers				O2					
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

[1] The classification of the machining groups can be found from page B 1174 onwards.

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application).
● Possible application. MQL (minimum quantity lubrication) or compressed air is recommended.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Cutting material grade													
Starting values for cutting speed v_c [m/min]													
HC						BH			DP				
WKK10S			WKK20S			WCB30 / WCB50 / WCB80			WCD10			WDN10	
L/D			L/D			L/D			L/D				
3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c	3 × D_c	4 × D_c	6 × D_c		
320	290	180	300	270	160								
300	240	150	280	220	130								
270	220	140	250	200	120								
260	210	130	240	190	110								
230	190	120	210	170	100								
270	220	140	250	200	120								
300	240	150	280	220	130								
250	200	130	230	180	110								
220	180	110	200	160	90								
190	150	80	170	130	60								
250	190	130	230	170	110								
210	180	110	190	160	90								
200	160	90	180	140	70								
250	200	130	230	180	110								
190	170	90	170	150	70								
240	190		220	170									
190	140		160	120									
220	170		180	140									
300	250	140	280	230	120	600*	700*						
240	200	120	220	180	100	700*	600*						
320	270	160	300	250	140	2000*	1800*						
240	200	120	220	180	100	900*	800*						
290	240	150	270	220	130	800*	700*						
270	210	130	250	190	110	700*	600*						
250	190	110	230	170	90								
									2000*	1800*	1600*	1800*	
									2000*	1800*	1600*	1800*	
									1000*	900*	800*	900*	
									800*	700*	600*	700*	
									700*	600*	500*	600*	
									800*	700*	600*	700*	
250	200								700*	600*	500*	600*	
300	240								800*	700*	600*	700*	
90	70	50	80	60	40								
80	60	45	70	50	35								
80	60	45	70	50	35								
60	50	35	50	40	25								
60	50	35	50	40	25								
						300	250						
						200	150						
						100	60						
						250	200						

HC = Coated carbide
HW = Uncoated carbide
BH = CBN with high CBN content
DP = Polycrystalline diamond

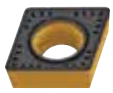
* Comply with limit speeds.
The ideal cutting speed for PCD machining is determined via the factors of the maximum possible and/or permitted speed, the tool length and the chip control. The specified cutting speeds are rough standard values.
These must be clarified via testing.

Cutting tool material application charts – Counterboring and precision boring

Grades

Walter grade designation	Standard designation	Material group P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating method	Coating composition	Indexable insert example
WPP10S	HC – P 10	●●								CVD	TiCN + Al_2O_3 (+TiCN)	
	HC – K 20			●								
WPP20S	HC – P 20	●●								CVD	TiCN + Al_2O_3 (+TiCN)	
	HC – K 30			●								
WPP30S	HC – P 30	●●								CVD	TiCN + Al_2O_3 (+TiCN)	
WMP20S	HC – M 20		●●							CVD	TiCN + Al_2O_3 (+TiCN)	
	HC – P 25	●●										
	HC – S 20					●						
WSM10S	HC – M 10		●●							PVD	TiCN + Al_2O_3 (+Al)	
	HC – S 10					●●						
	HC – P 10	●										
WSM20S	HC – M 20		●●							PVD	TiCN + Al_2O_3 (+Al)	
	HC – S 20					●●						
	HC – P 20	●										
WSM30S	HC – M 30		●●							PVD	TiCN + Al_2O_3 (+Al)	
	HC – S 30					●●						
	HC – P 30	●										
WPP01	HC – P 01	●●								CVD	TiCN + Al_2O_3 (+TiN)	
	HC – K 10			●								
WPP10	HC – P 10	●●								CVD	TiCN + Al_2O_3 (+TiN)	
	HC – K 20			●								
WPP20	HC – P 20	●●								CVD	TiCN + Al_2O_3 (+TiN)	
	HC – K 30			●								
WPP30	HC – P 30	●●								CVD	TiCN + Al_2O_3 (+TiN)	
WXM15	HC – P 15	●●								PVD	Multilayer TiAlN / TiN	
	HC – M 15		●									
	HC – K 15			●								
WTP35	HC – P 35	●●								CVD	TiCN + TiN	
	HC – M 35		●									
	HC – S 35					●						
WSM10	HC – M 10		●●							PVD	TiAlN + Al_2O_3 (ZrCN)	
	HC – S 10					●●						
	HC – P 10	●										
WSM20	HC – M 20		●●							PVD	TiAlN + Al_2O_3 (ZrCN)	
	HC – S 20					●●						
	HC – P 20	●										
WSM30	HC – M 30		●●							PVD	TiAlN + Al_2O_3 (ZrCN)	
	HC – S 30					●●						
	HC – P 30	●										

Grades

Walter grade designation	Standard designation	Material group P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating method	Coating composition	Indexable insert example
WSM21	HC – M 20		●●							PVD	TiAlN	
	HC – S 20					●●						
	HC – P 20	●●										
WKK10S	HC – K 10			●●						CVD	TiCN + Al_2O_3 (+TiCN)	
	HC – H 30						●					
WKK20S	HC – K 20			●●						CVD	TiCN + Al_2O_3 (+TiCN)	
	HC – P 10	●										
WAK10	HC – K 10			●●						CVD	TiCN + Al_2O_3 (+TiN)	
	HC – H 30						●					
WAK15	HC – K 15			●●						CVD	TiCN + Al_2O_3 (+TiN)	
WAK20	HC – K 20			●●						CVD	TiCN + Al_2O_3 (+TiN)	
	HC – P 10	●										
WAK30	HC – K 30			●●						CVD	TiCN + Al_2O_3 (+TiN)	
	HC – P 40	●										
WXN10	HC – N 10				●●					—	$TiCN^{plus}$	
	HC – P 01	●										
	HC – M 01		●									
WK1	HW – N 10				●●					—	—	
	HW – S 10					●						
WCB30	BL – H 05						●●			—	CBN	
WCB50	BH – H 10						●●			—		
	BH – K 10			●								
WCB80	BH – K 05			●●						—		
	BH – H 15						●					
WCD10	DP – N 10				●●					—	PKD	
WDN10	DP – N 20				●●					—	PKD	
	DP – O 20							●●				

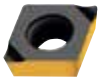
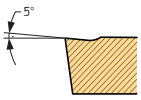
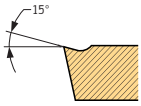
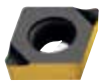
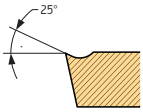
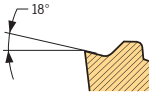
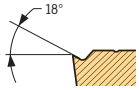
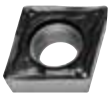
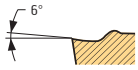
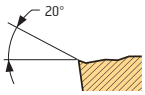
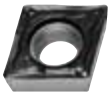
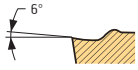
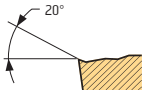
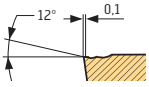
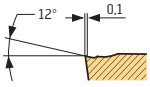
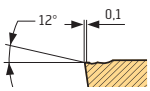
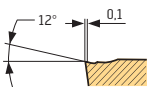
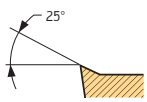
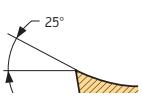
BL = CBN with low CBN content
BH = CBN with high CBN content
DP = Polycrystalline diamond

HC = Coated carbide
HW = Uncoated carbide
HT = Cermet

●● Primary application
● Additional application

Geometry overview of indexable inserts for counterboring and precision boring – Positive basic shape

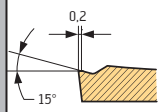
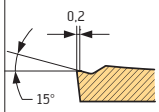
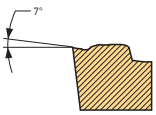
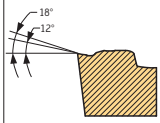
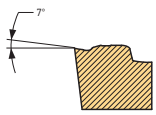
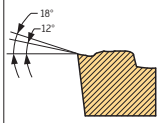
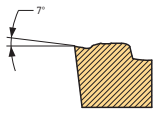
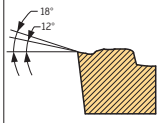
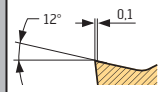
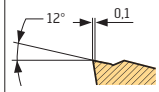
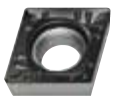
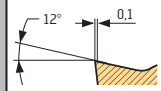
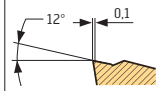
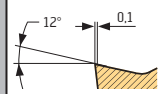
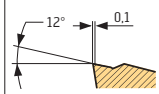
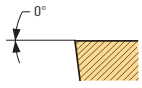
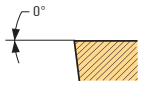
Precision boring

Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	**X5 – The stable one** – 5° rake angle – For cast iron and steel materials – For unfavourable machining conditions	••		••							0,1–0,3	0,03–0,15
	**X15 – The universal one** – 15° rake angle – For steel, stainless materials and materials with difficult cutting properties – Long projection lengths	••	••	•	•	•					0,1–0,3	0,03–0,15
	**X25 – The soft one** – 25° rake angle – Aluminium, soft steels, long-chipping materials	••	•		••	•					0,1–0,3	0,03–0,15
	**PF2** – Finishing insert with circumference fully ground – Low cutting forces	••	••	•	••	••					0,12–4,5	0,02–0,45
	**FM4** – Finishing insert – Excellent chip control – Used for precision boring	•	••			••					0,1–2,5	0,04–0,20
	**FP4** – Finishing insert – Excellent chip control – Used for precision boring	••	•	•		•					0,1–2,5	0,04–0,20
	**FP6** – Universal insert for operations from finishing to medium machining	••	•	•		•					0,3–2,5	0,08–0,32
	**FK6** – Universal insert for operations from finishing to medium machining	•	•	••		•					0,3–2,5	0,08–0,32
	**PM2** – Universal insert for non-ferrous materials – Sharp cutting edge with circumference fully ground – Polished rake face – Precision finishing on steel and stainless materials	•	•		••	•					0,5–6,0	0,02–0,80

•• Primary application
• Additional application

Note: Sectional views show CCMT09T308 . . or CCGT09T308 . .

Counterboring

Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	**E47 – The universal one** – 15° rake angle – Flexible universal geometry for almost all depths of cut – For materials of the ISO machining groups P, M, K and S	●●	●●	●●	●	●●					0,3–6,3	0,07–0,45
	**MM4** – Machining of long-chipping materials – Can be used universally in a wide range of applications – Circumference precision-ground – Circumference precision-sintered – Straight cutting edge for C, S and T basic shapes, for use as a chamfer insert in boring tools	●	●●	●		●●					0,4–3,0	0,08–0,32
	**MP4** – Machining of long-chipping materials – Can be used universally in a wide range of applications – Circumference precision-ground – Circumference precision-sintered – Straight cutting edge for C, S and T basic shapes, for use as a chamfer insert in boring tools	●●	●	●		●					0,4–3,5	0,08–0,32
	**MK4** – Machining unstable components, internal machining – Additional version with circumference fully ground available for maximum precision – Straight cutting edge for C, S and T basic shapes, for use as a chamfer insert in boring tools	●	●	●●		●					0,4–3,5	0,08–0,32
	**RM4** – Universal geometry for roughing operations to medium machining – Extremely large chip breaking area – Maximum machining volume and tool life	●	●●	●		●●					0,6–5,0	0,12–0,50
	**RP4** – Universal geometry for roughing operations to medium machining – Extremely large chip breaking area – Maximum machining volume and tool life	●●	●	●		●					0,6–5,0	0,12–0,50
	**RK4** – First choice for grey cast iron and ductile cast iron – Universal geometry for roughing operations to medium machining – Extremely large chip breaking area	●	●	●●		●					0,6–5,0	0,12–0,50
	**RK6** – Cast iron machining with hard crust – Interrupted cuts – Stable cutting edge design			●●				●			0,2–0,6	0,12–0,50

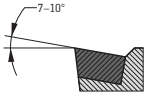
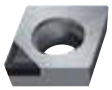
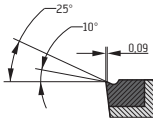
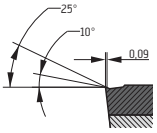
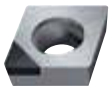
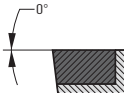
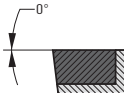
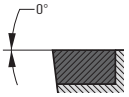
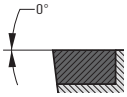
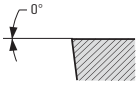
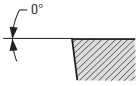
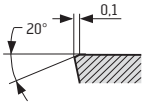
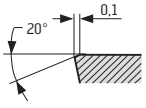
●● Primary application
● Additional application

Note: Sectional views show CCMT09T308 . . , CCGT09T308 . . , CCMW09T308 . . or RCMX2006 . . .

Geometry overview for indexable inserts for counterboring and precision boring – Positive basic shape, CBN/PCD/ceramic

B2

PCD/ceramic cutting tool materials

Geometry	Remarks/field of applications	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Cut Main cutting edge	Cut Corner radius	a_p [mm]	f [mm]
	**. CGT . . . FS-1** – PCD finishing insert with circumference fully ground in G tolerance – Extremely low cutting forces due to 7°–10° rake angle – Extremely high surface quality				●●	●		●●	–		0,05–1,5	0,03–0,38
	**. CGT. . . FS-M1** – PCD indexable insert with circumference fully ground in G tolerance – Excellent chip control thanks to laser-generated chip-breaker geometry – Finishing to medium machining				●●	●		●●			0,1–3,0	0,08–0,2
	**. CGW. . . FS-1** – PCD indexable insert with circumference fully ground in G tolerance – Universal PCD indexable insert with 0° rake angle – Maximum repeat accuracy				●●	●		●●			0,05–3,5	0,03–0,38
	**. CGW . . . FSL/R-9** – PCD indexable insert with circumference fully ground in G tolerance – Cutting edge with guide pad – Maximum depth of cut and shoulder machining				●●	●		●●			0,05–9,0	0,03–0,38
	**. . . E** – Ceramic indexable insert with circumference fully ground – Rounded cutting edge for minimum cutting forces – Machining high-temperature alloys					●●					0,1-3,6	0,1-0,32
	**. . . T01020** – Ceramic indexable insert with circumference fully ground – Chamfered cutting edge for maximum stability for medium machining to roughing operations – Machining high-temperature alloys					●●	●				0,1-3,6	0,1-0,32

●● Primary application
● Additional application

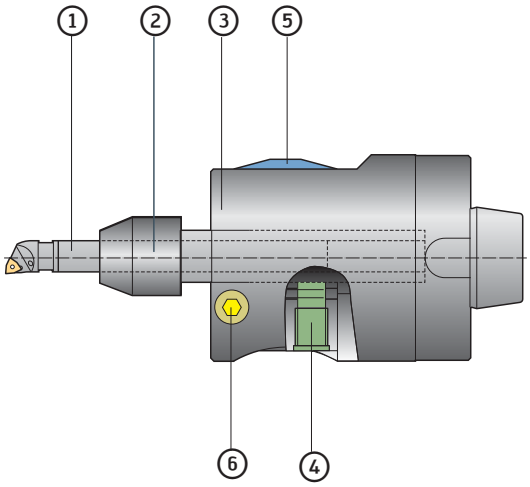
Note: Sectional views show CCGT09T304 . ., CCGW09T304 . . or RCGX090700 . . .

Setting instructions for Walter Precision B3230/B4030 precision boring tools

These tools have a highly precise adjustment mechanism.
The scale graduation permits effortless adjustment of the cutting edge in the µ range.

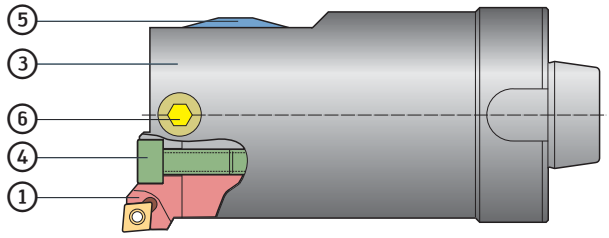
Walter Precision^{MINI}

1. Slide the insert holder ①, using a reducing sleeve ② if necessary, into the locating bore of the base body ③ until both clamping screws ④ are engaged.
2. Align the cutting edge with the marking provided on the face of the boring head and tighten the two clamping screws ④.
3. Move the base body ③ to the required diameter by turning the adjusting screw ⑤ with the locking screw ⑥ undone.
   The scale disc with vernier scale allows for a precise reading of the diameter change (1 DIV = 0.01 mm in diameter, with vernier scale 1 DIV = 0.002 mm in diameter).
4. Now tighten the locking screw ⑥.

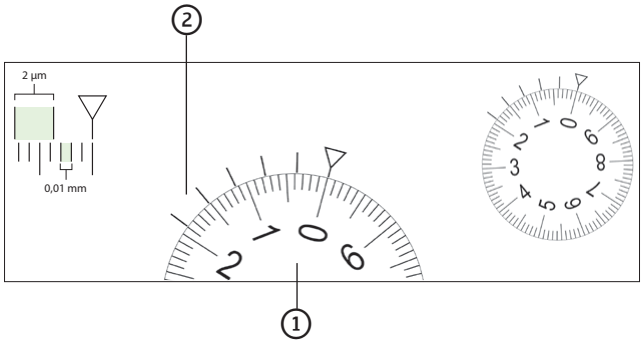


Walter Precision^{MEDIUM}

1. Position the cartridge ① in the cartridge guide of the base body ③ and secure with clamping screws ④.
2. Undo the locking screw ⑥.
3. Move the cartridge holder into the required diameter by turning the adjusting screw ⑤ with the locking screw ⑥ undone.
   The scale disc with vernier scale allows for a precise reading of the diameter change (1 DIV = 0.01 mm in diameter, with vernier scale 1 DIV = 0.002 mm in diameter).
4. Tighten the locking screw ⑥.



One full rotation of the scale ① = 1 mm.
The disc is divided into ten equal sections.
This means that turning the disc from **0 to 1** = 0.1 mm.
▽ **is the "zero position".**
The vernier scale ② is divided into five equal sections.
The distance between **one scale line on the vernier scale corresponds to 0.002 mm** in terms of the diameter



General information

Note the path restriction of the base body. Never use force when performing adjustments. Periodical lubrication (approx. every 20 operating hours) via the lubricating nipple (face of base body) guarantees extremely high precision coupled with a long service life.

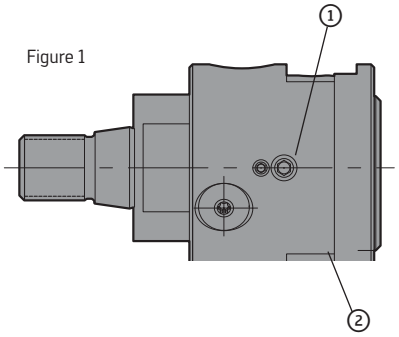
We recommend using a light machine oil such as Mobil Vactra Oil No. 2, BP Energol HLP-32, Klueber Isoflex PDP 94.

Setting instructions for the Walter Precision^{DIGITAL} B4035

Clamping/diameter adjustment

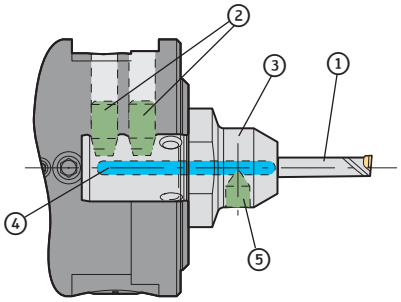
1. Switch on the digital display by pressing the “ON/Reset” button.
2. Undo the locking screw ①.
3. Adjust the boring range via the adjusting screw ② using an Allen key (SW4), and read off the display at the same time.
   Display = actual adjusting distance
   + = diameter increase
   – = diameter reduction
4. Tighten the locking screw ①.

Figure 1



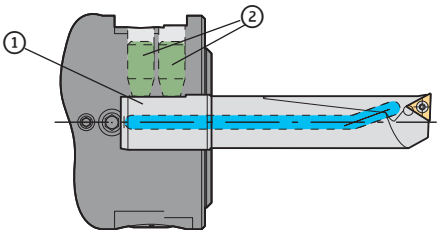
Mini boring tools, dia. 3–10 mm

1. Insert the adaptor ③ into the hole in the slide and secure with the two tapered threaded pins ②.
2. Insert a mini insert holder ① with a diameter of up to 14.7 mm into the adaptor.
3. Align the cutting position via the surface ④ at the end of the shank.
4. Clamp the mini insert holder using the tapered threaded pin ⑤ (4 Nm).
5. Diameter adjustment in accordance with figure 1.



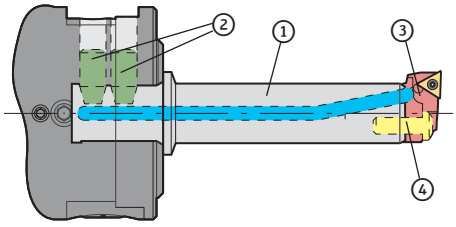
Boring bar dia. 20–32 mm

1. Clamp the boring bar ① in the body with the two fastening screws ②.
2. Diameter adjustment in accordance with figure 1.



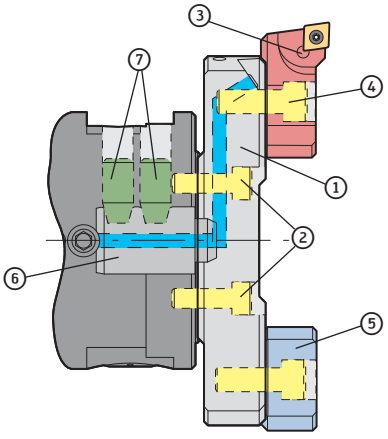
Extension and cartridges dia. 32–68 mm

1. Secure extension ① in the slide with the two tapered threaded pins ②.
2. Place the cartridge ③ in the teeth of the extension and clamp with the screw ④ (8 Nm).
3. Preset the cartridge ③ to diameter on the scale.
4. Diameter adjustment in accordance with figure 1.



Bridges with cooling lubricant transfer piece
Cartridges for unscrewing and counterweight dia. 68–124 mm

1. Insert the coolant transfer piece ⑥ into the locating bore in the slide and secure with the two tapered threaded pins ⑦.
2. Secure the bridge ① to the slider (8 Nm) with four fastening screws ②.
3. Place the cartridge ③ on the bridge (near the coolant outlet).
4. Roughly preset the cartridge to the required diameter using the scale. Tighten with the clamping screw ④ (8 Nm).
5. Fit the counterweight ⑤ on the opposite side, align to diameter using the scale, and secure.
6. Diameter adjustment in accordance with figure 1.



Detailed operating instructions including notes on balancing compensation are included with the tool set.

Precision boring cartridges
0.01 mm and 0.002 mm adjustment accuracy

How it works



① Axial adjustment (1 mm) via eccentric

② Fastening screw (5–6 Nm)

③ Fine adjustment
0.01 mm or 0.002 mm in diameter per scale line

Radial adjusting distance 0.3 mm

④ Lubricating nipple
Lubricant recommendation
lithium soap-based grease NLGI grade 1 KP1N10
e.g. Fuchs Renolit GL 1

The maintenance interval depends on the application conditions.
Re-greasing should be performed approximately every four weeks
in the event of continuous use.

⑤ Speed max. 10,000 rpm

Setting instructions for balance compensation
Walter Precision^{MINI} B4030 precision boring tools

① Angle scale

② Adjusting ring A

③ Adjusting ring B

④ Locking screw

1. Set the required diameter (see page B 639).
2. Turn the adjusting rings ② + ③ to the neutral position and secure in place ① (figure 1).
3. Take imbalance values from the settings table (included in the scope of delivery). Take the corner radius R into account.
4. Example:
   Boring diameter 28.5 mm
   Imbalance U
5. Set imbalance value 350 gmm for adjusting ring A ② at 160° on the angle scale ① and secure the ring (figure 2).
6. Set imbalance value 350 gmm for adjusting ring B ③ to the zero value of adjusting ring A ② and secure the ring (figure 3).

Figure 1

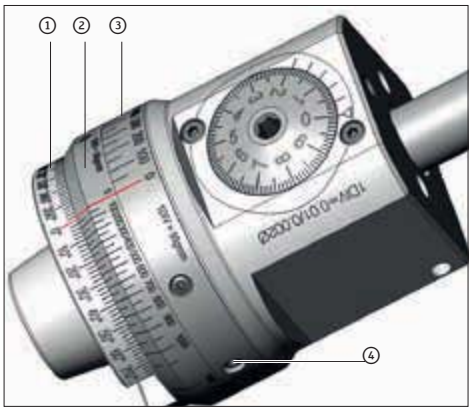


Figure 2



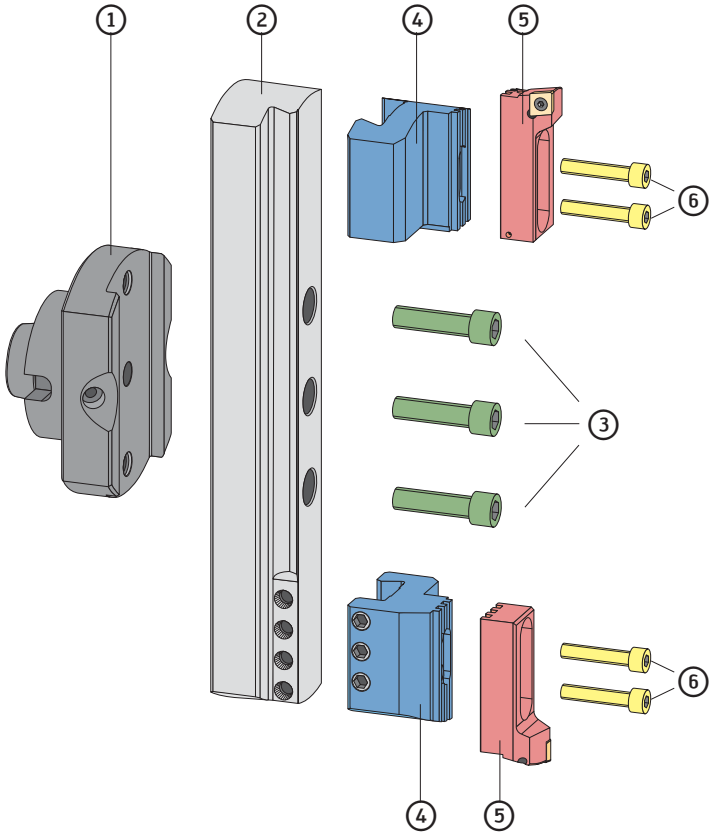
Figure 3



Assembly instructions for Walter bridge-type tools

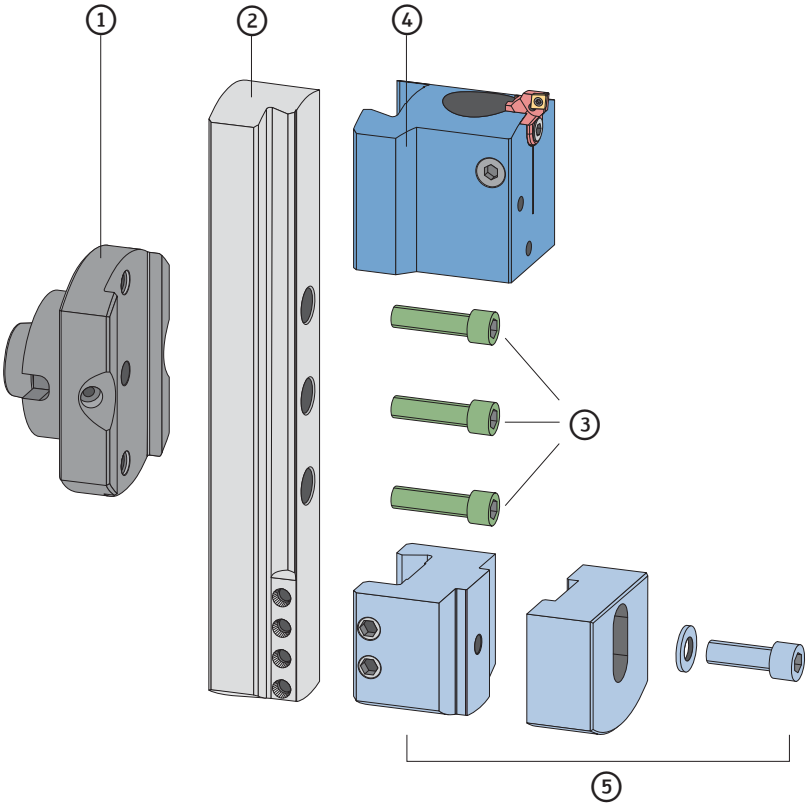
Walter Boring^{MAXI}
B3220/B3224 boring tool

1. Basic body
2. Bridge
3. Clamping screws for the bridge
4. Cartridge holder
5. Cartridge
6. Clamping screws for the cartridge



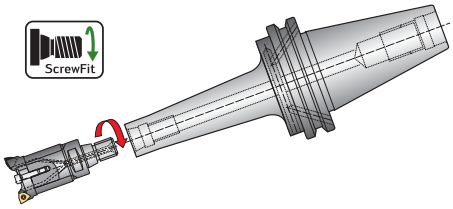
Walter Precision^{MAXI}
B3230/B3234 precision boring tool

1. Basic body
2. Bridge
3. Clamping screws for the bridge
4. Cartridge holder with cartridge
5. Balance compensation



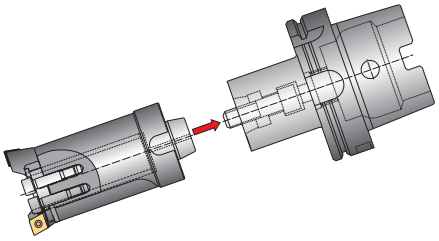
Tightening torques

For modular front pieces



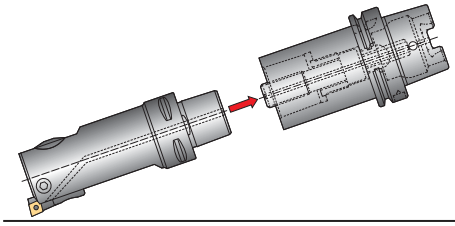
ScrewFit size	Thread	Tightening torque	Wrench size [mm]	Taper diameter corresponds to
T 9	M 5	6 Nm	SW 8	–
T 14	M 8	25 Nm	SW 12	–
T 18	M 10	50 Nm	SW 14	–
T 22	M 12	80 Nm	SW 17	NCT 25/32
T 28	M 16	150 Nm	SW 21	–
T 36	M 20	200 Nm	SW 30	NCT 40/50
T 45	M 20	200 Nm	SW 36	NCT 40/50

For NCT tools



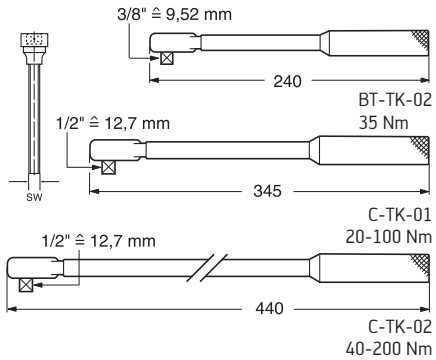
NCT	Thread	Wrench size	Torque wrench	Socket wrench	Tightening torque	Limit speed
25	M 8	5	FS 1385	FS 402	18 Nm	20.000 rpm
32	M 8	5	FS 1385	FS 402	18 Nm	30.000 rpm
40	M 12	8	FS 1386	FS 403	80 Nm	30.000 rpm
50	M 12	8	FS 1386	FS 403	80 Nm	30.000 rpm
63	M 16	12	FS 1386	FS 404	150 Nm	30.000 rpm
80	M 20	14	FS 1386	FS 405	200 Nm	30.000 rpm

Walter Capto™ tools (axial)



Walter Capto™	Wrench size	Torque	Torque wrench
C3	8	45	C-TK-01
C4	8	55	C-TK-01
C5	14	95	C-TK-01
C6	14	170	C-TK-02
C8	14	170	C-TK-02

Torque wrench for centre screw clamping



Torque wrench Order no.	Size	Tightening torque Nm	Spare parts Wrench adaptor	Spare parts WAF [mm]
C-TK-01	C3	45	5680 015-05	8
C-TK-01	C4	55	5680 015-05	8
C-TK-01	C5	95	5680 015-01	14
C-TK-02	C6	170	5680 015-02	14
C-TK-02	C8	170	5680 015-02	14

Application information

Reverse machining for precision boring

For reverse machining, the preset tool must be fed into the drilled hole with axial offset. Therefore, the boring diameter “D”, the diameter of the entry hole “d” and the diameter of the tool body “d_1” have a specific ratio to each other.

In order to evaluate the feasibility of reverse machining and select the appropriate tools, these values can be calculated as follows:

Min. diameter of the entry hole “d”

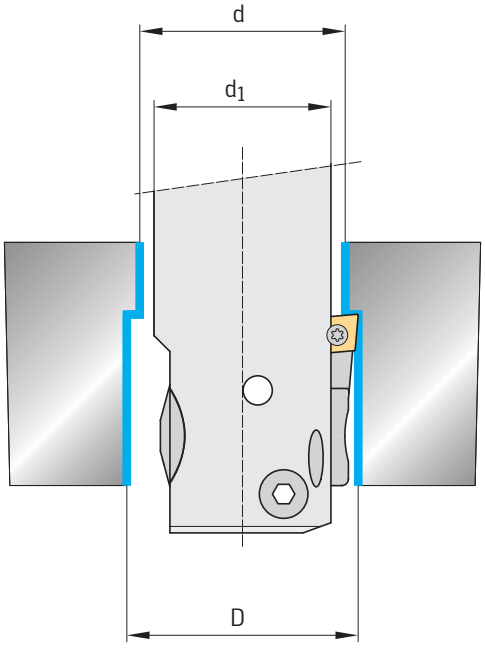
$$d = \frac{D + d_1}{2}$$

Max. boring diameter “d_1”

$$d_1 = 2d - d_1$$

Max. diameter of the tool body “d_1”

$$A = 2d - D$$



Example:

Calculating the minimum diameter of the entry hole “d”

Given:

- Boring diameter D = 93 mm
- Tool combination: B3230.C5.55-100.Z1
- Insert holder no. 3, d_1 = 50 mm

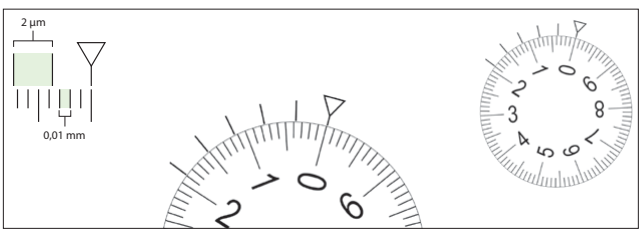
$$d = \frac{D + d_1}{2} = \frac{93 + 50}{2} = 71{,}5 \text{ mm}$$

Important:

The anticlockwise spindle must be used for reverse machining.
The cutting edge is set back relative to the boring head.
Note the overall length of the tool.
Note the space restrictions on the back of the workpiece.

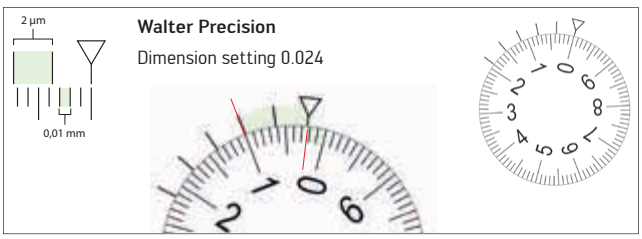
Reading the vernier scale

One full rotation of the disc = 1 mm.
The disc is divided into ten equal sections.
This means that turning the disc from **0 to 1** = 0.1 mm.
▽ is the “zero position”.
The vernier scale is divided into five equal sections.
The distance between **one scale line on the vernier scale corresponds to 0.002 mm** in terms of the diameter

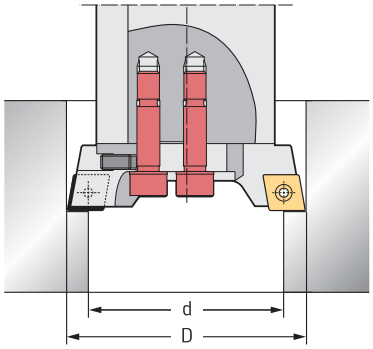


Example:

Adjusting the disc by 0.024 mm
clockwise (+adjustment)

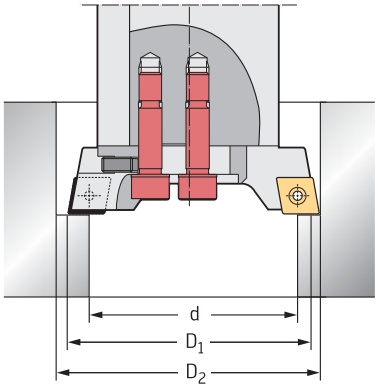


Walter Boring B3220/B3221 counterboring



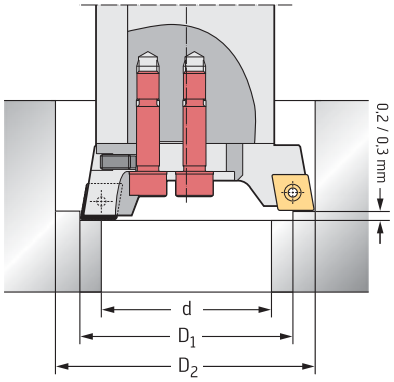
Counterboring symmetrically

The most frequently used method for:
Low to moderate material removal
– High v_C values
– High f_Z values
– Z = 2



Counterboring asymmetrically

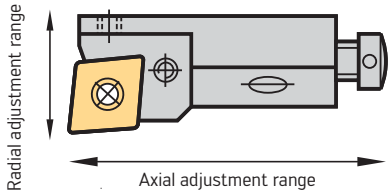
Positioning of the cutting edges offset in the diameter for:
– Maximum material removal
– Low power requirements
– Large shoulder dimensions
– Z = 1



Counterboring with asymmetrical and radial offset (ARS)

Positioning of the cutting edges offset in the diameter and axially for:
– Maximum material removal
– Excellent chip control
– Possible large shoulder dimensions
– Z = 1

Adjustment range of standard assembly parts for Walter special drills

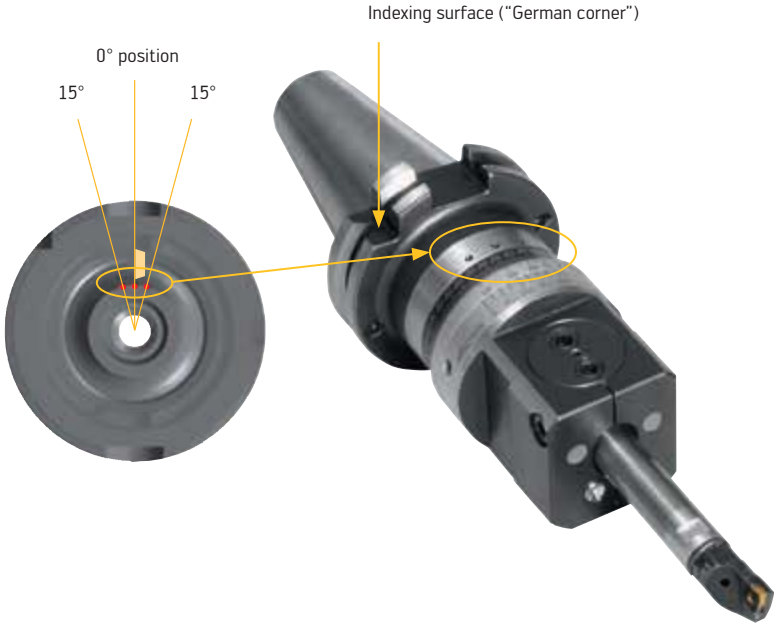


Group	Page	Axial	Radial
ISO cartridges	B 592	2 mm	0,5 mm
Walter mini cartridges	B 600	1,0 mm	0,5 mm
Walter precision boring cartridges	B 605	1,0 mm	0,3 mm

Cutting edge orientation for ScrewFit precision boring tools

The cutting edge orientation ensures that the position of the cutting edge is suitably aligned with the adaptor groove or indexing surface ("German corner").

If the ScrewFit interface is tightened to the defined torque, this ensures that the cutting edge is situated at 0° ±15°.



B2

Information on high-speed applications

1. Maximum permissible RPM:
   The limit values specified in the tables should not be exceeded. Otherwise correct operation and/or reliability are no longer guaranteed.
2. Only use original Walter indexable inserts and assembly parts (screws, etc.). Recommendation: New screws should be fitted after having replaced the indexable inserts five times at the most.
3. Observe the torques specified in the catalogue.
4. Balancing:
   Balancing must be performed in two steps when working at high speeds (> 6000 rpm):

   a. Basic balancing of the tool body including indexable inserts (carried out by Walter on request). The tool adaptor must also be balanced.

   b. Fine balancing of the tool when fully mounted on the adaptor. This fine balancing operation is strongly recommended because even the smallest concentricity errors can seriously alter the balance status.
5. Short projection lengths reduce concentricity faults, and increase spindle service life. The specified speeds only apply to the use of tools without additional extensions.
6. Safety guards:
   Appropriate safety guards or machine encapsulations must be used to securely collect particles that spin off such as chips or parts of cutting edges that are broken as a result of collisions.
7. Damaged tools:
   The operating speed must be specified for repairing an HSC tool.
   Repairs on Walter tools for HSC machining operations must only be carried out by Walter.
8. Technical progress:
   As research and standardisation in the field of HSC machining are ongoing, we reserve the right to make changes. The discussion on balancing specifications in particular is still in progress. The results of the "Balancing" working group of the Technical University of Darmstadt show that the quality category G16 is usually sufficient.

1. Walter Boring
boring tools
B3220 / B3221

Diameter range D_C [mm]	n_{max} [rpm]
20–24	16.000
26–33	12.000
33–41	10.000
41–55	7.800
55–70	5.800
70–90	4.600
90–110	3.700
110–153	2.900
150–220	2.100
220–290	1.450
290–360	1.100
360–430	900
430–500	750
500–570	650
570–640	550

The specified limiting speeds refer to symmetrically set tools (Z = 2).
The values are reduced by 50% for asymmetrically set tools (Z = 1).

2. Walter Precision
precision boring tools
B3230

Diameter range D_C [mm]	n_{max} [rpm]
2–45,5*	6.000
20–26	12.000
26–33	10.000
33–41	8.100
41–55	6.450
55–70	4.850
70–90	3.835
90–110	3.090
110–153	2.390
150–220	1.440
220–290	1.090
290–360	880
360–430	740
430–500	630
500–570	550
570–640	490

* The boring bar should be positioned as centrally as possible. Always use the largest boring bar possible.

3. Walter Precision
precision boring tools
B4030

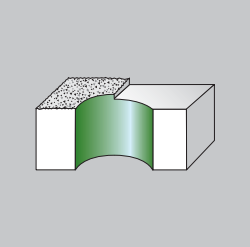
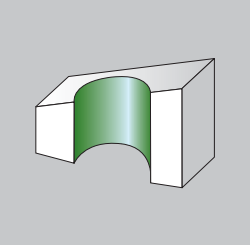
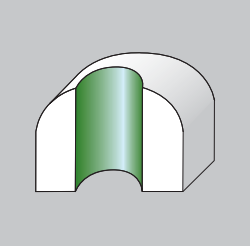
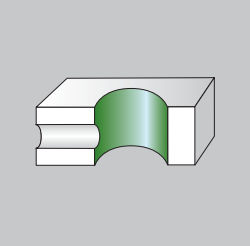
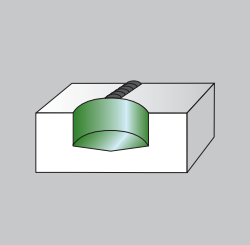
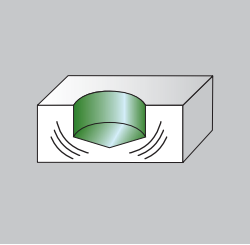
Diameter range D_C [mm]	n_{max} [rpm]
2–10*	14.000
10–20*	12.000
20–45*	8.000
33–41	15.000
41–55	11.500
55–70	9.000
70–90	7.000
90–110	5.500
110–153	4.000

4. Walter Precision^{DIGITAL}
precision boring tools
B4035

Diameter range D_C [mm]	n_{max} [rpm]
3–20	16.000
20–32	12.000
32–80	10.000
50–68	8.000
68–96	6.000
96–124	5.000

* The boring bar should be positioned as centrally as possible. Always use the largest boring bar possible.

Application recommendation

Application		Characteristics
Counterboring on uneven surfaces (cast iron surfaces)		– Depending on the drill entry angle, the spot drilling feed rate must be reduced. Use tools with max. $2 \times D_C$. Rule of thumb: 3° → 30%; 10° → 40%; 25° → 60% – Use a tough indexable insert grade – Use a strong corner radius
Inclined hole entry and hole exit		– Starting from an interrupted cut, reduce the feed rate down to 50% – Use a tough indexable insert grade – Use a strong corner radius
Counterboring on convex surfaces		– Possible without problems – Reduce the feed rate if necessary
Counterboring with cross hole		– If necessary, reduce the feed rate down to 50% – Watch out for chips becoming caught on the circumference of the tool – Use a tough indexable insert grade – Use a large corner radius
Counterboring on a forged/welded cast iron seam		– Reduce the feed rate – Use tools with max. $3 \times D_C$
Vibration		– The feed rate is too high – The cutting speed is too high – The geometry is too blunt – Check the axial/radial settings – Check the tool design – If necessary, use an HMD damping element

Cutting data for HSS core drills and countersinks

B 2

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart on page B 650.

Material group	Material			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Standard: DIN 343 — Designation: E3111 — Form — Type: N — Dia. range (mm): 7,80–49,60 — Cutting tool material: HSS — Coating: Uncoated — Page: B 614			
	Overview of the main material groups and code letters									
							v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	28	7	E O	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	28	8	E O	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	26	8	E O	
		C > 0.55%	Annealed	190	640	P4	28	8	E O	
		C > 0.55%	Heat-treated	300	1010	P5	17	7	E O	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	28	7	E O	
	Low-alloyed steel	Annealed		175	590	P7	28	8	E O	
		Heat-treated		285	960	P8	17	7	E O	
		Heat-treated		380	1280	P9	6	5	O E	
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	7	3	E O	
		Hardened and tempered		300	1010	P12	9	5	E O	
		Hardened and tempered		380	1280	P13	3	4	O E	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	7	3	E O	
		Martensitic, heat-treated		330	1110	P15	6	3	E O	
M	Stainless steel	Austenitic, quench hardened		200	680	M1	4	3	O E	
		Austenitic, precipitation hardened (PH)		300	1010	M2	5	5	O E	
		Austenitic/ferritic, duplex		230	780	M3	3	3	O E	
K	Malleable cast iron	Ferritic		200	400	K1	18	10	E O	
		Pearlitic		260	700	K2	13	9	E O	
	Grey cast iron	Low tensile strength		180	200	K3	22	10	E O	
		High tensile strength/austenitic		245	350	K4	18	10	E O	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	18	10	E O	
		Pearlitic		265	700	K6	13	9	E O	
	GGV (CGI)			230	400	K7	16	10	E O	
N	Wrought aluminium alloys	Not hardenable		30	–	N1	56	12	E O	
		Hardenable, hardened		100	340	N2	56	12	E O	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	36	12	E O	
		≤ 12% Si, hardenable, hardened		90	310	N4	25	10	E O	
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6	25	10	E O	M L
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	40	4	E O	
		Brass, bronze, red brass		90	310	N8	28	9	E O	
		Cu-alloys, short-chipping		110	380	N9	50	10	E O	M L
		High-tensile, Ampco		300	1010	N10	7	3	E O	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	4	3	O E	
			Hardened	280	940	S2	2	3	O E	
		Ni or Co base	Annealed	250	840	S3	4	3	O E	
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6	6	4	E O	
		α and β alloys, hardened		375	1260	S7	4	4	O E	
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9	7	3	E O	
	Molybdenum alloys			300	1010	S10	7	3	E O	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1	32	12	E O	
	Thermosetting plastics	Without abrasive fillers				O2	20	8		L
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page B 1174 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	DIN 335				DIN 335				DIN 334				DIN 335				DIN 334			
	E6819TIN				E6819				E6818				E7819				E7818			
	C				C				C				D				D			
	90°				90°				60°				90°				60°			
	6,00–31,00				4,30–31,00				6,30–25,00				15,00–80,00				16,00–80,00			
	HSS				HSS				HSS				HSS				HSS			
	TiN				Uncoated				Uncoated				Uncoated				Uncoated			
	B 616				B 616				B 618				B 617				B 619			
																				
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	26	8	E O		21	7	E O		21	7	E O		21	7	E O		21	7	E O	
	26	9	E O		21	8	E O		21	8	E O		21	8	E O		21	8	E O	
	24	9	E O		20	8	E O		20	8	E O		20	8	E O		20	8	E O	
	26	9	E O		21	8	E O		21	8	E O		21	8	E O		21	8	E O	
	18	8	E O		14	7	E O		14	7	E O		14	7	E O		14	7	E O	
	26	9	E O		21	8	E O		21	8	E O		21	8	E O		21	8	E O	
	26	9	E O		21	8	E O		21	8	E O		21	8	E O		21	8	E O	
	18	8	E O		14	7	E O		14	7	E O		14	7	E O		14	7	E O	
	12	5	E O		8	6	O E		8	6	O E		8	6	O E		8	6	O E	
	5,6	4	E O																	
	6	4	E O		6	4	E O		6	4	E O		6	4	E O		6	4	E O	
	14	6	E O		10	6	E O		10	6	E O		10	6	E O		10	6	E O	
	6	4	E O		5	5	O E		5	5	O E		5	5	O E		5	5	O E	
	6	4	E O		6	4	E O		6	4	E O		6	4	E O		6	4	E O	
	6	4	E O		5	4	E O		5	4	E O		5	4	E O		5	4	E O	
	5	4	O E		4	3	O E		4	3	O E		4	3	O E		4	3	O E	
	9	5	O E		5	5	O E		5	5	O E		5	5	O E		5	5	O E	
	4	4	O E		4	3	O E		4	3	O E		4	3	O E		4	3	O E	
	24	12	E O		15	12	E O		15	12	E O		15	12	E O		15	12	E O	
	18	10	E O		12	10	E O		12	10	E O		12	10	E O		12	10	E O	
	30	12	E O		19	12	E O		19	12	E O		19	12	E O		19	12	E O	
	24	12	E O		15	12	E O		15	12	E O		15	12	E O		15	12	E O	
	24	12	E O		15	12	E O		15	12	E O		15	12	E O		15	12	E O	
	18	10	E O		12	10	E O		12	10	E O		12	10	E O		12	10	E O	
	21	12	E O		14	12	E O		14	12	E O		14	12	E O		14	12	E O	
	60	12	E O		42	12	E O		42	12	E O		42	12	E O		42	12	E O	
	60	12	E O		42	12	E O		42	12	E O		42	12	E O		42	12	E O	
	35	12	E O		26	12	E O		26	12	E O		26	12	E O		26	12	E O	
	25	12	E O		19	10	E O		19	10	E O		19	10	E O		19	10	E O	
	10	12	E O		8	12	E O		8	12	E O		8	12	E O		8	12	E O	
	25	12		M L	25	12		M L	25	12		M L	25	12		M L	25	12		M L
	38	5	E O		30	5	E O		30	5	E O		30	5	E O		30	5	E O	
	30	10	E O		25	10	E O		25	10	E O		25	10	E O		25	10	E O	
	48	12	E O	M L	42	12	E O	M L	42	12	E O	M L	42	12	E O	M L	42	12	E O	M L
	14	6	E O		9	4	E O		9	4	E O		9	4	E O		9	4	E O	
	5	4	O E		4	3	O E		4	3	O E		4	3	O E		4	3	O E	
	3	3	O E		3	3	O E		3	3	O E		3	3	O E		3	3	O E	
	5	4	O E		4	3	O E		4	3	O E		4	3	O E		4	3	O E	
	2	3	O E		2	3	O E		2	3	O E		2	3	O E		2	3	O E	
	8	4	O E		7	4	E O		7	4	E O		7	4	E O		7	4	E O	
	5	4	O E		4	4	O E		4	4	O E		4	4	O E		4	4	O E	
	10	4	O E		9	4	E O		9	4	E O		9	4	E O		9	4	E O	
	10	4	O E		9	4	E O		9	4	E O		9	4	E O		9	4	E O	
	26	12	E O		26	12	E O		26	12	E O		26	12	E O		26	12	E O	
	24	8		L	15	7		L	15	7		L	15	7		L	15	7		L
	24	8		L	15	7		L	15	7		L	15	7		L	15	7		L

VRR: Feed rating charts for core drills and countersinks

	Feed f [mm] for diameter [mm]															
VRR	0,05	0,06	0,08	0,1	0,12	0,15	0,2	0,25	0,4	0,5	0,6	0,8	1	1,2	1,5	2
1	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,004	0,005	0,007
2	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,002	0,003	0,003	0,004	0,005	0,007	0,008	0,010	0,013
3	0,001	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,012	0,015	0,020
4	0,001	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,005	0,007	0,008	0,011	0,013	0,016	0,020	0,027
5	0,001	0,001	0,001	0,002	0,002	0,003	0,003	0,004	0,007	0,008	0,010	0,013	0,017	0,020	0,025	0,033
6	0,001	0,001	0,002	0,002	0,002	0,003	0,004	0,005	0,008	0,010	0,012	0,016	0,020	0,024	0,030	0,040
7	0,001	0,001	0,002	0,002	0,003	0,004	0,005	0,006	0,009	0,012	0,014	0,019	0,023	0,028	0,035	0,047
8	0,001	0,002	0,002	0,003	0,003	0,004	0,005	0,007	0,011	0,013	0,016	0,021	0,027	0,032	0,040	0,053
9	0,002	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,012	0,015	0,018	0,024	0,030	0,036	0,045	0,060
10	0,002	0,002	0,003	0,003	0,004	0,005	0,007	0,008	0,013	0,017	0,020	0,027	0,033	0,040	0,050	0,067
12	0,002	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,016	0,020	0,024	0,032	0,040	0,048	0,060	0,080
16	0,003	0,003	0,004	0,005	0,006	0,008	0,011	0,013	0,021	0,027	0,032	0,043	0,053	0,064	0,080	0,11
20	0,003	0,004	0,005	0,007	0,008	0,010	0,013	0,017	0,027	0,033	0,040	0,053	0,067	0,080	0,10	0,13
25	0,004	0,005	0,007	0,008	0,010	0,013	0,017	0,021	0,033	0,042	0,050	0,067	0,083	0,100	0,125	0,167
30	0,005	0,006	0,008	0,010	0,012	0,015	0,020	0,025	0,040	0,050	0,060	0,080	0,100	0,120	0,150	0,200

	Feed f [mm] for diameter [mm]														
VRR	2,5	4	5	6	8	10	12	15	20	25	40	50	60	80	100
1	0,008	0,013	0,017	0,018	0,021	0,024	0,026	0,029	0,033	0,037	0,047	0,053	0,058	0,067	0,075
2	0,017	0,027	0,033	0,037	0,042	0,047	0,052	0,058	0,067	0,075	0,094	0,11	0,12	0,13	0,15
3	0,025	0,040	0,050	0,055	0,063	0,071	0,077	0,087	0,10	0,11	0,14	0,16	0,17	0,20	0,22
4	0,033	0,053	0,067	0,073	0,084	0,094	0,10	0,12	0,13	0,15	0,19	0,21	0,23	0,27	0,30
5	0,042	0,067	0,083	0,091	0,11	0,12	0,13	0,14	0,17	0,19	0,24	0,26	0,29	0,33	0,37
6	0,050	0,080	0,10	0,11	0,13	0,14	0,15	0,17	0,20	0,22	0,28	0,32	0,35	0,40	0,45
7	0,058	0,093	0,12	0,13	0,15	0,16	0,18	0,20	0,23	0,26	0,33	0,37	0,40	0,47	0,52
8	0,067	0,11	0,13	0,15	0,17	0,19	0,21	0,23	0,27	0,30	0,38	0,42	0,46	0,53	0,60
9	0,075	0,12	0,15	0,16	0,19	0,21	0,23	0,26	0,30	0,34	0,42	0,47	0,52	0,60	0,67
10	0,083	0,13	0,17	0,18	0,21	0,24	0,26	0,29	0,33	0,37	0,47	0,53	0,58	0,67	0,75
12	0,10	0,16	0,20	0,22	0,25	0,28	0,31	0,35	0,40	0,45	0,57	0,63	0,69	0,80	0,89
16	0,13	0,21	0,27	0,29	0,34	0,38	0,41	0,46	0,53	0,60	0,75	0,84	0,92	1,07	1,19
20	0,17	0,27	0,33	0,37	0,42	0,47	0,52	0,58	0,67	0,75	0,94	1,05	1,15	1,33	1,49
25	0,21	0,33	0,42	0,46	0,53	0,59	0,65	0,72	0,83	0,93	1,18	1,32	1,44	1,67	1,86
30	0,25	0,40	0,50	0,55	0,63	0,71	0,77	0,87	1,00	1,12	1,41	1,58	1,73	2,00	2,24

		Page
Solid carbide and HSS reaming tools	Product range overview	B 652
	Designation key	B 653
	Walter Select – Solid carbide and HSS reaming tools	B 654
	Solid carbide and HSS reaming tools	B 660
Technical information – Solid carbide and HSS reaming tools	Cutting data	B 686
	Reaming tool tolerances in accordance with DIN 1420	B 691
	Dimensions – HSS reaming tools	B 692

Product range overview
Solid carbide and HSS reaming tools

Machining									
Standard	**Walter**		**Walter**		**Walter**	**Walter**	**Walter**	**Walter**	**DIN 212**
Designation	**F2481TMS**	**F2481**	**F2482TMS**	**F2482**	**F2171**	**F2162**	**F4171**	**F4162**	**F1342**
Cutting tool material	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Carbide	Carbide	Carbide	Carbide	HSS-E
Coating	TMS	Uncoated	TMS	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Helix angle	Left	Left	Straight	Straight	Left	Straight	Left	Straight	Straight
Dia. range [mm]	3,97–20	3,97–20	3,97–20	3,97–20	2–20	4–20	5–20	5–32	1–20
Page	B 660	B 660	B 662	B 662	B 664	B 665	B 666	B 667	B 668
									

Machining									
Standard	**DIN 212**		**DIN 208**	**DIN 208**	**DIN 219**	**DIN 2179**	**DIN 2180**	**DIN 206**	**DIN 859**
Designation	**F1352**	**F1352HUN**	**F4142**	**F4152**	**F7133**	**F3234**	**F6134**	**F1131**	**F1231**
Cutting tool material	HSS-E	HSS-E	HSS-E	HSS-E	HSS	HSS-E	HSS-E	HSS	HSS
Coating	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Helix angle	Left	Left	Straight	Left	Left	Left	Left	Left	Left
Dia. range [mm]	0,9–20	0,95–11,99	5–32	5–40	30–60	1–12	5–20	1–32	8–30
Page	B 671	B 675	B 676	B 677	B 678	B 679	B 680	B 681	B 684
									

Designation key – Solid carbide and HSS reaming tools

Example:

F	24	81	TMS
1	2	3	4

1	
Tool type	
F	HSS and carbide reaming tools

2	
Shank shape	
11	Cylindrical with square
12	Cylindrical with square
13	Cylindrical
21	Cylindrical
24	Cylindrical with internal coolant
32	Cylindrical with tang
41	Morse taper
61	Morse taper
71	Bore (Shell Type)

3	
Tool type	
31	Left-hand spiral hand reamer
33	Left-hand spiral shell reaming tool
34	Tapered reaming tool 1:50
42	Straight-fluted HSS machine reaming tool
52	Left-hand spiral HSS machine reaming tool
62	Straight-fluted carbide machine reaming tool
71	Left-hand spiral HSS machine reaming tool
81	Left-hand spiral HSC carbide reaming tool
82	Straight-fluted HSC carbide reaming tool

4	
Coating	
TMS	AlTiN thin coating

Walter Select – Solid carbide and HSS reaming tools

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page B 1174 onwards:

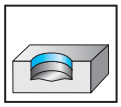
Note the **machining group** that corresponds to your material, e.g.: K5.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

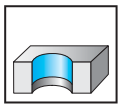
STEP 2

Select your tool from the table from page B 656 onwards:

– In accordance with the **standard** and the **type of drilled hole** (e.g. DIN 345, blind hole)
– For the relevant **machining group** (see step 1: P1–P15; M1–M3; …; 01-06)



= Blind hole



= Through hole

Walter Select
Solid carbide and HSS reaming tools

Machining					
Standard	**Walter**		**Walter**		**Walter**
Designation	**F2481TMS**	**F2481**	**F2482TMS**	**F2482**	**F2171**
Helix angle	Left	Left	Straight	Straight	Left
Cutting tool material	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Carbide
Coating	TMS	Uncoated	TMS	Uncoated	Uncoated
Shank	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
Dia. range [mm]	3,97–20	3,97–20	3,97–20	3,97–20	2–20
Page	B 660	B 660	B 662	B 662	B 664

STEP 3

Select your **cutting data** from the table from page B 686 onwards:

– **Cutting speed:** v_c
– **Feed:** VRR (feed rating chart)

Go to the row for your machining group (e.g. K5) and the column for your selected reaming tool. You will find the cutting speed v_c and the VRR there.
The feed rating chart (**VRR**) can be found on page B 690.

Cutting data for reaming tools

= Wet machining (E = emulsion, O = oil)
= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart on page B 690

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	Standard	Walter								
						Designation	F2482					F2482TMS			
						Form	–					–			
						Type	Straight-fluted					Straight-fluted			
						Dia. range (mm)	3,97–20,00					3,97–20,00			
						Cutting tool material	K10F					K10F			
						Coating	Uncoated					TMS			
						Page	B 662					B 662			
							v_c	VRR				v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	45	8	O E			190	20	O E	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	40	8	O E			175	20	O E	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	40	8	O E			170	20	O E	
		C > 0.55%	Annealed	190	640	P4	40	8	O E			175	20	O E	
		C > 0.55%	Heat-treated	300	1010	P5	30	8	O E			130	20	O E	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	45	8	O E			190	20	O E	
	Low-alloyed steel	Annealed		175	590	P7	40	8	O E			175	20	O E	
		Heat-treated		285	960	P8	30	8	O E			130	20	O E	
		Heat-treated		380	1280	P9	20	8	O E			80	20	O E	
		Heat-treated		430	1480	P10	10	8	O E			50	20	O E	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	25	8	O E			110	20	O E	
		Hardened and tempered		300	1010	P12	20	8	O E			95	20	O E	

Walter Select
Solid carbide and HSS reaming tools

Machining						
Standard	**Walter**		**Walter**		**Walter**	
Designation	**F2481TMS**	**F2481**	**F2482TMS**	**F2482**	**F2171**	
Helix angle	Left	Left	Straight	Straight	Left	
Cutting tool material	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Carbide	
Coating	TMS	Uncoated	TMS	Uncoated	Uncoated	
Shank	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	
Dia. range [mm]	3,97–20	3,97–20	3,97–20	3,97–20	2–20	
Page	B 660	B 660	B 662	B 662	B 664	
						
P Steel	●●	●	●●	●	●●	
M Stainless steel					●●	
K Cast iron	●●	●	●●	●	●●	
N NF metals		●●		●●	●●	
S Materials with difficult cutting properties					●●	
H Hard materials					●	
O Other		●●		●●	●●	

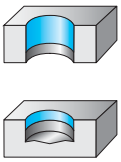
							
	Walter	**Walter**	**Walter**	**DIN 212**	**DIN 212**		**DIN 208**
	F2162	**F4171**	**F4162**	**F1342**	**F1352**	**F1352HUN**	**F4142**
	Straight	Left	Straight	Straight	Left	Left	Straight
	Carbide	Carbide	Carbide	HSS-E	HSS-E	HSS-E	HSS-E
	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
	DIN 6535 HA	Morse taper	Morse taper	Cylindrical	Cylindrical	Cylindrical	Morse taper
	4–20	5–20	5–32	1–20	0,9–20	0,95–11,99	5–32
	B 665	B 666	B 667	B 668	B 671	B 675	B 676
							
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●				
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●	●●				
	●	●	●				
	●●	●●	●●	●●	●●	●●	●●

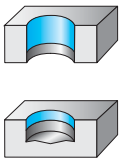
WALTER SELECT

●● Primary application

● Other application

Walter Select
Solid carbide and HSS reaming tools

Machining					
Standard	**DIN 208**	**DIN 219**	**DIN 2179**	**DIN 2180**	**DIN 206**
Designation	**F4152**	**F7133**	**F3234**	**F6134**	**F1131**
Helix angle	Left	Left	Left	Left	Left
Cutting tool material	HSS	HSS	HSS	HSS	HSS
Coating	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Shank	Morse taper	Locating bore 1:30	Cylindrical	Morse taper	Cylindrical
Dia. range [mm]	5–40	30–60	1–12	5–20	1–32
Page	B 677	B 678	B 679	B 680	B 681
					
P Steel	●●	●●	●●	●●	●●
M Stainless steel					
K Cast iron	●●	●●	●●	●●	●●
N NF metals	●●	●●	●●	●●	●●
S Materials with difficult cutting properties					
H Hard materials					
O Other	●●	●●	●●	●●	●●

	
	DIN 859
	F1231
	Left
	HSS
	Uncoated
	Cylindrical
	8–30
	B 684
	
	●●
	●●
	●●
	●●

WALTER SELECT

●● Primary application

● Other application

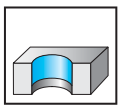
Solid carbide HSC reamers
F2481TMS / F2481





H7

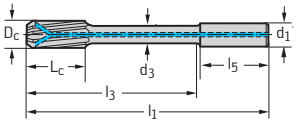
– Tolerance for 1/100 size: +0.004 mm



	P	M	K	N	S	H	O
TMS	●●		●●				
Uncoated	●		●	●●			●●

B 3

Shank DIN 6535 HA

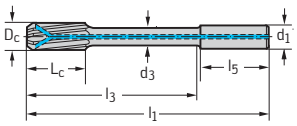


Designation TMS	Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_3 mm	l_5 mm	d_1 h6 mm	d_3 mm	Z
F2481TMS-3.97	F2481-3.97	3,97	12	75	34	36	6	3,4	4
F2481TMS-3.98	F2481-3.98	3,98	12	75	34	36	6	3,4	4
F2481TMS-3.99	F2481-3.99	3,99	12	75	34	36	6	3,4	4
F2481TMS-4	F2481-4	4	12	75	34	36	6	3,4	4
F2481TMS-4.01	F2481-4.01	4,01	12	75	34	36	6	3,4	4
F2481TMS-4.02	F2481-4.02	4,02	12	75	34	36	6	3,4	4
F2481TMS-4.03	F2481-4.03	4,03	12	75	34	36	6	3,4	4
F2481TMS-4.5	F2481-4.5	4,5	12	75	34	36	6	3,4	4
F2481TMS-4.97	F2481-4.97	4,97	12	75	35	36	6	3,8	4
F2481TMS-4.98	F2481-4.98	4,98	12	75	35	36	6	3,8	4
F2481TMS-4.99	F2481-4.99	4,99	12	75	35	36	6	3,8	4
F2481TMS-5	F2481-5	5	12	75	35	36	6	3,8	4
F2481TMS-5.01	F2481-5.01	5,01	12	75	35	36	6	3,8	4
F2481TMS-5.02	F2481-5.02	5,02	12	75	35	36	6	3,8	4
F2481TMS-5.03	F2481-5.03	5,03	12	75	35	36	6	3,8	4
F2481TMS-5.5	F2481-5.5	5,5	12	75	35	36	6	4,2	4
F2481TMS-5.97	F2481-5.97	5,97	12	75	35	36	6	4,5	4
F2481TMS-5.98	F2481-5.98	5,98	12	75	35	36	6	4,5	4
F2481TMS-5.99	F2481-5.99	5,99	12	75	35	36	6	4,5	4
F2481TMS-6	F2481-6	6	12	75	35	36	6	4,5	4
F2481TMS-6.01	F2481-6.01	6,01	12	75	35	36	6	4,5	4
F2481TMS-6.02	F2481-6.02	6,02	12	75	35	36	6	4,5	4
F2481TMS-6.03	F2481-6.03	6,03	12	75	35	36	6	4,5	4
F2481TMS-6.5	F2481-6.5	6,5	16	100	59	36	8	4,8	6
F2481TMS-7	F2481-7	7	16	100	59	36	8	5	6
F2481TMS-7.5	F2481-7.5	7,5	16	100	60	36	8	5,5	6
F2481TMS-7.97	F2481-7.97	7,97	16	100	60	36	8	6	6
F2481TMS-7.98	F2481-7.98	7,98	16	100	60	36	8	6	6
F2481TMS-7.99	F2481-7.99	7,99	16	100	60	36	8	6	6
F2481TMS-8	F2481-8	8	16	100	60	36	8	6	6
F2481TMS-8.01	F2481-8.01	8,01	16	100	60	36	8	6	6
F2481TMS-8.02	F2481-8.02	8,02	16	100	60	36	8	6	6
F2481TMS-8.03	F2481-8.03	8,03	16	100	60	36	8	6	6
F2481TMS-8.5	F2481-8.5	8,5	20	100	55	40	10	6,5	6
F2481TMS-9	F2481-9	9	20	100	55	40	10	7	6
F2481TMS-9.5	F2481-9.5	9,5	20	120	76	40	10	7,5	6
F2481TMS-9.97	F2481-9.97	9,97	20	120	76	40	10	7,5	6
F2481TMS-9.98	F2481-9.98	9,98	20	120	76	40	10	7,5	6
F2481TMS-9.99	F2481-9.99	9,99	20	120	76	40	10	7,5	6
F2481TMS-10	F2481-10	10	20	120	76	40	10	7,5	6
F2481TMS-10.01	F2481-10.01	10,01	20	120	76	40	10	7,5	6
F2481TMS-10.02	F2481-10.02	10,02	20	120	76	40	10	7,5	6
F2481TMS-10.03	F2481-10.03	10,03	20	120	76	40	10	7,5	6
F2481TMS-10.5	F2481-10.5	10,5	20	120	70	45	12	8	6
F2481TMS-11	F2481-11	11	20	120	70	45	12	8,5	6
F2481TMS-11.5	F2481-11.5	11,5	20	120	71	45	12	8,5	6
F2481TMS-11.97	F2481-11.97	11,97	20	120	71	45	12	9	6
F2481TMS-11.98	F2481-11.98	11,98	20	120	71	45	12	9	6

Continued

XIII D 1 B 686 B 691

Continued

	Designation TMS	Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_3 mm	l_5 mm	d_1 h6 mm	d_3 mm	Z
Shank DIN 6535 HA	F2481TMS-11.99	F2481-11.99	11,99	20	120	71	45	12	9	6
	F2481TMS-12	F2481-12	12	20	120	71	45	12	9	6
	F2481TMS-12.01	F2481-12.01	12,01	20	120	71	45	12	9	6
	F2481TMS-12.02	F2481-12.02	12,02	20	120	71	45	12	9	6
	F2481TMS-12.03	F2481-12.03	12,03	20	120	71	45	12	9	6
	F2481TMS-13	F2481-13	13	22	130	80	45	14	10	6
	F2481TMS-14	F2481-14	14	22	130	80	45	14	10,5	6
	F2481TMS-15	F2481-15	15	22	130	77	48	16	11,5	6
	F2481TMS-16	F2481-16	16	25	150	97	48	16	12	6
	F2481TMS-17	F2481-17	17	25	150	97	48	18	13	8
	F2481TMS-18	F2481-18	18	25	150	97	48	18	13,5	8
	F2481TMS-19	F2481-19	19	25	150	95	50	20	14	8
	F2481TMS-20	F2481-20	20	25	150	95	50	20	14,5	8

B 3

WALTER SELECT

●● Primary application

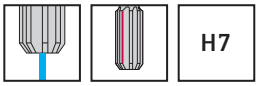
● Other application

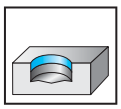
XIII D 1 B 686 B 691

Solid carbide HSC reaming tools
F2482TMS / F2482



– Tolerance for 1/100 size: +0.004 mm

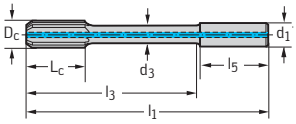




	P	M	K	N	S	H	O
TMS	●●		●●				
Uncoated	●		●	●●			●●

B 3

Shank DIN 6535 HA

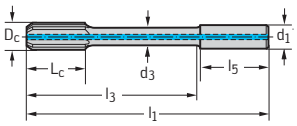


Designation TMS	Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_3 mm	l_5 mm	d_1 h6 mm	d_3 mm	Z
F2482TMS-3.97	F2482-3.97	3,97	12	75	34	36	6	3,5	4
F2482TMS-3.98	F2482-3.98	3,98	12	75	34	36	6	3,5	4
F2482TMS-3.99	F2482-3.99	3,99	12	75	34	36	6	3,5	4
F2482TMS-4	F2482-4	4	12	75	34	36	6	3,5	4
F2482TMS-4.01	F2482-4.01	4,01	12	75	34	36	6	3,5	4
F2482TMS-4.02	F2482-4.02	4,02	12	75	34	36	6	3,5	4
F2482TMS-4.03	F2482-4.03	4,03	12	75	34	36	6	3,5	4
F2482TMS-4.5	F2482-4.5	4,5	12	75	34	36	6	4	4
F2482TMS-4.97	F2482-4.97	4,97	12	75	35	36	6	4,4	4
F2482TMS-4.98	F2482-4.98	4,98	12	75	35	36	6	4,4	4
F2482TMS-4.99	F2482-4.99	4,99	12	75	35	36	6	4,4	4
F2482TMS-5	F2482-5	5	12	75	35	36	6	4,4	4
F2482TMS-5.01	F2482-5.01	5,01	12	75	35	36	6	4,4	4
F2482TMS-5.02	F2482-5.02	5,02	12	75	35	36	6	4,4	4
F2482TMS-5.03	F2482-5.03	5,03	12	75	35	36	6	4,4	4
F2482TMS-5.5	F2482-5.5	5,5	12	75	35	36	6	4,9	4
F2482TMS-5.97	F2482-5.97	5,97	12	75	35	36	6	5,3	4
F2482TMS-5.98	F2482-5.98	5,98	12	75	35	36	6	5,3	4
F2482TMS-5.99	F2482-5.99	5,99	12	75	35	36	6	5,3	4
F2482TMS-6	F2482-6	6	12	75	35	36	6	5,3	4
F2482TMS-6.01	F2482-6.01	6,01	12	75	35	36	6	5,3	4
F2482TMS-6.02	F2482-6.02	6,02	12	75	35	36	6	5,3	4
F2482TMS-6.03	F2482-6.03	6,03	12	75	35	36	6	5,3	4
F2482TMS-6.5	F2482-6.5	6,5	16	100	59	36	8	5,7	6
F2482TMS-7	F2482-7	7	16	100	59	36	8	6,2	6
F2482TMS-7.5	F2482-7.5	7,5	16	100	60	36	8	6,7	6
F2482TMS-7.97	F2482-7.97	7,97	16	100	60	36	8	7,2	6
F2482TMS-7.98	F2482-7.98	7,98	16	100	60	36	8	7,2	6
F2482TMS-7.99	F2482-7.99	7,99	16	100	60	36	8	7,2	6
F2482TMS-8	F2482-8	8	16	100	60	36	8	7,2	6
F2482TMS-8.01	F2482-8.01	8,01	16	100	60	36	8	7,2	6
F2482TMS-8.02	F2482-8.02	8,02	16	100	60	36	8	7,2	6
F2482TMS-8.03	F2482-8.03	8,03	16	100	60	36	8	7,2	6
F2482TMS-8.5	F2482-8.5	8,5	20	100	55	40	10	7,7	6
F2482TMS-9	F2482-9	9	20	100	55	40	10	8,2	6
F2482TMS-9.5	F2482-9.5	9,5	20	120	76	40	10	8,7	6
F2482TMS-9.97	F2482-9.97	9,97	20	120	76	40	10	9	6
F2482TMS-9.98	F2482-9.98	9,98	20	120	76	40	10	9	6
F2482TMS-9.99	F2482-9.99	9,99	20	120	76	40	10	9	6
F2482TMS-10	F2482-10	10	20	120	76	40	10	9	6
F2482TMS-10.01	F2482-10.01	10,01	20	120	76	40	10	9	6
F2482TMS-10.02	F2482-10.02	10,02	20	120	76	40	10	9	6
F2482TMS-10.03	F2482-10.03	10,03	20	120	76	40	10	9	6
F2482TMS-10.5	F2482-10.5	10,5	20	120	70	45	12	9,5	6
F2482TMS-11	F2482-11	11	20	120	70	45	12	10	6
F2482TMS-11.5	F2482-11.5	11,5	20	120	71	45	12	10,5	6
F2482TMS-11.97	F2482-11.97	11,97	20	120	71	45	12	11	6
F2482TMS-11.98	F2482-11.98	11,98	20	120	71	45	12	11	6

Continued

XIII D 1 B 686 B 691

Continued

	Designation TMS	Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_3 mm	l_5 mm	d_1 h6 mm	d_3 mm	Z
Shank DIN 6535 HA	F2482TMS-11.99	F2482-11.99	11,99	20	120	71	45	12	11	6
	F2482TMS-12	F2482-12	12	20	120	71	45	12	11	6
	F2482TMS-12.01	F2482-12.01	12,01	20	120	71	45	12	11	6
	F2482TMS-12.02	F2482-12.02	12,02	20	120	71	45	12	11	6
	F2482TMS-12.03	F2482-12.03	12,03	20	120	71	45	12	11	6
	F2482TMS-13	F2482-13	13	22	130	80	45	14	11,5	6
	F2482TMS-14	F2482-14	14	22	130	80	45	14	12,5	6
	F2482TMS-15	F2482-15	15	22	130	77	48	16	13,5	6
	F2482TMS-16	F2482-16	16	25	150	97	48	16	14,2	6
	F2482TMS-17	F2482-17	17	25	150	97	48	18	15,2	8
	F2482TMS-18	F2482-18	18	25	150	97	48	18	16,2	8
	F2482TMS-19	F2482-19	19	25	150	95	50	20	17,2	8
	F2482TMS-20	F2482-20	20	25	150	95	50	20	18,2	8

B 3

WALTER SELECT

●● Primary application

● Other application

XIII D 1 B 686 B 691

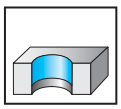
Carbide machine reamers
F2171



– Up to dia. 13 mm solid carbide, greater than dia. 13 mm solid carbide head



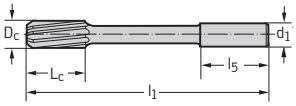
H7



	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●	●	●●

B 3

Shank DIN 6535 HA



Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_5 mm	d_1 h6 mm	Z
F2171-2	2	12	49	28	4	4
F2171-2.5	2,5	16	59	28	4	4
F2171-3	3	17	63	28	4	6
F2171-3.2	3,2	18	65	28	4	6
F2171-3.5	3,5	18	70	28	4	6
F2171-4	4	19	75	28	4	6
F2171-4.5	4,5	21	80	36	6	6
F2171-5	5	23	86	36	6	6
F2171-5.5	5,5	26	93	36	6	6
F2171-6	6	26	93	36	6	6
F2171-6.5	6,5	28	101	36	6	6
F2171-7	7	31	109	36	8	6
F2171-7.5	7,5	31	109	36	8	6
F2171-8	8	33	117	36	8	6
F2171-8.5	8,5	33	117	36	8	6
F2171-9	9	36	125	40	10	6
F2171-10	10	38	133	40	10	6
F2171-11	11	41	142	45	12	6
F2171-12	12	44	151	45	12	6
F2171-13	13	44	151	45	12	6
F2171-14	14	47	160	48	16	8
F2171-15	15	50	162	48	16	8
F2171-16	16	52	170	48	16	8
F2171-18	18	52	182	48	18	8
F2171-20	20	52	195	50	20	8

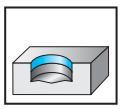
Dimensions similar to DIN 8093

D 1 B 686 B 691

Carbide machine reamers
F2162



– Up to dia. 13 mm solid carbide, greater than dia. 13 mm solid carbide head



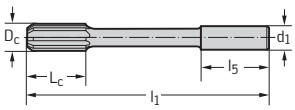


H7

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●	●	●●

B 3

Shank DIN 6535 HA



Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_5 mm	d_1 h6 mm	Z
F2162-4	4	19	75	28	4	6
F2162-4.5	4,5	21	80	36	6	6
F2162-5	5	23	86	36	6	6
F2162-5.5	5,5	26	93	36	6	6
F2162-6	6	26	93	36	6	6
F2162-6.5	6,5	28	101	36	6	6
F2162-7	7	31	109	36	8	6
F2162-7.5	7,5	31	109	36	8	6
F2162-8	8	33	117	36	8	6
F2162-8.5	8,5	33	117	36	8	6
F2162-9	9	36	125	40	10	6
F2162-9.5	9,5	36	125	40	10	6
F2162-10	10	38	133	40	10	6
F2162-11	11	41	142	45	12	6
F2162-12	12	44	151	45	12	6
F2162-13	13	44	151	45	12	6
F2162-14	14	47	160	48	16	8
F2162-15	15	50	162	48	16	8
F2162-16	16	52	170	48	16	8
F2162-17	17	52	175	48	18	8
F2162-18	18	52	182	48	18	8
F2162-20	20	52	195	50	20	8

Dimensions similar to DIN 8093

WALTER SELECT

●● Primary application

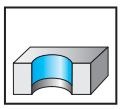
● Other application

D 1 B 686 B 691

Carbide machine reamers with Morse taper
F4171



– Up to dia. 16 mm solid carbide head, greater than dia. 16 mm carbide-tipped

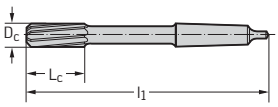


H7

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●	●	●●

B 3

Morse taper



Designation Uncoated	D_c mm	L_c mm	l_1 mm	MT	Z
F4171-5	5	23	133	MK1 B	6
F4171-6	6	26	138	MK1 B	6
F4171-7	7	31	150	MK1 B	6
F4171-8	8	33	156	MK1 B	6
F4171-9	9	36	162	MK1 B	6
F4171-10	10	38	168	MK1 B	6
F4171-11	11	41	175	MK1 B	6
F4171-12	12	44	182	MK1 B	6
F4171-13	13	44	182	MK1 B	6
F4171-14	14	47	189	MK1 B	6
F4171-15	15	50	204	MK2 B	6
F4171-16	16	52	210	MK2 B	6
F4171-17	17	54	214	MK2 B	6
F4171-18	18	56	219	MK2 B	6
F4171-19	19	58	223	MK2 B	6
F4171-20	20	60	228	MK2 B	6

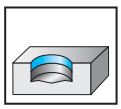
Dia. 5–7 mm: Dimensions in accordance with DIN 208 form B
Dia. 8–20 mm: Dimensions in accordance with DIN 8094 form B

D 1 B 686 B 691

Carbide machine reamers with Morse taper
F4162



– Up to dia. 16 mm solid carbide head, greater than dia. 16 mm carbide-tipped



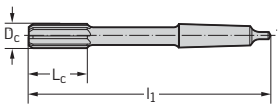


H7

	P	M	K	N	S	H	O
Uncoated	●●	●●	●●	●●	●●	●	●●

B 3

Morse taper



Designation Uncoated	D_c mm	L_c mm	l_1 mm	MT	Z
F4162-5	5	23	133	MK1 B	6
F4162-6	6	26	138	MK1 B	6
F4162-7	7	31	150	MK1 B	6
F4162-8	8	33	156	MK1 B	6
F4162-9	9	36	162	MK1 B	6
F4162-10	10	38	168	MK1 B	6
F4162-11	11	41	175	MK1 B	6
F4162-12	12	44	182	MK1 B	6
F4162-13	13	44	182	MK1 B	6
F4162-14	14	47	189	MK1 B	8
F4162-15	15	50	204	MK2 B	8
F4162-16	16	52	210	MK2 B	8
F4162-21	21	62	232	MK2 B	6
F4162-22	22	64	237	MK2 B	6
F4162-23	23	66	241	MK2 B	6
F4162-24	24	68	268	MK3 B	8
F4162-25	25	68	268	MK3 B	8
F4162-26	26	70	273	MK3 B	8
F4162-27	27	71	277	MK3 B	8
F4162-28	28	71	277	MK3 B	8
F4162-30	30	73	281	MK3 B	8
F4162-32	32	77	317	MK4 B	8

Dia. 5–7 mm: Dimensions in accordance with DIN 208 form A
Dia. 8–32 mm: Dimensions in accordance with DIN 8094 form A

WALTER SELECT
●● Primary application
● Other application

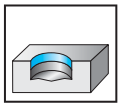
D 1 B 686 B 691

HSS machine reamers
F1342



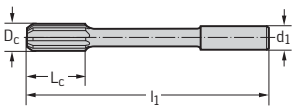
– Walter standard up to dia. 2.1 mm
– With centring tip on both sides up to dia. 3.7 mm

DIN 212 | H7



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

Parallel shank



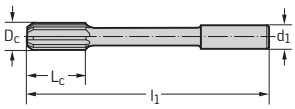
Designation Uncoated	D_c mm	L_c mm	l_1 mm	d_1 h9 mm	Z
F1342-1	1	6	34	1	3
F1342-1.1	1,1	7	36	1,1	3
F1342-1.2	1,2	7	36	1,1	3
F1342-1.3	1,3	8	38	1,2	3
F1342-1.4	1,4	8	40	1,3	3
F1342-1.5	1,5	8	40	1,4	3
F1342-1.6	1,6	9	43	1,5	3
F1342-1.7	1,7	9	43	1,5	3
F1342-1.8	1,8	10	46	1,7	4
F1342-1.9	1,9	10	46	1,7	4
F1342-2	2	11	49	1,9	4
F1342-2.1	2,1	11	49	1,9	4
F1342-2.2	2,2	12	53	2,2	4
F1342-2.3	2,3	12	53	2,3	4
F1342-2.4	2,4	14	57	2,4	4
F1342-2.5	2,5	14	57	2,5	4
F1342-2.6	2,6	14	57	2,6	4
F1342-2.7	2,7	15	61	2,7	6
F1342-2.8	2,8	15	61	2,8	6
F1342-2.9	2,9	15	61	2,9	6
F1342-3	3	15	61	3	6
F1342-3.1	3,1	16	65	3,1	6
F1342-3.2	3,2	16	65	3,2	6
F1342-3.3	3,3	16	65	3,3	6
F1342-3.4	3,4	18	70	3,4	6
F1342-3.5	3,5	18	70	3,5	6
F1342-3.6	3,6	18	70	3,6	6
F1342-3.7	3,7	18	70	3,7	6
F1342-3.8	3,8	19	75	4	6
F1342-3.9	3,9	19	75	4	6
F1342-4	4	19	75	4	6
F1342-4.1	4,1	19	75	4	6
F1342-4.2	4,2	19	75	4	6
F1342-4.3	4,3	21	80	4,5	6
F1342-4.4	4,4	21	80	4,5	6
F1342-4.5	4,5	21	80	4,5	6
F1342-4.6	4,6	21	80	4,5	6
F1342-4.7	4,7	21	80	4,5	6
F1342-4.8	4,8	23	86	5	6
F1342-4.9	4,9	23	86	5	6
F1342-5	5	23	86	5	6
F1342-5.1	5,1	23	86	5	6
F1342-5.2	5,2	23	86	5	6
F1342-5.3	5,3	23	86	5	6
F1342-5.4	5,4	26	93	5,6	6
F1342-5.5	5,5	26	93	5,6	6
F1342-5.6	5,6	26	93	5,6	6
F1342-5.7	5,7	26	93	5,6	6

Continued

D 1 | B 686 | B 691

Continued

Parallel shank



Designation Uncoated	D_c mm	L_c mm	l_1 mm	d_1 h9 mm	Z
F1342-5.8	5,8	26	93	5,6	6
F1342-5.9	5,9	26	93	5,6	6
F1342-6	6	26	93	5,6	6
F1342-6.1	6,1	28	101	6,3	6
F1342-6.2	6,2	28	101	6,3	6
F1342-6.3	6,3	28	101	6,3	6
F1342-6.4	6,4	28	101	6,3	6
F1342-6.5	6,5	28	101	6,3	6
F1342-6.6	6,6	28	101	6,3	6
F1342-6.7	6,7	28	101	6,3	6
F1342-6.8	6,8	31	109	7,1	6
F1342-6.9	6,9	31	109	7,1	6
F1342-7	7	31	109	7,1	6
F1342-7.1	7,1	31	109	7,1	6
F1342-7.2	7,2	31	109	7,1	6
F1342-7.3	7,3	31	109	7,1	6
F1342-7.4	7,4	31	109	7,1	6
F1342-7.5	7,5	31	109	7,1	6
F1342-7.6	7,6	33	117	8	6
F1342-7.7	7,7	33	117	8	6
F1342-7.8	7,8	33	117	8	6
F1342-7.9	7,9	33	117	8	6
F1342-8	8	33	117	8	6
F1342-8.1	8,1	33	117	8	6
F1342-8.2	8,2	33	117	8	6
F1342-8.3	8,3	33	117	8	6
F1342-8.4	8,4	33	117	8	6
F1342-8.5	8,5	33	117	8	6
F1342-8.6	8,6	36	125	9	6
F1342-8.7	8,7	36	125	9	6
F1342-8.8	8,8	36	125	9	6
F1342-8.9	8,9	36	125	9	6
F1342-9	9	36	125	9	6
F1342-9.1	9,1	36	125	9	6
F1342-9.2	9,2	36	125	9	6
F1342-9.3	9,3	36	125	9	6
F1342-9.4	9,4	36	125	9	6
F1342-9.5	9,5	36	125	9	6
F1342-9.6	9,6	38	133	10	6
F1342-9.7	9,7	38	133	10	6
F1342-9.8	9,8	38	133	10	6
F1342-9.9	9,9	38	133	10	6
F1342-10	10	38	133	10	6
F1342-10.1	10,1	38	133	10	6
F1342-10.2	10,2	38	133	10	6
F1342-10.3	10,3	38	133	10	6
F1342-10.4	10,4	38	133	10	6
F1342-10.5	10,5	38	133	10	6
F1342-10.6	10,6	38	133	10	6
F1342-10.7	10,7	41	142	10	6
F1342-10.8	10,8	41	142	10	6
F1342-10.9	10,9	41	142	10	6
F1342-11	11	41	142	10	6
F1342-11.5	11,5	41	142	10	6
F1342-12	12	44	151	10	6
F1342-12.5	12,5	44	151	10	6
F1342-13	13	44	151	10	6
F1342-13.5	13,5	47	160	12,5	6

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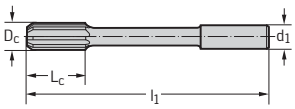
WALTER SELECT

●● Primary application

● Other application

D 1 B 686 B 691

Continued

	Designation Uncoated	D_c mm	L_c mm	l_1 mm	d_1 h9 mm	Z
Parallel shank	F1342-14	14	47	160	12,5	8
	F1342-14.5	14,5	50	162	12,5	8
	F1342-15	15	50	162	12,5	8
	F1342-15.5	15,5	52	170	12,5	8
	F1342-16	16	52	170	12,5	8
	F1342-16.5	16,5	54	175	14	8
	F1342-17	17	54	175	14	8
	F1342-17.5	17,5	56	182	14	8
	F1342-18	18	56	182	14	8
	F1342-18.5	18,5	58	189	16	8
	F1342-19	19	58	189	16	8
	F1342-19.5	19,5	60	195	16	8
	F1342-20	20	60	195	16	8

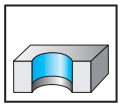
D 1 B 686 B 691

HSS machine reamers
F1352



– Walter standard up to dia. 1.3 mm
– With centring tip on both sides up to dia. 3.7 mm

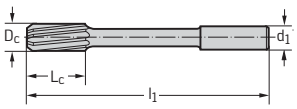
DIN 212 | H7



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

B 3

Parallel shank



Designation Uncoated	D_c mm	L_c mm	l_1 mm	d_1 h9 mm	Z
F1352-0.9	0,9	6	34	0,9	3
F1352-1	1	6	34	1	3
F1352-1.1	1,1	7	36	1,1	3
F1352-1.2	1,2	8	38	1,2	3
F1352-1.3	1,3	8	38	1,3	3
F1352-1.4	1,4	8	40	1,4	3
F1352-1.5	1,5	8	40	1,5	3
F1352-1.6	1,6	9	43	1,6	3
F1352-1.7	1,7	9	43	1,7	3
F1352-1.8	1,8	10	46	1,8	4
F1352-1.9	1,9	10	46	1,9	4
F1352-2	2	11	49	2	4
F1352-2.1	2,1	11	49	2,1	4
F1352-2.2	2,2	12	53	2,2	4
F1352-2.3	2,3	12	53	2,3	4
F1352-2.4	2,4	14	57	2,4	4
F1352-2.5	2,5	14	57	2,5	4
F1352-2.6	2,6	14	57	2,6	4
F1352-2.7	2,7	15	61	2,7	6
F1352-2.8	2,8	15	61	2,8	6
F1352-2.9	2,9	15	61	2,9	6
F1352-3	3	15	61	3	6
F1352-3.1	3,1	16	65	3,1	6
F1352-3.2	3,2	16	65	3,2	6
F1352-3.3	3,3	16	65	3,3	6
F1352-3.4	3,4	18	70	3,4	6
F1352-3.5	3,5	18	70	3,5	6
F1352-3.6	3,6	18	70	3,6	6
F1352-3.7	3,7	18	70	3,7	6
F1352-3.8	3,8	19	75	4	6
F1352-3.9	3,9	19	75	4	6
F1352-4	4	19	75	4	6
F1352-4.1	4,1	19	75	4	6
F1352-4.2	4,2	19	75	4	6
F1352-4.3	4,3	21	80	4,5	6
F1352-4.4	4,4	21	80	4,5	6
F1352-4.5	4,5	21	80	4,5	6
F1352-4.6	4,6	21	80	4,5	6
F1352-4.7	4,7	21	80	4,5	6
F1352-4.8	4,8	23	86	5	6
F1352-4.9	4,9	23	86	5	6
F1352-5	5	23	86	5	6
F1352-5.1	5,1	23	86	5	6
F1352-5.2	5,2	23	86	5	6

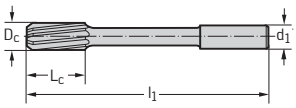
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WALTER SELECT
●● Primary application
● Other application

D 1 | B 686 | B 691

Continued

Parallel shank

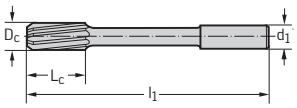


Designation Uncoated	D_c mm	L_c mm	l_1 mm	d_1 h9 mm	Z
F1352-5.3	5,3	23	86	5	6
F1352-5.4	5,4	26	93	5,6	6
F1352-5.5	5,5	26	93	5,6	6
F1352-5.6	5,6	26	93	5,6	6
F1352-5.7	5,7	26	93	5,6	6
F1352-5.8	5,8	26	93	5,6	6
F1352-5.9	5,9	26	93	5,6	6
F1352-6	6	26	93	5,6	6
F1352-6.1	6,1	28	101	6,3	6
F1352-6.2	6,2	28	101	6,3	6
F1352-6.3	6,3	28	101	6,3	6
F1352-6.4	6,4	28	101	6,3	6
F1352-6.5	6,5	28	101	6,3	6
F1352-6.6	6,6	28	101	6,3	6
F1352-6.7	6,7	28	101	6,3	6
F1352-6.8	6,8	31	109	7,1	6
F1352-6.9	6,9	31	109	7,1	6
F1352-7	7	31	109	7,1	6
F1352-7.1	7,1	31	109	7,1	6
F1352-7.2	7,2	31	109	7,1	6
F1352-7.3	7,3	31	109	7,1	6
F1352-7.4	7,4	31	109	7,1	6
F1352-7.5	7,5	31	109	7,1	6
F1352-7.6	7,6	33	117	8	6
F1352-7.7	7,7	33	117	8	6
F1352-7.8	7,8	33	117	8	6
F1352-7.9	7,9	33	117	8	6
F1352-8	8	33	117	8	6
F1352-8.1	8,1	33	117	8	6
F1352-8.2	8,2	33	117	8	6
F1352-8.3	8,3	33	117	8	6
F1352-8.4	8,4	33	117	8	6
F1352-8.5	8,5	33	117	8	6
F1352-8.6	8,6	36	125	9	6
F1352-8.7	8,7	36	125	9	6
F1352-8.8	8,8	36	125	9	6
F1352-8.9	8,9	36	125	9	6
F1352-9	9	36	125	9	6
F1352-9.1	9,1	36	125	9	6
F1352-9.2	9,2	36	125	9	6
F1352-9.3	9,3	36	125	9	6
F1352-9.4	9,4	36	125	9	6
F1352-9.5	9,5	36	125	9	6
F1352-9.6	9,6	38	133	10	6
F1352-9.7	9,7	38	133	10	6
F1352-9.8	9,8	38	133	10	6
F1352-9.9	9,9	38	133	10	6
F1352-10	10	38	133	10	6
F1352-10.1	10,1	38	133	10	6
F1352-10.2	10,2	38	133	10	6
F1352-10.3	10,3	38	133	10	6
F1352-10.4	10,4	38	133	10	6
F1352-10.5	10,5	38	133	10	6
F1352-10.6	10,6	38	133	10	6
F1352-10.7	10,7	41	142	10	6
F1352-10.8	10,8	41	142	10	6
F1352-10.9	10,9	41	142	10	6
F1352-11	11	41	142	10	6
F1352-11.5	11,5	41	142	10	6
F1352-12	12	44	151	10	6
F1352-12.5	12,5	44	151	10	6
F1352-13	13	44	151	10	6

Continued

D 1 B 686 B 691

Continued

	Designation Uncoated	D_c mm	L_c mm	l_1 mm	d_1 h9 mm	Z
Parallel shank 	F1352-13.5	13,5	47	160	12,5	8
	F1352-14	14	47	160	12,5	8
	F1352-14.5	14,5	50	162	12,5	8
	F1352-15	15	50	162	12,5	8
	F1352-15.5	15,5	52	170	12,5	8
	F1352-16	16	52	170	12,5	8
	F1352-16.5	16,5	54	175	14	8
	F1352-17	17	54	175	14	8
	F1352-17.5	17,5	56	182	14	8
	F1352-18	18	56	182	14	8
	F1352-18.5	18,5	58	189	16	8
	F1352-19	19	58	189	16	8
	F1352-19.5	19,5	60	195	16	8
	F1352-20	20	60	195	16	8

WALTER SELECT
●● Primary application
● Other application

D 1 B 686 B 691

Determining the reamer diameter for F1352HUN in relation to the nominal diameter and tolerance range

Nominal diameter D_c mm above – to	Additional values in mm, relative to the fits														
	A 9	A 11	B 8	B 9	B 10	B 11	C 8	C 9	C 10	C 11	D 7	D 8	D 9	D 10	D 11
1–3	+0,28	+0,31	–	+0,15	+0,17	+0,18	–	+0,07	+0,09	+0,10	–	–	+0,03	+0,05	+0,06
3–6	+0,29	+0,32	+0,15	+0,16	+0,17	+0,19	+0,08	+0,09	+0,10	+0,12	–	+0,04	+0,05	+0,06	+0,08
6–10	+0,30	+0,35	+0,16	+0,17	+0,19	+0,22	+0,09	+0,10	+0,12	+0,15	–	+0,05	+0,06	+0,08	+0,11
10–18	+0,32	+0,37	+0,16	+0,18	+0,20	+0,23	+0,11	+0,12	+0,14	+0,18	+0,06	+0,06	+0,08	+0,10	+0,13
	E 7	E 8	E 9	F 7	F 8	F 9	F 10	G 6	G 7	H 6	H 7	H 8	H 9	H 10	H 11
1–3	–	+0,02	+0,03	+0,01	+0,01	+0,02	–	–	–	–	–	–	+0,01	+0,03	+0,04
3–6	–	+0,03	+0,04	–	+0,02	+0,03	+0,04	–	+0,01	–	–	+0,01	+0,02	+0,03	+0,05
6–10	+0,03	+0,03	+0,05	+0,02	+0,02	+0,03	+0,05	–	+0,01	–	–	+0,01	+0,02	+0,04	+0,07
10–18	+0,04	+0,04	+0,06	+0,02	+0,03	+0,04	+0,07	+0,01	–	–	+0,01	+0,01	+0,03	+0,05	+0,08
	H 12	H 13	J 6	J 7	J 8	JS 6	JS 7	JS 8	JS 9	K 7	K 8	M6	M7	M8	N 6
1–3	+0,08	+0,11	–	–	–	–	–	+0,00	+0,00	–	– 0,01	–	–	–	–
3–6	+0,09	+0,14	–	+0,00	+0,00	–	+0,00	+0,00	+0,00	–	–	–	–	– 0,01	–
6–10	+0,12	+0,18	–	+0,00	+0,00	–	+0,00	+0,00	+0,00	–	– 0,01	– 0,01	– 0,01	– 0,01	–
10–18	+0,14	+0,22	–	+0,00	+0,00	–	+0,00	+0,00	+0,01	–	– 0,01	– 0,01	– 0,01	– 0,01	–
	N 7	N 8	N 9	N 10	N 11	P 6	P 7	R 6	R 7	S 6	S 7	U 6	U 7	U 10	Z 10
1–3	– 0,01	– 0,01	– 0,02	– 0,02	– 0,02	–	–	–	–	–	– 0,02	–	–	–	– 0,04
3–6	– 0,01	– 0,01	– 0,01	– 0,02	– 0,02	–	–	–	– 0,02	–	–	–	– 0,03	– 0,04	– 0,05
6–10	–	– 0,02	– 0,01	– 0,02	– 0,02	–	– 0,02	–	– 0,02	–	– 0,03	–	– 0,03	– 0,05	– 0,06
10–18	– 0,01	– 0,02	– 0,02	– 0,02	– 0,03	–	– 0,02	–	– 0,03	–	– 0,03	–	–	– 0,05	– 0,07

Application example:

Request: D_c = 4.25 mm F8

Solution: Nominal diameter + additional value = 1/100 reamer
4.25 mm + 0.02 mm = 4.27 mm

Tool: Walter Titex F1352HUN reamer D_c = 4.27 mm

Application info:

The table is structured so that each reamer diameter can be determined in increments of 1/100 mm.

The manufacturing tolerances are taken into consideration in the additional values:
Diameter up to D_c = 6 mm $^{+0.004\ mm}_{0}$

more than D_c = 6 mm $^{+0.005\ mm}_{0}$

The specified fits can be manufactured with a 1/100 reamer, since they correspond to the manufacturing tolerances for reaming tools in accordance with DIN 1420.

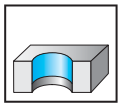
The lower tolerance range dimension for reaming tools in accordance with DIN 1420 has been reduced by 25% for the fields with a green background. The result of this is that the usage period of the reamer is reduced in relation to the drilled hole tolerance. The additional values in the green fields can be used in special cases.

HSS machine reamers
F1352HUN



– Walter standard up to dia. 3.75 mm with centring tips
– Diameter increment = 0.01 mm

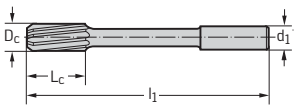
DIN 212



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

B 3

Parallel shank



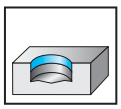
Designation Uncoated	D_c from – to mm	d_1 mm	L_c mm	l_1 mm	Z
...-0,95	0,95	$=D_c$	5,5	34	3
...-0,97 – ...-1,06	0,97 – 1,06	$=D_c$	5,5	34	3
...-1,07 – ...-1,18	1,07 – 1,18	$=D_c$	6,5	34	3
...-1,19 – ...-1,32	1,19 – 1,32	$=D_c$	7,5	34	3
...-1,33 – ...-1,50	1,33 – 1,50	$=D_c$	8,0	40	3
...-1,51 – ...-1,70	1,51 – 1,70	$=D_c$	9,0	43	3
...-1,71 – ...-1,90	1,71 – 1,90	$=D_c$	10,0	46	4
...-1,91 – ...-2,12	1,91 – 2,12	$=D_c$	11,0	49	4
...-2,13 – ...-2,36	2,13 – 2,36	$=D_c$	12,0	53	4
...-2,37 – ...-2,65	2,37 – 2,65	$=D_c$	14,0	57	4
...-2,66 – ...-3,00	2,66 – 3,00	$=D_c$	15,0	61	6
...-3,01 – ...-3,35	3,01 – 3,35	$=D_c$	16,0	65	6
...-3,36 – ...-3,75	3,36 – 3,75	$=D_c$	18,0	70	6
...-3,76 – ...-4,25	3,76 – 4,25	4,0	19,0	75	6
...-4,26 – ...-4,75	4,26 – 4,75	4,5	21,0	80	6
...-4,76 – ...-5,30	4,76 – 5,30	5,0	23,0	86	6
...-5,31 – ...-6,00	5,31 – 6,00	5,6	26,0	93	6
...-6,01 – ...-6,70	6,01 – 6,70	6,3	28,0	101	6
...-6,71 – ...-7,50	6,71 – 7,50	7,1	31,0	109	6
...-7,51 – ...-8,50	7,51 – 8,50	8,0	33,0	117	6
...-8,51 – ...-9,50	8,51 – 9,50	9,0	36,0	125	6
...-9,51 – ...-10,60	9,51 – 10,60	10,0	38,0	133	6
...-10,61 – ...-11,80	10,61 – 11,80	10,0	41,0	142	6
...-11,81 – ...-12,00	11,81 – 12,00	10,0	44,0	151	6

D 1 B 686 B 691

HSS machine reamers with Morse taper
F4142



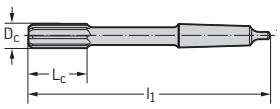
DIN 208 |  | H7



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

B 3

Morse taper



Designation Uncoated	D_c mm	L_c mm	l_1 mm	MT	Z
F4142-5	5	23	133	MK1 B	6
F4142-6	6	26	138	MK1 B	6
F4142-7	7	31	150	MK1 B	6
F4142-8	8	33	156	MK1 B	6
F4142-9	9	36	162	MK1 B	6
F4142-10	10	38	168	MK1 B	6
F4142-11	11	41	175	MK1 B	6
F4142-12	12	44	182	MK1 B	6
F4142-13	13	44	182	MK1 B	6
F4142-14	14	47	189	MK1 B	8
F4142-15	15	50	204	MK2 B	8
F4142-16	16	52	210	MK2 B	8
F4142-17	17	54	214	MK2 B	8
F4142-18	18	56	219	MK2 B	8
F4142-19	19	58	223	MK2 B	8
F4142-20	20	60	228	MK2 B	8
F4142-21	21	62	232	MK2 B	8
F4142-22	22	64	237	MK2 B	8
F4142-23	23	66	241	MK2 B	8
F4142-24	24	68	268	MK3 B	8
F4142-25	25	68	268	MK3 B	8
F4142-26	26	70	273	MK3 B	8
F4142-27	27	71	277	MK3 B	10
F4142-28	28	71	277	MK3 B	10
F4142-29	29	73	281	MK3 B	10
F4142-30	30	73	281	MK3 B	10
F4142-32	32	77	317	MK4 B	10

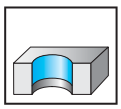
WALTER SELECT
●● Primary application
● Other application

D 1 B 686 B 691

HSS machine reamers with Morse taper
F4152



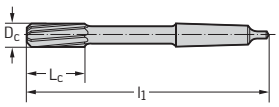
DIN 208 |  | H7



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

B 3

Morse taper



Designation Uncoated	D_c mm	L_c mm	l_1 mm	MT	Z
F4152-5	5	23	133	MK1 B	6
F4152-6	6	26	138	MK1 B	6
F4152-7	7	31	150	MK1 B	6
F4152-8	8	33	156	MK1 B	6
F4152-9	9	36	162	MK1 B	6
F4152-10	10	38	168	MK1 B	6
F4152-11	11	41	175	MK1 B	6
F4152-12	12	44	182	MK1 B	6
F4152-13	13	44	182	MK1 B	6
F4152-14	14	47	189	MK1 B	8
F4152-15	15	50	204	MK2 B	8
F4152-16	16	52	210	MK2 B	8
F4152-17	17	54	214	MK2 B	8
F4152-18	18	56	219	MK2 B	8
F4152-19	19	58	223	MK2 B	8
F4152-20	20	60	228	MK2 B	8
F4152-21	21	62	232	MK2 B	8
F4152-22	22	64	237	MK2 B	8
F4152-23	23	66	241	MK2 B	8
F4152-24	24	68	268	MK3 B	8
F4152-25	25	68	268	MK3 B	8
F4152-26	26	70	273	MK3 B	8
F4152-27	27	71	277	MK3 B	10
F4152-28	28	71	277	MK3 B	10
F4152-29	29	73	281	MK3 B	10
F4152-30	30	73	281	MK3 B	10
F4152-31	31	75	285	MK3 B	10
F4152-32	32	77	317	MK4 B	10
F4152-33	33	77	317	MK4 B	10
F4152-34	34	78	321	MK4 B	10
F4152-35	35	78	321	MK4 B	10
F4152-36	36	79	325	MK4 B	10
F4152-37	37	79	325	MK4 B	10
F4152-38	38	81	329	MK4 B	10
F4152-39	39	81	329	MK4 B	10
F4152-40	40	81	329	MK4 B	10


D 1

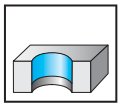
B 686

B 691

HSS shell reamers
F7133



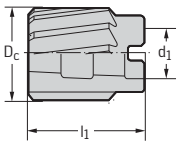
DIN 219 | H7



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

B 3

Locating bore 1:30



Designation Uncoated	D_c mm	l_1 mm	d_1 mm	Z
F7133-30	30	45	13	8
F7133-32	32	50	16	10
F7133-33	33	50	16	10
F7133-34	34	50	16	10
F7133-35	35	50	16	10
F7133-36	36	56	19	10
F7133-38	38	56	19	10
F7133-40	40	56	19	10
F7133-42	42	56	19	10
F7133-44	44	63	22	12
F7133-45	45	63	22	12
F7133-46	46	63	22	12
F7133-50	50	63	22	12
F7133-52	52	71	27	12
F7133-55	55	71	27	12
F7133-60	60	71	27	12

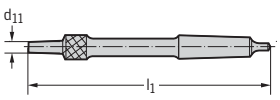
Shell reamer holder for F7133
Z2311



– For F7133 shell reamers

Tool

Morse taper



Designation	d_{11} mm	l_1 mm	kg
Z2311-13	13	250	0,6
Z2311-16	16	261	0,74
Z2311-19	19	298	1,29
Z2311-22	22	312	1,58
Z2311-27	27	359	2,19
Z2311-32	32	376	4,22
Z2311-40	40	396	5,5
Z2311-50	50	416	7,85

WALTER SELECT
●● Primary application
● Other application

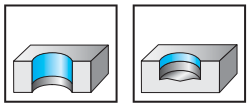
D 1 B 686 B 691

HSS machine tapered reamer
F3234



– For tapered pins in accordance with DIN EN 28736; 28737; 28744
– For tapered pins in accordance with DIN 258; 1447; 7977; 7978

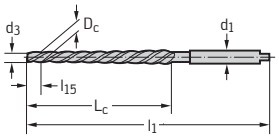
DIN 2179 | 1:50



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

B 3

Parallel shank



Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_{15} mm	d_1 h9 mm	d_3 mm	Z
F3234-1	1	33	60	5	1,4	0,9	2
F3234-1.5	1,5	42	70	5	2,1	1,4	2
F3234-2	2	48	86	5	3,2	1,9	3
F3234-2.5	2,5	48	86	5	3,2	2,4	3
F3234-3	3	58	100	5	4	2,9	3
F3234-4	4	68	112	5	5	3,9	3
F3234-5	5	73	122	5	6,3	4,9	3
F3234-6	6	105	160	5	8	5,9	3
F3234-8	8	145	207	5	10	7,9	3
F3234-10	10	175	245	5	12,5	9,9	3
F3234-12	12	210	290	10	16	11,8	3

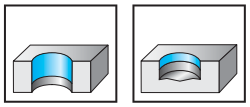
D 1 | B 686 | B 691

HSS machine tapered reamers
F6134



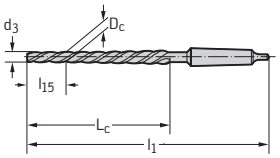
– For tapered pins in accordance with DIN EN 28736; 28737; 28744
– For tapered pins in accordance with DIN 258; 1447; 7977; 7978

DIN 2180 | 1:50



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

Morse taper



Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_{15} mm	d_3 mm	MT	Z
F6134-5	5	73	155	5	4,9	MK1 B	3
F6134-6	6	105	187	5	5,9	MK1 B	3
F6134-8	8	145	227	5	7,9	MK1 B	3
F6134-10	10	175	257	5	9,9	MK1 B	3
F6134-12	12	210	315	10	11,8	MK2 B	3
F6134-16	16	230	335	10	15,8	MK2 B	3
F6134-20	20	250	377	10	19,8	MK3 B	3

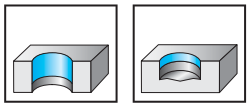
WALTER SELECT
●● Primary application
● Other application

D 1 B 686 B 691

HSS hand reamers
F1131



– Long chamfer



DIN 206

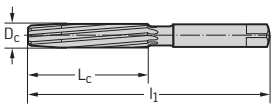


H7

	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

B 3

Parallel shank



Designation Uncoated	D_c mm	L_c mm	l_1 mm
F1131-1	1	13	34
F1131-1.1	1,1	15	36
F1131-1.2	1,2	17	38
F1131-1.3	1,3	17	38
F1131-1.4	1,4	20	41
F1131-1.5	1,5	20	41
F1131-1.6	1,6	21	44
F1131-1.7	1,7	21	44
F1131-1.8	1,8	23	47
F1131-1.9	1,9	23	47
F1131-2	2	25	50
F1131-2.1	2,1	25	50
F1131-2.2	2,2	27	54
F1131-2.3	2,3	27	54
F1131-2.4	2,4	29	58
F1131-2.5	2,5	29	58
F1131-2.6	2,6	29	58
F1131-2.7	2,7	31	62
F1131-2.8	2,8	31	62
F1131-2.9	2,9	31	62
F1131-3	3	31	62
F1131-3.1	3,1	33	66
F1131-3.2	3,2	33	66
F1131-3.3	3,3	33	66
F1131-3.4	3,4	35	71
F1131-3.5	3,5	35	71
F1131-3.6	3,6	35	71
F1131-3.7	3,7	35	71
F1131-3.8	3,8	38	76
F1131-3.9	3,9	38	76
F1131-4	4	38	76
F1131-4.1	4,1	38	76
F1131-4.2	4,2	38	76
F1131-4.3	4,3	41	81
F1131-4.4	4,4	41	81
F1131-4.5	4,5	41	81
F1131-4.6	4,6	41	81
F1131-4.7	4,7	41	81
F1131-4.8	4,8	44	87
F1131-4.9	4,9	44	87
F1131-5	5	44	87
F1131-5.1	5,1	44	87
F1131-5.2	5,2	44	87
F1131-5.3	5,3	44	87

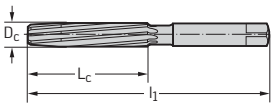
Continued

WALTER SELECT
●● Primary application
● Other application

D 1 B 691

Continued

Parallel shank



B 3

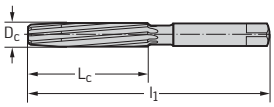
Designation Uncoated	D_c mm	L_c mm	l_1 mm
F1131-5.4	5,4	47	93
F1131-5.5	5,5	47	93
F1131-5.6	5,6	47	93
F1131-5.7	5,7	47	93
F1131-5.8	5,8	47	93
F1131-5.9	5,9	47	93
F1131-6	6	47	93
F1131-6.1	6,1	50	100
F1131-6.2	6,2	50	100
F1131-6.3	6,3	50	100
F1131-6.4	6,4	50	100
F1131-6.5	6,5	50	100
F1131-6.6	6,6	50	100
F1131-6.7	6,7	50	100
F1131-6.8	6,8	54	107
F1131-6.9	6,9	54	107
F1131-7	7	54	107
F1131-7.1	7,1	54	107
F1131-7.2	7,2	54	107
F1131-7.3	7,3	54	107
F1131-7.4	7,4	54	107
F1131-7.5	7,5	54	107
F1131-7.6	7,6	58	115
F1131-7.7	7,7	58	115
F1131-7.8	7,8	58	115
F1131-7.9	7,9	58	115
F1131-8	8	58	115
F1131-8.1	8,1	58	115
F1131-8.2	8,2	58	115
F1131-8.3	8,3	58	115
F1131-8.4	8,4	58	115
F1131-8.5	8,5	58	115
F1131-8.6	8,6	62	124
F1131-8.7	8,7	62	124
F1131-8.8	8,8	62	124
F1131-8.9	8,9	62	124
F1131-9	9	62	124
F1131-9.1	9,1	62	124
F1131-9.2	9,2	62	124
F1131-9.3	9,3	62	124
F1131-9.4	9,4	62	124
F1131-9.5	9,5	62	124
F1131-9.6	9,6	66	133
F1131-9.7	9,7	66	133
F1131-9.8	9,8	66	133
F1131-9.9	9,9	66	133
F1131-10	10	66	133
F1131-10.5	10,5	66	133
F1131-11	11	71	142
F1131-11.5	11,5	71	142
F1131-12	12	76	152
F1131-12.5	12,5	76	152
F1131-13	13	76	152
F1131-13.5	13,5	81	163
F1131-14	14	81	163
F1131-14.5	14,5	81	163
F1131-15	15	81	163
F1131-15.5	15,5	87	175
F1131-16	16	87	175
F1131-16.5	16,5	87	175
F1131-17	17	87	175
F1131-17.5	17,5	93	188

Continued

D 1 B 691

Continued

Parallel shank



Designation Uncoated	D_c mm	L_c mm	l_1 mm
F1131-18	18	93	188
F1131-18.5	18,5	93	188
F1131-19	19	93	188
F1131-19.5	19,5	100	201
F1131-20	20	100	201
F1131-20.5	20,5	100	201
F1131-21	21	100	201
F1131-21.5	21,5	100	201
F1131-22	22	107	215
F1131-22.5	22,5	107	215
F1131-23	23	107	215
F1131-23.5	23,5	107	215
F1131-24	24	115	231
F1131-24.5	24,5	115	231
F1131-25	25	115	231
F1131-25.5	25,5	115	231
F1131-26	26	115	231
F1131-26.5	26,5	115	231
F1131-27	27	124	247
F1131-27.5	27,5	124	247
F1131-28	28	124	247
F1131-28.5	28,5	124	247
F1131-29	29	124	247
F1131-29.5	29,5	124	247
F1131-30	30	124	247
F1131-32	32	133	265

WALTER SELECT

●● Primary application

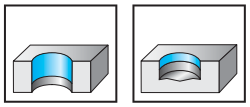
● Other application

D 1 B 691

HSS adjustable hand reamers
F1231



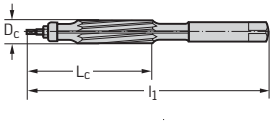
– Adjustment range: 0.01 × D_c



DIN 859 | H7

	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●●

B 3

	Designation Uncoated	D_c mm	L_c mm	l_1 mm
Parallel shank	F1231-8	8	42	115
	F1231-9	9	46	124
	F1231-10	10	50	133
	F1231-11	11	51	142
	F1231-12	12	56	152
	F1231-13	13	56	152
	F1231-14	14	61	163
	F1231-15	15	61	163
	F1231-16	16	67	175
	F1231-17	17	67	175
	F1231-18	18	68	188
	F1231-19	19	68	188
	F1231-20	20	75	201
	F1231-22	22	82	215
	F1231-24	24	85	231
	F1231-25	25	85	231
	F1231-26	26	85	231
	F1231-28	28	94	247
	F1231-30	30	94	247

D 1 B 691

Cutting data for reaming tools

B 3

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart on page B 690

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Standard			Walter							
				Designation			F2482				F2482TMS			
				Form			–				–			
				Type			**Straight-fluted**				**Straight-fluted**			
				Dia. range (mm)			3,97–20,00				3,97–20,00			
				Cutting tool material			K10F				K10F			
				Coating			Uncoated				TMS			
				Page			B 662				B 662			
				Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	v_c	VRR			v_c	VRR		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	45	8	**O E**		190	20	**O E**	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	40	8	**O E**		175	20	**O E**	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	40	8	**O E**		170	20	**O E**	
		C > 0.55%	Annealed	190	640	P4	40	8	**O E**		175	20	**O E**	
		C > 0.55%	Heat-treated	300	1010	P5	30	8	**O E**		130	20	**O E**	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	45	8	**O E**		190	20	**O E**	
	Low-alloyed steel	Annealed		175	590	P7	40	8	**O E**		175	20	**O E**	
		Heat-treated		285	960	P8	30	8	**O E**		130	20	**O E**	
		Heat-treated		380	1280	P9	20	8	**O E**		80	20	**O E**	
		Heat-treated		430	1480	P10	10	8	**O E**		50	20	**O E**	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	25	8	**O E**		110	20	**O E**	
		Hardened and tempered		300	1010	P12	20	8	**O E**		95	20	**O E**	
		Hardened and tempered		380	1280	P13	15	8	**O E**		65	20	**O E**	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	25	8	**O E**		110	20	**O E**	
		Martensitic, heat-treated		330	1110	P15	20	8	**O E**		80	20	**O E**	
M	Stainless steel	Austenitic, quench hardened		200	680	M1								
		Austenitic, precipitation hardened (PH)		300	1010	M2								
		Austenitic/ferritic, duplex		230	780	M3								
K	Malleable cast iron	Ferritic		200	400	K1	35	8	**O E**		120	20	**O E**	
		Pearlitic		260	700	K2	30	8	**O E**		95	20	**O E**	
	Grey cast iron	Low tensile strength		180	200	K3	45	8	**O E**		145	20	**O E**	
		High tensile strength/austenitic		245	350	K4	35	8	**O E**		120	20	**O E**	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	35	8	**O E**		120	20	**O E**	
		Pearlitic		265	700	K6	30	8	**O E**		95	20	**O E**	
	GGV (CGI)			230	400	K7	35	8	**O E**		110	20	**O E**	
N	Wrought aluminium alloys	Not hardenable		30	–	N1	115	8	**O E**					
		Hardenable, hardened		100	340	N2	115	8	**O E**					
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	90	8	**O E**					
		≤ 12% Si, hardenable, hardened		90	310	N4	80	8	**O E**					
		> 12% Si, not hardenable		130	450	N5	65	8	**O E**					
	Magnesium-based alloys			70	250	N6	80	8	**O**					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	80	8	**O E**					
		Brass, bronze, red brass		90	310	N8	65	8	**O E**					
		Cu-alloys, short-chipping		110	380	N9	70	8	**O E**					
		High-tensile, Ampco		300	1010	N10	20	8	**O E**					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1								
			Hardened	280	940	S2								
		Ni or Co base	Annealed	250	840	S3								
			Hardened	350	1180	S4								
			Cast	320	1080	S5								
	Titanium alloys	Pure titanium		200	680	S6								
		α and β alloys, hardened		375	1260	S7								
		β alloys		410	1400	S8								
	Tungsten alloys			300	1010	S9								
	Molybdenum alloys			300	1010	S10								
H	Hardened steel	Hardened and tempered		50 HRC	–	H1								
		Hardened and tempered		55 HRC	–	H2								
		Hardened and tempered		60 HRC	–	H3								
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4								
O	Thermoplastics	Without abrasive fillers				O1	40	8	**E**					
	Thermosetting plastics	Without abrasive fillers				O2	40	8	**E**					
	Plastic, glass fibre reinforced	GFRP				O3	30	8	**E**					
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6								

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

B 3

	Walter																							
	F2481				F2481TMS				F2162				F2171				F4162				F4171			
	–				–				A / C				B / D				A				B			
	Left-hand helix				**Left-hand helix**				**Straight-fluted**				**Left-hand helix**				**Straight-fluted**				**Left-hand helix**			
	3,97–20,00				3,97–20,00				4,00–20,00				2,00–20,00				5,00–32,00				5,00–20,00			
	K10F				K10F				K10				K10				K10				K10			
	Uncoated				TMS				Uncoated				Uncoated				Uncoated				Uncoated			
	B 660				B 660				B 665				B 664				B 667				B 666			
																								
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	45	8	**O E**		190	20	**O E**		24	8	**E O**		24	8	**E O**		24	8	**E O**		24	8	**E O**	
	40	8	**O E**		175	20	**O E**		22	8	**E O**		22	8	**E O**		22	8	**E O**		22	8	**E O**	
	40	8	**O E**		170	20	**O E**		21	8	**E O**		21	8	**E O**		21	8	**E O**		21	8	**E O**	
	40	8	**O E**		175	20	**O E**		22	8	**E O**		22	8	**E O**		22	8	**E O**		22	8	**E O**	
	30	8	**O E**		130	20	**O E**		16	8	**E O**		16	8	**E O**		16	8	**E O**		16	8	**E O**	
	45	8	**O E**		190	20	**O E**		24	8	**E O**		24	8	**E O**		24	8	**E O**		24	8	**E O**	
	40	8	**O E**		175	20	**O E**		22	8	**E O**		22	8	**E O**		22	8	**E O**		22	8	**E O**	
	30	8	**O E**		130	20	**O E**		16	8	**E O**		16	8	**E O**		16	8	**E O**		16	8	**E O**	
	20	8	**O E**		80	20	**O E**		10	8	**O E**		10	8	**O E**		10	8	**O E**		10	8	**O E**	
	10	8	**O E**		50	20	**O E**		6	8	**O E**		6	8	**O E**		6	8	**O E**		6	8	**O E**	
	25	8	**O E**		110	20	**O E**		14	8	**E O**		14	8	**E O**		14	8	**E O**		14	8	**E O**	
	20	8	**O E**		95	20	**O E**		12	8	**E O**		12	8	**E O**		12	8	**E O**		12	8	**E O**	
	15	8	**O E**		65	20	**O E**		8	8	**O E**		8	8	**O E**		8	8	**O E**		8	8	**O E**	
	25	8	**O E**		110	20	**O E**		14	8	**E O**		14	8	**E O**		14	8	**E O**		14	8	**E O**	
	20	8	**O E**		80	20	**O E**		10	8	**E O**		10	8	**E O**		10	8	**E O**		10	8	**E O**	
									8	8			8	8			8	8			8	8		
									12	8			12	8			12	8			12	8		
									6	8			6	8			6	8			6	8		
	35	8	**O E**		120	20	**O E**		20	8	**E O**		20	8	**E O**		20	8	**E O**		20	8	**E O**	
	30	8	**O E**		95	20	**O E**		16	8	**E O**		16	8	**E O**		16	8	**E O**		16	8	**E O**	
	45	8	**O E**		145	20	**O E**		24	8	**E O**		24	8	**E O**		24	8	**E O**		24	8	**E O**	
	35	8	**O E**		120	20	**O E**		20	8	**E O**		20	8	**E O**		20	8	**E O**		20	8	**E O**	
	35	8	**O E**		120	20	**O E**		20	8	**E O**		20	8	**E O**		20	8	**E O**		20	8	**E O**	
	30	8	**O E**		95	20	**O E**		16	8	**E O**		16	8	**E O**		16	8	**E O**		16	8	**E O**	
	35	8	**O E**		110	20	**O E**		18	8	**E O**		18	8	**E O**		18	8	**E O**		18	8	**E O**	
	115	8	**O E**						63	10	**E O**		63	10	**E O**		63	10	**E O**		63	10	**E O**	
	115	8	**O E**						63	10	**E O**		63	10	**E O**		63	10	**E O**		63	10	**E O**	
	90	8	**O E**						50	10	**E O**		50	10	**E O**		50	10	**E O**		50	10	**E O**	
	80	8	**O E**						45	10	**E O**		45	10	**E O**		45	10	**E O**		45	10	**E O**	
	65	8	**O E**						36	10	**E O**		36	10	**E O**		36	10	**E O**		36	10	**E O**	
	80	8	**O**						45	10	**O**		45	10	**O**		45	10	**O**		45	10	**O**	
	80	8	**O E**						45	10	**E O**		45	10	**E O**		45	10	**E O**		45	10	**E O**	
	65	8	**O E**						36	10	**E O**		36	10	**E O**		36	10	**E O**		36	10	**E O**	
	70	8	**O E**						40	10	**E O**		40	10	**E O**		40	10	**E O**		40	10	**E O**	
	20	8	**O E**						12	10	**E O**		12	10	**E O**		12	10	**E O**		12	10	**E O**	
									12	8	**E O**		12	8	**E O**		12	8	**E O**		12	8	**E O**	
									10	8	**E O**		10	8	**E O**		10	8	**E O**		10	8	**E O**	
									10	8	**E O**		10	8	**E O**		10	8	**E O**		10	8	**E O**	
									6	8	**E O**		6	8	**E O**		6	8	**E O**		6	8	**E O**	
									6	8	**E O**		6	8	**E O**		6	8	**E O**		6	8	**E O**	
									10	8	**E O**		10	8	**E O**		10	8	**E O**		10	8	**E O**	
									8	8	**E O**		8	8	**E O**		8	8	**E O**		8	8	**E O**	
									6	8	**E O**		6	8	**E O**		6	8	**E O**		6	8	**E O**	
									12	8	**E O**		12	8	**E O**		12	8	**E O**		12	8	**E O**	
									12	8	**E O**		12	8	**E O**		12	8	**E O**		12	8	**E O**	
	40	8	**E**						22	8	**E**		22	8	**E**		22	8	**E**		22	8	**E**	
	40	8	**E**						22	8		**L**	22	8		**L**	22	8		**L**	22	8		**L**
	30	8	**E**						16	8		**L**	16	8		**L**	16	8		**L**	16	8		**L**

Cutting data for reaming tools

B 3

= Wet machining (E = emulsion, O = oil)

= Dry machining is possible (M = MQL, L = dry)
The cutting data must be selected from Walter GPS

v_c = Cutting speed
VRR = Feed rating chart on page B 690

* The classification of the machining groups can be found in the material group comparison table

Material group	Overview of the main material groups and code letters			Standard			DIN 212				
				Designation			F1342				
				Form			A / C				
				Type			Straight-fluted				
				Dia. range (mm)			1,00–20,00				
				Cutting tool material			HSS-E				
				Coating			Uncoated				
				Page			B 668				
				Brinell hardness HB	Tensile strength R_m N/mm²	Machining group *	v_c	VRR			
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	14	8	E O		
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	14	8	E O		
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	13	8	E O		
		C > 0.55%	Annealed	190	640	P4	14	8	E O		
		C > 0.55%	Heat-treated	300	1010	P5					
		Free cutting steel (short-chipping)	Annealed	220	750	P6	14	8	E O		
	Low-alloyed steel	Annealed		175	590	P7	14	8	E O		
		Heat-treated		285	960	P8	10	8	E O		
		Heat-treated		380	1280	P9					
		Heat-treated		430	1480	P10					
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	4	8	E O		
		Hardened and tempered		300	1010	P12					
		Hardened and tempered		380	1280	P13					
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	4	8	E O		
		Martensitic, heat-treated		330	1110	P15					
M	Stainless steel	Austenitic, quench hardened		200	680	M1					
		Austenitic, precipitation hardened (PH)		300	1010	M2					
		Austenitic/ferritic, duplex		230	780	M3					
K	Malleable cast iron	Ferritic		200	400	K1	11	8	E O		
		Pearlitic		260	700	K2	8	8	E O		
	Grey cast iron	Low tensile strength		180	200	K3	13	8	E O		
		High tensile strength/austenitic		245	350	K4	11	8	E O		
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	11	8	E O		
		Pearlitic		265	700	K6	8	8	E O		
	GGV (CGI)			230	400	K7	10	8	E O		
N	Wrought aluminium alloys	Not hardenable		30	–	N1	28	10	E O		
		Hardenable, hardened		100	340	N2	28	10	E O		
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	18	10	E O		
		≤ 12% Si, hardenable, hardened		90	310	N4	13	10	E O		
		> 12% Si, not hardenable		130	450	N5					
	Magnesium-based alloys			70	250	N6	13	10	O		
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	21	10	E O		
		Brass, bronze, red brass		90	310	N8	17	10	E O		
		Cu-alloys, short-chipping		110	380	N9	30	10	E O		
		High-tensile, Ampco		300	1010	N10					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1					
			Hardened	280	940	S2					
		Ni or Co base	Annealed	250	840	S3					
			Hardened	350	1180	S4					
			Cast	320	1080	S5					
	Titanium alloys	Pure titanium		200	680	S6					
		α and β alloys, hardened		375	1260	S7					
		β alloys		410	1400	S8					
	Tungsten alloys			300	1010	S9					
	Molybdenum alloys			300	1010	S10					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1					
		Hardened and tempered		55 HRC	–	H2					
		Hardened and tempered		60 HRC	–	H3					
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4					
O	Thermoplastics	Without abrasive fillers				O1	18	8	E		
	Thermosetting plastics	Without abrasive fillers				O2	11	8		L	
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6					

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	DIN 212				DIN 208				DIN 208				DIN 219				DIN 2179				DIN 2180			
	F1352 F1352HUN				F4142				F4152				F7133				F3234				F6134			
	B / D				A				B				B				–				–			
	Left-hand helix				**Straight-fluted**				**Left-hand helix**				**Left-hand helix**				**Taper 1:50**				**Taper 1:50**			
	0,90–20,00				5,00–32,00				5,00–40,00				25,00–60,00				1,00–12,00				5,00–20,00			
	HSS-E				HSS-E				HSS-E				HSS				HSS-E				HSS-E			
	Uncoated				Uncoated				Uncoated				Uncoated				Uncoated				Uncoated			
	B 671; B 675				B 676				B 677				B 678				B 679				B 680			
																								
	v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR			v_c	VRR		
	14	8	**E O**		14	8	**E O**		14	8	**E O**		14	8	**E O**		8	8	**E O**		8	8	**E O**	
	14	8	**E O**		14	8	**E O**		14	8	**E O**		14	8	**E O**		8	8	**E O**		8	8	**E O**	
	13	8	**E O**		13	8	**E O**		13	8	**E O**		13	8	**E O**		8	8	**E O**		8	8	**E O**	
	14	8	**E O**		14	8	**E O**		14	8	**E O**		14	8	**E O**		8	8	**E O**		8	8	**E O**	
	14	8	**E O**		14	8	**E O**		14	8	**E O**		14	8	**E O**		8	8	**E O**		8	8	**E O**	
	14	8	**E O**		14	8	**E O**		14	8	**E O**		14	8	**E O**		8	8	**E O**		8	8	**E O**	
	10	8	**E O**		10	8	**E O**		10	8	**E O**		10	8	**E O**		5	8	**E O**		5	8	**E O**	
	4	8	**E O**		4	8	**E O**		4	8	**E O**		4	8	**E O**		2	8	**E O**		2	8	**E O**	
	4	8	**E O**		4	8	**E O**		4	8	**E O**		4	8	**E O**		2	8	**E O**		2	8	**E O**	
	11	8	**E O**		11	8	**E O**		11	8	**E O**		11	8	**E O**		6	8	**E O**		6	8	**E O**	
	8	8	**E O**		8	8	**E O**		8	8	**E O**		8	8	**E O**		5	8	**E O**		5	8	**E O**	
	13	8	**E O**		13	8	**E O**		13	8	**E O**		13	8	**E O**		8	8	**E O**		8	8	**E O**	
	11	8	**E O**		11	8	**E O**		11	8	**E O**		11	8	**E O**		6	8	**E O**		6	8	**E O**	
	11	8	**E O**		11	8	**E O**		11	8	**E O**		11	8	**E O**		6	8	**E O**		6	8	**E O**	
	8	8	**E O**		8	8	**E O**		8	8	**E O**		8	8	**E O**		5	8	**E O**		5	8	**E O**	
	10	8	**E O**		10	8	**E O**		10	8	**E O**		10	8	**E O**		5	8	**E O**		5	8	**E O**	
	28	10	**E O**		28	10	**E O**		28	10	**E O**		28	10	**E O**		16	10	**E O**		16	10	**E O**	
	28	10	**E O**		28	10	**E O**		28	10	**E O**		28	10	**E O**		16	10	**E O**		16	10	**E O**	
	18	10	**E O**		18	10	**E O**		18	10	**E O**		18	10	**E O**		11	10	**E O**		11	10	**E O**	
	13	10	**E O**		13	10	**E O**		13	10	**E O**		13	10	**E O**		8	10	**E O**		8	10	**E O**	
	13	10	**O**		13	10	**O**		13	10	**O**		13	10	**O**		8	10	**O**		8	10	**O**	
	21	10	**E O**		21	10	**E O**		21	10	**E O**		21	10	**E O**		12	10	**E O**		12	10	**E O**	
	17	10	**E O**		17	10	**E O**		17	10	**E O**		17	10	**E O**		10	10	**E O**		10	10	**E O**	
	30	10	**E O**		30	10	**E O**		30	10	**E O**		30	10	**E O**		17	10	**E O**		17	10	**E O**	
	18	8	**E**		18	8	**E**		18	8	**E**		18	8	**E**		10	8	**E**		10	8	**E**	
	11	8		**L**	11	8		**L**	11	8		**L**	11	8		**L**	6	8		**L**	6	8		**L**

VRR: Feed rate charts for solid carbide and HSS reaming tools

	Feed f [mm] for diameter [mm]															
VRR	1	1,2	1,5	2	2,5	4	5	6	8	10	12	15	20	25	40	50
6	0,04	0,04	0,04	0,05	0,06	0,08	0,09	0,10	0,12	0,14	0,15	0,17	0,21	0,23	0,31	0,35
8	0,05	0,05	0,06	0,07	0,08	0,11	0,12	0,14	0,16	0,18	0,20	0,23	0,27	0,31	0,41	0,47
10	0,06	0,07	0,07	0,09	0,10	0,13	0,15	0,17	0,20	0,23	0,25	0,29	0,34	0,39	0,51	0,59
12	0,07	0,08	0,09	0,11	0,12	0,16	0,18	0,20	0,24	0,27	0,30	0,35	0,41	0,47	0,62	0,70
20						0,18	0,30	0,45	0,70	0,80	0,90	1,00	1,20	1,30		

B 3

Material removal from diameter (mm)			
Ø ≤ 5	5–12	12–16	16–20
0,1	0,1–0,2	0,2	0,2–0,3

Reaming tool tolerances in accordance with DIN 1420

Basic information for determining the manufacturing tolerances

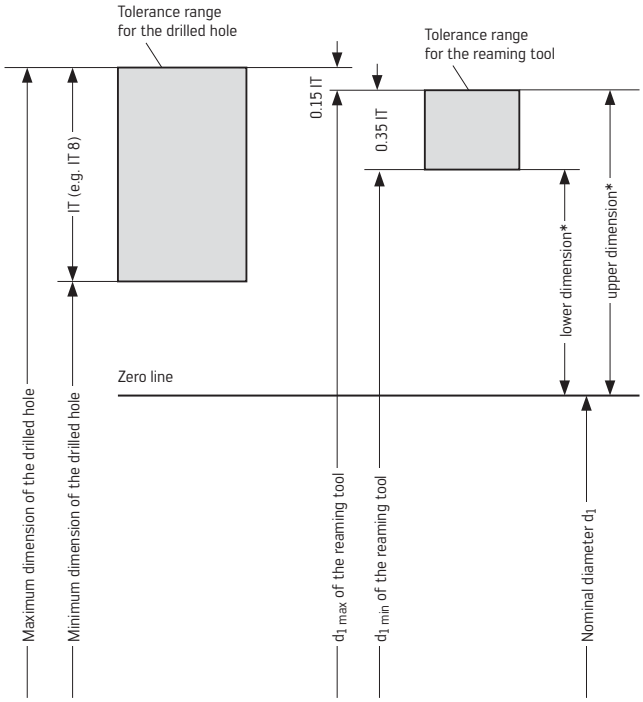
The manufacturing tolerances specified in the DIN 1420 standard are assigned to specific tolerance ranges for the holes to be reamed. In general, they ensure that the reamed hole is within the associated tolerance range and also ensure that the reaming tool can be used cost-effectively.

However, it is important to bear in mind that the size of the reamed hole depends not only on the manufacturing tolerance of the reaming tool, but also on other factors, e.g.:

– On the angles on the cutting edge
– On the chamfer of the reaming tool
– On the clamping of the workpiece
– On the tool adaptor
– On the condition of the machine tool
– On the lubrication and the material being reamed

There are therefore special cases in which other manufacturing tolerances are better suited. However, considering the importance of cost-effective manufacturing and inventory as well as of the interchangeability between reaming tools from different manufacturers, other manufacturing tolerances should only be used in well-founded special cases.

Determining the manufacturing tolerances for reaming tools



* in relation to the nominal diameter d_1 of the reaming tool

Determining the permitted maximum and minimum dimensions of reaming tools

The permitted maximum diameter $D_{c\ max}$ of the reaming tool is 15% below the corresponding hole tolerance (0.15 IT), the permitted maximum dimension for the drilled hole. For calculating this, the value 0.15 IT is rounded to the nearest whole or half µm value, in order to ensure round µm values for $D_{c\ max}$.

The permitted minimum diameter $D_{c\ min}$ of the reaming tool is 35% below the corresponding hole tolerance (0.35 IT), the permitted maximum reaming tool diameter $D_{c\ max}$.

Example: 20 H8 reaming tool

Nominal diameter D_c	= 20.000 mm
Upper dimension	= 20.033 mm
Tolerance of the drilled hole (IT 8)	= 0.033 mm
15% of the hole tolerance (0.15 IT 8)	= 0.0049 mm
	≈ 0.005 mm

Maximum dimension of the reaming tool:

$D_{c\ max}$ = 20.033 – 0.005 = **20.028 mm**

Manufacturing tolerance of the reaming tool:

33% of the hole tolerance (0.35 IT 8)	= 0.0115 mm
	≈ 0.012 mm

Minimum dimension of the reaming tool:

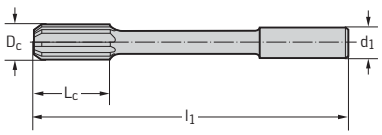
$D_{c\ min} = D_{c\ max}$ – 0.35 IT 8

= 20.028 – 0.012 = **20.016 mm**

Dimensions for HSS reamers

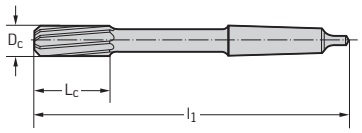
Reamers with parallel shank

Walter Designation	F11 . .			F13 . .			F12 . .		
D_c mm	DIN 206			DIN 212			DIN 859		
above – to	l_1	L_c	d_1 e_9	l_1	L_c	d_1 h_9	l_1	L_c	d_1 e_9
0,75–1,06	34	13	$D_c = d_1$	34	5,5				$D_c = d_1$
1,06–1,18	36	15	$D_c = d_1$	36	6,5				$D_c = d_1$
1,18–1,32	38	17	$D_c = d_1$	38	7,5				$D_c = d_1$
1,32–1,50	41	20	$D_c = d_1$	40	8				$D_c = d_1$
1,50–1,70	44	21	$D_c = d_1$	43	9				$D_c = d_1$
1,70–1,90	47	23	$D_c = d_1$	46	10				$D_c = d_1$
1,90–2,12	50	25	$D_c = d_1$	49	11				$D_c = d_1$
2,12–2,36	54	27	$D_c = d_1$	53	12				$D_c = d_1$
2,36–2,65	58	29	$D_c = d_1$	57	14				$D_c = d_1$
2,65–3,00	62	31	$D_c = d_1$	61	15				$D_c = d_1$
3,00–3,35	66	33	$D_c = d_1$	65	16				$D_c = d_1$
3,35–3,75	71	35	$D_c = d_1$	70	18				$D_c = d_1$
3,75–4,25	76	38	$D_c = d_1$	75	19	4	76	38	$D_c = d_1$
4,25–4,75	81	41	$D_c = d_1$	80	21	4,5	81	41	$D_c = d_1$
4,75–5,30	87	44	$D_c = d_1$	86	23	5	87	44	$D_c = d_1$
5,30–6,00	93	47	$D_c = d_1$	93	26	5,6	93	47	$D_c = d_1$
6,00–6,70	100	50	$D_c = d_1$	101	28	6,3	100	50	$D_c = d_1$
6,70–7,50	107	54	$D_c = d_1$	109	31	7,1	107	54	$D_c = d_1$
7,50–8,50	115	58	$D_c = d_1$	117	33	8	115	58	$D_c = d_1$
8,50–9,50	124	62	$D_c = d_1$	125	36	9	124	62	$D_c = d_1$
9,50–10,60	133	66	$D_c = d_1$	133	38	10	133	66	$D_c = d_1$
10,60–11,80	142	71	$D_c = d_1$	142	41	10	142	71	$D_c = d_1$
11,80–13,20	152	76	$D_c = d_1$	151	44	10	152	76	$D_c = d_1$
13,20–14,00	163	81	$D_c = d_1$	160	47	12,5	163	81	$D_c = d_1$
14,00–15,00	163	81	$D_c = d_1$	162	50	12,5	163	81	$D_c = d_1$
15,00–16,00	175	87	$D_c = d_1$	170	52	12,5	175	87	$D_c = d_1$
16,00–17,00	175	87	$D_c = d_1$	175	54	14	175	87	$D_c = d_1$
17,00–18,00	188	93	$D_c = d_1$	182	56	14	188	93	$D_c = d_1$
18,00–19,00	188	93	$D_c = d_1$	189	58	16	188	93	$D_c = d_1$
19,00–21,20	201	100	$D_c = d_1$	195	60	16	201	100	$D_c = d_1$
21,20–23,60	215	107	$D_c = d_1$				215	107	$D_c = d_1$
23,60–26,50	231	115	$D_c = d_1$				231	115	$D_c = d_1$
26,50–30,00	247	124	$D_c = d_1$				247	124	$D_c = d_1$
30,00–33,50	265	133	$D_c = d_1$				265	133	$D_c = d_1$
33,50–37,50	284	142	$D_c = d_1$				284	142	$D_c = d_1$
37,50–42,50	305	152	$D_c = d_1$				305	152	$D_c = d_1$
42,50–47,50	326	163	$D_c = d_1$				326	163	$D_c = d_1$
47,50–53,00	347	174	$D_c = d_1$				347	174	$D_c = d_1$
53,00–60,00	367	184	$D_c = d_1$				367	181	$D_c = d_1$
60,00–67,00	387	194	$D_c = d_1$				387	194	$D_c = d_1$
67,00–75,00	406	203	$D_c = d_1$				406	203	$D_c = d_1$



Reamers with Morse taper

Walter Designation	F41 . .			F45 . .		
D_c mm	DIN 208			DIN 311		
above – to	l_1	L_c	Morse taper	l_1	L_c	Morse taper
4,75–5,30	133	23	1			
5,30–6,00	138	26	1			
6,00–6,70	144	28	1	151	75	1
6,70–7,50	150	31	1	156	80	1
7,50–8,50	156	33	1	161	85	1
8,50–9,50	162	36	1	166	90	1
9,50–10,60	168	38	1	171	95	1
10,60–11,80	175	41	1	176	100	1
11,80–13,20	182	44	1	199	105	2
13,20–14,00	189	47	1	209	115	2
14,00–15,00	204	50	2	219	125	2
15,00–16,00	210	52	2	229	135	2
16,00–17,00	214	54	2	251	135	3
17,00–18,00	219	56	2	261	145	3
18,00–19,00	223	58	2	261	145	3
19,00–20,00	228	60	2	271	155	3
20,00–21,20	232	62	2	271	155	3
21,20–22,40	237	64	2	281	165	3
22,40–23,60	241	66	2	281	165	3
23,60–25,00	268	68	3	296	180	3
25,00–26,50	273	70	3	296	180	3
26,50–28,00	277	71	3	311	195	3
28,00–30,00	281	73	3	311	195	3
30,00–31,50	285	75	3	326	210	3
31,50–33,50	317	77	4	354	210	4
33,50–35,50	321	78	4	364	220	4
35,50–37,50	325	79	4	364	220	4
37,50–40,00	329	81	4	374	230	4
40,00–42,50	333	82	4	374	230	4
42,50–45,00	336	83	4	384	240	4
45,00–47,50	340	84	4	384	240	4
47,50–50,00	344	86	4	394	250	4




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		Page
Solid drilling	Calculation formulae	B 696
	Shanks and tool adaptors	B 697
Counterboring and precision boring	Calculation formulae	B 701
Assembly parts and accessories	Hand tools, screws, torques	B 702
Drilling as a whole	Cutting forces of Walter machining groups	B 1173
	Material comparison table	B 1174
	Hardness comparison table	B 1196
	ISO tolerances	B 1197

Solid drilling calculation formulae

Speed

$$n = \frac{v_c \times 1000}{D_c \times \pi} \quad [rpm]$$

Cutting speed

$$v_c = \frac{D_c \times \pi \times n}{1000} \quad [m/min]$$

Feed rate

$$v_f = f \times n \quad [mm/min]$$

Metal removal rate (solid drilling)

$$Q = \frac{v_f \times \pi \times D_c^2}{4 \times 1000} \quad [cm^3/min]$$

Power requirement

$$P_{mot} = \frac{Q \times k_c}{60000 \times \eta} \quad [kW]$$

Torque

$$M_c = \frac{D_c^2 \times k_c \times f}{8000} = \frac{P_c \times 9500}{n} \quad [Nm]$$

Feed force

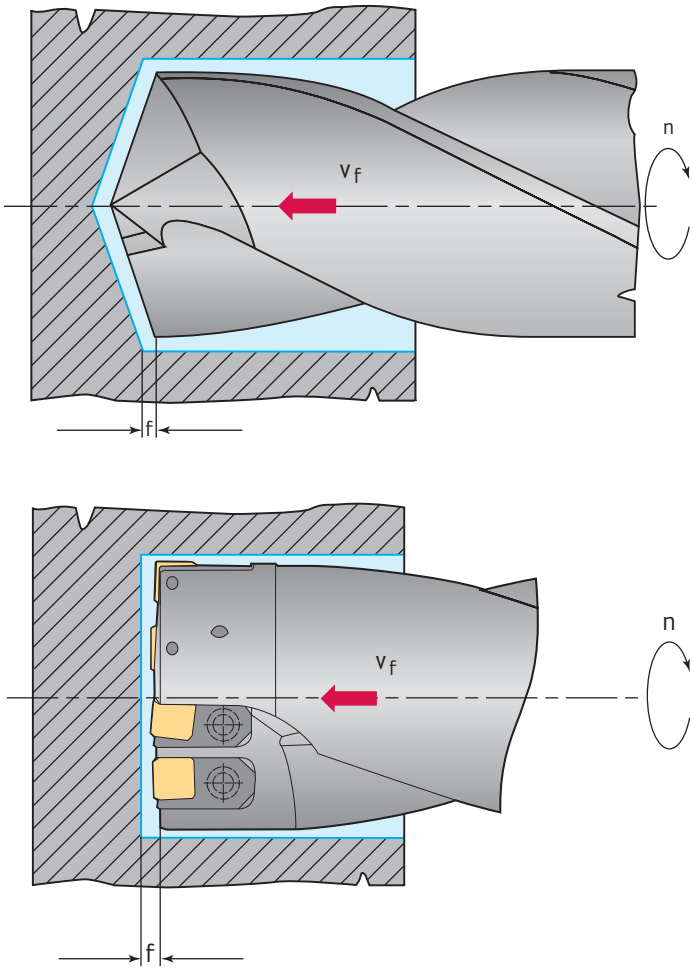
$$F_f = 0{,}63 \times \frac{f \times D_c \times k_c}{2} \quad [N]$$

Specific cutting force

$$k_c = \frac{k_{c1.1}}{h^{m_c}}$$

Chip thickness

$$h = f_z \times \sin\kappa \quad [mm]$$



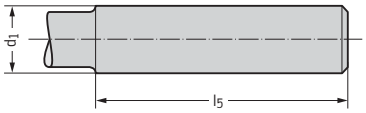
n	Speed	rpm
D_c	Cutting diameter	mm
v_c	Cutting speed	m/min
v_f	Feed rate	mm/min
f_z	Feed per tooth	mm
f	Feed per revolution	mm
A	Chip cross section	mm^2
Q	Metal removal rate	cm^3/min
P_{mot}	Drive power	kW
M_c	Torque	Nm
F_f	Feed force	N
h	Chip thickness	mm
k_c	Specific cutting force	N/mm^2
η	Machine efficiency (0.7-0.95)	
κ	Lead angle	°
$k_c1.1$*	Specific cutting force for 1 mm^2 chip cross section with h = 1 mm	N/mm^2
m_c*	increase in the k_c curve	

* for m_c and $k_{c\,1.1}$, see table on page B 1173

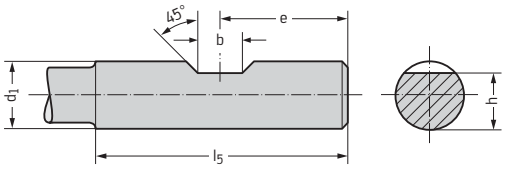
Shanks and tool adaption

Parallel shank DIN 1835 A / DIN 1835 B

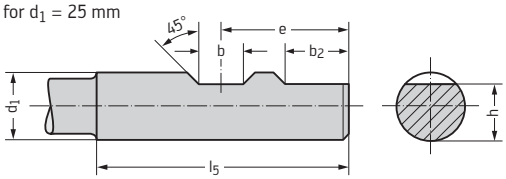
Form A
for d_1 = 3-20 mm



Form B
for d_1 = 3-20 mm



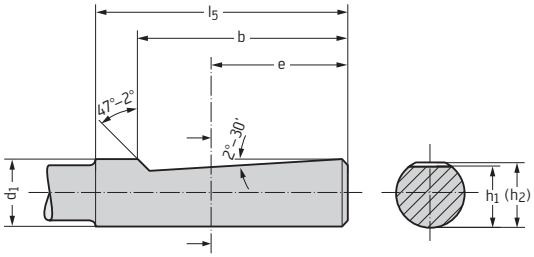
Form B
for d_1 = 25 mm



d_1 h6 mm	l_5 +2 mm	b +0,05 mm	e −1 mm	b_2 +1 mm	h h13 mm
3	28	–	–	–	–
4	28	–	–	–	–
5	28	–	–	–	–
6	36	4,2	18	–	4,8
8	36	5,5	18	–	6,6
10	40	7	20	–	8,4
12	45	8	22,5	–	10,4
16	48	10	24	–	14,2
20	50	11	25	–	18,2
25	56	12	32	17	23,0
32	60	14	36	19	30,0
40	70	14	40	19	38,0
50	80	18	45	23	47,8

Parallel shank DIN 1835 E

Form E



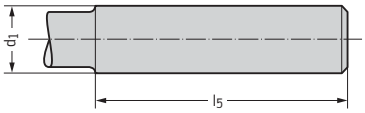
d_1 h6 mm	l_5 +2 mm	b −1 mm	e mm	h_1 mm	(h_2) h13 mm
6	36	25	18	5,4	4,8
8	36	25	18	7,2	6,6
10	40	28	20	9,1	8,4
12	45	33	22,5	11,2	10,4
16	48	36	24	15,0	14,2
20	50	38	25	19,1	18,2
25	56	44	32	24,1	23,0
32	60	48	35	31,2	30,0

Shanks and tool adaption

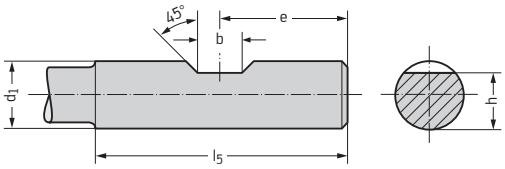
(continued)

Parallel shank DIN 6535 HA / DIN 6535 HB

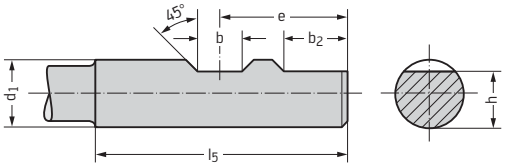
Form HA
for d_1 = 6-20 mm



Form HB
for d_1 = 6-20 mm



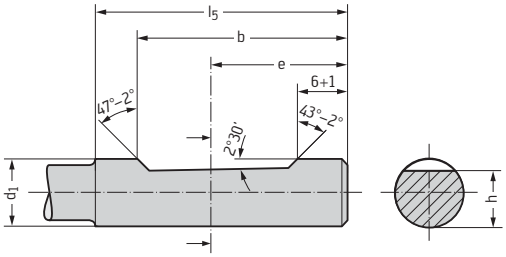
Form HB
for d_1 = 25 mm



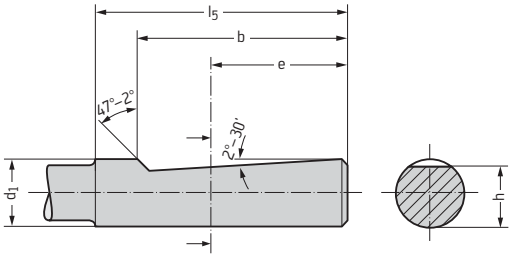
d_1 h6 mm	l_5 +2 mm	b +0,05 mm	e –1 mm	b_2 +1 mm	h h11 mm
6	36	4,2	18	–	5,1
8	36	5,5	18	–	6,9
10	40	7	20	–	8,5
12	45	8	22,5	–	10,4
14	45	8	22,5	–	12,7
16	48	10	24	–	14,2
18	48	10	24	–	16,2
20	50	11	25	–	18,2
25	56	12	32	17	23,0

Parallel shank DIN 6535 HE

for d_1 = 6-20 mm

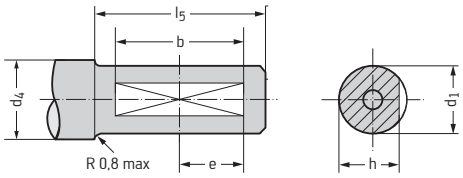


for d_1 = 25 mm



d_1 h6 mm	l_5 +2 mm	b –1 mm	e mm	h mm
6	36	25	18	5,1
8	36	25	18	6,9
10	40	28	20	8,5
12	45	33	22,5	10,4
14	45	33	22,5	12,7
16	48	36	24	14,2
18	48	36	24	16,2
20	50	38	25	18,2
25	56	44	32	23,0

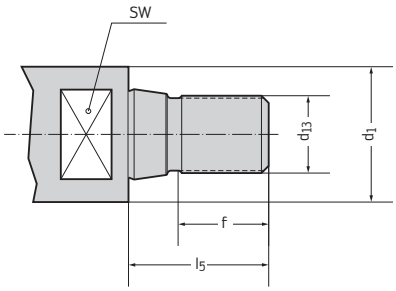
Parallel shank
ISO 9766:1990 (E)



d_1 h6 mm	d_4 min. mm	h h13 mm	l_5 ±1 mm	e mm	b mm
20	25	18,2	50	14,5	29
25	31	23	56	17,5	35
32	38	30	60	19,5	39

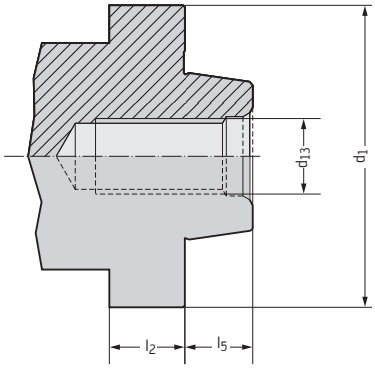
B 4

Tool adaption
ScrewFit



Type	d_1 mm	d_{13}	l_5 mm	f mm	SW mm
T09	9,7	M5	14	6	8
T14	14,5	M8	18	10	12
T18	18,5	M10	21	12	14
T22	22	M12	23	14	17
T28	28	M16	29	18	21
T36	36	M20	35	20	30
T45	45	M20	35	20	36

Tool adaption
NCT

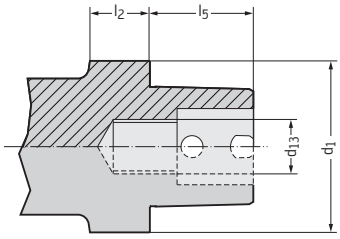


Type	d_1 mm	d_{13}	l_5 mm	l_2 mm
25	24,85	M8	6,975	14
32	31,85	M8	6,975	14
40	39,85	M12	11,975	16
50	49,85	M12	11,975	16
63	62,85	M16	15,975	16
80	79,85	M20	17,975	18

Shanks and tool adaption

(continued)

Tool adaption
Walter Capto™ ISO 26623



Type	d_1 mm	l_2 mm	l_5 mm	d_{13}
Walter Capto™ C3	32	15	19	M12 × 1,5
Walter Capto™ C4	40	20	24	M14 × 1,5
Walter Capto™ C5	50	20	30	M16 × 1,5
Walter Capto™ C6	63	22	38	M20 × 2
Walter Capto™ C8	80	30	48	M20 × 2

B 4

Calculation formulae for counterboring

Speed

$$n = \frac{v_c \times 1000}{D_c \times \pi} \quad [rpm]$$

Cutting speed

$$v_c = \frac{D_c \times \pi \times n}{1000} \quad [m/min]$$

Feed per revolution

$$f = f_z \times z \quad [mm]$$

Feed rate

$$v_f = f \times n \quad [mm/min]$$

Metal removal rate (solid drilling)

$$Q = \frac{v_f \times \pi \times \left(D_c^2 - D_p^2\right)}{4 \times 1000} \quad [cm^3/min]$$

Power requirement

$$P_c = \frac{Q \times k_c}{6000} \quad [kW]$$

$$P_{mot} = \frac{P_c}{\eta} \quad [kW]$$

Torque

$$M_c = \frac{P_c \times 9500}{\eta} \quad [Nm]$$

Feed force

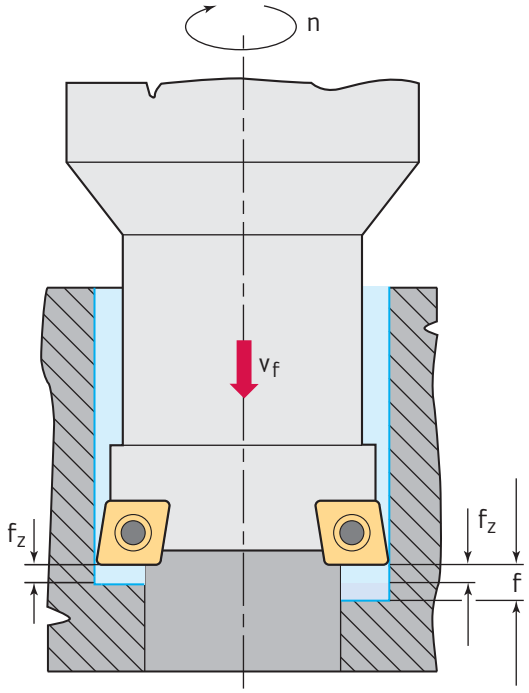
$$F_f = 0{,}63 \times \frac{f \times (D_c - D_p) \times k_c}{2} \quad [N]$$

Specific cutting force

$$k_c = \frac{k_{c1.1}}{h^{m_c}}$$

Chip thickness

$$h = f_z \times \sin\kappa \quad [mm]$$



n	Speed	rpm
D_c	Cutting diameter	mm
D_p	Start hole	mm
z	Number of teeth	
v_c	Cutting speed	m/min
v_f	Feed rate	mm/min
f_z	Feed per tooth	mm
f	Feed per revolution	mm
A	Chip cross section	mm^2
Q	Metal removal rate	cm^3/min
P_{mot}	Drive power	kW
P_c	Effective power	kW
M_c	Torque	Nm
F_f	Feed force	N
h	Chip thickness	mm
kc	Specific cutting force	N/mm^2
η	Machine efficiency (0.7-0.95)	
κ	Lead angle	°
$k_c1.1$*	Specific cutting force for 1 mm^2 chip cross section with h = 1 mm	N/mm^2
m_c*	Increase in the k_c curve	

*for m_c and $k_{c\,1.1}$, see table on page B 1173

Torque screwdriver with interchangeable blades

Torque screwdriver



Designation	Size	⬡	Scale range
FS2001	1	4	0,4–1,2 Nm
FS2003	3	4	1,5–5,0 Nm
FS2002	1	4	3.5–10.6 in lbs
FS2004	3	4	13.3-44 in lbs



Designation	Size	⬡	Scale range
FS2248		4	1,0–6,0 Nm

Interchangeable blades	Designation	Torx	⬡ ↕
 Torx interchangeable blades Blade length 175 mm	FS2005	6	4
	FS2006	7	
	FS2007	8	
	FS2008	10	
	FS2009	15	
	FS2010	20	
 Torx Plus interchangeable blades Blade length 175 mm	FS2085	6 IP	4
	FS2011	7 IP	
	FS2012	8 IP	
	FS2013	9 IP	
	FS2014	15 IP	
	FS2015	20 IP	
	FS2016	25 IP	
Complete blade set (FS2005–FS2016) Blade length 175 mm	FS2017		4

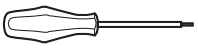
Torque T-handle



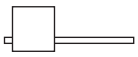
Designation	⬡	Scale range
FS2041	6	4,5–14 Nm
FS2042	6	40–123 in lbs

Interchangeable blades	Designation	Torx/SW	⬡ ↕
 Torx interchangeable blades Blade length 130 mm	FS2043	15	6
	FS2044	20	
	FS2045	25	
	FS2046	30	
 Torx Plus interchangeable blades Blade length 130 mm	FS2047	15 IP	6
	FS2048	20 IP	
	FS2049	25 IP	
	FS2109	30 IP	
 Hexagonal interchangeable blades Blade length 130 mm	FS2050	SW 3	6
	FS2051	SW 4	
	FS2052	SW 5	
Complete blade set (FS2043–FS2052) Blade length 130 mm	FS2053		6

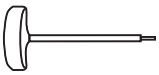
Screwdriver

Screwdriver types	Designation	Torx
 Screwdriver	FS1063	6
	FS2086	6 IP
	FS309	7
	FS2088	7 IP
	FS230	8
	FS1483	8 IP
	FS1128	9
	FS1484	9 IP
	FS229	15
	FS1485	15 IP
	FS228	20
	FS1486	20 IP
	FS2167	25
	FS1487	25 IP
	FS396	30
	FS2109	30 IP

IP = Torx Plus

Screwdriver types	Designation	Torx	WAF
 Torx key	FS2146	6 IP	–
	FS2087	6 IP	–
	FS325	7	–
	FS1490	7 IP	–
	FS257	8	–
	FS1466	9 IP	–
	FS1050	10	–
	FS255	15	–
	FS1465	15 IP	3,5
	FS1496	15 IP	4,0
	FS256	20	–
	FS1154	–	2,0
	FS1155	–	2,5

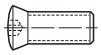
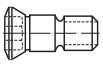
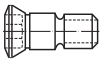
IP = Torx Plus

Screwdriver types	Designation	Torx
 Handle key, small	FS1047	15
	FS1048	20
	FS1049	25
 Handle key, large	FS1172	15
	FS1173	20
	FS1174	25
	FS1175	30

Allen key	Designation	Torx	WAF
	ISO 2936–1,3	–	1,3
	ISO 2936–1,5	–	1,5
	ISO 2936–2	–	2
	ISO 2936–2,5	–	2,5
	ISO 2936–3	–	3
	ISO 2936–4	–	4
	ISO 2936–5	–	5
	ISO 2936–6	–	6
	FS1464	20 IP	–
	FS1592	25 IP	–

IP = Torx Plus

Clamping screws for indexable inserts

Screw types	Designation	Dimensions	Torx	Tightening torque Nm
 Clamping screws with 43° head angle for indexable inserts with countersink	FS322	M2,5 × 5,7	7	0,8
	FS258	M3 × 5,7	8	1,5
	FS246	M3 × 7	8	1,5
	FS1163	M3,5 × 10	15	3,0
	FS320	M4 × 5	15	3,0
	FS318	M4 × 6	15	3,0
	FS245	M4 × 6,5	15	3,0
	FS321	M4 × 7	15	3,0
	FS319	M4 × 8	15	3,0
	FS244	M4 × 9	15	3,0
	FS749	M4 × 10,5	15	3,0
	FS326	M4 × 12	15	3,0
	FS1458	M4 × 12	15 IP	2,5
	FS954	M4,5 × 11	20	4,5
	FS260	M5 × 9,5	20	5,0
	FS243	M5 × 11	20	5,0
	FS242	M5 × 13	20	5,0
	FS1165	M5 × 12	20	6,0
	FS1010	M6 × 14	20	5,0
	FS1164	M6 × 15	25	10,0
 Fitting screws	FS925	M2,5 × 6,5	8	0,8
	FS397	M3 × 6,9	8	1,0
	FS2070	M3 × 6,5	8 IP	2,0
	FS922	M3,5 × 9,5	15	2,5
	FS390	M4 × 0,5 × 8,4	15	4,0
	FS2071	M4 × 8,4	15 IP	4,0
	FS1028	M4,5 × 12,8	20	4,0
	FS1153	M4,5 × 14	20	4,0
	FS391	M5 × 0,5 × 9,1	20	5,0
	FS392	M5 × 0,5 × 12,75	20	5,0
	FS393	M5 × 0,5 × 15,45	20	5,0
	FS2072	M5 × 9,55	20 IP	5,0
	FS2073	M5 × 0,5 × 12,75	20 IP	5,0
	FS2074	M5 × 15,45	20 IP	5,0
	FS2075	M6 × 20,35	20 IP	5,0
	FS394	M6 × 0,7 × 20,35	20	5,0
	FS395	M8 × 0,75 × 24,7	30	6,0
	FS2107	M8 × 24,7	30 IP	10,0
 Clamping screws for drill inserts	FS1396	M2,5 × 10,9	7 IP	1,2
	FS1397	M3 × 12,8	8 IP	2,0
	FS1398	M3 × 14,7	8 IP	2,0
	FS1399	M4 × 16,7	15 IP	4,0
	FS1400	M5 × 18,7	20 IP	5,0
	FS1401	M5 × 20,6	20 IP	5,0
	FS1402	M5 × 22,6	20 IP	5,0
	FS1403	M6 × 24,6	25 IP	5,5
	FS1404	M6 × 26,6	25 IP	5,5
	FS2159	M6 × 29,6	25 IP	5,5
 Clamping screws for thread milling inserts with 60° head angle and arched countersink in accordance with ISO	T9111010-1XT7	M2,2 × 5	7	0,4
	T9111020-2XT8	M2,6 × 6,5	8	1,0
	T9111030-3XT10	UNC 5 × 9,5	10	1,5 / 2,0
	T9111031-3MXT10	UNC 5 × 8	10	1,5 / 2,0
	T9111040-4XT20	UNC 8 × 10,7	20	5,0
	T9111050-5XT25	M5 × 15	25	6,0

Screw types	Designation	Dimensions	Torx	Tightening torque Nm
 Clamping screws with 60° head angle for indexable inserts with arched countersink in accordance with ISO	FS1358	M1,8 × 3,5	6	0,4
	FS1012	M1,8 × 4,3	6	0,4
	FS2076	M2 × 3,2	6 IP	0,6
	FS1003	M2 × 3,25	6	0,4
	FS1151	M2 × 3,45	6	0,4
	FS2147	M2 × 4,25	6 IP	0,6
	FS2148	M2 × 4,95	6 IP	0,6
	FS1004	M2,2 × 4,6	7	0,6
	FS2084	M2,2 × 4,6	7 IP	0,9
	FS2111	M2,2 × 4,85	7 IP	0,9
	FS1020	M2,2 × 5,5	7	0,6
	FS2149	M2,2 × 6,4	7 IP	0,9
	FS2066	M2,5 × 5,2	7 IP	0,9
	FS924	M2,5 × 4,5	8	0,8
	FS1455	M2,5 × 4,5	8 IP	0,8 / 1,2
	FS1129	M2,5 × 5,2	8	0,8
	FS1021	M2,5 × 5,5	8	0,8
	FS2067	M2,5 × 5,7	7 IP	0,9
	FS375	M2,5 × 5,8	7	0,8
	FS923	M2,5 × 6	8	0,8 / 1,2
	FS1454	M2,5 × 6	8 IP	0,8 / 1,2
	FS2061	M2,5 × 6,5	7 IP	0,9
	FS2077	M3 × 5,3	9 IP	1,5
	FS1005	M3 × 6	8	1,0
	FS1456	M3 × 6,2	9 IP	1,5 / 2,0
	FS2078	M3 × 7,2	9 IP	1,5
	FS1013	M3 × 7,5	8	1,0
	FS1457	M3 × 7,7	9 IP	1,5
	FS379	M3 × 8,5	8	1,0
	FS2079	M3 × 8,7	9 IP	2,0
	FS920	M3,5 × 7,3	15	2,5
	FS2062	M3,5 × 8,1	15 IP	3,0
	FS359	M3,5 × 9	15	2,5
	FS2119	M3,5 × 9,3	15 IP	3,0
	FS2063	M3,5 × 10,1	15 IP	3,0
	FS1006	M3,5 × 12	15	2,5
	FS2060	M3,5 × 12,1	15 IP	3,0
	FS2064	M4 × 0,5 × 11	15 IP	3,0
	FS2065	M4 × 0,5 × 14	15 IP	3,0
	FS1011	M4 × 7,8	15	3,0
	FS2080	M4 × 8,5	15 IP	2,5
	FS2114	M4 × 9	15 IP	2,5
	FS378	M4 × 9,5	15	3,0
	FS1453	M4 × 9,7	15 IP	2,5 / 3,5
	FS1459*	M4 × 10	15 IP	4,0
	FS2163	M4 × 10,8	15 IP	3,0
	FS2081	M4 × 12	15 IP	3,0
	FS1007	M4 × 12	15	3,0
	FS1029	M5 × 9	20	5,0
	FS2139	M5 × 10	20 IP	5,0
	FS1030	M5 × 11	20	5,0
	FS1495	M5 × 13	20 IP	5,0
	FS1031	M5 × 13	20	5,0
	FS1009	M5 × 16	20	5,0
	FS2112	M5 × 16	20 IP	5,0
	FS2090	M5 × 17,25	20 IP	5,0
	FS1036	M6 × 14	20	5,0
	FS2089	M6 × 18,25	25 IP	5,0
	FS1008	M6 × 18	20	5,0
	FS1152	M8 × 1 × 18,5	30	10,0
	FS2150	M8 × 22	30 IP	10,0

* Screw head with radius IP = Torx Plus



Tools for threading

Threading solutions from the Walter Prototyp competence brand offer a high degree of innovation. They reduce costs, increase productivity and provide decisive competitive advantages. In our comprehensive range of catalogue products, you can find the right tool for any machining method or process: HSS-E (-PM) and solid carbide taps, thread formers and thread milling cutters. At sizes of ≥ M1, these tools are available as part of our standard range.

1 TMO and TMO HRC orbital thread milling cutters
[from page B 1108]
- Solid carbide thread milling cutters with TiCN and TAX coating
- For particularly small threads from M1.6 upwards
- TMO HRC specially developed for hardened materials up to 65 HRC from size M2 upwards

2 Thread milling cutters
[from page B 1090]
- Solid carbide thread milling cutters for universal applications at pitches of up to 3 mm
- Thread milling with chamfering (TMC) possible in one operation up to a pitch of 2 mm

3 Thread milling cutters with indexable inserts
[from page B 1116]
- For large threads < M20

4 TMD drill thread milling cutters
[from page B 1107]
- Drilling, countersinking and thread milling in one operation
- Three-edged solid carbide tool for high feeds and high tool life quantities
- With NHC coating for machining aluminium and with TAX coating for grey cast iron



7

8



5 **Paradur® HSC**
[from page B 990]
- Taps made of micrograin carbide with a special geometry for blind hole threads in steel up to 55 HRC
- With internal cooling and TiCN coating

6 **Protodyn® (S) Eco Plus**
[from page B 1034]
- HSS-E thread formers with new geometry both in the chamfer and polygon areas
- Tools with special surface treatment with TiN and TiCN coating in the product range

7 **Paradur® Eco Plus**
[from page B 780]
- HSS-E-PM blind hole taps for universal use
- The tool with THL coating is particularly suitable for adverse chip formation and difficult materials
- Particularly cost-effective for wet machining and minimum quantity lubrication

8 **Prototex® X·pert P**
[from page B 750]
- The X·pert tool families are available for four material groups (X·pert P, X·pert M, X·pert K and X·pert N) for machining blind and through holes

		Page
HSS-E (-PM) taps	Product range overview	B 710
	Designation key	B 724
	Walter Select – HSS-E (-PM) taps	B 726
	M – Metric thread	B 742
	MF – Metric fine-pitch thread	B 836
	UNC / UNF/ UN-8	B 879
	MJ / UNJC / UNJF	B 919
	G / Rc / Rp	B 925
	NPT / NPTF	B 944
	Pg / BSW / Tr	B 952
	Thread insert	B 957
Solid carbide taps	Product range overview	B 980
	Designation key	B 983
	Walter Select – Solid carbide taps	B 984
	M – Metric thread	B 989
	MF – Metric fine-pitch thread	B 999
	UNC, UNF	B 1004
	G	B 1006
	Thread cutting oils	B 1007

		Page
Technical information	Cutting data	B 1008
	Type description	B 1010
	Product families	B 1013
	Grade description	B 1014
	Basic types	B 1015
	Thread cutting process	B 1016
	Angles and characteristics	B 1017
	Chamfer/Lead forms	B 1019
	Modifications	B 1020
	Solutions	B 1021

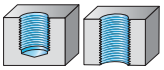
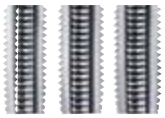
HSS-E (-PM) taps product range overview
M – Metric thread

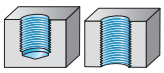
Machining						
Thread depth	**1 × D_N**					**1,5 × D_N**
Designation	**Prototex® OS**	**MMB**	**AMB**	**AMB Inox**	**Protostep Inox**	**Paradur® Combi**
Dimension range	M1–M10	M2–M16	M3–M10	M6–M12	M3–M16	M3–M11
Tolerance	6H	6H	6G / 7G	6HX	6HX	6H
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	B	NA	18 P	18 P	NA	C
Coating/grade	Uncoated	Uncoated	NID / TIN	NID	VAP	Uncoated
Version length	M	M	M	M	M	M
Page	B 748	B 775	B 776	B 778	B 779	B 768
						

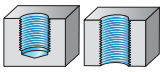
Machining						
Thread depth	**2 × D_N**		**3 × D_N**			
Designation	**Prototex® TiNi**	**Prototex® TiNi Plus**	**TC216 Perform**	**Prototex® Synchrospeed**	**Paradur® N**	**Prototex® X-pert P**
Dimension range	M1–M24	M2–M20	M3–M20	M2–M24	M3–M12	M1–M56
Tolerance	4HX / 6HX	6HX	6H	6HX	6H	4H / 6H / 6G / 7G
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	B	B	B	B	D	B
Coating/grade	Uncoated / TiCN	ACN	WY80FC / WY80AA	THL / TIN	Uncoated	Uncoated / TiCN / TiN
Version length	M	M	M	M	M	M / L / XL
Page	B 763	B 765	B 746	B 747	B 749	B 750
						

Machining						
Thread depth	**3 × D_N**					
Designation	**Prototex® X-pert P**	**Prototex® X-pert P AZ**	**Prototex® X-pert M**	**Prototex® X-pert N**	**Prototex® Sprint**	**Prototex® Megasprint**
Dimension range	M2 LH–M20 LH	M3–M10	M1–M36	M2–M10	M3–M20	M6–M20
Tolerance	6H	6H	6HX / 6GX	6H	6H	6H
Coolant supply	External	External	External	External	External	Radial
Chamfer/Lead form	B	B	B	B	B	B
Coating/grade	Uncoated	Uncoated	TICN / TIN / VAP	Uncoated	TICN / TIN	TIN
Version length	M	M	M	M	M	M
Page	B 753	B 756	B 760	B 762	B 766	B 767
						

HSS-E (-PM) taps product range overview
M – Metric thread

Machining					
Thread depth	**3 × D_N**	**3,5 × D_N**	**1,5 × D_N**		**2 × D_N**
Designation	**KMB H**	**Prototex® Eco Plus**	**Prototex® Eco Plus**	**Paradur® H**	**Paradur® H AZ**	**HGB**
Dimension range	M3–M12	M2–M30	M3 LH–M20 LH	M1–M42	M3–M10	M2–M30
Tolerance	6H	6HX / 6GX	6HX	6H	6H	6H
Coolant supply	External	External / radial	External	External	External	External
Chamfer/Lead form	B	B	B	C	C	C
Coating/grade	Uncoated	THL / TIN	THL	TiN / uncoated	Uncoated	Uncoated
Version length	S	M	M	M	M	S
Page	B 774	B 742	B 744	B 790	B 791	B 769
						

Machining						
Thread depth	**2 × D_N**				**3 × D_N**	
Designation	**HGB Inox**	**HGB Ti**	**Paradur® AP**	**Paradur® FT**	**KMB Ms**	**Paradur® Eco CI**
Dimension range	M2–M30	M3–M12	M3–M20	M3–M10	M2–M8	M3–M30
Tolerance	6HX	6HX	6HX	6H	6H	6HX
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	C	D	E	C / E
Coating/grade	VAP	NID	NIT	Uncoated	Uncoated	TICN / NID
Version length	S	S	M	M	S	M / XL
Page	B 770	B 771	B 825	B 831	B 773	B 814
						

Machining						
Thread depth	**3 × D_N**	**1,5 × D_N**				**2 × D_N**
Designation	**Paradur® X·pert K**	**Paradur® N**	**Paradur Inox® 25**	**Paradur® Ni**	**Paradur® Ni 10**	**Paradur® Ti**
Dimension range	M3–M20	M2–M36	M5–M20	M2–M20	M3–M16	M1–M36
Tolerance	6HX	6H / 6G	6HX	4HX / 6HX	6HX	6HX
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	E	C	C	C
Coating/grade	TAFT	TiCN / TiN / uncoated	TIN	Uncoated	TiN / uncoated	TiCN / uncoated
Version length	M	M	M	M	M	M
Page	B 820	B 794	B 813	B 826	B 828	B 829
						

HSS-E (-PM) taps product range overview
M – Metric thread

Machining						
Thread depth	**2 × D_N**		**2,5 × D_N**			
Designation	**Paradur® Ti Plus**	**Paradur® Sprint**	**Paradur® Synchrospeed**	**Paradur® H 24**	**Paradur® STE**	**Paradur® X·pert M**
Dimension range	M2–M20	M3–M20	M2–M24	M3–M16	M3–M24	M1.6–M42
Tolerance	6HX	6H	6HX	6HX	6HX	6HX / 6GX
Coolant supply	External	External	External / axial	External	External	External
Chamfer/Lead form	C	C	C	C	E	C
Coating/grade	ACN	TICN / TIN	TIN/VAP / THL	Uncoated	THL / uncoated	TICN / TIN / VAP / THL
Version length	M	M	M	M	M	M / XL
Page	B 830	B 834	B 788	B 797	B 808	B 810
						

Machining						
Thread depth	**2,5 × D_N**	**3 × D_N**				
Designation	**Paradur® Megasprint**	**KMB WST**	**Paradur® Eco Plus**	**Paradur® Eco Plus**	**TC115 Perform**	**Paradur® X·pert P**
Dimension range	M6–M20	M3–M12	M2–M64	M3 LH–M20 LH	M3–M20	M1.6–M64
Tolerance	6H	6H	6HX / 6GX	6HX	6H	4H / 6H / 6G / 7G /
Coolant supply	Axial	External	External / axial / radial	External	External	External
Chamfer/Lead form	C	C	C / E	C	C	C
Coating/grade	TiN	Uncoated	THL / TiN	THL	WY80FC / WY80AA	Uncoated / TiN / THL
Version length	M	S	M	M	M	M / L / XL
Page	B 835	B 772	B 780	B 783	B 787	B 798
						

Machining						
Thread depth	**3 × D_N**					
Designation	**Paradur® X·pert P**	**Paradur® X·pert P AZ**	**Paradur® Secur**	**TC142 Supreme**	**Paradur® Eco CI**	**Paradur® X·pert N**
Dimension range	M3 LH–M30 LH	M3–M12	M4–M30	M1.6–M36	M4–M24	M1.6–M20
Tolerance	6H	6H	6HX	6HX	6HX	6H / 6G
Coolant supply	External	External	External	External	Axial / radial	External
Chamfer/Lead form	C	C	C	C	C / E	C
Coating/grade	Uncoated	Uncoated	TIN	WY80FC / WW60RB	TICN	Uncoated
Version length	M	M	M	M	M	M
Page	B 800	B 803	B 806	B 809	B 815	B 821
						

HSS-E (-PM) taps product range overview
M – Metric thread

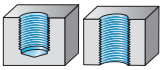
Machining					
Thread depth	**3 × D_N**		**3,5 × D_N**		
Designation	**Paradur® WLM Synchrospeed**	**Paradur® Uni**	**Paradur® HT**	**Paradur® NH**	**Paradur® Short Chip HT**
Dimension range	M3–M10	M2–M36	M4–M36	M4–M12	M5–M12
Tolerance	6H	6H / 6G	6H	6H	6HX
Coolant supply	External	External	Axial	Axial	Axial
Chamfer/Lead form	C	C	C	C	C
Coating/grade	CrN / uncoated	TiN / vap / uncoated	TIN	TiN / uncoated	THL / uncoated
Version length	M	M	M / L	M	M
Page	B 824	B 832	B 792	B 796	B 807
					

HSS-E (-PM) taps product range overview
MF – Metric fine-pitch thread

Machining						
Thread depth	**2 × D_N**		**3 × D_N**			
Designation	**Prototex® TiNi**	**Prototex® TiNi Plus**	**TC216 Perform**	**Prototex® Synchrospeed**	**Prototex® X-pert P**	**Prototex® X-pert P**
Dimension range	MF 8x0.75–MF 16x1	MF 6x0.75–MF 14x1.5	MF 8x1–MF 18x1.5	MF 8x1–MF 16x1.5	MF 2x0.25–MF 50x1.5	MF 8x1 LH–MF 20x1.5 LH
Tolerance	6HX	6HX	6H	6HX	6H / 6G	6H
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	B	B	B	B	B	B
Coating/grade	Uncoated	ACN	WY80FC / WY80AA	TIN / THL	TiN / uncoated	Uncoated
Version length	M	M	M	M	M	M
Page	B 847	B 848	B 838	B 839	B 840	B 843
						

B 5

HSS-E (-PM) taps product range overview
MF – Metric fine-pitch thread

Machining						
Thread depth	**3 × D_N**		**3,5 × D_N**	**1,5 × D_N**		**3 × D_N**
Designation	**Prototex® X-pert M**	**Prototex® Sprint**	**Prototex® Eco Plus**	**Paradur® H**	**Paradur® H**	**Paradur® Eco Cl**
Dimension range	MF 5x0.5– MF 24x1.5	MF 8x1– MF 20x1.5	MF 6x0.75– MF 22x1.5	MF 2x0.25– MF 52x1.5	MF 4x0.5 LH– MF 24x1.5 LH	MF 8x1– MF 22x1.5
Tolerance	6HX / 6GX	6H	6HX	6H	6H	6HX
Coolant supply	External	External	External / radial	External	External	External
Chamfer/Lead form	B	B	B	C	C	E
Coating/grade	TIN / VAP	TIN	THL	Uncoated	Uncoated	TICN
Version length	M	M	M	M	M	M
Page	B 845	B 849	B 836	B 855	B 857	B 871
						

Machining						
Thread depth	**1,5 × D_N**				**2 × D_N**	
Designation	**Paradur® HN**	**Paradur® N**	**Paradur Inox® 25**	**Paradur® Ni 10**	**Paradur® Ti**	**Paradur® Ti Plus**
Dimension range	MF 12x1.5– MF 22x1.5	MF 4x0.5– MF 36x1.5	MF 10x1– MF 24x1.5	MF 8x1– MF 12x1.25	MF 8x0.75– MF 16x1	MF 6x0.75– MF 14x1.5
Tolerance	6HX	6H / 6G	6HX	6HX	6HX	6HX
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	E	C	E	C	C	C
Coating/grade	Uncoated	Uncoated / TiCN / TiN	TIN	Uncoated	Uncoated	ACN
Version length	M	M	M	M	M	M
Page	B 858	B 860	B 870	B 874	B 875	B 876
						

Machining						
Thread depth	**2 × D_N**	**2,5 × D_N**			**3 × D_N**	
Designation	**Paradur® Sprint**	**Paradur® Synchrospeed**	**Paradur® STE**	**Paradur® X-pert M**	**Paradur® Eco Plus**	**TC115 Perform**
Dimension range	MF 8x1– MF 20x1.5	MF 8x1– MF 16x1.5	MF 8x1– MF 18x1.5	MF 4x0.5– MF 30x2	MF 6x0.75– MF 22x1.5	MF 8x1– MF 18x1.5
Tolerance	6H	6HX	6HX	6HX / 6GX	6HX	6H
Coolant supply	External	External	External	External	External / axial	External
Chamfer/Lead form	C	C	E	C	C / E	C
Coating/grade	TIN	TIN/VAP / THL	THL	TIN / VAP	THL	WY80FC / WY80AA
Version length	M	M	M	M	M	M
Page	B 878	B 854	B 866	B 868	B 850	B 853
						

HSS-E (-PM) taps product range overview
MF – Metric fine-pitch thread

Machining						
Thread depth	**3 × D_N**					**3,5 × D_N**
Designation	**Paradur® X·pert P**	**TC142 Supreme**	**Paradur® Eco CI**	**Paradur® X·pert N**	**Paradur® Uni**	**Paradur® HT**
Dimension range	MF 2.5x0.35– MF 52x2	MF 8x1– MF 20x1.5	MF 8x1– MF 22x1.5	MF 8x1– MF 20x1.5	MF 4x0.5– MF 30x2	MF 10x1– MF 33x2
Tolerance	6H / 6G	6HX	6HX	6H	6H	6H
Coolant supply	External	External	Axial	External	External	Axial
Chamfer/Lead form	C	C	C	C	C	C
Coating/grade	Uncoated / TiN	WW60RB	TICN	Uncoated	Uncoated	TIN
Version length	M	M	M	M	M	M
Page	B 862	B 867	B 872	B 873	B 877	B 859
						

Machining	
Thread depth	**3,5 × D_N**
Designation	**Paradur® Short Chip HT**
Dimension range	MF 12x1.5– MF 16x1.5
Tolerance	6HX
Coolant supply	Axial
Chamfer/Lead form	C
Coating/grade	THL / uncoated
Version length	M
Page	B 865
	

B 5

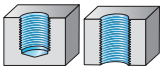
HSS-E (-PM) taps product range overview
UNC/UNF/UN-8

Machining						
Thread depth	**3 × D_N**	**2,5 × D_N**	**2 × D_N**	**3 × D_N**		**3,5 × D_N**
Designation	**Paradur® X·pert P**	**Paradur® X·pert M**	**Prototex® TiNi**	**Prototex® X·pert P**	**Prototex® X·pert M**	**Prototex® Eco Plus**
Dimension range	UN 1.1/8-8–UN 2.1/4-8	UN 1.1/8-8–UN 2"-8	UNC 2-56–UNC 3/4-10	UNC 2-56–UNC 1.1/2-6	UNC 2-56–UNC 1"-8	UNC 2-56–UNC 5/8-11
Tolerance	2B	3B / 2B	3B / 2B	3B / 2B	2B	2B
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	B	B	B	B
Coating/grade	Uncoated	VAP	Uncoated	Uncoated / TiN	TIN / VAP	THL
Version length	M	M	M	M	M	M
Page	B 892	B 894	B 884	B 880	B 883	B 879
						

Machining						
Thread depth	**3 × D_N**	**1,5 × D_N**		**2 × D_N**	**2,5 × D_N**	**3 × D_N**
Designation	**Paradur® Eco CI**	**Paradur® N**	**Paradur® Ni**	**Paradur® Ti**	**Paradur® X·pert M**	**Paradur® Eco Plus**
Dimension range	UNC 6-32–UNC 7/8-9	UNC 1-64–UNC 1"-8	UNC 2-56–UNC 3/4-10	UNC 6-32–UNC 5/8-11	UNC 2-56–UNC 1.1/2-6	UNC 2-56–UNC 3/4-10
Tolerance	2B	3B / 2B	3B / 2B	3B / 2B	2B	2B
Coolant supply	External	External	External	External	External	External / axial
Chamfer/Lead form	C	C	C	C	C	C
Coating/grade	NID	Uncoated	Uncoated	Uncoated	TIN / VAP	THL
Version length	M	M	M	M	M	M
Page	B 896	B 888	B 898	B 900	B 893	B 886
						

Machining						
Thread depth	**3 × D_N**		**2 × D_N**	**3 × D_N**		**3,5 × D_N**
Designation	**Paradur® X·pert P**	**Paradur® X·pert N**	**Prototex® TiNi**	**Prototex® X·pert P**	**Prototex® X·pert M**	**Prototex® Eco Plus**
Dimension range	UNC 2-56–UNC 1.1/2-6	UNC 2-56–UNC 3/8-16	UNF 4-48–UNF 5/8-18	UNF 0-80–UNF 1.1/2-12	UNF 5-44–UNF 1"-12	UNF 4-48–UNF 5/8-18
Tolerance	3B / 2B	2B	3B / 2B	3B / 2B	2B	2B
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	B	B	B	B
Coating/grade	Uncoated	Uncoated	Uncoated	Uncoated / TiN	TIN / VAP	THL
Version length	M	M	M	M	M	M
Page	B 890	B 897	B 907	B 903	B 906	B 902
						

HSS-E (-PM) taps product range overview
UNC/UNF/UN-8

Machining						
Thread depth	**3 × D_N**	**1,5 × D_N**		**2 × D_N**	**2,5 × D_N**	**3 × D_N**
Designation	**Paradur® Eco CI**	**Paradur® N**	**Paradur® Ni**	**Paradur® Ti**	**Paradur® X·pert M**	**Paradur® Eco Plus**
Dimension range	UNF 6-40– UNF 7/8-14	UNF 0-80– UNF 7/8-14	UNF 6-40– UNF 5/8-18	UNF 6-40– UNF 5/8-18	UNF 6-40– UNF 1"-12	UNF 4-48– UNF 5/8-18
Tolerance	2B	3B / 2B	3B	3B / 2B	2B	2B
Coolant supply	External	External	External	External	External	External / axial
Chamfer/Lead form	C	C	C	C	C	C
Coating/grade	NID	Uncoated	Uncoated	Uncoated	TIN / VAP	THL
Version length	M	M	M	M	M	M
Page	B 915	B 911	B 916	B 917	B 914	B 909
						

Machining	
Thread depth	**3 × D_N**
Designation	**Paradur® X·pert P**
Dimension range	UNF 1-72– UNF 1.1/2-12
Tolerance	2B
Coolant supply	External
Chamfer/Lead form	C
Coating/grade	TiN / uncoated
Version length	M
Page	B 913
	

B 5

HSS-E (-PM) taps product range overview MJ/UNJC/UNJF

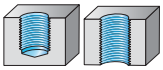
Machining						
Thread depth	**1,5 × D_N**	**2 × D_N**	**1,5 × D_N**	**2 × D_N**	**1,5 × D_N**	**2 × D_N**
Designation	**Paradur® Ni 10**	**Paradur® Ti**	**Paradur® Ni 10**	**Prototex® TiNi Plus**	**Paradur® Ni 10**	**Paradur® Ti Plus**
Dimension range	MJ 3– MJ 6	MJ 3– MJ 10	UNJC 4-40– UNJC 3/8-16	UNJF 10-32– UNJF 3/8-24	UNJF 6-40– UNJF 3/8-24	UNJF 10-32– UNJF 3/8-24
Tolerance	4H	4H	3B	3B	3B	3B
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	C	B	C	C
Coating/grade	Uncoated	Uncoated	Uncoated	ACN	Uncoated	ACN
Version length	M	M	M	M	M	M
Page	B 919	B 920	B 921	B 924	B 922	B 923
						

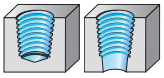
HSS-E (-PM) taps product range overview G/Rc/Rp

Machining						
Thread depth	**3 × D_N**			**3,5 × D_N**	**1,5 × D_N**	**3 × D_N**
Designation	**Prototex® Synchrospeed**	**Prototex® X-pert P**	**Prototex® X-pert M**	**Prototex® Eco Plus**	**Paradur® H**	**KMB Ms**
Dimension range	G 1/8-28– G 1/2-14	G 1/8-28– G 2"-11	G 1/8-28– G 1"-11	G 1/8-28– G 1"-11	G 1/8-28– G 2.1/2-11	G 1/8-28– G 1"-11
Tolerance	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	B	B	B	B	C	F
Coating/grade	THL	TiN / uncoated	TIN / VAP	THL	Uncoated	Uncoated
Version length	M	M	M	M	M	
Page	B 926	B 927	B 928	B 925	B 932	B 929
						

B 5

HSS-E (-PM) taps product range overview G/Rc/Rp

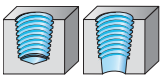
Machining						
Thread depth	**3 × D_N**	**1,5 × D_N**		**2,5 × D_N**		
Designation	**Paradur® Eco CI**	**Paradur® N**	**Paradur Inox® 25**	**Paradur® Synchrospeed**	**Paradur® STE**	**Paradur® X·pert M**
Dimension range	G 1/8-28– G 1.1/2-11	G 1/8-28– G 1"-11	G 1/4-19– G 3/4-14	G 1/8-28– G 1/2-14	G 1/8-28– G 1/2-14	G 1/8-28– G 1"-11
Tolerance	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	E	C	E	C
Coating/grade	TICN / NID	Uncoated	TIN	THL	THL / uncoated	TIN / VAP
Version length	M	M	M	M	M	M
Page	B 939	B 933	B 938	B 931	B 935	B 937
						

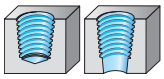
Machining						
Thread depth	**3 × D_N**					
Designation	**Paradur® Eco Plus**	**Paradur® X·pert P**	**TC142 Supreme**	**Paradur® X·pert N**	**Paradur® Uni**	**Paradur® H**
Dimension range	G 1/8-28– G 1"-11	G 1/8-28– G 2"-11	G 1/8-28– G 1/4-19	G 1/8-28	G 1/8-28– G 1"-11	Rc 1/8-28– Rc 1.1/2-11
Tolerance	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	C	C	C	C
Coating/grade	THL	TiN / uncoated	WY80FC	Uncoated	Uncoated	Uncoated
Version length	M	M	M	M	M	M
Page	B 930	B 934	B 936	B 940	B 941	B 942
						

Machining	
Thread depth	**1,5 × D_N**
Designation	**Paradur® H**
Dimension range	Rp 1/8-28– Rp 1.1/2-11
Tolerance	NORMAL
Coolant supply	External
Chamfer/Lead form	C
Coating/grade	Uncoated
Version length	M
Page	B 943
	

B 5

HSS-E (-PM) taps product range overview
NPT/NPTF

Machining						
Thread depth						
Designation	**Paradur® H**	**Paradur® N**	**Paradur Inox®**	**Paradur Inox® 40**	**Paradur® Ni**	**Paradur® H**
Dimension range	NPT 1/16-27– NPT 2"-11.5	NPT 1/16-27– NPT 1"-11.5	NPT 1/16-27– NPT 1"-11.5	NPT 1/8-27– NPT 1/2-14	NPT 1/16-27– NPT 1"-11.5	NPTF 1/16-27– NPTF 1"-11.5
Tolerance	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	C	C	C	C
Coating/grade	Uncoated	VAP	THL / VAP	Uncoated	Uncoated	Uncoated
Version length	M	M	M	M	M	M
Page	B 944	B 945	B 946	B 947	B 948	B 949
						

Machining		
Thread depth		
Designation	**Paradur® N**	**Paradur Inox®**
Dimension range	NPTF 1/16-27– NPTF 3/4-14	NPTF 1/16-27– NPTF 1/2-14
Tolerance	NORMAL	NORMAL
Coolant supply	External	External
Chamfer/Lead form	C	C
Coating/grade	VAP	VAP
Version length	M	M
Page	B 950	B 951
		

B 5

HSS-E (-PM) taps product range overview Pg/BSW/TR

Machining					
Thread depth	**3 × D_N**	**3 × D_N**	**3 × D_N**	**2 × D_N**	
Designation	**Prototex® X·pert P**	**Paradur® X·pert P**	**KMB H**	**TMB**	**TMB**
Dimension range	BSW 1/8-40– BSW 1"-8	BSW 1/8-40– BSW 1"-8	Pg 7-20– Pg 21-16	Tr 8x1.5– Tr 28x5	Tr 10x2 LH– Tr 26x5 LH
Tolerance	MEDIUM	MEDIUM	NORMAL	7H	7H
Coolant supply	External	External	External	External	External
Chamfer/Lead form	B	C	B	24 P	24 P
Coating/grade	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Version length	M	M	M	M	M
Page	B 953	B 954	B 952	B 955	B 956
					

HSS-E (-PM) taps product range overview Thread insert

Machining					
Thread depth	**2 × D_N**	**3 × D_N**	**1,5 × D_N**	**2 × D_N**	**2,5 × D_N**
Designation	**Prototex® TiNi**	**Prototex® X·pert P**	**Prototex® X·pert M**	**Paradur® Ni**	**Paradur® Ti**	**Paradur® X·pert M**
Dimension range	EGM4– EGM8	EGM2.5– EGM16	EGM2.5– EGM8	EGM4– EGM8	EGM4– EGM8	EGM2.5– EGM16
Tolerance	4H	6Hmod	6Hmod	4H	4H	6Hmod
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	B	B	B	C	C	C
Coating/grade	Uncoated	Uncoated	VAP	Uncoated	Uncoated	VAP
Version length	M	M	M	M	M	M
Page	B 959	B 957	B 958	B 963	B 964	B 961
						

B 5

HSS-E (-PM) taps product range overview
Thread insert

Machining						
Thread depth	**3 × D_N**			**2 × D_N**	**3 × D_N**	**2 × D_N**
Designation	**Paradur® X·pert P**	**Paradur® X·pert N**	**Paradur® X·pert P**	**Prototex® TiNi**	**Prototex® X·pert P**	**Paradur® Ti**
Dimension range	EGM2.5–EGM24	EGM2.5–EGM16	EGMF 8x1–EGMF 16x1.5	EGUNC 4-40–EGUNC 8-32	EGUNC 6-32–EGUNC 1/4-20	EGUNC 4-40–EGUNC 8-32
Tolerance	6Hmod	6Hmod	6Hmod	3B	3B	3B
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	C	B	B	C
Coating/grade	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
Version length	M	M	M	M	M	M
Page	B 960	B 962	B 965	B 967	B 966	B 971
						

Machining						
Thread depth	**2,5 × D_N**	**3 × D_N**		**2 × D_N**	**3 × D_N**	
Designation	**Paradur® X·pert M**	**Paradur® X·pert P**	**Paradur® X·pert N**	**Prototex® TiNi**	**Prototex® X·pert P**	**Prototex® X·pert M**
Dimension range	EGUNC 4-40–EGUNC 1/2-13	EGUNC 6-32–EGUNC 1/4-20	EGUNC 6-32–EGUNC 1/4-20	EGUNF 10-32–EGUNF 3/8-24	EGUNF 6-40–EGUNF 1/2-20	EGUNF 8-36–EGUNF 1/4-28
Tolerance	3B	3B	3B	3B	3B	3B
Coolant supply	External	External	External	External	External	External
Chamfer/Lead form	C	C	C	B	B	B
Coating/grade	vap	Uncoated	Uncoated	Uncoated	Uncoated	vap
Version length	M	M	M	M	M	M
Page	B 969	B 968	B 970	B 974	B 972	B 973
						

Machining					
Thread depth	**1,5 × D_N**	**2 × D_N**	**2,5 × D_N**	**3 × D_N**	
Designation	**Paradur® Ni**	**Paradur® Ti**	**Paradur® X·pert M**	**Paradur® X·pert P**	**Paradur® X·pert N**
Dimension range	EGUNF 10-32–EGUNF 3/8-24	EGUNF 10-32–EGUNF 3/8-24	EGUNF 10-32–EGUNF 1/4-28	EGUNF 6-40–EGUNF 1/2-20	EGUNF 10-32–EGUNF 1/4-28
Tolerance	3B	3B	3B	3B	3B
Coolant supply	External	External	External	External	External
Chamfer/Lead form	C	C	C	C	C
Coating/grade	Uncoated	Uncoated	vap	Uncoated	Uncoated
Version length	M	M	M	M	M
Page	B 978	B 979	B 976	B 975	B 977
					



HSS-E (-PM) taps designation key

Example:

E	P	2	0	5	6	3	4	2
1	2	3	4	5	6	7	8	9

1 – Tool range

Empty	DIN threading tools
A	ANSI
E	Eco
S	Synchrospeed
P	X-pert P
M	X-pert M
K	X-pert K
N	X-pert N

2 – Tool generation

P	Plus

3 – Tool type

2	HSS taps
3	Set
4	Interrupted teeth (AZ)

4 – Thread type

0	Metric
1	Metric fine
2	UNC / UN
3	UNF / UNEF
4	G / Rp / Rc
5	NPT / NPSM
6	NPTF
7	Pg
8	BSW / W
9	Tr

5 – Design

0	Manual taps (HGB)
1	Short machine taps (KMB)
2	Prototex®, spiral point
3	Paradur®, straight flutes (or Prototex® H)
4	Paradur®, low-helix
5	Paradur®, high-helix flutes > 25°
6	Automatic nut tap (AMB), short shank
7	AMB/MMB/trapezoidal, long shank
8	Stepped AMB/MMB, trapezoidal tap set

6 – Tolerance/shank

0	ISO 1/4H, 4HX, 3B, 3BX Reinforced shank
1	ISO 2/6H, 6HX, 2B, 2BX Reinforced shank
2	5G Reinforced shank
3	ISO 3/6G, 6GX Reinforced shank
4	7G, 7GX Reinforced shank
5	ISO 1/4H, 4HX, 3B, 3BX Reduced shank
6	ISO 2/6H, 6HX, 2B, 2BX Reduced shank
7	5G Reduced shank
8	ISO 3/6G, 6GX Reduced shank
9	7G, 7GX Reduced shank

7 – Tool type

0	Short Chip HT, HT, Ni, STE
1	H, HT, N, OS
2	NH, HP
3	Eco Plus, Synchrospeed, X-pert M
4	X-pert K
5	MS
6	X-pert N, Ti, TiNi
7	Combi
9	X-pert P, Secur

8 – Modification

0	None
1	Internal coolant supply, axial outlet
2	Different thread type
3	Extended shank
4	Internal coolant supply, radial outlet
5	Combination of various points
6	Different number of flutes
7	Reduced/different helix
8	Left-hand thread
9	Insert

9 – Surface treatment

0	None
2	THL
4	CRN
5	TiN
6	TiCN
7	TAFT

Example:

T	C	1	42	–	M10×1.25	–	C	0	–	W	Y	80	AA
1	2	3	4	5	6		7	8		Grade			

1	2	3	4
Tool group	Generation	Tool type	Tool type
T Threading		1 Blind hole taps 2 Through hole taps	15 Universal 45° helix angle 300-1000 N/mm² 16 Universal Straight-fluted, spiral point 300-1000 N/mm² 42 ISO M 50° helix angle < 1000 N/mm²

5	6	7	8
1. Delimiters	Thread dimensions	Tolerance/shank type	Modification
– Metric D DIN-ANSI		C ISO 2/6H, 6HX Reinforced shank L ISO 2/6H, 6HX Reduced shank	0 External coolant

B 5

Grade designation key for solid carbide and HSS cutting tool materials

Example:

W	Y	80	AA
Walter	1	2	3

1	2	3
Substrate	Range of applications	Coating
Solid carbide HSS W HSS Y	Wear resistance 05 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 Toughness	FC Vaporised AA TiN RB TiAlN

Walter Select – HSS-E (-PM) taps

Step by step to the right tool

STEP 1

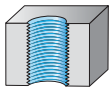
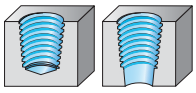
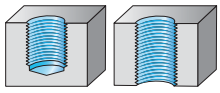
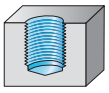
Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Select your intended **application** from the table.

Tapping HSS-E (-PM)													
													
Thread depth	$1,0 \times D_N$	$2,0 \times D_N$	$3,0 \times D_N$	$3,5 \times D_N$	–	$1,5 \times D_N$	$2,0 \times D_N$	$3,0 \times D_N$	$1,5 \times D_N$	$2,0 \times D_N$	$2,5 \times D_N$	$3,0 \times D_N$	$3,5 \times D_N$
Page	B 728	B 729	B 729	B 732	B 732	B 733	B 734	B 735	B 735	B 737	B 737	B 739	B 741

STEP 3

Select your **tool** from the table from page B 728 onwards, based on the following criteria:

– **Material group**
– **Thread type**
– **Thread depth**

Walter Select HSS-E (-PM) taps

WALTER SELECT
●● Primary application
● Other application

Material group	Overview of the main material groups and code letters		Machining				
			Thread depth	1 × D_N			
			Designation	Prototex® OS	MMB		
			Coolant supply	External	External		
			Coating / grade	Uncoated	Uncoated		
			Thread type | Page	M | B 748	M | B 775		
			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group		
P	Non-alloyed steel	C ≤ 0.25% Annealed	125	430	P1	●	●
		C > 0.25... ≤ 0.55% Annealed	190	640	P2	●	●
		C > 0.25... ≤ 0.55% Heat-treated	210	710	P3	●	●
		C > 0.55% Annealed	190	640	P4	●	●
		C > 0.55% Heat-treated	300	1010	P5		
		Free cutting steel (short-chipping) Annealed	220	750	P6	●	●
	Low-alloyed steel	Annealed	175	590	P7	●	●
		Heat-treated	285	960	P8		
		Heat-treated	380	1280	P9		
		Heat-treated	430	1480	P10		
	High-alloyed steel and high-alloyed tool steel	Annealed	200	680	P11		
		Hardened and tempered	300	1010	P12		
		Hardened and tempered	380	1280	P13		
	Stainless steel	Ferritic/martensitic, annealed	200	680	P14		
		Martensitic, heat-treated	330	1110	P15		
M	Stainless steel	Austenitic, quench hardened	200	680	M1		
		Austenitic, precipitation hardened (PH)	300	1010	M2		
		Austenitic/ferritic, duplex	230	780	M3		
	Malleable cast iron	Ferritic	200	400	K1		

STEP 4

The corresponding page in the catalogue is specified following tool selection.

At the bottom right of the catalogue page, you will find a reference to the **cutting data table.**

HSS-E-PM machine taps
Prototex® Eco Plus

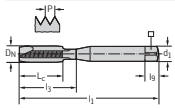
– For long-chipping materials

M DIN 13 | 6GX

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			
TIN	●●	●●	●●	●●			

≤ 3,5×D_N | B=3,5-5 | 42HRC 1350 –500 N/mm²

DIN 371



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2023302-M2	EP2023305-M2	M 2	0,4	45	6	9	2,8	2,1	5	3
EP2023302-M2.5	EP2023305-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	3
EP2023302-M3	EP2023305-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
EP2023302-M4	EP2023305-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
EP2023302-M5	EP2023305-M5	M 5	0,8	70	13	25	6	4,9	8	3
EP2023302-M6	EP2023305-M6	M 6	1	80	15	30	6	4,9	8	3
EP2023302-M8	EP2023305-M8	M 8	1,25	90	18	35	8	6,2	9	3
EP2023302-M10	EP2023305-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376

STEP 5

Select the **cutting data** for the tool type from page B 1008 onwards.

Tapping and thread forming cutting data

= Cooling lubricant recommended
E = Emulsion
O = Oil
v_c = Cutting speed

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	HSS-E (PM) taps Uncoated v_c [m/min] 1,5 × D_N	2 × D_N	2,5 × D_N	
P	Non-alloyed steel	C ≤ 0.25% Annealed	125	430	P1	16	13	12	E
		C > 0.25% to ≤ 0.55% Annealed	190	640	P2	20	17	14	E
		C > 0.25% to ≤ 0.55% Heat-treated	210	710	P3	10	9	7	E
		C > 0.55% Annealed	190	640	P4	10	9	7	E
		C > 0.55% Heat-treated	300	1010	P5	6	5	4	E
		Free cutting steel (short-chipping) Annealed	220	750	P6	10	9	7	E
	Low-alloyed steel	Annealed	175	590	P7	20	17	14	E
		Heat-treated	285	960	P8	5	4	4	E
		Heat-treated	380	1280	P9	3	3	2	E
		Heat-treated	430	1480	P10	3	2	2	O
	High-alloyed steel and high-alloyed tool steel	Annealed	200	680	P11	10	9	7	E
		Hardened and tempered	300	1010	P12	6	5	4	E
		Hardened and tempered	380	1280	P13	3	3	2	O
	Stainless steel	Ferritic/martensitic, annealed	200	680	P14	3	2	2	E
		Martensitic, heat-treated	330	1110	P15	3	2	2	E
M	Stainless steel								E

B 5

Walter Select HSS-E (-PM) taps

WALTER SELECT

●● Primary application

● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining		
							Thread depth	1×D_N	
							Designation	Prototex® OS	MMB
							Coolant supply	External	External
							Coating / grade	Uncoated	Uncoated
							Thread type | Page	M | B 748	M | B 775
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	●	●	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	●	●	
		C > 0.55%	Annealed	190	640	P4	●	●	
		C > 0.55%	Heat-treated	300	1010	P5			
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●	
	Low-alloyed steel	Annealed		175	590	P7	●	●	
		Heat-treated		285	960	P8			
		Heat-treated		380	1280	P9			
		Heat-treated		430	1480	P10			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11			
		Hardened and tempered		300	1010	P12			
		Hardened and tempered		380	1280	P13			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14			
		Martensitic, heat-treated		330	1110	P15			
M	Stainless steel	Austenitic, quench hardened		200	680	M1			
		Austenitic, precipitation hardened (PH)		300	1010	M2			
		Austenitic/ferritic, duplex		230	780	M3			
K	Malleable cast iron	Ferritic		200	400	K1			
		Pearlitic		260	700	K2			
	Grey cast iron	Low tensile strength		180	200	K3			
		High tensile strength/austenitic		245	350	K4			
	Cast iron with spheroidal graphite	Ferritic		155	400	K5			
		Pearlitic		265	700	K6			
	GGV (CGI)			230	400	K7			
N	Wrought aluminium alloys	Not hardenable		30	-	N1	●		
		Hardenable, hardened		100	340	N2	●		
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3			
		≤ 12% Si, hardenable, hardened		90	310	N4			
		> 12% Si, not hardenable		130	450	N5			
	Magnesium-based alloys			70	250	N6			
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7			
		Brass, bronze, red brass		90	310	N8			
		Cu-alloys, short-chipping		110	380	N9			
		High-tensile, Ampco		300	1010	N10			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1			
			Hardened	280	940	S2			
		Ni or Co base	Annealed	250	840	S3			
			Hardened	350	1180	S4			
			Cast	320	1080	S5			
	Titanium alloys	Pure titanium		200	680	S6			
		α and β alloys, hardened		375	1260	S7			
		β alloys		410	1400	S8			
	Tungsten alloys			300	1010	S9			
	Molybdenum alloys			300	1010	S10			
H	Hardened steel			<63 HRC	-	H1-H4			
O	Plastics, graphite					O1-O6			



	1 × D_N			1,5 × D_N	2 × D_N			3 × D_N
	AMB	AMB Inox	Protostep Inox	Paradur® Combi	Prototex® TiNi	Prototex® TiNi Plus	TMB	TC216 Perform
	External	External	External	External	External	External	External	External
	NID / TIN	NID	VAP	Uncoated	Uncoated / TiCN	ACN	Uncoated	WY80FC / WY80AA
	M | B 776	M | B 778	M | B 779	M | B 768	M | B 763 MF | B 847 UNC | B 884 UNF | B 907 EGM | B 959 EGUNC | B 967 EGUNF | B 974	M | B 765 MF | B 848 UNJF | B 924	TR | B 955	M | B 746 MF | B 838
								
	●			●			●	●●
	●			●	●●		●●	●●
	●			●	●●		●●	●●
	●			●	●●		●●	●●
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					●●			

B 5

Walter Select HSS-E (-PM) taps

WALTER SELECT
●● Primary application
● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining	Thread depth 3 × D_N	
							Designation	Prototex® Synchrospeed	Paradur® N
							Coolant supply	External	External
							Coating / grade	THL / TIN	Uncoated
							Thread type | Page	M | B 747 MF | B 839 G | B 926	M | B 749
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●●	●●	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	●●	●●	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	●●	●	
		C > 0.55%	Annealed	190	640	P4	●●	●	
		C > 0.55%	Heat-treated	300	1010	P5	●●	●	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●●	●	
	Low-alloyed steel	Annealed		175	590	P7	●●	●	
		Heat-treated		285	960	P8	●●	●	
		Heat-treated		380	1280	P9	●●		
		Heat-treated		430	1480	P10			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●●	●	
		Hardened and tempered		300	1010	P12	●●	●	
		Hardened and tempered		380	1280	P13	●●		
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●		
		Martensitic, heat-treated		330	1110	P15	●●		
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●		
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●		
		Austenitic/ferritic, duplex		230	780	M3	●●		
K	Malleable cast iron	Ferritic		200	400	K1	●●	●	
		Pearlitic		260	700	K2	●●	●	
	Grey cast iron	Low tensile strength		180	200	K3	●		
		High tensile strength/austenitic		245	350	K4	●		
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●	
		Pearlitic		265	700	K6	●●	●	
	GGV (CGI)			230	400	K7	●		
N	Wrought aluminium alloys	Not hardenable		30	-	N1	●●	●	
		Hardenable, hardened		100	340	N2	●●	●	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●	●	
		≤ 12% Si, hardenable, hardened		90	310	N4	●●	●	
		> 12% Si, not hardenable		130	450	N5			
	Magnesium-based alloys			70	250	N6	●●		
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●	●	
		Brass, bronze, red brass		90	310	N8	●	●	
		Cu-alloys, short-chipping		110	380	N9	●		
		High-tensile, Ampco		300	1010	N10			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●		
			Hardened	280	940	S2	●		
		Ni or Co base	Annealed	250	840	S3	●		
			Hardened	350	1180	S4	●		
			Cast	320	1080	S5	●		
	Titanium alloys	Pure titanium		200	680	S6	●	●	
		α and β alloys, hardened		375	1260	S7			
		β alloys		410	1400	S8			
	Tungsten alloys			300	1010	S9			
	Molybdenum alloys			300	1010	S10			
H	Hardened steel			<63 HRC	-	H1-H4			
O	Plastics, graphite					O1-O6	●●		



	3 × D_N						
	Prototex® X·pert P	**Prototex® X·pert P AZ**	**Prototex® X·pert M**	**Prototex® X·pert N**	**Prototex® Sprint**	**Prototex® Megasprint**	**KMB H**
	External	External	External	External	External	Radial	External
	Uncoated / TiCN / TiN	Uncoated	TICN / TIN / VAP	Uncoated	TICN / TIN	TIN	Uncoated
	M | B 750 MF | B 840 UNC | B 880 UNF | B 903 G | B 927 BSW | B 953 EGM | B 957 EGUNC | B 966 EGUNF | B 972	M | B 756	M | B 760 MF | B 845 UNC | B 883 UNF | B 906 G | B 928 EGM | B 958 EGUNF | B 973	M | B 762	M | B 766 MF | B 849	M | B 767	M | B 774 PG | B 952
							
	●●	●●					●●
	●●	●●	●●		●●	●●	●●
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	●●	●		●●			●●

B 5

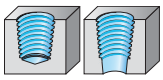
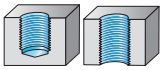
Walter Select HSS-E (-PM) taps

WALTER SELECT

●● Primary application

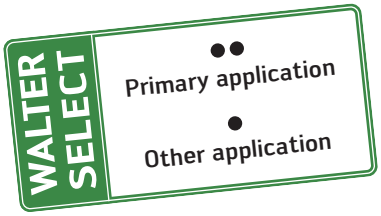
● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining			
							Thread depth	3,5 × D_N		
							Designation	Prototex® Eco Plus	Paradur® H	
							Coolant supply	External / radial	External	
							Coating / grade	THL / TIN	Uncoated	
							Thread type | Page	M | B 742 MF | B 836 UNC | B 879 UNF | B 902 G | B 925	NPT | B 944 NPTF | B 949	
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		●●	●●	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		●●	●●	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		●●	●●	
		C > 0.55%	Annealed	190	640	P4		●●	●●	
		C > 0.55%	Heat-treated	300	1010	P5		●●	●	
		Free cutting steel (short-chipping)	Annealed	220	750	P6		●●	●●	
	Low-alloyed steel	Annealed		175	590	P7		●●	●●	
		Heat-treated		285	960	P8		●●	●	
		Heat-treated		380	1280	P9		●●		
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		●●	●●	
		Hardened and tempered		300	1010	P12		●●	●	
		Hardened and tempered		380	1280	P13		●●		
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		●●		
		Martensitic, heat-treated		330	1110	P15		●●		
M	Stainless steel	Austenitic, quench hardened		200	680	M1		●●		
		Austenitic, precipitation hardened (PH)		300	1010	M2		●●		
		Austenitic/ferritic, duplex		230	780	M3		●●		
K	Malleable cast iron	Ferritic		200	400	K1		●●	●	
		Pearlitic		260	700	K2		●●	●	
	Grey cast iron	Low tensile strength		180	200	K3		●	●	
		High tensile strength/austenitic		245	350	K4		●	●	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		●●	●	
		Pearlitic		265	700	K6		●●	●	
	GGV (CGI)			230	400	K7		●	●	
N	Wrought aluminium alloys	Not hardenable		30	-	N1				
		Hardenable, hardened		100	340	N2		●●		
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		●●	●	
		≤ 12% Si, hardenable, hardened		90	310	N4		●●	●	
		> 12% Si, not hardenable		130	450	N5		●	●	
	Magnesium-based alloys			70	250	N6			●	
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7		●		
		Brass, bronze, red brass		90	310	N8		●	●	
		Cu-alloys, short-chipping		110	380	N9		●	●	
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel			<63 HRC	-	H1-H4				
O	Plastics, graphite					O1-O6			●	

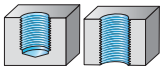
							
	-					$1,5 \times D_N$	
	Paradur® H	**Paradur® N**	**Paradur Inox®**	**Paradur Inox® 40**	**Paradur® Ni**	**Paradur® H**	**Paradur® H AZ**
	External	External	External	External	External	External	External
	Uncoated	VAP	THL / VAP	Uncoated	Uncoated	TiN / uncoated	Uncoated
	RC | B 942	NPT | B 945 NPTF | B 950	NPT | B 946 NPTF | B 951	NPT | B 947	NPT | B 948	M | B 790 MF | B 855 G | B 932 RP | B 943	M | B 791
							
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B 5

Walter Select HSS-E (-PM) taps



Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining	
							Thread depth	$2 \times D_N$
							Designation	HGB / HGB Inox
							Coolant supply	External / External
							Coating / grade	Uncoated / VAP
							Thread type | Page	M | B 769 / M | B 770
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	●	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	●	
		C > 0.55%	Annealed	190	640	P4	●	
		C > 0.55%	Heat-treated	300	1010	P5		
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	
	Low-alloyed steel	Annealed		175	590	P7	●	
		Heat-treated		285	960	P8		●
		Heat-treated		380	1280	P9		●
		Heat-treated		430	1480	P10		
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	
		Hardened and tempered		300	1010	P12		●
		Hardened and tempered		380	1280	P13		●
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		●
		Martensitic, heat-treated		330	1110	P15		●
M	Stainless steel	Austenitic, quench hardened		200	680	M1		●
		Austenitic, precipitation hardened (PH)		300	1010	M2		●
		Austenitic/ferritic, duplex		230	780	M3		●
K	Malleable cast iron	Ferritic		200	400	K1	●	
		Pearlitic		260	700	K2	●	
	Grey cast iron	Low tensile strength		180	200	K3	●	
		High tensile strength/austenitic		245	350	K4	●	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	
		Pearlitic		265	700	K6	●	
	GGV (CGI)			230	400	K7	●	
N	Wrought aluminium alloys	Not hardenable		30	-	N1	●	
		Hardenable, hardened		100	340	N2	●	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●	
		≤ 12% Si, hardenable, hardened		90	310	N4	●	
		> 12% Si, not hardenable		130	450	N5	●	
	Magnesium-based alloys			70	250	N6	●	
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●	
		Brass, bronze, red brass		90	310	N8	●	
		Cu-alloys, short-chipping		110	380	N9	●	
		High-tensile, Ampco		300	1010	N10		
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		
			Hardened	280	940	S2		
		Ni or Co base	Annealed	250	840	S3		
			Hardened	350	1180	S4		
			Cast	320	1080	S5		
	Titanium alloys	Pure titanium		200	680	S6		
		α and β alloys, hardened		375	1260	S7		
		β alloys		410	1400	S8		
	Tungsten alloys			300	1010	S9		
	Molybdenum alloys			300	1010	S10		
H	Hardened steel			<63 HRC	-	H1-H4		
O	Plastics, graphite					O1-O6		





	2 × D_N			3 × D_N			1,5 × D_N
	HGB Ti	Paradur® AP	Paradur® FT	KMB Ms	Paradur® Eco CI	Paradur® X-pert K	Paradur® N
	External	External	External	External	External	External	External
	NID	NIT	Uncoated	Uncoated	TICN / NID	TAFT	TICN / TIN / uncoated
	M | B 771	M | B 825	M | B 831	M | B 773 G | B 929	M | B 814 MF | B 871 UNC | B 896 UNF | B 915 G | B 939	M | B 820	M | B 794 MF | B 860 UNC | B 888 UNF | B 911 G | B 933
							
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			●	●	●		

Walter Select HSS-E (-PM) taps

WALTER SELECT
●● Primary application
● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining		
							Thread depth	1,5 × D_N	
							Designation	Paradur Inox® 25	Paradur® Ni
							Coolant supply	External	External
							Coating / grade	TIN	Uncoated
							Thread type | Page	M | B 813 MF | B 870 G | B 938	M | B 826 UNC | B 898 UNF | B 916 EGM | B 963 EGUNF | B 978
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1			
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2			
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	●		
		C > 0.55%	Annealed	190	640	P4	●		
		C > 0.55%	Heat-treated	300	1010	P5	●●		
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●		
	Low-alloyed steel	Annealed		175	590	P7	●		
		Heat-treated		285	960	P8	●●		
		Heat-treated		380	1280	P9		●	
		Heat-treated		430	1480	P10		●	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●		
		Hardened and tempered		300	1010	P12	●●		
		Hardened and tempered		380	1280	P13		●	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●		
		Martensitic, heat-treated		330	1110	P15	●	●	
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●		
		Austenitic, precipitation hardened (PH)		300	1010	M2	●	●	
		Austenitic/ferritic, duplex		230	780	M3	●	●	
K	Malleable cast iron	Ferritic		200	400	K1	●		
		Pearlitic		260	700	K2	●		
	Grey cast iron	Low tensile strength		180	200	K3	●		
		High tensile strength/austenitic		245	350	K4	●		
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●		
		Pearlitic		265	700	K6	●		
	GGV (CGI)			230	400	K7	●		
N	Wrought aluminium alloys	Not hardenable		30	-	N1			
		Hardenable, hardened		100	340	N2			
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		●	
		≤ 12% Si, hardenable, hardened		90	310	N4		●	
		> 12% Si, not hardenable		130	450	N5		●	
	Magnesium-based alloys			70	250	N6			
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7			
		Brass, bronze, red brass		90	310	N8			
		Cu-alloys, short-chipping		110	380	N9			
		High-tensile, Ampco		300	1010	N10			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		●●	
			Hardened	280	940	S2		●●	
		Ni or Co base	Annealed	250	840	S3		●●	
			Hardened	350	1180	S4		●●	
			Cast	320	1080	S5		●●	
	Titanium alloys	Pure titanium		200	680	S6			
		α and β alloys, hardened		375	1260	S7			
		β alloys		410	1400	S8			
	Tungsten alloys			300	1010	S9		●●	
	Molybdenum alloys			300	1010	S10		●	
H	Hardened steel			<63 HRC	-	H1-H4			
O	Plastics, graphite					O1-O6			



	1,5 × D_N		2 × D_N			2,5 × D_N	
	Paradur® Ni 10	**Paradur® HN**	**Paradur® Ti**	**Paradur® Ti Plus**	**Paradur® Sprint**	**Paradur® Synchrospeed**	**Paradur® H 24**
	External	External	External	External	External	External / axial	External
	TiN / uncoated	Uncoated	TiCN / uncoated	ACN	TICN / TIN	TIN/VAP / THL	Uncoated
	M | B 828 MJ | B 919 MF | B 874 UNJC | B 921 UNJF | B 922	MF | B 858	M | B 829 MJ | B 920 MF | B 875 UNC | B 900 UNF | B 917 EGM | B 964 EGUNC | B 971 EGUNF | B 979	M | B 830 MF | B 876 UNJF | B 923	M | B 834 MF | B 878	M | B 788 MF | B 854 G | B 931	M | B 797
							
		●				●●	
		●●	●●		●●	●●	
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Walter Select HSS-E (-PM) taps

WALTER SELECT
●● Primary application
● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Paradur® STE	Paradur® X·pert M	
	Machining								
	Thread depth						**2,5 × D_N**		
	Designation						**Paradur® STE**	**Paradur® X·pert M**	
	Coolant supply						External	External	
	Coating / grade						THL / uncoated	TICN / TIN / VAP / THL	
	Thread type | Page						M | B 808 MF | B 866 G | B 935	M | B 810 MF | B 868 UNC | B 893 UNF | B 914 UN | B 894 G | B 937 EGM | B 961 EGUNC | B 969 EGUNF | B 976	
									
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1			
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	●●	●●	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	●●	●●	
		C > 0.55%	Annealed	190	640	P4	●●	●●	
		C > 0.55%	Heat-treated	300	1010	P5		●●	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	
	Low-alloyed steel	Annealed		175	590	P7	●	●●	
		Heat-treated		285	960	P8		●●	
		Heat-treated		380	1280	P9			
		Heat-treated		430	1480	P10			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	
		Hardened and tempered		300	1010	P12		●●	
		Hardened and tempered		380	1280	P13			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		●●	
		Martensitic, heat-treated		330	1110	P15		●●	
M	Stainless steel	Austenitic, quench hardened		200	680	M1		●●	
		Austenitic, precipitation hardened (PH)		300	1010	M2		●●	
		Austenitic/ferritic, duplex		230	780	M3		●●	
K	Malleable cast iron	Ferritic		200	400	K1	●●	●	
		Pearlitic		260	700	K2	●●	●	
	Grey cast iron	Low tensile strength		180	200	K3			
		High tensile strength/austenitic		245	350	K4			
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●●	●	
		Pearlitic		265	700	K6	●●	●	
	GGV (CGI)			230	400	K7		●	
N	Wrought aluminium alloys	Not hardenable		30	-	N1			
		Hardenable, hardened		100	340	N2			
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3			
		≤ 12% Si, hardenable, hardened		90	310	N4			
		> 12% Si, not hardenable		130	450	N5			
	Magnesium-based alloys			70	250	N6			
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7			
		Brass, bronze, red brass		90	310	N8			
		Cu-alloys, short-chipping		110	380	N9			
		High-tensile, Ampco		300	1010	N10			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1			
			Hardened	280	940	S2			
		Ni or Co base	Annealed	250	840	S3			
			Hardened	350	1180	S4			
			Cast	320	1080	S5			
	Titanium alloys	Pure titanium		200	680	S6			
		α and β alloys, hardened		375	1260	S7			
		β alloys		410	1400	S8			
	Tungsten alloys			300	1010	S9			
	Molybdenum alloys			300	1010	S10			
H	Hardened steel			<63 HRC	-	H1-H4			
O	Plastics, graphite					O1-O6			



	2,5 × D_N	3 × D_N					
	Paradur® Megasprint	KMB WST	Paradur® Eco Plus	TC115 Perform	Paradur® X·pert P	Paradur® X·pert P AZ	Paradur® Secur
	Axial	External	External / axial / radial	External	External	External	External
	TIN	Uncoated	THL / TIN	WY80FC / WY80AA	Uncoated / TiN / THL	Uncoated	TIN
	M | B 835	M | B 772	M | B 780 MF | B 850 UNC | B 886 UNF | B 909 G | B 930	M | B 787 MF | B 853	M | B 798 MF | B 862 UNC | B 890 UNF | B 913 UN | B 892 G | B 934 BSW | B 954 EGM | B 960 EGMF | B 965 EGUNC | B 968 EGUNF | B 975	M | B 803	M | B 806
							
		●●	●●	●●	●●	●●	●
	●●	●●	●●	●●	●●	●●	●●
	●●	●	●●	●●	●	●	
	●●	●	●●	●●	●	●	
	●●	●	●●	●			
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B 5

Walter Select HSS-E (-PM) taps

WALTER SELECT
●● Primary application
● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining		
							Thread depth	$3 \times D_N$	
							Designation	TC142 Supreme	Paradur® Eco CI
							Coolant supply	External	Axial / radial
							Coating / grade	WY80FC / WW60RB	TICN
							Thread type | Page	M | B 809 MF | B 867 G | B 936	M | B 815 MF | B 872
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1			
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2			
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	●		
		C > 0.55%	Annealed	190	640	P4	●		
		C > 0.55%	Heat-treated	300	1010	P5	●		
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●		
	Low-alloyed steel	Annealed		175	590	P7	●		
		Heat-treated		285	960	P8	●		
		Heat-treated		380	1280	P9			
		Heat-treated		430	1480	P10			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●		
		Hardened and tempered		300	1010	P12			
		Hardened and tempered		380	1280	P13			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●●		
		Martensitic, heat-treated		330	1110	P15			
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●		
		Austenitic, precipitation hardened (PH)		300	1010	M2			
		Austenitic/ferritic, duplex		230	780	M3	●●		
K	Malleable cast iron	Ferritic		200	400	K1		●●	
		Pearlitic		260	700	K2		●●	
	Grey cast iron	Low tensile strength		180	200	K3		●●	
		High tensile strength/austenitic		245	350	K4		●●	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		●●	
		Pearlitic		265	700	K6		●●	
	GGV (CGI)			230	400	K7		●●	
N	Wrought aluminium alloys	Not hardenable		30	-	N1			
		Hardenable, hardened		100	340	N2			
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		●●	
		≤ 12% Si, hardenable, hardened		90	310	N4		●●	
		> 12% Si, not hardenable		130	450	N5		●●	
	Magnesium-based alloys			70	250	N6		●●	
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7			
		Brass, bronze, red brass		90	310	N8			
		Cu-alloys, short-chipping		110	380	N9			
		High-tensile, Ampco		300	1010	N10			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1			
			Hardened	280	940	S2			
		Ni or Co base	Annealed	250	840	S3			
			Hardened	350	1180	S4			
			Cast	320	1080	S5			
	Titanium alloys	Pure titanium		200	680	S6			
		α and β alloys, hardened		375	1260	S7			
		β alloys		410	1400	S8			
	Tungsten alloys			300	1010	S9			
	Molybdenum alloys			300	1010	S10			
H	Hardened steel			<63 HRC	-	H1-H4			
O	Plastics, graphite					O1-O6		●●	



	3 × D_N			3,5 × D_N		
	Paradur® X-pert N	Paradur® WLM Synchrospeed	Paradur® Uni	Paradur® HT	Paradur® NH	Paradur® Short Chip HT
	External	External	External	Axial	Axial	Axial
	Uncoated	CrN / uncoated	TiN / vap / uncoated	TIN	TiN / uncoated	THL / uncoated
	M | B 821 MF | B 873 UNC | B 897 G | B 940 EGM | B 962 EGUNC | B 970 EGUNF | B 977	M | B 824	M | B 832 MF | B 877 G | B 941	M | B 792 MF | B 859	M | B 796	M | B 807 MF | B 865
						
			●●		●	
			●●	●	●●	●
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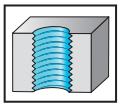
HSS-E-PM machine taps
Prototex® Eco Plus



– For long-chipping materials

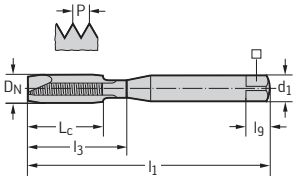
M
DIN 13

6HX



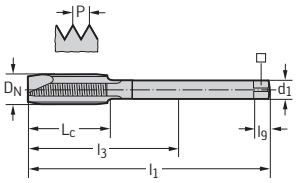
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			
TIN	●●	●●	●●	●●			

DIN 371



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2021302-M2	EP2021305-M2	M 2	0,4	45	6	9	2,8	2,1	5	3
EP2021302-M2.5	EP2021305-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	3
EP2021302-M3	EP2021305-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
EP2021302-M4	EP2021305-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
EP2021302-M5	EP2021305-M5	M 5	0,8	70	13	25	6	4,9	8	3
EP2021302-M6	EP2021305-M6	M 6	1	80	15	30	6	4,9	8	3
EP2021302-M8	EP2021305-M8	M 8	1,25	90	18	35	8	6,2	9	3
EP2021302-M10	EP2021305-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2026302-M12	EP2026305-M12	M 12	1,75	110	23	83	9	7	10	4
EP2026302-M14	EP2026305-M14	M 14	2	110	25	81	11	9	12	4
EP2026302-M16	EP2026305-M16	M 16	2	110	25	68	12	9	12	4
EP2026302-M18	EP2026305-M18	M 18	2,5	125	30	81	14	11	14	4
EP2026302-M20	EP2026305-M20	M 20	2,5	140	30	95	16	12	15	4
EP2026302-M24	EP2026305-M24	M 24	3	160	36	113	18	14,5	17	4
EP2026302-M27		M 27	3	160	36	97	20	16	19	4
EP2026302-M30		M 30	3,5	180	42	115	22	18	21	4

B 5

B 1008 D 1 B 709

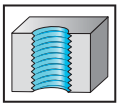
HSS-E-PM machine taps
Prototex® Eco Plus



– For long-chipping materials

M
DIN 13

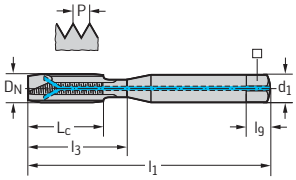
6HX



≤ 3,5×D_N | B=3,5-5 | 42HRC | 1350 –500 N/mm²

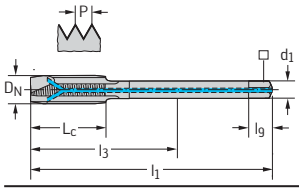
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 371



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2021342-M6	M 6	1	80	15	30	6	4,9	8	3
EP2021342-M8	M 8	1,25	90	18	35	8	6,2	9	3
EP2021342-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2026342-M12	M 12	1,75	110	23	83	9	7	10	4
EP2026342-M16	M 16	2	110	25	68	12	9	12	4

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E-PM machine taps
Prototex® Eco Plus



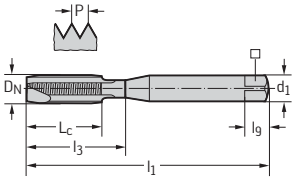
– For long-chipping materials

M	6HX	
DIN 13		

≤ 3,5×D_N | B=3,5-5 | LH | 42HRC | 1350 –500 N/mm²

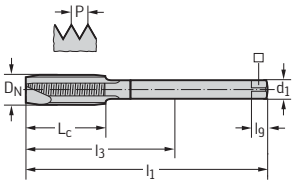
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 371



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2021382-M3	M 3 - LH	0,5	56	9	18	3,5	2,7	6	3
EP2021382-M4	M 4 - LH	0,7	63	12	21	4,5	3,4	6	3
EP2021382-M5	M 5 - LH	0,8	70	13	25	6	4,9	8	3
EP2021382-M6	M 6 - LH	1	80	15	30	6	4,9	8	3
EP2021382-M8	M 8 - LH	1,25	90	18	35	8	6,2	9	3
EP2021382-M10	M 10 - LH	1,5	100	20	39	10	8	11	3

DIN 376



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2026382-M12	M 12 - LH	1,75	110	23	83	9	7	10	4
EP2026382-M16	M 16 - LH	2	110	25	68	12	9	12	4
EP2026382-M20	M 20 - LH	2,5	140	30	95	16	12	15	4

B 5

B 1008 D 1 B 709

HSS-E-PM machine taps
Prototex® Eco Plus



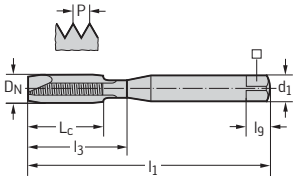
– For long-chipping materials

≤ 3,5×D_N	B=3,5-5	42HRC 1350 –500 N/mm²

M	6GX	
DIN 13		

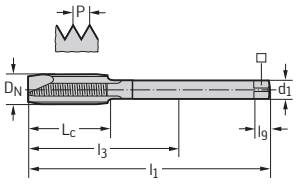
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			
TIN	●●	●●	●●	●●			

DIN 371



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2023302-M2	EP2023305-M2	M 2	0,4	45	6	9	2,8	2,1	5	3
EP2023302-M2.5	EP2023305-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	3
EP2023302-M3	EP2023305-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
EP2023302-M4	EP2023305-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
EP2023302-M5	EP2023305-M5	M 5	0,8	70	13	25	6	4,9	8	3
EP2023302-M6	EP2023305-M6	M 6	1	80	15	30	6	4,9	8	3
EP2023302-M8	EP2023305-M8	M 8	1,25	90	18	35	8	6,2	9	3
EP2023302-M10	EP2023305-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2028302-M12	EP2028305-M12	M 12	1,75	110	23	83	9	7	10	4
EP2028302-M14	EP2028305-M14	M 14	2	110	25	81	11	9	12	4
EP2028302-M16	EP2028305-M16	M 16	2	110	25	68	12	9	12	4

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

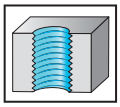
HSS-E machine taps
TC216 Perform



– For long-chipping materials

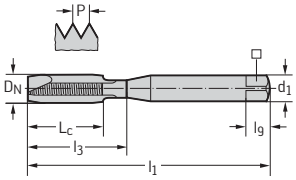
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
WY80AA	●●	●●	●●	●●			
WY80FC	●●	●●	●●	●●			

DIN 371

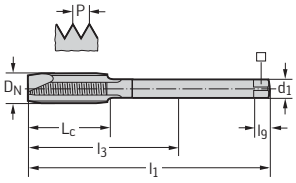


Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WY80AA	WY80FC
TC216-M3-C0-	M 3	0,5	56	9	18	3,5	2,7	6	2	✕	✕
TC216-M4-C0-	M 4	0,7	63	12	21	4,5	3,4	6	3	✕	✕
TC216-M5-C0-	M 5	0,8	70	13	25	6	4,9	8	3	✕	✕
TC216-M6-C0-	M 6	1	80	15	30	6	4,9	8	3	✕	✕
TC216-M8-C0-	M 8	1,25	90	18	35	8	6,2	9	3	✕	✕
TC216-M10-C0-	M 10	1,5	100	20	39	10	8	11	3	✕	✕

Ordering example for the WY80FC grade: TC216-M3-C0-WY80FC

B 5

DIN 376



Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WY80AA	WY80FC
TC216-M12-L0-	M 12	1,75	110	23	83	9	7	10	3	✕	✕
TC216-M14-L0-	M 14	2	110	25	81	11	9	12	4	✕	✕
TC216-M16-L0-	M 16	2	110	25	68	12	9	12	4	✕	✕
TC216-M20-L0-	M 20	2,5	140	30	95	16	12	15	4	✕	✕

Ordering example for the WY80FC grade: TC216-M12-L0-WY80FC

B 1008 D 1 B 709

HSS-E machine taps
Prototex® Synchrospeed

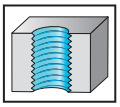


– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 3×D_N | B=3,5-5 | 44HRC 1400 N/mm²

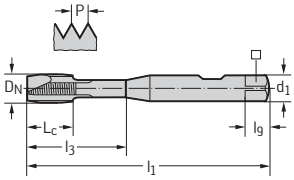
M
DIN 13

6HX



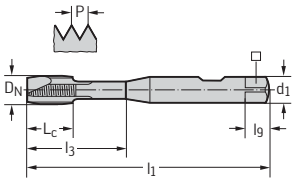
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●	●●		●●
TIN	●●	●●	●●	●●	●●		●●

~DIN 371



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2021302-M2	S2021305-M2	M 2	0,4	70	4	9	6	4,9	8	3
S2021302-M2.5	S2021305-M2.5	M 2.5	0,45	70	5	12,5	6	4,9	8	3
S2021302-M3	S2021305-M3	M 3	0,5	70	5	18	6	4,9	8	3
S2021302-M4	S2021305-M4	M 4	0,7	70	7	21	6	4,9	8	3
S2021302-M5	S2021305-M5	M 5	0,8	70	8	25	6	4,9	8	3
S2021302-M6	S2021305-M6	M 6	1	80	10	30	6	4,9	8	3
S2021302-M8	S2021305-M8	M 8	1,25	90	13	35	8	6,2	9	3
S2021302-M10	S2021305-M10	M 10	1,5	100	15	39	10	8	11	3

~DIN 376



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2026302-M12	S2026305-M12	M 12	1,75	110	18	68	12	9	12	3
S2026302-M14	S2026305-M14	M 14	2	110	20	66	14	11	14	3
S2026302-M16	S2026305-M16	M 16	2	110	20	65	16	12	15	4
S2026302-M20	S2026305-M20	M 20	2,5	140	25	95	16	12	15	4
S2026302-M24	S2026305-M24	M 24	3	160	30	97	20	16	19	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E machine taps
Prototex® OS

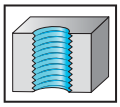


– For long-chipping materials

≤ 1×D_N	B=3,5-5	14HRC 700 –200 N/mm²

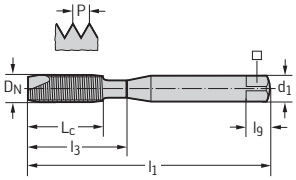
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
Uncoated	●●			●			

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20211-M1	M 1	0,25	40	5	5	2,5	2,1	5	2
20211-M1.2	M 1.2	0,25	40	5	5	2,5	2,1	5	2
20211-M1.4	M 1.4	0,3	40	7	6,5	2,5	2,1	5	2
20211-M1.6	M 1.6	0,35	40	7	7	2,5	2,1	5	2
20211-M1.7	M 1.7	0,35	40	7	7	2,5	2,1	5	2
20211-M1.8	M 1.8	0,35	40	7	7	2,5	2,1	5	2
20211-M2	M 2	0,4	45	6	9	2,8	2,1	5	2
20211-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	2
20211-M2.6	M 2.6	0,45	50	8	12,5	2,8	2,1	5	2
20211-M3	M 3	0,5	56	9	18	3,5	2,7	6	2
20211-M4	M 4	0,7	63	12	21	4,5	3,4	6	2
20211-M5	M 5	0,8	70	13	25	6	4,9	8	2
20211-M6	M 6	1	80	15	30	6	4,9	8	3
20211-M8	M 8	1,25	90	18	35	8	6,2	9	3
20211-M10	M 10	1,5	100	20	39	10	8	11	3

≤ M 1.4: 5H
≤ M 1.8: Without reduced neck after the thread

B 5

B 1008 D 1 B 709

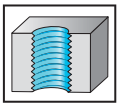
HSS-E machine taps
Paradur® N



– For long-chipping materials

M
DIN 13

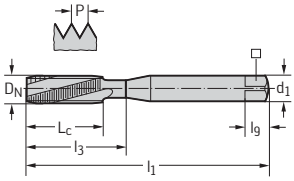
ISO2/6H



≤ 3×D_N | B=3,5-5 | 15° | 32HRC, 1000 –200 N/mm²

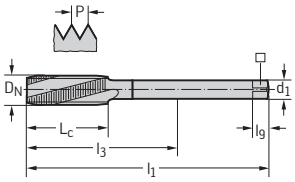
	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20411-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
20411-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
20411-M5	M 5	0,8	70	13	25	6	4,9	8	3
20411-M6	M 6	1	80	15	30	6	4,9	8	3

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20461-M6	M 6	1	80	15	59	4,5	3,4	6	3
20461-M8	M 8	1,25	90	18	67	6	4,9	8	3
20461-M10	M 10	1,5	100	20	77	7	5,5	8	3
20461-M12	M 12	1,75	110	23	83	9	7	10	3

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine taps
Prototex® X·pert P

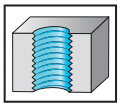


– Reduced number of flutes
– For long-chipping materials



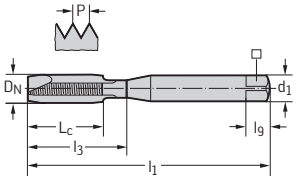
M
DIN 13

ISO1/4H



	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P20200-M1.6	M 1.6	0,35	40	7	7	2,5	2,1	5	2
P20200-M2	M 2	0,4	45	6	9	2,8	2,1	5	2
P20200-M2.2	M 2.2	0,45	45	7	12	2,8	2,1	5	2
P20200-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	2
P20200-M3	M 3	0,5	56	9	18	3,5	2,7	6	2
P20200-M3.5	M 3.5	0,6	56	11	20	4	3	6	2
P20200-M4	M 4	0,7	63	12	21	4,5	3,4	6	2
P20200-M5	M 5	0,8	70	13	25	6	4,9	8	2
P20200-M6	M 6	1	80	15	30	6	4,9	8	2
P20200-M8	M 8	1,25	90	18	35	8	6,2	9	3
P20200-M10	M 10	1,5	100	20	39	10	8	11	3

M 1.6: Without reduced neck after the thread

B 5

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P

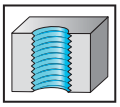


≤ 3×D_N | B=3,5-5 | 32HRC 1000 –200 N/mm²

– For long-chipping materials

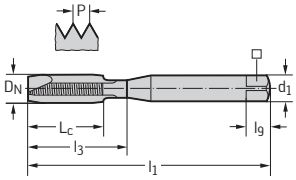
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
TICN	●●			●			●
TIN	●●			●			●
Uncoated	●●			●			●

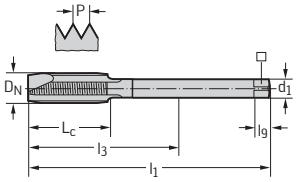
DIN 371



Designation TICN	Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
P2031006-M2	P2031005-M2	P20310-M2	M 2	0,4	45	6	9	2,8	2,1	3
	P2031005-M2.2	P20310-M2.2	M 2.2	0,45	45	7	12	2,8	2,1	3
P2031006-M2.5	P2031005-M2.5	P20310-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	3
P2031006-M3	P2031005-M3	P20310-M3	M 3	0,5	56	9	18	3,5	2,7	3
		P20310-M3.5	M 3.5	0,6	56	11	20	4	3	3
P2031006-M4	P2031005-M4	P20310-M4	M 4	0,7	63	12	21	4,5	3,4	3
P2031006-M5	P2031005-M5	P20310-M5	M 5	0,8	70	13	25	6	4,9	3
P2031006-M6	P2031005-M6	P20310-M6	M 6	1	80	15	30	6	4,9	3
	P2031005-M7	P20310-M7	M 7	1	80	15	30	7	5,5	3
P2031006-M8	P2031005-M8	P20310-M8	M 8	1,25	90	18	35	8	6,2	3
P2031006-M10	P2031005-M10	P20310-M10	M 10	1,5	100	20	39	10	8	3

l_9 dimension in accordance with DIN 10

DIN 376



Designation TICN	Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
		P20360-M2	M 2	0,4	45	6	26	1,4	1,1	3
		P20360-M2.5	M 2.5	0,45	50	8	31	1,8	1,4	3
		P20360-M3	M 3	0,5	56	9	37	2,2	1,8	3
		P20360-M4	M 4	0,7	63	12	43	2,8	2,1	3
		P20360-M5	M 5	0,8	70	13	49	3,5	2,7	3
P2036006-M6	P2036005-M6	P20360-M6	M 6	1	80	15	59	4,5	3,4	3
		P20360-M7	M 7	1	80	15	58	5,5	4,3	3
P2036006-M8	P2036005-M8	P20360-M8	M 8	1,25	90	18	67	6	4,9	3
		P20360-M9	M 9	1,25	90	18	67	7	5,5	3
P2036006-M10	P2036005-M10	P20360-M10	M 10	1,5	100	20	77	7	5,5	3
P2036006-M12	P2036005-M12	P20360-M12	M 12	1,75	110	23	83	9	7	3
	P2036005-M14	P20360-M14	M 14	2	110	25	81	11	9	3
P2036006-M16	P2036005-M16	P20360-M16	M 16	2	110	25	68	12	9	3
	P2036005-M18	P20360-M18	M 18	2,5	125	30	81	14	11	4
P2036006-M20	P2036005-M20	P20360-M20	M 20	2,5	140	30	95	16	12	4
		P20360-M22	M 22	2,5	140	30	93	18	14,5	4
P2036006-M24	P2036005-M24	P20360-M24	M 24	3	160	36	113	18	14,5	4
	P2036005-M27	P20360-M27	M 27	3	160	36	97	20	16	4
P2036006-M30	P2036005-M30	P20360-M30	M 30	3,5	180	42	115	22	18	4
		P20360-M33	M 33	3,5	180	42	113	25	20	4
	P2036005-M36	P20360-M36	M 36	4	200	48	131	28	22	4
		P20360-M39	M 39	4	200	48	102	32	24	4
		P20360-M42	M 42	4,5	200	54	102	32	24	4
		P20360-M45	M 45	4,5	220	54	117	36	29	4
		P20360-M48	M 48	5	250	60	147	36	29	4
		P20360-M52	M 52	5	250	60	120	40	32	4
		P20360-M56	M 56	5,5	250	66	120	40	32	4

l_9 dimension in accordance with DIN 10

B 1008 | D 1 | B 709

HSS-E machine taps
Prototex® X·pert P

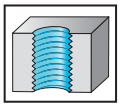


– Reduced number of flutes
– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 32HRC 1000 –200 N/mm²

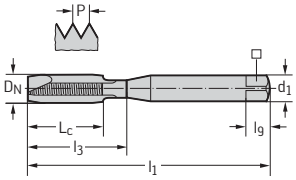
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20210-M1	M 1	0,25	40	5	5	2,5	2,1	5	2
P2021005-M1.2	P20210-M1.2	M 1.2	0,25	40	5	5	2,5	2,1	5	2
P2021005-M1.4	P20210-M1.4	M 1.4	0,3	40	7	6,5	2,5	2,1	5	2
P2021005-M1.6	P20210-M1.6	M 1.6	0,35	40	7	7	2,5	2,1	5	2
	P20210-M1.8	M 1.8	0,35	40	7	7	2,5	2,1	5	2
P2021005-M2	P20210-M2	M 2	0,4	45	6	9	2,8	2,1	5	2
	P20210-M2.3	M 2.3	0,4	45	7	12	2,8	2,1	5	2
	P20210-M2.2	M 2.2	0,45	45	7	12	2,8	2,1	5	2
P2021005-M2.5	P20210-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	2
	P20210-M2.6	M 2.6	0,45	50	8	12,5	2,8	2,1	5	2
P2021005-M3	P20210-M3	M 3	0,5	56	9	18	3,5	2,7	6	2
P2021005-M3.5	P20210-M3.5	M 3.5	0,6	56	11	20	4	3	6	2
P2021005-M4	P20210-M4	M 4	0,7	63	12	21	4,5	3,4	6	2
	P20210-M4.5	M 4.5	0,75	70	13	25	6	4,9	8	2
P2021005-M5	P20210-M5	M 5	0,8	70	13	25	6	4,9	8	2
P2021005-M6	P20210-M6	M 6	1	80	15	30	6	4,9	8	2

≤ M 1.4: 5H
≤ M 1.8: Without reduced neck after the thread

B 5

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P



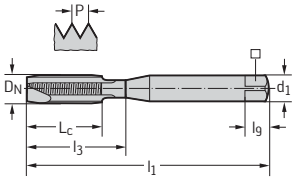
– For long-chipping materials

M	ISO2/6H	
DIN 13		

≤ 3×D_N | B=3,5-5 | LH | 32HRC, 1000 –200 N/mm²

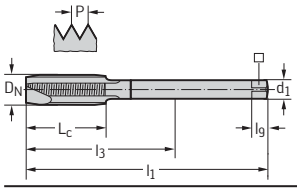
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P202108-M2	M 2 - LH	0,4	45	6	9	2,8	2,1	5	2
P202108-M3	M 3 - LH	0,5	56	9	18	3,5	2,7	6	2
P202108-M4	M 4 - LH	0,7	63	12	21	4,5	3,4	6	2
P202108-M5	M 5 - LH	0,8	70	13	25	6	4,9	8	2
P202108-M6	M 6 - LH	1	80	15	30	6	4,9	8	3
P202108-M8	M 8 - LH	1,25	90	18	35	8	6,2	9	3
P202108-M10	M 10 - LH	1,5	100	20	39	10	8	11	3

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P202608-M12	M 12 - LH	1,75	110	23	83	9	7	10	3
P202608-M16	M 16 - LH	2	110	25	68	12	9	12	3
P202608-M20	M 20 - LH	2,5	140	30	95	16	12	15	3

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine taps
Prototex® X·pert P

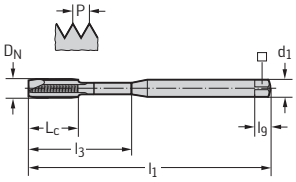


– For long-chipping materials

M	ISO2/6H	
DIN 13		

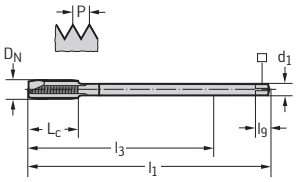
	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

~DIN 371 L



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2031035-M3	P203103-M3	M 3	0,5	112	9	18	3,5	2,7	6	3
P2031035-M4	P203103-M4	M 4	0,7	112	12	21	4,5	3,4	6	3
P2031035-M5	P203103-M5	M 5	0,8	125	13	25	6	4,9	8	3
P2031035-M6	P203103-M6	M 6	1	125	15	30	6	4,9	8	3
P2031035-M8	P203103-M8	M 8	1,25	140	18	40	8	6,2	9	3
P2031035-M10	P203103-M10	M 10	1,5	160	20	50	10	8	11	3

~DIN 376 L



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P203603-M3	M 3	0,5	112	9	86	2,2	1,8	4	3
	P203603-M4	M 4	0,7	112	12	92	2,8	2,1	5	3
P2036035-M5	P203603-M5	M 5	0,8	125	13	104	3,5	2,7	6	3
P2036035-M6	P203603-M6	M 6	1	125	15	104	4,5	3,4	6	3
P2036035-M8	P203603-M8	M 8	1,25	140	18	117	6	4,9	8	3
P2036035-M10	P203603-M10	M 10	1,5	160	20	137	7	5,5	8	3
P2036035-M12	P203603-M12	M 12	1,75	180	23	153	9	7	10	3
P2036035-M14	P203603-M14	M 14	2	180	25	151	11	9	12	3
P2036035-M16	P203603-M16	M 16	2	200	25	158	12	9	12	3
P2036035-M20	P203603-M20	M 20	2,5	224	30	179	16	12	15	4

B 5

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P



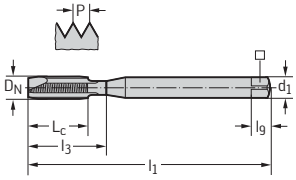
– For long-chipping materials

M	ISO2/6H	
DIN 13		

≤ 3×D_N | B=3,5-5 | XL (l_1) | 32HRC, 1000 –200 N/mm²

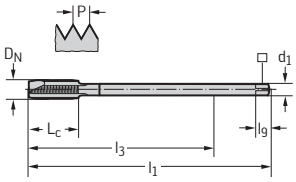
	P	M	K	N	S	H	O
Uncoated	●●			●			●

~DIN 371 XL



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P202103-M4	M 4	0,7	125	12	21	4,5	3,4	6	3
P202103-M5	M 5	0,8	140	13	25	6	4,9	8	3
P202103-M6	M 6	1	160	15	30	6	4,9	8	3

~DIN 376 XL



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P202603-M8	M 8	1,25	180	18	157	6	4,9	8	3
P202603-M10	M 10	1,5	200	20	177	7	5,5	8	3
P202603-M12	M 12	1,75	220	23	193	9	7	10	3
P202603-M14	M 14	2	220	25	191	11	9	12	3
P202603-M16	M 16	2	220	25	178	12	9	12	3
P202603-M20	M 20	2,5	280	30	235	16	12	15	4

WALTER SELECT
●● Primary application
● Other application

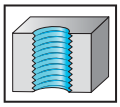
B 1008 | D 1 | B 709

HSS-E machine taps
Prototex® X·pert P AZ



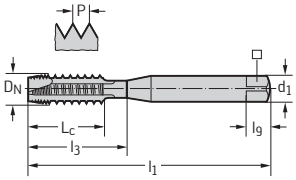
– For long-chipping materials
– For thin-walled workpieces

≤ 3×D_N	B=3,5-5	32HRC 1000 –200 N/mm²

M DIN 13	ISO2/6H	

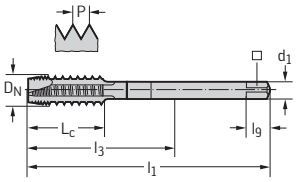
	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P40310-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
P40310-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
P40310-M5	M 5	0,8	70	13	25	6	4,9	8	3
P40310-M6	M 6	1	80	15	30	6	4,9	8	3
P40310-M8	M 8	1,25	90	18	35	8	6,2	9	3
P40310-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P40360-M12	M 12	1,75	110	23	83	9	7	10	3
P40360-M14	M 14	2	110	25	81	11	9	12	3
P40360-M16	M 16	2	110	25	68	12	9	12	3
P40360-M20	M 20	2,5	140	30	95	16	12	15	4
P40360-M24	M 24	3	160	36	113	18	14,5	17	4

B 5

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P

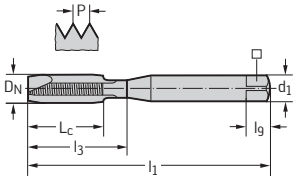


– For long-chipping materials

M	ISO3/6G	
DIN 13		

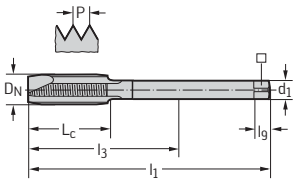
	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20330-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	3
	P20330-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
	P20330-M3.5	M 3.5	0,6	56	11	20	4	3	6	3
	P20330-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
	P20330-M5	M 5	0,8	70	13	25	6	4,9	8	3
P2033005-M6	P20330-M6	M 6	1	80	15	30	6	4,9	8	3
	P20330-M7	M 7	1	80	15	30	7	5,5	8	3
P2033005-M8	P20330-M8	M 8	1,25	90	18	35	8	6,2	9	3
P2033005-M10	P20330-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20380-M5	M 5	0,8	70	13	49	3,5	2,7	6	3
	P20380-M6	M 6	1	80	15	59	4,5	3,4	6	3
	P20380-M8	M 8	1,25	90	18	67	6	4,9	8	3
	P20380-M10	M 10	1,5	100	20	77	7	5,5	8	3
	P20380-M12	M 12	1,75	110	23	83	9	7	10	3
	P20380-M14	M 14	2	110	25	81	11	9	12	3
	P20380-M16	M 16	2	110	25	68	12	9	12	3
	P20380-M18	M 18	2,5	125	30	81	14	11	14	4
	P20380-M20	M 20	2,5	140	30	95	16	12	15	4
	P20380-M24	M 24	3	160	36	113	18	14,5	17	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P

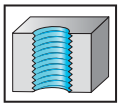


– Reduced number of flutes
– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 32HRC 1000 –200 N/mm²

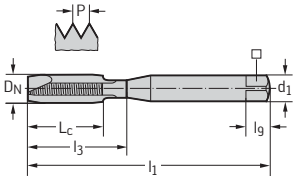
M
DIN 13

ISO3/6G



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2023005-M2	P20230-M2	M 2	0,4	45	6	9	2,8	2,1	5	2
	P20230-M2.3	M 2.3	0,4	45	7	12	2,8	2,1	5	2
P2023005-M2.5	P20230-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	2
	P20230-M2.6	M 2.6	0,45	50	8	12,5	2,8	2,1	5	2
P2023005-M3	P20230-M3	M 3	0,5	56	9	18	3,5	2,7	6	2
P2023005-M3.5	P20230-M3.5	M 3.5	0,6	56	11	20	4	3	6	2
P2023005-M4	P20230-M4	M 4	0,7	63	12	21	4,5	3,4	6	2
P2023005-M5	P20230-M5	M 5	0,8	70	13	25	6	4,9	8	2

B 5

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P

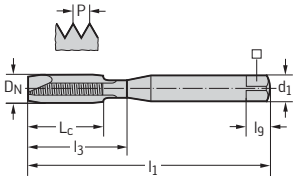


– For long-chipping materials

M	7G	
DIN 13		

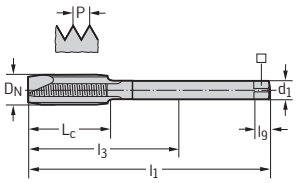
	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2034005-M2	P20340-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
P2034005-M2.5	P20340-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	3
	P20340-M2.6	M 2.6	0,45	50	8	14	2,8	2,1	5	3
P2034005-M3	P20340-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
P2034005-M3.5	P20340-M3.5	M 3.5	0,6	56	11	20	4	3	6	3
P2034005-M4	P20340-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
P2034005-M5	P20340-M5	M 5	0,8	70	13	25	6	4,9	8	3
P2034005-M6	P20340-M6	M 6	1	80	15	30	6	4,9	8	3
P2034005-M8	P20340-M8	M 8	1,25	90	18	35	8	6,2	9	3
P2034005-M10	P20340-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2039005-M12	P20390-M12	M 12	1,75	110	23	83	9	7	10	3
P2039005-M16	P20390-M16	M 16	2	110	25	68	12	9	12	3
P2039005-M20	P20390-M20	M 20	2,5	140	30	95	16	12	15	4

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert M

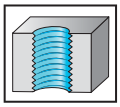


≤ 3×D_N | B=3,5-5 | 36HRC 1200 –700 N/mm²

– For long-chipping materials

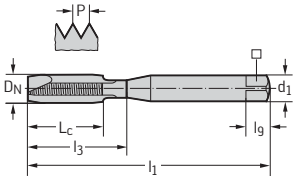
M
DIN 13

6HX



	P	M	K	N	S	H	O
TICN	●	●●					
TIN	●	●●					
VAP	●	●●					

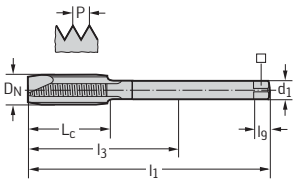
DIN 371



Designation TICN	Designation TIN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
		M20213-M1	M 1	0,25	40	5	5	2,5	2,1	2
		M20213-M1.2	M 1.2	0,25	40	5	5	2,5	2,1	2
		M20213-M1.4	M 1.4	0,3	40	7	6,5	2,5	2,1	2
		M20213-M1.6	M 1.6	0,35	40	7	7	2,5	2,1	2
		M20213-M1.8	M 1.8	0,35	40	7	7	2,5	2,1	2
		M20213-M1.7	M 1.7	0,35	40	7	7	2,5	2,1	2
M2021306-M2	M2021305-M2	M20213-M2	M 2	0,4	45	6	9	2,8	2,1	2
		M20213-M2.3	M 2.3	0,4	45	7	12	2,8	2,1	2
		M20213-M2.2	M 2.2	0,45	45	7	12	2,8	2,1	2
M2021306-M2.5	M2021305-M2.5	M20213-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	2
		M20213-M2.6	M 2.6	0,45	50	8	12,5	2,8	2,1	2
M2021306-M3	M2021305-M3	M20213-M3	M 3	0,5	56	9	18	3,5	2,7	2
M2021306-M3.5	M2021305-M3.5	M20213-M3.5	M 3.5	0,6	56	11	20	4	3	2
M2021306-M4	M2021305-M4	M20213-M4	M 4	0,7	63	12	21	4,5	3,4	3
		M20213-M4.5	M 4.5	0,75	70	13	25	6	4,9	3
M2021306-M5	M2021305-M5	M20213-M5	M 5	0,8	70	13	25	6	4,9	3
M2021306-M6	M2021305-M6	M20213-M6	M 6	1	80	15	30	6	4,9	3
		M20213-M7	M 7	1	80	15	30	7	5,5	3
M2021306-M8	M2021305-M8	M20213-M8	M 8	1,25	90	18	35	8	6,2	3
		M20213-M9	M 9	1,25	90	18	35	9	7	3
M2021306-M10	M2021305-M10	M20213-M10	M 10	1,5	100	20	39	10	8	3

≤ M 1.4: 5HX
≤ M 1.8: Without reduced neck after the thread
l_9 dimension in accordance with DIN 10

DIN 376



Designation TICN	Designation TIN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
M2026306-M5		M20263-M5	M 5	0,8	70	13	49	3,5	2,7	3
M2026306-M6		M20263-M6	M 6	1	80	15	59	4,5	3,4	3
M2026306-M8		M20263-M8	M 8	1,25	90	18	67	6	4,9	3
M2026306-M10		M20263-M10	M 10	1,5	100	20	77	7	5,5	3
M2026306-M12	M2026305-M12	M20263-M12	M 12	1,75	110	23	83	9	7	4
M2026306-M14	M2026305-M14	M20263-M14	M 14	2	110	25	81	11	9	4
M2026306-M16	M2026305-M16	M20263-M16	M 16	2	110	25	68	12	9	4
		M20263-M18	M 18	2,5	125	30	81	14	11	4
M2026306-M20	M2026305-M20	M20263-M20	M 20	2,5	140	30	95	16	12	4
		M20263-M22	M 22	2,5	140	30	93	18	14,5	4
M2026306-M24		M20263-M24	M 24	3	160	36	113	18	14,5	4
		M20263-M27	M 27	3	160	36	97	20	16	4
		M20263-M30	M 30	3,5	180	42	115	22	18	4
		M20263-M33	M 33	3,5	180	42	113	25	20	5
		M20263-M36	M 36	4	200	48	131	28	22	5

l_9 dimension in accordance with DIN 10

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert M

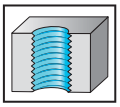


– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 36HRC 1200 –700 N/mm²

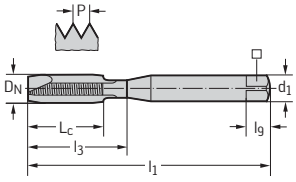
M
DIN 13

6GX



	P	M	K	N	S	H	O
TICN	●	●●					
VAP	●	●●					

DIN 371



Designation TICN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2023306-M3	M20233-M3	M 3	0,5	56	9	18	3,5	2,7	6	2
M2023306-M4	M20233-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
M2023306-M5	M20233-M5	M 5	0,8	70	13	25	6	4,9	8	3
M2023306-M6	M20233-M6	M 6	1	80	15	30	6	4,9	8	3
M2023306-M7	M20233-M7	M 7	1	80	15	30	7	5,5	8	3
M2023306-M8	M20233-M8	M 8	1,25	90	18	35	8	6,2	9	3
M2023306-M10	M20233-M10	M 10	1,5	100	20	39	10	8	11	3

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

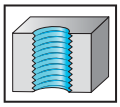
HSS-E machine taps
Prototex® X·pert N



– For long-chipping materials

M
DIN 13

ISO2/6H



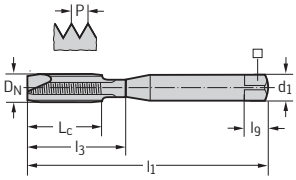
≤ 3×D_N

B=3,5-5

14HRC
700
–200
N/mm²

	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_g mm	N
N20219-M2	M 2	0,4	45	6	9	2,8	2,1	5	2
N20219-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	2
N20219-M3	M 3	0,5	56	9	18	3,5	2,7	6	2
N20219-M4	M 4	0,7	63	12	21	4,5	3,4	6	2
N20219-M5	M 5	0,8	70	13	25	6	4,9	8	2
N20219-M6	M 6	1	80	15	30	6	4,9	8	3
N20219-M8	M 8	1,25	90	18	35	8	6,2	9	3
N20219-M10	M 10	1,5	100	20	39	10	8	11	3

B 5

B 1008 D 1 B 709

HSS-E-PM machine taps
Prototex® TiNi



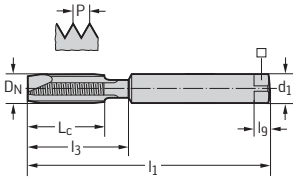
– For long-chipping materials

M	4HX	
DIN 13		

≤ 2×D_N | B=3,5-5 | 44HRC, 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
202061-M2	M 2	0,4	45	8	8	2,8	2,1	5	2
202061-M2.5	M 2.5	0,45	50	9	9	2,8	2,1	5	2
202061-M3	M 3	0,5	56	10	10	3,5	2,7	6	2
202061-M3.5	M 3.5	0,6	56	12	12	4	3	6	3
202061-M4	M 4	0,7	63	13	13	4,5	3,4	6	3
202061-M5	M 5	0,8	70	16	16	6	4,9	8	3
202061-M6	M 6	1	80	15	23	6	4,9	8	3
202061-M8	M 8	1,25	90	18	29,5	8	6,2	9	3
202061-M10	M 10	1,5	100	20	33,5	10	8	11	3

≤ M 5: Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

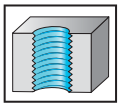
HSS-E-PM machine taps
Prototex® TiNi



– For long-chipping materials

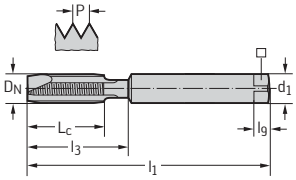
M
DIN 13

6HX



	P	M	K	N	S	H	O
TICN	●●	●●		●	●●		
Uncoated	●●	●●		●	●●		

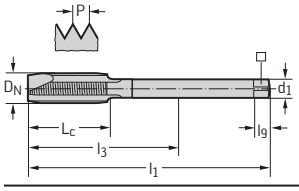
~DIN 371



Designation TICN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	202161-M1	M 1	0,25	40	5	5	2,5	2,1	5	2
	202161-M1.2	M 1.2	0,25	40	5	5	2,5	2,1	5	2
	202161-M1.4	M 1.4	0,3	40	5	5	2,5	2,1	5	2
	202161-M1.6	M 1.6	0,35	40	5	5	2,5	2,1	5	2
	202161-M1.8	M 1.8	0,35	40	5	5	2,5	2,1	5	2
2021616-M2	202161-M2	M 2	0,4	45	8	8	2,8	2,1	5	2
	202161-M2.2	M 2.2	0,45	45	8	8	2,8	2,1	5	2
2021616-M2.5	202161-M2.5	M 2.5	0,45	50	9	9	2,8	2,1	5	2
2021616-M3	202161-M3	M 3	0,5	56	10	10	3,5	2,7	6	2
2021616-M3.5	202161-M3.5	M 3.5	0,6	56	12	12	4	3	6	3
2021616-M4	202161-M4	M 4	0,7	63	13	13	4,5	3,4	6	3
	202161-M4.5	M 4.5	0,75	70	13	13	6	4,9	8	3
2021616-M5	202161-M5	M 5	0,8	70	16	16	6	4,9	8	3
2021616-M6	202161-M6	M 6	1	80	15	23	6	4,9	8	3
2021616-M8	202161-M8	M 8	1,25	90	18	29,5	8	6,2	9	3
2021616-M10	202161-M10	M 10	1,5	100	20	33,5	10	8	11	3

≤ M 1.4: 5HX
≤ M 5: Without reduced neck after the thread

DIN 376



Designation TICN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2026616-M12	202661-M12	M 12	1,75	110	23	83	9	7	10	4
2026616-M14	202661-M14	M 14	2	110	25	81	11	9	12	4
2026616-M16	202661-M16	M 16	2	110	25	68	12	9	12	4
2026616-M20	202661-M20	M 20	2,5	140	30	95	16	12	15	4
2026616-M24	202661-M24	M 24	3	160	36	113	18	14,5	17	4

B 1008 D 1 B 709

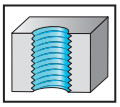
HSS-E-PM machine taps
Prototex® TiNi Plus



– Machining with emulsion is possible
– For long-chipping materials

M
DIN 13

6HX



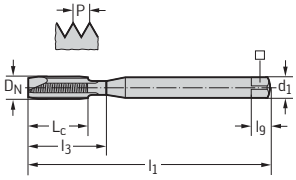
≤ 2×D_N

B=3,5-5

44HRC
1400
–700
N/mm²

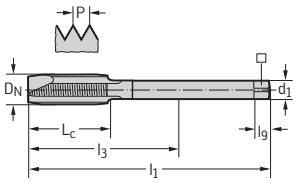
	P	M	K	N	S	H	O
ACN					●●		

~DIN 371



Designation ACN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2021763-M2	M 2	0,4	45	8	8	2,8	2,1	5	2
2021763-M2.5	M 2.5	0,45	50	9	9	2,8	2,1	5	2
2021763-M3	M 3	0,5	56	10	10	3,5	2,7	6	2
2021763-M3.5	M 3.5	0,6	56	12	12	4	3	6	3
2021763-M4	M 4	0,7	63	13	13	4,5	3,4	6	3
2021763-M5	M 5	0,8	70	16	16	6	4,9	8	3
2021763-M6	M 6	1	80	15	23	6	4,9	8	3
2021763-M8	M 8	1,25	90	18	29,5	8	6,2	9	3
2021763-M10	M 10	1,5	100	20	33,5	10	8	11	3

DIN 376



Designation ACN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2026763-M12	M 12	1,75	110	23	83	9	7	10	4
2026763-M16	M 16	2	110	25	68	12	9	12	4
2026763-M20	M 20	2,5	140	30	95	16	12	15	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E-PM machine taps
Prototex® Sprint

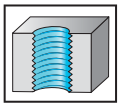


– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 36HRC 1200 –350 N/mm²

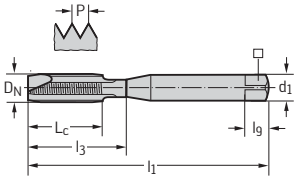
M
DIN 13

ISO2/6H



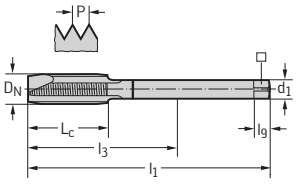
	P	M	K	N	S	H	O
TICN	●	●		●			
TIN	●	●		●			

DIN 371



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7021366-M3	7021365-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
7021366-M4	7021365-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
7021366-M5	7021365-M5	M 5	0,8	70	13	25	6	4,9	8	3
7021366-M6	7021365-M6	M 6	1	80	15	30	6	4,9	8	3
7021366-M8	7021365-M8	M 8	1,25	90	18	35	8	6,2	9	3
7021366-M10	7021365-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	7026365-M12	M 12	1,75	110	23	83	9	7	10	3
	7026365-M14	M 14	2	110	25	81	11	9	12	3
	7026365-M16	M 16	2	110	25	68	12	9	12	3
	7026365-M18	M 18	2,5	125	30	81	14	11	14	3
	7026365-M20	M 20	2,5	140	30	95	16	12	15	3

B 1008 D 1 B 709

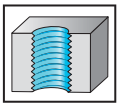
HSS-E-PM machine taps
Prototex® Megasprint



– For long-chipping materials

M
DIN 13

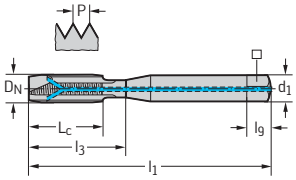
ISO2/6H



≤ 3×D_N | B=3,5-5 | 36HRC 1200 –350 N/mm²

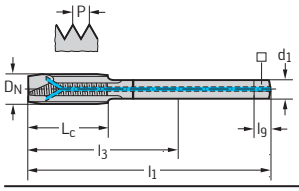
	P	M	K	N	S	H	O
TIN	●	●		●			

DIN 371



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7021345-M6	M 6	1	80	15	30	6	4,9	8	3
7021345-M8	M 8	1,25	90	18	35	8	6,2	9	3
7021345-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7026345-M12	M 12	1,75	110	23	83	9	7	10	3
7026345-M16	M 16	2	110	25	68	12	9	12	3
7026345-M20	M 20	2,5	140	30	95	16	12	15	3

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine drill taps
Paradur® Combi



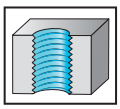
– For long-chipping materials





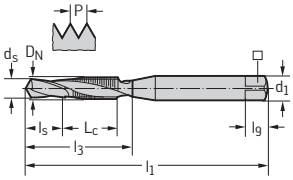
M
DIN 13

ISO2/6H



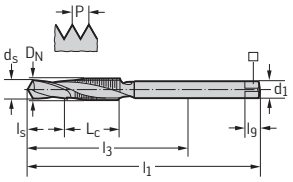
	P	M	K	N	S	H	O
Uncoated	●●		●	●			

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	d_s mm	l_s mm	l_3 mm	d_1 h12 mm	□ mm	l_9 mm	N
20417-M3	M 3	0,5	63	11	2,5	10	21	3	2,7	6	2
20417-M4	M 4	0,7	75	14	3,3	11	25	4	3,4	6	2
20417-M5	M 5	0,8	80	16	4,2	12	28	5	4,9	8	2
20417-M6	M 6	1	85	18	5	13	32	6	4,9	8	2

~DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	d_s mm	l_s mm	l_3 mm	d_1 h12 mm	□ mm	l_9 mm	N
20467-M8	M 8	1,25	90	14	6,7	18	67	8	4,9	8	2
20467-M10	M 10	1,5	100	17	8,5	24	77	10	5,5	8	4
20467-M12	M 12	1,75	125	20	10,2	25	98	12	7	10	4

B 5

B 1008 D 1 B 709

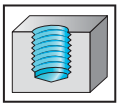
HSS hand tap set
HGB

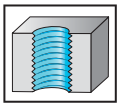


– For long and short-chipping materials

≤ 2×D_N	A,D,C	S (l_1)	25HRC 850 –200 N/mm²

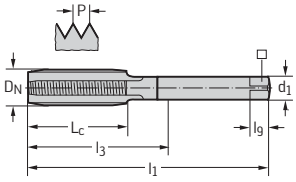
M DIN 13	ISO2/6H





	P	M	K	N	S	H	O
Uncoated	●		●	●			

DIN 352



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
30060-M2	M 2	0,4	36	8	8	2,8	2,1	5	3
30060-M2.5	M 2.5	0,45	40	9	9	2,8	2,1	5	3
30060-M3	M 3	0,5	40	9	13,5	3,5	2,7	6	3
30060-M4	M 4	0,7	45	11	16,5	4,5	3,4	6	3
30060-M5	M 5	0,8	50	13	19	6	4,9	8	3
30060-M6	M 6	1	56	15	27	6	4,9	8	3
30060-M8	M 8	1,25	63	19	40	6	4,9	8	3
30060-M10	M 10	1,5	70	22	47	7	5,5	8	3
30060-M12	M 12	1,75	75	25	48	9	7	10	4
30060-M16	M 16	2	80	25	38	12	9	12	4
30060-M20	M 20	2,5	95	32	50	16	12	15	4
30060-M24	M 24	3	110	34	63	18	14,5	17	4
30060-M30	M 30	3,5	125	40	60	22	18	21	4

Ordering code includes initial, intermediate and final cutter.
≤ M 2.5: Without reduced neck after the thread

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E hand tap set
HGB Inox



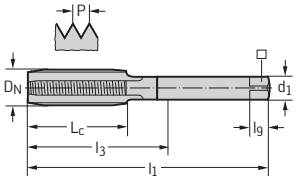
– For long-chipping materials

M	6HX		
DIN 13			

≤ 2×D_N | D,D,C | S (l_1) | 36HRC 1200 –400 N/mm²

	P	M	K	N	S	H	O
VAP	●	●					

DIN 352



Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
30063-M2	M 2	0,4	36	8	7	2,8	2,1	5	3
30063-M2.5	M 2.5	0,45	40	9	7,9	2,8	2,1	5	3
30063-M3	M 3	0,5	40	9	7,8	3,5	2,7	6	3
30063-M4	M 4	0,7	45	11	9,3	4,5	3,4	6	3
30063-M5	M 5	0,8	50	13	11	6	4,9	8	3
30063-M6	M 6	1	56	15	12,5	6	4,9	8	3
30063-M8	M 8	1,25	63	19	15,9	6	4,9	8	3
30063-M10	M 10	1,5	70	22	18,3	7	5,5	8	4
30063-M12	M 12	1,75	75	25	20,6	9	7	10	4
30063-M16	M 16	2	80	25	20	12	9	12	4
30063-M20	M 20	2,5	95	32	25,8	16	12	15	4
30063-M24	M 24	3	110	34	26,5	18	14,5	17	4
30063-M30	M 30	3,5	125	40	31,3	22	18	21	4

Ordering code includes initial, intermediate and final cutter.
≤ M 2.5: Without reduced neck after the thread

B 5

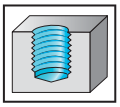
B 1008 D 1 B 709

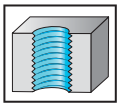
HSS-E hand tap set
HGB Ti



– For long-chipping materials

M	6HX		
DIN 13			

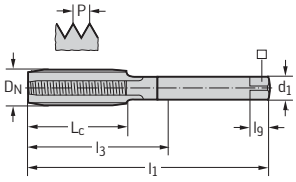




≤ 2×D_N | D,D,C | S (l_1) | 47HRC, 1500 –700 N/mm²

NID	P	M	K	N	S	H	O
					●		

DIN 352



Designation NID	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
30016-M3	M 3	0,5	40	9	7,8	3,5	2,7	6	3
30016-M4	M 4	0,7	45	11	9,3	4,5	3,4	6	3
30016-M5	M 5	0,8	50	13	11	6	4,9	8	3
30016-M6	M 6	1	56	15	12,5	6	4,9	8	3
30016-M8	M 8	1,25	63	19	15,9	6	4,9	8	4
30016-M10	M 10	1,5	70	22	18,3	7	5,5	8	4
30016-M12	M 12	1,75	75	25	20,6	9	7	10	4

Ordering code includes initial, intermediate and final cutter.

B 5

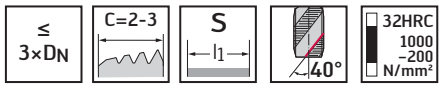
WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E taps, short
KMB WST



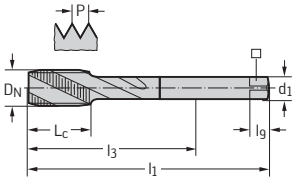
– For long-chipping materials



M	ISO2/6H	
DIN 13		

	P	M	K	N	S	H	O
Uncoated	●●		●	●			

DIN 2184-2



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20167-M3	M 3	0,5	40	6	13,5	3,5	2,7	6	3
20167-M4	M 4	0,7	45	7	16,5	4,5	3,4	6	3
20167-M5	M 5	0,8	50	8	19	6	4,9	8	3
20167-M6	M 6	1	56	10	27	6	4,9	8	3
20167-M8	M 8	1,25	63	12	40	6	4,9	8	3
20167-M10	M 10	1,5	70	15	47	7	5,5	8	3
20167-M12	M 12	1,75	75	16	48	9	7	10	3

B 5

B 1008 D 1 B 709

HSS-E taps, short
KMB Ms



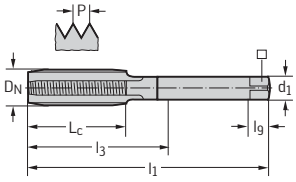
– For short-chipping materials

M	ISO2/6H		
DIN 13			

≤ 3×D_N | E=1,5-2 | S (l_1) | 25HRC, 850 –350 N/mm²

	P	M	K	N	S	H	O
Uncoated				●●			●

DIN 2184-2



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20165-M2	M 2	0,4	36	8	8	2,8	2,1	5	3
20165-M2.5	M 2.5	0,45	40	9	9	2,8	2,1	5	3
20165-M3	M 3	0,5	40	9	13,5	3,5	2,7	6	3
20165-M3.5	M 3.5	0,6	45	10	15	4	3	6	3
20165-M4	M 4	0,7	45	11	16,5	4,5	3,4	6	3
20165-M5	M 5	0,8	50	13	19	6	4,9	8	3
20165-M6	M 6	1	56	15	27	6	4,9	8	3
20165-M8	M 8	1,25	63	19	40	6	4,9	8	3

≤ M 2.5: Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E taps, short
KMB H

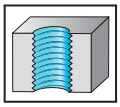


– For long-chipping materials

≤ 3×D_N	B=3,5-5	S (l_1)	32HRC, 1000 –200 N/mm²

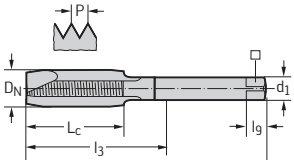
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●

DIN 2184-2



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20160-M3	M 3	0,5	40	9	13,5	3,5	2,7	6	3
20160-M4	M 4	0,7	45	11	16,5	4,5	3,4	6	3
20160-M5	M 5	0,8	50	13	19	6	4,9	8	3
20160-M6	M 6	1	56	15	27	6	4,9	8	3
20160-M8	M 8	1,25	63	19	40	6	4,9	8	3
20160-M10	M 10	1,5	70	22	47	7	5,5	8	3
20160-M12	M 12	1,75	75	25	48	9	7	10	3

B 5

B 1008 D 1 B 709

HSS-E nut taps
MMB



– For long-chipping materials

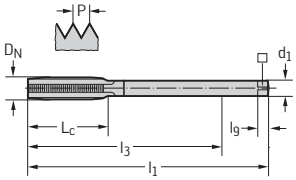
M	ISO2/6H	
DIN 13		

≤ 1×D_N

28HRC
900
–200
N/mm²

	P	M	K	N	S	H	O
Uncoated	●●						

DIN 357



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h12 mm	□ mm	l_9 mm	N
20890-M2	M 2	0,4	66	16	47	1,4	1,1	4	3
20890-M2.5	M 2.5	0,45	70	20	51	1,7	1,3	4	3
20890-M3	M 3	0,5	70	22	51	2,2	1,8	4	3
20890-M4	M 4	0,7	90	25	70	2,8	2,1	5	3
20890-M5	M 5	0,8	100	28	79	3,5	2,7	6	3
20890-M6	M 6	1	110	32	89	4,5	3,4	6	3
20890-M8	M 8	1,25	125	40	102	6	4,9	8	3
20890-M10	M 10	1,5	140	45	117	7	5,5	8	3
20890-M12	M 12	1,75	180	50	153	9	7	10	3
20890-M16	M 16	2	200	63	158	12	9	12	3

B 5

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

HSS-E automatic nut thread taps
AMB

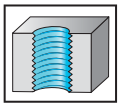


– For long-chipping materials

≤ 1×D_N | 18×P | 28HRC 900 –200 N/mm²

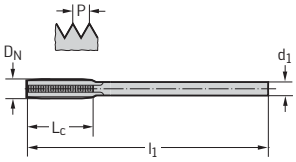
M
DIN 13

ISO3/6G



	P	M	K	N	S	H	O
NID	●●						

AMB STANDARD



Designation NID	D_N	P mm	l_1 mm	L_c mm	d_1 h12 mm	N
20801-M3	M 3	0,5	250	12	2,3	3
20801-M3.5	M 3.5	0,6	250	14,5	2,7	3
20801-M4	M 4	0,7	250	17	3	3
20801-M5	M 5	0,8	250	19	3,9	3
20801-M6	M 6	1	250	24	4,6	3
20801-M8	M 8	1,25	250	30	6,1	3

3 AN leveller

B 5

B 1008 D 1 B 709

HSS-E automatic nut thread taps
AMB



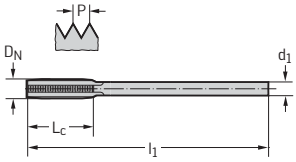
– For long-chipping materials

M	7G	
DIN 13		

≤ 1×D_N | 18×P | 28HRC 900 –200 N/mm²

	P	M	K	N	S	H	O
TIN	●●						

AMB STANDARD



Designation TIN	D_N	P mm	l_1 mm	L_c mm	d_1 h12 mm	N
2084805-M5	M 5	0,8	271	19	3,9	5
2084805-M6	M 6	1	271	24	4,6	5
2084805-M8	M 8	1,25	271	30	6,1	5
2084805-M10	M 10	1,5	271	36	8	5

MAS 14, T-STAR 10

B 5

WALTER SELECT
●● Primary application
● Other application

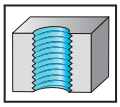
B 1008 D 1 B 709

HSS-E automatic nut thread taps
AMB Inox



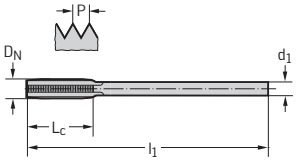
– For long-chipping materials

≤ 1×D_N	18×P	33HRC 1100 –400 N/mm²

M DIN 13	6HX	

NID	P	M	K	N	S	H	O
		●●					

AMB STANDARD



Designation NID	D_N	P mm	l_1 mm	L_c mm	d_1 h12 mm	N
20844-M6	M 6	1	271	24	4,6	5
20844-M8	M 8	1,25	271	30	6,1	5
20844-M10	M 10	1,5	271	36	8	5
20844-M12	M 12	1,75	271	42	9,4	5

MAS 14, T-STAR 10

B 5

B 1008 D 1 B 709

HSS-E stepped AMB
Protostep Inox

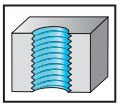


– For long-chipping materials
– Three steps

33HRC
1100
–400
N/mm²

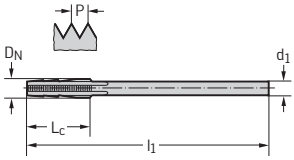
M
DIN 13

6HX



	P	M	K	N	S	H	O
VAP		●●					

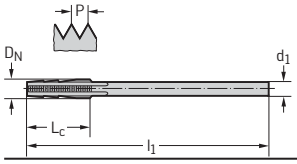
AMB STANDARD



Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h12 mm	N
20934-M3	M 3	0,5	195	12	9,8	2,3	3
20934-M4	M 4	0,7	195	17	13,9	3	3

MAS 8

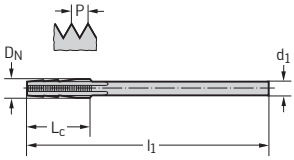
AMB STANDARD



Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h12 mm	N
20944-M5	M 5	0,8	271	19	15,4	3,9	3
20944-M6	M 6	1	271	24	19,5	4,6	3
20944-M8	M 8	1,25	271	30	24,4	6,1	3
20944-M10	M 10	1,5	271	36	29,3	8	3
20944-M12	M 12	1,75	271	42	34,1	9,4	4

MAS 14, T-STAR 10

AMB STANDARD



Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h12 mm	N
20954-M14	M 14	2	435	48	39	11,1	4
20954-M16	M 16	2	435	48	39	13,2	4

MAS 20, T-STAR 20

WALTER SELECT
●● Primary application
● Other application

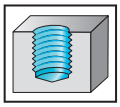
B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Eco Plus



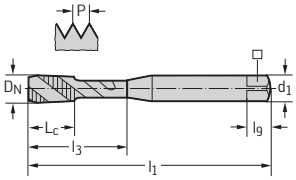
– For long-chipping materials

≤ 3×D_N	C=2-3	45°	38HRC 1250 –500 N/mm²

M DIN 13	6HX	

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			
TIN	●●	●●	●●	●●			

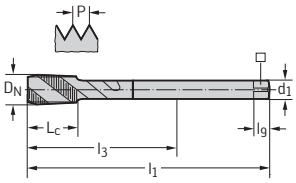
~DIN 371



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2051302-M2	EP2051305-M2	M 2	0,4	45	4	7,6	2,8	2,1	5	3
EP2051302-M2.5	EP2051305-M2.5	M 2.5	0,45	50	4	9,3	2,8	2,1	5	3
EP2051302-M3	EP2051305-M3	M 3	0,5	56	6	11	3,5	2,7	6	3
EP2051302-M4	EP2051305-M4	M 4	0,7	63	7	14,8	4,5	3,4	6	3
EP2051302-M5	EP2051305-M5	M 5	0,8	70	8	20,7	6	4,9	8	3
EP2051302-M6	EP2051305-M6	M 6	1	80	10	25	6	4,9	8	3
EP2051302-M8	EP2051305-M8	M 8	1,25	90	12	35	8	6,2	9	3
EP2051302-M10	EP2051305-M10	M 10	1,5	100	15	39	10	8	11	3

B 5

DIN 376



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2056302-M12	EP2056305-M12	M 12	1,75	110	16	83	9	7	10	4
EP2056302-M14	EP2056305-M14	M 14	2	110	20	81	11	9	12	4
EP2056302-M16	EP2056305-M16	M 16	2	110	20	68	12	9	12	4
EP2056302-M18	EP2056305-M18	M 18	2,5	125	25	81	14	11	14	4
EP2056302-M20	EP2056305-M20	M 20	2,5	140	25	95	16	12	15	4
EP2056302-M24	EP2056305-M24	M 24	3	160	30	113	18	14,5	17	4
EP2056302-M27		M 27	3	160	30	97	20	16	19	4
EP2056302-M30		M 30	3,5	180	35	115	22	18	21	4
EP2056302-M36		M 36	4	200	40	131	28	22	25	4
EP2056302-M42		M 42	4,5	200	45	102	32	24	27	5
EP2056302-M48		M 48	5	250	50	147	36	29	32	5
EP2056302-M56		M 56	5,5	250	55	120	40	32	35	5
EP2056302-M64		M 64	6	315	60	178	50	39	42	6

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Eco Plus



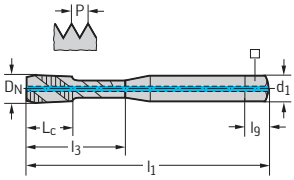
– For long-chipping materials

M	6HX	
DIN 13		

≤ 3×D_N	C=2-3	45°		38HRC 1250 –500 N/mm²

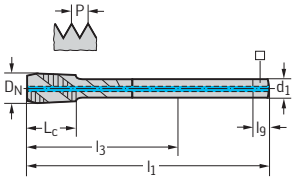
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

~DIN 371



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2051312-M4	M 4	0,7	63	7	14,8	4,5	3,4	6	3
EP2051312-M5	M 5	0,8	70	8	20,7	6	4,9	8	3
EP2051312-M6	M 6	1	80	10	25	6	4,9	8	3
EP2051312-M8	M 8	1,25	90	12	35	8	6,2	9	3
EP2051312-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2056312-M12	M 12	1,75	110	16	83	9	7	10	4
EP2056312-M16	M 16	2	110	20	68	12	9	12	4
EP2056312-M20	M 20	2,5	140	25	95	16	12	15	4
EP2056312-M24	M 24	3	160	30	113	18	14,5	17	4

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

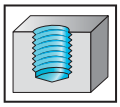
HSS-E-PM machine taps
Paradur® Eco Plus



– For long-chipping materials

M
DIN 13

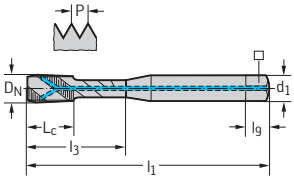
6HX



≤ 3×D_N | C=2-3 | 45° | 38HRC 1250 –500 N/mm²

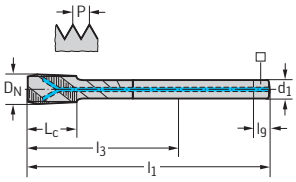
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 371



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2051342-M8	M 8	1,25	90	12	35	8	6,2	9	3
EP2051342-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2056342-M12	M 12	1,75	110	16	83	9	7	10	4
EP2056342-M16	M 16	2	110	20	68	12	9	12	4

B 5

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Eco Plus



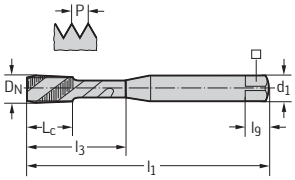
– For long-chipping materials

M	6HX	
DIN 13		

≤ 3×D_N | C=2-3 | LH | 45° | 38HRC 1250 –500 N/mm²

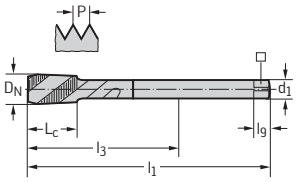
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

~DIN 371



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2051382-M3	M 3 - LH	0,5	56	6	11	3,5	2,7	6	3
EP2051382-M4	M 4 - LH	0,7	63	7	14,8	4,5	3,4	6	3
EP2051382-M5	M 5 - LH	0,8	70	8	20,7	6	4,9	8	3
EP2051382-M6	M 6 - LH	1	80	10	25	6	4,9	8	3
EP2051382-M8	M 8 - LH	1,25	90	12	35	8	6,2	9	3
EP2051382-M10	M 10 - LH	1,5	100	15	39	10	8	11	3

DIN 376



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2056382-M12	M 12 - LH	1,75	110	16	83	9	7	10	4
EP2056382-M14	M 14 - LH	2	110	20	81	11	9	12	4
EP2056382-M16	M 16 - LH	2	110	20	68	12	9	12	4
EP2056382-M18	M 18 - LH	2,5	125	25	81	14	11	14	4
EP2056382-M20	M 20 - LH	2,5	140	25	95	16	12	15	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

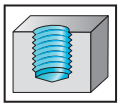
HSS-E-PM machine taps
Paradur® Eco Plus



– For long-chipping materials

M
DIN 13

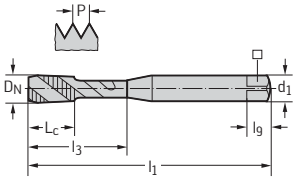
6HX



≤ 3×D_N | E=1,5-2 | 45° | 38HRC, 1250 –500 N/mm²

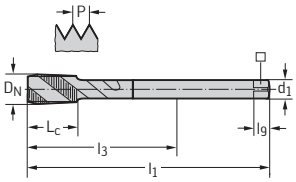
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

~DIN 371



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2051362-M4	M 4	0,7	63	7	14,8	4,5	3,4	6	3
EP2051362-M5	M 5	0,8	70	8	20,7	6	4,9	8	3
EP2051362-M6	M 6	1	80	10	25	6	4,9	8	3
EP2051362-M8	M 8	1,25	90	12	35	8	6,2	9	4
EP2051362-M10	M 10	1,5	100	15	39	10	8	11	4

DIN 376



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2056362-M12	M 12	1,75	110	16	83	9	7	10	4
EP2056362-M16	M 16	2	110	20	68	12	9	12	4
EP2056362-M20	M 20	2,5	140	25	95	16	12	15	4
EP2056362-M24	M 24	3	160	30	113	18	14,5	17	5

B 5

B 1008 | D 1 | B 709

HSS-E-PM machine taps
Paradur® Eco Plus



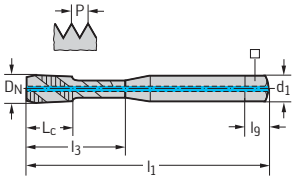
– For long-chipping materials

M	6HX	
DIN 13		

≤ 3×D_N	E=1,5-2	45°		38HRC 1250 –500 N/mm²

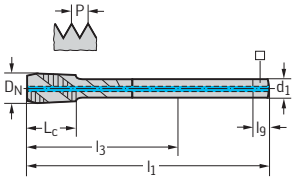
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

~DIN 371



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2051352-M4	M 4	0,7	63	7	14,8	4,5	3,4	6	3
EP2051352-M5	M 5	0,8	70	8	20,7	6	4,9	8	3
EP2051352-M6	M 6	1	80	10	25	6	4,9	8	3
EP2051352-M8	M 8	1,25	90	12	35	8	6,2	9	4
EP2051352-M10	M 10	1,5	100	15	39	10	8	11	4

DIN 376



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2056352-M12	M 12	1,75	110	16	83	9	7	10	4
EP2056352-M16	M 16	2	110	20	68	12	9	12	4
EP2056352-M20	M 20	2,5	140	25	95	16	12	15	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Eco Plus



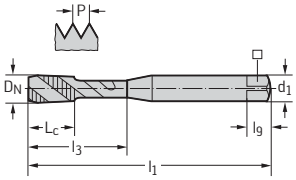
– For long-chipping materials

≤ 3×D_N	C=2-3	45°	38HRC 1250 –500 N/mm²

M	6GX	
DIN 13		

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			
TIN	●●	●●	●●	●●			

~DIN 371

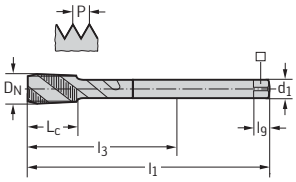


Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2053302-M2	EP2053305-M2	M 2	0,4	45	4	7,6	2,8	2,1	5	3
EP2053302-M2.5	EP2053305-M2.5	M 2.5	0,45	50	4	9,3	2,8	2,1	5	3
EP2053302-M3	EP2053305-M3	M 3	0,5	56	6	11	3,5	2,7	6	3
EP2053302-M4	EP2053305-M4	M 4	0,7	63	7	14,8	4,5	3,4	6	3
EP2053302-M5	EP2053305-M5	M 5	0,8	70	8	20,7	6	4,9	8	3
EP2053302-M6	EP2053305-M6	M 6	1	80	10	25	6	4,9	8	3
EP2053302-M8	EP2053305-M8	M 8	1,25	90	12	35	8	6,2	9	3
EP2053302-M10	EP2053305-M10	M 10	1,5	100	15	39	10	8	11	3

≤ M 2.5: Without thread taper

B 5

DIN 376



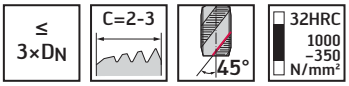
Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2058302-M12	EP2058305-M12	M 12	1,75	110	16	83	9	7	10	4
EP2058302-M14	EP2058305-M14	M 14	2	110	20	81	11	9	12	4
EP2058302-M16	EP2058305-M16	M 16	2	110	20	68	12	9	12	4

B 1008 D 1 B 709

HSS-E machine taps
TC115 Perform

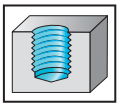


– For long-chipping materials



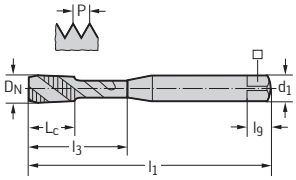
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
WY80AA	●●	●●	●●	●			
WY80FC	●●	●●	●●	●			

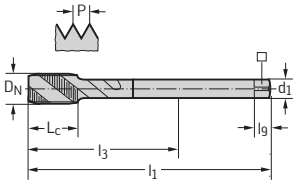
DIN 371



Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WY80AA	WY80FC
TC115-M3-C0-	M 3	0,5	56	6	18	3,5	2,7	6	3	⊠	⊠
TC115-M4-C0-	M 4	0,7	63	7	21	4,5	3,4	6	3	⊠	⊠
TC115-M5-C0-	M 5	0,8	70	8	25	6	4,9	8	3	⊠	⊠
TC115-M6-C0-	M 6	1	80	10	30	6	4,9	8	3	⊠	⊠
TC115-M8-C0-	M 8	1,25	90	12	35	8	6,2	9	3	⊠	⊠
TC115-M10-C0-	M 10	1,5	100	15	39	10	8	11	3	⊠	⊠

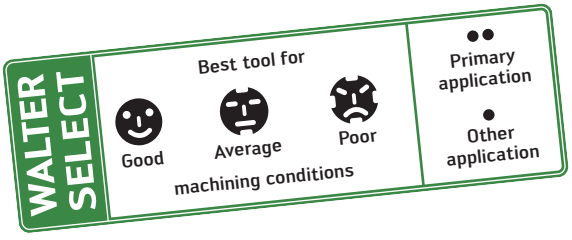
Ordering example for the WY80FC grade: TC115-M3-C0-WY80FC

DIN 376



Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WY80AA	WY80FC
TC115-M12-L0-	M 12	1,75	110	16	83	9	7	10	3	⊠	⊠
TC115-M14-L0-	M 14	2	110	20	81	11	9	12	3	⊠	⊠
TC115-M16-L0-	M 16	2	110	20	68	12	9	12	3	⊠	⊠
TC115-M20-L0-	M 20	2,5	140	25	95	16	12	15	4	⊠	⊠

Ordering example for the WY80FC grade: TC115-M12-L0-WY80FC



B 1008 D 1 B 709

HSS-E machine taps
Paradur® Synchrospeed

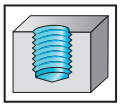


– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 2,5×D_N | C=2-3 | 40° | 40HRC 1300 N/mm²

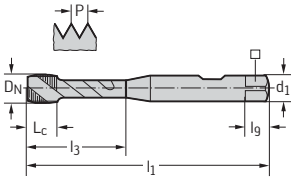
M
DIN 13

6HX



	P	M	K	N	S	H	O
THL	●●	●●	●●	●	●		●
TIN/VAP	●●	●●	●●	●	●		●

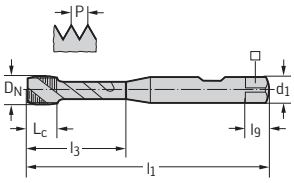
~DIN 371



Designation THL	Designation TIN/VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2051302-M2	S2051305-M2	M 2	0,4	70	4	7,6	6	4,9	8	3
S2051302-M2.5	S2051305-M2.5	M 2.5	0,45	70	4,5	9,3	6	4,9	8	3
S2051302-M3	S2051305-M3	M 3	0,5	70	5	11	6	4,9	8	3
S2051302-M4	S2051305-M4	M 4	0,7	70	7	14,8	6	4,9	8	3
S2051302-M5	S2051305-M5	M 5	0,8	70	8,5	20,7	6	4,9	8	3
S2051302-M6	S2051305-M6	M 6	1	80	10,5	25	6	4,9	8	3
S2051302-M8	S2051305-M8	M 8	1,25	90	13,5	35	8	6,2	9	3
S2051302-M10	S2051305-M10	M 10	1,5	100	16	39	10	8	11	3

B 5

~DIN 376



Designation THL	Designation TIN/VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2056302-M12	S2056305-M12	M 12	1,75	110	18,5	42	12	9	12	3
S2056302-M14	S2056305-M14	M 14	2	110	21	45	14	11	14	3
S2056302-M16	S2056305-M16	M 16	2	110	21	55	16	12	15	4
S2056302-M20	S2056305-M20	M 20	2,5	140	26,5	95	16	12	15	4
S2056302-M24	S2056305-M24	M 24	3	160	32	97	20	16	19	4

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® Synchrospeed

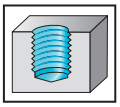


– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 2,5×D_N | C=2-3 | 40° | 40HRC 1300 N/mm²

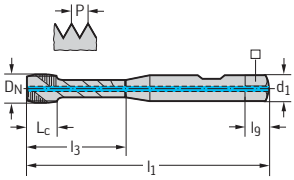
M
DIN 13

6HX



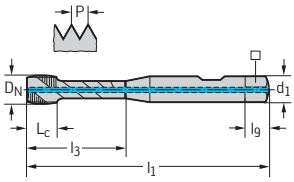
	P	M	K	N	S	H	O
THL	●●	●●	●●	●	●		●
TIN/VAP	●●	●●	●●	●	●		●

~DIN 371



Designation THL	Designation TIN/VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2051312-M5	S2051315-M5	M 5	0,8	70	8,5	20,7	6	4,9	8	3
S2051312-M6	S2051315-M6	M 6	1	80	10,5	25	6	4,9	8	3
S2051312-M8	S2051315-M8	M 8	1,25	90	13,5	35	8	6,2	9	3
S2051312-M10	S2051315-M10	M 10	1,5	100	16	39	10	8	11	3

~DIN 376



Designation THL	Designation TIN/VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2056312-M12	S2056315-M12	M 12	1,75	110	18,5	68	12	9	12	3
S2056312-M14	S2056315-M14	M 14	2	110	21	66	14	11	14	3
S2056312-M16	S2056315-M16	M 16	2	110	21	65	16	12	15	4
S2056312-M20	S2056315-M20	M 20	2,5	140	26,5	95	16	12	15	4

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® H

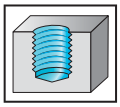


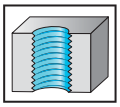
– For long-chipping and short-chipping materials

≤ 1,5×D_N | C=2-3 | 32HRC, 1000 –200 N/mm²

M
DIN 13

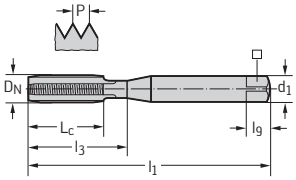
ISO2/6H





	P	M	K	N	S	H	O
TIN			●	●●			●
Uncoated			●	●●			●

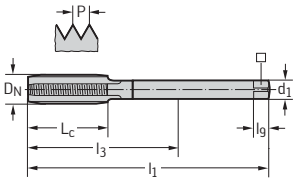
DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	20311-M1	M 1	0,25	40	5	5	2,5	2,1	5	3
	20311-M1.2	M 1.2	0,25	40	5	5	2,5	2,1	5	3
	20311-M1.4	M 1.4	0,3	40	6,5	6,5	2,5	2,1	5	3
	20311-M1.6	M 1.6	0,35	40	7	7	2,5	2,1	5	3
	20311-M1.7	M 1.7	0,35	40	7	7	2,5	2,1	5	3
	20311-M1.8	M 1.8	0,35	40	7	7	2,5	2,1	5	3
	20311-M2	M 2	0,4	45	6	9	2,8	2,1	5	3
	20311-M2.2	M 2.2	0,45	45	7	12	2,8	2,1	5	3
	20311-M2.3	M 2.3	0,4	45	7	12	2,8	2,1	5	3
	20311-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	3
	20311-M2.6	M 2.6	0,45	50	8	12,5	2,8	2,1	5	3
203115-M3	20311-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
203115-M3.5	20311-M3.5	M 3.5	0,6	56	11	20	4	3	6	3
203115-M4	20311-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
203115-M5	20311-M5	M 5	0,8	70	13	25	6	4,9	8	3
203115-M6	20311-M6	M 6	1	80	15	30	6	4,9	8	3
203115-M7	20311-M7	M 7	1	80	15	30	7	5,5	8	3
203115-M8	20311-M8	M 8	1,25	90	18	35	8	6,2	9	3
203115-M10	20311-M10	M 10	1,5	100	20	39	10	8	11	3

≤ M 1.4: 5H
≤ M 1.8: Without reduced neck after the thread

DIN 376



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	20361-M2	M 2	0,4	45	6	26	1,4	1,1	4	3
	20361-M2.5	M 2.5	0,45	50	8	31	1,8	1,4	4	3
	20361-M3	M 3	0,5	56	9	37	2,2	1,8	4	3
	20361-M4	M 4	0,7	63	12	43	2,8	2,1	5	3
	20361-M5	M 5	0,8	70	13	49	3,5	2,7	6	3
	20361-M6	M 6	1	80	15	59	4,5	3,4	6	3
	20361-M8	M 8	1,25	90	18	67	6	4,9	8	3
	20361-M10	M 10	1,5	100	20	77	7	5,5	8	3
	20361-M12	M 12	1,75	110	23	83	9	7	10	3
	20361-M14	M 14	2	110	25	81	11	9	12	3
	20361-M16	M 16	2	110	25	68	12	9	12	3
	20361-M18	M 18	2,5	125	30	81	14	11	14	4
	20361-M20	M 20	2,5	140	30	95	16	12	15	4
	20361-M24	M 24	3	160	36	113	18	14,5	17	4
	20361-M27	M 27	3	160	36	97	20	16	19	4
	20361-M30	M 30	3,5	180	42	115	22	18	21	4
	20361-M33	M 33	3,5	180	42	113	25	20	23	4
	20361-M36	M 36	4	200	48	131	28	22	25	4
	20361-M42	M 42	4,5	200	54	102	32	24	27	4

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® H AZ

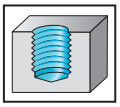


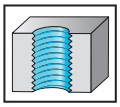
– For long-chipping and short-chipping materials
– For thin-walled workpieces

≤ 1,5×D_N | C=2-3 | 32HRC 1000 –200 N/mm²

M
DIN 13

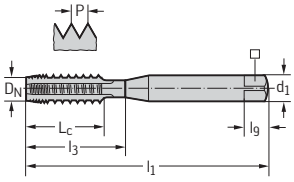
ISO2/6H





	P	M	K	N	S	H	O
Uncoated			●●	●●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
40311-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
40311-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
40311-M5	M 5	0,8	70	13	25	6	4,9	8	3
40311-M6	M 6	1	80	15	30	6	4,9	8	3
40311-M8	M 8	1,25	90	18	35	8	6,2	9	3
40311-M10	M 10	1,5	100	20	39	10	8	11	3

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® HT



– For long-chipping and short-chipping materials

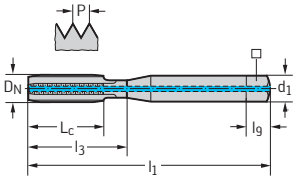
M
DIN 13

ISO2/6H

≤ 3,5×D_N | C=2-3 | 44HRC 1400 –700 N/mm²

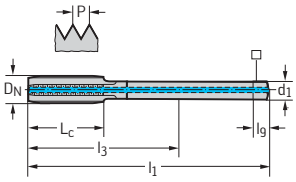
	P	M	K	N	S	H	O
TIN	●●		●●	●			●

DIN 371



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2031115-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
2031115-M5	M 5	0,8	70	13	25	6	4,9	8	3
2031115-M6	M 6	1	80	15	30	6	4,9	8	3
2031115-M8	M 8	1,25	90	18	35	8	6,2	9	3
2031115-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2036115-M12	M 12	1,75	110	23	83	9	7	10	3
2036115-M14	M 14	2	110	25	81	11	9	12	3
2036115-M16	M 16	2	110	25	68	12	9	12	3
2036115-M20	M 20	2,5	140	30	95	16	12	15	3
2036115-M22	M 22	2,5	140	30	93	18	14,5	17	3
2036115-M24	M 24	3	160	36	113	18	14,5	17	4
2036115-M27	M 27	3	160	36	97	20	16	19	4
2036115-M30	M 30	3,5	180	42	115	22	18	21	4
2036115-M36	M 36	4	200	48	131	28	22	25	5

B 5

B 1008 | D 1 | B 709

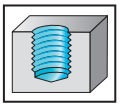
HSS-E machine taps
Paradur® HT



– For long-chipping and short-chipping materials

M
DIN 13

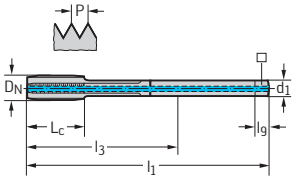
ISO2/6H



≤ 3,5×D_N | C=2-3 | L (l_1) | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
TIN	●●		●●	●			●

~DIN 376 L



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2036155-M8	M 8	1,25	110	18	87	6	4,9	8	3
2036155-M10	M 10	1,5	125	20	102	7	5,5	8	3
2036155-M12	M 12	1,75	140	23	113	9	7	10	3
2036155-M14	M 14	2	140	25	111	11	9	12	3
2036155-M16	M 16	2	160	25	118	12	9	12	3
2036155-M20	M 20	2,5	180	30	135	16	12	15	3
2036155-M22	M 22	2,5	200	30	153	18	14,5	17	3
2036155-M24	M 24	3	200	36	153	18	14,5	17	4
2036155-M27	M 27	3	225	36	162	20	16	19	4
2036155-M30	M 30	3,5	250	42	185	22	18	21	4
2036155-M33	M 33	3,5	275	42	208	25	20	23	4
2036155-M36	M 36	4	300	48	231	28	22	25	5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

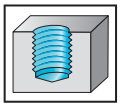
HSS-E machine taps
Paradur® N



– For long-chipping materials

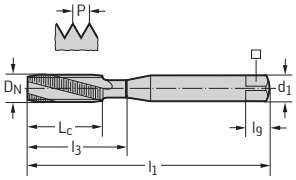
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
TICN	●●		●●	●●			
TIN	●●		●●	●●			
Uncoated	●●		●●	●●			

DIN 371

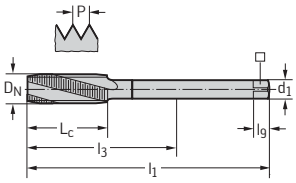


Designation TICN	Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
		20410-M2	M 2	0,4	45	4	9	2,8	2,1	3
		20410-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	3
	204105-M3	20410-M3	M 3	0,5	56	6	18	3,5	2,7	3
		20410-M3.5	M 3.5	0,6	56	6,5	20	4	3	3
2041006-M4	204105-M4	20410-M4	M 4	0,7	63	7	21	4,5	3,4	3
2041006-M5	204105-M5	20410-M5	M 5	0,8	70	8	25	6	4,9	3
2041006-M6	204105-M6	20410-M6	M 6	1	80	10	30	6	4,9	3
		20410-M7	M 7	1	80	10	30	7	5,5	3
2041006-M8	204105-M8	20410-M8	M 8	1,25	90	12	35	8	6,2	3
2041006-M10	204105-M10	20410-M10	M 10	1,5	100	15	39	10	8	3

l_9 dimension in accordance with DIN 10

B 5

DIN 376



Designation TICN	Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
		20460-M3	M 3	0,5	56	6	37	2,2	1,8	3
		20460-M4	M 4	0,7	63	7	43	2,8	2,1	3
		20460-M5	M 5	0,8	70	8	49	3,5	2,7	3
		20460-M6	M 6	1	80	10	59	4,5	3,4	3
		20460-M8	M 8	1,25	90	13	67	6	4,9	3
		20460-M10	M 10	1,5	100	15	77	7	5,5	3
2046006-M12	204605-M12	20460-M12	M 12	1,75	110	16	83	9	7	3
2046006-M14	204605-M14	20460-M14	M 14	2	110	20	81	11	9	3
2046006-M16	204605-M16	20460-M16	M 16	2	110	20	68	12	9	3
		20460-M18	M 18	2,5	125	25	81	14	11	4
2046006-M20	204605-M20	20460-M20	M 20	2,5	140	25	95	16	12	4
		20460-M22	M 22	2,5	140	25	93	18	14,5	4
		20460-M24	M 24	3	160	30	113	18	14,5	4
		20460-M30	M 30	3,5	180	35	115	22	18	4
		20460-M36	M 36	4	200	40	131	28	22	4

l_9 dimension in accordance with DIN 10

B 1008 D 1 B 709

HSS-E machine taps
Paradur® N



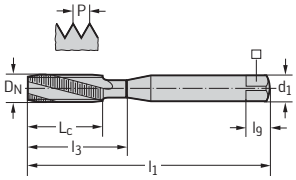
– For long-chipping materials

M	ISO3/6G	
DIN 13		

≤ 1,5×D_N | C=2-3 | 15° | 32HRC, 1000 –200 N/mm²

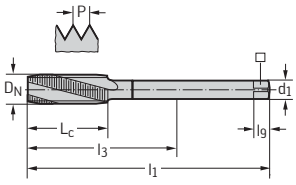
	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20430-M2	M 2	0,4	45	4	9	2,8	2,1	5	3
20430-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	5	3
20430-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
20430-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
20430-M5	M 5	0,8	70	8	25	6	4,9	8	3
20430-M6	M 6	1	80	10	30	6	4,9	8	3
20430-M8	M 8	1,25	90	12	35	8	6,2	9	3
20430-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20480-M12	M 12	1,75	110	16	83	9	7	10	3
20480-M16	M 16	2	110	20	68	12	9	12	3

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® NH



– For long-chipping materials

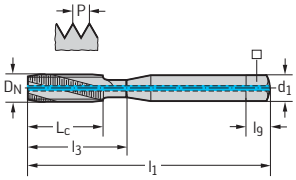
≤ 3,5×D_N | C=2-3 | 15° | 36HRC 1200 –400 N/mm²

M
DIN 13

ISO2/6H

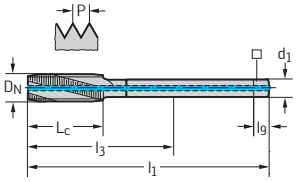
	P	M	K	N	S	H	O
TIN	●●		●●	●			●
Uncoated	●●		●●	●			●

DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2041215-M4		M 4	0,7	63	12	21	4,5	3,4	6	3
2041215-M5	2041210-M5	M 5	0,8	70	13	25	6	4,9	8	3
2041215-M6	2041210-M6	M 6	1	80	15	30	6	4,9	8	3
2041215-M8	2041210-M8	M 8	1,25	90	18	35	8	6,2	9	3
2041215-M10	2041210-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2046215-M12	2046210-M12	M 12	1,75	110	23	83	9	7	10	4

B 5

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® H 24



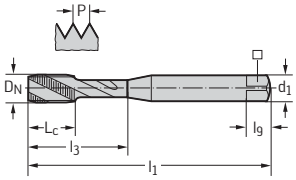
– For long-chipping materials

M	6HX	
DIN 13		

≤ 2,5×D_N | C=2-3 | 24° | 44HRC, 1400 –500 N/mm²

	P	M	K	N	S	H	O
Uncoated	●		●				

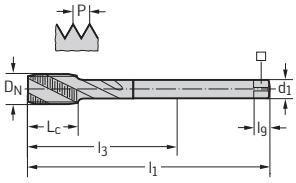
~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
204107-M3	M 3	0,5	56	11	11	3,5	2,7	6	3
204107-M4	M 4	0,7	63	15	15	4,5	3,4	6	3
204107-M5	M 5	0,8	70	18,5	18,5	6	4,9	8	3
204107-M6	M 6	1	80	15	30	6	4,9	8	3
204107-M8	M 8	1,25	90	18	38	8	6,2	9	3
204107-M10	M 10	1,5	100	20	45	10	8	11	3

≤ M 5: Without reduced neck after the thread

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
204607-M12	M 12	1,75	110	23	83	9	7	10	4
204607-M16	M 16	2	110	25	68	12	9	12	4

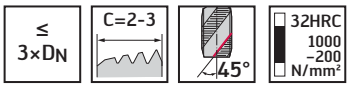
WALTER SELECT
●● Primary application
● Other application

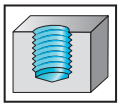
B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® X·pert P



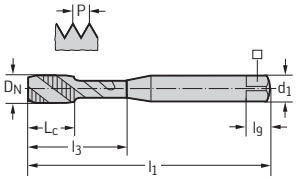
– For long-chipping materials



M	ISO1/4H	
DIN 13		

	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P20509-M2	M 2	0,4	45	4	9	2,8	2,1	5	3
P20509-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	5	3
P20509-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
P20509-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
P20509-M5	M 5	0,8	70	8	25	6	4,9	8	3
P20509-M6	M 6	1	80	10	30	6	4,9	8	3
P20509-M7	M 7	1	80	10	30	7	5,5	8	3
P20509-M8	M 8	1,25	90	12	35	8	6,2	9	3
P20509-M10	M 10	1,5	100	15	39	10	8	11	3

B 5

B 1008 D 1 B 709

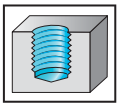
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

M
DIN 13

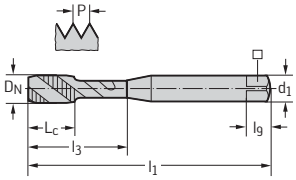
ISO2/6H



≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

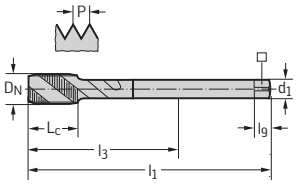
	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20519-M1.6	M 1.6	0,35	40	6	6	2,5	2,1	5	2
P2051905-M2	P20519-M2	M 2	0,4	45	4	9	2,8	2,1	5	3
	P20519-M2.2	M 2.2	0,45	45	4	12	2,8	2,1	5	3
P2051905-M2.5	P20519-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	5	3
	P20519-M2.6	M 2.6	0,45	50	4	12,5	2,8	2,1	5	3
P2051905-M3	P20519-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
P2051905-M3.5	P20519-M3.5	M 3.5	0,6	56	6,5	20	4	3	6	3
P2051905-M4	P20519-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
	P20519-M4.5	M 4.5	0,75	70	8	25	6	4,9	8	3
P2051905-M5	P20519-M5	M 5	0,8	70	8	25	6	4,9	8	3
P2051905-M6	P20519-M6	M 6	1	80	10	30	6	4,9	8	3
	P20519-M7	M 7	1	80	10	30	7	5,5	8	3
P2051905-M8	P20519-M8	M 8	1,25	90	12	35	8	6,2	9	3
P2051905-M10	P20519-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20569-M4	M 4	0,7	63	7	43	2,8	2,1	5	3
	P20569-M5	M 5	0,8	70	8	49	3,5	2,7	6	3
	P20569-M6	M 6	1	80	10	59	4,5	3,4	6	3
	P20569-M8	M 8	1,25	90	12	67	6	4,9	8	3
	P20569-M9	M 9	1,25	90	13	67	7	5,5	8	3
	P20569-M10	M 10	1,5	100	15	77	7	5,5	8	3
	P20569-M11	M 11	1,5	100	15	76	8	6,2	9	3
P2056905-M12	P20569-M12	M 12	1,75	110	16	83	9	7	10	3
P2056905-M14	P20569-M14	M 14	2	110	20	81	11	9	12	3
P2056905-M16	P20569-M16	M 16	2	110	20	68	12	9	12	3
P2056905-M18	P20569-M18	M 18	2,5	125	25	81	14	11	14	4
P2056905-M20	P20569-M20	M 20	2,5	140	25	95	16	12	15	4
	P20569-M22	M 22	2,5	140	25	93	18	14,5	17	4
P2056905-M24	P20569-M24	M 24	3	160	30	113	18	14,5	17	4
	P20569-M27	M 27	3	160	30	97	20	16	19	4
P2056905-M30	P20569-M30	M 30	3,5	180	35	115	22	18	21	4
	P20569-M33	M 33	3,5	180	35	113	25	20	23	4
	P20569-M36	M 36	4	200	40	131	28	22	25	4
	P20569-M39	M 39	4	200	40	102	32	24	27	4
	P20569-M42	M 42	4,5	200	45	102	32	24	27	4
	P20569-M45	M 45	4,5	220	45	117	36	29	32	4
	P20569-M48	M 48	5	250	50	147	36	29	32	4
	P20569-M52	M 52	5	250	50	120	40	32	35	5
	P20569-M56	M 56	5,5	250	55	120	40	32	35	5
	P20569-M60	M 60	5,5	280	55	147	45	35	38	5
	P20569-M64	M 64	6	315	60	178	50	39	42	6

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® X·pert P



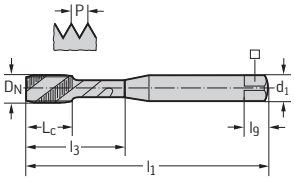
– For long-chipping materials

M	ISO2/6H	
DIN 13		

≤ 3×D_N	C=2-3	LH	45°	32HRC 1000 –200 N/mm²

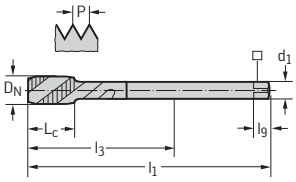
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P205198-M3	M 3 - LH	0,5	56	6	18	3,5	2,7	6	3
P205198-M4	M 4 - LH	0,7	63	7	21	4,5	3,4	6	3
P205198-M5	M 5 - LH	0,8	70	8	25	6	4,9	8	3
P205198-M6	M 6 - LH	1	80	10	30	6	4,9	8	3
P205198-M8	M 8 - LH	1,25	90	12	35	8	6,2	9	3
P205198-M10	M 10 - LH	1,5	100	15	39	10	8	11	3

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P205698-M12	M 12 - LH	1,75	110	16	83	9	7	10	3
P205698-M14	M 14 - LH	2	110	20	81	11	9	12	3
P205698-M16	M 16 - LH	2	110	20	68	12	9	12	3
P205698-M20	M 20 - LH	2,5	140	25	95	16	12	15	4
P205698-M24	M 24 - LH	3	160	30	113	18	14,5	17	4
P205698-M30	M 30 - LH	3,5	180	35	115	22	18	21	4

B 5

B 1008 D 1 B 709

HSS-E machine taps
Paradur® X·pert P

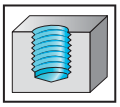


– For long-chipping materials

≤ 3×D_N | C=2-3 | L (l_1) | 45° | 32HRC, 1000 –200 N/mm²

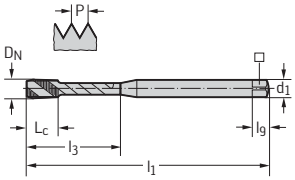
M
DIN 13

ISO2/6H



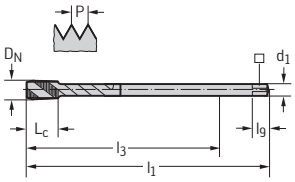
	P	M	K	N	S	H	O
THL	●●			●			●
Uncoated	●●			●			●

~DIN 371 L



Designation THL	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2051832-M3	P205183-M3	M 3	0,5	112	6	18	3,5	2,7	6	3
P2051832-M4	P205183-M4	M 4	0,7	112	7	21	4,5	3,4	6	3
P2051832-M5	P205183-M5	M 5	0,8	125	8	25	6	4,9	8	3
P2051832-M6	P205183-M6	M 6	1	125	10	30	6	4,9	8	3
P2051832-M8	P205183-M8	M 8	1,25	140	13	40	8	6,2	9	3
P2051832-M10	P205183-M10	M 10	1,5	160	15	50	10	8	11	3

~DIN 376 L



Designation THL	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2056832-M8	P205683-M8	M 8	1,25	140	12	117	6	4,9	8	3
P2056832-M10	P205683-M10	M 10	1,5	160	15	137	7	5,5	8	3
P2056832-M12	P205683-M12	M 12	1,75	180	16	153	9	7	10	3
P2056832-M14	P205683-M14	M 14	2	180	20	151	11	9	12	3
P2056832-M16	P205683-M16	M 16	2	200	20	158	12	9	12	3
P2056832-M20	P205683-M20	M 20	2,5	224	25	179	16	12	15	4

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

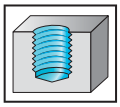
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

M
DIN 13

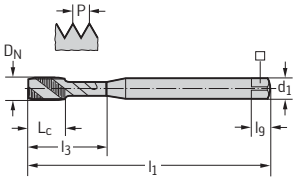
ISO2/6H



≤ 3×D_N | C=2-3 | XL (l_1) | 45° | 32HRC, 1000 –200 N/mm²

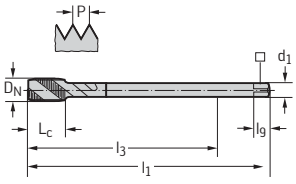
	P	M	K	N	S	H	O
Uncoated	●●			●			●

~DIN 371 XL



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2051935-M3	M 3	0,5	125	6	18	3,5	2,7	6	3
P2051935-M4	M 4	0,7	125	7	21	4,5	3,4	6	3
P2051935-M5	M 5	0,8	140	8	25	6	4,9	8	3
P2051935-M6	M 6	1	160	10	30	6	4,9	8	3
P2051935-M8	M 8	1,25	180	13	35	8	6,2	9	3
P2051935-M10	M 10	1,5	200	15	39	10	8	11	3

~DIN 376 XL



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2056935-M8	M 8	1,25	180	12	157	6	4,9	8	3
P2056935-M10	M 10	1,5	200	15	177	7	5,5	8	3
P2056935-M12	M 12	1,75	220	16	193	9	7	10	3
P2056935-M14	M 14	2	220	20	191	11	9	12	3
P2056935-M16	M 16	2	220	20	178	12	9	12	3
P2056935-M18	M 18	2,5	250	25	206	14	11	14	4
P2056935-M20	M 20	2,5	280	25	235	16	12	15	4

B 5

B 1008 | D 1 | B 709

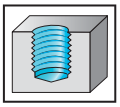
HSS-E machine taps
Paradur® X·pert P AZ



– For long-chipping materials
– For thin-walled workpieces

M
DIN 13

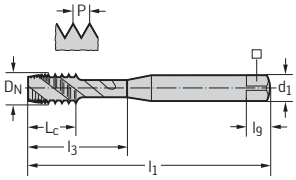
ISO2/6H



≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

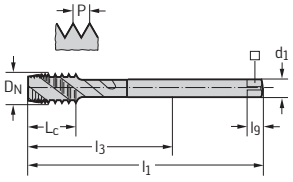
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P40519-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
P40519-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
P40519-M5	M 5	0,8	70	8	25	6	4,9	8	3
P40519-M6	M 6	1	80	10	30	6	4,9	8	3
P40519-M8	M 8	1,25	90	12	35	8	6,2	9	3
P40519-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P40569-M12	M 12	1,75	110	16	83	9	7	10	3

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® X·pert P

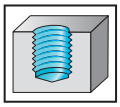


– For long-chipping materials

≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

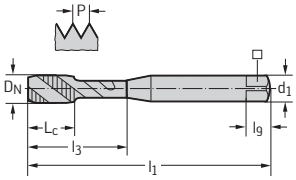
M
DIN 13

ISO3/6G



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

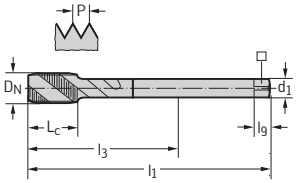
DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20539-M2	M 2	0,4	45	4	9	2,8	2,1	5	3
	P20539-M2.3	M 2.3	0,4	45	4	12	2,8	2,1	5	3
P2053905-M2.5	P20539-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	5	3
P2053905-M3	P20539-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
	P20539-M3.5	M 3.5	0,6	56	6,5	20	4	3	6	3
P2053905-M4	P20539-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
P2053905-M5	P20539-M5	M 5	0,8	70	8	25	6	4,9	8	3
P2053905-M6	P20539-M6	M 6	1	80	10	30	6	4,9	8	3
P2053905-M8	P20539-M8	M 8	1,25	90	12	35	8	6,2	9	3
P2053905-M10	P20539-M10	M 10	1,5	100	15	39	10	8	11	3

B 5

DIN 376



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20589-M5	M 5	0,8	70	8	49	3,5	2,7	6	3
	P20589-M6	M 6	1	80	10	59	4,5	3,4	6	3
	P20589-M8	M 8	1,25	90	12	67	6	4,9	8	3
	P20589-M10	M 10	1,5	100	15	77	7	5,5	8	3
P2058905-M12	P20589-M12	M 12	1,75	110	16	83	9	7	10	3
	P20589-M14	M 14	2	110	20	81	11	9	12	3
P2058905-M16	P20589-M16	M 16	2	110	20	68	12	9	12	3

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® X·pert P

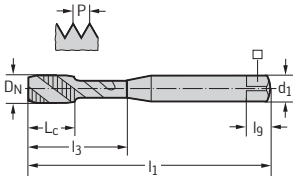


– For long-chipping materials

M	7G	
DIN 13		

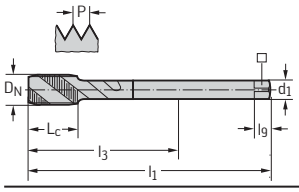
	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20549-M2	M 2	0,4	45	4	9	2,8	2,1	5	3
	P20549-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	5	3
P2054905-M3	P20549-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
P2054905-M4	P20549-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
P2054905-M5	P20549-M5	M 5	0,8	70	8	25	6	4,9	8	3
P2054905-M6	P20549-M6	M 6	1	80	10	30	6	4,9	8	3
P2054905-M8	P20549-M8	M 8	1,25	90	12	35	8	6,2	9	3
P2054905-M10	P20549-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P20599-M8	M 8	1,25	90	12	67	6	4,9	8	3
	P20599-M10	M 10	1,5	100	15	77	7	5,5	8	3
P2059905-M12	P20599-M12	M 12	1,75	110	16	83	9	7	10	3
P2059905-M16	P20599-M16	M 16	2	110	20	68	12	9	12	3
P2059905-M20	P20599-M20	M 20	2,5	140	25	95	16	12	15	4
P2059905-M24	P20599-M24	M 24	3	160	30	113	18	14,5	17	4

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

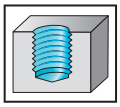
HSS-E-PM machine taps
Paradur® Secur



– For long-chipping materials

M
DIN 13

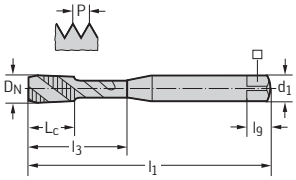
6HX



≤ 3×D_N | C=2-3 | 45° | 25HRC 850 –350 N/mm²

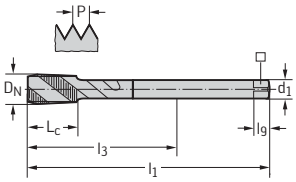
	P	M	K	N	S	H	O
TIN	●●			●●			

~DIN 371



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2051905-M4	M 4	0,7	63	7	14,8	4,5	3,4	6	3
E2051905-M5	M 5	0,8	70	8	20,7	6	4,9	8	3
E2051905-M6	M 6	1	80	10	25	6	4,9	8	3
E2051905-M8	M 8	1,25	90	12	35	8	6,2	9	3
E2051905-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2056905-M12	M 12	1,75	110	16	83	9	7	10	4
E2056905-M16	M 16	2	110	20	68	12	9	12	4
E2056905-M20	M 20	2,5	140	25	95	16	12	15	4
E2056905-M24	M 24	3	160	30	113	18	14,5	17	4
E2056905-M30	M 30	3,5	180	35	115	22	18	21	5

B 5

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® Short Chip HT

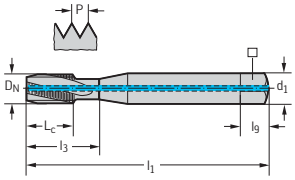


– For long-chipping materials

M	6HX	
DIN 13		

	P	M	K	N	S	H	O
THL	●●		●	●			
THL/uncoated	●●		●	●			

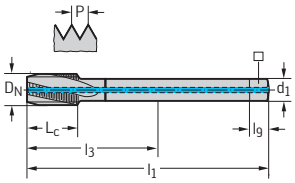
DIN 371



Designation THL	Designation THL/uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20410T2-M5	20410TR-M5	M 5	0,8	70	8	25	6	4,9	8	3
20410T2-M6	20410TR-M6	M 6	1	80	10	30	6	4,9	8	3
20410T2-M8	20410TR-M8	M 8	1,25	90	12	35	8	6,2	9	3
20410T2-M10	20410TR-M10	M 10	1,5	100	15	39	10	8	11	3

20410TR: Uncoated rake

DIN 376



Designation THL	Designation THL/uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20460T2-M12	20460TR-M12	M 12	1,75	110	16	83	9	7	10	3

20460TR: Uncoated rake

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E machine taps
Paradur® STE

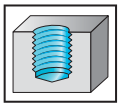


– For long-chipping materials

≤ 2,5×D_N | E=1,5-2 | 40° | 36HRC 1200 –350 N/mm²

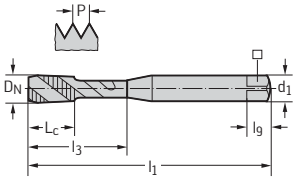
M
DIN 13

6HX



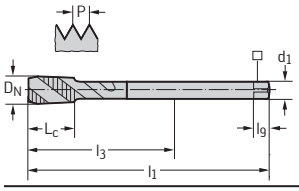
	P	M	K	N	S	H	O
THL	●	●	●	●			
Uncoated	●	●	●	●			

DIN 371



Designation THL	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2051062-M3	205106-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
2051062-M4	205106-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
2051062-M5	205106-M5	M 5	0,8	70	8	25	6	4,9	8	3
2051062-M6	205106-M6	M 6	1	80	10	30	6	4,9	8	3
2051062-M8	205106-M8	M 8	1,25	90	12	35	8	6,2	9	4
2051062-M10	205106-M10	M 10	1,5	100	15	39	10	8	11	4

DIN 376



Designation THL	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2056062-M12	205606-M12	M 12	1,75	110	16	83	9	7	10	4
2056062-M16	205606-M16	M 16	2	110	20	68	12	9	12	5
2056062-M20		M 20	2,5	140	25	95	16	12	15	5
2056062-M24		M 24	3	160	30	113	18	14,5	17	5

B 5

B 1008 D 1 B 709

HSS-E machine taps
TC142 Supreme



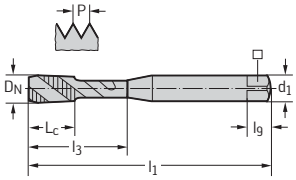
– For long-chipping materials

≤ 3×D_N	C=2-3	50°	36HRC 1200 –350 N/mm²

M DIN 13	6HX	

	P	M	K	N	S	H	O
WW60RB	●	●●					
WY80FC	●	●●					

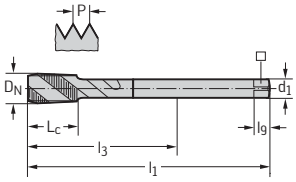
DIN 371



Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WW60RB	WY80FC
TC142-M1.6-C0-	M 1.6	0,35	40	6	6	2,5	2,1	5	2		●●
TC142-M2-C0-	M 2	0,4	45	4	9	2,8	2,1	5	3	●●	●●
TC142-M2.3-C0-	M 2.3	0,4	45	4	12	2,8	2,1	5	3		●●
TC142-M2.5-C0-	M 2.5	0,45	50	4	12,5	2,8	2,1	5	3		●●
TC142-M2.6-C0-	M 2.6	0,45	50	4	12,5	2,8	2,1	5	3		●●
TC142-M3-C0-	M 3	0,5	56	6	18	3,5	2,7	6	3	●●	●●
TC142-M4-C0-	M 4	0,7	63	7	21	4,5	3,4	6	3	●●	●●
TC142-M5-C0-	M 5	0,8	70	8	25	6	4,9	8	3	●●	●●
TC142-M6-C0-	M 6	1	80	10	30	6	4,9	8	3	●●	●●
TC142-M8-C0-	M 8	1,25	90	12	35	8	6,2	9	3	●●	●●
TC142-M10-C0-	M 10	1,5	100	15	39	10	8	11	3	●●	●●

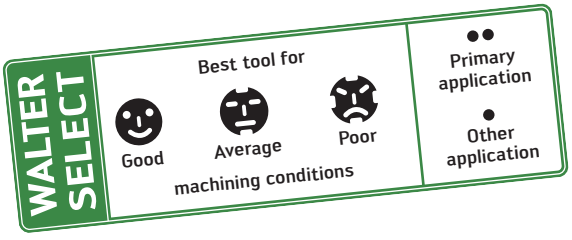
Ordering example for the WY80FC grade: TC142-M1.6-C0-WY80FC

DIN 376



Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WW60RB	WY80FC
TC142-M6-L0-	M 6	1	80	10	59	4,5	3,4	6	3		●●
TC142-M8-L0-	M 8	1,25	90	12	67	6	4,9	8	3		●●
TC142-M10-L0-	M 10	1,5	100	15	77	7	5,5	8	3	●●	●●
TC142-M12-L0-	M 12	1,75	110	16	83	9	7	10	3	●●	●●
TC142-M14-L0-	M 14	2	110	20	81	11	9	12	3	●●	●●
TC142-M16-L0-	M 16	2	110	20	68	12	9	12	4	●●	●●
TC142-M18-L0-	M 18	2,5	125	25	81	14	11	14	4	●●	
TC142-M20-L0-	M 20	2,5	140	25	95	16	12	15	4	●●	●●
TC142-M24-L0-	M 24	3	160	30	113	18	14,5	17	4	●●	●●
TC142-M27-L0-	M 27	3	160	30	97	20	16	19	4		●●
TC142-M30-L0-	M 30	3,5	180	35	115	22	18	21	5		●●
TC142-M33-L0-	M 33	3,5	180	35	113	25	20	23	5		●●
TC142-M36-L0-	M 36	4	200	40	131	28	22	25	5		●●

Ordering example for the WY80FC grade: TC142-M6-L0-WY80FC



B 1008 D 1 B 709

HSS-E machine taps
Paradur® X·pert M

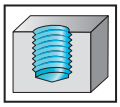


≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

– For long-chipping materials

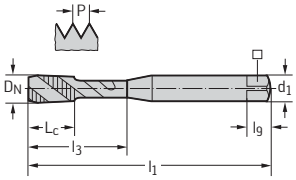
M
DIN 13

6HX



	P	M	K	N	S	H	O
TICN	●	●●					
TIN	●	●●					
VAP	●	●●					

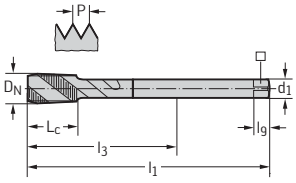
DIN 371



Designation TICN	Designation TIN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
		M20513-M1.6	M 1.6	0,35	40	6	6	2,5	2,1	3
		M20513-M1.7	M 1.7	0,35	40	6	6	2,5	2,1	3
		M20513-M1.8	M 1.8	0,35	40	6	6	2,5	2,1	3
M2051306-M2	M2051305-M2	M20513-M2	M 2	0,4	45	4	9	2,8	2,1	3
M2051306-M2.5	M2051305-M2.5	M20513-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	3
M2051306-M3	M2051305-M3	M20513-M3	M 3	0,5	56	6	18	3,5	2,7	3
		M20513-M3.5	M 3.5	0,6	56	6,5	20	4	3	3
M2051306-M4	M2051305-M4	M20513-M4	M 4	0,7	63	7	21	4,5	3,4	3
		M20513-M4.5	M 4.5	0,75	70	8	25	6	4,9	3
M2051306-M5	M2051305-M5	M20513-M5	M 5	0,8	70	8	25	6	4,9	3
M2051306-M6	M2051305-M6	M20513-M6	M 6	1	80	10	30	6	4,9	3
		M20513-M7	M 7	1	80	10	30	7	5,5	3
M2051306-M8	M2051305-M8	M20513-M8	M 8	1,25	90	12	35	8	6,2	3
M2051306-M10	M2051305-M10	M20513-M10	M 10	1,5	100	15	39	10	8	3

≤ M 1.8: Without reduced neck after the thread
≤ M 2.5: Without thread taper
l_9 dimension in accordance with DIN 10

DIN 376



Designation TICN	Designation TIN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
M2056306-M6		M20563-M6	M 6	1	80	10	59	4,5	3,4	3
M2056306-M8		M20563-M8	M 8	1,25	90	12	67	6	4,9	3
M2056306-M10		M20563-M10	M 10	1,5	100	15	77	7	5,5	3
M2056306-M12	M2056305-M12	M20563-M12	M 12	1,75	110	16	83	9	7	4
		M20563-M14	M 14	2	110	20	81	11	9	4
M2056306-M16	M2056305-M16	M20563-M16	M 16	2	110	20	68	12	9	4
		M20563-M18	M 18	2,5	125	25	81	14	11	4
M2056306-M20	M2056305-M20	M20563-M20	M 20	2,5	140	25	95	16	12	4
		M20563-M22	M 22	2,5	140	25	93	18	14,5	4
M2056306-M24		M20563-M24	M 24	3	160	30	113	18	14,5	4
		M20563-M27	M 27	3	160	30	97	20	16	5
M2056306-M30		M20563-M30	M 30	3,5	180	35	115	22	18	5
		M20563-M33	M 33	3,5	180	35	113	25	20	5
		M20563-M36	M 36	4	200	40	131	28	22	5
		M20563-M42	M 42	4,5	200	45	102	32	24	5

l_9 dimension in accordance with DIN 10

B 1008 D 1 B 709

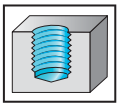
HSS-E machine taps
Paradur® X·pert M



– For long-chipping materials

M
DIN 13

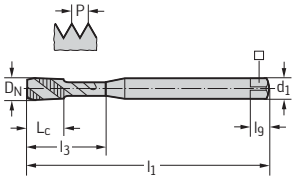
6HX



≤ 2,5×D_N | C=2-3 | XL (l_1) | 40° | 36HRC 1200 –700 N/mm²

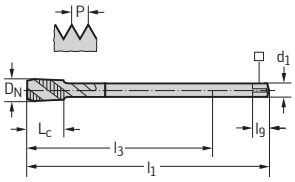
	P	M	K	N	S	H	O
THL	●	●●					

~DIN 371 XL



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2051332-M4	M 4	0,7	125	7	21	4,5	3,4	6	3
M2051332-M5	M 5	0,8	140	8	25	6	4,9	8	3
M2051332-M6	M 6	1	160	10	30	6	4,9	8	3

~DIN 376 XL



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2056332-M8	M 8	1,25	180	12	157	6	4,9	8	3
M2056332-M10	M 10	1,5	200	15	177	7	5,5	8	3
M2056332-M12	M 12	1,75	220	16	193	9	7	10	4
M2056332-M16	M 16	2	220	20	178	12	9	12	4
M2056332-M20	M 20	2,5	280	25	235	16	12	15	4

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® X·pert M

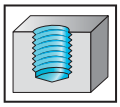


– For long-chipping materials

≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

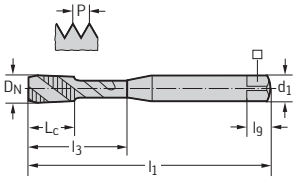
M
DIN 13

6GX



	P	M	K	N	S	H	O
TICN	●	●●					
VAP	●	●●					

DIN 371



Designation TICN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2053306-M3	M20533-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
M2053306-M4	M20533-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
M2053306-M5	M20533-M5	M 5	0,8	70	8	25	6	4,9	8	3
M2053306-M6	M20533-M6	M 6	1	80	10	30	6	4,9	8	3
M2053306-M8	M20533-M8	M 8	1,25	90	12	35	8	6,2	9	3
M2053306-M10	M20533-M10	M 10	1,5	100	15	39	10	8	11	3

B 5

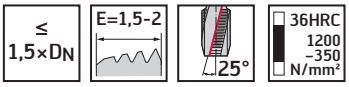
B 1008 D 1 B 709

HSS-E machine taps
Paradur Inox® 25



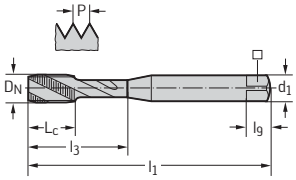
– For long-chipping materials

M	6HX	
DIN 13		



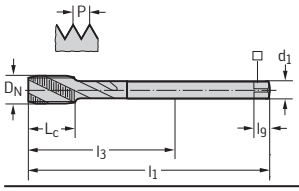
	P	M	K	N	S	H	O
TIN	●●	●●					

~DIN 371



Designation TIN	DN	P mm	l1 mm	Lc mm	l3 mm	d1 h9 mm	□ mm	l9 mm	N
2051315-M5	M 5	0,8	70	8	19	6	4,9	8	4
2051315-M6	M 6	1	80	10	22	6	4,9	8	4
2051315-M8	M 8	1,25	90	13	28	8	6,2	9	5
2051315-M10	M 10	1,5	100	15	32	10	8	11	5

DIN 376



Designation TIN	DN	P mm	l1 mm	Lc mm	l3 mm	d1 h9 mm	□ mm	l9 mm	N
2056315-M12	M 12	1,75	110	16	83	9	7	10	5
2056315-M14	M 14	2	110	20	81	11	9	12	5
2056315-M16	M 16	2	110	20	68	12	9	12	5
2056315-M20	M 20	2,5	140	25	95	16	12	15	5

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Eco CI

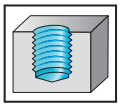


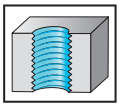
– For short-chipping materials
– Nitrided

≤ 3×D_N | C=2-3 | 32HRC | 1000 –100 N/mm²

M
DIN 13

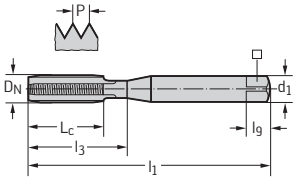
6HX





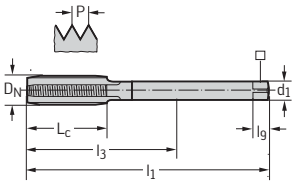
	P	M	K	N	S	H	O
TICN			●●	●●			●●
NID			●●	●●			●●

DIN 371



Designation TICN	Designation NID	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2031406-M3	E20314-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
E2031406-M4	E20314-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2031406-M5	E20314-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2031406-M6	E20314-M6	M 6	1	80	15	30	6	4,9	8	4
E2031406-M7	E20314-M7	M 7	1	80	15	30	7	5,5	8	4
E2031406-M8	E20314-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031406-M9		M 9	1,25	90	18	35	9	7	10	4
E2031406-M10	E20314-M10	M 10	1,5	100	20	39	10	8	11	4

DIN 376



Designation TICN	Designation NID	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2036406-M12	E20364-M12	M 12	1,75	110	23	83	9	7	10	4
E2036406-M14	E20364-M14	M 14	2	110	25	81	11	9	12	4
E2036406-M16	E20364-M16	M 16	2	110	25	68	12	9	12	4
E2036406-M18	E20364-M18	M 18	2,5	125	30	81	14	11	14	4
E2036406-M20	E20364-M20	M 20	2,5	140	30	95	16	12	15	4
E2036406-M22	E20364-M22	M 22	2,5	140	30	93	18	14,5	17	4
E2036406-M24	E20364-M24	M 24	3	160	36	113	18	14,5	17	5
E2036406-M30	E20364-M30	M 30	3,5	180	42	115	22	18	21	5

B 5

B 1008 D 1 B 709

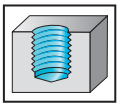
HSS-E-PM machine taps
Paradur® Eco CI



– For short-chipping materials
– Nitrided

M
DIN 13

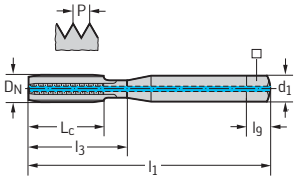
6HX



≤ 3×D_N | C=2-3 | 32HRC, 1000 –100 N/mm²

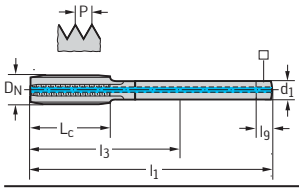
	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2031416-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2031416-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2031416-M6	M 6	1	80	15	30	6	4,9	8	4
E2031416-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031416-M10	M 10	1,5	100	20	39	10	8	11	4

DIN 376



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2036416-M12	M 12	1,75	110	23	83	9	7	10	4
E2036416-M14	M 14	2	110	25	81	11	9	12	4
E2036416-M16	M 16	2	110	25	68	12	9	12	4
E2036416-M18	M 18	2,5	125	30	81	14	11	14	4
E2036416-M20	M 20	2,5	140	30	95	16	12	15	4
E2036416-M24	M 24	3	160	36	113	18	14,5	17	5

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

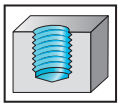
HSS-E-PM machine taps
Paradur® Eco CI



– For short-chipping materials
– Nitrided

M
DIN 13

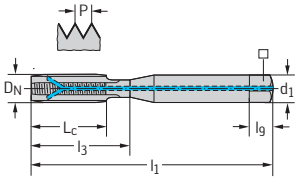
6HX



≤ 3×D_N | C=2-3 | 32HRC 1000 –100 N/mm²

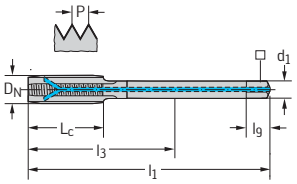
	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2031446-M6	M 6	1	80	15	30	6	4,9	8	4
E2031446-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031446-M10	M 10	1,5	100	20	39	10	8	11	4

DIN 376



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2036446-M12	M 12	1,75	110	23	83	9	7	10	4
E2036446-M16	M 16	2	110	25	68	12	9	12	4

B 1008 D 1 B 709

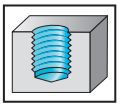
HSS-E-PM machine taps
Paradur® Eco CI

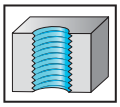


– For short-chipping materials
– Nitrided

M
DIN 13

6HX

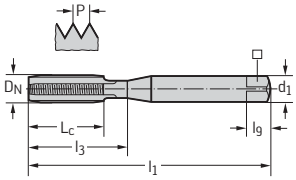




≤ 3×D_N | E=1,5-2 | 32HRC, 1000 –100 N/mm²

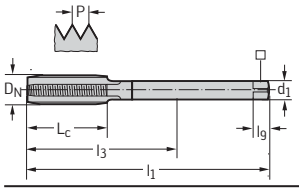
	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2031466-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2031466-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2031466-M6	M 6	1	80	15	30	6	4,9	8	4
E2031466-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031466-M10	M 10	1,5	100	20	39	10	8	11	4

DIN 376



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2036466-M12	M 12	1,75	110	23	83	9	7	10	4
E2036466-M16	M 16	2	110	25	68	12	9	12	4
E2036466-M20	M 20	2,5	140	30	95	16	12	15	4
E2036466-M24	M 24	3	160	36	113	18	14,5	17	5

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

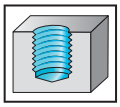
HSS-E-PM machine taps
Paradur® Eco CI



– For short-chipping materials
– Nitrided

M
DIN 13

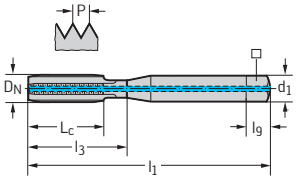
6HX



≤ 3×D_N | E=1,5-2 | 32HRC 1000 –100 N/mm²

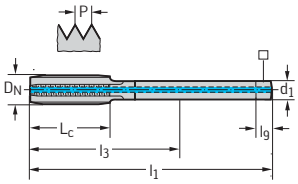
	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2031456-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2031456-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2031456-M6	M 6	1	80	15	30	6	4,9	8	4
E2031456-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031456-M10	M 10	1,5	100	20	39	10	8	11	4

DIN 376



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2036456-M12	M 12	1,75	110	23	83	9	7	10	4
E2036456-M16	M 16	2	110	25	68	12	9	12	4
E2036456-M20	M 20	2,5	140	30	95	16	12	15	4

B 5

B 1008 | D 1 | B 709

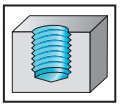
HSS-E-PM machine taps
Paradur® Eco CI

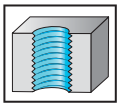


– For short-chipping materials
– Nitrided

M
DIN 13

6HX

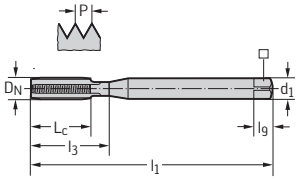




≤ 3×D_N | C=2-3 | XL (l_1) | 32HRC, 1000 –100 N/mm²

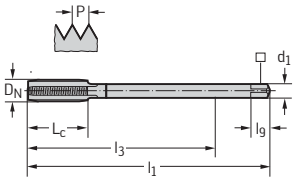
	P	M	K	N	S	H	O
TICN			●●	●●			●●

~DIN 371 XL



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2031436-M4	M 4	0,7	125	12	21	4,5	3,4	6	3
E2031436-M5	M 5	0,8	140	13	25	6	4,9	8	4
E2031436-M6	M 6	1	160	15	30	6	4,9	8	4
E2031436-M8	M 8	1,25	180	18	35	8	6,2	9	4
E2031436-M10	M 10	1,5	200	20	39	10	8	11	4

~DIN 376 XL



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2036436-M12	M 12	1,75	220	23	193	9	7	10	4
E2036436-M16	M 16	2	220	25	178	12	9	12	4
E2036436-M20	M 20	2,5	280	30	235	16	12	15	4

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E-PM machine taps
Paradur® X·pert K

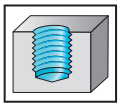


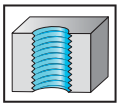
– For short-chipping materials

≤ 3×D_N	C=2-3	32HRC 1000 –100 N/mm²

M
DIN 13

6HX

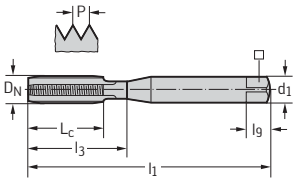




	P	M	K	N	S	H	O
TAFT			●●	●			

DIN 371

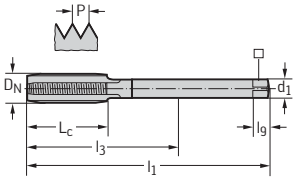
Parallel shank



Designation TAFT	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
K2031407-M3	M 3	0,5	56	9	17	3,5	2,7	6	3
K2031407-M4	M 4	0,7	63	11	19	4,5	3,4	6	3
K2031407-M5	M 5	0,8	70	13	23	6	4,9	8	3
K2031407-M6	M 6	1	80	15	27	6	4,9	8	3
K2031407-M8	M 8	1,25	90	18	31	8	6,2	9	4
K2031407-M10	M 10	1,5	100	20	35	10	8	11	4

DIN 376

Parallel shank



Designation TAFT	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
K2036407-M12	M 12	1,75	110	23	78	9	7	10	4
K2036407-M14	M 14	2	110	25	75	11	9	12	4
K2036407-M16	M 16	2	110	25	62	12	9	12	4
K2036407-M20	M 20	2,5	140	30	88	16	12	15	4

B 5

B 1008 D 1 B 709

HSS-E machine taps
Paradur® X·pert N



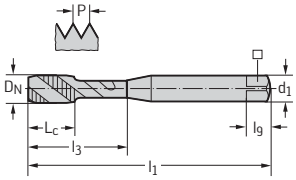
– For long-chipping materials

M	ISO2/6H	
DIN 13		

≤ 3×D_N | C=2-3 | 35° | 14HRC 700 –200 N/mm²

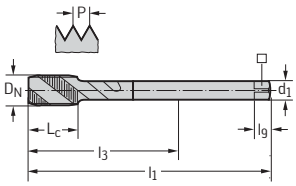
	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N20516-M1.6	M 1.6	0,35	40	6	6	2,5	2,1	5	2
N20516-M2	M 2	0,4	45	4	9	2,8	2,1	5	2
N20516-M2.3	M 2.3	0,4	45	4	12	2,8	2,1	5	2
N20516-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	5	2
N20516-M3	M 3	0,5	56	6	18	3,5	2,7	6	2
N20516-M3.5	M 3.5	0,6	56	6,5	20	4	3	6	2
N20516-M4	M 4	0,7	63	7	21	4,5	3,4	6	2
N20516-M5	M 5	0,8	70	8	25	6	4,9	8	2
N20516-M6	M 6	1	80	10	30	6	4,9	8	2
N20516-M8	M 8	1,25	90	12	35	8	6,2	9	2
N20516-M10	M 10	1,5	100	15	39	10	8	11	2

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N20566-M6	M 6	1	80	10	59	4,5	3,4	6	2
N20566-M8	M 8	1,25	90	12	67	6	4,9	8	2
N20566-M10	M 10	1,5	100	15	77	7	5,5	8	2
N20566-M12	M 12	1,75	110	16	83	9	7	10	3
N20566-M14	M 14	2	110	20	81	11	9	12	3
N20566-M16	M 16	2	110	20	68	12	9	12	3
N20566-M20	M 20	2,5	140	25	95	16	12	15	3

B 5

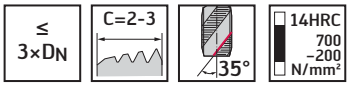
WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E machine taps
Paradur® X·pert N

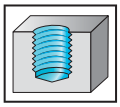


– Increased number of flutes
– For long-chipping materials



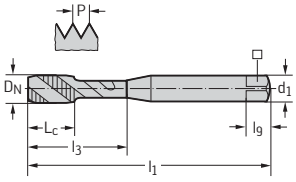
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N205166-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
N205166-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
N205166-M5	M 5	0,8	70	8	25	6	4,9	8	3
N205166-M6	M 6	1	80	10	30	6	4,9	8	3
N205166-M7	M 7	1	80	10	30	7	5,5	8	3
N205166-M8	M 8	1,25	90	12	35	8	6,2	9	3
N205166-M10	M 10	1,5	100	15	39	10	8	11	3

B 5

B 1008 D 1 B 709

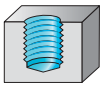
HSS-E machine taps
Paradur® X·pert N



– For long-chipping materials

M
DIN 13

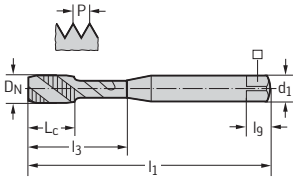
ISO3/6G



≤ 3×D_N | C=2-3 | 35° | 14HRC 700 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N20536-M2	M 2	0,4	45	4	9	2,8	2,1	5	2
N20536-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	5	2
N20536-M3	M 3	0,5	56	6	18	3,5	2,7	6	2
N20536-M4	M 4	0,7	63	7	21	4,5	3,4	6	2
N20536-M5	M 5	0,8	70	8	25	6	4,9	8	2
N20536-M6	M 6	1	80	10	30	6	4,9	8	2
N20536-M8	M 8	1,25	90	12	35	8	6,2	9	2

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® WLM Synchrospeed

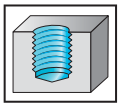


– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 3×D_N | C=2-3 | 45° | 14HRC 700 N/mm²

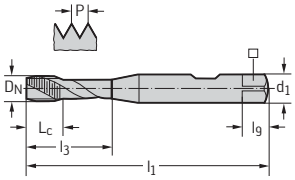
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
CRN	●			●●	●●		●●
Uncoated	●			●●	●●		●●

~DIN 371



Designation CRN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2051604-M3	S20516-M3	M 3	0,5	70	6	18	6	4,9	8	2
S2051604-M4	S20516-M4	M 4	0,7	70	7	21	6	4,9	8	2
S2051604-M5	S20516-M5	M 5	0,8	70	8	25	6	4,9	8	2
S2051604-M6	S20516-M6	M 6	1	80	10	30	6	4,9	8	2
S2051604-M8	S20516-M8	M 8	1,25	90	12	35	8	6,2	9	2
S2051604-M10	S20516-M10	M 10	1,5	100	15	39	10	8	11	2

B 5

B 1008 | D 1 | B 709

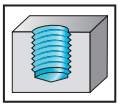
HSS-E machine taps
Paradur® AP

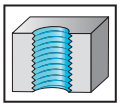


– For short-chipping materials
– For Ampco

M
DIN 13

6HX





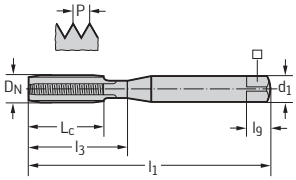
≤ 2×D_N

C=2-3

47HRC
1500 –700 N/mm²

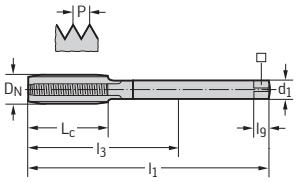
	P	M	K	N	S	H	O
NIT				●●	●		

DIN 371



Designation NIT	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20312-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
20312-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
20312-M5	M 5	0,8	70	13	25	6	4,9	8	3
20312-M6	M 6	1	80	15	30	6	4,9	8	3
20312-M8	M 8	1,25	90	18	35	8	6,2	9	3
20312-M10	M 10	1,5	100	20	39	10	8	11	3

DIN 376



Designation NIT	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20362-M12	M 12	1,75	110	23	83	9	7	10	4
20362-M16	M 16	2	110	25	68	12	9	12	4
20362-M20	M 20	2,5	140	30	95	16	12	15	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

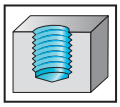
HSS-E-PM machine taps
Paradur® Ni



– For long-chipping materials

M
DIN 13

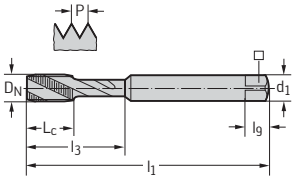
4HX



≤ 1,5×D_N | C=2-3 | 25° | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●				●●		

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
204104-M2	M 2	0,4	45	8	8	2,8	2,1	5	3
204104-M3	M 3	0,5	56	10	10	3,5	2,7	6	3
204104-M3.5	M 3.5	0,6	56	12	12	4	3	6	3
204104-M4	M 4	0,7	63	13	13	4,5	3,4	6	3
204104-M5	M 5	0,8	70	16	16	6	4,9	8	3
204104-M6	M 6	1	80	15	23	6	4,9	8	3
204104-M8	M 8	1,25	90	18	29,5	8	6,2	9	3
204104-M10	M 10	1,5	100	20	33,5	10	8	11	4

≤ M 5: Without reduced neck after the thread

B 5

B 1008 D 1 B 709

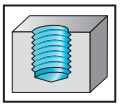
HSS-E-PM machine taps
Paradur® Ni



– For long-chipping materials

M
DIN 13

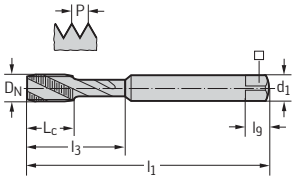
6HX



≤ 1,5×D_N | C=2-3 | 25° | 44HRC, 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●				●●		

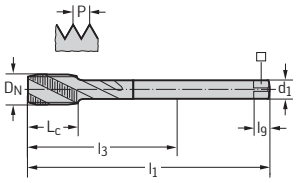
~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
204102-M2	M 2	0,4	45	8	8	2,8	2,1	5	3
204102-M2.5	M 2.5	0,45	50	9	30	2,8	2,1	5	3
204102-M3	M 3	0,5	56	10	35	3,5	2,7	6	3
204102-M3.5	M 3.5	0,6	56	12	12	4	3	6	3
204102-M4	M 4	0,7	63	13	42	4,5	3,4	6	3
204102-M5	M 5	0,8	70	16	16	6	4,9	8	3
204102-M6	M 6	1	80	15	23	6	4,9	8	3
204102-M8	M 8	1,25	90	18	29,5	8	6,2	9	3
204102-M10	M 10	1,5	100	20	33,5	10	8	11	4

≤ M 5: Without reduced neck after the thread

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
204602-M12	M 12	1,75	110	23	83	9	7	10	4
204602-M14	M 14	2	110	25	81	11	9	12	4
204602-M16	M 16	2	110	25	68	12	9	12	4
204602-M18	M 18	2,5	125	30	81	14	11	14	5
204602-M20	M 20	2,5	140	30	95	16	12	15	5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

HSS-E-PM machine taps
Paradur® Ni 10



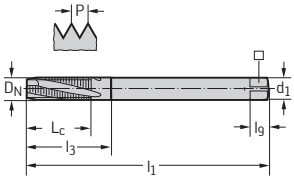
– For long-chipping and short-chipping materials

≤ 1,5×D_N	C=2-3	10°	49HRC 1600 –1000 N/mm²

M	6HX	
DIN 13		

	P	M	K	N	S	H	O
TIN	●●			●	●●		
Uncoated	●●			●	●●		

~DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2041015-M3	204101-M3	M 3	0,5	56	8	35	3,5	2,7	6	3
2041015-M4	204101-M4	M 4	0,7	63	10,5	42	4,5	3,4	6	3
2041015-M5	204101-M5	M 5	0,8	70	13	47	6	4,9	8	3
2041015-M6	204101-M6	M 6	1	80	16	57	6	4,9	8	3
2041015-M8	204101-M8	M 8	1,25	90	20,5	66	8	6,2	9	3
2041015-M10	204101-M10	M 10	1,5	100	25,5	72	10	8	11	3
2041015-M12	204101-M12	M 12	1,75	110	30,5	68	12	9	12	4
2041015-M16	204101-M16	M 16	2	110	39,5	65	16	12	15	4

Without reduced neck after the thread

B 5

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Ti

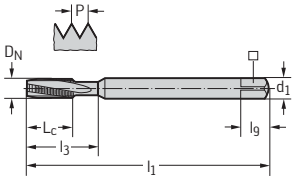


– For long-chipping materials

M	6HX	
DIN 13		

	P	M	K	N	S	H	O
TICN	●●			●	●●		
Uncoated	●●			●	●●		

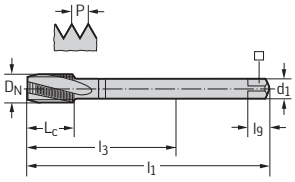
~DIN 371



Designation TICN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	20416-M1	M 1	0,25	40	5	5	2,5	2,1	5	3
	20416-M1.2	M 1.2	0,25	40	5	5	2,5	2,1	5	3
	20416-M1.4	M 1.4	0,3	40	5	5	2,5	2,1	5	3
	20416-M1.6	M 1.6	0,35	40	5	5	2,5	2,1	5	3
	20416-M1.8	M 1.8	0,35	40	5	5	2,5	2,1	5	3
2041606-M2	20416-M2	M 2	0,4	45	8	8	2,8	2,1	5	3
	20416-M2.2	M 2.2	0,45	45	8	8	2,8	2,1	5	3
2041606-M2.5	20416-M2.5	M 2.5	0,45	50	9	30	2,8	2,1	5	3
2041606-M3	20416-M3	M 3	0,5	56	10	35	3,5	2,7	6	3
	20416-M3.5	M 3.5	0,6	56	12	12	4	3	6	3
2041606-M4	20416-M4	M 4	0,7	63	13	42	4,5	3,4	6	3
	20416-M4.5	M 4.5	0,75	70	16	16	6	4,9	8	3
2041606-M5	20416-M5	M 5	0,8	70	16	16	6	4,9	8	3
2041606-M6	20416-M6	M 6	1	80	15	23	6	4,9	8	3
2041606-M8	20416-M8	M 8	1,25	90	18	29,5	8	6,2	9	3
2041606-M10	20416-M10	M 10	1,5	100	20	33,5	10	8	11	3

≤ M 1.4: 5HX
≤ M 5: Without reduced neck after the thread

DIN 376



Designation TICN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2046606-M12	20466-M12	M 12	1,75	110	23	83	9	7	10	4
	20466-M14	M 14	2	110	25	81	11	9	12	4
2046606-M16	20466-M16	M 16	2	110	25	68	12	9	12	4
	20466-M20	M 20	2,5	140	30	95	16	12	15	4
	20466-M24	M 24	3	160	36	113	18	14,5	17	5
	20466-M27	M 27	3	160	36	97	20	16	19	5
	20466-M30	M 30	3,5	180	42	115	22	18	21	5
	20466-M33	M 33	3,5	180	42	113	25	20	23	5
	20466-M36	M 36	4	200	48	131	28	22	25	5

WALTER SELECT
●● Primary application
● Other application

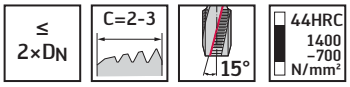
B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Ti Plus



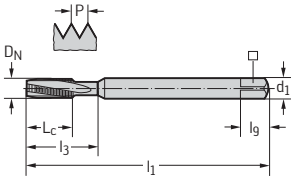
– For long-chipping materials

M	6HX	
DIN 13		



	P	M	K	N	S	H	O
ACN					●●		

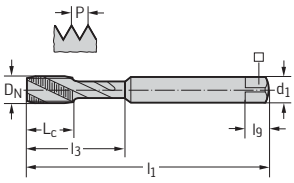
~DIN 371



Designation ACN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2041663-M2	M 2	0,4	45	8	8	2,8	2,1	5	3
2041663-M2.5	M 2.5	0,45	50	9	30	2,8	2,1	5	3
2041663-M3	M 3	0,5	56	10	10	3,5	2,7	6	3
2041663-M3.5	M 3.5	0,6	56	12	12	4	3	6	3
2041663-M4	M 4	0,7	63	13	13	4,5	3,4	6	3
2041663-M5	M 5	0,8	70	16	16	6	4,9	8	3
2041663-M6	M 6	1	80	15	23	6	4,9	8	3
2041663-M8	M 8	1,25	90	18	29,5	8	6,2	9	3
2041663-M10	M 10	1,5	100	20	33,5	10	8	11	3

B 5

DIN 376



Designation ACN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2046663-M12	M 12	1,75	110	23	83	9	7	10	4
2046663-M16	M 16	2	110	25	68	12	9	12	4
2046663-M20	M 20	2,5	140	30	95	16	12	15	4

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® FT

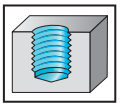


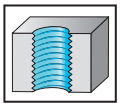
– For short-chipping materials

≤ 2×D_N	B=3,5-5	51HRC 1700 –900 N/mm²

M
DIN 13

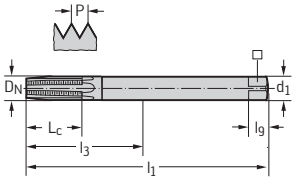
ISO2/6H





	P	M	K	N	S	H	O
Uncoated					●		●

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20316-M3	M 3	0,5	56	11	35	3,5	2,7	6	3
20316-M4	M 4	0,7	63	13	42	4,5	3,4	6	5
20316-M5	M 5	0,8	70	16	47	6	4,9	8	5
20316-M6	M 6	1	80	20	57	6	4,9	8	5
20316-M8	M 8	1,25	90	25	66	8	6,2	9	5
20316-M10	M 10	1,5	100	30	72	10	8	11	5

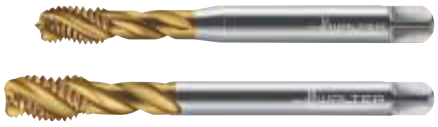
Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E machine taps
Paradur® Uni

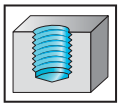


≤ 3×D_N | C=2-3 | 40° | 32HRC 1000 –200 N/mm²

– For long-chipping materials

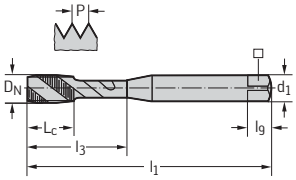
M
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
TIN	●●		●	●			
VAP	●●		●	●			
Uncoated	●●		●	●			

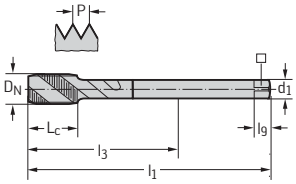
DIN 371



Designation TIN	Designation VAP	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
		7051770-M2	M 2	0,4	45	4	9	2,8	2,1	3
		7051770-M2.3	M 2.3	0,4	45	4	12	2,8	2,1	3
		7051770-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	3
		7051770-M2.6	M 2.6	0,45	50	4	12,5	2,8	2,1	3
7051775-M3	7051773-M3	7051770-M3	M 3	0,5	56	6	18	3,5	2,7	3
		7051770-M3.5	M 3.5	0,6	56	6,5	20	4	3	3
7051775-M4	7051773-M4	7051770-M4	M 4	0,7	63	7	21	4,5	3,4	3
7051775-M5	7051773-M5	7051770-M5	M 5	0,8	70	8	25	6	4,9	3
7051775-M6	7051773-M6	7051770-M6	M 6	1	80	10	30	6	4,9	3
7051775-M7		7051770-M7	M 7	1	80	10	30	7	5,5	3
7051775-M8	7051773-M8	7051770-M8	M 8	1,25	90	12	35	8	6,2	3
7051775-M10	7051773-M10	7051770-M10	M 10	1,5	100	15	39	10	8	3

l_9 dimension in accordance with DIN 10

DIN 376



Designation TIN	Designation VAP	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
		7056770-M3	M 3	0,5	56	6	34	2,2	1,8	3
		7056770-M4	M 4	0,7	63	7	43	2,8	2,1	3
		7056770-M5	M 5	0,8	70	8	49	3,5	2,7	3
		7056770-M6	M 6	1	80	10	59	4,5	3,4	3
		7056770-M8	M 8	1,25	90	12	67	6	4,9	3
		7056770-M10	M 10	1,5	100	15	77	7	5,5	3
7056775-M12	7056773-M12	7056770-M12	M 12	1,75	110	16	83	9	7	3
7056775-M14	7056773-M14	7056770-M14	M 14	2	110	20	81	11	9	3
7056775-M16	7056773-M16	7056770-M16	M 16	2	110	20	68	12	9	4
7056775-M18		7056770-M18	M 18	2,5	125	25	81	14	11	4
7056775-M20		7056770-M20	M 20	2,5	140	25	95	16	12	4
		7056770-M22	M 22	2,5	140	25	93	18	14,5	4
		7056770-M24	M 24	3	160	30	113	18	14,5	4
		7056770-M27	M 27	3	160	30	97	20	16	4
		7056770-M30	M 30	3,5	180	35	115	22	18	4
		7056770-M33	M 33	3,5	180	35	113	25	20	4
		7056770-M36	M 36	4	200	40	131	28	22	4

l_9 dimension in accordance with DIN 10

B 1008 D 1 B 709

HSS-E machine taps
Paradur® Uni



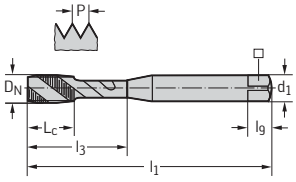
– For long-chipping materials

M	ISO3/6G	
DIN 13		

≤ 3×D_N | C=2-3 | 40° | 32HRC, 1000 –200 N/mm²

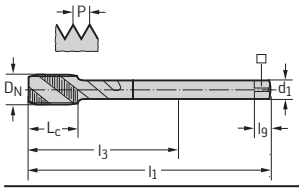
	P	M	K	N	S	H	O
Uncoated	●●		●	●			

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7053770-M2	M 2	0,4	45	4	9	2,8	2,1	5	3
7053770-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
7053770-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
7053770-M5	M 5	0,8	70	8	25	6	4,9	8	3
7053770-M6	M 6	1	80	10	30	6	4,9	8	3
7053770-M8	M 8	1,25	90	12	35	8	6,2	9	3
7053770-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7058770-M12	M 12	1,75	110	16	83	9	7	10	3
7058770-M14	M 14	2	110	20	81	11	9	12	3
7058770-M16	M 16	2	110	20	68	12	9	12	4
7058770-M18	M 18	2,5	125	25	81	14	11	14	4
7058770-M20	M 20	2,5	140	25	95	16	12	15	4

B 5

WALTER SELECT
●● Primary application
● Other application

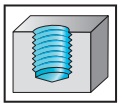
B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Sprint



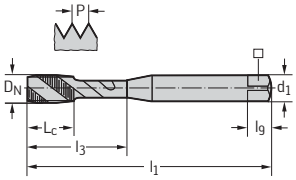
– For long-chipping materials

≤ 2×D_N	C=2-3	40°	36HRC 1200 –350 N/mm²

M DIN 13	ISO2/6H	

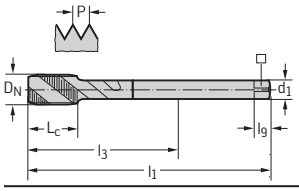
	P	M	K	N	S	H	O
TICN	●	●	●	●			
TIN	●	●	●	●			

DIN 371



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7051366-M3	7051365-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
7051366-M4	7051365-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
7051366-M5	7051365-M5	M 5	0,8	70	8	25	6	4,9	8	3
7051366-M6	7051365-M6	M 6	1	80	10	30	6	4,9	8	3
7051366-M8	7051365-M8	M 8	1,25	90	12	35	8	6,2	9	3
7051366-M10	7051365-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	7056365-M12	M 12	1,75	110	16	83	9	7	10	3
	7056365-M14	M 14	2	110	20	81	11	9	12	3
	7056365-M16	M 16	2	110	20	68	12	9	12	4
	7056365-M18	M 18	2,5	125	25	81	14	11	14	4
	7056365-M20	M 20	2,5	140	25	95	16	12	15	4

B 5

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Megasprint



– For long-chipping materials

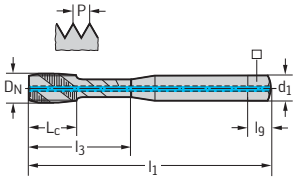
M
DIN 13

ISO2/6H

≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –350 N/mm²

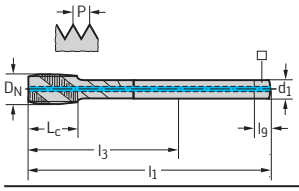
	P	M	K	N	S	H	O
TIN	●	●	●	●			

DIN 371



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7051315-M6	M 6	1	80	10	30	6	4,9	8	3
7051315-M8	M 8	1,25	90	12	35	8	6,2	9	3
7051315-M10	M 10	1,5	100	15	39	10	8	11	3

DIN 376



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7056315-M12	M 12	1,75	110	16	83	9	7	10	3
7056315-M14	M 14	2	110	20	81	11	9	12	3
7056315-M16	M 16	2	110	20	68	12	9	12	4
7056315-M18	M 18	2,5	125	25	81	14	11	14	4
7056315-M20	M 20	2,5	140	25	95	16	12	15	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

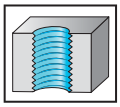
HSS-E-PM machine taps
Prototex® Eco Plus



– For long-chipping materials

MF
DIN 13

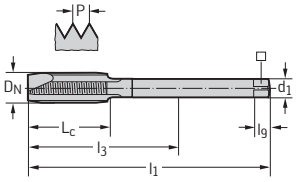
6HX



≤ 3,5×D_N | B=3,5-5 | 42HRC 1350 –500 N/mm²

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 374



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2126302-M6X0.75	MF 6x0.75	0,75	80	15	59	4,5	3,4	6	3
EP2126302-M8X1	MF 8x1	1	90	18	67	6	4,9	8	3
EP2126302-M10X1	MF 10x1	1	90	20	67	7	5,5	8	3
EP2126302-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	3
EP2126302-M12X1	MF 12x1	1	100	21	73	9	7	10	4
EP2126302-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
EP2126302-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
EP2126302-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
EP2126302-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
EP2126302-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
EP2126302-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
EP2126302-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	4

B 5

B 836 D 1 B 709

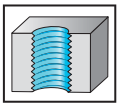
HSS-E-PM machine taps
Prototex® Eco Plus



– For long-chipping materials

MF
DIN 13

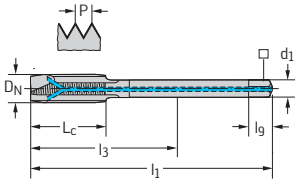
6HX



≤ 3,5×D_N | B=3,5-5 | 42HRC 1350 –500 N/mm²

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 374



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2126342-M8X1	MF 8x1	1	90	18	67	6	4,9	5	3
EP2126342-M10X1	MF 10x1	1	90	20	67	7	5,5	8	3
EP2126342-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	3
EP2126342-M12X1	MF 12x1	1	100	21	73	9	7	10	4
EP2126342-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
EP2126342-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
EP2126342-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
EP2126342-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
EP2126342-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
EP2126342-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	12	4

WALTER SELECT
●● Primary application
● Other application

B 836 | D 1 | B 709

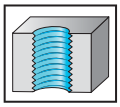
HSS-E machine taps
TC216 Perform



– For long-chipping materials

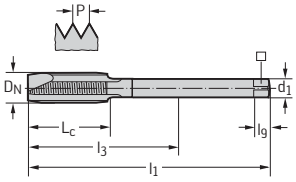
MF
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
WY80AA	●●	●●	●●	●●			
WY80FC	●●	●●	●●	●●			

DIN 374



Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WY80AA	WY80FC
TC216-M8X1-L0-	MF 8x1	1	90	18	67	6	4,9	8	3	✓	✓
TC216-M10X1-L0-	MF 10x1	1	90	20	67	7	5,5	8	3	✓	✓
TC216-M12X1.25-L0-	MF 12x1.25	1,25	100	21	73	9	7	10	4	✓	✓
TC216-M12X1.5-L0-	MF 12x1.5	1,5	100	21	73	9	7	10	4	✓	✓
TC216-M14X1.5-L0-	MF 14x1.5	1,5	100	21	71	11	9	12	4	✓	✓
TC216-M16X1.5-L0-	MF 16x1.5	1,5	100	21	58	12	9	12	4	✓	✓
TC216-M18X1.5-L0-	MF 18x1.5	1,5	110	24	66	14	11	14	4	✓	✓

Ordering example for the WY80FC grade: TC216-M8X1-L0-WY80FC

B 5

B 836 D 1 B 709

HSS-E machine taps
Prototex® Synchrospeed

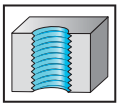


– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 3×D_N | B=3,5-5 | 44HRC 1400 N/mm²

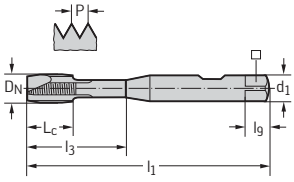
MF
DIN 13

6HX



	P	M	K	N	S	H	O
THL	●●	●●	●●	●●	●●		●●
TIN	●●	●●	●●	●●	●●		●●

~DIN 371



Designation THL	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2126302-M8X1	S2126305-M8X1	MF 8x1	1	90	10	35	8	6,2	9	3
S2126302-M10X1	S2126305-M10X1	MF 10x1	1	90	10	39	10	8	11	3
S2126302-M10X1.25	S2126305-M10X1.25	MF 10x1.25	1,25	100	13	39	10	8	11	3
S2126302-M12X1.25	S2126305-M12X1.25	MF 12x1.25	1,25	100	13	42	12	9	12	3
S2126302-M12X1.5	S2126305-M12X1.5	MF 12x1.5	1,5	100	15	42	12	9	12	3
S2126302-M14X1.5	S2126305-M14X1.5	MF 14x1.5	1,5	100	15	49	14	11	14	3
S2126302-M16X1.5	S2126305-M16X1.5	MF 16x1.5	1,5	100	15	50	16	12	15	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

HSS-E machine taps
Prototex® X·pert P

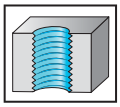


≤ 3×D_N | B=3,5-5 | 32HRC 1000 –200 N/mm²

– For long-chipping materials

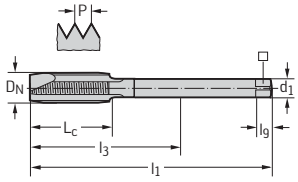
MF
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 374



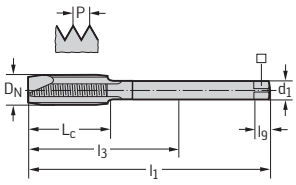
Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P21360-M4X0.5	MF 4x0.5	0,5	63	12	43	2,8	2,1	5	3
P2136005-M5X0.5	P21360-M5X0.5	MF 5x0.5	0,5	70	13	49	3,5	2,7	6	3
P2136005-M6X0.5	P21360-M6X0.5	MF 6x0.5	0,5	80	15	59	4,5	3,4	6	3
P2136005-M6X0.75	P21360-M6X0.75	MF 6x0.75	0,75	80	15	59	4,5	3,4	6	3
P2136005-M8X0.5	P21360-M8X0.5	MF 8x0.5	0,5	80	15	57	6	4,9	8	3
P2136005-M8X0.75	P21360-M8X0.75	MF 8x0.75	0,75	80	15	57	6	4,9	8	3
P2136005-M8X1	P21360-M8X1	MF 8x1	1	90	18	67	6	4,9	8	3
	P21360-M9X1	MF 9x1	1	90	18	67	7	5,5	8	3
	P21360-M10X0.5	MF 10x0.5	0,5	90	20	67	7	5,5	8	3
	P21360-M10X0.75	MF 10x0.75	0,75	90	20	67	7	5,5	8	3
P2136005-M10X1	P21360-M10X1	MF 10x1	1	90	20	67	7	5,5	8	3
P2136005-M10X1.25	P21360-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	3
	P21360-M12X0.5	MF 12x0.5	0,5	100	21	73	9	7	10	4
P2136005-M12X1	P21360-M12X1	MF 12x1	1	100	21	73	9	7	10	4
	P21360-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
P2136005-M12X1.5	P21360-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
	P21360-M14X1	MF 14x1	1	100	21	71	11	9	12	4
	P21360-M14X1.25	MF 14x1.25	1,25	100	21	71	11	9	12	4
P2136005-M14X1.5	P21360-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
	P21360-M16X1	MF 16x1	1	100	21	58	12	9	12	4
P2136005-M16X1.5	P21360-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
	P21360-M18X1	MF 18x1	1	110	24	66	14	11	14	4
P2136005-M18X1.5	P21360-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
	P21360-M18X2	MF 18x2	2	125	30	81	14	11	14	4
	P21360-M20X1	MF 20x1	1	125	24	80	16	12	15	4
P2136005-M20X1.5	P21360-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
	P21360-M20X2	MF 20x2	2	140	30	95	16	12	15	4
	P21360-M22X1	MF 22x1	1	125	24	78	18	14,5	17	4
P2136005-M22X1.5	P21360-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	4
	P21360-M22X2	MF 22x2	2	140	26	93	18	14,5	17	4
	P21360-M24X1	MF 24x1	1	140	26	93	18	14,5	17	4
P2136005-M24X1.5	P21360-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	4
P2136005-M24X2	P21360-M24X2	MF 24x2	2	140	26	93	18	14,5	17	4
	P21360-M25X1.5	MF 25x1.5	1,5	140	26	93	18	14,5	17	4
	P21360-M26X1.5	MF 26x1.5	1,5	140	26	93	18	14,5	17	4
	P21360-M27X1	MF 27x1	1	140	26	77	20	16	19	4
	P21360-M27X1.5	MF 27x1.5	1,5	140	26	77	20	16	19	4
P2136005-M27X2	P21360-M27X2	MF 27x2	2	140	26	77	20	16	19	4
	P21360-M28X1.5	MF 28x1.5	1,5	140	26	77	20	16	19	4
	P21360-M30X1	MF 30x1	1	150	26	85	22	18	21	4
P2136005-M30X1.5	P21360-M30X1.5	MF 30x1.5	1,5	150	26	85	22	18	21	4
P2136005-M30X2	P21360-M30X2	MF 30x2	2	150	26	85	22	18	21	4
	P21360-M32X1.5	MF 32x1.5	1,5	150	26	85	22	18	21	4
	P21360-M32X2	MF 32x2	2	150	26	85	22	18	21	4
	P21360-M33X1.5	MF 33x1.5	1,5	160	28	93	25	20	23	4
	P21360-M33X2	MF 33x2	2	160	28	93	25	20	23	4
	P21360-M35X1.5	MF 35x1.5	1,5	170	28	101	28	22	25	4
	P21360-M36X1.5	MF 36x1.5	1,5	170	28	101	28	22	25	4

Continued

B 836 D 1 B 709

Continued

DIN 374



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P21360-M36X2	MF 36x2	2	170	28	101	28	22	25	4
	P21360-M36X3	MF 36x3	3	200	39	131	28	22	25	4
	P21360-M38X1.5	MF 38x1.5	1,5	170	28	101	28	22	25	5
	P21360-M39X2	MF 39x2	2	170	28	72	32	24	27	4
	P21360-M40X1.5	MF 40x1.5	1,5	170	28	72	32	24	27	5
	P21360-M40X2	MF 40x2	2	170	28	72	32	24	27	4
	P21360-M42X1.5	MF 42x1.5	1,5	170	28	72	32	24	27	5
	P21360-M42X2	MF 42x2	2	170	28	72	32	24	27	4
	P21360-M42X3	MF 42x3	3	200	42	102	32	24	27	4
	P21360-M45X1.5	MF 45x1.5	1,5	180	28	77	36	29	32	5
	P21360-M48X1.5	MF 48x1.5	1,5	190	28	87	36	29	32	5
	P21360-M48X3	MF 48x3	3	225	45	122	36	29	32	4
	P21360-M50X1.5	MF 50x1.5	1,5	190	28	87	36	29	32	5

WALTER SELECT

●● Primary application

● Other application

B 836 D 1 B 709

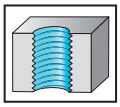
HSS-E machine taps
Prototex® X·pert P



– Reduced number of flutes
– For long-chipping materials

MF
DIN 13

ISO2/6H



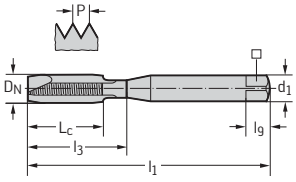
≤ 3×D_N

B=3,5-5

32HRC
1000
–200
N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P21210-M2X0.25	MF 2x0.25	0,25	45	6	9	2,8	2,1	5	2
P21210-M2.2X0.25	MF 2.2x0.25	0,25	45	7	12	2,8	2,1	5	2
P21210-M2.3X0.25	MF 2.3x0.25	0,25	45	7	12	2,8	2,1	5	2
P21210-M3X0.25	MF 3x0.25	0,25	56	6	18	3,5	2,7	6	2
P21210-M2.5X0.35	MF 2.5x0.35	0,35	50	8	12,5	2,8	2,1	5	2
P21210-M3X0.35	MF 3x0.35	0,35	56	9	18	3,5	2,7	6	2
P21210-M3.5X0.35	MF 3.5x0.35	0,35	56	11	20	4	3	6	2
P21210-M4X0.35	MF 4x0.35	0,35	63	12	21	4,5	3,4	6	2
P21210-M4X0.5	MF 4x0.5	0,5	63	12	21	4,5	3,4	6	2
P21210-M4.5X0.5	MF 4.5x0.5	0,5	70	13	25	6	4,9	8	2
P21210-M5X0.5	MF 5x0.5	0,5	70	13	25	6	4,9	8	3
P21210-M5X0.75	MF 5x0.75	0,75	70	13	25	6	4,9	8	3
P21210-M6X0.5	MF 6x0.5	0,5	80	15	30	6	4,9	8	3
P21210-M6X0.75	MF 6x0.75	0,75	80	15	30	6	4,9	8	3
P21210-M7X0.75	MF 7x0.75	0,75	80	15	30	7	5,5	8	3
P21210-M8X1	MF 8x1	1	90	18	35	8	6,2	9	3
P21210-M10X1	MF 10x1	1	90	20	39	10	8	11	3

B 5

B 836 D 1 B 709

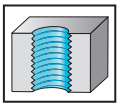
HSS-E machine taps
Prototex® X·pert P



– For long-chipping materials

MF
DIN 13

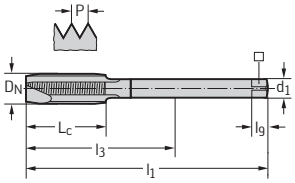
ISO2/6H



≤ 3×D_N | B=3,5-5 | LH | 32HRC, 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 374



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P212608-M8X1	MF 8x1 - LH	1	90	18	67	6	4,9	8	3
P212608-M10X1	MF 10x1 - LH	1	90	20	67	7	5,5	8	3
P212608-M12X1	MF 12x1 - LH	1	100	21	73	9	7	10	4
P212608-M12X1.5	MF 12x1.5 - LH	1,5	100	21	73	9	7	10	4
P212608-M14X1.5	MF 14x1.5 - LH	1,5	100	21	71	11	9	12	4
P212608-M16X1	MF 16x1 - LH	1	100	21	58	12	9	12	4
P212608-M16X1.5	MF 16x1.5 - LH	1,5	100	21	58	12	9	12	4
P212608-M18X1.5	MF 18x1.5 - LH	1,5	110	24	66	14	11	14	4
P212608-M20X1.5	MF 20x1.5 - LH	1,5	125	24	80	16	12	15	4

WALTER SELECT
●● Primary application
● Other application

B 836 | D 1 | B 709

HSS-E machine taps
Prototex® X·pert P

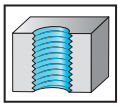


– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 32HRC 1000 –200 N/mm²

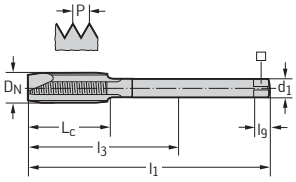
MF
DIN 13

ISO3/6G



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 374



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P21380-M4X0.5	MF 4x0.5	0,5	63	12	43	2,8	2,1	5	3
	P21380-M5X0.5	MF 5x0.5	0,5	70	13	49	3,5	2,7	6	3
	P21380-M6X0.5	MF 6x0.5	0,5	80	15	59	4,5	3,4	6	3
	P21380-M6X0.75	MF 6x0.75	0,75	80	15	59	4,5	3,4	6	3
	P21380-M8X0.75	MF 8x0.75	0,75	80	15	57	6	4,9	8	3
P2138005-M8X1	P21380-M8X1	MF 8x1	1	90	18	67	6	4,9	8	3
P2138005-M10X1	P21380-M10X1	MF 10x1	1	90	20	67	7	5,5	8	3
	P21380-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	3
P2138005-M12X1	P21380-M12X1	MF 12x1	1	100	21	73	9	7	10	4
	P21380-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
P2138005-M12X1.5	P21380-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
P2138005-M14X1.5	P21380-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
P2138005-M16X1.5	P21380-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
	P21380-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
	P21380-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
	P21380-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	4
	P21380-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	4

B 836 D 1 B 709

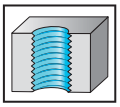
HSS-E machine taps
Prototex® X·pert M



– For long-chipping materials

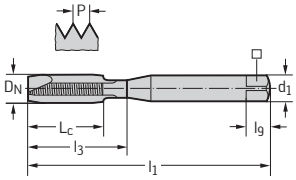
MF
DIN 13

6HX



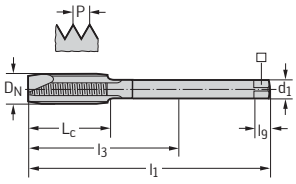
	P	M	K	N	S	H	O
TIN	●	●●					
VAP	●	●●					

DIN 371



Designation TIN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2121305-M5X0.5		MF 5x0.5	0,5	70	13	25	6	4,9	8	3
M2121305-M6X0.5		MF 6x0.5	0,5	80	15	30	6	4,9	8	3
M2121305-M6X0.75		MF 6x0.75	0,75	80	15	30	6	4,9	8	3

DIN 374



Designation TIN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2126305-M8X0.5	M21263-M8X0.5	MF 8x0.5	0,5	80	15	57	6	4,9	8	3
M2126305-M8X0.75	M21263-M8X0.75	MF 8x0.75	0,75	80	15	57	6	4,9	8	3
M2126305-M8X1	M21263-M8X1	MF 8x1	1	90	18	67	6	4,9	8	3
	M21263-M10X0.75	MF 10x0.75	0,75	90	20	67	7	5,5	8	3
M2126305-M10X1	M21263-M10X1	MF 10x1	1	90	20	67	7	5,5	8	3
M2126305-M10X1.25	M21263-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	3
	M21263-M12X1	MF 12x1	1	100	21	73	9	7	10	4
	M21263-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
M2126305-M12X1.5	M21263-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
	M21263-M14X1	MF 14x1	1	100	21	71	11	9	12	4
M2126305-M14X1.5	M21263-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
	M21263-M16X1	MF 16x1	1	100	21	58	12	9	12	4
M2126305-M16X1.5	M21263-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
M2126305-M18X1.5	M21263-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
M2126305-M20X1.5	M21263-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
	M21263-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	4
	M21263-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	4

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

HSS-E machine taps
Prototex® X·pert M

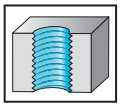


– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 36HRC 1200 –700 N/mm²

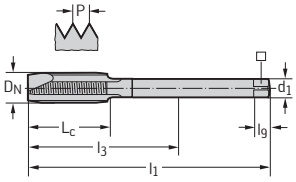
MF
DIN 13

6GX



	P	M	K	N	S	H	O
TIN	●	●●					

DIN 374



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2128305-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
M2128305-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
M2128305-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
M2128305-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
M2128305-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	4

B 5

B 836 D 1 B 709

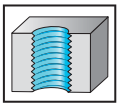
HSS-E-PM machine taps
Prototex® TiNi



– For long-chipping materials

MF
DIN 13

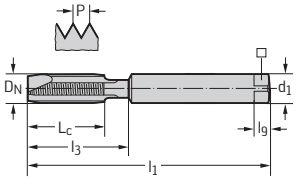
6HX



≤ 2×D_N | B=3,5-5 | 44HRC 1400 –700 N/mm²

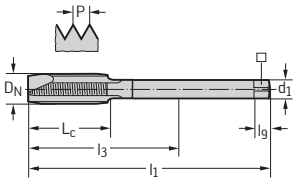
	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
212161-M8X0.75	MF 8x0.75	0,75	80	10	29	8	6,2	9	3
212161-M8X1	MF 8x1	1	90	12	29	8	6,2	9	3
212161-M10X1	MF 10x1	1	90	14	33	10	8	11	3

DIN 374



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
212661-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	3
212661-M12X1	MF 12x1	1	100	16	73	9	7	10	4
212661-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
212661-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
212661-M14X1	MF 14x1	1	100	16	71	11	9	12	4
212661-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
212661-M16X1	MF 16x1	1	100	18	58	12	9	12	4

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

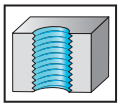
HSS-E-PM machine taps
Prototex® TiNi Plus



– Machining with emulsion is possible
– For long-chipping materials

MF
DIN 13

6HX



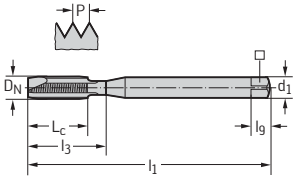
≤ 2×D_N

B=3,5-5

44HRC
1400
–700
N/mm²

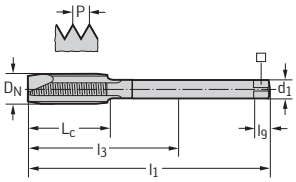
	P	M	K	N	S	H	O
ACN					●●		

~DIN 371



Designation ACN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2121763-M6X0.75	MF 6x0.75	0,75	80	15	23	6	4,9	8	3
2121763-M8X0.75	MF 8x0.75	0,75	90	18	29,5	8	6,2	9	3
2121763-M8X1	MF 8x1	1	90	18	29,5	8	6,2	9	3
2121763-M10X1	MF 10x1	1	100	20	33,5	10	8	11	3

DIN 374



Designation ACN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2126763-M12X1	MF 12x1	1	100	21	73	9	7	10	4
2126763-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
2126763-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4

B 836 D 1 B 709

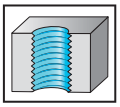
HSS-E-PM machine taps
Prototex® Sprint



– For long-chipping materials

MF
DIN 13

ISO2/6H



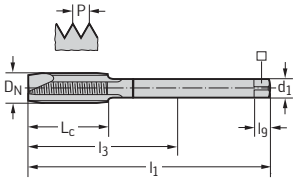
≤ 3×D_N

B=3,5-5

36HRC
1200
–350
N/mm²

	P	M	K	N	S	H	O
TIN	●	●		●			

DIN 374



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7126365-M8X1	MF 8x1	1	90	18	62	6	4,9	8	3
7126365-M10X1	MF 10x1	1	90	20	62	7	5,5	8	3
7126365-M12X1.25	MF 12x1.25	1,25	100	21	67	9	7	10	4
7126365-M12X1.5	MF 12x1.5	1,5	100	21	66	9	7	10	4
7126365-M14X1.5	MF 14x1.5	1,5	100	21	64	11	9	12	4
7126365-M16X1.5	MF 16x1.5	1,5	100	21	51	12	9	12	4
7126365-M18X1.5	MF 18x1.5	1,5	110	24	59	14	11	14	4
7126365-M20X1.5	MF 20x1.5	1,5	125	24	73	16	12	15	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

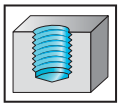
HSS-E-PM machine taps
Paradur® Eco Plus



– For long-chipping materials

MF
DIN 13

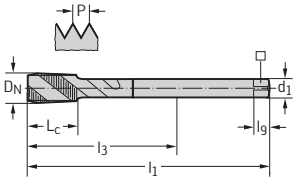
6HX



≤ 3×D_N | C=2-3 | 45° | 38HRC 1250 –500 N/mm²

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 374



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2156302-M6X0.75	MF 6x0.75	0,75	80	10	59	4,5	3,4	6	3
EP2156302-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
EP2156302-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
EP2156302-M10X1.25	MF 10x1.25	1,25	100	15	77	7	5,5	8	3
EP2156302-M12X1	MF 12x1	1	100	13	73	9	7	10	4
EP2156302-M12X1.25	MF 12x1.25	1,25	100	13	73	9	7	10	4
EP2156302-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
EP2156302-M14X1.25	MF 14x1.25	1,25	100	15	71	11	9	12	4
EP2156302-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
EP2156302-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	4
EP2156302-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	4
EP2156302-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	4
EP2156302-M22X1.5	MF 22x1.5	1,5	125	18	78	18	14,5	17	4

B 5

B 836 D 1 B 709

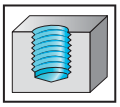
HSS-E-PM machine taps
Paradur® Eco Plus



– For long-chipping materials

MF
DIN 13

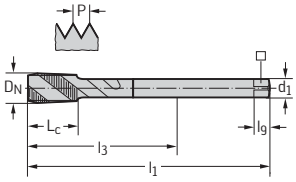
6HX



≤ 3×D_N | E=1,5-2 | 45° | 38HRC, 1250 –500 N/mm²

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 374



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2156362-M8X1	MF 8x1	1	90	12	67	6	4,9	8	4
EP2156362-M10X1	MF 10x1	1	90	12	67	7	5,5	8	4
EP2156362-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
EP2156362-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 836 | D 1 | B 709

HSS-E-PM machine taps
Paradur® Eco Plus

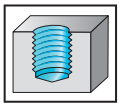


– For long-chipping materials



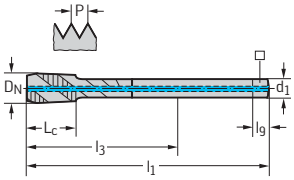
MF
DIN 13

6HX



	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 374



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2156312-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
EP2156312-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
EP2156312-M10X1.25	MF 10x1.25	1,25	100	15	77	7	5,5	8	3
EP2156312-M12X1	MF 12x1	1	100	13	73	9	7	10	4
EP2156312-M12X1.25	MF 12x1.25	1,25	100	13	73	9	7	10	4
EP2156312-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
EP2156312-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
EP2156312-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	4
EP2156312-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	4
EP2156312-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	4

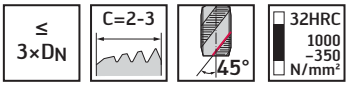
B 5

B 836 D 1 B 709

HSS-E machine taps
TC115 Perform

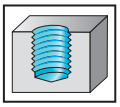


– For long-chipping materials



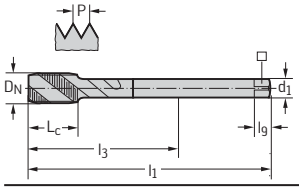
MF
DIN 13

ISO2/6H



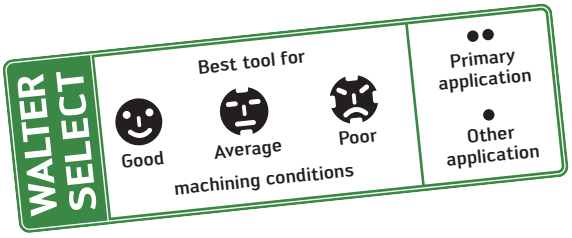
	P	M	K	N	S	H	O
WY80AA	●●	●●	●●	●			
WY80FC	●●	●●	●●	●			

DIN 374



Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WY80AA	WY80FC
TC115-M8X1-L0-	MF 8x1	1	90	12	67	6	4,9	8	3	●●	●●
TC115-M10X1-L0-	MF 10x1	1	90	12	67	7	5,5	8	3	●●	●●
TC115-M12X1.25-L0-	MF 12x1.25	1,25	100	13	73	9	7	10	4	●●	●●
TC115-M12X1.5-L0-	MF 12x1.5	1,5	100	13	73	9	7	10	4	●●	●●
TC115-M14X1.5-L0-	MF 14x1.5	1,5	100	15	71	11	9	12	4	●●	●●
TC115-M16X1.5-L0-	MF 16x1.5	1,5	100	15	58	12	9	12	4	●●	●●
TC115-M18X1.5-L0-	MF 18x1.5	1,5	110	17	66	14	11	14	4	●●	●●

Ordering example for the WY80FC grade: TC115-M8X1-L0-WY80FC



B 836 D 1 B 709

HSS-E machine taps
Paradur® Synchrospeed

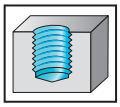


– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 2,5×D_N | C=2-3 | 40° | 40HRC 1300 N/mm²

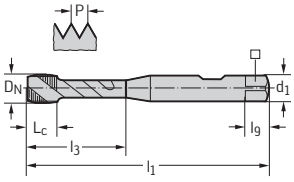
MF
DIN 13

6HX



	P	M	K	N	S	H	O
THL	●●	●●	●●	●	●		●
TIN/VAP	●●	●●	●●	●	●		●

~DIN 371



Designation THL	Designation TIN/VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_g mm	N
S2156302-M8X1	S2156305-M8X1	MF 8x1	1	90	10,5	35	8	6,2	9	3
S2156302-M10X1	S2156305-M10X1	MF 10x1	1	90	10,5	39	10	8	11	3
S2156302-M10X1.25	S2156305-M10X1.25	MF 10x1.25	1,25	100	13,5	39	10	8	11	3
S2156302-M12X1.25	S2156305-M12X1.25	MF 12x1.25	1,25	100	13,5	42	12	9	12	3
S2156302-M12X1.5	S2156305-M12X1.5	MF 12x1.5	1,5	100	16	42	12	9	12	3
S2156302-M14X1.5	S2156305-M14X1.5	MF 14x1.5	1,5	100	16	49	14	11	14	4
S2156302-M16X1.5	S2156305-M16X1.5	MF 16x1.5	1,5	100	16	50	16	12	15	4

B 5

B 836 D 1 B 709

HSS-E machine taps
Paradur® H

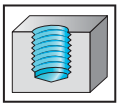


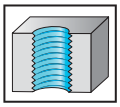
– For long-chipping and short-chipping materials

≤ 1,5×D_N | C=2-3 | 32HRC, 1000 –200 N/mm²

MF
DIN 13

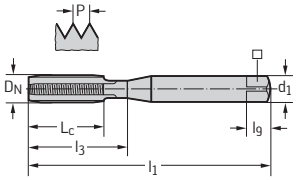
ISO2/6H





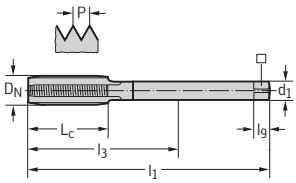
	P	M	K	N	S	H	O
Uncoated			●	●●			●

DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
21311-M2X0.25	MF 2x0.25	0,25	45	6	9	2,8	2,1	5	3
21311-M2.2X0.25	MF 2.2x0.25	0,25	45	7	12	2,8	2,1	5	3
21311-M2.5X0.35	MF 2.5x0.35	0,35	50	8	12,5	2,8	2,1	5	3
21311-M3X0.35	MF 3x0.35	0,35	56	9	18	3,5	2,7	6	3
21311-M3.5X0.35	MF 3.5x0.35	0,35	56	11	20	4	3	6	3
21311-M4X0.35	MF 4x0.35	0,35	63	12	21	4,5	3,4	6	3
21311-M4X0.5	MF 4x0.5	0,5	63	12	21	4,5	3,4	6	3
21311-M5X0.35	MF 5x0.35	0,35	70	13	25	6	4,9	8	3
21311-M5X0.5	MF 5x0.5	0,5	70	13	25	6	4,9	8	3
21311-M6X0.75	MF 6x0.75	0,75	80	15	30	6	4,9	8	3
21311-M7X0.75	MF 7x0.75	0,75	80	15	30	7	5,5	8	3

DIN 374



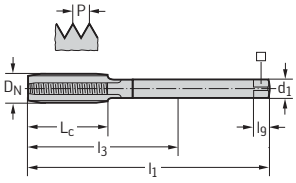
Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
21361-M4X0.5	MF 4x0.5	0,5	63	12	43	2,8	2,1	5	3
21361-M5X0.5	MF 5x0.5	0,5	70	13	49	3,5	2,7	6	3
21361-M6X0.5	MF 6x0.5	0,5	80	15	59	4,5	3,4	6	3
21361-M6X0.75	MF 6x0.75	0,75	80	15	59	4,5	3,4	6	3
21361-M7X0.5	MF 7x0.5	0,5	80	15	58	5,5	4,3	7	3
21361-M7X0.75	MF 7x0.75	0,75	80	15	58	5,5	4,3	7	3
21361-M8X0.5	MF 8x0.5	0,5	80	15	57	6	4,9	8	3
21361-M8X0.75	MF 8x0.75	0,75	80	15	57	6	4,9	8	3
21361-M8X1	MF 8x1	1	90	18	67	6	4,9	8	3
21361-M9X0.5	MF 9x0.5	0,5	90	15	67	7	5,5	8	3
21361-M9X0.75	MF 9x0.75	0,75	90	15	67	7	5,5	8	3
21361-M9X1	MF 9x1	1	90	18	67	7	5,5	8	3
21361-M10X0.5	MF 10x0.5	0,5	90	20	67	7	5,5	8	3
21361-M10X0.75	MF 10x0.75	0,75	90	20	67	7	5,5	8	3
21361-M10X1	MF 10x1	1	90	20	67	7	5,5	8	3
21361-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	3
21361-M11X1	MF 11x1	1	90	20	66	8	6,2	9	3
21361-M12X0.5	MF 12x0.5	0,5	100	21	73	9	7	10	3
21361-M12X0.75	MF 12x0.75	0,75	100	21	73	9	7	10	4
21361-M12X1	MF 12x1	1	100	21	73	9	7	10	4
21361-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
21361-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
21361-M14X1	MF 14x1	1	100	21	71	11	9	12	4
21361-M14X1.25	MF 14x1.25	1,25	100	21	71	11	9	12	4
21361-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
21361-M15X1.5	MF 15x1.5	1,5	100	21	58	12	9	12	4
21361-M16X1	MF 16x1	1	100	21	58	12	9	12	4
21361-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
21361-M18X1	MF 18x1	1	110	24	66	14	11	14	4
21361-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
21361-M18X2	MF 18x2	2	125	30	81	14	11	14	4

Continued

B 836 | D 1 | B 709

Continued

DIN 374



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
21361-M20X1	MF 20x1	1	125	24	80	16	12	15	4
21361-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
21361-M20X2	MF 20x2	2	140	30	95	16	12	15	4
21361-M22X1	MF 22x1	1	125	24	78	18	14,5	17	4
21361-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	4
21361-M22X2	MF 22x2	2	140	26	93	18	14,5	17	4
21361-M24X1	MF 24x1	1	140	26	93	18	14,5	17	4
21361-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	4
21361-M24X2	MF 24x2	2	140	26	93	18	14,5	17	4
21361-M25X1.5	MF 25x1.5	1,5	140	26	93	18	14,5	17	4
21361-M26X1.5	MF 26x1.5	1,5	140	26	93	18	14,5	17	4
21361-M27X1	MF 27x1	1	140	26	77	20	16	19	4
21361-M27X1.5	MF 27x1.5	1,5	140	26	77	20	16	19	4
21361-M27X2	MF 27x2	2	140	26	77	20	16	19	4
21361-M28X1.5	MF 28x1.5	1,5	140	26	77	20	16	19	4
21361-M28X2	MF 28x2	2	140	26	77	20	16	19	4
21361-M30X1	MF 30x1	1	150	26	85	22	18	21	4
21361-M30X1.5	MF 30x1.5	1,5	150	26	85	22	18	21	4
21361-M30X2	MF 30x2	2	150	26	85	22	18	21	4
21361-M32X1.5	MF 32x1.5	1,5	150	26	85	22	18	21	4
21361-M33X1.5	MF 33x1.5	1,5	160	28	93	25	20	23	4
21361-M33X2	MF 33x2	2	160	28	93	25	20	23	4
21361-M35X1.5	MF 35x1.5	1,5	170	28	101	28	22	25	4
21361-M36X1.5	MF 36x1.5	1,5	170	28	101	28	22	25	4
21361-M36X2	MF 36x2	2	170	28	101	28	22	25	4
21361-M36X3	MF 36x3	3	200	39	131	28	22	25	4
21361-M38X1.5	MF 38x1.5	1,5	170	28	101	28	22	25	6
21361-M39X1.5	MF 39x1.5	1,5	170	28	72	32	24	27	6
21361-M39X3	MF 39x3	3	200	42	102	32	24	27	4
21361-M40X1.5	MF 40x1.5	1,5	170	28	72	32	24	27	6
21361-M40X2	MF 40x2	2	170	28	72	32	24	27	4
21361-M42X1.5	MF 42x1.5	1,5	170	28	72	32	24	27	6
21361-M42X2	MF 42x2	2	170	28	72	32	24	27	4
21361-M42X3	MF 42x3	3	200	42	102	32	24	27	4
21361-M45X1.5	MF 45x1.5	1,5	180	28	77	36	29	32	6
21361-M45X2	MF 45x2	2	180	30	77	36	29	32	6
21361-M45X3	MF 45x3	3	200	42	97	36	29	32	4
21361-M48X1.5	MF 48x1.5	1,5	190	28	87	36	29	32	6
21361-M48X2	MF 48x2	2	190	30	87	36	29	32	6
21361-M48X3	MF 48x3	3	225	45	122	36	29	32	4
21361-M50X1.5	MF 50x1.5	1,5	190	28	87	36	29	32	6
21361-M52X1.5	MF 52x1.5	1,5	190	29	60	40	32	35	6
21361-M52X2	MF 52x2	2	190	32	60	40	32	35	6
21361-M52X3	MF 52x3	3	225	45	95	40	32	35	6

B 836 D 1 B 709

HSS-E machine taps
Paradur® H

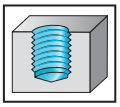


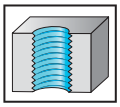
– For long-chipping and short-chipping materials



MF
DIN 13

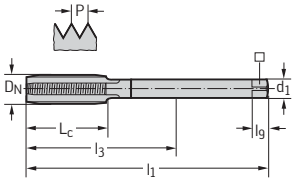
ISO2/6H





	P	M	K	N	S	H	O
Uncoated			●	●●			●

DIN 374



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
21368-M4X0.5	MF 4x0.5 - LH	0,5	63	12	43	2,8	2,1	5	3
21368-M5X0.5	MF 5x0.5 - LH	0,5	70	13	49	3,5	2,7	6	3
21368-M6X0.5	MF 6x0.5 - LH	0,5	80	15	59	4,5	3,4	6	3
21368-M6X0.75	MF 6x0.75 - LH	0,75	80	15	59	4,5	3,4	6	3
21368-M8X0.5	MF 8x0.5 - LH	0,5	80	15	57	6	4,9	8	3
21368-M8X0.75	MF 8x0.75 - LH	0,75	80	15	57	6	4,9	8	3
21368-M8X1	MF 8x1 - LH	1	90	18	67	6	4,9	8	3
21368-M10X0.75	MF 10x0.75 - LH	0,75	90	20	67	7	5,5	8	3
21368-M10X1	MF 10x1 - LH	1	90	20	67	7	5,5	8	3
21368-M12X1	MF 12x1 - LH	1	100	21	73	9	7	10	4
21368-M12X1.5	MF 12x1.5 - LH	1,5	100	21	73	9	7	10	4
21368-M14X1	MF 14x1 - LH	1	100	21	71	11	9	12	4
21368-M14X1.5	MF 14x1.5 - LH	1,5	100	21	71	11	9	12	4
21368-M16X1	MF 16x1 - LH	1	100	21	58	12	9	12	4
21368-M16X1.5	MF 16x1.5 - LH	1,5	100	21	58	12	9	12	4
21368-M18X1.5	MF 18x1.5 - LH	1,5	110	24	66	14	11	14	4
21368-M20X1.5	MF 20x1.5 - LH	1,5	125	24	80	16	12	15	4
21368-M22X1.5	MF 22x1.5 - LH	1,5	125	24	78	18	14,5	17	4
21368-M24X1.5	MF 24x1.5 - LH	1,5	140	26	93	18	14,5	17	4

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

HSS-E machine taps
Paradur® HN

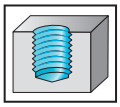


– For short-chipping materials

≤ 1,5×D_N | E=1,5-2 | 36HRC 1200 –400 N/mm²

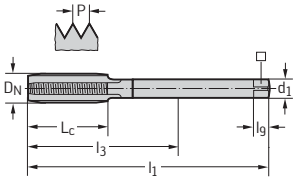
MF
DIN 13

6HX



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			

DIN 374



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
213614-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
213614-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6
213614-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	6
213614-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	6
213614-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	6
213614-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	6

B 5

B 836 D 1 B 709

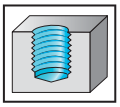
HSS-E machine taps
Paradur® HT



– For long-chipping and short-chipping materials

MF
DIN 13

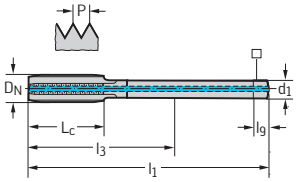
ISO2/6H



≤ 3,5×D_N | C=2-3 | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
TIN	●●		●●	●			●

DIN 374



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2136115-M10X1	MF 10x1	1	90	20	67	7	5,5	8	3
2136115-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	3
2136115-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	3
2136115-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	3
2136115-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	3
2136115-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	3
2136115-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	3
2136115-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	4
2136115-M30X2	MF 30x2	2	150	26	85	22	18	21	4
2136115-M33X2	MF 33x2	2	160	28	93	25	20	23	4

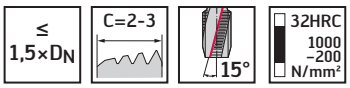
B 5

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

HSS-E machine taps
Paradur® N

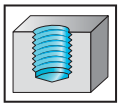




– For long-chipping materials

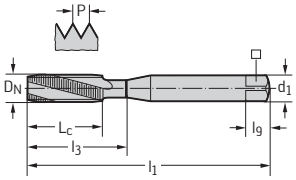
MF
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			
TICN	●●		●●	●●			
TIN	●●		●●	●●			

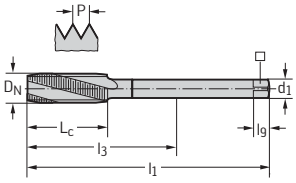
DIN 371



Designation TICN	Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm
		21410-M4X0.5	MF 4x0.5	0,5	63	7	21	4,5	3,4
		21410-M5X0.5	MF 5x0.5	0,5	70	8	25	6	4,9
		21410-M6X0.5	MF 6x0.5	0,5	80	10	30	6	4,9
		21410-M6X0.75	MF 6x0.75	0,75	80	10	30	6	4,9

l_9 dimension in accordance with DIN 10

DIN 374



Designation TICN	Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm
	2146005-M8X0.75	21460-M8X0.75	MF 8x0.75	0,75	80	10	57	6	4,9
2146006-M8X1	2146005-M8X1	21460-M8X1	MF 8x1	1	90	13	67	6	4,9
2146006-M10X1	2146005-M10X1	21460-M10X1	MF 10x1	1	90	12	67	7	5,5
		21460-M10X1.25	MF 10x1.25	1,25	100	15	77	7	5,5
2146006-M12X1	2146005-M12X1	21460-M12X1	MF 12x1	1	100	13	73	9	7
		21460-M12X1.25	MF 12x1.25	1,25	100	13	73	9	7
2146006-M12X1.5	2146005-M12X1.5	21460-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7
		21460-M14X1	MF 14x1	1	100	15	71	11	9
		21460-M14X1.25	MF 14x1.25	1,25	100	15	71	11	9
2146006-M14X1.5	2146005-M14X1.5	21460-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9
		21460-M16X1	MF 16x1	1	100	15	58	12	9
2146006-M16X1.5	2146005-M16X1.5	21460-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9
2146006-M18X1.5	2146005-M18X1.5	21460-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11
2146006-M20X1.5	2146005-M20X1.5	21460-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12
		21460-M20X2	MF 20x2	2	140	30	95	16	12
	2146005-M22X1.5	21460-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5
	2146005-M24X1.5	21460-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5
		21460-M24X2	MF 24x2	2	140	26	93	18	14,5
		21460-M26X1.5	MF 26x1.5	1,5	140	26	93	18	14,5
		21460-M27X1.5	MF 27x1.5	1,5	140	26	77	20	16
		21460-M27X2	MF 27x2	2	140	26	77	20	16
		21460-M28X1.5	MF 28x1.5	1,5	140	26	77	20	16
		21460-M30X1.5	MF 30x1.5	1,5	150	26	85	22	18
		21460-M30X2	MF 30x2	2	150	26	85	22	18
		21460-M32X1.5	MF 32x1.5	1,5	150	26	85	22	18
		21460-M33X1.5	MF 33x1.5	1,5	160	28	93	25	20
		21460-M36X1.5	MF 36x1.5	1,5	170	28	101	28	22

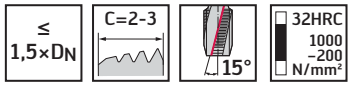
l_9 dimension in accordance with DIN 10

B 836 D 1 B 709

HSS-E machine taps
Paradur® N

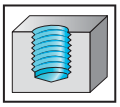


– For long-chipping materials



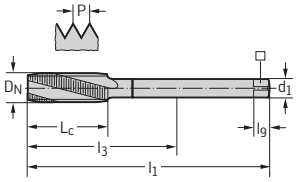
MF
DIN 13

ISO3/6G



	P	M	K	N	S	H	O
TIN	●●		●●	●●			
Uncoated	●●		●●	●●			

DIN 374



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	21480-M4X0.5	MF 4x0.5	0,5	63	7	43	2,8	2,1	5	3
	21480-M5X0.5	MF 5x0.5	0,5	70	8	49	3,5	2,7	6	3
	21480-M6X0.5	MF 6x0.5	0,5	80	10	59	4,5	3,4	6	3
	21480-M6X0.75	MF 6x0.75	0,75	80	10	59	4,5	3,4	6	3
	21480-M8X0.75	MF 8x0.75	0,75	80	10	57	6	4,9	8	3
2148005-M8X1	21480-M8X1	MF 8x1	1	90	13	67	6	4,9	8	3
2148005-M10X1	21480-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
2148005-M12X1	21480-M12X1	MF 12x1	1	100	13	73	9	7	10	3
2148005-M12X1.5	21480-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	3
2148005-M14X1.5	21480-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
2148005-M16X1.5	21480-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
	21480-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
	21480-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
	21480-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	4

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

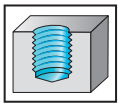
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

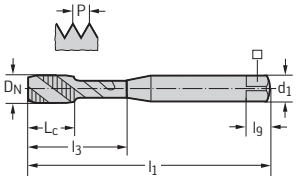
MF
DIN 13

ISO2/6H



	P	M	K	N	S	H	O
Uncoated	●●			●			●
TIN	●●			●			●

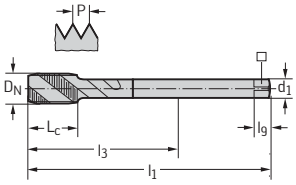
DIN 371



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P21519-M2.5X0.35	MF 2.5x0.35	0,35	50	4	12,5	2,8	2,1	5	3
	P21519-M3X0.25	MF 3x0.25	0,25	56	6	18	3,5	2,7	6	3
	P21519-M3X0.35	MF 3x0.35	0,35	56	6	18	3,5	2,7	6	3
	P21519-M4X0.35	MF 4x0.35	0,35	63	7	21	4,5	3,4	6	3
	P21519-M4X0.5	MF 4x0.5	0,5	63	7	21	4,5	3,4	6	3
	P21519-M4.5X0.5	MF 4.5x0.5	0,5	70	8	25	6	4,9	8	3
	P21519-M5X0.5	MF 5x0.5	0,5	70	8	25	6	4,9	8	3
	P21519-M6X0.5	MF 6x0.5	0,5	80	10	30	6	4,9	8	3
	P21519-M6X0.75	MF 6x0.75	0,75	80	10	30	6	4,9	8	3
	P21519-M7X0.75	MF 7x0.75	0,75	80	10	30	7	5,5	8	3
	P21519-M8X1	MF 8x1	1	90	12	35	8	6,2	9	3
	P21519-M10X1	MF 10x1	1	90	12	39	10	8	11	3

B 5

DIN 374



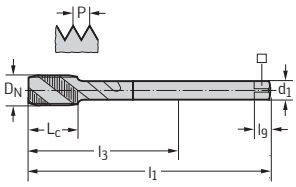
Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P21569-M8X0.75	MF 8x0.75	0,75	80	10	57	6	4,9	8	3
P2156905-M8X1	P21569-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
	P21569-M9X1	MF 9x1	1	90	13	67	7	5,5	8	3
	P21569-M10X0.75	MF 10x0.75	0,75	90	12	67	7	5,5	8	3
P2156905-M10X1	P21569-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
P2156905-M10X1.25	P21569-M10X1.25	MF 10x1.25	1,25	100	15	77	7	5,5	8	3
P2156905-M12X1	P21569-M12X1	MF 12x1	1	100	13	73	9	7	10	4
P2156905-M12X1.25	P21569-M12X1.25	MF 12x1.25	1,25	100	13	73	9	7	10	4
P2156905-M12X1.5	P21569-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
	P21569-M14X1	MF 14x1	1	100	15	71	11	9	12	4
	P21569-M14X1.25	MF 14x1.25	1,25	100	15	71	11	9	12	4
P2156905-M14X1.5	P21569-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
	P21569-M16X1	MF 16x1	1	100	15	58	12	9	12	4
P2156905-M16X1.5	P21569-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	4
	P21569-M18X1	MF 18x1	1	110	17	66	14	11	14	4
P2156905-M18X1.5	P21569-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	4
	P21569-M20X1	MF 20x1	1	125	17	80	16	12	15	4
P2156905-M20X1.5	P21569-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	4
	P21569-M20X2	MF 20x2	2	140	25	95	16	12	15	4
	P21569-M22X1	MF 22x1	1	125	18	78	18	14,5	17	4
P2156905-M22X1.5	P21569-M22X1.5	MF 22x1.5	1,5	125	18	78	18	14,5	17	4
	P21569-M22X2	MF 22x2	2	140	20	93	18	14,5	17	4
	P21569-M24X1	MF 24x1	1	140	20	93	18	14,5	17	5
	P21569-M24X1.5	MF 24x1.5	1,5	140	20	93	18	14,5	17	5
	P21569-M24X2	MF 24x2	2	140	20	93	18	14,5	17	5
	P21569-M26X1.5	MF 26x1.5	1,5	140	20	93	18	14,5	17	5
	P21569-M27X1.5	MF 27x1.5	1,5	140	20	77	20	16	19	5
	P21569-M27X2	MF 27x2	2	140	20	77	20	16	19	5
	P21569-M30X1.5	MF 30x1.5	1,5	150	20	85	22	18	21	5
	P21569-M30X2	MF 30x2	2	150	20	85	22	18	21	5

Continued

B 836 D 1 B 709

Continued

DIN 374



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P21569-M32X1.5	MF 32x1.5	1,5	150	20	85	22	18	21	5
	P21569-M33X1.5	MF 33x1.5	1,5	160	22	93	25	20	23	5
	P21569-M33X2	MF 33x2	2	160	22	93	25	20	23	5
	P21569-M36X1.5	MF 36x1.5	1,5	170	22	101	28	22	25	5
	P21569-M36X2	MF 36x2	2	170	22	101	28	22	25	5
	P21569-M36X3	MF 36x3	3	200	30	131	28	22	25	5
	P21569-M38X1.5	MF 38x1.5	1,5	170	22	101	28	22	25	5
	P21569-M39X2	MF 39x2	2	170	22	72	32	24	27	5
	P21569-M39X3	MF 39x3	3	200	33	102	32	24	27	5
	P21569-M40X1.5	MF 40x1.5	1,5	170	22	72	32	24	27	5
	P21569-M42X1.5	MF 42x1.5	1,5	170	22	72	32	24	27	6
	P21569-M42X2	MF 42x2	2	170	22	72	32	24	27	6
	P21569-M42X3	MF 42x3	3	200	33	102	32	24	27	6
	P21569-M45X1.5	MF 45x1.5	1,5	180	22	77	36	29	32	6
	P21569-M48X1.5	MF 48x1.5	1,5	190	22	87	36	29	32	6
	P21569-M48X2	MF 48x2	2	190	24	87	36	29	32	6
	P21569-M48X3	MF 48x3	3	225	36	122	36	29	32	6
	P21569-M52X2	MF 52x2	2	190	26	60	40	32	35	6
	P21569-M52X3	MF 52x3	3	225	36	95	40	32	35	6

B 5

WALTER SELECT

●● Primary application

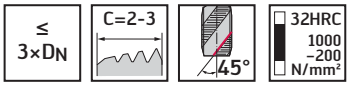
● Other application

B 836 D 1 B 709

HSS-E machine taps
Paradur® X·pert P

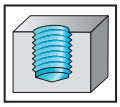


– For long-chipping materials



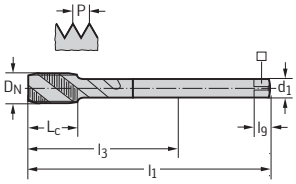
MF
DIN 13

ISO3/6G



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 374



Designation TIN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2158905-M8X1	P21589-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
P2158905-M10X1	P21589-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
P2158905-M12X1	P21589-M12X1	MF 12x1	1	100	13	73	9	7	10	4
P2158905-M12X1.5	P21589-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
P2158905-M14X1.5	P21589-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
P2158905-M16X1.5	P21589-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	4
P2158905-M18X1.5	P21589-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	4
	P21589-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	4

B 5

B 836 D 1 B 709

HSS-E machine taps
Paradur® Short Chip HT

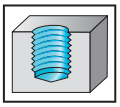


– For long-chipping materials



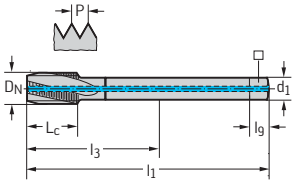
MF
DIN 13

6HX



	P	M	K	N	S	H	O
THL	●●		●	●			
THL/uncoated	●●		●	●			

DIN 376



Designation THL	Designation THL / Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
21460T2-M12X1.5	21460TR-M12X1.5	MF 12x1.5	1,5	100	13	58	9	7	10	3
21460T2-M14X1.5	21460TR-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
21460T2-M16X1.5	21460TR-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	4

21460TR: Uncoated rake

B 5

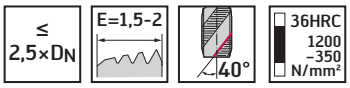
WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

HSS-E machine taps
Paradur® STE

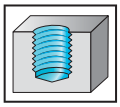


– For long-chipping materials



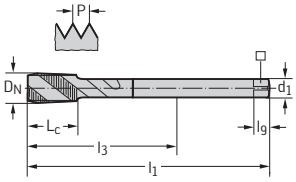
MF
DIN 13

6HX



	P	M	K	N	S	H	O
THL	●	●	●	●			

DIN 374



Designation THL	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2156062-M8X1	MF 8x1	1	90	13	67	6	4,9	8	4
2156062-M10X1	MF 10x1	1	90	12	67	7	5,5	8	4
2156062-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
2156062-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	5
2156062-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	5
2156062-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	5

B 5

B 836 D 1 B 709

HSS-E machine taps
TC142 Supreme

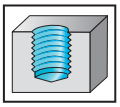


– For long-chipping materials

≤ 3×D_N	C=2-3	50°	36HRC 1200 –350 N/mm²

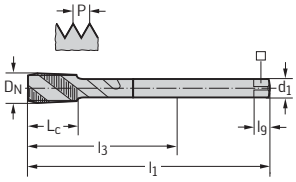
MF
DIN 13

6HX



	P	M	K	N	S	H	O
WW60RB	●	●●					

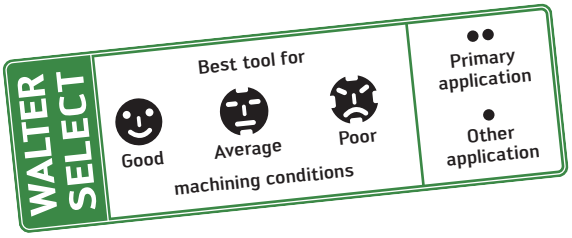
DIN 374



Designation	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WW60RB
TC142-M8X1-L0-	MF 8x1	1	90	12	67	6	4,9	8	3	●
TC142-M10X1-L0-	MF 10x1	1	90	12	67	7	5,5	8	3	●
TC142-M10X1.25-L0-	MF 10x1.25	1,25	100	15	77	7	5,5	8	3	●
TC142-M12X1-L0-	MF 12x1	1	100	13	73	9	7	10	4	●
TC142-M12X1.25-L0-	MF 12x1.25	1,25	100	13	73	9	7	10	4	●
TC142-M12X1.5-L0-	MF 12x1.5	1,5	100	13	73	9	7	10	4	●
TC142-M14X1.5-L0-	MF 14x1.5	1,5	100	15	71	11	9	12	4	●
TC142-M16X1.5-L0-	MF 16x1.5	1,5	100	15	58	12	9	12	4	●
TC142-M20X1.5-L0-	MF 20x1.5	1,5	125	17	80	16	12	15	4	●

Ordering example for the WW60RB grade: TC142-M8X1-L0-WW60RB

B 5



B 836 D 1 B 709

HSS-E machine taps
Paradur® X·pert M

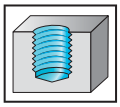


– For long-chipping materials

≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

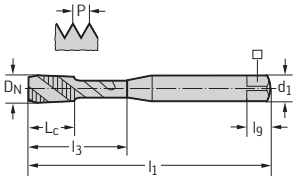
MF
DIN 13

6HX



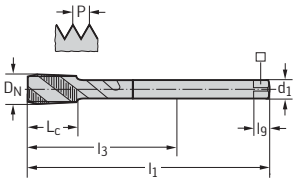
	P	M	K	N	S	H	O
TIN	●	●●					
VAP	●	●●					

DIN 371



Designation TIN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2151305-M4X0.5	M21513-M4X0.5	MF 4x0.5	0,5	63	7	21	4,5	3,4	6	3
M2151305-M5X0.5	M21513-M5X0.5	MF 5x0.5	0,5	70	8	25	6	4,9	8	3
M2151305-M6X0.5	M21513-M6X0.5	MF 6x0.5	0,5	80	10	30	6	4,9	8	3
	M21513-M6X0.75	MF 6x0.75	0,75	80	10	30	6	4,9	8	3

DIN 374



Designation TIN	Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2156305-M8X0.5	M21563-M8X0.5	MF 8x0.5	0,5	80	10	57	6	4,9	8	3
M2156305-M8X0.75	M21563-M8X0.75	MF 8x0.75	0,75	80	10	57	6	4,9	8	3
M2156305-M8X1	M21563-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
M2156305-M10X0.75	M21563-M10X0.75	MF 10x0.75	0,75	90	12	67	7	5,5	8	3
M2156305-M10X1	M21563-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
M2156305-M10X1.25	M21563-M10X1.25	MF 10x1.25	1,25	100	15	77	7	5,5	8	3
M2156305-M12X1	M21563-M12X1	MF 12x1	1	100	13	73	9	7	10	4
M2156305-M12X1.25	M21563-M12X1.25	MF 12x1.25	1,25	100	13	73	9	7	10	4
M2156305-M12X1.5	M21563-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
	M21563-M14X1	MF 14x1	1	100	15	71	11	9	12	4
M2156305-M14X1.5	M21563-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
M2156305-M16X1.5	M21563-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	4
M2156305-M18X1.5	M21563-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	4
M2156305-M20X1.5	M21563-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	4
	M21563-M20X2	MF 20x2	2	140	25	95	16	12	15	4
	M21563-M22X1.5	MF 22x1.5	1,5	125	18	78	18	14,5	17	5
	M21563-M24X1.5	MF 24x1.5	1,5	140	20	93	18	14,5	17	5
	M21563-M24X2	MF 24x2	2	140	20	93	18	14,5	17	5
	M21563-M27X1.5	MF 27x1.5	1,5	140	20	77	20	16	19	5
	M21563-M27X2	MF 27x2	2	140	20	77	20	16	19	5
	M21563-M30X2	MF 30x2	2	150	20	85	22	18	21	5

B 836 D 1 B 709

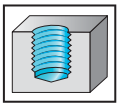
HSS-E machine taps
Paradur® X·pert M



– For long-chipping materials

MF
DIN 13

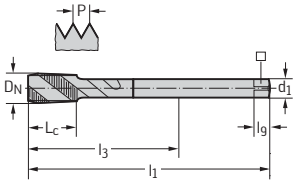
6GX



≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

	P	M	K	N	S	H	O
TIN	●	●●					

DIN 374



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2158305-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
M2158305-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
M2158305-M12X1	MF 12x1	1	100	13	73	9	7	10	4
M2158305-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
M2158305-M14X1	MF 14x1	1	100	15	71	11	9	12	4
M2158305-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
M2158305-M16X1	MF 16x1	1	100	15	58	12	9	12	4
M2158305-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	4

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

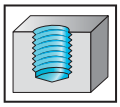
HSS-E machine taps
Paradur Inox® 25



– For long-chipping materials

MF
DIN 13

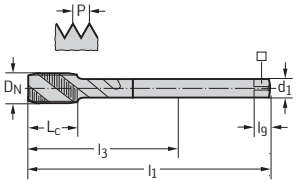
6HX



≤ 1,5×D_N | E=1,5-2 | 25° | 36HRC 1200 –350 N/mm²

	P	M	K	N	S	H	O
TIN	●●	●●					

DIN 374



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2156315-M10X1	MF 10x1	1	90	20	67	7	5,5	8	5
2156315-M12X1	MF 12x1	1	100	21	73	9	7	10	5
2156315-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
2156315-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	5
2156315-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	5
2156315-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	5
2156315-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	6
2156315-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	6
2156315-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	6

B 5

B 836 D 1 B 709

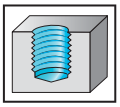
HSS-E-PM machine taps
Paradur® Eco CI



– For short-chipping materials
– Nitrided

MF
DIN 13

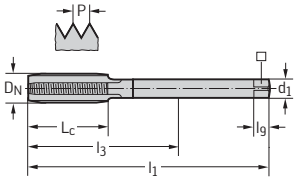
6HX



≤ 3×D_N | E=1,5-2 | 32HRC, 1000 –100 N/mm²

	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 374



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2136466-M8X1	MF 8x1	1	90	18	67	6	4,9	8	4
E2136466-M10X1	MF 10x1	1	90	20	67	7	5,5	8	4
E2136466-M12X1	MF 12x1	1	100	21	73	9	7	10	4
E2136466-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
E2136466-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
E2136466-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
E2136466-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
E2136466-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
E2136466-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	5

B 5

WALTER SELECT
●● Primary application
● Other application

B 836 D 1 B 709

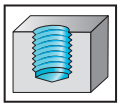
HSS-E-PM machine taps
Paradur® Eco CI



– For short-chipping materials
– Nitrided

MF
DIN 13

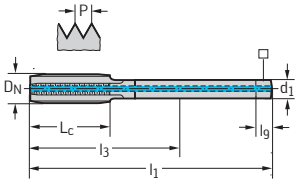
6HX



≤ 3×D_N | C=2-3 | 32HRC | 1000 –100 N/mm²

	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 374



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2136416-M8X1	MF 8x1	1	90	18	67	6	4,9	8	4
E2136416-M10X1	MF 10x1	1	90	20	67	7	5,5	8	4
E2136416-M12X1	MF 12x1	1	100	21	73	9	7	10	4
E2136416-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
E2136416-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
E2136416-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
E2136416-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
E2136416-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
E2136416-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	5

B 5

B 836 D 1 B 709

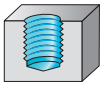
HSS-E machine taps
Paradur® X·pert N



– For long-chipping materials

MF
DIN 13

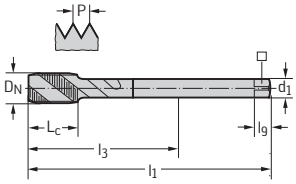
ISO2/6H



≤ 3×D_N | C=2-3 | 35° | 14HRC 700 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 374



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N21566-M8X1	MF 8x1	1	90	12	67	6	4,9	8	2
N21566-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
N21566-M12X1	MF 12x1	1	100	13	73	9	7	10	3
N21566-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	3
N21566-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	3
N21566-M16X1	MF 16x1	1	100	15	58	12	9	12	4
N21566-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	3
N21566-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	4
N21566-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	4

B 5

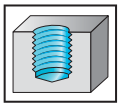
WALTER SELECT
●● Primary application
● Other application

B 836 | D 1 | B 709

HSS-E-PM machine taps
Paradur® Ni 10



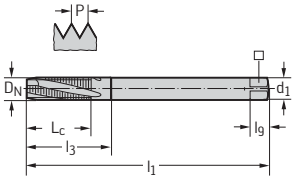
– For long-chipping and short-chipping materials

MF DIN 13	6HX	

≤ 1,5×D_N	C=2-3	10°	49HRC 1600 –1000 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
214101-M8X1	MF 8x1	1	90	20	66	8	6,2	9	3
214101-M10X1	MF 10x1	1	90	24	62	10	8	11	3
214101-M10X1.25	MF 10x1.25	1,25	100	24,5	72	10	8	11	3
214101-M12X1	MF 12x1	1	100	28	58	12	9	12	4
214101-M12X1.25	MF 12x1.25	1,25	100	28,5	58	12	9	12	4
214101-M12X1.5	MF 12x1.5	1,5	100	29,5	58	12	9	12	4

B 5

B 836 D 1 B 709

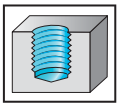
HSS-E-PM machine taps
Paradur® Ti



– For long-chipping materials

MF
DIN 13

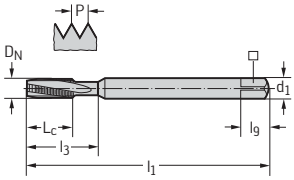
6HX



≤ 2×D_N | C=2-3 | 15° | 44HRC, 1400 –700 N/mm²

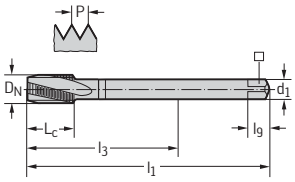
	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
21416-M8X0.75	MF 8x0.75	0,75	80	10	29	8	6,2	9	3
21416-M8X1	MF 8x1	1	90	12	29	8	6,2	9	3
21416-M10X1	MF 10x1	1	90	14	33	10	8	11	3

DIN 374



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
21466-M8X0.75	MF 8x0.75	0,75	80	10	57	6	4,9	8	3
21466-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
21466-M10X1	MF 10x1	1	90	14	67	7	5,5	8	3
21466-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	3
21466-M12X1	MF 12x1	1	100	16	73	9	7	10	4
21466-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
21466-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
21466-M14X1	MF 14x1	1	100	16	71	11	9	12	4
21466-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
21466-M16X1	MF 16x1	1	100	18	58	12	9	12	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 836 | D 1 | B 709

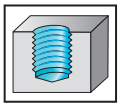
HSS-E-PM machine taps
Paradur® Ti Plus



– For long-chipping materials

MF
DIN 13

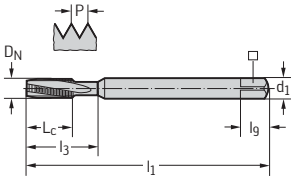
6HX



≤ 2×D_N | C=2-3 | 15° | 44HRC 1400 –700 N/mm²

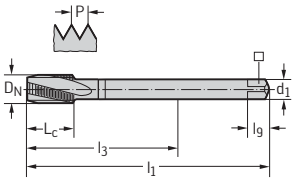
	P	M	K	N	S	H	O
ACN					●●		

~DIN 371



Designation ACN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2141663-M6X0.75	MF 6x0.75	0,75	80	15	23	6	4,9	8	3
2141663-M8X0.75	MF 8x0.75	0,75	90	18	29,5	8	6,2	9	3
2141663-M8X1	MF 8x1	1	90	18	29,5	8	6,2	9	3
2141663-M10X1	MF 10x1	1	100	20	33,5	10	8	11	3

DIN 374



Designation ACN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2146663-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
2146663-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4

B 5

B 836 D 1 B 709

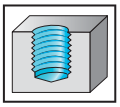
HSS-E machine taps
Paradur® Uni



– For long-chipping materials

MF
DIN 13

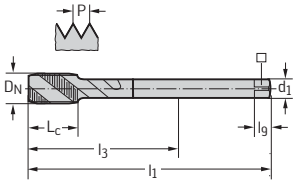
ISO2/6H



≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●		●	●			

DIN 374



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7156770-M4X0.5	MF 4x0.5	0,5	63	7	43	2,8	2,1	5	3
7156770-M5X0.5	MF 5x0.5	0,5	70	8	49	3,5	2,7	6	3
7156770-M6X0.5	MF 6x0.5	0,5	80	10	59	4,5	3,4	6	3
7156770-M6X0.75	MF 6x0.75	0,75	80	10	59	4,5	3,4	6	3
7156770-M8X0.75	MF 8x0.75	0,75	80	10	57	6	4,9	8	3
7156770-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
7156770-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
7156770-M10X1.25	MF 10x1.25	1,25	100	15	77	7	5,5	8	3
7156770-M12X1	MF 12x1	1	100	13	73	9	7	10	4
7156770-M12X1.25	MF 12x1.25	1,25	100	13	73	9	7	10	4
7156770-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
7156770-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
7156770-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	5
7156770-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	5
7156770-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	5
7156770-M22X1.5	MF 22x1.5	1,5	125	18	78	18	14,5	17	5
7156770-M24X1.5	MF 24x1.5	1,5	140	20	93	18	14,5	17	5
7156770-M26X1.5	MF 26x1.5	1,5	140	20	93	18	14,5	17	5
7156770-M27X1.5	MF 27x1.5	1,5	140	20	77	20	16	19	5
7156770-M27X2	MF 27x2	2	140	20	77	20	16	19	5
7156770-M28X1.5	MF 28x1.5	1,5	140	20	77	20	16	19	5
7156770-M30X1.5	MF 30x1.5	1,5	150	20	85	22	18	21	5
7156770-M30X2	MF 30x2	2	150	20	85	22	18	21	5

B 5

WALTER SELECT
●● Primary application
● Other application

B 836 | D 1 | B 709

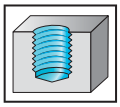
HSS-E-PM machine taps
Paradur® Sprint



– For long-chipping materials

MF
DIN 13

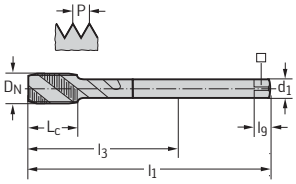
ISO2/6H



≤ 2×D_N | C=2-3 | 40° | 36HRC 1200 –350 N/mm²

	P	M	K	N	S	H	O
TIN	●	●	●	●			

DIN 374



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7156365-M8X1	MF 8x1	1	90	12	67	6	4,9	8	3
7156365-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
7156365-M10X1.25	MF 10x1.25	1,25	100	15	77	7	5,5	8	3
7156365-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	4
7156365-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	4
7156365-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	5
7156365-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	5
7156365-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	5

B 5

B 836 | D 1 | B 709

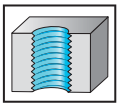
HSS-E-PM machine taps
Prototex® Eco Plus



– For long-chipping materials

UNC
ASME B1.1

2B



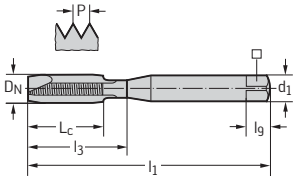
≤ 3,5×D_N

B=3,5-5

42HRC
1350
–500
N/mm²

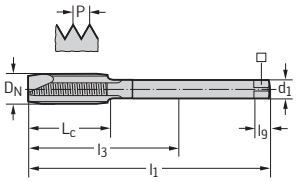
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
EP2221302-UNC2	UNC 2-56	2,184	45	7	12	2,8	2,1	5	3
EP2221302-UNC4	UNC 4-40	2,845	56	9	18	3,5	2,7	6	3
EP2221302-UNC6	UNC 6-32	3,505	56	11	20	4	3	6	3
EP2221302-UNC8	UNC 8-32	4,166	63	12	21	4,5	3,4	6	3
EP2221302-UNC10	UNC 10-24	4,826	70	13	25	6	4,9	8	3
EP2221302-UNC1/4	UNC 1/4-20	6,35	80	15	30	7	5,5	8	3

DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
EP2226302-UNC5/16	UNC 5/16-18	7,938	90	18	67	6	4,9	8	3
EP2226302-UNC3/8	UNC 3/8-16	9,525	100	20	77	7	5,5	8	3
EP2226302-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
EP2226302-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4

B 5

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P

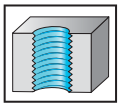


– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 32HRC, 1000 –200 N/mm²

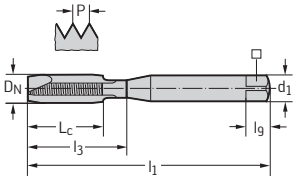
UNC
ASME B1.1

3B



	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1-B



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
P22200-UNC2	UNC 2-56	2,184	45	7	12	2,8	2,1	5	2
P22200-UNC4	UNC 4-40	2,845	56	9	18	3,5	2,7	6	2
P22200-UNC6	UNC 6-32	3,505	56	11	20	4	3	6	2
P22200-UNC8	UNC 8-32	4,166	63	12	21	4,5	3,4	6	2

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

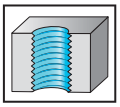
HSS-E machine taps
Prototex® X·pert P



– For long-chipping materials

UNC
ASME B1.1

2B



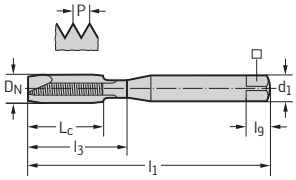
≤ 3×D_N

B=3,5-5

32HRC
1000
–200
N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
P22210-UNC2	UNC 2-56	2,184	45	7	12	2,8	2,1	5	2
P22210-UNC4	UNC 4-40	2,845	56	9	18	3,5	2,7	6	2
P22210-UNC6	UNC 6-32	3,505	56	11	20	4	3	6	2
P22210-UNC8	UNC 8-32	4,166	63	12	21	4,5	3,4	6	2

B 5

B 1008 D 1 B 709

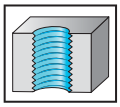
HSS-E machine taps
Prototex® X·pert P



– For long-chipping materials

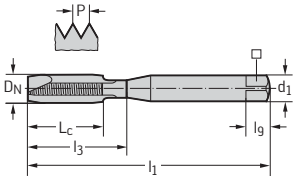
UNC
ASME B1.1

2B



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

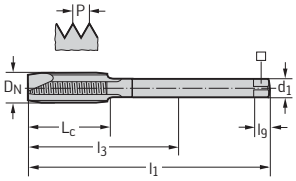
DIN 2184-1



Designation TIN	Designation Uncoated	DN-P	DN mm	l1 h9 mm	Lc mm	l3 mm	d1 mm	□ mm	l9 mm	N
	P22310-UNC2	UNC 2-56	2,184	45	7	12	2,8	2,1	5	3
	P22310-UNC4	UNC 4-40	2,845	56	9	18	3,5	2,7	6	3
	P22310-UNC5	UNC 5-40	3,175	56	10	18	3,5	2,7	6	3
P2231005-UNC6	P22310-UNC6	UNC 6-32	3,505	56	11	20	4	3	6	3
	P22310-UNC8	UNC 8-32	4,166	63	12	21	4,5	3,4	6	3
	P22310-UNC10	UNC 10-24	4,826	70	13	25	6	4,9	8	3
	P22310-UNC12	UNC 12-24	5,486	80	15	30	6	4,9	8	3
	P22310-UNC1/4	UNC 1/4-20	6,35	80	15	30	7	5,5	8	3
	P22310-UNC5/16	UNC 5/16-18	7,938	90	18	35	8	6,2	9	3
	P22310-UNC3/8	UNC 3/8-16	9,525	100	20	39	10	8	11	3

B 5

DIN 2184-1



Designation TIN	Designation Uncoated	DN-P	DN mm	l1 h9 mm	Lc mm	l3 mm	d1 mm	□ mm	l9 mm	N
	P22360-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	3
P2236005-UNC1/2	P22360-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	3
	P22360-UNC9/16	UNC 9/16-12	14,288	110	25	81	11	9	12	3
P2236005-UNC5/8	P22360-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	3
P2236005-UNC3/4	P22360-UNC3/4	UNC 3/4-10	19,05	125	30	81	14	11	14	3
	P22360-UNC7/8	UNC 7/8-9	22,225	140	30	93	18	14,5	17	3
	P22360-UNC1	UNC 1"-8	25,4	160	36	113	18	14,5	17	3
	P22360-UNC1.1/8	UNC 1.1/8-7	28,575	180	42	115	22	18	21	4
	P22360-UNC1.1/4	UNC 1.1/4-7	31,75	180	42	115	22	18	21	4
	P22360-UNC1.1/2	UNC 1.1/2-6	38,1	200	48	131	28	22	25	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

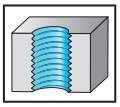
HSS-E machine taps
Prototex® X·pert M



– For long-chipping materials

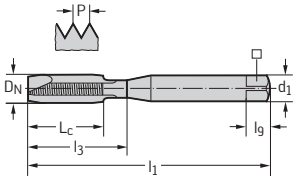
UNC
ASME B1.1

2B



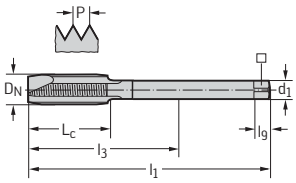
	P	M	K	N	S	H	O
TIN	●	●●					
VAP	●	●●					

DIN 2184-1



Designation TIN	Designation VAP	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
M2221305-UNC2	M22213-UNC2	UNC 2-56	2,184	45	7	12	2,8	2,1	5	2
M2221305-UNC3	M22213-UNC3	UNC 3-48	2,515	50	8	12,5	2,8	2,1	5	2
M2221305-UNC4	M22213-UNC4	UNC 4-40	2,845	56	9	18	3,5	2,7	6	2
M2221305-UNC5	M22213-UNC5	UNC 5-40	3,175	56	10	18	3,5	2,7	6	2
M2221305-UNC6	M22213-UNC6	UNC 6-32	3,505	56	11	20	4	3	6	2
M2221305-UNC8	M22213-UNC8	UNC 8-32	4,166	63	12	21	4,5	3,4	6	3
M2221305-UNC10	M22213-UNC10	UNC 10-24	4,826	70	13	25	6	4,9	8	3
M2221305-UNC12	M22213-UNC12	UNC 12-24	5,486	80	15	30	6	4,9	8	3
M2221305-UNC1/4	M22213-UNC1/4	UNC 1/4-20	6,35	80	15	30	7	5,5	8	3

DIN 2184-1



Designation TIN	Designation VAP	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
	M22263-UNC5/16	UNC 5/16-18	7,938	90	18	67	6	4,9	8	3
M2226305-UNC3/8	M22263-UNC3/8	UNC 3/8-16	9,525	100	20	77	7	5,5	8	3
	M22263-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	3
M2226305-UNC1/2	M22263-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
	M22263-UNC9/16	UNC 9/16-12	14,288	110	25	81	11	9	12	4
	M22263-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4
	M22263-UNC3/4	UNC 3/4-10	19,05	125	30	81	14	11	14	4
	M22263-UNC7/8	UNC 7/8-9	22,225	140	30	93	18	14,5	17	4
	M22263-UNC1	UNC 1"-8	25,4	160	36	113	18	14,5	17	4

B 5

B 1008 D 1 B 709

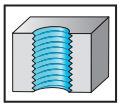
HSS-E-PM machine taps
Prototex® TiNi



– For long-chipping materials

UNC
ASME B1.1

3B



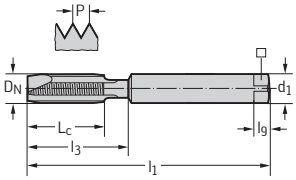
≤ 2×D_N

B=3,5-5

44HRC
1400
–700
N/mm²

	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

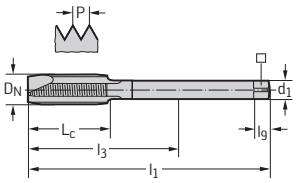
~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
22207-UNC2	UNC 2-56	2,184	45	9	9	2,8	2,1	5	2
22207-UNC4	UNC 4-40	2,845	56	10	10	3,5	2,7	6	2
22207-UNC5	UNC 5-40	3,175	56	10	10	3,5	2,7	6	2
22207-UNC6	UNC 6-32	3,505	56	12	12	4	3	6	3
22207-UNC8	UNC 8-32	4,166	63	13	13	4,5	3,4	6	3
22207-UNC10	UNC 10-24	4,826	70	16	16	6	4,9	8	3
22207-UNC1/4	UNC 1/4-20	6,35	80	15	25	7	5,5	8	3
22207-UNC5/16	UNC 5/16-18	7,938	90	18	29,5	8	6,2	9	3
22207-UNC3/8	UNC 3/8-16	9,525	100	20	33,5	10	8	11	3

B 5

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
22257-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	4
22257-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
22257-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4
22257-UNC3/4	UNC 3/4-10	19,05	125	30	81	14	11	14	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

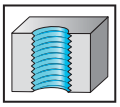
HSS-E-PM machine taps
Prototex® TiNi



– For long-chipping materials

UNC
ASME B1.1

2B



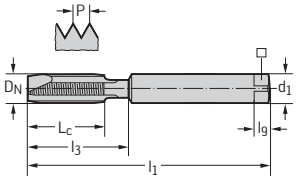
≤ 2×D_N

B=3,5-5

44HRC
1400
–700
N/mm²

	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

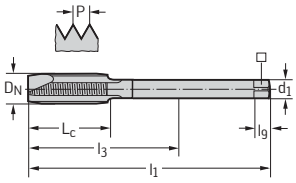
~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
22217-UNC2	UNC 2-56	2,184	45	9	9	2,8	2,1	5	2
22217-UNC4	UNC 4-40	2,845	56	10	10	3,5	2,7	6	2
22217-UNC5	UNC 5-40	3,175	56	10	10	3,5	2,7	6	2
22217-UNC6	UNC 6-32	3,505	56	12	12	4	3	6	3
22217-UNC8	UNC 8-32	4,166	63	13	13	4,5	3,4	6	3
22217-UNC10	UNC 10-24	4,826	70	16	16	6	4,9	8	3
22217-UNC1/4	UNC 1/4-20	6,35	80	15	25	7	5,5	8	3
22217-UNC5/16	UNC 5/16-18	7,938	90	18	29,5	8	6,2	9	3
22217-UNC3/8	UNC 3/8-16	9,525	100	20	33,5	10	8	11	3

≤ UNC 10: Without reduced neck after the thread

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
22267-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	4
22267-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
22267-UNC9/16	UNC 9/16-12	14,288	110	25	81	11	9	12	4
22267-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4
22267-UNC3/4	UNC 3/4-10	19,05	125	30	81	14	11	14	4

B 1008 D 1 B 709

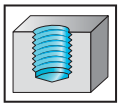
HSS-E-PM machine taps
Paradur® Eco Plus



– For long-chipping materials

UNC
ASME B1.1

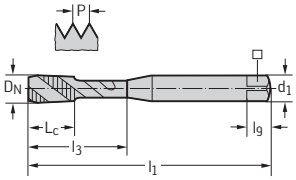
2B



≤ 3×D_N | C=2-3 | 45° | 38HRC 1250 –500 N/mm²

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

~DIN 2184-1

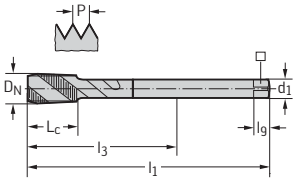


Designation THL	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2251302-UNC2	UNC 2-56	2,184	45	4	8,4	2,8	2,1	5	3
EP2251302-UNC4	UNC 4-40	2,845	56	6	11	3,5	2,7	6	3
EP2251302-UNC6	UNC 6-32	3,505	56	6,5	13,7	4	3	6	3
EP2251302-UNC8	UNC 8-32	4,166	63	7	17,8	4,5	3,4	6	3
EP2251302-UNC10	UNC 10-24	4,826	70	8	20,7	6	4,9	8	3
EP2251302-UNC1/4	UNC 1/4-20	6,35	80	10	27,3	7	5,5	8	3

UNC 2: Without thread taper

B 5

DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2256302-UNC5/16	UNC 5/16-18	7,938	90	12	67	6	4,9	8	3
EP2256302-UNC3/8	UNC 3/8-16	9,525	100	15	77	7	5,5	8	3
EP2256302-UNC1/2	UNC 1/2-13	12,7	110	18	83	9	7	10	4
EP2256302-UNC5/8	UNC 5/8-11	15,875	110	20	68	12	9	12	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

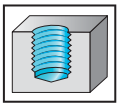
HSS-E-PM machine taps
Paradur® Eco Plus



– For long-chipping materials

UNC
ASME B1.1

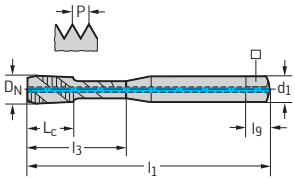
2B



≤ 3×D_N | C=2-3 | 45° | 38HRC 1250 –500 N/mm²

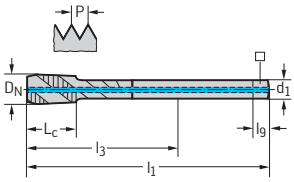
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

~DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2251312-UNC1/4	UNC 1/4-20	6,35	80	10	27,3	7	5,5	8	3

DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2256312-UNC5/16	UNC 5/16-18	7,938	90	12	67	6	4,9	8	3
EP2256312-UNC3/8	UNC 3/8-16	9,525	100	15	77	7	5,5	8	3
EP2256312-UNC1/2	UNC 1/2-13	12,7	110	18	83	9	7	10	4
EP2256312-UNC5/8	UNC 5/8-11	15,875	110	20	68	12	9	12	4
EP2256312-UNC3/4	UNC 3/4-10	19,05	125	25	81	14	11	14	4

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® N



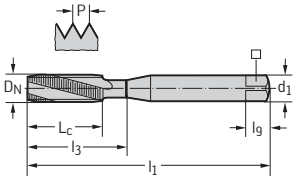
– For long-chipping materials

UNC	3B	
ASME B1.1		

≤ 1,5×D_N | C=2-3 | 15° | 32HRC, 1000 –200 N/mm²

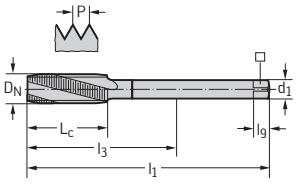
	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
22400-UNC2	UNC 2-56	2,184	45	4	12	2,8	2,1	5	3
22400-UNC4	UNC 4-40	2,845	56	6	18	3,5	2,7	6	3
22400-UNC6	UNC 6-32	3,505	56	6,5	20	4	3	6	3
22400-UNC8	UNC 8-32	4,166	63	7	21	4,5	3,4	6	3
22400-UNC1/4	UNC 1/4-20	6,35	80	10	30	7	5,5	8	3
22400-UNC5/16	UNC 5/16-18	7,938	90	12	35	8	6,2	9	3
22400-UNC3/8	UNC 3/8-16	9,525	100	15	39	10	8	11	3

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
22450-UNC3/8	UNC 3/8-16	9,525	100	15	77	7	5,5	8	3
22450-UNC7/16	UNC 7/16-14	11,113	100	15	76	8	6,2	9	3
22450-UNC1/2	UNC 1/2-13	12,7	110	18	83	9	7	10	3
22450-UNC5/8	UNC 5/8-11	15,875	110	20	68	12	9	12	3
22450-UNC3/4	UNC 3/4-10	19,05	125	25	81	14	11	14	4
22450-UNC7/8	UNC 7/8-9	22,225	140	25	93	18	14,5	17	4

B 5

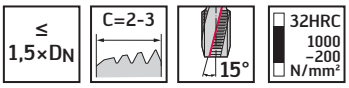
WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E machine taps
Paradur® N



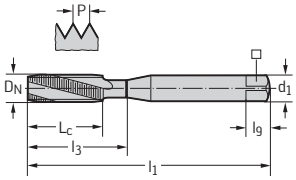
– For long-chipping materials



UNC ASME B1.1	2B	

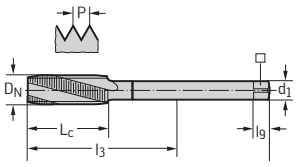
	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			

DIN 2184-1



Designation Uncoated	DN-P	DN mm	l1 mm	Lc mm	l3 mm	d1 h9 mm	□ mm	l9 mm	N
22410-UNC1	UNC 1-64	1,854	45	4	9	2,8	2,1	5	3
22410-UNC2	UNC 2-56	2,184	45	4	12	2,8	2,1	5	3
22410-UNC3	UNC 3-48	2,515	50	4	12,5	2,8	2,1	5	3
22410-UNC4	UNC 4-40	2,845	56	6	18	3,5	2,7	6	3
22410-UNC6	UNC 6-32	3,505	56	6,5	20	4	3	6	3
22410-UNC8	UNC 8-32	4,166	63	7	21	4,5	3,4	6	3
22410-UNC10	UNC 10-24	4,826	70	8	25	6	4,9	8	3
22410-UNC12	UNC 12-24	5,486	80	10	30	6	4,9	8	3
22410-UNC1/4	UNC 1/4-20	6,35	80	10	30	7	5,5	8	3
22410-UNC5/16	UNC 5/16-18	7,938	90	12	35	8	6,2	9	3
22410-UNC3/8	UNC 3/8-16	9,525	100	15	39	10	8	11	3

DIN 2184-1



Designation Uncoated	DN-P	DN mm	l1 mm	Lc mm	l3 mm	d1 h9 mm	□ mm	l9 mm	N
22460-UNC7/16	UNC 7/16-14	11,113	100	15	76	8	6,2	9	3
22460-UNC1/2	UNC 1/2-13	12,7	110	18	83	9	7	10	3
22460-UNC5/8	UNC 5/8-11	15,875	110	20	68	12	9	12	3
22460-UNC3/4	UNC 3/4-10	19,05	125	25	81	14	11	14	4
22460-UNC7/8	UNC 7/8-9	22,225	140	25	93	18	14,5	17	4
22460-UNC1	UNC 1"-8	25,4	160	30	113	18	14,5	17	4

B 1008 D 1 B 709

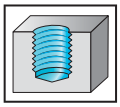
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

UNC
ASME B1.1

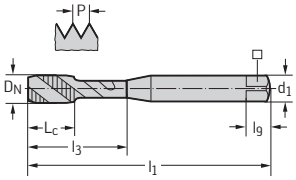
3B



≤ 3×D_N | C=2-3 | 45° | 32HRC 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●			●

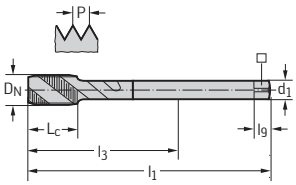
DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P22509-UNC2	UNC 2-56	2,184	45	4	12	2,8	2,1	5	3
P22509-UNC3	UNC 3-48	2,515	50	4	12,5	2,8	2,1	5	3
P22509-UNC4	UNC 4-40	2,845	56	6	18	3,5	2,7	6	3
P22509-UNC6	UNC 6-32	3,505	56	6,5	20	4	3	6	3
P22509-UNC8	UNC 8-32	4,166	63	7	21	4,5	3,4	6	3
P22509-UNC10	UNC 10-24	4,826	70	8	25	6	4,9	8	3
P22509-UNC1/4	UNC 1/4-20	6,35	80	10	30	7	5,5	8	3
P22509-UNC5/16	UNC 5/16-18	7,938	90	12	35	8	6,2	9	3
P22509-UNC3/8	UNC 3/8-16	9,525	100	15	39	10	8	11	3

B 5

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P22559-UNC5/16	UNC 5/16-18	7,938	90	12	67	6	4,9	8	3
P22559-UNC3/8	UNC 3/8-16	9,525	100	15	77	7	5,5	8	3
P22559-UNC7/16	UNC 7/16-14	11,113	100	15	76	8	6,2	9	3
P22559-UNC1/2	UNC 1/2-13	12,7	110	18	83	9	7	10	4
P22559-UNC9/16	UNC 9/16-12	14,288	110	20	81	11	9	12	4
P22559-UNC5/8	UNC 5/8-11	15,875	110	20	68	12	9	12	4
P22559-UNC3/4	UNC 3/4-10	19,05	125	25	81	14	11	14	4
P22559-UNC7/8	UNC 7/8-9	22,225	140	25	93	18	14,5	17	4
P22559-UNC1	UNC 1"-8	25,4	160	30	113	18	14,5	17	4
P22559-UNC1.1/4	UNC 1.1/4-7	31,75	180	35	115	22	18	21	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

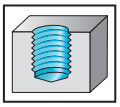
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

UNC
ASME B1.1

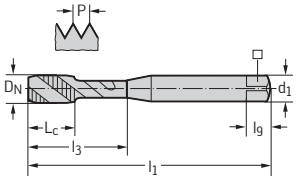
2B



≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

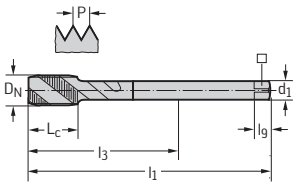
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P22519-UNC2	UNC 2-56	2,184	45	4	12	2,8	2,1	5	3
P22519-UNC3	UNC 3-48	2,515	50	4	12,5	2,8	2,1	5	3
P22519-UNC4	UNC 4-40	2,845	56	6	18	3,5	2,7	6	3
P22519-UNC5	UNC 5-40	3,175	56	6	18	3,5	2,7	6	3
P22519-UNC6	UNC 6-32	3,505	56	6,5	20	4	3	6	3
P22519-UNC8	UNC 8-32	4,166	63	7	21	4,5	3,4	6	3
P22519-UNC10	UNC 10-24	4,826	70	8	25	6	4,9	8	3
P22519-UNC12	UNC 12-24	5,486	80	10	30	6	4,9	8	3
P22519-UNC1/4	UNC 1/4-20	6,35	80	10	30	7	5,5	8	3
P22519-UNC5/16	UNC 5/16-18	7,938	90	12	35	8	6,2	9	3
P22519-UNC3/8	UNC 3/8-16	9,525	100	15	39	10	8	11	3

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P22569-UNC7/16	UNC 7/16-14	11,113	100	15	76	8	6,2	9	3
P22569-UNC1/2	UNC 1/2-13	12,7	110	18	83	9	7	10	4
P22569-UNC9/16	UNC 9/16-12	14,288	110	20	81	11	9	12	4
P22569-UNC5/8	UNC 5/8-11	15,875	110	20	68	12	9	12	4
P22569-UNC3/4	UNC 3/4-10	19,05	125	25	81	14	11	14	4
P22569-UNC7/8	UNC 7/8-9	22,225	140	25	93	18	14,5	17	4
P22569-UNC1	UNC 1"-8	25,4	160	30	113	18	14,5	17	4
P22569-UNC1.1/8	UNC 1.1/8-7	28,575	180	35	115	22	18	21	4
P22569-UNC1.1/4	UNC 1.1/4-7	31,75	180	35	115	22	18	21	4
P22569-UNC1.1/2	UNC 1.1/2-6	38,1	200	40	131	28	22	25	4

B 5

B 1008 | D 1 | B 709

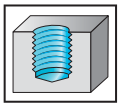
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

UN-8
ASME B1.1

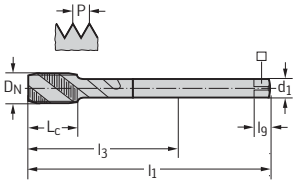
2B



≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P265676-UN1.1/8	UN 1.1/8-8	28,575	180	30	115	22	18	21	5
P265676-UN1.1/4	UN 1.1/4-8	31,75	180	30	115	22	18	21	5
P265676-UN1.3/8	UN 1.3/8-8	34,925	200	30	131	28	22	25	5
P265676-UN1.1/2	UN 1.1/2-8	38,1	200	30	131	28	22	25	5
P265676-UN1.5/8	UN 1.5/8-8	41,275	200	33	102	32	24	27	6
P265676-UN1.3/4	UN 1.3/4-8	44,45	200	33	97	36	29	32	6
P265676-UN1.7/8	UN 1.7/8-8	47,625	225	36	122	36	29	32	6
P265676-UN2	UN 2"-8	50,8	225	36	95	40	32	35	6
P265676-UN2.1/4	UN 2.1/4-8	57,15	250	36	117	45	35	38	6

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

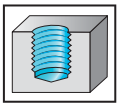
HSS-E machine taps
Paradur® X·pert M



– For long-chipping materials

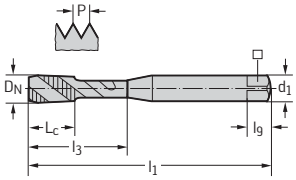
UNC
ASME B1.1

2B



	P	M	K	N	S	H	O
TIN	●	●●					
VAP	●	●●					

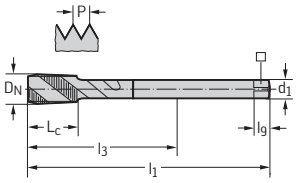
DIN 2184-1



Designation TIN	Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2251305-UNC2	M22513-UNC2	UNC 2-56	2,184	45	4	12	2,8	2,1	5	3
M2251305-UNC3	M22513-UNC3	UNC 3-48	2,515	50	4	12,5	2,8	2,1	5	3
M2251305-UNC4	M22513-UNC4	UNC 4-40	2,845	56	6	18	3,5	2,7	6	3
M2251305-UNC5	M22513-UNC5	UNC 5-40	3,175	56	6	18	3,5	2,7	6	3
M2251305-UNC6	M22513-UNC6	UNC 6-32	3,505	56	6,5	20	4	3	6	3
M2251305-UNC8	M22513-UNC8	UNC 8-32	4,166	63	7	21	4,5	3,4	6	3
M2251305-UNC10	M22513-UNC10	UNC 10-24	4,826	70	8	25	6	4,9	8	3
M2251305-UNC12	M22513-UNC12	UNC 12-24	5,486	80	10	30	6	4,9	8	3
M2251305-UNC1/4	M22513-UNC1/4	UNC 1/4-20	6,35	80	10	30	7	5,5	8	3

UNC 2: Without thread taper

DIN 2184-1



Designation TIN	Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2256305-UNC5/16	M22563-UNC5/16	UNC 5/16-18	7,938	90	12	67	6	4,9	8	3
M2256305-UNC3/8	M22563-UNC3/8	UNC 3/8-16	9,525	100	15	77	7	5,5	8	3
M2256305-UNC7/16	M22563-UNC7/16	UNC 7/16-14	11,113	100	15	76	8	6,2	9	3
M2256305-UNC1/2	M22563-UNC1/2	UNC 1/2-13	12,7	110	18	83	9	7	10	4
M2256305-UNC9/16	M22563-UNC9/16	UNC 9/16-12	14,288	110	20	81	11	9	12	4
M2256305-UNC5/8	M22563-UNC5/8	UNC 5/8-11	15,875	110	20	68	12	9	12	4
M2256305-UNC3/4	M22563-UNC3/4	UNC 3/4-10	19,05	125	25	81	14	11	14	4
M2256305-UNC7/8	M22563-UNC7/8	UNC 7/8-9	22,225	140	25	93	18	14,5	17	4
M2256305-UNC1	M22563-UNC1	UNC 1"-8	25,4	160	30	113	18	14,5	17	4
	M22563-UNC1.1/8	UNC 1.1/8-7	28,575	180	35	115	22	18	21	5
	M22563-UNC1.1/4	UNC 1.1/4-7	31,75	180	35	115	22	18	21	5
	M22563-UNC1.1/2	UNC 1.1/2-6	38,1	200	40	131	28	22	25	5

B 1008 D 1 B 709

HSS-E machine taps
Paradur® X·pert M

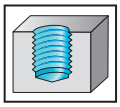


– For long-chipping materials

≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

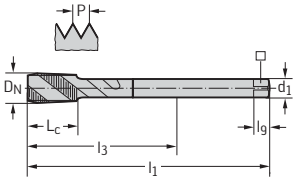
UN-8
ASME B1.1

3B



	P	M	K	N	S	H	O
VAP	●	●●					

DIN 2184-1-C



Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M225532-UN1.1/8	UN 1.1/8-8	28,575	180	30	115	22	18	21	4
M225532-UN1.1/4	UN 1.1/4-8	31,75	180	30	115	22	18	21	4
M225532-UN1.3/8	UN 1.3/8-8	34,925	200	30	131	28	22	25	5

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

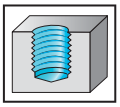
HSS-E machine taps
Paradur® X·pert M



– For long-chipping materials

UN-8
ASME B1.1

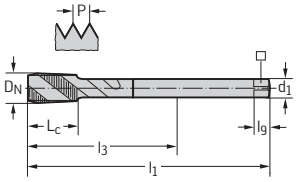
2B



≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

	P	M	K	N	S	H	O
VAP	●	●●					

DIN 2184-1



Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M225632-UN1.1/8	UN 1.1/8-8	28,575	180	30	115	22	18	21	4
M225632-UN1.1/4	UN 1.1/4-8	31,75	180	30	115	22	18	21	4
M225632-UN1.3/8	UN 1.3/8-8	34,925	200	30	131	28	22	25	5
M225632-UN1.1/2	UN 1.1/2-8	38,1	200	30	131	28	22	25	5
M225632-UN1.5/8	UN 1.5/8-8	41,275	200	33	102	32	24	27	5
M225632-UN1.3/4	UN 1.3/4-8	44,45	200	33	97	36	29	32	6
M225632-UN1.7/8	UN 1.7/8-8	47,625	225	36	122	36	29	32	6
M225632-UN2	UN 2"-8	50,8	225	36	95	40	32	35	6

B 1008 | D 1 | B 709

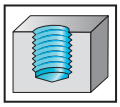
HSS-E-PM machine taps
Paradur® Eco CI



– For short-chipping materials
– Nitrided

UNC
ASME B1.1

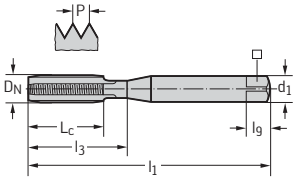
2B



≤ 3×D_N | C=2-3 | 32HRC, 1000 –100 N/mm²

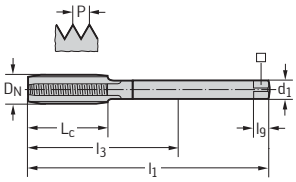
NID	P	M	K	N	S	H	O
			●●	●●			●●

DIN 2184-1



Designation NID	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E22314-UNC6	UNC 6-32	3,505	56	11	20	4	3	6	3
E22314-UNC8	UNC 8-32	4,166	63	12	21	4,5	3,4	6	3
E22314-UNC10	UNC 10-24	4,826	70	13	25	6	4,9	8	4
E22314-UNC1/4	UNC 1/4-20	6,35	80	15	30	7	5,5	8	4

DIN 2184-1



Designation NID	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E22364-UNC5/16	UNC 5/16-18	7,938	90	18	67	6	4,9	8	4
E22364-UNC3/8	UNC 3/8-16	9,525	100	20	77	7	5,5	8	4
E22364-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	4
E22364-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
E22364-UNC9/16	UNC 9/16-12	14,288	110	25	81	11	9	12	4
E22364-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4
E22364-UNC3/4	UNC 3/4-10	19,05	125	30	81	14	11	14	4
E22364-UNC7/8	UNC 7/8-9	22,225	140	30	93	18	14,5	17	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

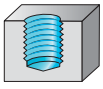
HSS-E machine taps
Paradur® X·pert N



– For long-chipping materials

UNC
ASME B1.1

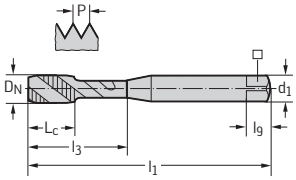
2B



≤ 3×D_N | C=2-3 | 35° | 14HRC 700 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N22516-UNC2	UNC 2-56	2,184	45	4	12	2,8	2,1	5	2
N22516-UNC4	UNC 4-40	2,845	56	6	18	3,5	2,7	6	2
N22516-UNC6	UNC 6-32	3,505	56	6,5	20	4	3	6	2
N22516-UNC8	UNC 8-32	4,166	63	7	21	4,5	3,4	6	2
N22516-UNC10	UNC 10-24	4,826	70	8	25	6	4,9	8	2
N22516-UNC1/4	UNC 1/4-20	6,35	80	10	30	7	5,5	8	2
N22516-UNC5/16	UNC 5/16-18	7,938	90	12	35	8	6,2	9	2
N22516-UNC3/8	UNC 3/8-16	9,525	100	15	39	10	8	11	2

B 1008 | D 1 | B 709

HSS-E-PM machine taps
Paradur® Ni

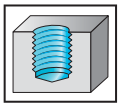


– For long-chipping materials

≤ 1,5×D_N	C=2-3	25°	44HRC 1400 –700 N/mm²

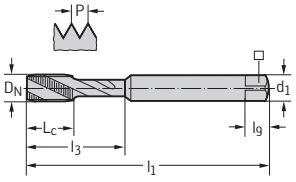
UNC
ASME B1.1

3B



	P	M	K	N	S	H	O
Uncoated	●				●●		

~DIN 2184-1

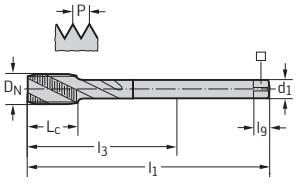


Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
224104-UNC2	UNC 2-56	2,184	45	9	9	2,8	2,1	5	3
224104-UNC4	UNC 4-40	2,845	56	10	10	3,5	2,7	6	3
224104-UNC6	UNC 6-32	3,505	56	12	12	4	3	6	3
224104-UNC8	UNC 8-32	4,166	63	13	13	4,5	3,4	6	3
224104-UNC1/4	UNC 1/4-20	6,35	80	15	25	7	5,5	8	3
224104-UNC5/16	UNC 5/16-18	7,938	90	18	29,5	8	6,2	9	3
224104-UNC3/8	UNC 3/8-16	9,525	100	20	33,5	10	8	11	4

≤ UNC 8: Without reduced neck after the thread

B 5

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
224604-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	4
224604-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
224604-UNC9/16	UNC 9/16-12	14,288	110	25	81	11	9	12	4
224604-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4
224604-UNC3/4	UNC 3/4-10	19,05	125	30	81	14	11	14	5

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

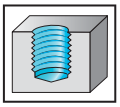
HSS-E-PM machine taps
Paradur® Ni



– For long-chipping materials

UNC
ASME B1.1

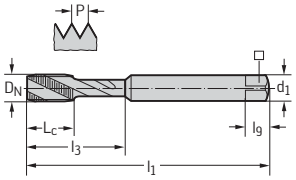
2B



≤ 1,5×D_N | C=2-3 | 25° | 44HRC, 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●				●●		

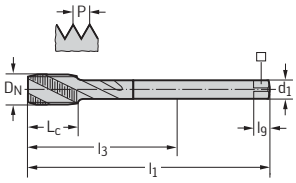
~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
224102-UNC2	UNC 2-56	2,184	45	9	9	2,8	2,1	5	3
224102-UNC3	UNC 3-48	2,515	50	9	9	2,8	2,1	5	3
224102-UNC4	UNC 4-40	2,845	56	10	10	3,5	2,7	6	3
224102-UNC6	UNC 6-32	3,505	56	12	12	4	3	6	3
224102-UNC8	UNC 8-32	4,166	63	13	13	4,5	3,4	6	3
224102-UNC10	UNC 10-24	4,826	70	16	16	6	4,9	8	3
224102-UNC1/4	UNC 1/4-20	6,35	80	15	25	7	5,5	8	3
224102-UNC5/16	UNC 5/16-18	7,938	90	18	29,5	8	6,2	9	3
224102-UNC3/8	UNC 3/8-16	9,525	100	20	33,5	10	8	11	4

≤ UNC 10: Without reduced neck after the thread

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
224602-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	4
224602-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
224602-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4
224602-UNC3/4	UNC 3/4-10	19,05	125	30	81	14	11	14	5

B 5

B 1008 | D 1 | B 709

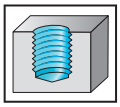
HSS-E-PM machine taps
Paradur® Ti



– For long-chipping materials

UNC
ASME B1.1

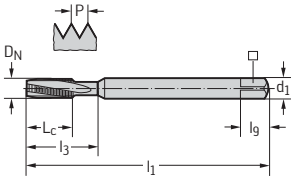
3B



≤ 2×D_N | C=2-3 | 15° | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 2184-1

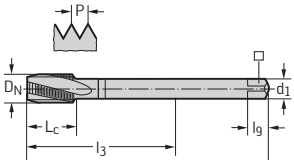


Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
224164-UNC6	UNC 6-32	3,505	56	12	12	4	3	6	3
224164-UNC8	UNC 8-32	4,166	63	13	13	4,5	3,4	6	3
224164-UNC10	UNC 10-24	4,826	70	16	16	6	4,9	8	3
224164-UNC1/4	UNC 1/4-20	6,35	80	15	25	7	5,5	8	3
224164-UNC5/16	UNC 5/16-18	7,938	90	18	29,5	8	6,2	9	3
224164-UNC3/8	UNC 3/8-16	9,525	100	20	33,5	10	8	11	3

≤ UNC 10: Without reduced neck after the thread

B 5

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
224664-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	4
224664-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
224664-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

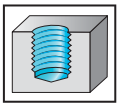
HSS-E-PM machine taps
Paradur® Ti



– For long-chipping materials

UNC
ASME B1.1

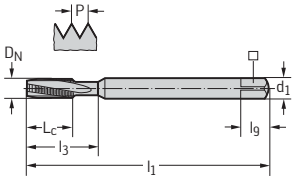
2B



≤ 2×D_N | C=2-3 | 15° | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

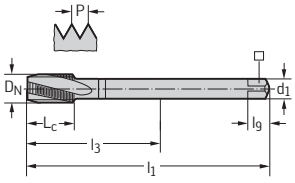
~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
22416-UNC6	UNC 6-32	3,505	56	12	12	4	3	6	3
22416-UNC8	UNC 8-32	4,166	63	13	13	4,5	3,4	6	3
22416-UNC10	UNC 10-24	4,826	70	16	16	6	4,9	8	3
22416-UNC12	UNC 12-24	5,486	80	15	23	6	4,9	8	3
22416-UNC1/4	UNC 1/4-20	6,35	80	15	25	7	5,5	8	3
22416-UNC5/16	UNC 5/16-18	7,938	90	18	29,5	8	6,2	9	3
22416-UNC3/8	UNC 3/8-16	9,525	100	20	33,5	10	8	11	3

≤ UNC 10: Without reduced neck after the thread

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
22466-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	4
22466-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
22466-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4

B 5

B 1008 D 1 B 709

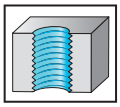
HSS-E-PM machine taps
Prototex® Eco Plus



– For long-chipping materials

UNF
ASME B1.1

2B



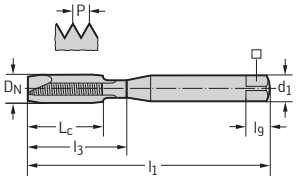
≤ 3,5×D_N

B=3,5-5

42HRC
1350
–500
N/mm²

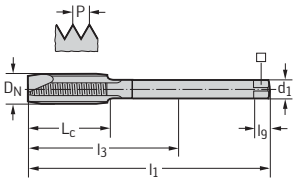
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
EP2321302-UNF4	UNF 4-48	2,845	56	9	18	3,5	2,7	6	3
EP2321302-UNF6	UNF 6-40	3,505	56	11	20	4	3	6	3
EP2321302-UNF8	UNF 8-36	4,166	63	12	21	4,5	3,4	6	3
EP2321302-UNF10	UNF 10-32	4,826	70	13	25	6	4,9	8	3
EP2321302-UNF1/4	UNF 1/4-28	6,35	80	15	30	7	5,5	8	3

DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
EP2326302-UNF5/16	UNF 5/16-24	7,938	90	18	67	6	4,9	8	3
EP2326302-UNF3/8	UNF 3/8-24	9,525	100	20	77	7	5,5	8	3
EP2326302-UNF1/2	UNF 1/2-20	12,7	100	21	73	9	7	10	4
EP2326302-UNF5/8	UNF 5/8-18	15,875	100	21	58	12	9	12	4

B 5

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

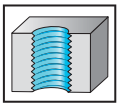
HSS-E machine taps
Prototex® X·pert P



– For long-chipping materials

UNF
ASME B1.1

3B



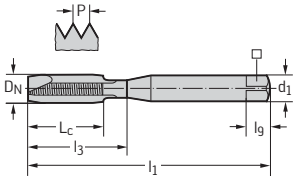
≤ 3×D_N

B=3,5-5

32HRC
1000
–200
N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1-B



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
P23200-UNF2	UNF 2-64	2,184	45	7	12	2,8	2,1	5	2
P23200-UNF4	UNF 4-48	2,845	56	9	18	3,5	2,7	6	2
P23200-UNF6	UNF 6-40	3,505	56	11	20	4	3	6	2
P23200-UNF8	UNF 8-36	4,166	63	12	21	4,5	3,4	6	2
P23200-UNF10	UNF 10-32	4,826	70	13	25	6	4,9	8	2
P23200-UNF12	UNF 12-28	5,486	80	15	30	6	4,9	8	3
P23200-UNF1/4	UNF 1/4-28	6,35	80	15	30	7	5,5	8	3

B 5

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P

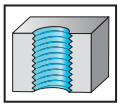


– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 32HRC | 1000 –200 N/mm²

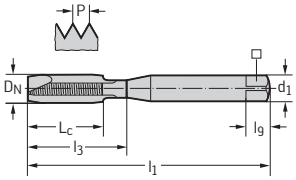
UNF
ASME B1.1

2B



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 2184-1



Designation TIN	Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
	P23210-UNF0	UNF 0-80	1,524	40	8	8	2,5	2,1	5	2
	P23210-UNF1	UNF 1-72	1,854	45	6	9	2,8	2,1	5	2
	P23210-UNF2	UNF 2-64	2,184	45	7	12	2,8	2,1	5	2
	P23210-UNF3	UNF 3-56	2,515	50	8	12,5	2,8	2,1	5	2
	P23210-UNF4	UNF 4-48	2,845	56	9	18	3,5	2,7	6	2
	P23210-UNF6	UNF 6-40	3,505	56	11	20	4	3	6	2
	P23210-UNF8	UNF 8-36	4,166	63	12	21	4,5	3,4	6	2
	P23210-UNF10	UNF 10-32	4,826	70	13	25	6	4,9	8	2
P2321005-UNF12	P23210-UNF12	UNF 12-28	5,486	80	15	30	6	4,9	8	3
P2321005-UNF1/4	P23210-UNF1/4	UNF 1/4-28	6,35	80	15	30	7	5,5	8	3

UNF 0: Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E machine taps
Prototex® X·pert P

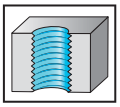


≤ 3×D_N | B=3,5-5 | 32HRC | 1000 –200 N/mm²

– For long-chipping materials

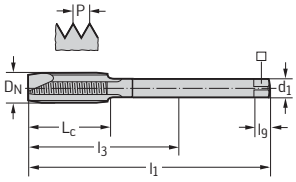
UNF
ASME B1.1

2B



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 2184-1



Designation TIN	Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
P2336005-UNF5/16	P23360-UNF5/16	UNF 5/16-24	7,938	90	18	67	6	4,9	8	3
P2336005-UNF3/8	P23360-UNF3/8	UNF 3/8-24	9,525	100	20	77	7	5,5	8	3
P2336005-UNF7/16	P23360-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	3
P2336005-UNF1/2	P23360-UNF1/2	UNF 1/2-20	12,7	100	21	73	9	7	10	4
	P23360-UNF9/16	UNF 9/16-18	14,288	100	21	71	11	9	12	4
P2336005-UNF5/8	P23360-UNF5/8	UNF 5/8-18	15,875	100	21	58	12	9	12	4
P2336005-UNF3/4	P23360-UNF3/4	UNF 3/4-16	19,05	110	24	66	14	11	14	4
	P23360-UNF7/8	UNF 7/8-14	22,225	125	24	78	18	14,5	17	4
	P23360-UNF1	UNF 1"-12	25,4	140	26	93	18	14,5	17	4
	P23360-UNF1.1/8	UNF 1.1/8-12	28,575	150	26	85	22	18	21	4
	P23360-UNF1.1/4	UNF 1.1/4-12	31,75	150	26	85	22	18	21	4
	P23360-UNF1.3/8	UNF 1.3/8-12	34,925	170	28	101	28	22	25	4
	P23360-UNF1.1/2	UNF 1.1/2-12	38,1	170	28	101	28	22	25	4

B 1008 | D 1 | B 709

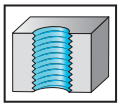
HSS-E machine taps
Prototex® X·pert M



– For long-chipping materials

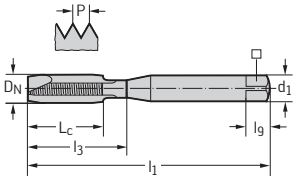
UNF
ASME B1.1

2B



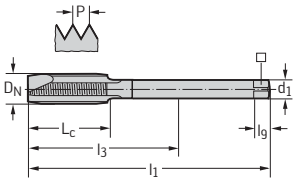
	P	M	K	N	S	H	O
TIN	●	●●					
VAP	●	●●					

DIN 2184-1



Designation TIN	Designation VAP	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
	M23213-UNF5	UNF 5-44	3,175	56	10	18	3,5	2,7	6	2
	M23213-UNF6	UNF 6-40	3,505	56	11	20	4	3	6	2
	M23213-UNF8	UNF 8-36	4,166	63	12	21	4,5	3,4	6	2
M2321305-UNF10	M23213-UNF10	UNF 10-32	4,826	70	13	25	6	4,9	8	3
	M23213-UNF12	UNF 12-28	5,486	80	15	30	6	4,9	8	3
M2321305-UNF1/4	M23213-UNF1/4	UNF 1/4-28	6,35	80	15	30	7	5,5	8	3

DIN 2184-1



Designation TIN	Designation VAP	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
M2326305-UNF5/16	M23263-UNF5/16	UNF 5/16-24	7,938	90	18	67	6	4,9	8	3
M2326305-UNF3/8	M23263-UNF3/8	UNF 3/8-24	9,525	100	20	77	7	5,5	8	3
M2326305-UNF7/16	M23263-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	3
M2326305-UNF1/2	M23263-UNF1/2	UNF 1/2-20	12,7	100	21	73	9	7	10	4
	M23263-UNF9/16	UNF 9/16-18	14,288	100	21	71	11	9	12	4
	M23263-UNF5/8	UNF 5/8-18	15,875	100	21	58	12	9	12	4
	M23263-UNF3/4	UNF 3/4-16	19,05	110	24	66	14	11	14	4
	M23263-UNF7/8	UNF 7/8-14	22,225	125	24	78	18	14,5	17	4
	M23263-UNF1	UNF 1“-12	25,4	140	26	93	18	14,5	17	4

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 709

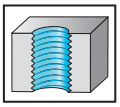
HSS-E-PM machine taps
Prototex® TiNi



– For long-chipping materials

UNF
ASME B1.1

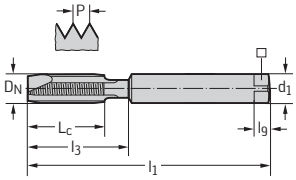
3B



≤ 2×D_N | B=3,5-5 | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

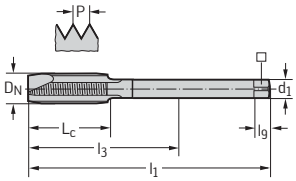
~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
23207-UNF4	UNF 4-48	2,845	56	10	10	3,5	2,7	6	2
23207-UNF5	UNF 5-44	3,175	56	10	10	3,5	2,7	6	2
23207-UNF6	UNF 6-40	3,505	56	12	12	4	3	6	3
23207-UNF8	UNF 8-36	4,166	63	13	13	4,5	3,4	6	3
23207-UNF10	UNF 10-32	4,826	70	16	16	6	4,9	8	3
23207-UNF1/4	UNF 1/4-28	6,35	80	15	25	7	5,5	8	3
23207-UNF5/16	UNF 5/16-24	7,938	90	18	29,5	8	6,2	9	3
23207-UNF3/8	UNF 3/8-24	9,525	100	20	33,5	10	8	11	3

≤ UNF 10: Without reduced neck after the thread

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
23257-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	4
23257-UNF1/2	UNF 1/2-20	12,7	100	23	73	9	7	10	4
23257-UNF5/8	UNF 5/8-18	15,875	100	25	58	12	9	12	4

B 1008 D 1 B 709

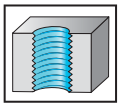
HSS-E-PM machine taps
Prototex® TiNi



– For long-chipping materials

UNF
ASME B1.1

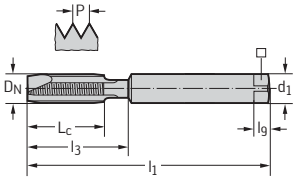
2B



≤ 2×D_N | B=3,5-5 | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

~DIN 2184-1

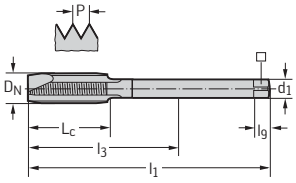


Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
23217-UNF5	UNF 5-44	3,175	56	10	10	3,5	2,7	6	2
23217-UNF6	UNF 6-40	3,505	56	12	12	4	3	6	3
23217-UNF10	UNF 10-32	4,826	70	16	16	6	4,9	8	3
23217-UNF1/4	UNF 1/4-28	6,35	80	15	25	7	5,5	8	3
23217-UNF5/16	UNF 5/16-24	7,938	90	18	29,5	8	6,2	9	3
23217-UNF3/8	UNF 3/8-24	9,525	100	20	33,5	10	8	11	3

≤ UNF 10: Without reduced neck after the thread

B 5

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
23267-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	4
23267-UNF1/2	UNF 1/2-20	12,7	100	23	73	9	7	10	4
23267-UNF5/8	UNF 5/8-18	15,875	100	25	58	12	9	12	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

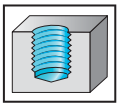
HSS-E-PM machine taps
Paradur® Eco Plus



– For long-chipping materials

UNF
ASME B1.1

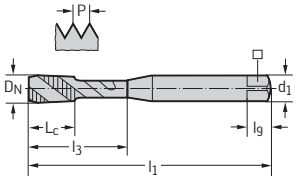
2B



≤ 3×D_N | C=2-3 | 45° | 38HRC 1250 –500 N/mm²

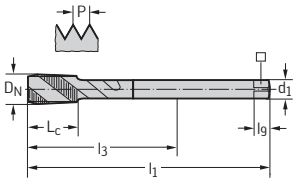
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

~DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2351302-UNF4	UNF 4-48	2,845	56	6	11	3,5	2,7	6	3
EP2351302-UNF6	UNF 6-40	3,505	56	6,5	13,1	4	3	6	3
EP2351302-UNF8	UNF 8-36	4,166	63	7	17,4	4,5	3,4	6	3
EP2351302-UNF10	UNF 10-32	4,826	70	8	20,7	6	4,9	8	3
EP2351302-UNF1/4	UNF 1/4-28	6,35	80	10	25,9	7	5,5	8	3

DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2356302-UNF5/16	UNF 5/16-24	7,938	90	12	67	6	4,9	8	3
EP2356302-UNF3/8	UNF 3/8-24	9,525	100	15	77	7	5,5	8	3
EP2356302-UNF1/2	UNF 1/2-20	12,7	100	13	73	9	7	10	4
EP2356302-UNF5/8	UNF 5/8-18	15,875	100	15	58	12	9	12	4

B 5

B 1008 | D 1 | B 709

HSS-E-PM machine taps
Paradur® Eco Plus

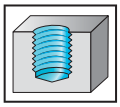


– For long-chipping materials



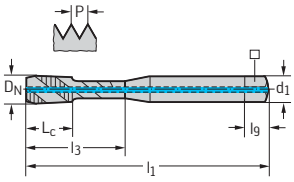
UNF
ASME B1.1

2B



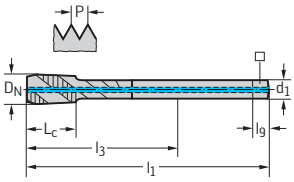
	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

~DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2351312-UNF1/4	UNF 1/4-28	6,35	80	10	25,9	7	5,5	8	3

DIN 2184-1



Designation THL	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2356312-UNF5/16	UNF 5/16-24	7,938	90	12	67	6	4,9	8	3
EP2356312-UNF3/8	UNF 3/8-24	9,525	100	15	77	7	5,5	8	3
EP2356312-UNF1/2	UNF 1/2-20	12,7	100	13	73	9	7	10	4
EP2356312-UNF5/8	UNF 5/8-18	15,875	100	15	58	12	9	12	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

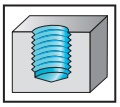
HSS-E machine taps
Paradur® N



– For long-chipping materials

UNF
ASME B1.1

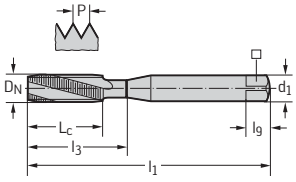
3B



≤ 1,5×D_N | C=2-3 | 15° | 32HRC, 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			

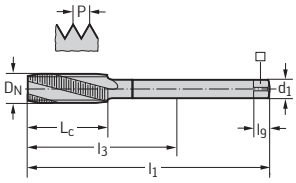
DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
23400-UNF0	UNF 0-80	1,524	40	6	6	2,5	2,1	5	3
23400-UNF4	UNF 4-48	2,845	56	6	18	3,5	2,7	6	3
23400-UNF8	UNF 8-36	4,166	63	7	21	4,5	3,4	6	3
23400-UNF10	UNF 10-32	4,826	70	8	25	6	4,9	8	3
23400-UNF12	UNF 12-28	5,486	80	10	30	6	4,9	8	3
23400-UNF1/4	UNF 1/4-28	6,35	80	10	30	7	5,5	8	3
23400-UNF5/16	UNF 5/16-24	7,938	90	12	35	8	6,2	9	3
23400-UNF3/8	UNF 3/8-24	9,525	100	15	39	10	8	11	3

UNF 0: Without reduced neck after the thread

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
23450-UNF5/16	UNF 5/16-24	7,938	90	13	67	6	4,9	8	3
23450-UNF3/8	UNF 3/8-24	9,525	100	15	77	7	5,5	8	3
23450-UNF7/16	UNF 7/16-20	11,113	100	15	76	8	6,2	9	3
23450-UNF1/2	UNF 1/2-20	12,7	100	13	73	9	7	10	3
23450-UNF9/16	UNF 9/16-18	14,288	100	15	71	11	9	12	4
23450-UNF5/8	UNF 5/8-18	15,875	100	15	58	12	9	12	4
23450-UNF3/4	UNF 3/4-16	19,05	110	17	66	14	11	14	4
23450-UNF7/8	UNF 7/8-14	22,225	125	18	78	18	14,5	17	4

B 1008 | D 1 | B 709

HSS-E machine taps
Paradur® N



– For long-chipping materials



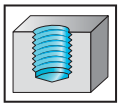






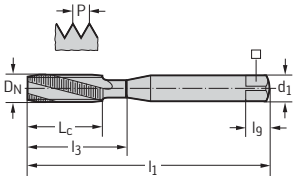
UNF
ASME B1.1

2B



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			

DIN 2184-1

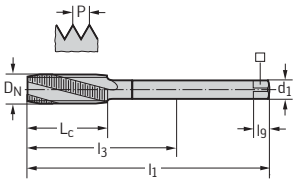


Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
23410-UNF0	UNF 0-80	1,524	40	6	6	2,5	2,1	5	3
23410-UNF1	UNF 1-72	1,854	45	4	9	2,8	2,1	5	3
23410-UNF2	UNF 2-64	2,184	45	4	12	2,8	2,1	5	3
23410-UNF4	UNF 4-48	2,845	56	6	18	3,5	2,7	6	3
23410-UNF6	UNF 6-40	3,505	56	6,5	20	4	3	6	3
23410-UNF8	UNF 8-36	4,166	63	7	21	4,5	3,4	6	3
23410-UNF10	UNF 10-32	4,826	70	8	25	6	4,9	8	3
23410-UNF12	UNF 12-28	5,486	80	10	30	6	4,9	8	3
23410-UNF1/4	UNF 1/4-28	6,35	80	10	30	7	5,5	8	3
23410-UNF5/16	UNF 5/16-24	7,938	90	12	35	8	6,2	9	3
23410-UNF3/8	UNF 3/8-24	9,525	100	15	39	10	8	11	3

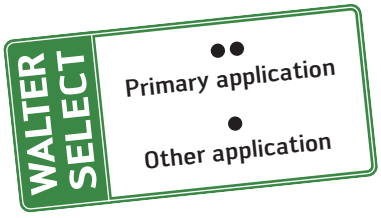
UNF 0: Without reduced neck after the thread

B 5

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
23460-UNF5/16	UNF 5/16-24	7,938	90	13	67	6	4,9	8	3
23460-UNF3/8	UNF 3/8-24	9,525	100	15	77	7	5,5	8	3
23460-UNF7/16	UNF 7/16-20	11,113	100	15	76	8	6,2	9	3
23460-UNF1/2	UNF 1/2-20	12,7	100	13	73	9	7	10	3
23460-UNF9/16	UNF 9/16-18	14,288	100	15	71	11	9	12	4
23460-UNF5/8	UNF 5/8-18	15,875	100	15	58	12	9	12	4
23460-UNF3/4	UNF 3/4-16	19,05	110	17	66	14	11	14	4
23460-UNF7/8	UNF 7/8-14	22,225	125	18	78	18	14,5	17	4



B 1008 D 1 B 709

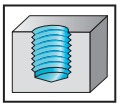
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

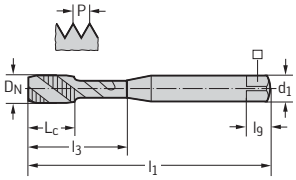
UNF
ASME B1.1

2B



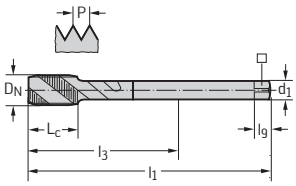
	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 2184-1



Designation TIN	Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	P23519-UNF1	UNF 1-72	1,854	45	4	9	2,8	2,1	5	3
	P23519-UNF2	UNF 2-64	2,184	45	4	12	2,8	2,1	5	3
	P23519-UNF3	UNF 3-56	2,515	50	4	12,5	2,8	2,1	5	3
	P23519-UNF4	UNF 4-48	2,845	56	6	18	3,5	2,7	6	3
	P23519-UNF5	UNF 5-44	3,175	56	6	18	3,5	2,7	6	3
	P23519-UNF6	UNF 6-40	3,505	56	6,5	20	4	3	6	3
	P23519-UNF8	UNF 8-36	4,166	63	7	21	4,5	3,4	6	3
P2351905-UNF10	P23519-UNF10	UNF 10-32	4,826	70	8	25	6	4,9	8	3
	P23519-UNF12	UNF 12-28	5,486	80	10	30	6	4,9	8	3
P2351905-UNF1/4	P23519-UNF1/4	UNF 1/4-28	6,35	80	10	30	7	5,5	8	3

DIN 2184-1



Designation TIN	Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2356905-UNF5/16	P23569-UNF5/16	UNF 5/16-24	7,938	90	12	67	6	4,9	8	3
P2356905-UNF3/8	P23569-UNF3/8	UNF 3/8-24	9,525	100	15	77	7	5,5	8	3
P2356905-UNF7/16	P23569-UNF7/16	UNF 7/16-20	11,113	100	15	76	8	6,2	9	3
P2356905-UNF1/2	P23569-UNF1/2	UNF 1/2-20	12,7	100	13	73	9	7	10	4
P2356905-UNF9/16	P23569-UNF9/16	UNF 9/16-18	14,288	100	15	71	11	9	12	4
P2356905-UNF5/8	P23569-UNF5/8	UNF 5/8-18	15,875	100	15	58	12	9	12	4
P2356905-UNF3/4	P23569-UNF3/4	UNF 3/4-16	19,05	110	17	66	14	11	14	4
P2356905-UNF7/8	P23569-UNF7/8	UNF 7/8-14	22,225	125	18	78	18	14,5	17	4
	P23569-UNF1	UNF 1"-12	25,4	140	20	93	18	14,5	17	5
	P23569-UNF1.1/8	UNF 1.1/8-12	28,575	150	20	85	22	18	21	5
	P23569-UNF1.1/4	UNF 1.1/4-12	31,75	150	20	85	22	18	21	5
	P23569-UNF1.3/8	UNF 1.3/8-12	34,925	170	22	101	28	22	25	5
	P23569-UNF1.1/2	UNF 1.1/2-12	38,1	170	22	101	28	22	25	5

B 1008 D 1 B 709

HSS-E machine taps
Paradur® X·pert M

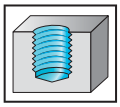


– For long-chipping materials

≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

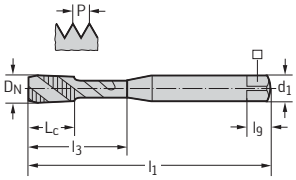
UNF
ASME B1.1

2B



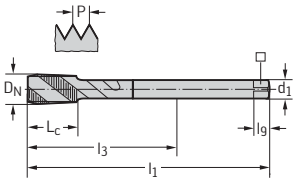
	P	M	K	N	S	H	O
TIN	●	●●					
VAP	●	●●					

DIN 2184-1



Designation TIN	Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2351305-UNF6	M23513-UNF6	UNF 6-40	3,505	56	6,5	20	4	3	6	3
M2351305-UNF8	M23513-UNF8	UNF 8-36	4,166	63	7	21	4,5	3,4	6	3
M2351305-UNF10	M23513-UNF10	UNF 10-32	4,826	70	8	25	6	4,9	8	3
M2351305-UNF12	M23513-UNF12	UNF 12-28	5,486	80	10	30	6	4,9	8	3
M2351305-UNF1/4	M23513-UNF1/4	UNF 1/4-28	6,35	80	10	30	7	5,5	8	3

DIN 2184-1



Designation TIN	Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2356305-UNF5/16	M23563-UNF5/16	UNF 5/16-24	7,938	90	12	67	6	4,9	8	3
M2356305-UNF3/8	M23563-UNF3/8	UNF 3/8-24	9,525	100	15	77	7	5,5	8	3
M2356305-UNF7/16	M23563-UNF7/16	UNF 7/16-20	11,113	100	15	76	8	6,2	9	3
M2356305-UNF1/2	M23563-UNF1/2	UNF 1/2-20	12,7	100	13	73	9	7	10	4
M2356305-UNF9/16	M23563-UNF9/16	UNF 9/16-18	14,288	100	15	71	11	9	12	4
M2356305-UNF5/8	M23563-UNF5/8	UNF 5/8-18	15,875	100	15	58	12	9	12	4
M2356305-UNF3/4	M23563-UNF3/4	UNF 3/4-16	19,05	110	17	66	14	11	14	4
M2356305-UNF7/8	M23563-UNF7/8	UNF 7/8-14	22,225	125	18	78	18	14,5	17	4
M2356305-UNF1	M23563-UNF1	UNF 1“-12	25,4	140	20	93	18	14,5	17	5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

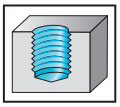
HSS-E-PM machine taps
Paradur® Eco CI



– For short-chipping materials
– Nitrided

UNF
ASME B1.1

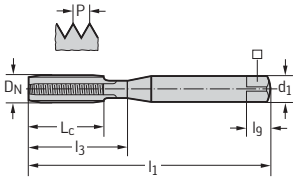
2B



≤ 3×D_N | C=2-3 | 32HRC, 1000 –100 N/mm²

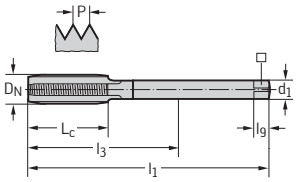
	P	M	K	N	S	H	O
NID			●●	●●			●●

DIN 2184-1



Designation NID	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E23314-UNF6	UNF 6-40	3,505	56	11	20	4	3	6	3
E23314-UNF8	UNF 8-36	4,166	63	12	21	4,5	3,4	6	3
E23314-UNF10	UNF 10-32	4,826	70	13	25	6	4,9	8	4
E23314-UNF1/4	UNF 1/4-28	6,35	80	15	30	7	5,5	8	4

DIN 2184-1



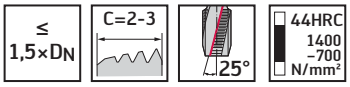
Designation NID	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E23364-UNF5/16	UNF 5/16-24	7,938	90	18	67	6	4,9	8	4
E23364-UNF3/8	UNF 3/8-24	9,525	100	20	77	7	5,5	8	4
E23364-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	4
E23364-UNF1/2	UNF 1/2-20	12,7	100	21	73	9	7	10	4
E23364-UNF9/16	UNF 9/16-18	14,288	100	21	71	11	9	12	4
E23364-UNF5/8	UNF 5/8-18	15,875	100	21	58	12	9	12	4
E23364-UNF3/4	UNF 3/4-16	19,05	110	24	66	14	11	14	4
E23364-UNF7/8	UNF 7/8-14	22,225	125	24	78	18	14,5	17	5

B 1008 | D 1 | B 709

HSS-E-PM machine taps
Paradur® Ni

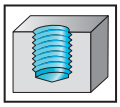


– For long-chipping materials



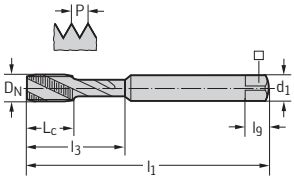
UNF
ASME B1.1

3B



	P	M	K	N	S	H	O
Uncoated	●				●●		

~DIN 2184-1

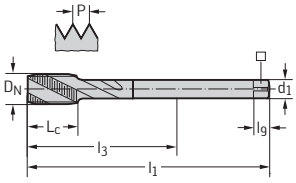


Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234104-UNF6	UNF 6-40	3,505	56	12	12	4	3	6	3
234104-UNF8	UNF 8-36	4,166	63	13	42	4,5	3,4	6	3
234104-UNF10	UNF 10-32	4,826	70	16	16	6	4,9	8	3
234104-UNF12	UNF 12-28	5,486	80	15	23	6	4,9	8	3
234104-UNF1/4	UNF 1/4-28	6,35	80	15	25	7	5,5	8	3
234104-UNF5/16	UNF 5/16-24	7,938	90	18	29,5	8	6,2	9	3
234104-UNF3/8	UNF 3/8-24	9,525	100	20	33,5	10	8	11	4

≤ UNF 10: Without reduced neck after the thread

B 5

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234604-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	4
234604-UNF1/2	UNF 1/2-20	12,7	100	23	73	9	7	10	4
234604-UNF5/8	UNF 5/8-18	15,875	100	25	58	12	9	12	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

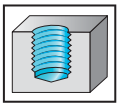
HSS-E-PM machine taps
Paradur® Ti



– For long-chipping materials

UNF
ASME B1.1

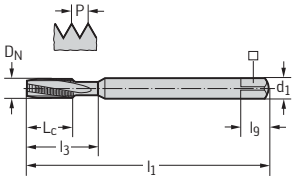
3B



≤ 2×D_N | C=2-3 | 15° | 44HRC | 1400 – 700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

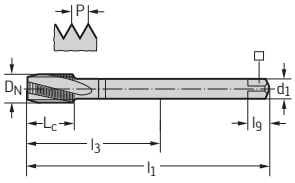
~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234164-UNF10	UNF 10-32	4,826	70	16	16	6	4,9	8	3
234164-UNF1/4	UNF 1/4-28	6,35	80	15	25	7	5,5	8	3
234164-UNF5/16	UNF 5/16-24	7,938	90	18	29,5	8	6,2	9	3
234164-UNF3/8	UNF 3/8-24	9,525	100	20	33,5	10	8	11	3

≤ UNF 10: Without reduced neck after the thread

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234664-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	4
234664-UNF1/2	UNF 1/2-20	12,7	100	23	73	9	7	10	4
234664-UNF5/8	UNF 5/8-18	15,875	100	25	58	12	9	12	4

B 5

B 1008 | D 1 | B 709

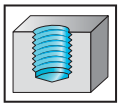
HSS-E-PM machine taps
Paradur® Ti



– For long-chipping materials

UNF
ASME B1.1

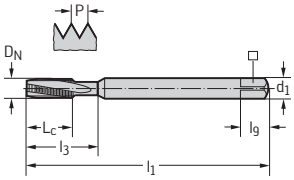
2B



≤ 2×D_N | C=2-3 | 15° | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 2184-1

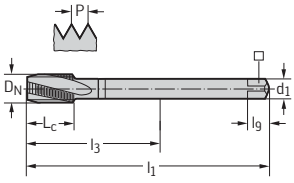


Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
23416-UNF6	UNF 6-40	3,505	56	12	35	4	3	6	3
23416-UNF8	UNF 8-36	4,166	63	13	13	4,5	3,4	6	3
23416-UNF10	UNF 10-32	4,826	70	16	16	6	4,9	8	3
23416-UNF12	UNF 12-28	5,486	80	15	23	6	4,9	8	3
23416-UNF1/4	UNF 1/4-28	6,35	80	15	25	7	5,5	8	3
23416-UNF5/16	UNF 5/16-24	7,938	90	18	29,5	8	6,2	9	3
23416-UNF3/8	UNF 3/8-24	9,525	100	20	33,5	10	8	11	3

≤ UNF 10: Without reduced neck after the thread

B 5

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
23466-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	4
23466-UNF1/2	UNF 1/2-20	12,7	100	23	73	9	7	10	4
23466-UNF5/8	UNF 5/8-18	15,875	100	25	58	12	9	12	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

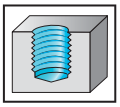
HSS-E-PM machine taps
Paradur® Ni 10



– Rounded thread crest
– For long-chipping and short-chipping materials

MJ
DIN ISO 5855-1

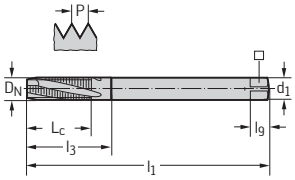
4H



≤ 1,5×D_N | C=2-3 | 10° | 49HRC 1600 –1000 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2041014-MJ3	MJ 3	0,5	56	8	35	3,5	2,7	6	3
2041014-MJ4	MJ 4	0,7	63	10,5	42	4,5	3,4	6	3
2041014-MJ5	MJ 5	0,8	70	13	47	6	4,9	8	3
2041014-MJ6	MJ 6	1	80	15,5	57	6	4,9	8	3

Without reduced neck after the thread

B 5

B 1008 | D 1 | B 709

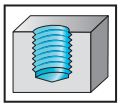
HSS-E-PM machine taps
Paradur® Ti



– Rounded thread crest
– For long-chipping materials

MJ
DIN ISO 5855-1

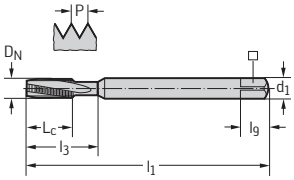
4H



≤ 2×D_N | C=2-3 | 15° | 44HRC, 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
204164-MJ3	MJ 3	0,5	56	10	10	3,5	2,7	6	3
204164-MJ4	MJ 4	0,7	63	13	13	4,5	3,4	6	3
204164-MJ5	MJ 5	0,8	70	16	16	6	4,9	8	3
204164-MJ6	MJ 6	1	80	15	23	6	4,9	8	3
204164-MJ8	MJ 8	1,25	90	18	29,5	8	6,2	9	3
204164-MJ10	MJ 10	1,5	100	20	33,5	10	8	11	3

≤ MJ 5: Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

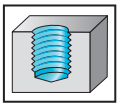
HSS-E-PM machine taps
Paradur® Ni 10



– Rounded thread crest
– For long-chipping and short-chipping materials

UNJC
ASME B1.15

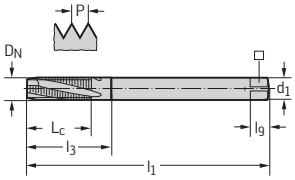
3B



≤ 1,5×D_N | C=2-3 | 10° | 49HRC 1600 –1000 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
224101-UNJC4	UNJC 4-40	2,845	56	8	35	3,5	2,7	6	3
224101-UNJC6	UNJC 6-32	3,505	56	10	35	4	3	6	3
224101-UNJC8	UNJC 8-32	4,166	63	11	42	4,5	3,4	6	3
224101-UNJC10	UNJC 10-24	4,826	70	13,5	47	6	4,9	8	3
224101-UNJC1/4	UNJC 1/4-20	6,35	80	17,5	57	7	5,5	8	3
224101-UNJC5/16	UNJC 5/16-18	7,938	90	21	66	8	6,2	9	3
224101-UNJC3/8	UNJC 3/8-16	9,525	100	25	72	10	8	11	3

≤ UNC 10: Without reduced neck after the thread

B 1008 | D 1 | B 709

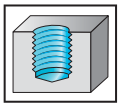
HSS-E-PM machine taps
Paradur® Ni 10



– Rounded thread crest
– For long-chipping and short-chipping materials

UNJF
ASME B1.15

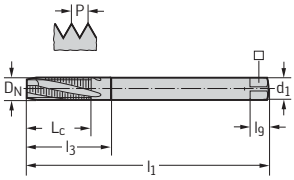
3B



≤ 1,5×D_N | C=2-3 | 10° | 49HRC 1600 –1000 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234101-UNJF6	UNJF 6-40	3,505	56	9,5	35	4	3	6	3
234101-UNJF8	UNJF 8-36	4,166	63	11	42	4,5	3,4	6	3
234101-UNJF10	UNJF 10-32	4,826	70	12,5	47	6	4,9	8	3
234101-UNJF1/4	UNJF 1/4-28	6,35	80	16	57	7	5,5	8	3
234101-UNJF5/16	UNJF 5/16-24	7,938	90	20	66	8	6,2	9	3
234101-UNJF3/8	UNJF 3/8-24	9,525	100	23	72	10	8	11	3

≤ UNJF 10: Without reduced neck after the thread

B 5

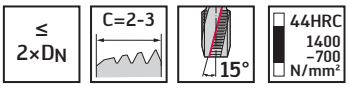
WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E-PM machine taps
Paradur® Ti Plus

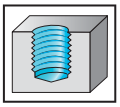


– Rounded thread crest
– For long-chipping materials



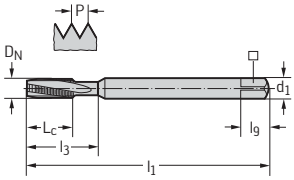
UNJF
ASME B1.15

3B



	P	M	K	N	S	H	O
ACN					●●		

~DIN 2184-1



Designation ACN	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2340663-UNJF10	UNJF 10-32	4,826	70	16	16	6	4,9	8	3
2340663-UNJF1/4	UNJF 1/4-28	6,35	80	15	25	7	5,5	8	3
2340663-UNJF5/16	UNJF 5/16-24	7,938	90	18	29,5	8	6,2	9	3
2340663-UNJF3/8	UNJF 3/8-24	9,525	100	20	33,5	10	8	11	3

UNJF 10: Without reduced neck after the thread

B 5

B 1008 D 1 B 709

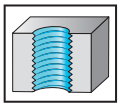
HSS-E-PM machine taps
Prototex® TiNi Plus



– Rounded thread crest
– For long-chipping materials

UNJF
ASME B1.15

3B



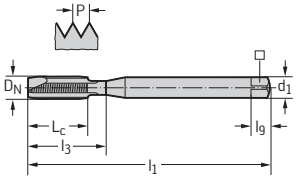
≤ 2×D_N

B=3,5-5

44HRC
1400
–700
N/mm²

	P	M	K	N	S	H	O
ACN					●●		

~DIN 2184-1



Designation ACN	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
2320763-UNJF10	UNJF 10-32	4,826	70	16	16	6	4,9	8	3
2320763-UNJF1/4	UNJF 1/4-28	6,35	80	15	25	7	5,5	8	3
2320763-UNJF5/16	UNJF 5/16-24	7,938	90	18	29,5	8	6,2	9	3
2320763-UNJF3/8	UNJF 3/8-24	9,525	100	20	33,5	10	8	11	3

UNJF 10: Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

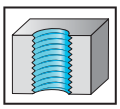
HSS-E-PM machine taps
Prototex® Eco Plus



– For long-chipping materials

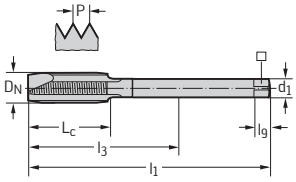
≤ 3,5×D_N | B=3,5-5 | 42HRC 1350 –500 N/mm²

G
DIN EN ISO 228



	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 5156



Designation THL	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2426302-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	3
EP2426302-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	4
EP2426302-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	4
EP2426302-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	4
EP2426302-G5/8	G 5/8-14	22,911	14	125	24	78	18	14,5	17	4
EP2426302-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	19	5
EP2426302-G1	G 1"-11	33,249	11	160	28	93	25	20	23	5

B 5

B 925 | D 1 | B 709

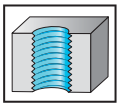
HSS-E machine taps
Prototex® Synchrospeed



– For long-chipping materials
– Only for synchronous machining (rigid tapping)

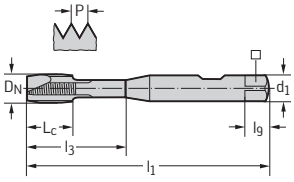
≤ 3×D_N | B=3,5-5 | 44HRC 1400 N/mm²

G
DIN EN ISO 228



	P	M	K	N	S	H	O
THL	●●	●●	●●	●●	●●		●●

~DIN 5156



Designation THL	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_g mm	N
S2426302-G1/8	G 1/8-28	9,728	28	90	9	39	10	8	11	3
S2426302-G1/4	G 1/4-19	13,157	19	100	13	46	14	11	14	3
S2426302-G3/8	G 3/8-19	16,662	19	100	13	62,5	16	12	15	4
S2426302-G1/2	G 1/2-14	20,955	14	125	18	50	20	16	19	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 925 D 1 B 709

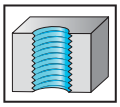
HSS-E machine taps
Prototex® X·pert P



– For long-chipping materials

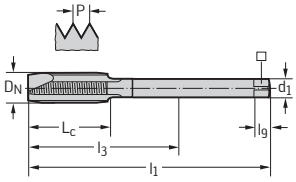
≤ 3×D_N | B=3,5-5 | 32HRC | 1000 –200 N/mm²

G
DIN EN ISO 228



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 5156



Designation TIN	Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	N
P2436005-G1/8	P24360-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	3
P2436005-G1/4	P24360-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	3
P2436005-G3/8	P24360-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	4
P2436005-G1/2	P24360-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	4
	P24360-G5/8	G 5/8-14	22,911	14	125	24	78	18	14,5	4
P2436005-G3/4	P24360-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	4
	P24360-G7/8	G 7/8-14	30,201	14	150	26	85	22	18	4
P2436005-G1	P24360-G1	G 1"-11	33,249	11	160	28	93	25	20	4
	P24360-G1.1/4	G 1.1/4-11	41,91	11	170	28	72	32	24	4
	P24360-G1.1/2	G 1.1/2-11	47,803	11	190	30	87	36	29	5
	P24360-G1.3/4	G 1.3/4-11	53,746	11	190	32	60	40	32	5
	P24360-G2	G 2"-11	59,614	11	220	34	87	45	35	5

l_9 dimension in accordance with DIN 10

B 5

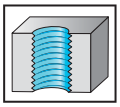
B 925 D 1 B 709

HSS-E machine taps
Prototex® X·pert M



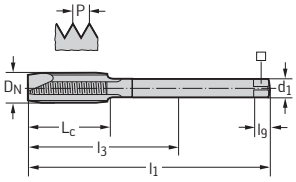
– For long-chipping materials

G
DIN EN ISO 228



	P	M	K	N	S	H	O
TIN	●	●●					
VAP	●	●●					

DIN 5156



Designation TIN	Designation VAP	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2426305-G1/8	M24263-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	3
M2426305-G1/4	M24263-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	4
M2426305-G3/8	M24263-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	4
M2426305-G1/2	M24263-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	4
	M24263-G5/8	G 5/8-14	22,911	14	125	24	78	18	14,5	17	4
M2426305-G3/4	M24263-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	19	4
M2426305-G1	M24263-G1	G 1"-11	33,249	11	160	28	93	25	20	23	5

B 5

WALTER SELECT
●● Primary application
● Other application

B 925 D 1 B 709

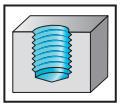
HSS-E taps, short
KMB Ms

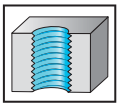


– For short-chipping materials

≤ 3×D_N	F=1-1,5	S (l_1)	25HRC 850 –350 N/mm²

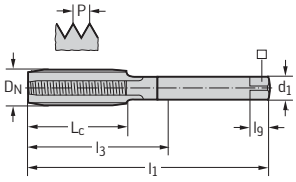
G
DIN EN ISO 228





	P	M	K	N	S	H	O
Uncoated				●●			●

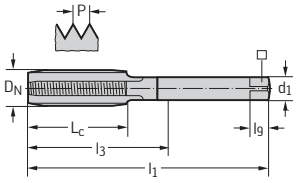
DIN 5157



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
24165-G1/8	G 1/8-28	9,728	28	63	20	40	7	5,5	8	3
24165-G1/4	G 1/4-19	13,157	19	70	20	41	11	9	12	4
24165-G3/8	G 3/8-19	16,662	19	70	20	28	12	9	12	4
24165-G1/2	G 1/2-14	20,955	14	80	22	35	16	12	15	6
24165-G3/4	G 3/4-14	26,441	14	90	22	27	20	16	19	6
24165-G1	G 1"-11	33,249	11	100	25	33	25	20	23	6

Thread machining allowance 0.05 mm

DIN 5157



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
24195-G1/8	G 1/8-28	9,728	28	63	20	40	7	5,5	8	3
24195-G1/4	G 1/4-19	13,157	19	70	20	41	11	9	12	4
24195-G3/8	G 3/8-19	16,662	19	70	20	28	12	9	12	4
24195-G1/2	G 1/2-14	20,955	14	80	22	35	16	12	15	6
24195-G3/4	G 3/4-14	26,441	14	90	22	27	20	16	19	6

Thread machining allowance 0.1 mm

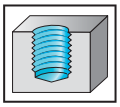
B 925 D 1 B 709

HSS-E-PM machine taps
Paradur® Eco Plus



– For long-chipping materials

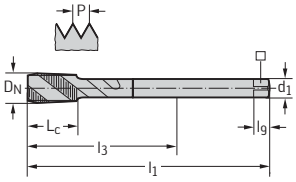
G
DIN EN ISO 228



≤ 3×D_N | C=2-3 | 45° | 38HRC, 1250 –500 N/mm²

	P	M	K	N	S	H	O
THL	●●	●●	●●	●●			

DIN 5156



Designation THL	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2456302-G1/8	G 1/8-28	9,728	28	90	12	67	7	5,5	8	3
EP2456302-G1/4	G 1/4-19	13,157	19	100	15	71	11	9	12	4
EP2456302-G3/8	G 3/8-19	16,662	19	100	15	58	12	9	12	4
EP2456302-G1/2	G 1/2-14	20,955	14	125	18	80	16	12	15	4
EP2456302-G5/8	G 5/8-14	22,911	14	125	18	78	18	14,5	17	4
EP2456302-G1	G 1"-11	33,249	11	160	22	93	25	20	23	5

B 5

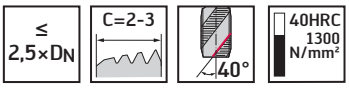
WALTER SELECT
●● Primary application
● Other application

B 925 | D 1 | B 709

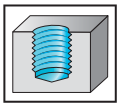
HSS-E machine taps
Paradur® Synchrospeed



– For long-chipping materials
– Only for synchronous machining (rigid tapping)

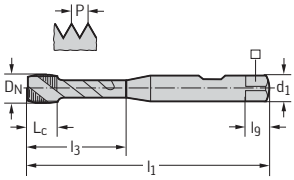


G
DIN EN ISO 228



	P	M	K	N	S	H	O
THL	●●	●●	●●	●	●		●

~DIN 5156



Designation THL	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2456302-G1/8	G 1/8-28	9,728	28	90	9,5	39	10	8	11	3
S2456302-G1/4	G 1/4-19	13,157	19	100	14	46	14	11	14	3
S2456302-G3/8	G 3/8-19	16,662	19	100	14	62,5	16	12	15	4
S2456302-G1/2	G 1/2-14	20,955	14	125	19	50	20	16	19	4

B 925 D 1 B 709

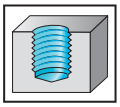
HSS-E machine taps
Paradur® H

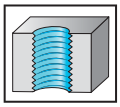


– For long and short-chipping materials

≤ 1,5×D_N	C=2-3	32HRC 1000 –200 N/mm²

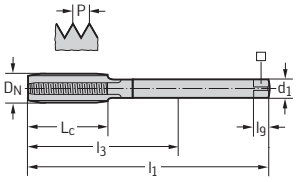
G
DIN EN ISO 228





	P	M	K	N	S	H	O
Uncoated			●	●●			●

DIN 5156



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
24361-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	3
24361-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	4
24361-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	4
24361-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	4
24361-G5/8	G 5/8-14	22,911	14	125	24	78	18	14,5	17	4
24361-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	19	4
24361-G7/8	G 7/8-14	30,201	14	150	26	85	22	18	21	4
24361-G1	G 1"-11	33,249	11	160	28	93	25	20	23	4
24361-G1.1/4	G 1.1/4-11	41,91	11	170	28	72	32	24	27	4
24361-G1.1/2	G 1.1/2-11	47,803	11	190	30	87	36	29	32	6
24361-G2	G 2"-11	59,614	11	220	34	87	45	35	38	6
24361-G2.1/2	G 2.1/2-11	75,184	11	275	38	138	50	39	42	6

B 5

WALTER SELECT
●● Primary application
● Other application

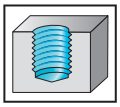
B 925 D 1 B 709

HSS-E machine taps
Paradur® N



– For long-chipping materials

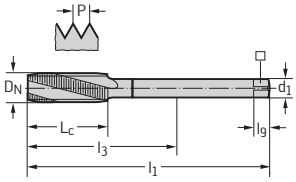
G
DIN EN ISO 228



≤ 1,5×D_N | C=2-3 | 15° | 32HRC, 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			

DIN 5156



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
24460-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	3
24460-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	4
24460-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	4
24460-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	4
24460-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	19	4
24460-G1	G 1"-11	33,249	11	160	28	93	25	20	23	4

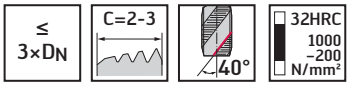
B 5

B 925 | D 1 | B 709

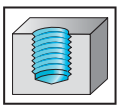
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

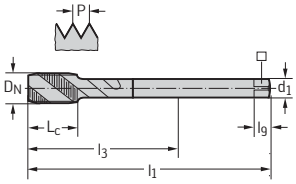


G
DIN EN ISO 228



	P	M	K	N	S	H	O
TIN	●●			●			●
Uncoated	●●			●			●

DIN 5156



Designation TIN	Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P2456905-G1/8	P24569-G1/8	G 1/8-28	9,728	28	90	12	67	7	5,5	8	3
P2456905-G1/4	P24569-G1/4	G 1/4-19	13,157	19	100	15	71	11	9	12	4
P2456905-G3/8	P24569-G3/8	G 3/8-19	16,662	19	100	15	58	12	9	12	4
P2456905-G1/2	P24569-G1/2	G 1/2-14	20,955	14	125	18	80	16	12	15	4
	P24569-G5/8	G 5/8-14	22,911	14	125	18	78	18	14,5	17	4
P2456905-G3/4	P24569-G3/4	G 3/4-14	26,441	14	140	20	77	20	16	19	5
	P24569-G7/8	G 7/8-14	30,201	14	150	20	85	22	18	21	5
P2456905-G1	P24569-G1	G 1"-11	33,249	11	160	22	93	25	20	23	5
	P24569-G1.1/8	G 1.1/8-11	37,897	11	170	22	101	28	22	25	5
	P24569-G1.1/4	G 1.1/4-11	41,91	11	170	22	72	32	24	27	6
	P24569-G1.1/2	G 1.1/2-11	47,803	11	190	24	87	36	29	32	6
	P24569-G1.3/4	G 1.3/4-11	53,746	11	190	26	60	40	32	35	6
	P24569-G2	G 2"-11	59,614	11	220	28	87	45	35	38	6

B 5

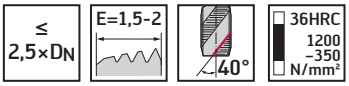
WALTER SELECT
●● Primary application
● Other application

B 925 D 1 B 709

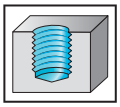
HSS-E machine taps
Paradur® STE



– For long-chipping materials

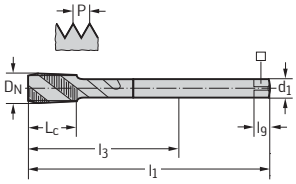


G
DIN EN ISO 228



	P	M	K	N	S	H	O
THL	●	●	●	●			
Uncoated	●	●	●	●			

DIN 5156



Designation THL	Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2456062-G1/8	245606-G1/8	G 1/8-28	9,728	28	90	12	67	7	5,5	8	4
2456062-G1/4	245606-G1/4	G 1/4-19	13,157	19	100	15	71	11	9	12	5
2456062-G3/8	245606-G3/8	G 3/8-19	16,662	19	100	15	58	12	9	12	5
2456062-G1/2	245606-G1/2	G 1/2-14	20,955	14	125	18	80	16	12	15	5

B 5

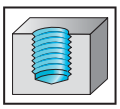
B 925 D 1 B 709

HSS-E machine taps
TC142 Supreme



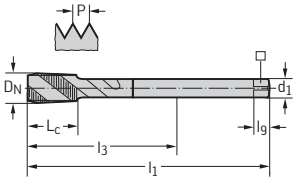
≤ 3×D_N | C=2-3 | 50° | 36HRC 1200 –350 N/mm²

G
DIN EN ISO 228



	P	M	K	N	S	H	O
WY80FC	●	●●					

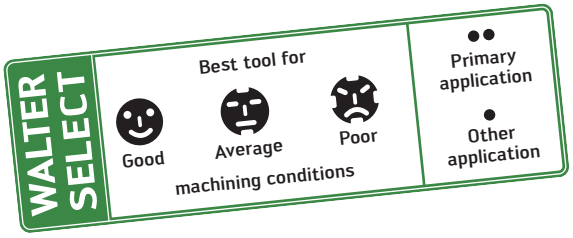
DIN 5156



Designation	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WY80FC
TC142-G1/8-L0-	G 1/8-28	9,728	28	90	12	67	7	5,5	8	3	✱
TC142-G1/4-L0-	G 1/4-19	13,157	19	100	15	71	11	9	12	4	✱

Ordering example for the WY80FC grade: TC142-G1/8-L0-WY80FC

B 5

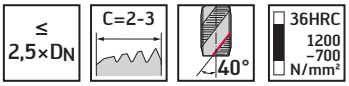


B 925 D 1 B 709

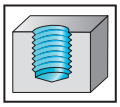
HSS-E machine taps
Paradur® X·pert M



– For long-chipping materials

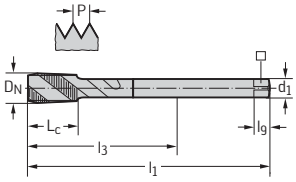


G
DIN EN ISO 228



	P	M	K	N	S	H	O
TIN	●	●●					
VAP	●	●●					

DIN 5156



Designation TIN	Designation VAP	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M2456305-G1/8	M24563-G1/8	G 1/8-28	9,728	28	90	12	67	7	5,5	8	3
M2456305-G1/4	M24563-G1/4	G 1/4-19	13,157	19	100	15	71	11	9	12	4
M2456305-G3/8	M24563-G3/8	G 3/8-19	16,662	19	100	15	58	12	9	12	4
M2456305-G1/2	M24563-G1/2	G 1/2-14	20,955	14	125	18	80	16	12	15	4
	M24563-G5/8	G 5/8-14	22,911	14	125	18	78	18	14,5	17	4
M2456305-G3/4	M24563-G3/4	G 3/4-14	26,441	14	140	20	77	20	16	19	5
	M24563-G7/8	G 7/8-14	30,201	14	150	20	85	22	18	21	5
M2456305-G1	M24563-G1	G 1"-11	33,249	11	160	22	93	25	20	23	5

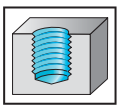
B 925 D 1 B 709

HSS-E machine taps
Paradur Inox® 25



– For long-chipping materials

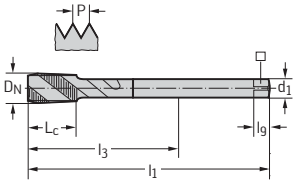
G
DIN EN ISO 228



≤ 1,5×D_N | E=1,5-2 | 25° | 36HRC, 1200 –350 N/mm²

	P	M	K	N	S	H	O
TIN	●●	●●					

DIN 5156



Designation TIN	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
2456315-G1/4	G 1/4-19	13,157	19	100	18	71	11	9	12	5
2456315-G3/8	G 3/8-19	16,662	19	100	22	58	12	9	12	5
2456315-G1/2	G 1/2-14	20,955	14	125	25	80	16	12	15	6
2456315-G3/4	G 3/4-14	26,441	14	140	28	77	20	16	19	6

B 5

WALTER SELECT
●● Primary application
● Other application

B 925 | D 1 | B 709

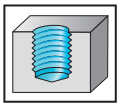
HSS-E-PM machine taps
Paradur® Eco CI

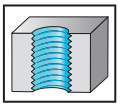


– For short-chipping materials
– Nitrided

≤ 3×D_N | C=2-3 | 32HRC, 1000 –100 N/mm²

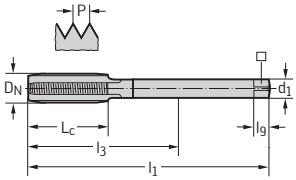
G
DIN EN ISO 228





	P	M	K	N	S	H	O
TICN			●●	●●			●●
NID			●●	●●			●●

DIN 5156



Designation TICN	Designation NID	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2436406-G1/8	E24364-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	4
E2436406-G1/4	E24364-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	4
E2436406-G3/8	E24364-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	5
E2436406-G1/2	E24364-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	5
E2436406-G3/4	E24364-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	19	6
E2436406-G1	E24364-G1	G 1“-11	33,249	11	160	28	93	25	20	23	6
E2436406-G1.1/4	E24364-G1.1/4	G 1.1/4-11	41,91	11	170	28	72	32	24	27	6
E2436406-G1.1/2	E24364-G1.1/2	G 1.1/2-11	47,803	11	190	30	87	36	29	32	6

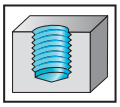
B 925 | D 1 | B 709

HSS-E machine taps
Paradur® X·pert N



– For long-chipping materials

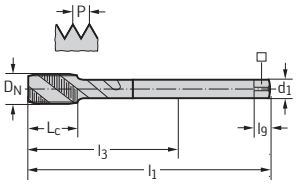
G
DIN EN ISO 228



≤ 3×D_N | C=2-3 | 35° | 14HRC 700 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 5156



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N24566-G1/8	G 1/8-28	9,728	28	90	12	67	7	5,5	8	3

B 5

WALTER SELECT
●● Primary application
● Other application

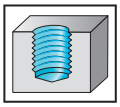
B 925 | D 1 | B 709

HSS-E machine taps
Paradur® Uni



– For long-chipping materials

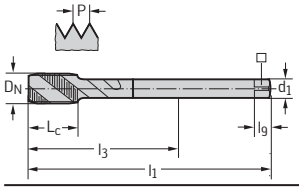
G
DIN EN ISO 228



≤ 3×D_N | C=2-3 | 40° | 32HRC, 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●		●	●			

DIN 5156



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
7456770-G1/8	G 1/8-28	9,728	28	90	12	67	7	5,5	8	3
7456770-G1/4	G 1/4-19	13,157	19	100	15	71	11	9	12	4
7456770-G3/8	G 3/8-19	16,662	19	100	15	58	12	9	12	4
7456770-G1/2	G 1/2-14	20,955	14	125	18	80	16	12	15	4
7456770-G5/8	G 5/8-14	22,911	14	125	18	78	18	14,5	17	5
7456770-G3/4	G 3/4-14	26,441	14	140	20	77	20	16	19	5
7456770-G1	G 1"-11	33,249	11	160	22	93	25	20	23	5

B 925 | D 1 | B 709

HSS-E machine taps
Paradur® H

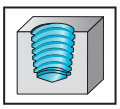


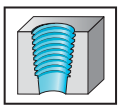
– For long and short-chipping materials





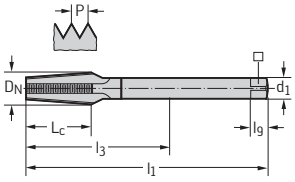
Rc
DIN EN 10226-2





	P	M	K	N	S	H	O
Uncoated			●	●●			●

PROTOTYP TOOLS STANDARD



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
24167-RC1/8	Rc 1/8-28	9,728	28	90	13	67	7	5,5	6	4
24167-RC1/4	Rc 1/4-19	13,157	19	100	20	71	11	9	9	4
24167-RC3/8	Rc 3/8-19	16,662	19	110	20	68	12	9	9	4
24167-RC1/2	Rc 1/2-14	20,955	14	125	26	80	16	12	12	5
24167-RC3/4	Rc 3/4-14	26,441	14	140	26	77	20	16	16	5
24167-RC1	Rc 1"-11	33,249	11	150	32	83	25	20	20	5
24167-RC1.1/4	Rc 1.1/4-11	41,91	11	160	32	62	32	24	24	6
24167-RC1.1/2	Rc 1.1/2-11	47,803	11	180	32	77	36	29	29	6

Taper ratio 1:16

B 5

WALTER SELECT
●● Primary application
● Other application

B 925 D 1 B 709

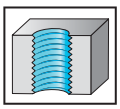
HSS-E machine taps
Paradur® H



– For long and short-chipping materials

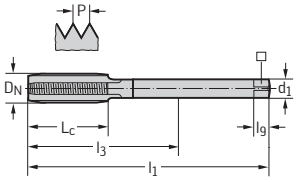
≤ 1,5×D_N | C=2-3 | 32HRC 1000 –200 N/mm²

Rp
DIN EN 10226-1



	P	M	K	N	S	H	O
Uncoated			●	●●			●

DIN 5156



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
243612-RP1/8	Rp 1/8-28	9,728	28	90	20	67	7	5,5	8	3
243612-RP1/4	Rp 1/4-19	13,157	19	100	21	71	11	9	12	4
243612-RP3/8	Rp 3/8-19	16,662	19	100	21	58	12	9	12	4
243612-RP1/2	Rp 1/2-14	20,955	14	125	24	80	16	12	15	4
243612-RP3/4	Rp 3/4-14	26,441	14	140	26	77	20	16	19	4
243612-RP1	Rp 1"-11	33,249	11	160	28	93	25	20	23	4
243612-RP1.1/2	Rp 1.1/2-11	47,803	11	190	30	87	36	29	32	6

B 5

B 925 D 1 B 709

HSS-E machine taps
Paradur® H

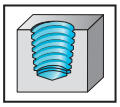


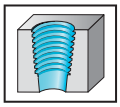
– For long-chipping and short-chipping materials





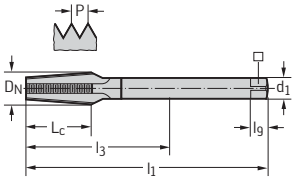
NPT
ASME B1.20.1





	P	M	K	N	S	H	O
Uncoated			●	●●			●

PROTOTYP TOOLS STANDARD



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
25167-NPT1/16	NPT 1/16-27	7,717	27	80	14	56	8	6,2	6	3
25167-NPT1/8	NPT 1/8-27	10,065	27	90	14	61	11	9	9	3
25167-NPT1/4	NPT 1/4-18	13,372	18	100	20	56	14	11	11	3
25167-NPT3/8	NPT 3/8-18	16,812	18	110	20	65	16	12	12	4
25167-NPT1/2	NPT 1/2-14	20,947	14	125	26	78	18	14,5	15	4
25167-NPT3/4	NPT 3/4-14	26,292	14	140	26	75	22	18	18	5
25167-NPT1	NPT 1"-11.5	32,914	12	150	31	81	28	22	22	5
25167-NPT1.1/4	NPT 1.1/4-11.5	41,67	12	160	31	62	32	24	24	5
25167-NPT1.1/2	NPT 1.1/2-11.5	47,74	12	160	31	57	36	29	29	6
25167-NPT2	NPT 2"-11.5	59,778	12	180	31	47	45	35	35	7

Taper ratio 1:16

B 5

B 1008 D 1 B 709

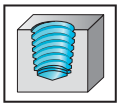
HSS-E machine taps
Paradur® N

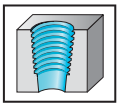


– For long-chipping materials



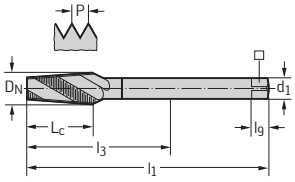
NPT
ASME B1.20.1





	P	M	K	N	S	H	O
VAP	●●		●●	●●			

PROTOTYP TOOLS STANDARD



Designation VAP	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
25460-NPT1/16	NPT 1/16-27	7,717	27	80	14	56	8	6,2	6	3
25460-NPT1/8	NPT 1/8-27	10,065	27	90	14	61	11	9	9	3
25460-NPT1/4	NPT 1/4-18	13,372	18	100	20	56	14	11	11	3
25460-NPT3/8	NPT 3/8-18	16,812	18	110	20	65	16	12	12	4
25460-NPT1/2	NPT 1/2-14	20,947	14	125	26	78	18	14,5	15	4
25460-NPT3/4	NPT 3/4-14	26,292	14	140	26	75	22	18	18	5
25460-NPT1	NPT 1"-11.5	32,914	12	150	31	81	28	22	22	5

Taper ratio 1:16

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

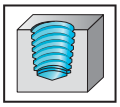
HSS-E machine taps
Paradur Inox®

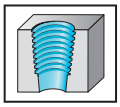


– For long-chipping materials



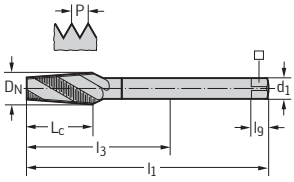
NPT
ASME B1.20.1





	P	M	K	N	S	H	O
THL	●●	●●	●				
VAP	●●	●●	●				

PROTOTYP TOOLS STANDARD



Designation THL	Designation VAP	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	25567-NPT1/16	NPT 1/16-27	7,717	27	80	14	56	8	6,2	6	3
2556702-NPT1/8	25567-NPT1/8	NPT 1/8-27	10,065	27	90	14	61	11	9	9	4
2556702-NPT1/4	25567-NPT1/4	NPT 1/4-18	13,372	18	100	20	56	14	11	11	4
2556702-NPT3/8	25567-NPT3/8	NPT 3/8-18	16,812	18	110	20	65	16	12	12	5
2556702-NPT1/2	25567-NPT1/2	NPT 1/2-14	20,947	14	125	26	78	18	14,5	15	5
	25567-NPT3/4	NPT 3/4-14	26,292	14	140	26	75	22	18	18	5
	25567-NPT1	NPT 1"-11.5	32,914	12	150	31	81	28	22	22	5

Taper ratio 1:16

B 5

B 1008 D 1 B 709

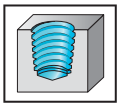
HSS-E machine taps
Paradur Inox® 40

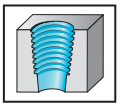


– For long-chipping materials



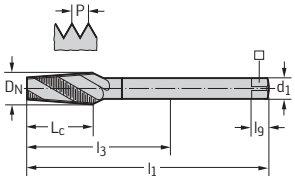
NPT
ASME B1.20.1





	P	M	K	N	S	H	O
Uncoated	●●	●●	●	●			

PROTOTYP TOOLS STANDARD



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
255630-NPT1/8	NPT 1/8-27	10,065	27	90	14	61	11	9	9	3
255630-NPT1/4	NPT 1/4-18	13,372	18	100	20	56	14	11	11	3
255630-NPT3/8	NPT 3/8-18	16,812	18	110	20	65	16	12	12	4
255630-NPT1/2	NPT 1/2-14	20,947	14	125	26	78	18	14,5	15	4

Taper ratio 1:16

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

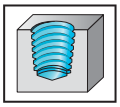
HSS-E machine taps
Paradur® Ni

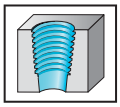


– For long-chipping materials



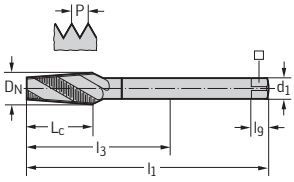
NPT
ASME B1.20.1





	P	M	K	N	S	H	O
Uncoated	●				●●		

PROTOTYP TOOLS STANDARD



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
25467-NPT1/16	NPT 1/16-27	7,717	27	80	14	56	8	6,2	6	3
25467-NPT1/8	NPT 1/8-27	10,065	27	90	14	61	11	9	9	4
25467-NPT1/4	NPT 1/4-18	13,372	18	100	20	56	14	11	11	4
25467-NPT3/8	NPT 3/8-18	16,812	18	110	20	65	16	12	12	5
25467-NPT1/2	NPT 1/2-14	20,947	14	125	26	78	18	14,5	15	5
25467-NPT3/4	NPT 3/4-14	26,292	14	140	26	75	22	18	18	5
25467-NPT1	NPT 1"-11.5	32,914	12	150	31	81	28	22	22	5

Taper ratio 1:16

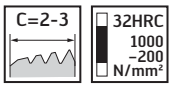
B 5

B 1008 D 1 B 709

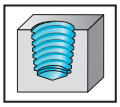
HSS-E machine taps
Paradur® H

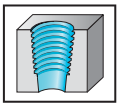


– For long-chipping and short-chipping materials



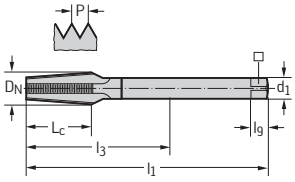
NPTF
ASME B1.20.3





	P	M	K	N	S	H	O
Uncoated			●	●●			●

PROTOTYP TOOLS STANDARD



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
26167-NPTF1/16	NPTF 1/16-27	7,635	27	80	14	56	8	6,2	6	3
26167-NPTF1/8	NPTF 1/8-27	9,982	27	90	14	61	11	9	9	3
26167-NPTF1/4	NPTF 1/4-18	13,313	18	100	20	56	14	11	11	3
26167-NPTF3/8	NPTF 3/8-18	16,752	18	110	20	65	16	12	12	4
26167-NPTF1/2	NPTF 1/2-14	20,921	14	125	26	78	18	14,5	15	4
26167-NPTF3/4	NPTF 3/4-14	26,267	14	140	26	75	22	18	18	5
26167-NPTF1	NPTF 1"-11.5	32,839	12	150	31	81	28	22	22	5

Taper ratio 1:16

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

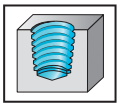
HSS-E machine taps
Paradur® N

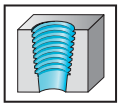


– For long-chipping materials



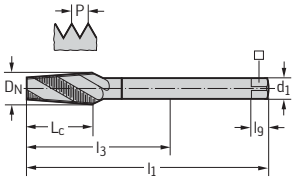
NPTF
ASME B1.20.3





	P	M	K	N	S	H	O
VAP	●●		●●	●●			

PROTOTYP TOOLS STANDARD



Designation VAP	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
26460-NPTF1/16	NPTF 1/16-27	7,635	27	80	14	56	8	6,2	6	3
26460-NPTF1/8	NPTF 1/8-27	9,982	27	90	14	61	11	9	9	3
26460-NPTF1/4	NPTF 1/4-18	13,313	18	100	20	56	14	11	11	3
26460-NPTF3/8	NPTF 3/8-18	16,752	18	110	20	65	16	12	12	4
26460-NPTF1/2	NPTF 1/2-14	20,921	14	125	26	78	18	14,5	15	4
26460-NPTF3/4	NPTF 3/4-14	26,267	14	140	26	75	22	18	18	5

Taper ratio 1:16

B 5

B 1008 D 1 B 709

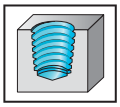
HSS-E machine taps
Paradur Inox®

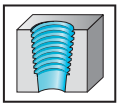


– For long-chipping materials



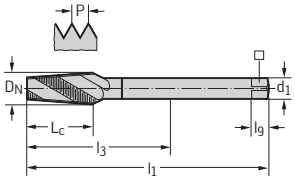
NPTF
ASME B1.20.3





	P	M	K	N	S	H	O
VAP	●●	●●	●				

PROTOTYP TOOLS STANDARD



Designation VAP	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
26567-NPTF1/16	NPTF 1/16-27	7,635	27	80	14	56	8	6,2	6	3
26567-NPTF1/8	NPTF 1/8-27	9,982	27	90	14	61	11	9	9	4
26567-NPTF1/4	NPTF 1/4-18	13,313	18	100	20	56	14	11	11	4
26567-NPTF1/2	NPTF 1/2-14	20,921	14	125	26	78	18	14,5	15	5

Taper ratio 1:16

B 5

WALTER SELECT
●● Primary application
● Other application

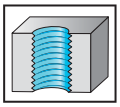
B 1008 D 1 B 709

HSS-E taps, short
KMB H



– For long-chipping materials

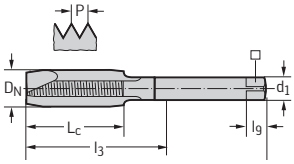
Pg
DIN 40430



≤ 3×D_N | B=3,5-5 | S (l_1) | 32HRC, 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●

DIN 40 432



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
27160-PG7	Pg 7-20	12,5	20	70	20	43	9	7	10	4
27160-PG9	Pg 9-18	15,2	18	70	20	28	12	9	12	4
27160-PG11	Pg 11-18	18,6	18	80	22	36	14	11	14	4
27160-PG13.5	Pg 13.5-18	20,4	18	80	22	35	16	12	15	4
27160-PG16	Pg 16-18	22,5	18	80	22	33	18	14,5	17	4
27160-PG21	Pg 21-16	28,3	16	90	22	25	22	18	21	4

B 5

B 1008 | D 1 | B 709

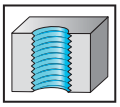
HSS-E machine taps
Prototex® X·pert P



– For long-chipping materials

BSW
BS 84

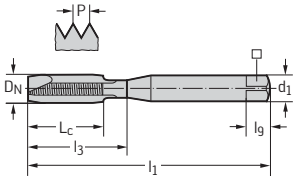
mc



≤ 3×D_N | B=3,5-5 | 32HRC, 1000 –200 N/mm²

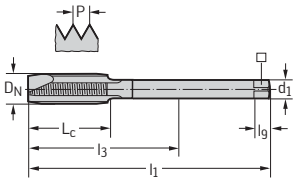
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P28210-BSW1/8	BSW 1/8-40	3,175	40	56	10	18	3,5	2,7	6	2
P28210-BSW3/16	BSW 3/16-24	4,763	24	70	13	25	6	4,9	8	2
P28210-BSW1/4	BSW 1/4-20	6,35	20	80	15	30	7	5,5	8	3
P28210-BSW5/16	BSW 5/16-18	7,938	18	90	18	35	8	6,2	9	3
P28210-BSW3/8	BSW 3/8-16	9,525	16	100	20	39	10	8	11	3

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P28360-BSW7/16	BSW 7/16-14	11,113	14	100	20	76	8	6,2	9	3
P28360-BSW1/2	BSW 1/2-12	12,7	12	110	23	83	9	7	10	3
P28360-BSW5/8	BSW 5/8-11	15,875	11	110	25	68	12	9	12	3
P28360-BSW3/4	BSW 3/4-10	19,05	10	125	30	81	14	11	14	4
P28360-BSW7/8	BSW 7/8-9	22,225	9	140	30	93	18	14,5	17	4
P28360-BSW1	BSW 1"-8	25,4	8	160	36	113	18	14,5	17	4

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

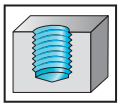
HSS-E machine taps
Paradur® X·pert P



– For long-chipping materials

BSW
BS 84

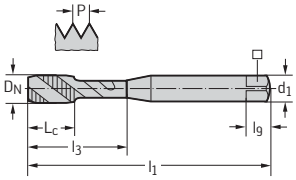
mc



≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

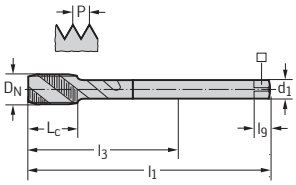
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P28519-BSW1/8	BSW 1/8-40	3,175	40	56	6	18	3,5	2,7	6	3
P28519-BSW3/16	BSW 3/16-24	4,763	24	70	8	25	6	4,9	8	3
P28519-BSW1/4	BSW 1/4-20	6,35	20	80	10	30	7	5,5	8	3
P28519-BSW5/16	BSW 5/16-18	7,938	18	90	12	35	8	6,2	9	3
P28519-BSW3/8	BSW 3/8-16	9,525	16	100	15	39	10	8	11	3

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P28569-BSW7/16	BSW 7/16-14	11,113	14	100	15	76	8	6,2	9	3
P28569-BSW1/2	BSW 1/2-12	12,7	12	110	18	83	9	7	10	3
P28569-BSW5/8	BSW 5/8-11	15,875	11	110	20	68	12	9	12	4
P28569-BSW3/4	BSW 3/4-10	19,05	10	125	25	81	14	11	14	4
P28569-BSW7/8	BSW 7/8-9	22,225	9	140	25	93	18	14,5	17	4
P28569-BSW1	BSW 1"-8	25,4	8	160	30	113	18	14,5	17	4

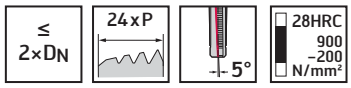
B 5

B 1008 | D 1 | B 709

HSS-E trapezoidal taps
TMB

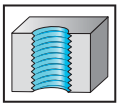


– Left-hand helix
– For long-chipping and short-chipping materials



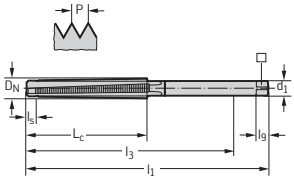
Tr
DIN 103

7H



	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●

PROTOTYP TOOLS STANDARD



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
29100-TR8X1.5	Tr 8x1.5	1,5	90	45	67	6	4,9	8	3
29100-TR10X2	Tr 10x2	2	135	60	112	7	5,5	8	3
29100-TR10X3	Tr 10x3	3	145	90	122	7	5,5	8	3
29100-TR12X3	Tr 12x3	3	175	90	151	8	6,2	9	3
29100-TR14X3	Tr 14x3	3	180	90	152	10	8	11	3
29100-TR14X4	Tr 14x4	4	215	120	187	10	8	11	3
29100-TR16X4	Tr 16x4	4	220	120	191	11	9	12	3
29100-TR18X4	Tr 18x4	4	225	120	183	12	9	12	3
29100-TR20X4	Tr 20x4	4	230	120	186	14	11	14	3
29100-TR22X5	Tr 22x5	5	265	150	220	16	12	15	3
29100-TR24X5	Tr 24x5	5	275	150	228	18	14,5	17	3
29100-TR26X5	Tr 26x5	5	295	150	232	20	16	19	3
29100-TR28X5	Tr 28x5	5	285	150	220	22	18	21	3

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E trapezoidal taps
TMB



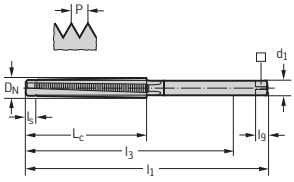
– Right-hand helix
– For long-chipping and short-chipping materials

Tr	7H	
DIN 103		

≤ 2×D_N | 24×P | LH | 5° | 28HRC 900 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●		●●	●●			●

PROTOTYP TOOLS STANDARD



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
29900-TR10X2	Tr 10x2 - LH	2	135	60	112	7	5,5	8	3
29900-TR12X3	Tr 12x3 - LH	3	175	90	151	8	6,2	9	3
29900-TR14X4	Tr 14x4 - LH	4	215	120	187	10	8	11	3
29900-TR16X4	Tr 16x4 - LH	4	220	120	191	11	9	12	3
29900-TR18X4	Tr 18x4 - LH	4	225	120	183	12	9	12	3
29900-TR20X4	Tr 20x4 - LH	4	230	120	186	14	11	14	3
29900-TR22X5	Tr 22x5 - LH	5	265	150	220	16	12	15	3
29900-TR24X5	Tr 24x5 - LH	5	275	150	228	18	14,5	17	3
29900-TR26X5	Tr 26x5 - LH	5	295	150	232	20	16	19	3

B 5

B 1008 D 1 B 709

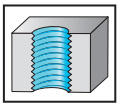
HSS-E machine taps – Insert
Prototex® X·pert P



– For long-chipping materials

EgM
DIN 8140

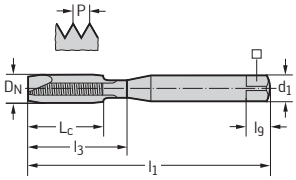
6H mod



≤ 3×D_N | B=3,5-5 | 32HRC 1000 –200 N/mm²

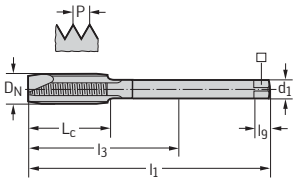
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 40 435



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P203009-EGM2.5	EGM 2.5	0,45	56	9	18	3,5	2,7	6	3
P203009-EGM3	EGM 3	0,5	63	12	21	4,5	3,4	6	3
P203009-EGM4	EGM 4	0,7	70	13	25	6	4,9	8	3
P203009-EGM5	EGM 5	0,8	80	15	30	6	4,9	8	3
P203009-EGM6	EGM 6	1	90	18	35	8	6,2	9	3
P203009-EGM8	EGM 8	1,25	100	20	39	10	8	11	3

DIN 40 435



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P203509-EGM10	EGM 10	1,5	100	21	73	9	7	10	3
P203509-EGM12	EGM 12	1,75	110	25	81	11	9	12	3
P203509-EGM16	EGM 16	2	125	30	81	14	11	14	4

B 5

B 1008 D 1 B 709

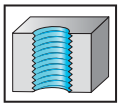
HSS-E machine taps – Insert
Prototex® X·pert M



– For long-chipping materials

EgM
DIN 8140

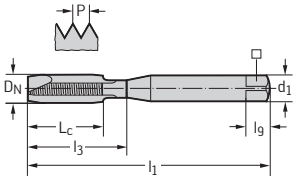
6H mod



≤ 3×D_N | B=3,5-5 | 36HRC 1200 –700 N/mm²

	P	M	K	N	S	H	O
VAP	●	●●					

DIN 40 435



Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M203009-EGM2.5	EGM 2.5	0,45	56	9	18	3,5	2,7	6	2
M203009-EGM3	EGM 3	0,5	63	12	21	4,5	3,4	6	2
M203009-EGM4	EGM 4	0,7	70	13	25	6	4,9	8	3
M203009-EGM5	EGM 5	0,8	80	15	30	6	4,9	8	3
M203009-EGM6	EGM 6	1	90	18	35	8	6,2	9	3
M203009-EGM8	EGM 8	1,25	100	20	39	10	8	11	3

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E-PM machine taps – Insert
Prototex® TiNi

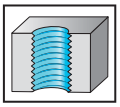


– For long-chipping materials

≤ 2×D_N | B=3,5-5 | 44HRC 1400 –700 N/mm²

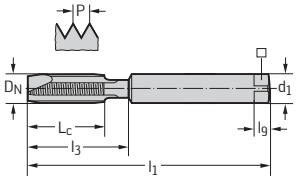
EgM
LN 9499

4H



	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

~DIN 40 435



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
20207-EGM4	EGM 4	0,7	70	16	16	6	4,9	8	3
20207-EGM5	EGM 5	0,8	80	15	23	6	4,9	8	3
20207-EGM6	EGM 6	1	90	18	29	8	6,2	9	3
20207-EGM8	EGM 8	1,25	100	20	33	10	8	11	3

EGM 4: Without reduced neck after the thread

B 5

B 1008 D 1 B 709

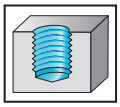
HSS-E machine taps – Insert
Paradur® X·pert P



– For long-chipping materials

EgM
DIN 8140

6H mod

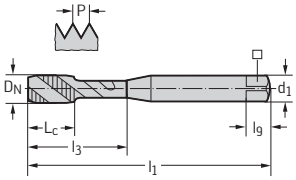


≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●			●

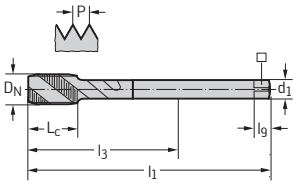
DIN 40 435

Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P205099-EGM2.5	EGM 2.5	0,45	56	6	18	3,5	2,7	6	3
P205099-EGM3	EGM 3	0,5	63	7	21	4,5	3,4	6	3
P205099-EGM4	EGM 4	0,7	70	8	25	6	4,9	8	3
P205099-EGM5	EGM 5	0,8	80	10	30	6	4,9	8	3
P205099-EGM6	EGM 6	1	90	12	35	8	6,2	9	3
P205099-EGM8	EGM 8	1,25	100	15	39	10	8	11	3



DIN 40 435

Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P205599-EGM10	EGM 10	1,5	100	13	73	9	7	10	4
P205599-EGM12	EGM 12	1,75	110	20	81	11	9	12	4
P205599-EGM14	EGM 14	2	110	20	68	12	9	12	4
P205599-EGM16	EGM 16	2	125	25	81	14	11	14	4
P205599-EGM20	EGM 20	2,5	160	25	113	18	14,5	17	4
P205599-EGM24	EGM 24	3	160	30	97	20	16	19	4



WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

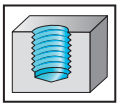
HSS-E machine taps – Insert
Paradur® X·pert M



– For long-chipping materials

EgM
DIN 8140

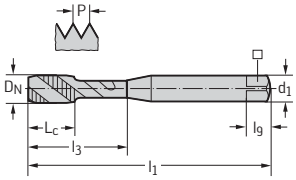
6H mod



≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

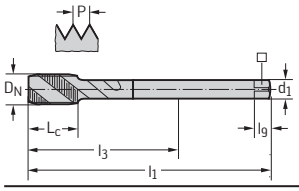
	P	M	K	N	S	H	O
VAP	●	●●					

DIN 40 435



Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M205049-EGM2.5	EGM 2.5	0,45	56	6	18	3,5	2,7	6	3
M205049-EGM3	EGM 3	0,5	63	7	21	4,5	3,4	6	3
M205049-EGM4	EGM 4	0,7	70	8	25	6	4,9	8	3
M205049-EGM5	EGM 5	0,8	80	10	30	6	4,9	8	3
M205049-EGM6	EGM 6	1	90	12	35	8	6,2	9	3
M205049-EGM8	EGM 8	1,25	100	15	39	10	8	11	3

DIN 40 435



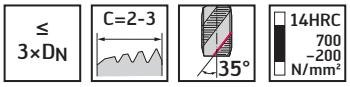
Designation VAP	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M205549-EGM10	EGM 10	1,5	100	13	73	9	7	10	4
M205549-EGM12	EGM 12	1,75	110	20	81	11	9	12	4
M205549-EGM14	EGM 14	2	110	20	68	12	9	12	4
M205549-EGM16	EGM 16	2	125	25	81	14	11	14	4

B 1008 D 1 B 709

HSS-E machine taps – Insert
Paradur® X·pert N

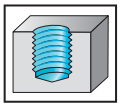


– For long-chipping materials



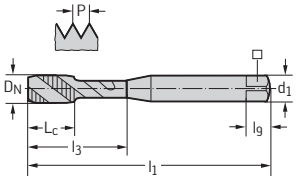
EgM
DIN 8140

6H mod



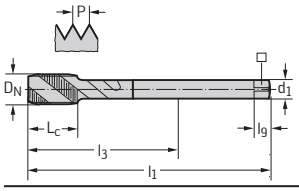
	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 40 435



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N205069-EGM2.5	EGM 2.5	0,45	56	6	18	3,5	2,7	6	2
N205069-EGM3	EGM 3	0,5	63	7	21	4,5	3,4	6	2
N205069-EGM4	EGM 4	0,7	70	8	25	6	4,9	8	2
N205069-EGM5	EGM 5	0,8	80	10	30	6	4,9	8	3
N205069-EGM6	EGM 6	1	90	12	35	8	6,2	9	3
N205069-EGM8	EGM 8	1,25	100	15	39	10	8	11	3

DIN 40 435



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N205569-EGM10	EGM 10	1,5	100	13	73	9	7	10	3
N205569-EGM12	EGM 12	1,75	110	20	81	11	9	12	3
N205569-EGM16	EGM 16	2	125	25	81	14	11	14	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

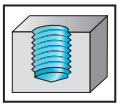
HSS-E-PM machine taps – Insert
Paradur® Ni



– For long-chipping materials

EgM
LN 9499

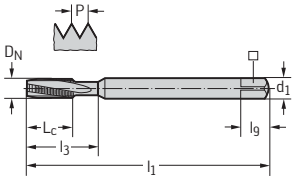
4H



≤ 1,5×D_N | C=2-3 | 25° | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●		●●	●	●		

~DIN 40 435



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
204089-EGM4	EGM 4	0,7	70	16	16	6	4,9	8	3
204089-EGM5	EGM 5	0,8	80	15	23	6	4,9	8	3
204089-EGM6	EGM 6	1	90	18	29	8	6,2	9	3
204089-EGM8	EGM 8	1,25	100	20	33,5	10	8	11	4

EGM 4: Without reduced neck after the thread

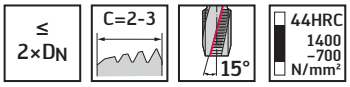
B 5

B 1008 D 1 B 709

HSS-E-PM machine taps – Insert
Paradur® Ti

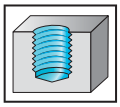


– For long-chipping materials



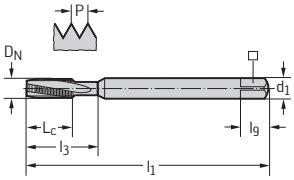
EgM
LN 9499

4H



	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 40 435



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
204069-EGM4	EGM 4	0,7	70	16	16	6	4,9	8	3
204069-EGM5	EGM 5	0,8	80	15	23	6	4,9	8	3
204069-EGM6	EGM 6	1	90	18	29	8	6,2	9	3
204069-EGM8	EGM 8	1,25	100	20	33,5	10	8	11	3

EGM 4: Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

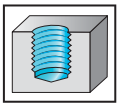
HSS-E machine taps – Insert
Paradur® X·pert P



– For long-chipping materials

EgMF
DIN 8140

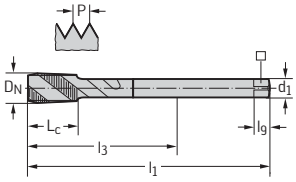
6H mod



≤ 3×D_N | C=2-3 | 45° | 32HRC 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 40 435



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P215599-EGM8X1	EGMF 8x1	1	90	12	67	7	5,5	8	3
P215599-EGM10X1	EGMF 10x1	1	100	13	73	9	7	10	3
P215599-EGM12X1.5	EGMF 12x1.5	1,5	100	15	71	11	9	12	4
P215599-EGM14X1.5	EGMF 14x1.5	1,5	100	15	58	12	9	12	4
P215599-EGM16X1.5	EGMF 16x1.5	1,5	110	17	66	14	11	14	4

B 5

B 1008 | D 1 | B 709

HSS-E machine taps – Insert
Prototex® X·pert P

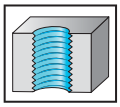


– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 32HRC, 1000 –200 N/mm²

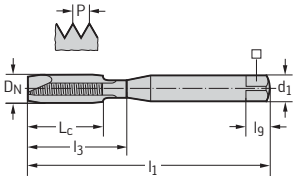
EgUNC
NASM 33537

3B



	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
P223009-EGUNC6	EGUNC 6-32	4,536	70	13	25	6	4,9	8	3
P223009-EGUNC8	EGUNC 8-32	5,197	80	15	30	6	4,9	8	3
P223009-EGUNC10	EGUNC 10-24	6,201	80	15	30	7	5,5	8	3
P223009-EGUNC1/4	EGUNC 1/4-20	8	90	18	35	8	6,2	9	3

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E-PM machine taps – Insert
Prototex® TiNi

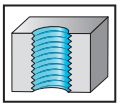


– For long-chipping materials

≤ 2×D_N | B=3,5-5 | 44HRC 1400 –700 N/mm²

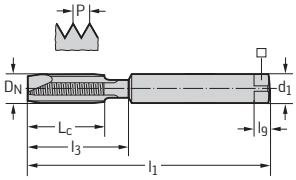
EgUNC
NASM 33537

3B



	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
222079-EGUNC4	EGUNC 4-40	3,67	63	13	13	4,5	3,4	6	3
222079-EGUNC6	EGUNC 6-32	4,536	70	16	16	6	4,9	8	3
222079-EGUNC8	EGUNC 8-32	5,197	80	15	23	6	4,9	8	3

≤ EGUNC 6: Without reduced neck after the thread

B 5

B 1008 | D 1 | B 709

HSS-E machine taps – Insert
Paradur® X·pert P

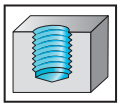


– For long-chipping materials

≤ 3×D_N | C=2-3 | 45° | 32HRC 1000 –200 N/mm²

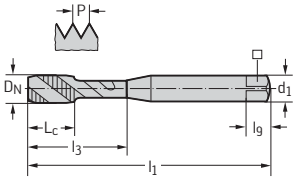
EgUNC
NASM 33537

3B



	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P225099-EGUNC6	EGUNC 6-32	4,536	70	8	25	6	4,9	8	3
P225099-EGUNC8	EGUNC 8-32	5,197	80	10	30	6	4,9	8	3
P225099-EGUNC10	EGUNC 10-24	6,201	80	10	30	7	5,5	8	3
P225099-EGUNC1/4	EGUNC 1/4-20	8	90	12	35	8	6,2	9	3

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

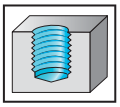
HSS-E machine taps – Insert
Paradur® X·pert M



– For long-chipping materials

EgUNC
NASM 33537

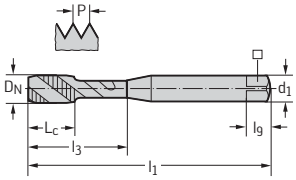
3B



≤ 2,5×D_N | C=2-3 | 50° | 36HRC 1200 –700 N/mm²

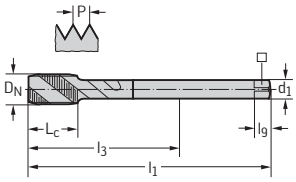
	P	M	K	N	S	H	O
VAP	●	●●					

DIN 2184-1



Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M225049-EGUNC4	EGUNC 4-40	3,67	63	7	21	4,5	3,4	6	3
M225049-EGUNC6	EGUNC 6-32	4,536	70	8	25	6	4,9	8	3
M225049-EGUNC8	EGUNC 8-32	5,197	80	10	30	6	4,9	8	3
M225049-EGUNC10	EGUNC 10-24	6,201	80	10	30	7	5,5	8	3
M225049-EGUNC1/4	EGUNC 1/4-20	8	90	12	35	8	6,2	9	3

DIN 2184-1



Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M225549-EGUNC5/16	EGUNC 5/16-18	9,771	100	15	77	7	5,5	8	3
M225549-EGUNC3/8	EGUNC 3/8-16	11,587	100	13	73	9	7	10	3
M225549-EGUNC1/2	EGUNC 1/2-13	15,238	110	20	68	12	9	12	4

B 5

B 1008 | D 1 | B 709

HSS-E machine taps – Insert
Paradur® X·pert N

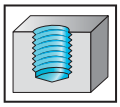


– For long-chipping materials

≤ 3×D_N	C=2-3	35°	14HRC 700 –200 N/mm²

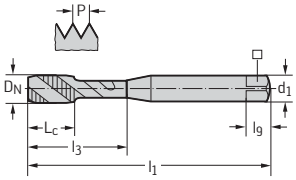
EgUNC
NASM 33537

3B



	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N225069-EGUNC6	EGUNC 6-32	4,536	70	8	25	6	4,9	8	2
N225069-EGUNC8	EGUNC 8-32	5,197	80	10	30	6	4,9	8	2
N225069-EGUNC10	EGUNC 10-24	6,201	80	10	30	7	5,5	8	2
N225069-EGUNC1/4	EGUNC 1/4-20	8	90	12	35	8	6,2	9	2

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

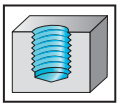
HSS-E-PM machine taps – Insert
Paradur® Ti



– For long-chipping materials

EgUNC
NASM 33537

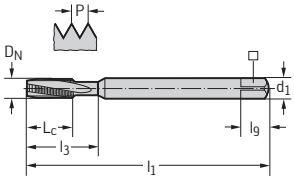
3B



≤ 2×D_N | C=2-3 | 15° | 44HRC 1400 –700 N/mm²

	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
224069-EGUNC4	EGUNC 4-40	3,67	63	13	13	4,5	3,4	6	3
224069-EGUNC6	EGUNC 6-32	4,536	70	16	16	6	4,9	8	3
224069-EGUNC8	EGUNC 8-32	5,197	80	15	23	6	4,9	8	3

≤ EGUNC 6: Without reduced neck after the thread

B 5

B 1008 | D 1 | B 709

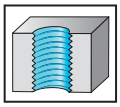
HSS-E machine taps – Insert
Prototex® X·pert P



– For long-chipping materials

EgUNF
NASM 33537

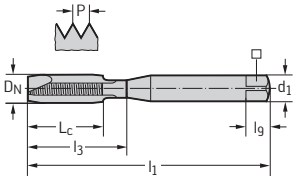
3B



≤ 3×D_N | B=3,5-5 | 32HRC, 1000 –200 N/mm²

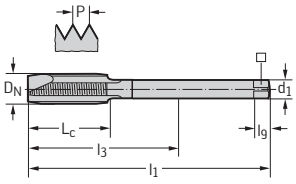
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
P233009-EGUNF6	EGUNF 6-40	4,33	70	13	25	6	4,9	8	3
P233009-EGUNF8	EGUNF 8-36	5,083	80	15	30	6	4,9	8	3
P233009-EGUNF10	EGUNF 10-32	5,857	80	15	30	6	4,9	8	3
P233009-EGUNF1/4	EGUNF 1/4-28	7,528	90	18	35	8	6,2	9	3

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
P233509-EGUNF5/16	EGUNF 5/16-24	9,313	90	20	67	7	5,5	8	3
P233509-EGUNF3/8	EGUNF 3/8-24	10,9	90	20	66	8	6,2	9	3
P233509-EGUNF7/16	EGUNF 7/16-20	12,763	100	21	73	9	7	10	4
P233509-EGUNF1/2	EGUNF 1/2-20	14,35	100	21	71	11	9	12	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

HSS-E machine taps – Insert
Prototex® X·pert M

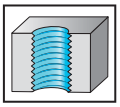


– For long-chipping materials

≤ 3×D_N | B=3,5-5 | 36HRC 1200 –700 N/mm²

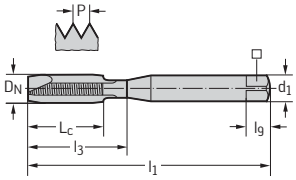
EgUNF
NASM 33537

3B



	P	M	K	N	S	H	O
VAP	●	●●					

DIN 2184-1



Designation VAP	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
M233009-EGUNF8	EGUNF 8-36	5,083	80	15	30	6	4,9	8	3
M233009-EGUNF10	EGUNF 10-32	5,857	80	15	30	6	4,9	8	3
M233009-EGUNF1/4	EGUNF 1/4-28	7,528	90	18	35	8	6,2	9	3

B 5

B 1008 D 1 B 709

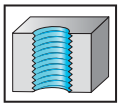
HSS-E-PM machine taps – Insert
Prototex® TiNi



– For long-chipping materials

EgUNF
NASM 33537

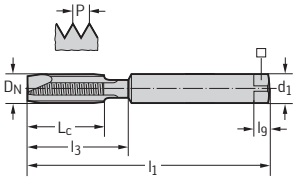
3B



≤ 2×D_N | B=3,5-5 | 44HRC 1400 –700 N/mm²

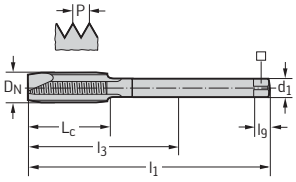
	P	M	K	N	S	H	O
Uncoated	●●	●●		●	●●		

~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
232079-EGUNF10	EGUNF 10-32	5,857	80	15	23	6	4,9	8	3
232079-EGUNF1/4	EGUNF 1/4-28	7,528	90	18	29,5	8	6,2	9	3
232079-EGUNF5/16	EGUNF 5/16-24	9,313	100	20	33,5	10	8	11	3

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 h9 mm	L_c mm	l_3 mm	d_1 mm	□ mm	l_9 mm	N
232579-EGUNF3/8	EGUNF 3/8-24	10,9	100	20	76	8	6,2	9	3

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

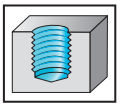
HSS-E machine taps – Insert
Paradur® X·pert P



– For long-chipping materials

EgUNF
NASM 33537

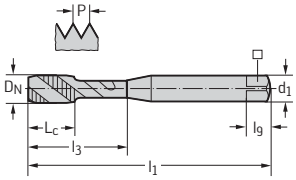
3B



≤ 3×D_N | C=2-3 | 45° | 32HRC, 1000 –200 N/mm²

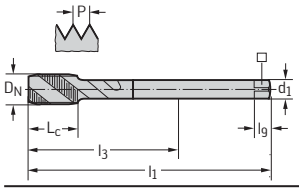
	P	M	K	N	S	H	O
Uncoated	●●			●			●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P235099-EGUNF6	EGUNF 6-40	4,33	70	8	25	6	4,9	8	3
P235099-EGUNF8	EGUNF 8-36	5,083	80	10	30	6	4,9	8	3
P235099-EGUNF10	EGUNF 10-32	5,857	80	10	30	6	4,9	8	3
P235099-EGUNF1/4	EGUNF 1/4-28	7,528	90	12	35	8	6,2	9	3

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
P235599-EGUNF5/16	EGUNF 5/16-24	9,313	90	12	67	7	5,5	8	3
P235599-EGUNF3/8	EGUNF 3/8-24	10,9	90	15	66	8	6,2	9	3
P235599-EGUNF7/16	EGUNF 7/16-20	12,763	100	13	73	9	7	10	4
P235599-EGUNF1/2	EGUNF 1/2-20	14,35	100	15	71	11	9	12	4

B 5

B 1008 | D 1 | B 709

HSS-E machine taps – Insert
Paradur® X·pert M

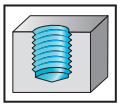


– For long-chipping materials

≤ 2,5×D_N | C=2-3 | 40° | 36HRC 1200 –700 N/mm²

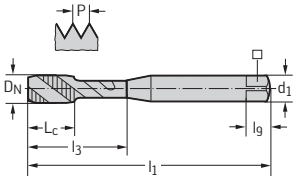
EgUNF
NASM 33537

3B



	P	M	K	N	S	H	O
VAP	●	●●					

DIN 2184-1



Designation VAP	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
M235049-EGUNF10	EGUNF 10-32	5,857	80	10	30	6	4,9	8	3
M235049-EGUNF1/4	EGUNF 1/4-28	7,528	90	12	35	8	6,2	9	3

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

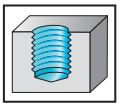
HSS-E machine taps – Insert
Paradur® X·pert N



– For long-chipping materials

EgUNF
NASM 33537

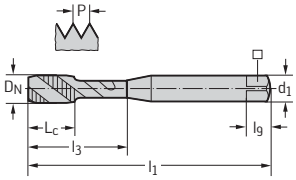
3B



≤ 3×D_N | C=2-3 | 35° | 14HRC 700 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated				●●	●		●

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
N235069-EGUNF10	EGUNF 10-32	5,857	80	10	30	6	4,9	8	2
N235069-EGUNF1/4	EGUNF 1/4-28	7,528	90	12	35	8	6,2	9	3

B 5

B 1008 D 1 B 709

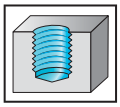
HSS-E-PM machine taps – Insert
Paradur® Ni



– For long-chipping materials

EgUNF
NASM 33537

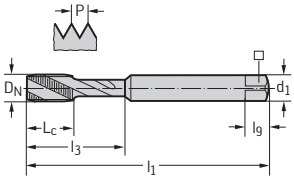
3B



≤ 1,5×D_N | C=2-3 | 25° | 44HRC 1400 –700 N/mm²

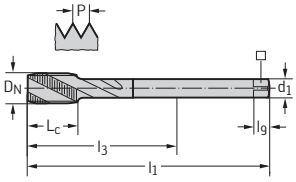
	P	M	K	N	S	H	O
Uncoated	●●		●●	●	●		

~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234079-EGUNF10	EGUNF 10-32	5,857	80	15	23	6	4,9	8	3
234079-EGUNF1/4	EGUNF 1/4-28	7,528	90	18	29,5	8	6,2	9	3
234079-EGUNF5/16	EGUNF 5/16-24	9,313	100	20	33,5	10	8	11	4

DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234579-EGUNF3/8	EGUNF 3/8-24	10,9	100	20	76	8	6,2	9	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

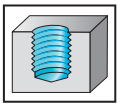
HSS-E-PM machine taps – Insert
Paradur® Ti



– For long-chipping materials

EgUNF
NASM 33537

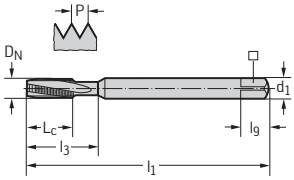
3B



≤ 2×D_N | C=2-3 | 15° | 44HRC 1400 –700 N/mm²

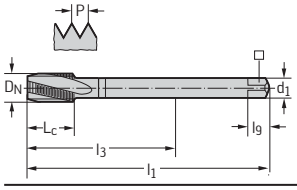
	P	M	K	N	S	H	O
Uncoated	●●			●	●●		

~DIN 2184-1



Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234069-EGUNF10	EGUNF 10-32	5,857	80	15	23	6	4,9	8	3
234069-EGUNF1/4	EGUNF 1/4-28	7,528	90	18	29,5	8	6,2	9	3
234069-EGUNF5/16	EGUNF 5/16-24	9,313	100	20	33,5	10	8	11	3

DIN 2184-1

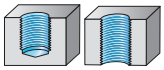
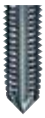


Designation Uncoated	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
234569-EGUNF3/8	EGUNF 3/8-24	10,9	100	20	76	8	6,2	9	4

B 5

B 1008 | D 1 | B 709

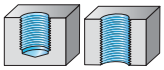
Solid carbide taps product range overview
M – Metric thread

Machining						
Thread depth	**1,5 × D_N**	**2 × D_N**		**3 × D_N**	**1,5 × D_N**	**2 × D_N**
Designation	**Prototex® HSC**	**Paradur® Hard**	**Paradur® Hard Plus**	**Paradur® HS**	**Paradur® N**	**Paradur® HSC**
Dimension range	M 6–M 12	M 3–M 16	M 3–M 16	M 3–M 12	M 3–M 10	M 6–M 12
Tolerance	6HX	6HX	6HX	6H	6H	6HX
Coolant supply	Cooling grooves on the shank	External	External	External	External	Axial
Chamfer/Lead form	B	C	D	C	C	C
Coating/grade	TICN	TICN	TICN	TiCN/uncoated	TiCN/uncoated	TICN
Version length	M	M	M	M	M	M
Page	B 989	B 997	B 998	B 995	B 991	B 990
						

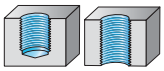
Machining				
Thread depth	**3 × D_N**		**3,5 × D_N**	
Designation	**Paradur® Engine**	**Paradur® HS**	**Paradur® N**	**Paradur® GG**
Dimension range	M 6–M 12	M 5–M 10	M 5–M 12	M 5–M 10
Tolerance	6HX	6H	6H	6HX
Coolant supply	Axial	Axial	Axial	Axial
Chamfer/Lead form	E	C	C	C
Coating/grade	Uncoated	TICN	Uncoated	TAFT/uncoated
Version length	L	M	M	M
Page	B 994	B 996	B 992	B 993
				

B 5

Solid carbide taps product range overview
MF – Metric fine-pitch thread

Machining					
Thread depth	**1,5 × D_N**	**3 × D_N**	**2 × D_N**	**3 × D_N**	**3,5 × D_N**
Designation	**Prototex® HSC**	**Paradur® HS**	**Paradur® HSC**	**Paradur® Engine**	**Paradur® GG**
Dimension range	MF 6x0.75– MF 16x1.5	MF 8x1– MF 16x1.5	MF 6x0.75– MF 16x1.5	MF 10x1– MF 16x1.5	MF 8x1– MF 12x1.5
Tolerance	6HX	6H	6HX	6HX	6HX
Coolant supply	Cooling grooves on the shank	External	Axial	Axial	Axial
Chamfer/Lead form	B	C	C	E	C
Coating/grade	TICN	Uncoated	TICN	Uncoated	TAFT
Version length	M	M	M	L	M
Page	B 999	B 1003	B 1000	B 1002	B 1001
					

Solid carbide taps product range overview
UNC, UNF, G

Machining			
Thread depth	**3 × D_N**		**2 × D_N**
Designation	**Paradur® HS**	**Paradur® HS**	**Paradur® Hard Scraper**
Dimension range	UNC 10-24– UNC 1/2-13	UNF 10-32– UNF 3/8-24	G 1/8-28– G 1/4-19
Tolerance	2B	2B	NORMAL
Coolant supply	External	External	External
Chamfer/Lead form	C	C	C
Coating/grade	TICN	TICN	TICN
Version length	M	M	M
Page	B 1004	B 1005	B 1006
			

B 5



Solid carbide taps designation key

Example:

8	0	4	1	5	0	6
1	2	3	4	5	6	7

1
Tool type
8 Solid carbide taps

2
Thread type
0 Metric
1 Metric fine
2 UNC
3 UNF
4 G

3
Design
2 Prototex®, spiral point
3 Paradur®, straight flutes
4 Paradur®, low-helix

4
Tolerance class/shank
1 ISO 2/6H, 6HX Reinforced shank
6 ISO 2/6H, 6HX Reduced shank

5
Tool type
0 HSC/N
1 HS
2 Hard Scraper
3 Engine
4 GG
8 Hard
9 Hard Plus

6
Modification
0 None
1 Internal coolant supply, axial outlet
3 Extended shank
4 Internal coolant supply, radial outlet
5 Combination of various points

7
Surface treatment
0 None
6 TiCN
7 TAFT

Walter Select – Solid carbide taps

Step by step to the right tool

STEP 1

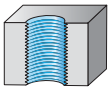
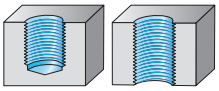
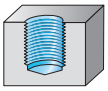
Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Select your intended **application** from the table.

	Tapping Solid carbide						
							
Thread depth	$1,5 \times D_N$	$2,0 \times D_N$	$3,0 \times D_N$	$1,5 \times D_N$	$2,0 \times D_N$	$3,0 \times D_N$	$3,5 \times D_N$
Page	B 986	B 986	B 987	B 987	B 987	B 987	B 988

STEP 3

Select the **tool** according to the following criteria:

- **Material group**
- **Thread type**
- **Thread depth**

Walter Select solid carbide taps

WALTER SELECT
●● Primary application
● Other application

Material group				Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining		
							Thread depth	1,5 × D_N	2 × D_N
							Designation	Prototex® HSC	Paradur® Hard
							Coolant supply	Coolant grooves on the shank	External
							Coating / grade	TICN	TICN
							Thread type | Page	M | B 989 MF | B 999	M | B 997
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1			
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		●	
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		●●	
		C > 0.55%	Annealed	190	640	P4		●●	
		C > 0.55%	Heat-treated	300	1010	P5		●●	
		Free cutting steel (short-chipping)	Annealed	220	750	P6		●●	
	Low-alloyed steel	Annealed		175	590	P7		●●	
		Heat-treated		285	960	P8		●●	
		Heat-treated		380	1280	P9		●●	
		Heat-treated		430	1480	P10		●	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		●●	
		Hardened and tempered		300	1010	P12		●●	
		Hardened and tempered		380	1280	P13		●●	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14			
		Martensitic, heat-treated		330	1110	P15			
M	Stainless steel	Austenitic, quench hardened		200	680	M1			
		Austenitic, precipitation hardened (PH)		300	1010	M2			
		Austenitic/ferritic, duplex		230	780	M3			
K	Malleable cast iron	Ferritic		200	400	K1		●●	
		Pearlitic		260	700	K2		●●	
	Grey cast iron	Low tensile strength		180	200	K3		●	
		High tensile strength/austenitic		245	350	K4		●	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		●●	
		Pearlitic		265	700	K6		●●	
	GGV (CGI)								

B 5

STEP 4

The corresponding page in the catalogue is specified following tool selection.

At the bottom right of the catalogue page, you will find a reference to the **cutting data table.**

Solid carbide machine taps
Paradur® N



– For long-chipping and short-chipping materials

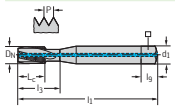
M
DIN 13



	P	M	K	N	S	H	O
Uncoated			●●	●●			●

DIN 371

Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
804101-M5	M 5	0,8	70	16	16	6	4,9	8	3
804101-M6	M 6	1	80	19	30	6	4,9	8	3
804101-M8	M 8	1,25	90	22	35	8	6,2	9	3
804101-M10	M 10	1,5	100	24	39	10	8	11	3



M 5: Without reduced neck after the thread

DIN 376

STEP 5

Select the **cutting data** for the tool type from page B 1008 onwards.

Tapping and thread forming cutting data

= Cooling lubricant recommended
E = Emulsion
O = Oil
v_c = Cutting speed

Material group				Brinell hardness HB	Tensile strength R_m N/mm²	Machining group ¹	HSS-E (PM) taps Uncoated v_c [m/min] 1,5 × D_N	2 × D_N	2,5 × D_N	
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	16	13	12	E
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	20	17	14	E
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	10	9	7	E
		C > 0.55%	Annealed	190	640	P4	10	9	7	E
		C > 0.55%	Heat-treated	300	1010	P5	6	5	4	E
		Free cutting steel (short-chipping)	Annealed	220	750	P6	10	9	7	E
	Low-alloyed steel	Annealed		175	590	P7	20	17	14	E
		Heat-treated		285	960	P8	5	4	4	E
		Heat-treated		380	1280	P9	3	3	2	E
		Heat-treated		430	1480	P10	3	2	2	O
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	10	9	7	E
		Hardened and tempered		300	1010	P12	6	5	4	E
		Hardened and tempered		380	1280	P13	3	3	2	O
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	3	2	2	E
		Martensitic, heat-treated		330	1110	P15	3	2	2	E
M	Stainless									E

Walter Select solid carbide taps

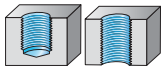
WALTER SELECT

●● Primary application

● Other application

Overview of the main material groups and code letters

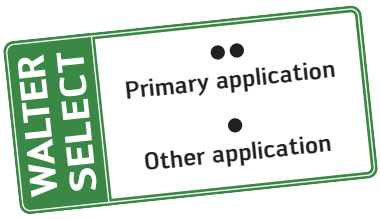
Material group				Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining		
							Thread depth	1,5 × D_N	2 × D_N	
							Designation	Prototex® HSC	Paradur® Hard	
							Coolant supply	Coolant grooves on the shank	External	
							Coating / grade	TICN	TICN	
							Thread type | Page	M | B 989 MF | B 999	M | B 997	
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1				
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		●		
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		●●		
		C > 0.55%	Annealed	190	640	P4		●●		
		C > 0.55%	Heat-treated	300	1010	P5		●●		
		Free cutting steel (short-chipping)	Annealed	220	750	P6		●●		
	Low-alloyed steel	Annealed		175	590	P7		●●		
		Heat-treated		285	960	P8		●●		
		Heat-treated		380	1280	P9		●●		
		Heat-treated		430	1480	P10		●		
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		●●		
		Hardened and tempered		300	1010	P12		●●		
		Hardened and tempered		380	1280	P13		●●		
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14				
		Martensitic, heat-treated		330	1110	P15				
M	Stainless steel	Austenitic, quench hardened		200	680	M1				
		Austenitic, precipitation hardened (PH)		300	1010	M2				
		Austenitic/ferritic, duplex		230	780	M3				
K	Malleable cast iron	Ferritic		200	400	K1		●●		
		Pearlitic		260	700	K2		●●		
	Grey cast iron	Low tensile strength		180	200	K3		●		
		High tensile strength/austenitic		245	350	K4		●		
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		●●		
		Pearlitic		265	700	K6		●●		
	GGV (CGI)			230	400	K7		●		
N	Wrought aluminium alloys	Not hardenable		30	-	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9			●	
	Molybdenum alloys			300	1010	S10			●	
H	Hardened steel			<63 HRC	-	H1-H4			●●	
O	Plastics, graphite					O1-O6				





	2 × D_N		3 × D_N	1,5 × D_N	2 × D_N	3 × D_N	
	Paradur® Hard Plus	**Paradur® Hard Scraper**	**Paradur® HS**	**Paradur® N**	**Paradur® HSC**	**Paradur® Engine**	**Paradur® HS**
	External	External	External	External	Axial	Axial	Axial
	TICN	TICN	TiCN / uncoated	TiCN / uncoated	TICN	Uncoated	TICN
	M | B 998	G | B 1006	M | B 995 MF | B 1003 UNC | B 1004 UNF | B 1005	M | B 991	M | B 990 MF | B 1000	M | B 994 MF | B 1002	M | B 996
							
					●		
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	●	●	●●				●●
	●●	●●	●●		●●		●●
			●●	●			●●

Walter Select solid carbide taps



Overview of the main material groups and code letters

Material group				Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Paradur® N	Paradur® GG
Machining								
Thread depth							3,5 × D_N	
Designation							Paradur® N	Paradur® GG
Coolant supply							Axial	Axial
Coating / grade							Uncoated	TAFT / uncoated
Thread type | Page							M | B 992	M | B 993 MF | B 1001
								
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		
		C > 0.55%	Annealed	190	640	P4		
		C > 0.55%	Heat-treated	300	1010	P5		
		Free cutting steel (short-chipping)	Annealed	220	750	P6		
	Low-alloyed steel	Annealed		175	590	P7		
		Heat-treated		285	960	P8		
		Heat-treated		380	1280	P9		
		Heat-treated		430	1480	P10		
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		
		Hardened and tempered		300	1010	P12		
		Hardened and tempered		380	1280	P13		
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		
		Martensitic, heat-treated		330	1110	P15		
M	Stainless steel	Austenitic, quench hardened		200	680	M1		
		Austenitic, precipitation hardened (PH)		300	1010	M2		
		Austenitic/Ferritic, duplex		230	780	M3		
K	Malleable cast iron	Ferritic		200	400	K1	●	●
		Pearlitic		260	700	K2	●	●
	Grey cast iron	Low tensile strength		180	200	K3	●	●●
		High tensile strength/austenitic		245	350	K4	●	●●
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●
		Pearlitic		265	700	K6	●	●
	GGV (CGI)			230	400	K7	●	●●
N	Wrought aluminium alloys	Not hardenable		30	-	N1		
		Hardenable, hardened		100	340	N2		
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●	●
		≤ 12% Si, hardenable, hardened		90	310	N4	●	●
		> 12% Si, not hardenable		130	450	N5	●	●
	Magnesium-based alloys			70	250	N6	●	●
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7		
		Brass, bronze, red brass		90	310	N8		
		Cu-alloys, short-chipping		110	380	N9		
		High-tensile, Ampco		300	1010	N10		●
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		
			Hardened	280	940	S2		
		Ni or Co base	Annealed	250	840	S3		
			Hardened	350	1180	S4		
			Cast	320	1080	S5		
	Titanium alloys	Pure titanium		200	680	S6		
		α and β alloys, hardened		375	1260	S7		
		β alloys		410	1400	S8		
	Tungsten alloys			300	1010	S9		
	Molybdenum alloys			300	1010	S10		
H	Hardened steel			<63 HRC	-	H1-H4		
O	Plastics, graphite					O1-O6	●	●●

Solid carbide machine taps
Prototex® HSC

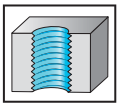


– For long-chipping materials
– Coolant grooves on the shank

≤ 1,5×D_N | B=3,5-5 | 44HRC 1400 –850 N/mm²

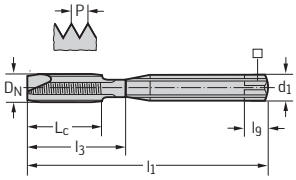
M
DIN 13

6HX



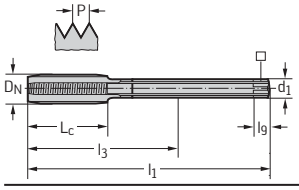
	P	M	K	N	S	H	O
TICN	●●		●●				

DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8021006-M6	M 6	1	80	19	30	6	4,9	8	3
8021006-M8	M 8	1,25	90	22	35	8	6,2	9	4
8021006-M10	M 10	1,5	100	24	39	10	8	11	4

DIN 376



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8026006-M12	M 12	1,75	110	23	83	9	7	10	5

B 5

B 1008 | D 1 | B 709

Solid carbide machine taps
Paradur® HSC



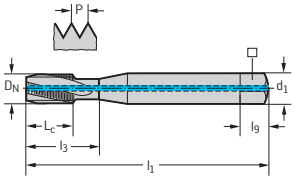
– For long-chipping and short-chipping materials

M	6HX	
DIN 13		

≤ 2×D_N | C=2-3 | 15° | | 55HRC / 25HRC

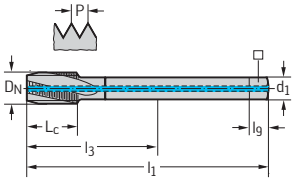
	P	M	K	N	S	H	O
TICN	●●		●●			●●	

DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8041056-M6	M 6	1	80	15	30	6	4,9	8	3
8041056-M8	M 8	1,25	90	20	35	8	6,2	9	3
8041056-M10	M 10	1,5	100	25	39	10	8	11	3

DIN 376



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8046056-M12	M 12	1,75	110	23	83	9	7	10	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

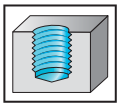
Solid carbide machine taps
Paradur® N



– For long-chipping and short-chipping materials

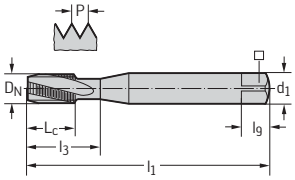
≤ 1,5×D_N | C=2-3 | 15° | 47HRC 1500 N/mm²

M
DIN 13



	P	M	K	N	S	H	O
TICN			●●	●●			●
Uncoated			●●	●●			●

~DIN 371



Designation TICN	Designation Uncoated	D_N	P mm	l_1 mm	L_C mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8041006-M3	80410-M3	M 3	0,5	56	10	10	3,5	2,7	6	3
8041006-M4	80410-M4	M 4	0,7	63	13	13	4,5	3,4	6	3
8041006-M5	80410-M5	M 5	0,8	70	16	16	6	4,9	8	3
8041006-M6	80410-M6	M 6	1	80	19	30	6	4,9	8	3
8041006-M8	80410-M8	M 8	1,25	90	22	35	8	6,2	9	3
8041006-M10	80410-M10	M 10	1,5	100	24	39	10	8	11	3

≤ M 5: Without reduced neck after the thread

B 1008 | D 1 | B 709

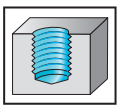
Solid carbide machine taps
Paradur® N



– For long-chipping and short-chipping materials

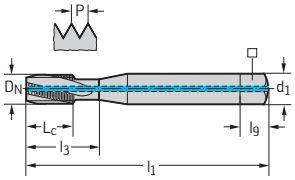


M
DIN 13



	P	M	K	N	S	H	O
Uncoated			●●	●●			●

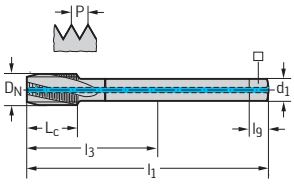
DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
804101-M5	M 5	0,8	70	16	16	6	4,9	8	3
804101-M6	M 6	1	80	19	30	6	4,9	8	3
804101-M8	M 8	1,25	90	22	35	8	6,2	9	3
804101-M10	M 10	1,5	100	24	39	10	8	11	3

M 5: Without reduced neck after the thread

DIN 376



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
804601-M12	M 12	1,75	110	23	83	9	7	10	3

B 5

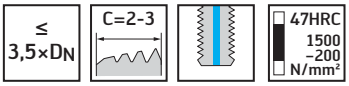
WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

Solid carbide machine taps
Paradur® GG



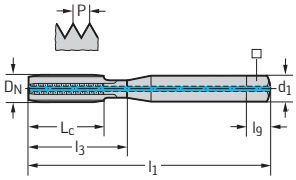
– For short-chipping materials



M	6HX	
DIN 13		

	P	M	K	N	S	H	O
TAFT			●●	●			●
Uncoated			●●	●			●

DIN 371



Designation TAFT	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8031417-M5	803141-M5	M 5	0,8	70	16	16	6	4,9	8	4
8031417-M6	803141-M6	M 6	1	80	19	30	6	4,9	8	4
8031417-M8	803141-M8	M 8	1,25	90	22	35	8	6,2	9	4
8031417-M10	803141-M10	M 10	1,5	100	24	39	10	8	11	4

M 5: Without reduced neck after the thread

B 5

B 1008 D 1 B 709

Solid carbide machine taps
Paradur® Engine



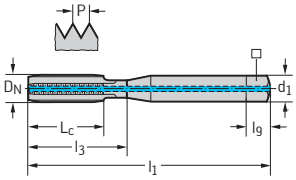
– Suitable coating according to requirements

M	6HX	
DIN 13		

≤ 3×D_N | E=1,5-2 | L (l_1) | | 32HRC, 1000 –200 N/mm²

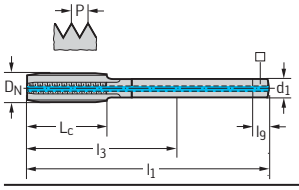
	P	M	K	N	S	H	O
Uncoated			●●	●●			

~DIN 371 L



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8031310-M6	M 6	1	80	15	30	6	4,9	8	3
8031310-M7	M 7	1	100	15	30	7	5,5	8	3
8031310-M8	M 8	1,25	120	18	35	8	6,2	9	3
8031310-M10	M 10	1,5	140	20	39	10	8	11	3

~DIN 376 L



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8036310-M12	M 12	1,75	140	23	113	9	7	10	4

WALTER SELECT

●● Primary application

● Other application

B 1008 | D 1 | B 709

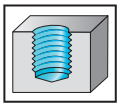
Solid carbide machine taps
Paradur® HS

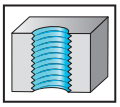


≤ 3×D_N | C=2-3 | 55HRC

– For short-chipping materials

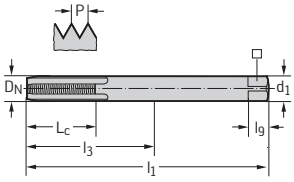
M
DIN 13





	P	M	K	N	S	H	O
TICN			●	●●	●	●	●●
Uncoated			●	●●	●	●	●●

~DIN 371



Designation TICN	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8031106-M3	80311-M3	M 3	0,5	56	10	35	3,5	2,7	6	3
8031106-M4	80311-M4	M 4	0,7	63	13	42	4,5	3,4	6	3
8031106-M5	80311-M5	M 5	0,8	70	16	47	6	4,9	8	3
8031106-M6	80311-M6	M 6	1	80	20	57	6	4,9	8	3
8031106-M8	80311-M8	M 8	1,25	90	25	66	8	6,2	9	3
8031106-M10	80311-M10	M 10	1,5	100	30	72	10	8	11	3
8031106-M12	80311-M12	M 12	1,75	110	36	68	12	9	12	3

Without reduced neck after the thread

B 5

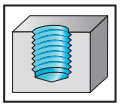
B 1008 D 1 B 709

Solid carbide machine taps
Paradur® HS



– For short-chipping materials

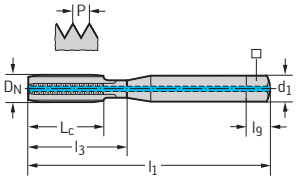
M
DIN 13



≤ 3×D_N | C=2-3 | 51HRC 1700 –200 N/mm²

	P	M	K	N	S	H	O
TICN			●	●●	●	●	●●

~DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8031116-M5	M 5	0,8	70	16	16	6	4,9	8	3
8031116-M6	M 6	1	80	19	30	6	4,9	8	3
8031116-M7	M 7	1	80	19	30	7	5,5	8	3
8031116-M8	M 8	1,25	90	22	35	8	6,2	9	3
8031116-M10	M 10	1,5	100	24	39	10	8	11	3

M 5: Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

Solid carbide machine taps
Paradur® Hard

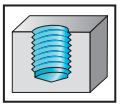


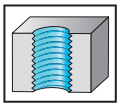
– For short-chipping materials
– Drill core hole 0.1-0.2 mm larger

≤ 2×D_N | C=2-3 | 63HRC / 50HRC

M
DIN 13

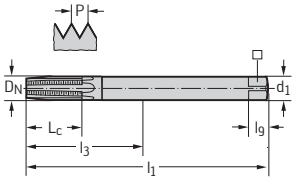
6HX





	P	M	K	N	S	H	O
TICN					●	●●	

~DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8031806-M3	M 3	0,5	56	8	35	3,5	2,7	6	4
8031806-M4	M 4	0,7	63	11	42	4,5	3,4	6	5
8031806-M5	M 5	0,8	70	13,5	47	6	4,9	8	5
8031806-M6	M 6	1	80	16,5	57	6	4,9	8	5
8031806-M8	M 8	1,25	90	21,5	66	8	6,2	9	5
8031806-M10	M 10	1,5	100	27	72	10	8	11	5
8031806-M12	M 12	1,75	110	32	68	12	9	12	6
8031806-M16	M 16	2	110	41	65	16	12	15	6

Without reduced neck after the thread

B 5

B 1008 | D 1 | B 709

Solid carbide machine taps
Paradur® Hard Plus



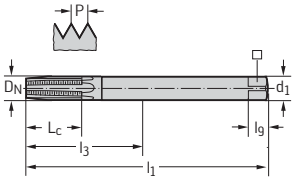
– For short-chipping materials
– Drill core hole 0.1-0.2 mm larger

M	6HX		
DIN 13			

≤ 2×D_N | B=3,5-5 | 63HRC / 50HRC

	P	M	K	N	S	H	O
TICN					●	●●	

~DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8031906-M3	M 3	0,5	56	9	35	3,5	2,7	6	4
8031906-M4	M 4	0,7	63	12	42	4,5	3,4	6	5
8031906-M5	M 5	0,8	70	14,5	47	6	4,9	8	5
8031906-M6	M 6	1	80	18	57	6	4,9	8	5
8031906-M8	M 8	1,25	90	23,5	66	8	6,2	9	5
8031906-M10	M 10	1,5	100	29	72	10	8	11	5
8031906-M12	M 12	1,75	110	34,5	68	12	9	12	6
8031906-M16	M 16	2	110	44	65	16	12	15	6

Without reduced neck after the thread

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

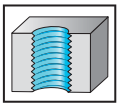
Solid carbide machine taps
Prototex® HSC



– For long-chipping materials
– Coolant grooves on the shank

MF
DIN 13

6HX



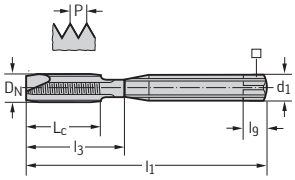
≤ 1,5×D_N

B=3,5-5

44HRC
1400
–850
N/mm²

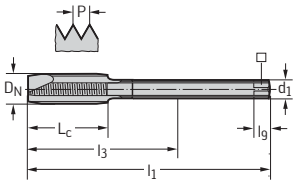
	P	M	K	N	S	H	O
TICN	●●		●●				

DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8121006-M6X0.75	MF 6x0.75	0,75	80	19	30	6	4,9	8	3
8121006-M8X1	MF 8x1	1	90	22	35	8	6,2	9	4
8121006-M10X1	MF 10x1	1	90	24	39	10	8	11	4

DIN 374



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8126006-M12X1	MF 12x1	1	100	21	73	9	7	10	5
8126006-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
8126006-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	5
8126006-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	5

B 1008 D 1 B 709

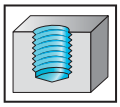
Solid carbide machine taps
Paradur® HSC



– For long-chipping materials

MF
DIN 13

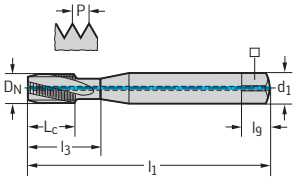
6HX



≤ 2×D_N | C=2-3 | 15° | 55HRC / 25HRC

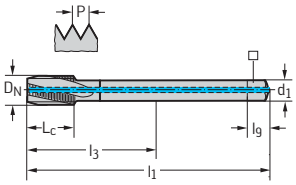
	P	M	K	N	S	H	O
TICN	●●		●●			●●	

~DIN 371



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8141056-M6X0.75	MF 6x0.75	0,75	80	15	30	6	4,9	8	3
8141056-M8X1	MF 8x1	1	90	20	35	8	6,2	9	3
8141056-M10X1	MF 10x1	1	90	25	39	10	8	11	3

DIN 374



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8146056-M12X1	MF 12x1	1	100	20	73	9	7	10	3
8146056-M12X1.5	MF 12x1.5	1,5	100	20	73	9	7	10	4
8146056-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
8146056-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

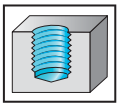
Solid carbide machine taps
Paradur® GG



– For short-chipping materials

MF
DIN 13

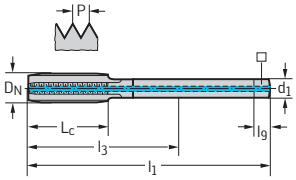
6HX



≤ 3,5×D_N | C=2-3 | 47HRC 1500 –200 N/mm²

	P	M	K	N	S	H	O
TAFT			●●	●			●

DIN 374



Designation TAFT	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8136417-M8X1	MF 8x1	1	90	12	67	6	4,9	8	4
8136417-M10X1	MF 10x1	1	90	14	67	7	5,5	8	4
8136417-M12X1.5	MF 12x1.5	1,5	100	20	73	9	7	10	4

B 5

B 1008 D 1 B 709

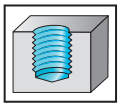
Solid carbide machine taps
Paradur® Engine



– Suitable coating according to requirements
– For short-chipping materials

MF
DIN 13

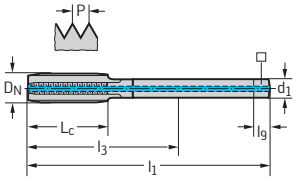
6HX



≤ 3×D_N | E=1,5-2 | L (l_1) | 32HRC 1000 –200 N/mm²

	P	M	K	N	S	H	O
Uncoated			●●	●●			

~DIN 374 L



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8136310-M10X1	MF 10x1	1	140	20	117	7	5,5	8	4
8136310-M12X1.25	MF 12x1.25	1,25	140	21	113	9	7	10	4
8136310-M12X1.5	MF 12x1.5	1,5	140	21	113	9	7	10	4
8136310-M16X1.5	MF 16x1.5	1,5	140	21	98	12	9	12	4

B 5

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 709

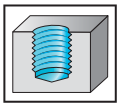
Solid carbide machine taps
Paradur® HS

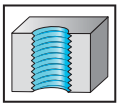


– For short-chipping materials

≤ 3×D_N | C=2-3 | 55HRC

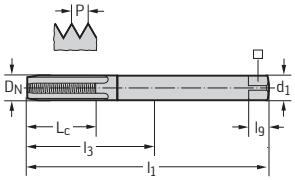
MF
DIN 13





	P	M	K	N	S	H	O
Uncoated			●	●●	●	●	●●

~DIN 371



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
81311-M8X1	MF 8x1	1	90	25	66	8	6,2	9	4
81311-M10X1	MF 10x1	1	90	30	62	10	8	11	4
81311-M14X1.5	MF 14x1.5	1,5	100	21	56	14	11	14	4
81311-M16X1.5	MF 16x1.5	1,5	100	21	55	16	12	15	4

Without reduced neck after the thread

B 5

B 1008 | D 1 | B 709

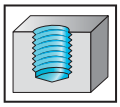
Solid carbide machine taps
Paradur® HS



– For short-chipping materials

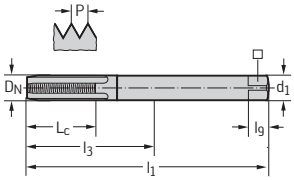
≤ 3×D_N	C=2-3	55HRC

UNC	2B
ASME B1.1	



	P	M	K	N	S	H	O
TICN			●	●●	●	●	●●

~DIN 2184-1



Designation TICN	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8231106-UNC10	UNC 10-24	4,826	70	16	47	6	4,9	8	3
8231106-UNC1/4	UNC 1/4-20	6,35	80	20	57	7	5,5	8	3
8231106-UNC5/16	UNC 5/16-18	7,938	90	25	66	8	6,2	9	3
8231106-UNC3/8	UNC 3/8-16	9,525	100	30	72	10	8	11	3
8231106-UNC1/2	UNC 1/2-13	12,7	110	36	68	12	9	12	3

Without reduced neck after the thread

B 5

B 1008 D 1 B 709

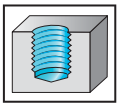
Solid carbide machine taps
Paradur® HS

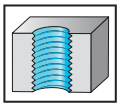


– For short-chipping materials

UNF
ASME B1.1

2B

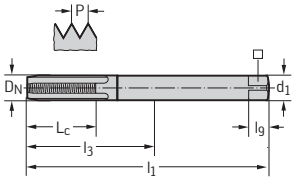




≤ 3×D_N | C=2-3 | 55HRC

	P	M	K	N	S	H	O
TICN			●	●●	●	●	●●

~DIN 2184-1



Designation TICN	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8331106-UNF10	UNF 10-32	4,826	70	16	47	6	4,9	8	3
8331106-UNF1/4	UNF 1/4-28	6,35	80	20	57	7	5,5	8	3
8331106-UNF5/16	UNF 5/16-24	7,938	90	25	66	8	6,2	9	3
8331106-UNF3/8	UNF 3/8-24	9,525	90	30	62	10	8	11	3

Without reduced neck after the thread

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 709

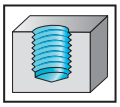
Solid carbide machine taps
Paradur® Hard Scraper

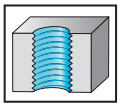


– For short-chipping materials
– Drill core hole 0.1-0.2 mm larger

≤ 2×D_N | C=2-3 | 63HRC / 50HRC

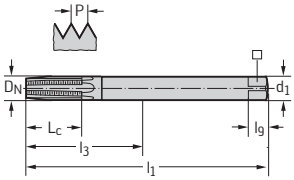
G
DIN EN ISO 228





	P	M	K	N	S	H	O
TICN					●	●●	

PROTOTYP TOOLS STANDARD



Designation TICN	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
8431206-G1/8	G 1/8-28	9,728	28	90	23,5	62	10	8	11	5
8431206-G1/4	G 1/4-19	13,157	19	100	32,5	58	12	9	12	6

Without reduced neck after the thread

B 5

B 1008 D 1 B 709

Thread cutting oils



	P	M	K	N	S	H	O
Protofluid	●●	●●	●●	●			
Hangsterfer's Hardcut					●●	●●	

Designation Protofluid*	Litres	Density at 15 °C in kg/m³	Viscosity at 40 °C in mm²/s	Flash point (COC) in °C	Pour point in °C
SP-1/4	0,25	884	23,4	195	– 15
SP-1/4-12	0,25 (× 12)				
SP-5	5				

* For general applications in thread cutting and thread forming

Designation Hangsterfer's Hardcut*	Litres	Density at 15 °C in kg/m³	Viscosity at 40 °C in mm²/s	Flash point (COC) in °C	Pour point in °C
SP-1/4	0,25	1065	21	196	– 4
SP-1	1				
SP-5	5				

* For steel, titanium and nickel alloys with difficult cutting properties as well as special materials

WALTER SELECT
●● Primary application
● Other application

B 1008

Tapping and thread forming cutting data

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	HSS-E (PM) taps, Uncoated, v_c [m/min] 1,5 × D_N	2 × D_N	2,5 × D_N	Cooling lubricant recommended	
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	16	13	12	E	
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	20	17	14	E	
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	10	9	7	E	
		C > 0.55%	Annealed	190	640	P4	10	9	7	E	
		C > 0.55%	Heat-treated	300	1010	P5	6	5	4	E	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	10	9	7	E	
	Low-alloyed steel	Annealed		175	590	P7	20	17	14	E	
		Heat-treated		285	960	P8	5	4	4	E	
		Heat-treated		380	1280	P9	3	3	2	E	
		Heat-treated		430	1480	P10	3	2	2	O	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	10	9	7	E	
		Hardened and tempered		300	1010	P12	6	5	4	E	
		Hardened and tempered		380	1280	P13	3	3	2	O	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	3	2	2	E	
		Martensitic, heat-treated		330	1110	P15	3	2	2	E	
M	Stainless steel	Austenitic, quench hardened		200	680	M1	4	3	3	E	
		Austenitic, precipitation hardened (PH)		300	1010	M2	2	2	1	E	
		Austenitic/ferritic, duplex		230	780	M3	2	2	2	E	
K	Malleable cast iron	Ferritic		200	400	K1	10	9	7	E	
		Pearlitic		260	700	K2	7	5	5	E	
	Grey cast iron	Low tensile strength		180	200	K3	19	16	13	E	
		High tensile strength/austenitic		245	350	K4	13	10	9	E	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	10	9	7	E	
		Pearlitic		265	700	K6	7	5	5	E	
	GGV (CGI)			230	400	K7	6	5	4	E	
N	Wrought aluminium alloys	Not hardenable		30	–	N1	10	8	7	E	
		Hardenable, hardened		100	340	N2	19	16	13	E	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	17	14	12	E	
		≤ 12% Si, hardenable, hardened		90	310	N4	17	14	12	E	
		> 12% Si, not hardenable		130	450	N5	16	13	11	E	
	Magnesium-based alloys			70	250	N6	26	21	19	O	
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	9	7	6	E	
		Brass, bronze, red brass		90	310	N8	24	21	18	E	
		Cu-alloys, short-chipping		110	380	N9	31	25	21	E	
		High-tensile, Ampco		300	1010	N10	2			E	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	3	3	2	E	
			Hardened	280	940	S2	2	2	2	E	
		Ni or Co base	Annealed	250	840	S3	3	3	2	E	
			Hardened	350	1180	S4	2	2	2	O	
			Cast	320	1080	S5	2	2	2	O	
	Titanium alloys	Pure titanium		200	680	S6	10	8	7	E	
		α and β alloys, hardened		375	1260	S7	3	2	2	O	
		β alloys		410	1400	S8	3	2	2	O	
	Tungsten alloys			300	1010	S9	2	2	2	O	
	Molybdenum alloys			300	1010	S10	5	5	4	O	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				O	
		Hardened and tempered		55 HRC	–	H2				O	
		Hardened and tempered		60 HRC	–	H3				O	
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				O	
O	Thermoplastics	Without abrasive fillers				O1	28	23	19	E	
	Thermosetting plastics	Without abrasive fillers				O2	11	9	8	E	
	Plastic, glass fibre reinforced	GFRP				O3	6	5	4	E	
	Plastic, carbon fibre reinforced	CFRP				O4	6	5	4	E	
	Plastic, aramid fibre reinforced	AFRP				O5	6	5	4	E	
	Graphite (technical)			80 Shore		O6	13	11	9	E	

E = Emulsion
O = Oil
v_c = Cutting speed

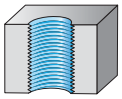
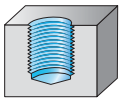
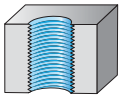
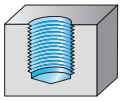
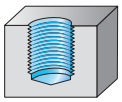
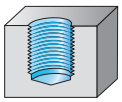
[1] The classification of the machining groups can be found from page B 1174 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

HSS-E (PM) taps			Solid carbide taps							HSS-E thread formers						Solid carbide thread formers			
Coated			Uncoated			Coated				Uncoated			Coated			Coated			
v_c [m/min]										v_c [m/min]									
1,5 × D_N	2 × D_N	2,5 × D_N	1,5 × D_N	2 × D_N	2,5 × D_N	1,5 × D_N	2 × D_N	2,5 × D_N		1,5 × D_N	2 × D_N	2,5 × D_N	1,5 × D_N	2 × D_N	2,5 × D_N	1,5 × D_N	2 × D_N	2,5 × D_N	
37	30	26							E	17	14	12	46	37	32	58	48	41	E
37	31	26				64			E	15	12	10	47	38	33	58	48	41	E
23	19	17				64	52		E	10	9	7	29	23	20	47	38	33	E
23	19	16				64	52		E	10	9	7	29	23	20	47	38	33	E
14	12	10				56	46		E				17	14	12	28	23	19	E
23	19	16				64	52		E	10	9	7	29	23	20	47	38	33	E
37	30	26				64	52		E	15	12	10	47	38	33	58	48	41	E
12	10	9				49	40		E				15	12	11	24	20	17	E
7	6	5				37	30		E										
5						26	21		O										
23	19	16				64	52		E	10	9	7	29	23	20	47	38	33	E
14	12	10				56	46		E				17	14	12	28	23	19	E
7	6	5				37	30		O										
7	6	5							E				13	10	9	26	21	18	E O
5	4	3							E				5	4	3	15	12	10	O
8	7	6							E				15	12	11	31	25	21	E O
5	4	3							E				5	4	4	15	13	11	O
6	5	4							E				5	4	4	15	13	11	E O
22	18	16	29	24	20	50	41	33	E										
11	9	8	17	14	12	34	28	22	E										
44	36	32	46	38	33	73	60	51	E										
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10	8	7	14	11	10	33	27	23	E										
8	7	6							E	25	20	17	56	45	39	81	67	57	E
32	26	22							E	28	23	19	52	43	37	70	57	49	E
22	18	16	41	33	28	89	73	63	E				48	39	34	70	57	49	E
22	18	16	41	33	28	89	73	63	E				48	39	34	70	57	49	E
25	21	18	35	29	24	70	57	49	E										
34	28	24	44	36	31	90	74	63	O										
14	12	10							E	10	8	7	21	17	15	46	38	33	E
36	29	25							E										
48	40	34	58	48	41	58	48	41	E										
			11	9	8	11	9	8	E										
									E				8	6	5				E
3									E										
									E				8	6	5				O
3									O										
3									O										
8	7	6							E										
4	4								O										
4	4								O										
2	2		5	4	3	6	5	4	O										
7	5		12	10	9	17	14	12	O										
						18	15	13	O										
						4	3		O										
						4	3		O										
						4	3		O										
22	18	15							E										
13	10	9	27	22	19	25	21	18	E										
8	6	5	16	13	11	15	12	11	E										
8	6	5	16	13	11	15	12	11	E										
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Type description

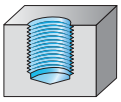
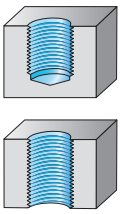
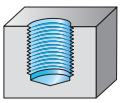
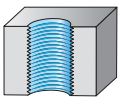
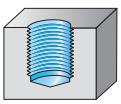
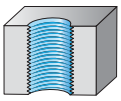
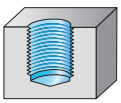
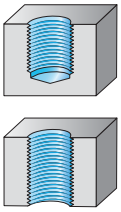
Taps for universal applications

Type description		Machining	Materials P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Thread depth	Page
Prototex® Eco Plus 	– For wet and MQL machining		●●	●●	●●	●●				0°	3,0 × D_N	B 742
Paradur® Eco Plus 	– For wet and MQL machining		●●	●●	●●	●●				45°	3,0 × D_N	B 780
Prototex® Synchrospeed 	– Synchronous machining – Shank tolerance h6		●●	●●	●●	●●	●●		●●	0°	3,0 × D_N	B 747
Paradur® Synchrospeed 	– Synchronous machining – Shank tolerance h6		●●	●●	●●	●●	●		●	40°	2,5 × D_N	B 788
TC115 	– Particularly cost-effective for small to medium batch sizes		●●	●●	●●	●				45°	3,0 × D_N	B 787
TC216 	– Particularly cost-effective for small to medium batch sizes		●●	●●	●●	●●				0°	3,5 × D_N	B 746

●● Primary application
● Additional application

B 5

Taps for special applications

Type description		Machining	Materials P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Thread depth	Page
TC142 	– For stainless and high-strength steels with extremely high performance		●	●●						50°	$3,0 \times D_N$	B 809
Paradur® Eco CI 	– For short-chipping materials – For wet and MQL machining				●●	●●			●	0°	$3,0 \times D_N$	B 814
Paradur® HT 	– For medium to high tensile steels and short-chipping materials – Internal cooling required		●●		●●	●			●	0°	$3,5 \times D_N$	B 792
Prototex® X-pert P 	– For materials with low to medium strength		●●			●			●	0°	$3,0 \times D_N$	B 750
Paradur® X-pert P 	– For materials with low to medium strength		●●			●			●	45°	$3,5 \times D_N$	B 798
Prototex® X-pert M 	– For stainless and high-strength steels		●	●●						0°	$3,0 \times D_N$	B 760
Paradur® X-pert M 	– For stainless and high-strength steels		●	●●						40°	$2,5 \times D_N$	B 810
Paradur® X-pert K 	– For cast iron workpieces				●●	●				0°	$3,0 \times D_N$	B 820

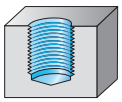
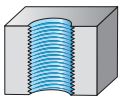
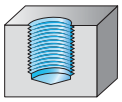
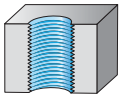
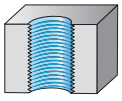
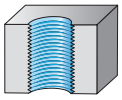
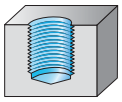
●● Primary application
● Additional application

B 5

Type description

(continued)

Taps for special applications

Type description		Machining	Materials P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Thread depth	Page
Paradur® X-pert N 	– For long-chipping aluminium materials					●●	●		●	35°	$3,0 \times D_N$	B 821
Prototex® X-pert N 	– For long-chipping aluminium materials					●●	●		●	0°	$3,0 \times D_N$	B 762
Paradur® Short Chip HT 	– For long-chipping materials		●●		●	●				15°	$4,0 \times D_N$	B 807
Prototex® TiNi Plus 	– For machining high tensile Ti materials that tend to cause jamming with emulsion		●●	●●		●	●●			0°	$2,0 \times D_N$	B 765
Paradur® Ti Plus 	– For machining high tensile Ti materials that tend to cause jamming with emulsion		●●			●	●●			15°	$2,0 \times D_N$	B 830
Prototex® HSC 	– For high-strength and high tensile steel materials up to 55 HRC – Shank tolerance h6 – Internal cooling required – Solid carbide		●●		●●					0°	$2,0 \times D_N$	B 989
Paradur® HSC 	– For high-strength and high tensile steel materials up to 55 HRC – Shank tolerance h6 – Internal cooling required – Solid carbide		●●		●●			●●		15°	$2,0 \times D_N$	B 990

●● Primary application
● Additional application

Product families

Taps	
AP	For Ampco materials
Eco CI	For short-chipping cast iron and aluminium materials
Eco Plus	Product range for particularly cost-effective wet or minimum quantity lubrication (MQL) machining
Engine	For short-chipping cast iron and aluminium materials, made from solid carbide
FT	For titanium carbide hard materials
H	For soft materials
H24	Tool with higher number of flutes
Hard	For hard machining up to 63 HRC
HS	For abrasive, short-chipping materials
HSC	"High Speed Cutting", for high cutting speeds
HT	For steel with a tensile strength of 700-1400 N/mm²
Inox 25	Designed specifically for manufacturing cap nuts
Insert	For manufacturing thread inserts
Megasprint	"Sprint" with internal coolant
MS	For short-chipping copper-zinc alloys
N	For steel with a tensile strength of 200-1000 N/mm²
NH	For steel with a tensile strength of 400-1200 N/mm²
Ni	For nickel alloys and similar materials
Ni 10	For materials with difficult cutting properties
OS	For thin steel and aluminium sheets
Secur	Problem-solver for birds nesting and swarf packing in soft, long-chipping materials with a tensile strength of up to 850 N/mm²
Short Chip HT	Problem-solver for birds nesting and swarf packing in steel with a tensile strength of 850-1200 N/mm²
Sprint	For a wide range of materials
STE	For steel with a tensile strength of 350-1200 N/mm² and chamfer form E
Synchrospeed	Product range for synchronous machining
TC115	Blind hole taps for universal use – Perform line
TC142	Blind hole taps for stainless steels – Supreme line
TC216	Through hole taps for universal use – Perform line
Ti	For titanium alloys and similar materials
Ti Plus	Specially developed for titanium alloys with emulsion
TiNi	For titanium alloys and nickel alloys
TiNi Plus	Specially developed for titanium alloys and nickel alloys with emulsion
X·pert K	For grey cast iron and cast iron with spheroidal graphite
X·pert M	For stainless and high-strength steels
X·pert N	For long-chipping aluminium alloys
X·pert P	For steel materials with a tensile strength of 200-1000 N/mm²

Grade description

Walter grade description	Standard designation	Materials							Range of applications	Coating process	Coating composition	Tool example
		P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	01 10 20 30 40 50 60 70 80 90			
WY80FC	HSS-E	●●	●●	●	●					–	Vaporised	
WY80AA	HSS-E	●●	●●	●	●					PVD	TiN	
WW60RB	HSS-E-PM	●	●●							PVD	TiAlN	

●● Primary application
● Additional application

B 5

Basic types

Blind hole thread

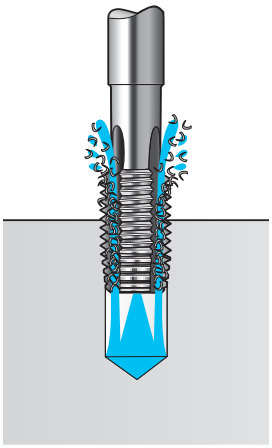
Straight-fluted taps – Short-chipping materials

Straight-fluted taps do not transport chips. For this reason, they can only be used with short-chipping materials or short threads.

Note:
The chips accumulate at the bottom of the drilled hole if internal coolant is not used. If the safety margin at the bottom of the hole is too small, the tool can run up against the chips and break.

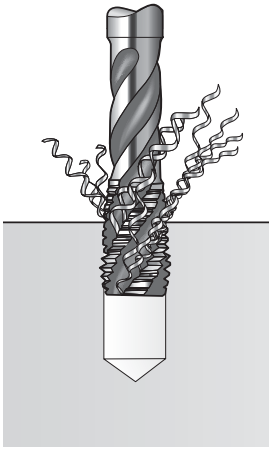
Deeper threads are possible with straight-fluted tools if the tap has an axial coolant supply, because the chips are flushed out against the direction of feed. However, a requirement for this is that the chips are broken short (e.g. Paradur® HT, thread depth of up to $3.5 \times D_N$).
In comparison to helical tools, straight-fluted taps have a longer tool life.

Some straight-fluted tools can also be used for through-hole threads in materials with good chip breaking properties (e.g. Paradur® Eco CI, Paradur® X-pert K, Paradur® Hard).



Right-hand spiral taps – Long-chipping materials

Right-hand spiral taps transport chips towards the shank. The tougher the material to be machined is (and/or the longer the chips it produces) and the deeper the thread, the greater the helix angle required (e.g. TC142, Paradur® Eco Plus).

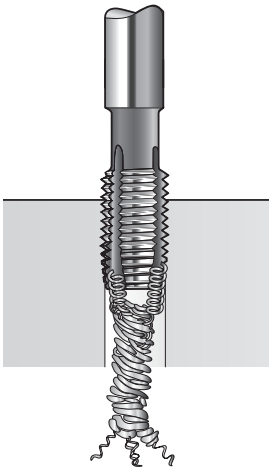


Through-hole threads

Taps with spiral point – Long-chipping materials

Taps with a spiral point transport the chips forward in the direction of feed.

Taps with a spiral point are the first choice for creating through-hole threads in long-chipping materials (e.g. TC216, Prototex® Eco Plus).

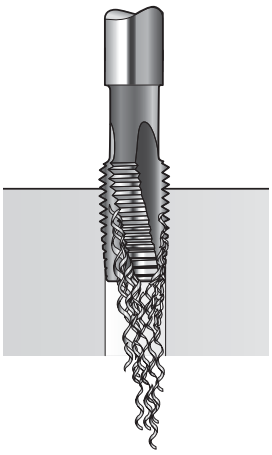


Left-hand spiral taps – Long-chipping materials

Left-hand spiral taps (and taps with a spiral point) transport the chips forward in the direction of feed.

Tools with left-hand spiral are practical if chips cannot be removed reliably with a spiral point alone.

Tool example:
Paradur® N of type 20411 and 20461



Thread cutting process

Cutting process for blind hole threads



1. The cutting tap comes to a stop. At the point at which it comes to a stop, all cutting edges in the chamfer/lead are in the process of forming chips.



2. The tool begins to reverse. The resulting chips remain where they are for the time being. The reverse torque at this point is virtually zero.



3. When the tap reverses, the chips come into contact with the back of the trailing land. The reverse torque increases sharply. The chips now have to be shorn off. As the chamfer/lead of the tap has a clearance angle and the conical chamfer/lead withdraws from the thread axially when it backs out of the hole, the purchase point is no longer directly at the root of the chips. For this reason, the chips require a certain level of stability (thickness) to ensure a clean break.



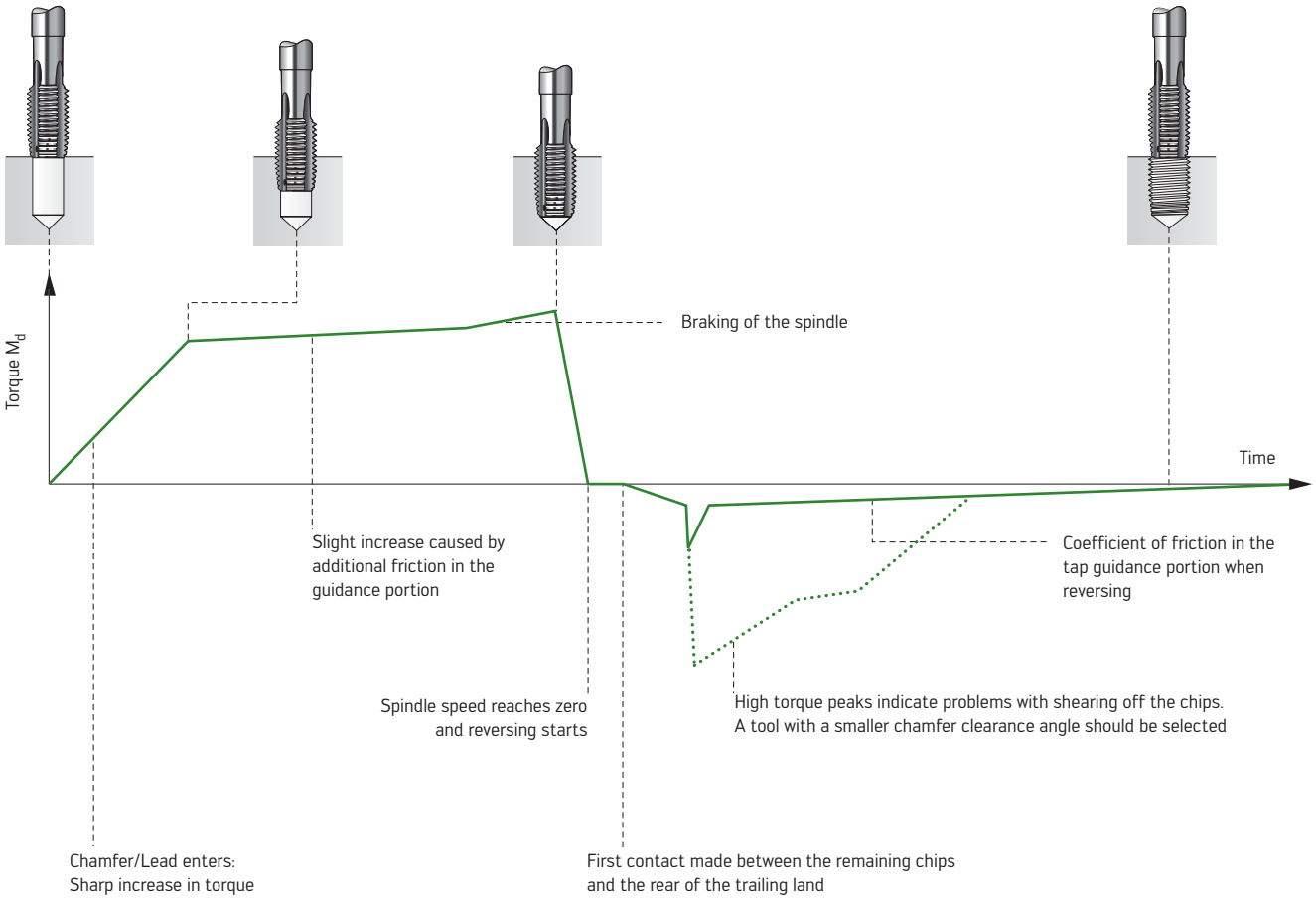
4. The chips have been shorn off and reverse torque decreases to the level of friction between the guide part and the cut thread.

Note:
Through hole taps cannot be used for blind hole machining, as these have a high chamfer/lead clearance angle. The result: The chips may not be shorn off, and may instead become jammed between the chamfer and the thread. This could lead to fractures in the chamfer and, in extreme cases, to tap breakage.

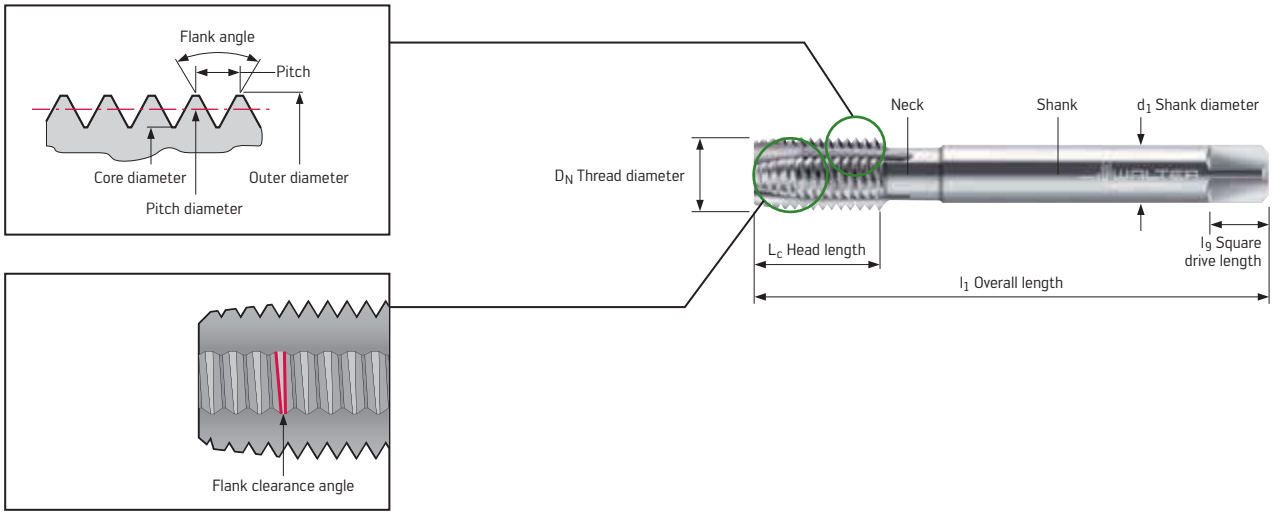
The chamfer clearance angle of blind hole taps is always smaller than that of through hole taps, because blind hole taps must shear off the chip root when reversing.

B 5

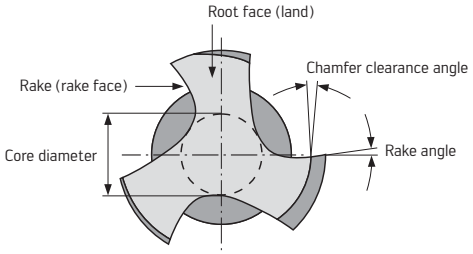
Torque curve during the blind hole thread tapping process



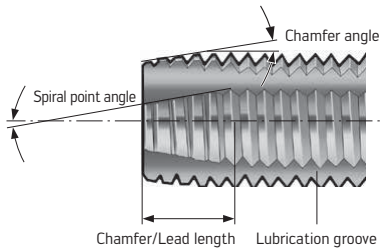
Angles and characteristics



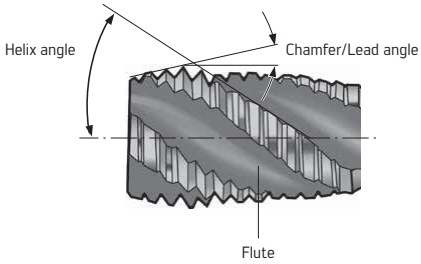
Features (view from above)



Through hole tap with a spiral point



Blind hole tap with a right-hand helix



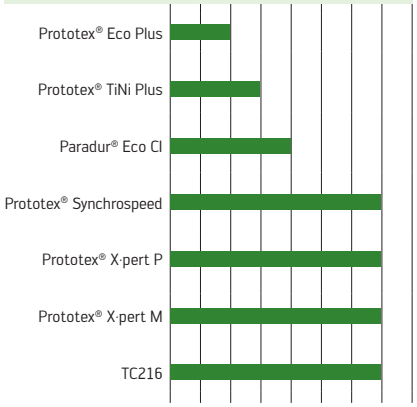
B 5

Angles and characteristics

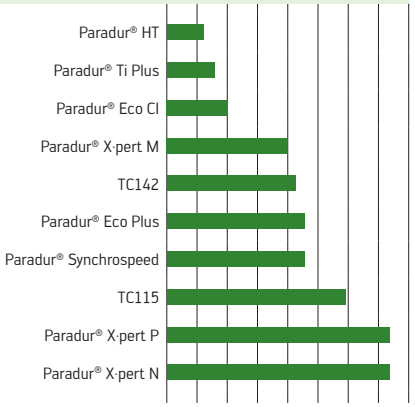
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Comparison of geometry data

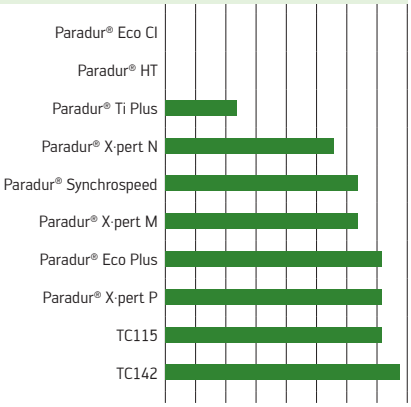
Rake angle of through hole taps



Rake angle of blind hole taps



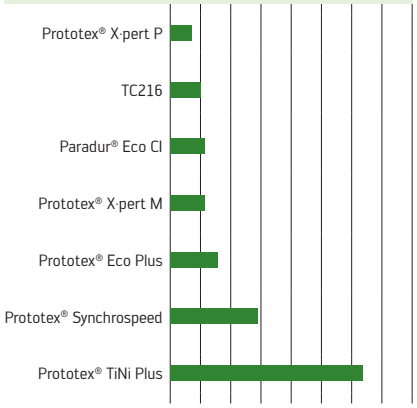
Helix angle of blind hole taps



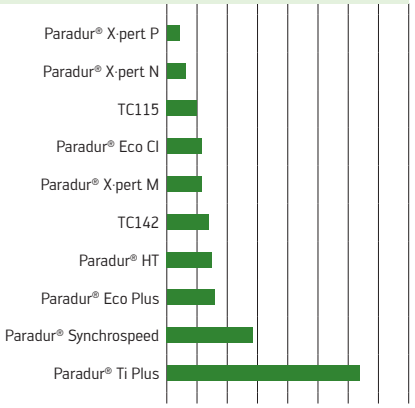
A smaller **rake angle**:
- Increases the stability of the cutting edges (large rake angles could cause fractures around the chamfer/lead)
- Generally produces more controllable chips
- Produces poorer-quality surfaces on the component
- Increases the cutting forces and the cutting torque
- Is required for machining hard and abrasive materials
- Increases the tendency to compress the material to be machined, i.e. the tap cuts less freely and therefore creates slightly tighter threads

A larger **helix angle**:
- Facilitates chip removal
- Reduces the stability of the tool and thereby limits the maximum cutting torque
- Reduces the stability of the teeth
- Reduces the tool life
- Enables deeper threads

Through hole tap flank clearance angle

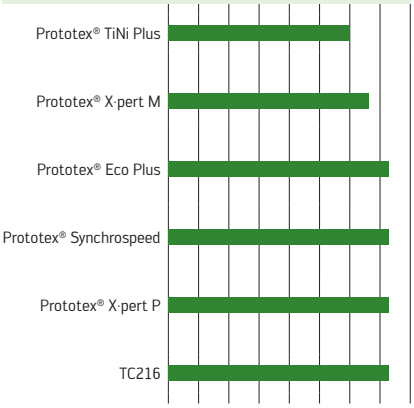


Blind hole tap flank clearance angle



The **flank clearance angle** must be matched to the material to be machined. Materials with a higher strength and materials that tend to cause jamming require a larger flank clearance angle.
The guidance characteristics of the tool worsen as the clearance angle is increased, which is why miscutting occurs in soft materials if compensating chucks are used.

Through hole tap spiral point angle

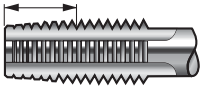
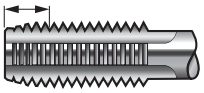
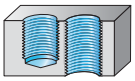
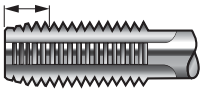
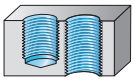
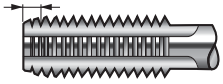
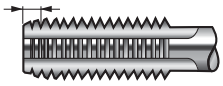


The **spiral point angle** is limited by the chamfer/lead length and the number of flutes, because a larger spiral point angle causes the land width in the first thread of the chamfer/lead to be reduced.
The result: The stability of the cutting edge decreases (the risk of fractures around the chamfer increases). However, an increased spiral point angle facilitates chip removal in the direction of feed.
If the spiral point angle is too small, chip removal can become problematic. Left-hand helical tools provide a solution for this.

Chamfer clearance angle:
Through hole taps have a chamfer clearance angle approx. three times larger than blind hole taps.

Chamfer/Lead forms

Chamfer forms based on DIN 2197

Form	Number of threads in the chamfer/lead	Design of the flutes	Blind hole/through hole machining	Used predominantly for
A	6–8 threads 	Straight-fluted		Short-chipping materials
				Short through-hole thread in medium-chipping and longchipping materials
B	3.5–5 threads 	Straight-fluted with a spiral point		Medium-chipping and long-chipping materials
C	2–3 threads 	Right-hand helical		Medium-chipping and long-chipping materials
		Straight-fluted		Short-chipping materials
D	3.5–5 threads 	Left-hand helical		Long-chipping materials
		Straight-fluted		Short-chipping materials
E	1.5–2 threads 	Right-hand helical		Short thread run-out in medium-chipping and long-chipping materials
		Straight-fluted		Short thread run-out in short-chipping materials
F	1–1.5 threads 	Right-hand helical		Very short thread run-out in medium-chipping and long-chipping materials
		Straight-fluted		Very short thread run-out in short-chipping materials

Please note:
Longer chamfers/leads:
– Increase the tool life
– Reduce the strain on the cutting edge
– Increase the required torque
Shorter chamfers/leads:
– Enable the thread to almost reach the bottom of the hole
– Facilitate chip formation

Modifications

	Negative chamfer (Secur chamfer)	Shortened chamfer	Reduced helix in the chamfer	Inclined thread	Uncoated rake
					
Chip formation	Chips are rolled more tightly, shorter chips	Chips are rolled more tightly, fewer chips	Chips are rolled more tightly, shorter chips	No change	Chips are rolled more tightly, shorter chips
Tool life quantity	+	– –	uncoated: – coated: +	+	–
Thread quality	–	–	uncoated: – – coated: □	□	–
Chip thickness	□	+	□	□	□
Torque	+	–	–	–	□
Application example	Prevention of bird nesting in soft steels such as St52, C45, etc.	Thread nearly to the bottom of the hole, improved chip control	Optimised chip formation in steels and aluminium wrought alloys	Problems with fractures or weld formations in the guide part	Optimised chip formation in steels, crankshaft machining
Standard tools with appropriate modification	Paradur® Secur Paradur® HSC Prototex® HSC	All tools with E/F chamfer form	Paradur® Short Chip HT Paradur® Ni 10 Paradur® HSC	TC142 Paradur® Eco Plus Paradur® X·pert M Paradur® Synchrospeed	All uncoated tools as well as Paradur® Synchrospeed (TiN-vap)

+ increases □ remains unchanged – decreases – – decreases sharply

Solutions

Thread surface

The thread surface is determined by:
– The production process: Drilling, forming, milling
– The wear on the tool
– The geometry
– The coating
– The material to be machined
– The cooling lubricant and its availability in the operating area of the tool

Note:
In tapping and thread forming, there is almost no possibility to influence the surface quality via the cutting data. In contrast to this, the cutting speed and feed rate can be selected independently of each other for thread milling.

Optimisation of the thread surface during thread cutting

– Use thread forming or thread milling instead of tapping
– Increase the rake angle
– Decreased chip thickness via a longer chamfer or an increased number of flutes (with blind hole taps, this nevertheless worsens the chip formation)
– In general, TiN and TiCN produce the best surfaces in steel (uncoated tools or CrN and DLC layers produce the best surfaces in aluminium)
– Increase the oil content of the emulsion or only use oil
– Supply cooling lubricant directly to the operating area
– Replace the tool with a new one earlier

Some of the suggested measures might lead to an improvement in the surface quality, but are accompanied by a worsening in chip control – which is problematic with deep blind holes in particular. It is therefore important to select a compromise that takes the customer's requirements into account.



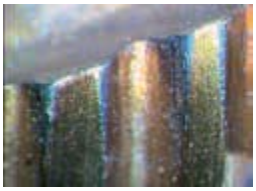
Tap with TiCN layer in AlSi7



Tap with DLC layer in AlSi7

Wear

A high level of hardness ensures high resistance to wear – and therefore a long tool life. However, increasing the hardness generally also leads to reduced toughness.
However, small dimensions and high-spiralled tools require a high level of toughness, because otherwise total breakage can occur.
The hardness of the tool can normally be increased without difficulty for thread formers, straight-fluted and low-spiralled tools, as well as for machining abrasive materials with a low strength.
Solid carbide tools are characterised by a particularly high degree of hardness.



Example of abrasive wear

Weld formations on the tool

Special coatings and surface treatments are recommended to solve problems depending on the material to be machined:
– Aluminium and aluminium alloys: Uncoated, CrN, DLC
– Soft steels and stainless steels: vap
– Soft structural steels: CrN

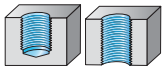


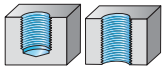
Example of weld formations

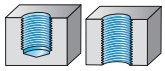


		Page
HSS-E and solid carbide thread formers	Product range overview	B 1024
	Designation key	B 1027
	Walter Select – HSS-E and solid carbide thread formers	B 1028
	M – Metric thread	B 1034
	MF – Metric fine-pitch thread	B 1062
	UNC / UNF	B 1072
	G	B 1074
Technical information	Cutting data	B 1008
	Type description	B 1076
	Product families	B 1077
	Thread forming process	B 1078
	Modifications	B 1080
	Solutions	B 1081

HSS-E and solid carbide thread formers product range overview
M – Metric thread

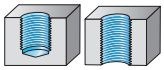
Machining						
Thread depth	**2 × D_N**	**3 × D_N**				**3,5 × D_N**
Designation	**Protodyn® Eco LM**	**Protodyn® Eco Plus**	**Protodyn® Plus**	**Protodyn® Plus**	**Protodyn® C**	**Protodyn® S Eco Plus**
Dimension range	M 2–M 12	M 2–M 20	M 1–M 24	M 3 LH–M 16 LH	M 1–M 10	M 2–M 20
Tolerance	6HX	6HX / 6GX	6HX / 6GX / 7GX	6HX	6HX / 6GX	6HX / 6GX
Coolant supply	External	External	External	External	External	External / radial
Chamfer/Lead form	C	C	C	C	C	C / E
Coating/grade	CRN	TIN / TICN	TIN	TIN	nid / uncoated	TIN / TICN
Cutting tool material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
Page	B 1045	B 1034	B 1046	B 1047	B 1053	B 1037
						

Machining						
Thread depth	**3,5 × D_N**					
Designation	**Protodyn® S Synchrospeed**	**Protodyn® S Eco Inox**	**Protodyn® S Plus**	**Protodyn® SC**	**Protodyn® SF**	**Protodyn® HSC**
Dimension range	M 3–M 12	M 2–M 12	M 2–M 24	M 3–M 10	M 3–M 16	M 3–M 10
Tolerance	6HX	6HX	6HX / 6GX / 7GX	6HX / 6GX	6HX	6HX
Coolant supply	External / radial	External	External	External	External	External
Chamfer/Lead form	C	C	C	C	C	C
Coating/grade	TIN / TICN	TIN	TIN	nid / uncoated	TICN	TICN
Cutting tool material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	Solid carbide
Page	B 1042	B 1044	B 1050	B 1055	B 1057	B 1058
						

Machining				
Thread depth	**3,5 × D_N**	**3 × D_N**	**3,5 × D_N**	
Designation	**Protodyn® S HSC**	**Protodyn® Eco Plus**	**Protodyn® S Eco Plus**	**Protodyn® S HSC**
Dimension range	M 6–M 10	M 5–M 16	M 2–M 16	M 6–M 10
Tolerance	6HX	6HX	6HX / 6GX	6HX
Coolant supply	Radial	Axial	External	Axial
Chamfer/Lead form	C	C	E	C / E
Coating/grade	TICN	TIN / TICN	TIN / TICN	TICN
Cutting tool material	Solid carbide	HSS-E	HSS-E	Solid carbide
Page	B 1061	B 1035	B 1039	B 1059
				

B 6

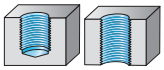
HSS-E and solid carbide thread formers product range overview
MF – Metric fine-pitch thread

Machining						
Thread depth	**$3,5 \times D_N$**					**$3 \times D_N$**
Designation	**Protodyn® S Eco Plus**	**Protodyn® S Synchrospeed**	**Protodyn® S Plus**	**Protodyn® SF**	**Protodyn® S HSC**	**Protodyn® Eco Plus**
Dimension range	MF 8x1– MF 16x1.5	MF 8x1– MF 16x1.5	MF 4x0.5– MF 30x1.5	MF 8x1– MF 16x1.5	MF 12x1.5– MF 16x1.5	MF 8x1– MF 14x1.5
Tolerance	6HX / 6GX	6HX	6HX / 6GX	6HX	6HX	6HX
Coolant supply	External / radial	External	External	External	Radial	Axial
Chamfer/Lead form	C	C	C / E	C	C	C
Coating/grade	TIN / TICN	TIN	TIN	TICN	TICN	TIN
Cutting tool material	HSS-E	HSS-E	HSS-E	HSS-E	Solid carbide	HSS-E
Page	B 1063	B 1066	B 1067	B 1069	B 1071	B 1062
						

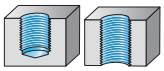
Machining	
Thread depth	**$3,5 \times D_N$**
Designation	**Protodyn® S HSC**
Dimension range	MF 8x1– MF 16x1.5
Tolerance	6HX
Coolant supply	Axial
Chamfer/Lead form	C
Coating/grade	TICN
Cutting tool material	Solid carbide
Page	B 1070
	

B 6

HSS-E and solid carbide thread formers product range overview UNC/UNF

Machining		
Thread depth	**3,5 × D_N**	
Designation	**Protodyn® S Plus**	**Protodyn® S Plus**
Dimension range	UNC 2-56– UNC 5/8-11	UNF 2-64– UNF 5/8-18
Tolerance	2BX	2BX
Coolant supply	External	External
Chamfer/Lead form	C	C
Coating/grade	TIN	TIN
Cutting tool material	HSS-E	HSS-E
Page	B 1072	B 1073
		

HSS-E and solid carbide thread formers product range overview G

Machining		
Thread depth	**3,5 × D_N**	
Designation	**Protodyn® S Plus**	**Protodyn® SF**
Dimension range	G 1/8-28– G 1"-11	G 1/8-28– G 1/2-14
Tolerance	NORMAL	NORMAL
Coolant supply	External	External
Chamfer/Lead form	C	C
Coating/grade	TIN	TICN
Cutting tool material	HSS-E	HSS-E
Page	B 1074	B 1075
		

HSS-E and solid carbide thread formers designation key

Example:

H	P	8	0	6	1	7	4	6
1	2	3	4	5	6	7	8	9

1	2	3	4	5
Tool range	**Tool generation**	**Tool type**	**Thread type**	**Design**
A ANSI	P Plus	2 HSS-E thread formers	0 Metric	6 Protodyn®
E Eco		8 Solid carbide thread formers	1 Metric fine	
S Synchrospeed			2 UNC	
D Protodyn®			3 UNF	
H HSC machining			4 G	

6	7	8	9
Tolerance/shank	**Version of lubrication grooves**	**Modification**	**Surface treatment**
1 6HX, 2BX Reinforced shank	0 Without lubrication grooves (chamfer form = D)	0 None	0 None
3 6GX Reinforced shank	1 Without lubrication grooves	1 Internal coolant supply, axial outlet	1 NID
4 7GX Reinforced shank	7 With lubrication grooves	4 Internal coolant supply, radial outlet	4 CRN
6 6HX, 2BX, G-X Reduced shank			5 TiN
8 6GX Reduced shank			6 TiCN
9 7GX Reduced shank			

Walter Select – HSS-E and solid carbide thread formers

Step by step to the right tool

STEP 1

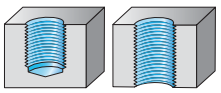
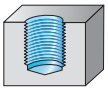
Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Select your intended **application** from the table.

	Thread forming HSS-E/solid carbide				
					
Thread depth	$2,0 \times D_N$	$3,0 \times D_N$	$3,5 \times D_N$	$3,0 \times D_N$	$3,5 \times D_N$
Page	B 1030	B 1030	B 1031	B 1033	B 1033

STEP 3

Select your **tool** from the table from page B 1030 onwards, based on the following criteria:

– **Material group**
– **Thread type**
– **Thread depth**

Walter Select HSS-E and solid carbide thread formers

WALTER SELECT
●● Primary application
● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining		
							Thread depth	2 × D_N	3 × D_N
							Designation	Protodyn® Eco LM	Protodyn® Eco Plus
							Coolant supply	External	External
							Cutting tool material	HSS-E	HSS-E
							Coating/grade	CRN	TIN / TICN
							Thread type I Page	M I B 1045	M I B 1034
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		●●	●●
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2			●●
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3			●●
		C > 0.55%	Annealed	190	640	P4			●●
		C > 0.55%	Heat-treated	300	1010	P5			●●
		Free cutting steel (short-chipping)	Annealed	220	750	P6			●●
	Low-alloyed steel	Annealed		175	590	P7			●●
		Heat-treated		285	960	P8			●●
		Heat-treated		380	1280	P9			
		Heat-treated		430	1480	P10			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11			●●
		Hardened and tempered		300	1010	P12			●●
		Hardened and tempered		380	1280	P13			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14			●●
		Martensitic, heat-treated		330	1110	P15			●●
M	Stainless steel	Austenitic, quench hardened		200	680	M1			●●
		Austenitic, precipitation hardened (PH)		300	1010	M2			●●
		Austenitic/ferritic, duplex		230	780	M3			●●
K	Malleable cast iron	Ferritic		200	400	K1			
		Pearlitic		260	700	K2			
	Grey cast iron	Low tensile strength		180	200	K3			
		High tensile strength/austenitic		245	350	K4			
	Cast iron								

STEP 4

The corresponding page in the catalogue is specified following tool selection.

At the bottom right of the catalogue page, you will find a reference to the **cutting data table**.

HSS-E machine thread formers
Protodyn® Eco Plus



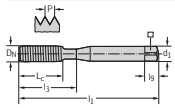
– For long-chipping materials

M DIN 13 | 6HX

≤ 3×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

	P	M	K	N	S	H	O
TICN	●●	●		●●	●		
TIN	●●	●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2061106-M2	EP2061105-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
EP2061106-M2.5	EP2061105-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
EP2061106-M3	EP2061105-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
EP2061106-M3.5	EP2061105-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
EP2061106-M4	EP2061105-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
EP2061106-M5	EP2061105-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2061106-M6	EP2061105-M6	M 6	1	80	15	30	6	4,9	8	5
EP2061106-M8	EP2061105-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2061106-M10	EP2061105-M10	M 10	1,5	100	20	39	10	8	11	5

STEP 5

Select the **cutting data** for the tool type from page B 1008 onwards.

Tapping and thread forming cutting data

= Cooling lubricant recommended
E = Emulsion
O = Oil
v_c = Cutting speed

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group ¹	HSS-E (PM) taps, Uncoated, v_c [m/min] 1,5 × D_N	2 × D_N	2,5 × D_N	
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	16	13	12	E
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	20	17	14	E
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	10	9	7	E
		C > 0.55%	Annealed	190	640	P4	10	9	7	E
		C > 0.55%	Heat-treated	300	1010	P5	6	5	4	E
		Free cutting steel (short-chipping)	Annealed	220	750	P6	10	9	7	E
	Low-alloyed steel	Annealed		175	590	P7	20	17	14	E
		Heat-treated		285	960	P8	5	4	4	E
		Heat-treated		380	1280	P9	3	3	2	E
		Heat-treated		430	1480	P10	3	2	2	O
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	10	9	7	E
		Hardened and tempered		300	1010	P12	6	5	4	E
		Hardened and tempered		380	1280	P13	3	3	2	O
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	3	2	2	E
		Martensitic, heat-treated		330	1110	P15	3	2	2	E
M	Stainless									E

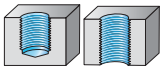
B 6

Walter Select HSS-E and solid carbide thread formers

WALTER SELECT
●● Primary application
● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining		
							Thread depth	2 × D_N	3 × D_N
							Designation	Protodyn® Eco LM	Protodyn® Eco Plus
							Coolant supply	External	External
							Cutting tool material	HSS-E	HSS-E
							Coating/grade	CRN	TIN / TICN
							Thread type | Page	M | B 1045	M | B 1034
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		●●	●●
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2			●●
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3			●●
		C > 0.55%	Annealed	190	640	P4			●●
		C > 0.55%	Heat-treated	300	1010	P5			●●
		Free cutting steel (short-chipping)	Annealed	220	750	P6			●●
	Low-alloyed steel	Annealed		175	590	P7			●●
		Heat-treated		285	960	P8			●●
		Heat-treated		380	1280	P9			
		Heat-treated		430	1480	P10			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11			●●
		Hardened and tempered		300	1010	P12			●●
		Hardened and tempered		380	1280	P13			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14			●●
		Martensitic, heat-treated		330	1110	P15			●●
M	Stainless steel	Austenitic, quench hardened		200	680	M1			●●
		Austenitic, precipitation hardened (PH)		300	1010	M2			●●
		Austenitic/ferritic, duplex		230	780	M3			●●
K	Malleable cast iron	Ferritic		200	400	K1			
		Pearlitic		260	700	K2			
	Grey cast iron	Low tensile strength		180	200	K3			
		High tensile strength/austenitic		245	350	K4			
	Cast iron with spheroidal graphite	Ferritic		155	400	K5			●●
		Pearlitic		265	700	K6			●
	GGV (CGI)			230	400	K7			
N	Wrought aluminium alloys	Not hardenable		30	-	N1		●●	●●
		Hardenable, hardened		100	340	N2		●●	●●
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		●●	●●
		≤ 12% Si, hardenable, hardened		90	310	N4		●●	●●
		> 12% Si, not hardenable		130	450	N5			
	Magnesium-based alloys			70	250	N6			
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7		●●	●●
		Brass, bronze, red brass		90	310	N8			
		Cu-alloys, short-chipping		110	380	N9			
		High-tensile, Ampco		300	1010	N10			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1			●●
			Hardened	280	940	S2			
		Ni or Co base	Annealed	250	840	S3			●●
			Hardened	350	1180	S4			
			Cast	320	1080	S5			
	Titanium alloys	Pure titanium		200	680	S6		●●	
		α and β alloys, hardened		375	1260	S7		●●	
		β alloys		410	1400	S8			
	Tungsten alloys			300	1010	S9			
	Molybdenum alloys			300	1010	S10			
H	Hardened steel			<63 HRC	-	H1-H4			
O	Plastics, graphite					O1-O6			

B6



	3 × D_N		3,5 × D_N				
	Protodyn® Plus	**Protodyn® C**	**Protodyn® S Eco Plus**	**Protodyn® S Synchrospeed**	**Protodyn® S Eco Inox**	**Protodyn® S Plus**	**Protodyn® SC**
	External	External	External / radial	External / radial	External	External	External
	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
	TIN	nid / uncoated	TIN / TICN	TIN / TICN	TIN	TIN	nid / uncoated
	M | B 1046	M | B 1053	M | B 1037 MF | B 1063	M | B 1042 MF | B 1066	M | B 1044	M | B 1050 MF | B 1067 UNC | B 1072 UNF | B 1073 G | B 1074	M | B 1055
							
	●●	●●	●●	●●	●	●●	●●
	●●	●●	●●	●●	●	●●	●●
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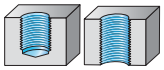
B 6

Walter Select HSS-E and solid carbide thread formers

WALTER SELECT
●● Primary application
● Other application

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Machining	Protodyn® SF	Protodyn® HSC
							Thread depth	3,5 × D_N	
							Designation	Protodyn® SF	Protodyn® HSC
							Coolant supply	External	External
							Cutting tool material	HSS-E	Solid carbide
							Coating/grade	TICN	TICN
							Thread type | Page	M | B 1057 MF | B 1069 G | B 1075	M | B 1058
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		●●	●●
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		●●	●●
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		●●	●●
		C > 0.55%	Annealed	190	640	P4		●●	●●
		C > 0.55%	Heat-treated	300	1010	P5		●●	●●
		Free cutting steel (short-chipping)	Annealed	220	750	P6		●●	●●
	Low-alloyed steel	Annealed		175	590	P7		●●	●●
		Heat-treated		285	960	P8		●●	●●
		Heat-treated		380	1280	P9			
		Heat-treated		430	1480	P10			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		●●	●●
		Hardened and tempered		300	1010	P12		●●	●●
		Hardened and tempered		380	1280	P13			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		●●	●
		Martensitic, heat-treated		330	1110	P15		●●	●
M	Stainless steel	Austenitic, quench hardened		200	680	M1		●●	●
		Austenitic, precipitation hardened (PH)		300	1010	M2		●●	●
		Austenitic/ferritic, duplex		230	780	M3		●●	●
K	Malleable cast iron	Ferritic		200	400	K1			
		Pearlitic		260	700	K2			
	Grey cast iron	Low tensile strength		180	200	K3			
		High tensile strength/austenitic		245	350	K4			
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		●●	●●
		Pearlitic		265	700	K6		●	●
	GGV (CGI)			230	400	K7			
N	Wrought aluminium alloys	Not hardenable		30	-	N1		●●	●●
		Hardenable, hardened		100	340	N2		●●	●●
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3		●●	●●
		≤ 12% Si, hardenable, hardened		90	310	N4		●●	●●
		> 12% Si, not hardenable		130	450	N5			
	Magnesium-based alloys			70	250	N6			
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7			●●
		Brass, bronze, red brass		90	310	N8			
		Cu-alloys, short-chipping		110	380	N9			
		High-tensile, Ampco		300	1010	N10			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		●●	
			Hardened	280	940	S2			
		Ni or Co base	Annealed	250	840	S3		●●	
			Hardened	350	1180	S4			
			Cast	320	1080	S5			
	Titanium alloys	Pure titanium		200	680	S6			
		α and β alloys, hardened		375	1260	S7			
		β alloys		410	1400	S8			
	Tungsten alloys			300	1010	S9			
	Molybdenum alloys			300	1010	S10			
H	Hardened steel			<63 HRC	-	H1-H4			
O	Plastics, graphite					O1-O6			

B6

				
	3,5 × D_N	3 × D_N	3,5 × D_N	
	Protodyn® S HSC	Protodyn® Eco Plus	Protodyn® S Eco Plus	Protodyn® S HSC
	Radial	Axial	External	Axial
	Solid carbide	HSS-E	HSS-E	Solid carbide
	TICN	TIN / TICN	TIN / TICN	TICN
	M | B 1061 MF | B 1071	M | B 1035 MF | B 1062	M | B 1039	M | B 1059 MF | B 1070
				
	●●	●●	●●	●●
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B 6

HSS-E machine thread formers
Protodyn® Eco Plus

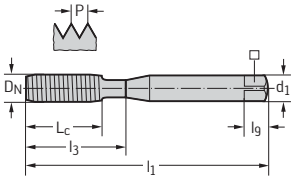


– For long-chipping materials

M	6HX		
DIN 13			

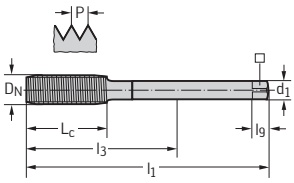
	P	M	K	N	S	H	O
TICN	●●	●		●●	●		
TIN	●●	●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2061106-M2	EP2061105-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
EP2061106-M2.5	EP2061105-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
EP2061106-M3	EP2061105-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
EP2061106-M3.5	EP2061105-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
EP2061106-M4	EP2061105-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
EP2061106-M5	EP2061105-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2061106-M6	EP2061105-M6	M 6	1	80	15	30	6	4,9	8	5
EP2061106-M8	EP2061105-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2061106-M10	EP2061105-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2066106-M12	EP2066105-M12	M 12	1,75	110	23	83	9	7	10	5
EP2066106-M14	EP2066105-M14	M 14	2	110	25	81	11	9	12	6
EP2066106-M16	EP2066105-M16	M 16	2	110	25	68	12	9	12	6
	EP2066105-M20	M 20	2,5	140	30	95	16	12	15	7

B 6

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® Eco Plus



– For long-chipping materials
– With lubrication groove

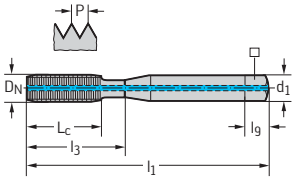
≤ 3×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

M
DIN 13

6HX

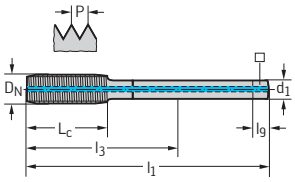
	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2061116-M5	EP2061115-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2061116-M6	EP2061115-M6	M 6	1	80	15	30	6	4,9	8	5
EP2061116-M8	EP2061115-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2061116-M10	EP2061115-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2066116-M12	EP2066115-M12	M 12	1,75	110	23	83	9	7	10	6
EP2066116-M14	EP2066115-M14	M 14	2	110	25	81	11	9	12	6
EP2066116-M16	EP2066115-M16	M 16	2	110	25	68	12	9	12	6

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 1023

HSS-E machine thread formers
Protodyn® Eco Plus

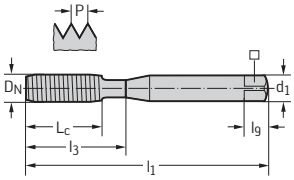


– For long-chipping materials

M	6GX		
DIN 13			

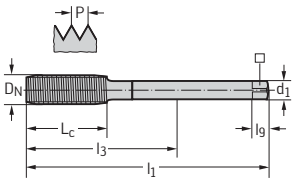
	P	M	K	N	S	H	O
TICN	●●	●		●●	●		
TIN	●●	●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2063106-M2	EP2063105-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
EP2063106-M2.5	EP2063105-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
EP2063106-M3	EP2063105-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
EP2063106-M3.5	EP2063105-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
EP2063106-M4	EP2063105-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
EP2063106-M5	EP2063105-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2063106-M6	EP2063105-M6	M 6	1	80	15	30	6	4,9	8	5
EP2063106-M8	EP2063105-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2063106-M10	EP2063105-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	EP2068105-M12	M 12	1,75	110	23	83	9	7	10	5
	EP2068105-M14	M 14	2	110	25	81	11	9	12	6
	EP2068105-M16	M 16	2	110	25	68	12	9	12	6

B 6

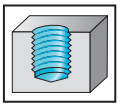
B 1008 D 1 B 1023

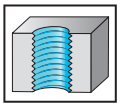
HSS-E machine thread formers
Protodyn® S Eco Plus



– For long-chipping materials

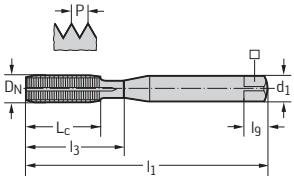
M	6HX		
DIN 13			





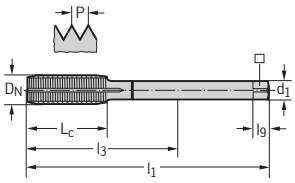
	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2061706-M2	EP2061705-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
EP2061706-M2.5	EP2061705-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
EP2061706-M3	EP2061705-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
EP2061706-M3.5	EP2061705-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
EP2061706-M4	EP2061705-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
EP2061706-M5	EP2061705-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2061706-M6	EP2061705-M6	M 6	1	80	15	30	6	4,9	8	5
EP2061706-M8	EP2061705-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2061706-M10	EP2061705-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2066706-M12	EP2066705-M12	M 12	1,75	110	23	83	9	7	10	5
EP2066706-M14	EP2066705-M14	M 14	2	110	25	81	11	9	12	6
EP2066706-M16	EP2066705-M16	M 16	2	110	25	68	12	9	12	6
EP2066706-M20	EP2066705-M20	M 20	2,5	140	30	95	16	12	15	7

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Eco Plus

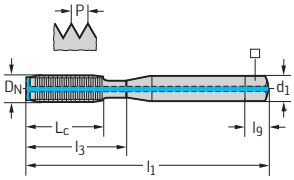


– For long-chipping materials

M DIN 13	6HX		

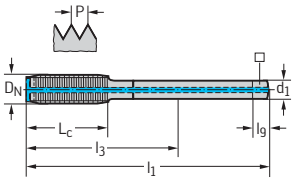
	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2061746-M5	EP2061745-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2061746-M6	EP2061745-M6	M 6	1	80	15	30	6	4,9	8	5
EP2061746-M8	EP2061745-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2061746-M10	EP2061745-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2066746-M12	EP2066745-M12	M 12	1,75	110	23	83	9	7	10	5
EP2066746-M14	EP2066745-M14	M 14	2	110	25	81	11	9	12	6
EP2066746-M16	EP2066745-M16	M 16	2	110	25	68	12	9	12	6
EP2066746-M20	EP2066745-M20	M 20	2,5	140	30	95	16	12	15	7

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Eco Plus

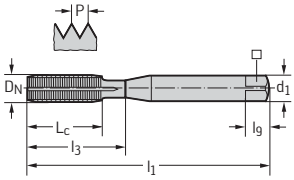


– For long-chipping materials

M	6HX	
DIN 13		

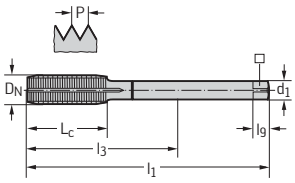
	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2061806-M2	EP2061805-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
EP2061806-M2.5	EP2061805-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
EP2061806-M3	EP2061805-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
EP2061806-M3.5	EP2061805-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
EP2061806-M4	EP2061805-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
EP2061806-M5	EP2061805-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2061806-M6	EP2061805-M6	M 6	1	80	15	30	6	4,9	8	5
EP2061806-M8	EP2061805-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2061806-M10	EP2061805-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2066806-M12	EP2066805-M12	M 12	1,75	110	23	83	9	7	10	5
EP2066806-M14	EP2066805-M14	M 14	2	110	25	81	11	9	12	6
EP2066806-M16	EP2066805-M16	M 16	2	110	25	68	12	9	12	6

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Eco Plus

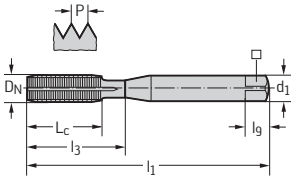


– For long-chipping materials

M	6GX		
DIN 13			

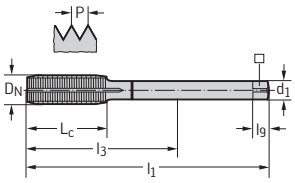
	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2063706-M2	EP2063705-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
EP2063706-M2.5	EP2063705-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
EP2063706-M3	EP2063705-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
EP2063706-M3.5	EP2063705-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
EP2063706-M4	EP2063705-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
EP2063706-M5	EP2063705-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2063706-M6	EP2063705-M6	M 6	1	80	15	30	6	4,9	8	5
EP2063706-M8	EP2063705-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2063706-M10	EP2063705-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	EP2068705-M12	M 12	1,75	110	23	83	9	7	10	5
	EP2068705-M14	M 14	2	110	25	81	11	9	12	6
	EP2068705-M16	M 16	2	110	25	68	12	9	12	6

B 6

B 1008 D 1 B 1023

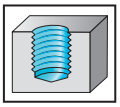
HSS-E machine thread formers
Protodyn® S Eco Plus



– For long-chipping materials

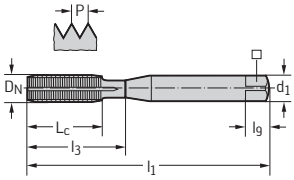
M
DIN 13

6GX



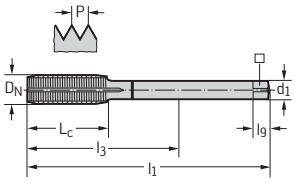
	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2063806-M2	EP2063805-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
EP2063806-M2.5	EP2063805-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
EP2063806-M3	EP2063805-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
EP2063806-M4	EP2063805-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
EP2063806-M5	EP2063805-M5	M 5	0,8	70	13	25	6	4,9	8	5
EP2063806-M6	EP2063805-M6	M 6	1	80	15	30	6	4,9	8	5
EP2063806-M8	EP2063805-M8	M 8	1,25	90	18	35	8	6,2	9	5
EP2063806-M10	EP2063805-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
	EP2068805-M12	M 12	1,75	110	23	83	9	7	10	5
	EP2068805-M14	M 14	2	110	25	81	11	9	12	6
	EP2068805-M16	M 16	2	110	25	68	12	9	12	6

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Synchrospeed

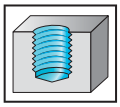


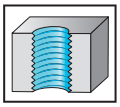
– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 3,5×D_N | C=2-3 | 36HRC 1200 N/mm²

M
DIN 13

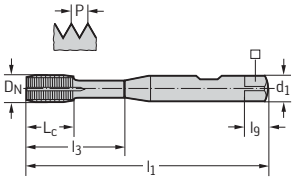
6HX





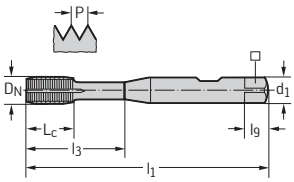
	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

~DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2061306-M3	S2061305-M3	M 3	0,5	70	3	18	6	4,9	8	3
S2061306-M4	S2061305-M4	M 4	0,7	70	4	21	6	4,9	8	3
S2061306-M5	S2061305-M5	M 5	0,8	70	5	25	6	4,9	8	4
S2061306-M6	S2061305-M6	M 6	1	80	6	30	6	4,9	8	4
S2061306-M8	S2061305-M8	M 8	1,25	90	8	35	8	6,2	9	5
S2061306-M10	S2061305-M10	M 10	1,5	100	9	39	10	8	11	5

~DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2066306-M12	S2066305-M12	M 12	1,75	110	11	42	12	9	12	5

B 6

B 1008 | D 1 | B 1023

HSS-E machine thread formers
Protodyn® S Synchrospeed

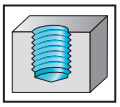


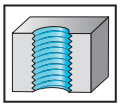
– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 3,5×D_N	C=2-3		36HRC 1200 N/mm²

M
DIN 13

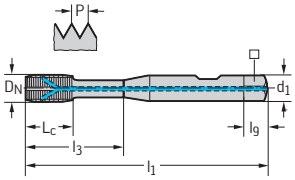
6HX





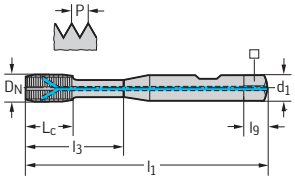
	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

~DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2061345-M4	M 4	0,7	70	4	21	6	4,9	8	3
S2061345-M5	M 5	0,8	70	5	25	6	4,9	8	4
S2061345-M6	M 6	1	80	6	30	6	4,9	8	4
S2061345-M8	M 8	1,25	90	8	35	8	6,2	9	5
S2061345-M10	M 10	1,5	100	9	39	10	8	11	5

~DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
S2066345-M12	M 12	1,75	110	11	42	12	9	12	5

B 6

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Eco Inox

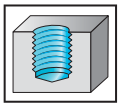


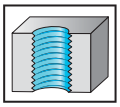
– For long-chipping materials
– For stainless steels when using emulsion

≤ 3,5×D_N | C=2-3 | 32HRC, 1000 –200 N/mm²

M
DIN 13

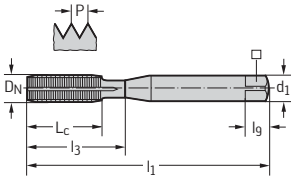
6HX





	P	M	K	N	S	H	O
TIN	●	●●		●	●		

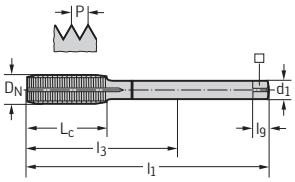
DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2061305-M2	M 2	0,4	45	6	6	2,8	2,1	5	3
E2061305-M2.5	M 2.5	0,45	50	8	8	2,8	2,1	5	3
E2061305-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
E2061305-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2061305-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2061305-M6	M 6	1	80	15	30	6	4,9	8	4
E2061305-M8	M 8	1,25	90	18	35	8	6,2	9	5
E2061305-M10	M 10	1,5	100	20	39	10	8	11	5

≤ M 2.5: Without reduced neck after the thread

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2066305-M12	M 12	1,75	110	23	83	9	7	10	5

B 6

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® Eco LM



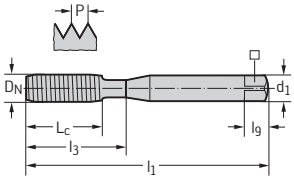
– For long-chipping materials

M DIN 13	6HX

≤ 2×D_N | C=2-3 | 14HRC 700 –200 N/mm²

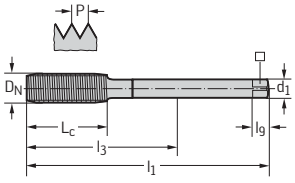
CRN	P	M	K	N	S	H	O
	●			●●	●●		

DIN 2174



Designation CRN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2061604-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
E2061604-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
E2061604-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
E2061604-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2061604-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2061604-M6	M 6	1	80	15	30	6	4,9	8	4
E2061604-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2061604-M10	M 10	1,5	100	20	39	10	8	11	4

DIN 2174



Designation CRN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
E2066604-M12	M 12	1,75	110	23	83	9	7	10	4

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® Plus



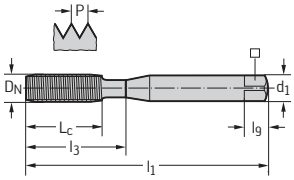
– For long-chipping materials

M DIN 13	6HX		

≤ 3×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

	P	M	K	N	S	H	O
TIN	●●	●		●●	●		

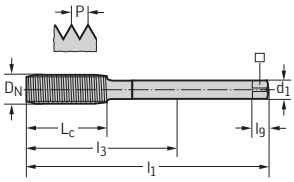
DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2061105-M1	M 1	0,25	40	6	6	2,5	2,1	5	3
DP2061105-M1.1	M 1.1	0,25	40	6	6	2,5	2,1	5	3
DP2061105-M1.2	M 1.2	0,25	40	6	6	2,5	2,1	5	3
DP2061105-M1.4	M 1.4	0,3	40	7	7	2,5	2,1	5	3
DP2061105-M1.6	M 1.6	0,35	40	8	8	2,5	2,1	5	3
DP2061105-M1.7	M 1.7	0,35	40	8	8	2,5	2,1	5	3
DP2061105-M1.8	M 1.8	0,35	40	8	8	2,5	2,1	5	3
DP2061105-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
DP2061105-M2.2	M 2.2	0,45	45	7	12	2,8	2,1	5	3
DP2061105-M2.3	M 2.3	0,4	45	7	12	2,8	2,1	5	3
DP2061105-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
DP2061105-M2.6	M 2.6	0,45	50	8	14	2,8	2,1	5	3
DP2061105-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
DP2061105-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
DP2061105-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
DP2061105-M5	M 5	0,8	70	13	25	6	4,9	8	5
DP2061105-M6	M 6	1	80	15	30	6	4,9	8	5
DP2061105-M7	M 7	1	80	15	30	7	5,5	8	5
DP2061105-M8	M 8	1,25	90	18	35	8	6,2	9	5
DP2061105-M10	M 10	1,5	100	20	39	10	8	11	5

≤ M 1.4: 5HX

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2066105-M12	M 12	1,75	110	23	83	9	7	10	5
DP2066105-M14	M 14	2	110	25	81	11	9	12	6
DP2066105-M16	M 16	2	110	25	68	12	9	12	6
DP2066105-M18	M 18	2,5	125	30	81	14	11	14	7
DP2066105-M20	M 20	2,5	140	30	95	16	12	15	7
DP2066105-M24	M 24	3	160	36	113	18	14,5	17	8

B 1008 D 1 B 1023

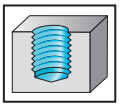
HSS-E machine thread formers
Protodyn® Plus

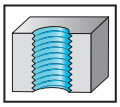


– For long-chipping materials

M
DIN 13

6HX

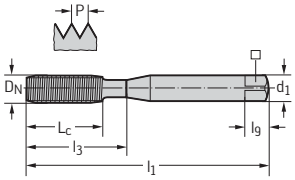




≤ 3×D_N | C=2-3 | LH | 36HRC 1200 –200 N/mm²

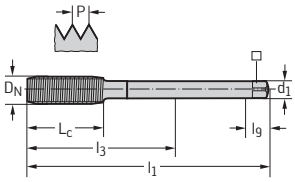
	P	M	K	N	S	H	O
TIN	●●	●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2061185-M3	M 3 - LH	0,5	56	9	18	3,5	2,7	6	4
DP2061185-M4	M 4 - LH	0,7	63	12	21	4,5	3,4	6	5
DP2061185-M5	M 5 - LH	0,8	70	13	25	6	4,9	8	5
DP2061185-M6	M 6 - LH	1	80	15	30	6	4,9	8	5
DP2061185-M8	M 8 - LH	1,25	90	18	35	8	6,2	9	5
DP2061185-M10	M 10 - LH	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2066185-M12	M 12 - LH	1,75	110	23	83	9	7	10	5
DP2066185-M16	M 16 - LH	2	110	25	68	12	9	12	6

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 1023

HSS-E machine thread formers
Protodyn® Plus



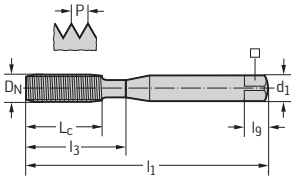
– For long-chipping materials

M	6GX		
DIN 13			

≤ 3×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

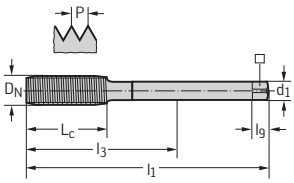
	P	M	K	N	S	H	O
TIN	●●	●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2063105-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
DP2063105-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
DP2063105-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
DP2063105-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
DP2063105-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
DP2063105-M5	M 5	0,8	70	13	25	6	4,9	8	5
DP2063105-M6	M 6	1	80	15	30	6	4,9	8	5
DP2063105-M8	M 8	1,25	90	18	35	8	6,2	9	5
DP2063105-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2068105-M12	M 12	1,75	110	23	83	9	7	10	5

B 1008 D 1 B 1023

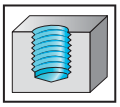
HSS-E machine thread formers
Protodyn® Plus

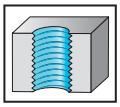


– For long-chipping materials

M
DIN 13

7GX

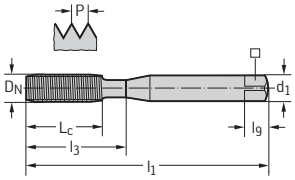




≤ 3×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

	P	M	K	N	S	H	O
TIN	●●	●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2064105-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
DP2064105-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
DP2064105-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
DP2064105-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
DP2064105-M5	M 5	0,8	70	13	25	6	4,9	8	5
DP2064105-M6	M 6	1	80	15	30	6	4,9	8	5
DP2064105-M8	M 8	1,25	90	18	35	8	6,2	9	5
DP2064105-M10	M 10	1,5	100	20	39	10	8	11	5

WALTER SELECT
●● Primary application
● Other application

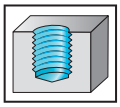
B 1008 | D 1 | B 1023

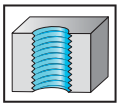
HSS-E machine thread formers
Protodyn® S Plus



– For long-chipping materials

M	6HX		
DIN 13			

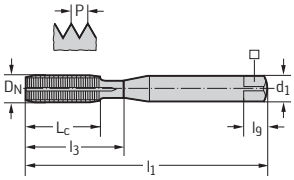




≤ 3,5×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

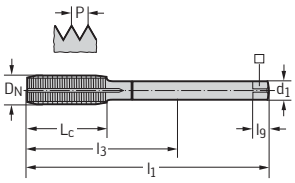
	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2061705-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
DP2061705-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
DP2061705-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
DP2061705-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
DP2061705-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
DP2061705-M5	M 5	0,8	70	13	25	6	4,9	8	5
DP2061705-M6	M 6	1	80	15	30	6	4,9	8	5
DP2061705-M7	M 7	1	80	15	30	7	5,5	8	5
DP2061705-M8	M 8	1,25	90	18	35	8	6,2	9	5
DP2061705-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2066705-M12	M 12	1,75	110	23	83	9	7	10	5
DP2066705-M14	M 14	2	110	25	81	11	9	12	6
DP2066705-M16	M 16	2	110	25	68	12	9	12	6
DP2066705-M18	M 18	2,5	125	30	81	14	11	14	7
DP2066705-M20	M 20	2,5	140	30	95	16	12	15	7
DP2066705-M24	M 24	3	160	36	113	18	14,5	17	8

B 6

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Plus



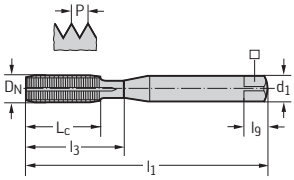
– For long-chipping materials

M	6GX		
DIN 13			

≤ 3,5×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

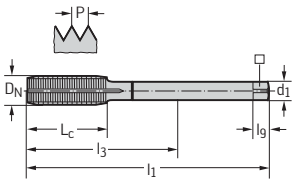
	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2063705-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
DP2063705-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
DP2063705-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
DP2063705-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
DP2063705-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
DP2063705-M5	M 5	0,8	70	13	25	6	4,9	8	5
DP2063705-M6	M 6	1	80	15	30	6	4,9	8	5
DP2063705-M8	M 8	1,25	90	18	35	8	6,2	9	5
DP2063705-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2068705-M12	M 12	1,75	110	23	83	9	7	10	5

WALTER SELECT

●● Primary application

● Other application

B 1008 | D 1 | B 1023

HSS-E machine thread formers
Protodyn® S Plus



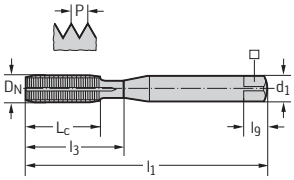
– For long-chipping materials

M	7GX		
DIN 13			

≤ 3,5×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

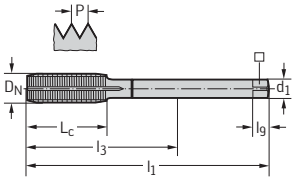
	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2064705-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
DP2064705-M2.5	M 2.5	0,45	50	8	14	2,8	2,1	5	3
DP2064705-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
DP2064705-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
DP2064705-M5	M 5	0,8	70	13	25	6	4,9	8	5
DP2064705-M6	M 6	1	80	15	30	6	4,9	8	5
DP2064705-M8	M 8	1,25	90	18	35	8	6,2	9	5
DP2064705-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2069705-M12	M 12	1,75	110	23	83	9	7	10	5

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® C



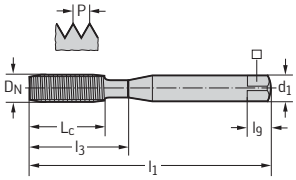
– For long-chipping materials

≤ 3×D_N	C=2-3	14HRC 700 –200 N/mm²

M DIN 13	6HX		

	P	M	K	N	S	H	O
NID	●						
Uncoated	●						

DIN 2174



Designation NID	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
D70611-M1	D7061100-M1	M 1	0,25	40	6	6	2,5	2,1	5	3
D70611-M1.2	D7061100-M1.2	M 1.2	0,25	40	6	6	2,5	2,1	5	3
D70611-M1.4	D7061100-M1.4	M 1.4	0,3	40	7	7	2,5	2,1	5	3
D70611-M1.6	D7061100-M1.6	M 1.6	0,35	40	8	8	2,5	2,1	5	3
D70611-M2	D7061100-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
D70611-M2.5	D7061100-M2.5	M 2.5	0,45	50	8	13	2,8	2,1	5	3
D70611-M3	D7061100-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
D70611-M3.5	D7061100-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
D70611-M4	D7061100-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
D70611-M5	D7061100-M5	M 5	0,8	70	13	25	6	4,9	8	5
D70611-M6	D7061100-M6	M 6	1	80	15	30	6	4,9	8	5
D70611-M8	D7061100-M8	M 8	1,25	90	18	35	8	6,2	9	5
D70611-M10	D7061100-M10	M 10	1,5	100	20	39	10	8	11	5

≤ M 1.4: 5HX

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® C



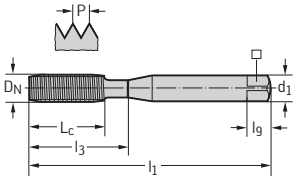
– For long-chipping materials



M	6GX		
DIN 13			

	P	M	K	N	S	H	O
Uncoated	●						

DIN 2174



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
D7063100-M2	M 2	0,4	45	6	11	2,8	2,1	5	3
D7063100-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
D7063100-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
D7063100-M5	M 5	0,8	70	13	25	6	4,9	8	5
D7063100-M6	M 6	1	80	15	30	6	4,9	8	5
D7063100-M8	M 8	1,25	90	18	35	8	6,2	9	5
D7063100-M10	M 10	1,5	100	20	39	10	8	11	5

B 6

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® SC

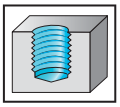


– For long-chipping materials

≤ 3,5×D_N | C=2-3 | 32HRC | 1000 –200 N/mm²

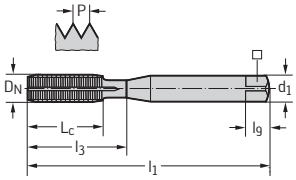
M
DIN 13

6HX



	P	M	K	N	S	H	O
NID	●			●			
Uncoated	●			●			

DIN 2174



Designation NID	Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
D70617-M3	D7061700-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
D70617-M3.5	D7061700-M3.5	M 3.5	0,6	56	11	20	4	3	6	4
D70617-M4	D7061700-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
D70617-M5	D7061700-M5	M 5	0,8	70	13	25	6	4,9	8	5
D70617-M6	D7061700-M6	M 6	1	80	15	30	6	4,9	8	5
	D7061700-M7	M 7	1	80	15	30	7	5,5	8	5
D70617-M8	D7061700-M8	M 8	1,25	90	18	35	8	6,2	9	5
D70617-M10	D7061700-M10	M 10	1,5	100	20	39	10	8	11	5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 1023

HSS-E machine thread formers
Protodyn® SC



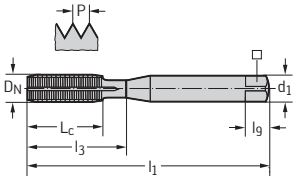
– For long-chipping materials

≤ 3,5×D_N	C=2-3	32HRC 1000 –200 N/mm²

M DIN 13	6GX		

	P	M	K	N	S	H	O
Uncoated	●			●			

DIN 2174



Designation Uncoated	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
D7063700-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
D7063700-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
D7063700-M5	M 5	0,8	70	13	25	6	4,9	8	5
D7063700-M6	M 6	1	80	15	30	6	4,9	8	5
D7063700-M8	M 8	1,25	90	18	35	8	6,2	9	5
D7063700-M10	M 10	1,5	100	20	39	10	8	11	5

B 6

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® SF



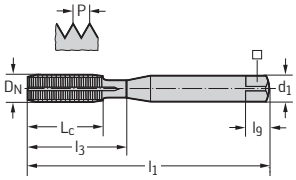
– For long-chipping materials

M	6HX		
DIN 13			

≤ 3,5×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

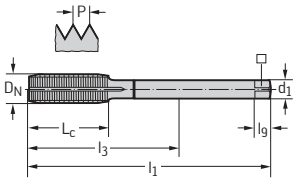
	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		

DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
D7061706-M3	M 3	0,5	56	9	18	3,5	2,7	6	4
D7061706-M4	M 4	0,7	63	12	21	4,5	3,4	6	5
D7061706-M5	M 5	0,8	70	13	25	6	4,9	8	5
D7061706-M6	M 6	1	80	15	30	6	4,9	8	5
D7061706-M8	M 8	1,25	90	18	35	8	6,2	9	5
D7061706-M10	M 10	1,5	100	20	39	10	8	11	5

DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
D7066706-M12	M 12	1,75	110	23	83	9	7	10	5
D7066706-M14	M 14	2	110	25	81	11	9	12	6
D7066706-M16	M 16	2	110	25	68	12	9	12	6

WALTER SELECT

●● Primary application

● Other application

B 1008 | D 1 | B 1023

Solid carbide machine thread formers
Protodyn® HSC



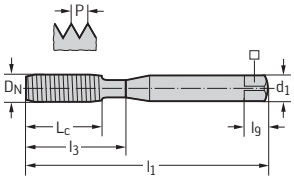
– For long-chipping materials

≤ 3,5×D_N	C=2-3	36HRC 1200 –200 N/mm²

M DIN 13	6HX		

	P	M	K	N	S	H	O
TICN	●●	●		●●	●		

~DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
HP8061106-M3	M 3	0,5	56	10	10	3,5	2,7	6	4
HP8061106-M4	M 4	0,7	63	13	13	4,5	3,4	6	5
HP8061106-M5	M 5	0,8	70	16	16	6	4,9	8	5
HP8061106-M6	M 6	1	80	15	30	6	4,9	8	5
HP8061106-M8	M 8	1,25	90	18	35	8	6,2	9	5
HP8061106-M10	M 10	1,5	100	20	39	10	8	11	5

≤ M 5: Without reduced neck after the thread

B6

B 1008 D 1 B 1023

Solid carbide machine thread formers
Protodyn® S HSC



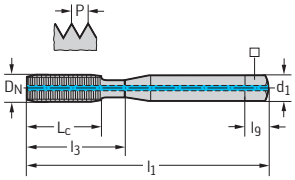
– For long-chipping materials

M	6HX	
DIN 13		

≤ 3,5×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

	P	M	K	N	S	H	O
TICN	●●	●		●●	●		

DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
HP8061716-M6	M 6	1	80	15	30	6	4,9	8	5
HP8061716-M8	M 8	1,25	90	18	35	8	6,2	9	5
HP8061716-M10	M 10	1,5	100	20	39	10	8	11	5

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 1023

Solid carbide machine thread formers
Protodyn® S HSC



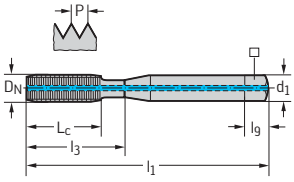
– For long-chipping materials

M	6HX	
DIN 13		

≤ 3,5×D_N | E=1,5-2 | 36HRC 1200 –200 N/mm²

	P	M	K	N	S	H	O
TICN	●●	●		●●	●		

DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
HP8061816-M6	M 6	1	80	15	30	6	4,9	8	5
HP8061816-M8	M 8	1,25	90	18	35	8	6,2	9	5
HP8061816-M10	M 10	1,5	100	20	39	10	8	11	5

B 6

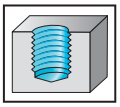
B 1008 D 1 B 1023

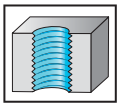
Solid carbide machine thread formers
Protodyn® S HSC



– For long-chipping materials

M	6HX		
DIN 13			

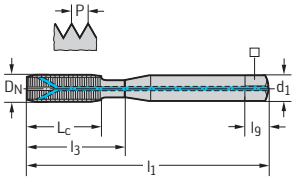




≤ 3,5×D_N	C=2-3		36HRC 1200 –200 N/mm²

	P	M	K	N	S	H	O
TICN	●●	●		●●	●		

DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
HP8061746-M6	M 6	1	80	15	30	6	4,9	8	5
HP8061746-M8	M 8	1,25	90	18	35	8	6,2	9	5
HP8061746-M10	M 10	1,5	100	20	39	10	8	11	5

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 1023

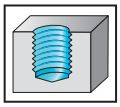
HSS-E machine thread formers
Protodyn® Eco Plus



– For long-chipping materials
– With lubrication groove

MF
DIN 13

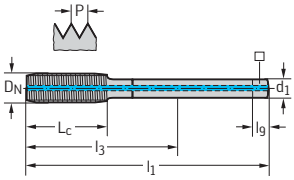
6HX



≤ 3×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2166115-M8X1	MF 8x1	1	90	18	67	6	4,9	8	5
EP2166115-M10X1	MF 10x1	1	90	20	67	7	5,5	8	5
EP2166115-M12X1	MF 12x1	1	100	21	73	9	7	10	6
EP2166115-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	6
EP2166115-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6

B 6

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Eco Plus

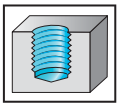


≤ 3,5×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

– For long-chipping materials

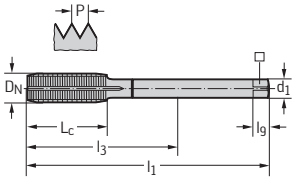
MF
DIN 13

6HX



	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2166706-M8X1	EP2166705-M8X1	MF 8x1	1	90	18	67	6	4,9	8	5
EP2166706-M10X1	EP2166705-M10X1	MF 10x1	1	90	20	67	7	5,5	8	5
EP2166706-M12X1	EP2166705-M12X1	MF 12x1	1	100	21	73	9	7	10	5
EP2166706-M12X1.5	EP2166705-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
EP2166706-M14X1.5	EP2166705-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6
EP2166706-M16X1.5	EP2166705-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	6

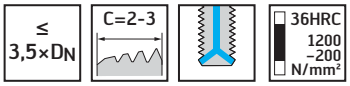
WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Eco Plus

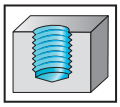


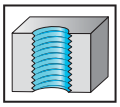
– For long-chipping materials



MF
DIN 13

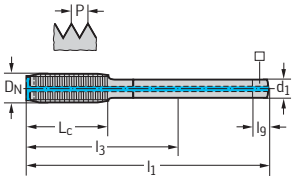
6HX





	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2166746-M8X1	EP2166745-M8X1	MF 8x1	1	90	18	67	6	4,9	8	5
EP2166746-M10X1	EP2166745-M10X1	MF 10x1	1	90	20	67	7	5,5	8	5
EP2166746-M12X1	EP2166745-M12X1	MF 12x1	1	100	21	73	9	7	10	5
EP2166746-M12X1.5	EP2166745-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
EP2166746-M14X1.5	EP2166745-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6
EP2166746-M16X1.5	EP2166745-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	6

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Eco Plus

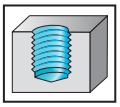


– For long-chipping materials

≤ 3,5×D_N	C=2-3	36HRC 1200 –200 N/mm²

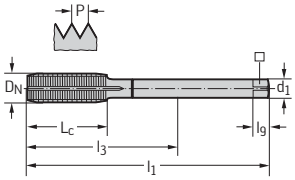
MF
DIN 13

6GX



	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		
TIN	●●	●●		●●	●		

DIN 2174



Designation TICN	Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
EP2168706-M8X1	EP2168705-M8X1	MF 8x1	1	90	18	67	6	4,9	8	5
EP2168706-M10X1	EP2168705-M10X1	MF 10x1	1	90	20	67	7	5,5	8	5
EP2168706-M12X1	EP2168705-M12X1	MF 12x1	1	100	21	73	9	7	10	5
EP2168706-M12X1.5	EP2168705-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
EP2168706-M14X1.5	EP2168705-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6
EP2168706-M16X1.5	EP2168705-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	6

WALTER SELECT

●● Primary application

● Other application

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® S Synchrospeed

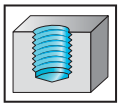


– For long-chipping materials
– Only for synchronous machining (rigid tapping)

≤ 3,5×D_N | C=2-3 | 36HRC 1200 N/mm²

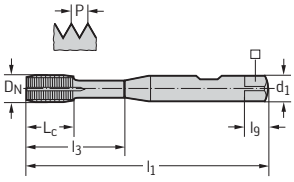
MF
DIN 13

6HX



	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

~DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_g mm	N
S2166305-M8X1	MF 8x1	1	90	6	35	8	6,2	9	5
S2166305-M10X1	MF 10x1	1	90	6	39	10	8	11	5
S2166305-M16X1.5	MF 16x1.5	1,5	100	9	50	16	12	15	6

B 6

B 1008 D 1 B 1023

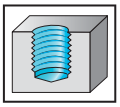
HSS-E machine thread formers
Protodyn® S Plus

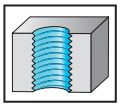


– For long-chipping materials

MF
DIN 13

6HX

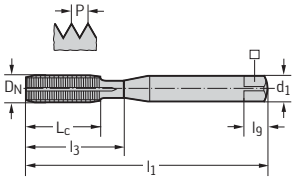




≤ 3,5×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

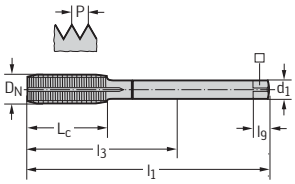
	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2161705-M4X0.5	MF 4x0.5	0,5	63	12	21	4,5	3,4	6	5
DP2161705-M5X0.5	MF 5x0.5	0,5	70	13	25	6	4,9	8	5
DP2161705-M6X0.5	MF 6x0.5	0,5	80	15	30	6	4,9	8	5
DP2161705-M6X0.75	MF 6x0.75	0,75	80	15	30	6	4,9	8	5
DP2161705-M7X0.75	MF 7x0.75	0,75	80	15	30	7	5,5	8	5

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2166705-M8X0.5	MF 8x0.5	0,5	80	15	57	6	4,9	8	5
DP2166705-M8X0.75	MF 8x0.75	0,75	80	15	57	6	4,9	8	5
DP2166705-M8X1	MF 8x1	1	90	18	67	6	4,9	8	5
DP2166705-M10X1	MF 10x1	1	90	20	67	7	5,5	8	5
DP2166705-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	5
DP2166705-M12X1	MF 12x1	1	100	21	73	9	7	10	5
DP2166705-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	5
DP2166705-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
DP2166705-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6
DP2166705-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	6
DP2166705-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	7
DP2166705-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	7
DP2166705-M20X2	MF 20X2	2	140	30	95	16	12	15	7
DP2166705-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	7
DP2166705-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	8
DP2166705-M24X2	MF 24x2	2	140	26	93	18	14,5	17	8
DP2166705-M27X1.5	MF 27x1.5	1,5	140	26	77	20	16	19	8
DP2166705-M27X2	MF 27x2	2	140	26	77	20	16	19	8
DP2166705-M30X1.5	MF 30x1.5	1,5	150	26	85	22	18	21	10
DP2166705-M30X2	MF 30x2	2	150	26	85	22	18	21	10

WALTER SELECT
●● Primary application
● Other application

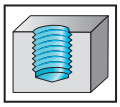
B 1008 | D 1 | B 1023

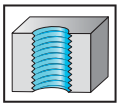
HSS-E machine thread formers
Protodyn® S Plus



– For long-chipping materials

MF	6GX		
DIN 13			

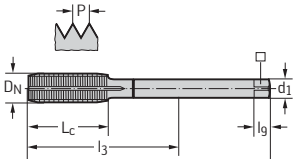




≤ 3,5×D_N | E=1,5-2 | 36HRC 1200 –200 N/mm²

	P	M	K	N	S	H	O
TIN	●●	●		●●	●		

DIN 2174



Designation TIN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
DP2168805-M10X1	MF 10x1	1	90	20	67	7	5,5	8	6
DP2168805-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	6
DP2168805-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	7
DP2168805-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	7

B 6

B 1008 D 1 B 1023

HSS-E machine thread formers
Protodyn® SF

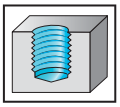


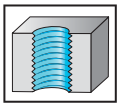
– For long-chipping materials

≤ 3,5×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

MF
DIN 13

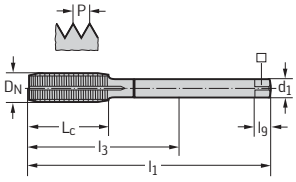
6HX





	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		

DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N
D7166706-M8X1	MF 8x1	1	90	18	67	6	4,9	8	5
D7166706-M10X1	MF 10x1	1	90	20	67	7	5,5	8	5
D7166706-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	5
D7166706-M12X1	MF 12x1	1	100	21	73	9	7	10	5
D7166706-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
D7166706-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6
D7166706-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	6

WALTER SELECT
●● Primary application
● Other application

B 1008 D 1 B 1023

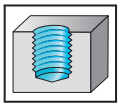
Solid carbide machine thread formers
Protodyn® S HSC



– For long-chipping materials

MF
DIN 13

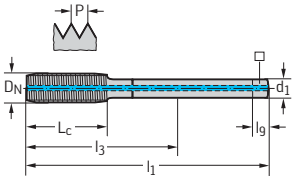
6HX



≤ 3,5×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

	P	M	K	N	S	H	O
TICN	●●	●		●●	●		

DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
HP8166716-M8X1	MF 8x1	1	90	12	67	6	4,9	8	5
HP8166716-M10X1	MF 10x1	1	90	14	67	7	5,5	8	5
HP8166716-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
HP8166716-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6
HP8166716-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	6

B 6

B 1008 D 1 B 1023

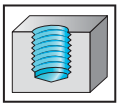
Solid carbide machine thread formers
Protodyn® S HSC

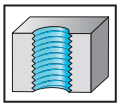


– For long-chipping materials

MF
DIN 13

6HX

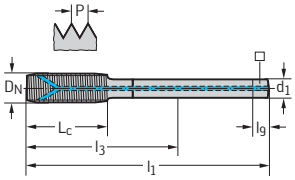




≤ 3,5×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

	P	M	K	N	S	H	O
TICN	●●	●		●●	●		

DIN 2174



Designation TICN	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_9 mm	N
HP8166746-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	5
HP8166746-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	6
HP8166746-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	6

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 1023

HSS-E machine thread formers
Protodyn® S Plus

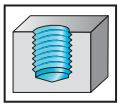


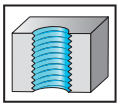
– For long-chipping materials

≤ 3,5×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

UNC
ASME B1.1

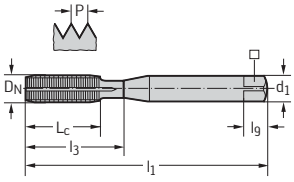
2BX





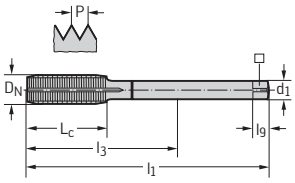
	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

DIN 2184-1



Designation TIN	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N mm
DP2261705-UNC2	UNC 2-56	2,184	45	7	12	2,8	2,1	5	3
DP2261705-UNC4	UNC 4-40	2,845	56	9	18	3,5	2,7	6	4
DP2261705-UNC6	UNC 6-32	3,505	56	11	20	4	3	6	4
DP2261705-UNC8	UNC 8-32	4,166	63	12	21	4,5	3,4	6	5
DP2261705-UNC10	UNC 10-24	4,826	70	13	25	6	4,9	8	5
DP2261705-UNC1/4	UNC 1/4-20	6,35	80	15	30	7	5,5	8	5
DP2261705-UNC5/16	UNC 5/16-18	7,938	90	18	35	8	6,2	9	5
DP2261705-UNC3/8	UNC 3/8-16	9,525	100	20	39	10	8	11	5

DIN 2184-1



Designation TIN	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N mm
DP2266705-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	5
DP2266705-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	6
DP2266705-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	6

B 6

B 1008 D 1 B 1023

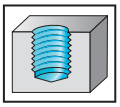
HSS-E machine thread formers
Protodyn® S Plus



– For long-chipping materials

UNF
ASME B1.1

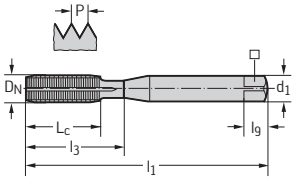
2BX



≤ 3,5×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

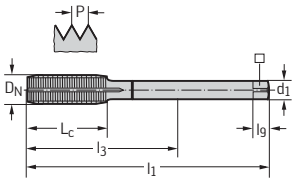
	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

DIN 2184-1



Designation TIN	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N mm
DP2361705-UNF2	UNF 2-64	2,184	45	7	12	2,8	2,1	5	3
DP2361705-UNF4	UNF 4-48	2,845	56	9	18	3,5	2,7	6	4
DP2361705-UNF6	UNF 6-40	3,505	56	11	20	4	3	6	4
DP2361705-UNF8	UNF 8-36	4,166	63	12	21	4,5	3,4	6	5
DP2361705-UNF10	UNF 10-32	4,826	70	13	25	6	4,9	8	5
DP2361705-UNF1/4	UNF 1/4-28	6,35	80	15	30	7	5,5	8	5
DP2361705-UNF5/16	UNF 5/16-24	7,938	90	18	35	8	6,2	9	5
DP2361705-UNF3/8	UNF 3/8-24	9,525	100	20	39	10	8	11	5

DIN 2184-1



Designation TIN	D_N-P	D_N mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N mm
DP2366705-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	5
DP2366705-UNF1/2	UNF 1/2-20	12,7	100	21	73	9	7	10	6
DP2366705-UNF5/8	UNF 5/8-18	15,875	100	21	58	12	9	12	6

WALTER SELECT
●● Primary application
● Other application

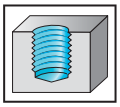
B 1008 | D 1 | B 1023

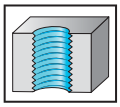
HSS-E machine thread formers
Protodyn® S Plus



– For long-chipping materials

G
DIN EN ISO 228

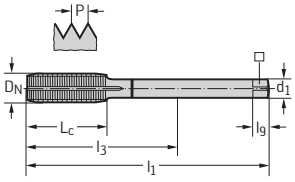




≤ 3,5×D_N | C=2-3 | 36HRC, 1200 –200 N/mm²

	P	M	K	N	S	H	O
TIN	●●	●●		●●	●		

DIN 2189



Designation TIN	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N mm
DP2466705-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	5
DP2466705-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	6
DP2466705-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	6
DP2466705-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	7
DP2466705-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	19	8
DP2466705-G1	G 1"-11	33,249	11	160	28	93	25	20	23	10

B 6

B 1008 D 1 B 1023

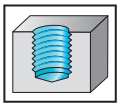
HSS-E machine thread formers
Protodyn® SF

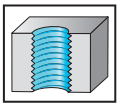


– For long-chipping materials

≤ 3,5×D_N | C=2-3 | 36HRC 1200 –200 N/mm²

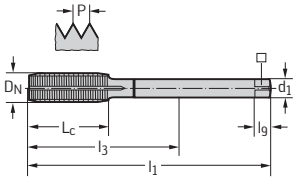
G
DIN EN ISO 228





	P	M	K	N	S	H	O
TICN	●●	●●		●●	●		

DIN 2189



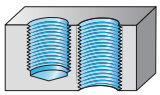
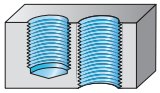
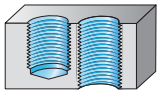
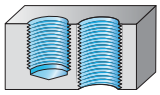
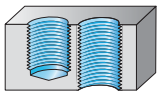
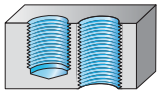
Designation TICN	D_N-P	D_N mm	Threads per inch	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N mm
D7466706-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	5
D7466706-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	6
D7466706-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	6
D7466706-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	7

WALTER SELECT
●● Primary application
● Other application

B 1008 | D 1 | B 1023

Type description

Thread forming

Type description		Machining	Materials P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Thread depth	Page
Protodyn® (S) Eco Plus 	– High-tech thread former for universal use – For wet and MQL machining		●●	●●		●●	●			$3,5 \times D_N$	B 1038
Protodyn® (S) Plus 	– For universal application		●●	●●		●●	●			$3,5 \times D_N$	B 1046
Protodyn® S Synchrospeed 	– For universal application – Specially designed for synchronous machining – Shank tolerance h6 – Weldon clamping surface		●●	●●		●●	●			$3,5 \times D_N$	B 1042
Protodyn® S Eco Inox 	– Specially designed for machining stainless steels with emulsion		●	●●		●	●			$3,5 \times D_N$	B 1044
Protodyn® Eco LM 	– For soft materials with tendency to cause jamming		●			●●	●●			$2,0 \times D_N$	B 1045
Protodyn® (S) HSC 	– For universal application – Solid carbide thread formers – For high forming speeds and long tool life – Shank tolerance h6		●●	●		●●	●			$4,0 \times D_N$	B 1058

●● Primary application
● Additional application

B 6

Product families

Thread formers	
Eco Inox	Specially designed for machining stainless steels with emulsion
Eco LM	For soft materials with tendency to cause jamming
Eco Plus	High-tech thread former for universal use
HSC	Solid carbide thread former for high forming speeds and long tool life
Plus	For universal application
Synchrospeed	Specially designed for synchronous machining

Thread forming process

Basic principles

Thread forming is a non-cutting process that uses cold forming to create internal threads. Displacement of the material forces the material to yield. This creates a compressed thread profile. This process does not require the flutes that would be required for thread tapping, which increases the stability of the tool.

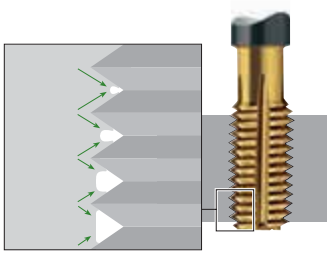
The combination of cold forming and the uninterrupted chamfer profile of formed threads (compare the picture on the right) significantly increases both the pull-out strength under static load and the fatigue strength under dynamic load. In contrast, the interrupted chamfer profile is used in thread tapping and thread milling (compare the picture on the right).

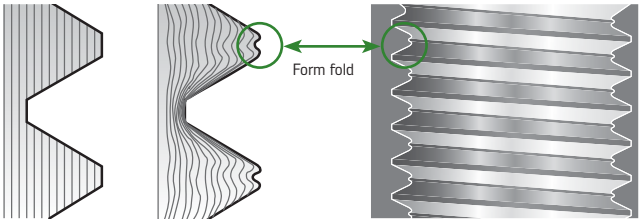
Please note that there is always a form fold in the area of the crest on formed threads. For this reason, thread forming is not permitted in all industries. Specific restrictions are listed below:

– Food industry and medical technology (germ formation around the form fold)
– Automatic component screw connections (screw may jam in the form fold)
– Generally not permitted for use in aircraft construction

Thread forming is perfectly suited for mass production – for example in the automotive industry. Extremely reliable processes can be implemented as a result of the non-cutting creation of threads in combination with high tool stability thanks to the closed polygon profile. In addition, in contrast to tapping, higher cutting parameters can often be achieved while also improving the tool life quantity. Thread forming requires a higher torque compared to tapping.

Note:
When carrying out thread forming, the pilot hole diameter is subject to tighter tolerances than when carrying out tapping and thread milling. This means that there are some cases in which thread forming is not a more cost-effective alternative. It is therefore essential to consider the circumstances of each individual case.





Applications and limits of thread forming

Approx. 65% of all materials to be machined in industry are formable. The limits are illustrated below:

– Brittle materials with elongation at fracture lower than 7% such as:
  • GJL (grey cast iron)
  • Si alloys with a silicon content of > 12%
  • Short-chipping Cu-Zn alloys
  • Thermosetting plastics
– Thread pitch > 3 mm
  (forming at pitches ≤ 1.5 mm is particularly cost-effective)
– Tensile strength > 1200-1400 N/mm²

Typical materials used in thread forming are:

– Steel
– Stainless steel
– Soft copper alloys
– Al wrought alloys

Rule of thumb:

Pilot hole diameter = nominal diameter - f* × pitch

* 6H tolerance: f = 0.45;
6G tolerance: f = 0.42

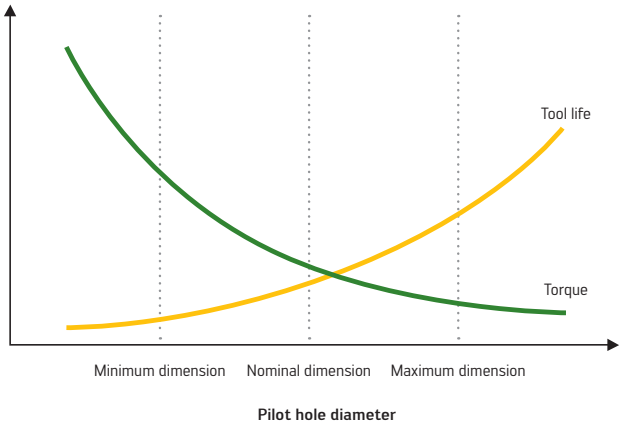
Example: M10 dimensions
Pilot hole diameter → 10.0 mm - 0.45 × 1.5 mm = 9.325 mm = **9.33 mm**

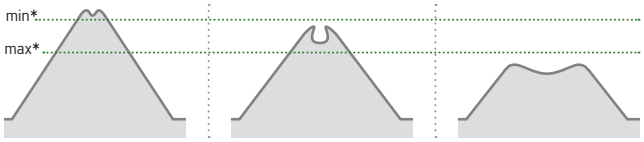
(continued)

Effect of the pilot hole diameter

The pilot hole diameter has a significant impact on the **thread forming process**: It affects the required torque and the tool life quantity of the thread former, as well as the formation of the thread. These relationships are illustrated in the adjacent diagram.

Note:
Interdependency of the pilot hole diameter and the thread core diameter:
If the core hole is drilled 0.04 mm larger, the thread core diameter (after forming) increases by at least 0.08 mm – i.e. by a factor of two as a minimum.





* Tolerance of the core diameter produced in accordance with DIN 13-50

Example: M16 × 1.5-6H, 42CrMo4; R_m = 1100 N/mm²

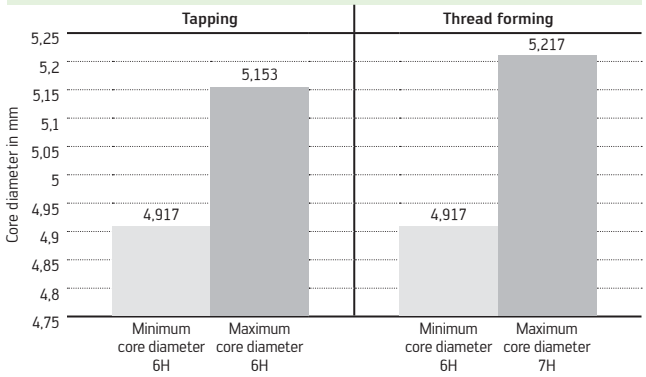


Larger core diameters are permitted for formed threads in accordance with DIN 13-50 than for thread tapping: For example, for a thread formed with tolerance class 6H, the minimum thread core diameter must comply with tolerance class 6H, but the maximum thread core diameter is based on tolerance class 7H. This correlation is shown with an example in the adjacent diagram.

Practical tip:
Especially in mass production, it is worth optimising the pilot hole diameter.
The following applies:
The pilot hole diameter should be as large as possible, but as small as necessary.
The larger the pilot hole diameter:
– The higher the tool life quantity will be
– The simpler and more reliable the forming process will be
– The lower the required torque will be
Ensure that the thread remains true to gauge.

The recommended pilot hole diameters can be found in the table on page B 1151.

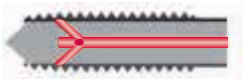
Example for permissible core diameters based on the dimension M6-6H



B 6

Modifications

Thread formers

		Effect	Side effect
Chamfer/Lead form D		Improved tool life quantity	Slightly increased cycle time
Chamfer/Lead form E		Threads nearly to the bottom of the hole and slightly reduced cycle time	Lower tool life quantity
Radial coolant outlets		Increased tool life thanks to improved cooling and lubrication conditions (for deep threads and demanding materials)	Higher purchase price
Lubrication grooves on the shank		Increased tool life thanks to improved cooling and lubrication conditions (not as efficient as radial coolant outlets)	Cost-effective alternative to radial coolant outlets
Increased overall length		Enables machining of areas that are difficult to access	–
Coatings and surface treatments		Increased performance	Potentially higher purchase price

Solutions

Thread forming is extremely reliable. The benefits of this method come to the fore in particular for deep blind holes in soft or tough materials, as these applications are the most likely to cause problems relating to chip removal when carrying out tapping.
Thread forming is the method of choice for such applications. Furthermore, the very materials that most frequently cause chipping problems (such as St52, 16MnCr5 or C15) are extremely well-suited to forming.

Thread forming is also beneficial for applications that require an extremely high surface quality, as the depths of surface roughness of formed threads are generally much lower than those of cut threads.

Despite the benefits of non-cutting creation of threads, there are certain points that should be borne in mind for thread forming as well in order to guarantee a reliable process:

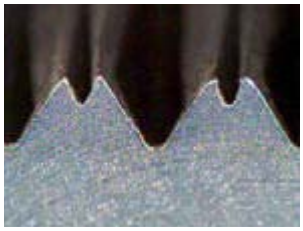
- The pilot hole diameter has a tighter tolerance (e.g. ±0.05 mm for M6) in comparison to tapping
- It must be ensured that no chips resulting from drilling remain in the core hole. This can be ensured by using a twist drill with internal cooling or using a thread former with an axial coolant outlet. In the latter case, the thread former should be positioned over the pilot hole for a short period before forming starts.
- The torque is generally higher compared to tapping. This means that the drive power of the machine must be taken into account, especially for larger threads.
- The required torque for thread forming is higher than for tapping; it may be necessary to increase the chuck setting value as a result.
- Greater attention must be paid to the cooling lubricant and the cooling lubricant supply when carrying out forming; the tool running dry, even for a short period, could result in rejects and tool breakage. This is due to the effect of higher surface pressure on the forming edges and the narrower cross section of the lubrication grooves used in forming compared to the flutes of taps. The smaller lubrication grooves give the thread former greater stability, which in turn is required due to the increased torque. Larger lubrication grooves would cause the formed edges to crack due to the higher forces applied.
- The coefficient of friction decreases with each coating as the temperature increases. Higher forming speeds can therefore lead to improved tool life quantity.
- Well-known automotive manufacturers often stipulate that the threads must comply with a specific thread overlap, which can be achieved using special solutions – the most important factor is ensuring a precise pilot hole diameter (e.g. via reaming).

Borderline cases for thread forming

It is difficult to set clear limits for forming, because there are always exceptions where limits have been exceeded successfully or not reached at all.

- **Tensile strength**
  Depending on the material and the lubrication conditions, the limit range is approx. 1200-1400 N/mm². However, there have been cases where forming was performed successfully in stainless steel using HSS-E thread formers and in Inconel 718, which is considered to have difficult cutting properties, using solid carbide thread formers. Both materials had a strength of 1450 N/mm².
- **Elongation at fracture**
  In general, a minimum value of 7% is specified for the elongation at fracture. Nevertheless, there have also been cases here where, for instance, GGG-70 has been formed with an elongation at fracture of only approx. 2%. However, in this case, tiny cracks were clearly visible in the flanks, which were considered acceptable by the user. In such cases, it should not be assumed that the forming process will result in increased strength.
- **Pitch and thread profile**
  For pitches greater than 3 mm, the limits for the tensile strengths specified above must be adjusted downwards. Thread types with steep flanks (e.g. 30° for trapezoidal threads) must be assessed on a case-by-case basis.
- **Silicon content**
  AlSi cast alloys can be formed if the silicon proportion is not higher than 12%. Nevertheless, there are have also been cases in which the silicon content was higher than 12%. However, this reduces the surface finish quality and the pull-out strength of the thread.
- **Form fold**
  The unavoidable form fold occurring on the crest of the thread may become problematic if automated processes are used to insert screws. The first threads of the screw sometimes thread into the form fold.
  Formed threads are also avoided in components used in the food industry and medical technology, because it is not possible to reliably clean away contamination in the form fold by washing.

  Note:
  Walter Prototyp is able to design special tools in which the form fold can be closed under specific conditions. There have been cases in which customers who were initially opposed to using thread forming decided to permit it for this reason.



Thread profile made with a standard former



Thread profile made with a special former

- **Aerospace industry**
  Thread forming is generally not permitted in the aerospace industry. Changes to the microstructure that occur during thread forming or welding are mainly avoided for applications in this industry.



		Page
Thread milling cutters	Designation key	B 1084
	Walter Select – Thread milling cutters	B 1086
	Product range overview	B 1088
	Thread milling cutters without countersink	B 1090
	Thread milling cutters with countersink	B 1105
	Drill thread milling cutter	B 1107
	Orbital thread milling cutters	B 1108
	Thread milling cutters with indexable inserts	B 1116
Technical information	Cutting data	B 1120
	Type description	B 1122
	Product families	B 1123
	Grade description	B 1124
	Process principles	B 1125
	Machining strategies	B 1126
	CNC programming	B 1131
	Modifications	B 1132
	Solutions	B 1133
	Shank dimensions in accordance with DIN 6535	B 1134

Thread milling designation key

Example:

H	5	0	5	5	1	1	6
1	2	3	4	5	6	7	8

1 Tool range

H	Solid carbide thread milling cutters
T	Thread milling cutters with indexable inserts

2 Tool type

5	Thread milling cutters
9	Toolholder/accessories

3 Thread type

0	Metric
1	Metric fine
2	UNC
3	UNF
4	G
5	NPT
6	NPTF

4 Tool design

3	Shank thread milling cutter, slim version, short dimensions
5	Shank thread milling cutter
7	Drill thread milling cutter
8	Orbital thread milling cutters

5 Tool design

0	Thread milling cutter for external thread
1	Thread milling cutter with 10° helix angle
3	Thread milling cutter for hardened materials ≥ 48 HRC
5	Thread milling cutter with 27° helix angle
6	Thread milling cutter for J thread
7	Orbital thread milling cutter, $2 \times D_N$
8	Orbital thread milling cutter, $3 \times D_N$

6 Shank design

0	DIN 6535 HA parallel shank
1	DIN 6535 HB parallel shank

7 Modifications

0	Without internal coolant
1	Internal coolant supply, axial outlet

8 Surface treatment

0	None
2	NHC
6	TiCN
7	TAX

Example:

T	C	6	10	–	M10	–	W	1	–	W	B	10	RD
1	2	3	4	5	6		7	8		Grade			

1	2	3	4	
Tool group	Generation	Tool type	Tool type	
T Threading		6 Solid carbide thread milling cutters	10 Universal, 20° helix angle, $1.5 \times D_N$	11 Universal, 20° helix angle, $2.0 \times D_N$

5	6	7	8
1. Delimiters	Thread dimensions	Shank type	Cooling
– Metric		W Weldon shank	0 External coolant 1 Axial internal coolant

Grade designation key for solid carbide and HSS cutting tool materials

Example:

W	B	10	RD
Walter	1	2	3

1	2	3
Substrate	Range of applications	Coating
Solid carbide: B, J HSS	Wear resistance 05 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 Toughness	RC TiAlN RD TiAlN (+ ZrN)

Walter Select – Thread milling cutters

Step by step to the right tool

STEP 1

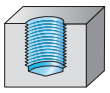
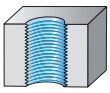
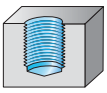
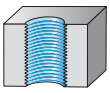
Determine the **material** to be machined from page B 1174 onwards:

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Select your intended **application** from the table.

Thread milling							
Machining	Universal					Specific	
							
Thread depth	$1,5 \times D_N$	$2,0 \times D_N$	$3,0 \times D_N$	–	$2,0 \times D_N$	$1,5 \times D_N$	$2,0 \times D_N$
Page	B 1088	B 1088	B 1089	B 1089	B 1089	B 1089	B 1089

B7

STEP 3

Select your **tool** from the table from page B 1088 onwards, based on the following criteria:

– **Thread depth**
– **Material group**
– **Thread type**

Walter Select/product range overview – Thread milling cutters

Machining	Universal					
Thread depth	$1,5 \times D_N$	$2 \times D_N$				
Designation	**TC610 Supreme**	**TC611 Supreme**	**TMC**	**TMO**	**TMI**	
Description	Thread milling cutters	Thread milling cutters	Thread milling cutters with countersink	Orbital thread milling cutters	Thread milling cutters with indexable inserts	
Coolant supply	External / axial	External / axial	External / axial	External / axial	Radial	
Coating/grade	WJ30RC / WB10RD	WJ30RC / WB10RD	Uncoated / TiCN	TiCN	TiCN	
Shank	DIN 6535 HB	DIN 6535 HB	DIN 6535 HA / HB	DIN 6535 HA	DIN 1835 B	
Helix angle	20°	20°	27°	15°	0°	
Thread type | Page	M | B 1090 MF | B 1092 UNC | B 1096 UNF | B 1098 G | B 1102	M | B 1091 UNC | B 1097 UNF | B 1099	M | B 1105	M | B 1108 UNC | B 1111 UNF | B 1113	M | B 1116 MF | B 1116 G | B 1116	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●●	●●	●●	●●	●●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals	●●	●●	●●	●●	●●	
S Materials with						

STEP 4

The corresponding page in the catalogue is specified following tool selection.

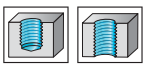
At the bottom right of the catalogue page, you will find a reference to the **cutting data table**.

Solid carbide thread milling cutters
TC610 Supreme



– Universal thread milling cutter

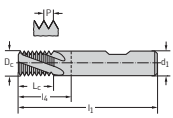
M
DIN 13



≤ $1,5 \times D_N$ | 20° | 48HRC

	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●
WB10RD	●●	●●	●●	●●	●●		●

Tool	Designation	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WB10RD	WJ30RC
Shank DIN 6535 HB	TC610-M6-W0-	1	4,5	9	57	21	6	4		●●
	TC610-M8-W0-	1,25	6	12,5	57	21	6	4		●●
	TC610-M10-W0-	1,5	7,5	15	63	27	8	4		●●
	TC610-M12-W0-	1,75	9,5	19,3	72	32	10	4		●●
	TC610-M14-W0-	2	10	22	72	32	10	4		●●
	TC610-M16-W0-	2	12	24	83	38	12	5		●●
	TC610-M20-W0-	2,5	16	30	92	44	16	6		●●
	TC610-M24-W0-	3	19	36	104	54	20	6		●●



Ordering example for the WJ30RC grade: TC610-M6-W0-WJ30RC

STEP 5

Select the **cutting data** for the tool type from page B 1120 onwards.

Cutting data for thread milling

= Cooling lubricant recommended ***

E = Emulsion
M = MQL
A = Compressed air

v_c = Cutting speed
f_z = Feed per tooth
f = Feed per revolution

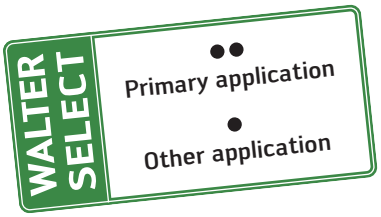
Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group ¹	
P	Non-alloyed steel	C ≤ 0.25% Annealed	125	430	P1	E M A
		C > 0.25% to ≤ 0.55% Annealed	190	640	P2	E M A
		C > 0.25% to ≤ 0.55% Heat-treated	210	710	P3	E M A
		C > 0.55% Annealed	190	640	P4	E M A
		C > 0.55% Heat-treated	300	1010	P5	E M A
		Free cutting steel (short-chipping) Annealed	220	750	P6	E M A
	Low-alloyed steel	Annealed	175	590	P7	E M A
		Heat-treated	285	960	P8	E M A
		Heat-treated	380	1280	P9	E M A
		Heat-treated	430	1480	P10	E M A
	High-alloyed steel and high-alloyed tool steel	Annealed	200	680	P11	E M A
		Hardened and tempered	300	1010	P12	E M A

B7

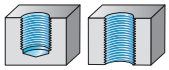
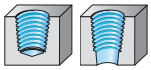
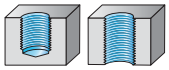
Walter Select/product range overview – Thread milling cutters

Machining	Universal				
Thread depth	$1,5 \times D_N$	$2 \times D_N$			
Designation	TC610 Supreme	TC611 Supreme	TMC	TMO	TMI
Description	Thread milling cutters	Thread milling cutters	Thread milling cutters with countersink	Orbital thread milling cutters	Thread milling cutters with indexable inserts
Coolant supply	External / axial	External / axial	External / axial	External / axial	Radial
Coating/grade	WJ30RC / WB10RD	WJ30RC / WB10RD	Uncoated / TiCN	TiCN	TiCN
Shank	DIN 6535 HB	DIN 6535 HB	DIN 6535 HA / HB	DIN 6535 HA	DIN 1835 B
Helix angle	20°	20°	27°	15°	0°
Thread type | Page	M | B 1090 MF | B 1092 UNC | B 1096 UNF | B 1098 G | B 1102	M | B 1091 UNC | B 1097 UNF | B 1099	M | B 1105	M | B 1108 UNC | B 1111 UNF | B 1113	M | B 1116 MF | B 1116 G | B 1116
					
P Steel	●●	●●	●●	●●	●●
M Stainless steel	●●	●●	●●	●●	●●
K Cast iron	●●	●●	●●	●●	●●
N NF metals	●●	●●	●●	●●	●●
S Materials with difficult cutting properties	●●	●●	●●	●●	●●
H Hard materials					
O Other	●	●	●	●	●

Tools for metric threads (M) can also be used to create fine-pitch threads (MF).
This is only possible if the thread pitch matches.



B7

	Universal			Specific			
							
	3 × D_N	–	2 × D_N	1,5 × D_N		2 × D_N	
	TMO	**TMG**	**TME**	**TMG Ni**	**TMG HRC**	**TMO HRC**	**TMD**
	Orbital thread milling cutters	Thread milling cutters	Thread milling cutters	Thread milling cutter for Ni alloys	Thread milling cutter for hard machining	Orbital thread milling cutter for hard machining	Drill thread milling cutter
	External / axial	External	External	External / axial	External	External	Radial
	Uncoated / TiCN	TiCN	TiCN	TiCN	TAX	TAX	TAX / NHC
	DIN 6535 HA	DIN 6535 HB	DIN 6535 HB	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
	15°	10°	20°	27°	10°	15°	27°
	M | B 1109 UNC | B 1112 UNF | B 1114	NPT | B 1103 NPTF | B 1104	M / MF | B 1095	MJ | B 1100 UNJF | B 1101	M | B 1093 MF | B 1094	M | B 1110	M | B 1107
							
	●●	●●	●●	●●	●●	●●	
	●●	●●	●●	●●			
	●●	●●	●●		●●	●●	
	●●	●●	●●	●			●●
	●●	●●	●●	●●	●	●	●●
					●●	●●	
	●	●	●	●	●	●	

B 7

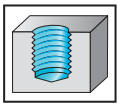
Solid carbide thread milling cutters
TC610 Supreme

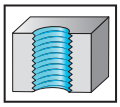


– Universal thread milling cutter

≤ 1,5×D_N | 20° | 48HRC

M
DIN 13

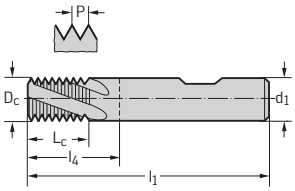




	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●
WB10RD	●●	●●	●●	●●	●●		●

Tool

Shank DIN 6535 HB

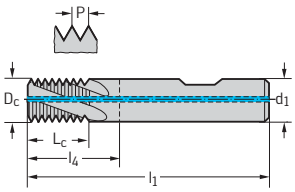


Designation	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WB10RD	WJ30RC
TC610-M6-W0-	1	4,5	9	57	21	6	4		●
TC610-M8-W0-	1,25	6	12,5	57	21	6	4		●
TC610-M10-W0-	1,5	7,5	15	63	27	8	4		●
TC610-M12-W0-	1,75	9,5	19,3	72	32	10	4		●
TC610-M14-W0-	2	10	22	72	32	10	4		●
TC610-M16-W0-	2	12	24	83	38	12	5		●
TC610-M20-W0-	2,5	16	30	92	44	16	6		●
TC610-M24-W0-	3	19	36	104	54	20	6		●

Ordering example for the WJ30RC grade: TC610-M6-W0-WJ30RC

Tool

Shank DIN 6535 HB



Designation	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WB10RD	WJ30RC
TC610-M6-W1-	1	4,5	9	57	21	6	4	●	●
TC610-M8-W1-	1,25	6	12,5	57	21	6	4	●	●
TC610-M10-W1-	1,5	7,5	15	63	27	8	4	●	●
TC610-M12-W1-	1,75	9,5	19,3	72	32	10	4	●	●
TC610-M14-W1-	2	10	22	72	32	10	4	●	●
TC610-M16-W1-	2	12	24	83	38	12	5	●	●
TC610-M20-W1-	2,5	16	30	92	44	16	6	●	●
TC610-M24-W1-	3	19	36	104	54	20	6	●	●

Ordering example for the WJ30RC grade: TC610-M6-W1-WJ30RC

B7

B 1120 | XIII | D 1 | B 1083

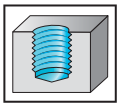
Solid carbide thread milling cutters
TC611 Supreme

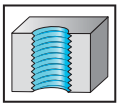


– Universal thread milling cutter

≤ 2×D_N | 20° | 48HRC

M
DIN 13

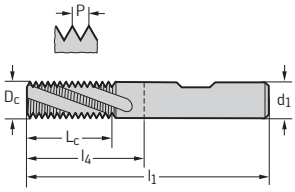




	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●
WB10RD	●●	●●	●●	●●	●●		●

Tool

Shank DIN 6535 HB

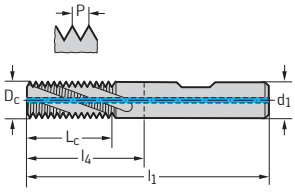


Designation	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WB10RD	WJ30RC
TC611-M6-W0-	1	4,5	12	57	21	6	4		☺
TC611-M8-W0-	1,25	6	16,3	57	21	6	4		☺
TC611-M10-W0-	1,5	7,5	21	63	27	8	4		☺
TC611-M12-W0-	1,75	9,5	24,5	72	32	10	4		☺
TC611-M14-W0-	2	10	28	80	40	10	4		☺
TC611-M16-W0-	2	12	32	89	44	12	5		☺
TC611-M20-W0-	2,5	16	40	105	57	16	6		☺
TC611-M24-W0-	3	19	48	118	68	20	6		☺

Ordering example for the WJ30RC grade: TC611-M6-W0-WJ30RC

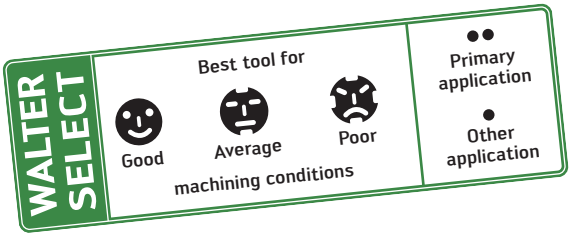
Tool

Shank DIN 6535 HB



Designation	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WB10RD	WJ30RC
TC611-M6-W1-	1	4,5	12	57	21	6	4	☺	☺
TC611-M8-W1-	1,25	6	16,3	57	21	6	4	☺	☺
TC611-M10-W1-	1,5	7,5	21	63	27	8	4	☺	☺
TC611-M12-W1-	1,75	9,5	24,5	72	32	10	4	☺	☺
TC611-M14-W1-	2	10	28	80	40	10	4	☺	☺
TC611-M16-W1-	2	12	32	89	44	12	5	☺	☺
TC611-M20-W1-	2,5	16	40	105	57	16	6	☺	☺
TC611-M24-W1-	3	19	48	118	68	20	6	☺	☺

Ordering example for the WJ30RC grade: TC611-M6-W1-WJ30RC



B 1120 | XIII | D 1 | B 1083

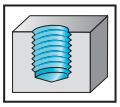
Solid carbide thread milling cutters
TC610 Supreme

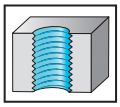


– Universal thread milling cutter

≤ 1,5×D_N | 20° | 48HRC

MF
DIN 13

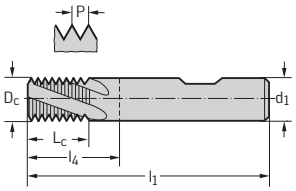




	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●
WB10RD	●●	●●	●●	●●	●●		●

Tool

Shank DIN 6535 HB

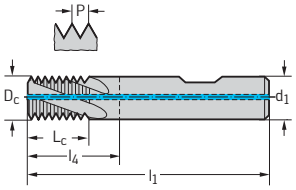


Designation	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WB10RD	WJ30RC
TC610-M6X0.5-W0-	0,5	4,8	9	57	21	6	5		●
TC610-M8X0.75-W0-	0,75	6	12	57	21	6	5		●
TC610-M8X1-W0-	1	6	12	57	21	6	4		●
TC610-M10X0.5-W0-	0,5	8	15	63	27	8	7		●
TC610-M10X1-W0-	1	8	15	63	27	8	5		●
TC610-M12X1-W0-	1	10	18	72	32	10	6		●
TC610-M12X1.25-W0-	1,25	10	18,8	72	32	10	6		●
TC610-M12X1.5-W0-	1,5	10	18	72	32	10	5		●
TC610-M14X1-W0-	1	12	21	83	38	12	7		●
TC610-M14X1.5-W0-	1,5	12	21	83	38	12	6		●
TC610-M16X1-W0-	1	14	24	83	38	14	7		●
TC610-M16X1.5-W0-	1,5	14	24	83	38	14	6		●
TC610-M18X1-W0-	1	16	27	92	44	16	8		●
TC610-M18X1.5-W0-	1,5	16	27	92	44	16	7		●
TC610-M20X2-W0-	2	16	30	92	44	16	6		●
TC610-M24X2-W0-	2	20	36	104	54	20	7		●
TC610-M28X2-W0-	2	25	42	121	65	25	8		●

Ordering example for the WJ30RC grade: TC610-M6X0.5-W0-WJ30RC

Tool

Shank DIN 6535 HB



Designation	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WB10RD	WJ30RC
TC610-M6X0.5-W1-	0,5	4,8	9	57	21	6	5		●
TC610-M8X0.75-W1-	0,75	6	12	57	21	6	5	●	●
TC610-M8X1-W1-	1	6	12	57	21	6	4	●	●
TC610-M10X0.5-W1-	0,5	8	15	63	27	8	7		●
TC610-M10X1-W1-	1	8	15	63	27	8	5	●	●
TC610-M12X1-W1-	1	10	18	72	32	10	6	●	●
TC610-M12X1.25-W1-	1,25	10	18,8	72	32	10	6		●
TC610-M12X1.5-W1-	1,5	10	18	72	32	10	5	●	●
TC610-M14X1-W1-	1	12	21	83	38	12	7	●	●
TC610-M14X1.5-W1-	1,5	12	21	83	38	12	6	●	●
TC610-M16X1-W1-	1	14	24	83	38	14	7	●	●
TC610-M16X1.5-W1-	1,5	14	24	83	38	14	6	●	●
TC610-M18X1-W1-	1	16	27	92	44	16	8		●
TC610-M18X1.5-W1-	1,5	16	27	92	44	16	7	●	●
TC610-M20X2-W1-	2	16	30	92	44	16	6	●	●
TC610-M24X2-W1-	2	20	36	104	54	20	7		●
TC610-M28X2-W1-	2	25	42	121	65	25	8		●

Ordering example for the WJ30RC grade: TC610-M6X0.5-W1-WJ30RC

B7

B 1120 | XIII | D 1 | B 1083

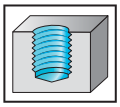
Solid carbide thread milling cutters
TMG HRC

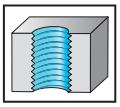


– Thread milling cutters for hardened materials

≤ 1,5×D_N | 10° | 63HRC – 48HRC

M
DIN 13

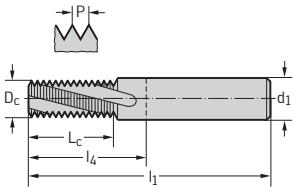




	P	M	K	N	S	H	O
TAX	●●		●●		●	●●	●

Tool

Shank DIN 6535 HA



Designation TAX	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5033008-M6	1	4,5	10	57	21	6	4
H5033008-M8	1,25	6	12,5	57	21	6	5
H5033008-M10	1,5	8	16,5	63	27	8	5
H5033008-M12	1,75	9	19,3	72	32	10	5
H5033008-M16	2	12	26	83	38	12	5

WALTER SELECT
●● Primary application
● Other application

B 1120 | XIII | D 1 | B 1083

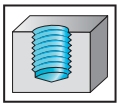
Solid carbide thread milling cutters
TMG HRC

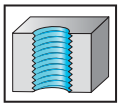


– Thread milling cutters for hardened materials

≤ 1,5×D_N | 10° | 63HRC / 48HRC

MF
DIN 13

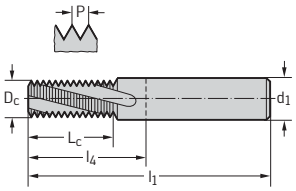




	P	M	K	N	S	H	O
TAX	●●		●●		●	●●	●

Tool

Shank DIN 6535 HA



Designation TAX	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5133008-M12X1	1	10	20	72	32	10	5
H5133008-M14X1.5	1,5	12	27	83	38	12	6

B 7

B 1120 | XIII | D 1 | B 1083

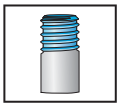
Solid carbide thread milling cutters
TME



– Universal thread milling cutter for external thread

≤ 2×D_N | 20° | 48HRC

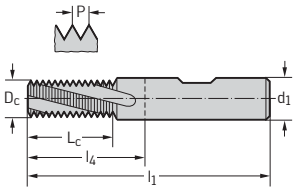
M-MF
DIN 13



	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●

Tool

Shank DIN 6535 HB



Designation TICN	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5150106-M10X1	1	10	16	72	32	10	4
H5150106-M12X1.5	1,5	12	22,5	83	38	12	5
H5150106-M16X1	1	16	30	92	44	16	6
H5150106-M16X1.25	1,25	16	30	92	44	16	6
H5150106-M16X1.5	1,5	16	30	92	44	16	6
H5150106-M16X1.75	1,75	16	29,8	92	44	16	6
H5150106-M16X2	2	16	30	92	44	16	6
H5150106-M20X3	3	20	42	104	54	20	6

WALTER SELECT
●● Primary application
● Other application

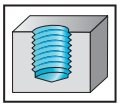
B 1120 | XIII | D 1 | B 1083

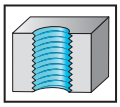
Solid carbide thread milling cutters
TC610 Supreme



– Universal thread milling cutter

UNC
ASME B1.1

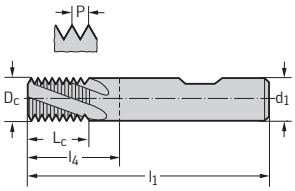




≤ 1,5×D_N | 20° | 48HRC

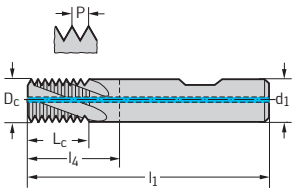
	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC610-UNC1/4-W0-	20	4,8	10,2	57	21	6	3	●
	TC610-UNC5/16-W0-	18	5,5	12,7	57	21	6	4	●
	TC610-UNC3/8-W0-	16	7,5	14,3	63	27	8	4	●
	TC610-UNC7/16-W0-	14	8	18,1	63	27	8	4	●
	TC610-UNC9/16-W0-	12	10	19,5	72	32	10	4	●
	TC610-UNC1/2-W0-	13	10	19,5	72	32	10	4	●
	TC610-UNC5/8-W0-	11	12	25,4	83	38	12	5	●
	TC610-UNC3/4-W0-	10	14	30,5	90	45	14	5	●
	TC610-UNC7/8-W0-	9	16	33,9	98	50	16	5	●
	TC610-UNC1-W0-	8	18	38,1	104	54	20	5	●



Ordering example for the WJ30RC grade: TC610-UNC1/4-W0-WJ30RC

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC610-UNC1/4-W1-	20	4,8	10,2	57	21	6	3	●
	TC610-UNC5/16-W1-	18	5,5	12,7	57	21	6	4	●
	TC610-UNC3/8-W1-	16	7,5	14,3	63	27	8	4	●
	TC610-UNC7/16-W1-	14	8	18,1	63	27	8	4	●
	TC610-UNC9/16-W1-	12	10	19,5	72	32	10	4	●
	TC610-UNC1/2-W1-	13	10	19,5	72	32	10	4	●
	TC610-UNC5/8-W1-	11	12	25,4	83	38	12	5	●
	TC610-UNC3/4-W1-	10	14	30,5	90	45	14	5	●
	TC610-UNC7/8-W1-	9	16	33,9	98	50	16	5	●
	TC610-UNC1-W1-	8	18	38,1	104	54	20	5	●



Ordering example for the WJ30RC grade: TC610-UNC1/4-W1-WJ30RC

B7

B 1120 | XIII | D 1 | B 1083

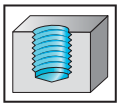
Solid carbide thread milling cutters
TC611 Supreme

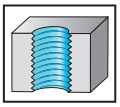


– Universal thread milling cutter

≤ 2×D_N | 20° | 48HRC

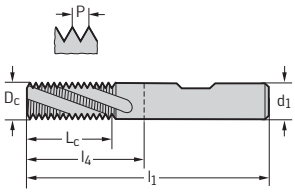
UNC
ASME B1.1





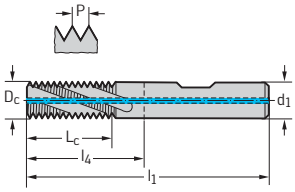
	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC611-UNC1/4-W0-	20	4,8	12,7	57	21	6	3	☹
	TC611-UNC5/16-W0-	18	5,5	16,9	57	21	6	4	☹
	TC611-UNC3/8-W0-	16	7,5	19,1	63	27	8	4	☹
	TC611-UNC7/16-W0-	14	8	23,6	68	32	8	4	☹
	TC611-UNC9/16-W0-	12	10	29,6	80	40	10	4	☹
	TC611-UNC1/2-W0-	13	10	25,4	76	36	10	4	☹
	TC611-UNC5/8-W0-	11	12	32,3	90	45	12	5	☹
	TC611-UNC3/4-W0-	10	14	38,1	98	53	14	5	☹
	TC611-UNC7/8-W0-	9	16	45,2	108	60	16	5	☹
	TC611-UNC1-W0-	8	18	50,8	116	68	20	5	☹

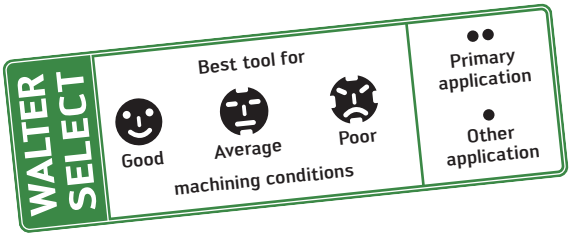


Ordering example for the WJ30RC grade: TC611-UNC1/4-W0-WJ30RC

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC611-UNC1/4-W1-	20	4,8	12,7	57	21	6	3	☹
	TC611-UNC5/16-W1-	18	5,5	16,9	57	21	6	4	☹
	TC611-UNC3/8-W1-	16	7,5	19,1	63	27	8	4	☹
	TC611-UNC7/16-W1-	14	8	23,6	68	32	8	4	☹
	TC611-UNC9/16-W1-	12	10	29,6	80	40	10	4	☹
	TC611-UNC1/2-W1-	13	10	25,4	76	36	10	4	☹
	TC611-UNC5/8-W1-	11	12	32,3	90	45	12	5	☹
	TC611-UNC3/4-W1-	10	14	38,1	98	53	14	5	☹
	TC611-UNC7/8-W1-	9	16	45,2	108	60	16	5	☹
	TC611-UNC1-W1-	8	18	50,8	116	68	20	5	☹



Ordering example for the WJ30RC grade: TC611-UNC1/4-W1-WJ30RC



B 1120 | XIII | D 1 | B 1083

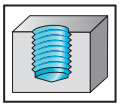
Solid carbide thread milling cutters
TC610 Supreme

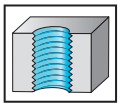


– Universal thread milling cutter

≤ 1,5×D_N | 20° | 48HRC

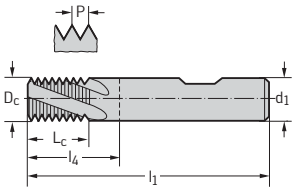
UNF
ASME B1.1





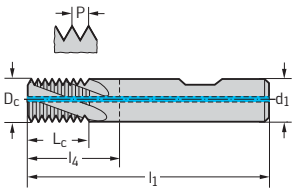
	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC610-UNF10-W0-	32	3,6	7,9	57	21	6	3	●
	TC610-UNF1/4-W0-	28	4,8	10,0	57	21	6	4	●
	TC610-UNF5/16-W0-	24	6	12,7	57	21	6	4	●
	TC610-UNF7/16-W0-	20	8	17,8	63	27	8	4	●
	TC610-UNF9/16-W0-	18	10	22,6	72	32	10	5	●
	TC610-UNF3/4-W0-	16	14	28,6	88	43	14	6	●



Ordering example for the WJ30RC grade: TC610-UNF10-W0-WJ30RC

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC610-UNF10-W1-	32	3,6	7,9	57	21	6	3	●
	TC610-UNF1/4-W1-	28	4,8	10,0	57	21	6	4	●
	TC610-UNF5/16-W1-	24	6	12,7	57	21	6	4	●
	TC610-UNF7/16-W1-	20	8	17,8	63	27	8	4	●
	TC610-UNF9/16-W1-	18	10	22,6	72	32	10	5	●
	TC610-UNF3/4-W1-	16	14	28,6	88	43	14	6	●



Ordering example for the WJ30RC grade: TC610-UNF10-W1-WJ30RC

B7

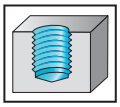
B 1120 | XIII | D 1 | B 1083

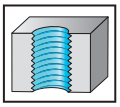
Solid carbide thread milling cutters
TC611 Supreme



– Universal thread milling cutter

UNF
ASME B1.1

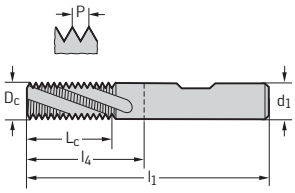




≤ 2×D_N | 20° | 48HRC

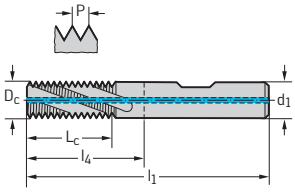
	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC611-UNF10-W0-	32	3,6	10,3	57	21	6	3	●●
	TC611-UNF1/4-W0-	28	4,8	12,7	57	21	6	4	●●
	TC611-UNF5/16-W0-	24	6	15,9	57	21	6	4	●●
	TC611-UNF7/16-W0-	20	8	22,9	68	32	8	4	●●
	TC611-UNF9/16-W0-	18	10	29,6	80	40	10	5	●●
	TC611-UNF3/4-W0-	16	14	38,1	98	53	14	6	●●

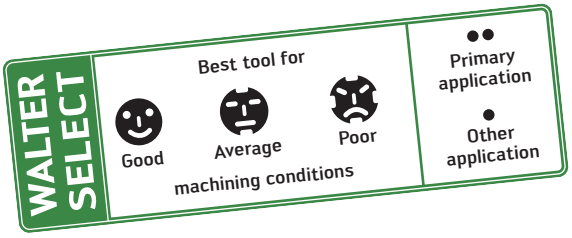


Ordering example for the WJ30RC grade: TC611-UNF10-W0-WJ30RC

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC611-UNF10-W1-	32	3,6	10,3	57	21	6	3	●●
	TC611-UNF1/4-W1-	28	4,8	12,7	57	21	6	4	●●
	TC611-UNF5/16-W1-	24	6	15,9	57	21	6	4	●●
	TC611-UNF7/16-W1-	20	8	22,9	68	32	8	4	●●
	TC611-UNF9/16-W1-	18	10	29,6	80	40	10	5	●●
	TC611-UNF3/4-W1-	16	14	38,1	98	53	14	6	●●



Ordering example for the WJ30RC grade: TC611-UNF10-W1-WJ30RC



B 1120 | XIII | D 1 | B 1083

B7

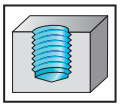
Solid carbide thread milling cutters
TMG Ni

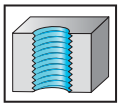


– Thread milling cutters for nickel alloys

≤ 1,5×D_N | 27° | 48HRC

MJ
DIN ISO 5855-1

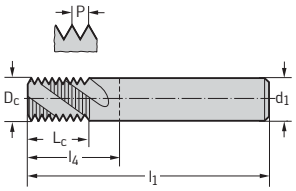




	P	M	K	N	S	H	O
TICN	●●	●●		●	●●		●

Tool

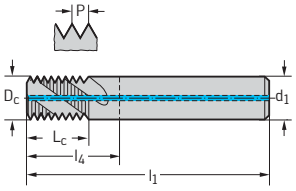
Shank DIN 6535 HA



Designation TICN	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5036006-MJ4	0,7	3	6,3	54	18	6	3
H5036006-MJ5	0,8	3,9	8	54	18	6	3
H5036006-MJ6	1	4,8	9	54	20	6	3

Tool

Shank DIN 6535 HA



Designation TICN	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5036016-MJ8	1,25	6,3	12,5	58	22	8	4
H5036016-MJ10	1,5	7,5	15	58	22	8	4
H5036016-MJ12	1,75	9,5	19,3	72	26	10	4

B7

B 1120 | XIII | D 1 | B 1083

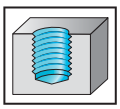
Solid carbide thread milling cutters
TMG Ni

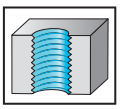


– Thread milling cutters for nickel alloys

≤ 1,5×D_N | 27° | 48HRC

UNJF
ISO 3161

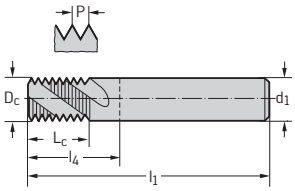




	P	M	K	N	S	H	O
TICN	●●	●●		●	●●		●

Tool

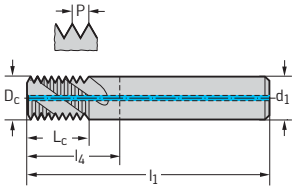
Shank DIN 6535 HA



Designation TICN	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5336006-UNJF10	32	3,6	7,9	54	18	6	3
H5336006-UNJF1/4	28	4,8	10,0	54	18	6	3

Tool

Shank DIN 6535 HA



Designation TICN	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5336016-UNJF5/16	24	6,2	12,7	58	22	8	3
H5336016-UNJF3/8	24	8	14,8	58	22	8	3
H5336016-UNJF7/16	20	9,2	17,8	72	26	10	4
H5336016-UNJF1/2	20	10,5	19,1	73	28	12	4

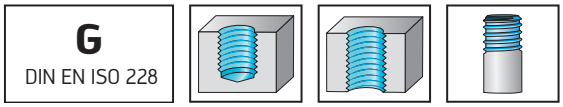
WALTER SELECT
●● Primary application
● Other application

B 1120 | XIII | D 1 | B 1083

Solid carbide thread milling cutters
TC610 Supreme



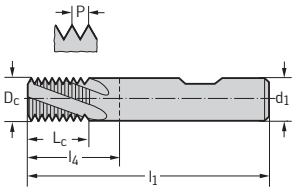
– Universal thread milling cutter





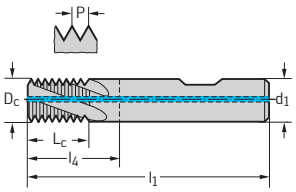
	P	M	K	N	S	H	O
WJ30RC	●●	●●	●●	●●	●●		●

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC610-G1/8-W0-	28	6	15,4	57	21	6	5	●
	TC610-G1/4-W0-	19	10	20,1	72	32	10	5	●
	TC610-G3/8-W0-	19	14	25,4	83	38	14	7	●
	TC610-G1/2-W0-	14	16	32,7	96	44	16	6	●
	TC610-G5/8-W0-	14	20	34,5	104	54	20	8	●
	TC610-G1X20-W0-	11	20	50,8	120	75	20	6	●



Ordering example for the WJ30RC grade: TC610-G1/8-W0-WJ30RC

Tool	Designation	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30RC
Shank DIN 6535 HB	TC610-G1/8-W1-	28	6	15,4	57	21	6	5	●
	TC610-G1/4-W1-	19	10	20,1	72	32	10	5	●
	TC610-G3/8-W1-	19	14	25,4	83	38	14	7	●
	TC610-G1/2-W1-	14	16	32,7	96	44	16	6	●
	TC610-G5/8-W1-	14	20	34,5	104	54	20	8	●
	TC610-G1X20-W1-	11	20	50,8	120	75	20	6	●



Ordering example for the WJ30RC grade: TC610-G1/8-W1-WJ30RC

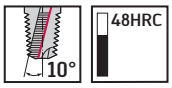
B7

B 1120 XIII D 1 B 1083

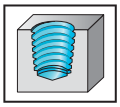
Solid carbide thread milling cutters
TMG

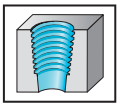


– Universal thread milling cutter



NPT
ASME B1.20.1

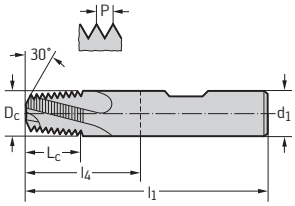




	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●

Tool

Shank DIN 6535 HB



Designation TICN	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5551106-NPT1/16	27	5,5	11,50	57	21	6	3
H5551106-NPT1/8	27	7,9	11,50	58	22	8	3
H5551106-NPT1/4-3/8	18	9,9	15,92	66	26	10	3
H5551106-NPT1/2-3/4	14	15,9	20,46	82	34	16	4
H5551106-NPT1-2	11,5	19,9	27,12	92	42	20	5

WALTER SELECT
●● Primary application
● Other application

B 1120 XIII D 1 B 1083

Solid carbide thread milling cutters
TMG

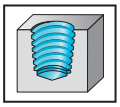


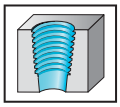
– Universal thread milling cutter





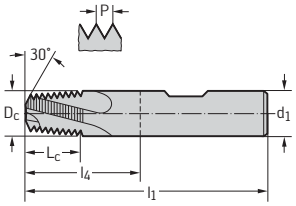
NPTF
ASME B1.20.3





	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●

Tool	Designation TICN	P Threads per inch	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
Shank DIN 6535 HB	H5651106-NPTF1/16	27	5,5	11,50	57	21	6	3
	H5651106-NPTF1/8	27	7,9	11,50	58	22	8	3
	H5651106-NPTF1/4-3/8	18	9,9	15,92	66	26	10	3
	H5651106-NPTF1/2-3/4	14	15,9	20,46	82	34	16	4
	H5651106-NPTF1-2	11,5	19,9	27,12	92	42	20	5



B7

B 1120 XIII D 1 B 1083

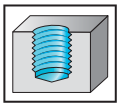
Solid carbide thread milling cutters
TMC

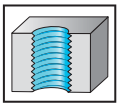


– Universal thread milling cutter with countersink

≤ 2×D_N | 27° | 38HRC

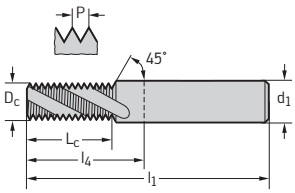
M
DIN 13



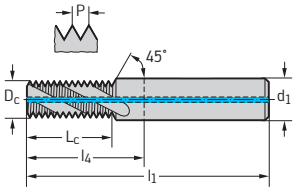


	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●
Uncoated	●●	●●	●●	●●	●●		●

	Designation TICN	Designation Uncoated	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	Z
Shank DIN 6535 HA	H5055006-M3	H505500-M3	0,5	2,3	6	57	21	3



	Designation TICN	Designation Uncoated	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	Z
Shank DIN 6535 HA	H5055016-M4	H505501-M4	0,7	3,2	8,4	57	21	3
	H5055016-M5	H505501-M5	0,8	4,1	10,4	57	21	3
	H5055016-M6	H505501-M6	1	4,8	12	63	27	3
	H5055016-M8	H505501-M8	1,3	6,5	16,3	72	32	3
	H5055016-M10	H505501-M10	1,5	8,2	21	83	38	3
	H5055016-M12	H505501-M12	1,8	9,9	24,5	83	38	4
	H5055016-M14	H505501-M14	2	11,6	30	92	44	4
	H5055016-M16	H505501-M16	2	13,6	32	92	44	4



B7

B 1120 | XIII | D 1 | B 1083

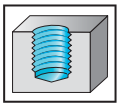
Solid carbide thread milling cutters
TMC

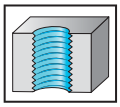


– Universal thread milling cutter with countersink



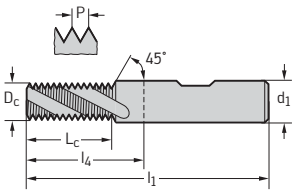
M
DIN 13



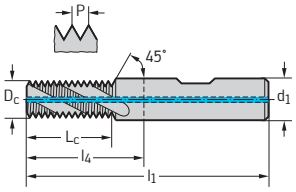


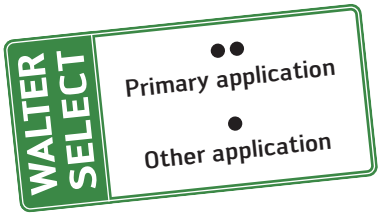
	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●

	Designation TICN	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	Z
Shank DIN 6535 HB	H5055106-M3	0,5	2,3	6	57	21	3



	Designation TICN	P mm	D_c mm	L_c mm	l_1 mm	l_4 mm	Z
Shank DIN 6535 HB	H5055116-M4	0,7	3,2	8,4	57	21	3
	H5055116-M5	0,8	4,1	10,4	57	21	3
	H5055116-M6	1	4,8	12	63	27	3
	H5055116-M8	1,3	6,5	16,3	72	32	3
	H5055116-M10	1,5	8,2	21	83	38	3
	H5055116-M12	1,8	9,9	24,5	83	38	4
	H5055116-M14	2	11,6	30	92	44	4
	H5055116-M16	2	13,6	32	92	44	4





B 1120 XIII D 1 B 1083

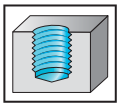
Solid carbide drill thread milling cutters
TMD

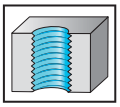


– Drill thread milling cutters for short-chipping materials
– Drilling, countersinking and thread milling in one operation

≤ 2×D_N | 27°

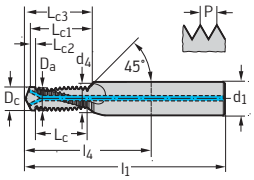
M
DIN 13





	P	M	K	N	S	H	O
NHC				●●			
TAX			●●				

Shank DIN 6535 HA



Designation NHC	Designation TAX	P mm	D_c mm	D_a mm	L_c mm	L_{c3} mm	d_4 mm	L_{c1} mm	L_{c2} mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5075011-M6	H5075018-M6	1	5	4,75	11	14,7	6,3	13,8	1	62	26	8	3
H5075011-M8	H5075018-M8	1,25	6,8	6,42	13,8	18,9	8,3	17,7	1,25	74	34	10	3
H5075011-M10	H5075018-M10	1,5	8,5	8,08	18	23,7	10,3	22,2	1,5	80	35	12	3
H5075011-M12	H5075018-M12	1,75	10,3	9,73	21	27,4	12,3	25,5	1,5	90	45	14	3
	H5075018-M16	2	14	13,3	30	37,6	16,3	35,1	1,5	102	54	18	3

B 7

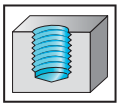
B 1120 | XIII | D 1 | B 1083

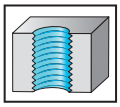
Solid carbide orbital thread milling cutters
TMO



– Universal orbital thread milling cutter

M
DIN 13



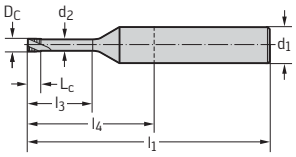


≤ 2×D_N | 15° | 48HRC

	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●

Tool

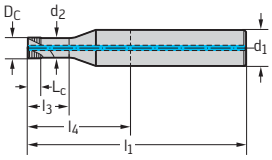
Shank DIN 6535 HA



Designation TICN	P mm	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5087006-M1.6	0,35	1,2	0,53	3,725	0,74	38	10	3	3
H5087006-M2	0,4	1,55	1	4,6	0,98	57	21	6	3
H5087006-M2.5	0,45	1,95	1,13	5,675	1,3	57	21	6	3
H5087006-M3	0,5	2,3	1,25	6,75	1,6	57	21	6	3
H5087006-M4	0,7	3,1	1,75	9,05	2,1	57	21	6	3
H5087006-M5	0,8	4	2	11,2	2,9	57	21	6	3
H5087006-M6	1	4,8	2,5	13,5	3,4	57	21	6	3
H5087006-M8	1,25	6,4	3,13	17,9	4,7	63	27	8	3
H5087006-M10	1,5	8,2	3,75	22,3	6,16	72	32	10	4
H5087006-M12	1,75	9,5	4,38	26,7	7,13	72	27	10	5

Tool

Shank DIN 6535 HA



Designation TICN	P mm	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5087016-M5	0,8	4	2	11,2	2,9	57	21	6	3
H5087016-M6	1	4,8	2,5	13,5	3,4	57	21	6	3
H5087016-M8	1,25	6,4	3,13	17,9	4,7	63	27	8	3
H5087016-M10	1,5	8,2	3,75	22,3	6,16	72	32	10	4
H5087016-M12	1,75	9,5	4,38	26,7	7,13	72	27	10	5

B7

B 1120 | XIII | D 1 | B 1083

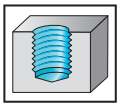
Solid carbide orbital thread milling cutters
TMO

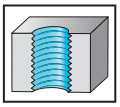


– Universal orbital thread milling cutter

≤ 3×D_N | 15° | 48HRC

M
DIN 13

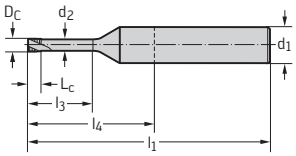




	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●
Uncoated	●●	●●	●●	●●	●●		●

Tool

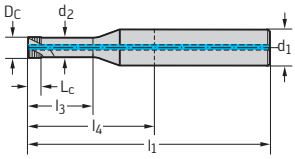
Shank DIN 6535 HA



Designation TICN	Designation Uncoated	P mm	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5088006-M1.6	H508800-M1.6	0,35	1,2	0,53	5,325	0,74	38	10	3	3
H5088006-M2	H508800-M2	0,4	1,55	1	6,6	0,98	57	21	6	3
H5088006-M2.5	H508800-M2.5	0,45	1,95	1,13	8,175	1,3	57	21	6	3
H5088006-M3	H508800-M3	0,5	2,3	1,25	9,75	1,6	57	21	6	3
H5088006-M4	H508800-M4	0,7	3,1	1,75	13,05	2,1	57	21	6	3
H5088006-M5	H508800-M5	0,8	4	2	16,2	2,9	57	21	6	3
H5088006-M6	H508800-M6	1	4,8	2,5	19,5	3,4	60	24	6	3
H5088006-M8	H508800-M8	1,25	6,4	3,13	25,875	4,7	68	27	8	3

Tool

Shank DIN 6535 HA



Designation TICN	Designation Uncoated	P mm	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5088016-M5		0,8	4	2	16,2	2,9	57	21	6	3
H5088016-M6		1	4,8	2,5	19,5	3,4	60	24	6	3
H5088016-M8		1,25	6,4	3,13	25,875	4,7	68	27	8	3

WALTER SELECT
●● Primary application
● Other application

B 1120 | XIII | D 1 | B 1083

B7

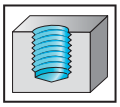
Solid carbide orbital thread milling cutters
TMO HRC

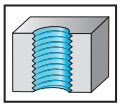


– Orbital thread milling cutter for hardened materials

≤ 2×D_N | 15° | 63HRC – 48HRC

M
DIN 13

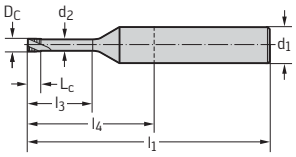




	P	M	K	N	S	H	O
TAX	●●		●●		●	●●	●

Tool

Shank DIN 6535 HA



Designation TAX	P mm	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5083008-M2	0,4	1,55	0,6	4,6	0,98	57	21	6	3
H5083008-M2.5	0,45	1,95	0,68	5,675	1,3	57	21	6	3
H5083008-M3	0,5	2,3	0,75	6,75	1,6	57	21	6	3
H5083008-M4	0,7	3,1	1,05	9,05	2,1	57	21	6	3
H5083008-M5	0,8	4	1,2	11,2	2,9	57	21	6	4
H5083008-M6	1	4,8	1,5	13,5	3,4	57	21	6	4

B 1120 | XIII | D 1 | B 1083

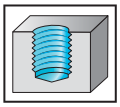
Solid carbide orbital thread milling cutters
TMO

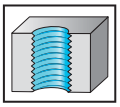


– Universal orbital thread milling cutter

≤ 2×D_N | 15° | 48HRC

UNC
ASME B1.1

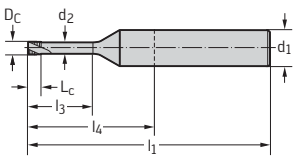




	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●

Tool

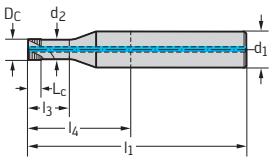
Shank DIN 6535 HA



Designation TICN	Threads per inch	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5287006-UNC4	40	2,1	1,59	21	1,21	57	21	6	3
H5287006-UNC6	32	2,6	1,99	21	1,5	57	21	6	3
H5287006-UNC10	24	3,55	2,65	21	2,1	57	21	6	3

Tool

Shank DIN 6535 HA



Designation TICN	Threads per inch	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5287016-UNC1/4	20	4,85	3,18	21	3,11	57	21	6	3
H5287016-UNC5/16	18	6,2	3,53	27	4,28	63	27	8	3

WALTER SELECT

●● Primary application

● Other application

B 1120 | XIII | D 1 | B 1083

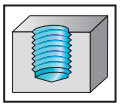
Solid carbide orbital thread milling cutters
TMO

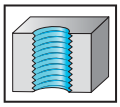


– Universal orbital thread milling cutter

≤ 3×D_N | 15° | 48HRC

UNC
ASME B1.1

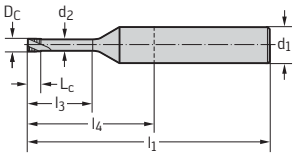




	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●
Uncoated	●●	●●	●●	●●	●●		●

Tool

Shank DIN 6535 HA



Designation TICN	Designation Uncoated	Threads per inch	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5288006-UNC2	H528800-UNC2	56	1,6	0,68	21	0,95	57	21	6	3
H5288006-UNC4	H528800-UNC4	40	2,1	1,59	21	1,21	57	21	6	3
H5288006-UNC6	H528800-UNC6	32	2,6	1,99	21	1,5	57	21	6	3
H5288006-UNC8	H528800-UNC8	32	3,25	1,98	21	2,15	57	21	6	3
H5288006-UNC10	H528800-UNC10	24	3,55	2,65	21	2,1	57	21	6	3
H5288006-UNC1/4	H528800-UNC1/4	20	4,85	3,18	21	3,11	57	21	6	3
H5288006-UNC5/16	H528800-UNC5/16	18	6,2	3,53	27	4,28	63	27	8	3

B 1120 | XIII | D 1 | B 1083

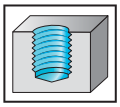
Solid carbide orbital thread milling cutters
TMO

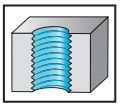


– Universal orbital thread milling cutter

≤ 2×D_N | 15° | 48HRC

UNF
ASME B1.1

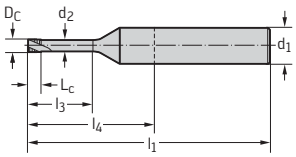




	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●

Tool

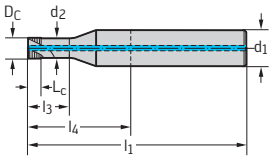
Shank DIN 6535 HA



Designation TICN	Threads per inch	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5387006-UNF10	32	3,85	2,38	21	2,75	57	21	6	3

Tool

Shank DIN 6535 HA



Designation TICN	Threads per inch	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H5387016-UNF1/4	28	5,25	2,72	21	4	57	21	6	3
H5387016-UNF5/16	24	6,55	3,18	27	5,1	63	27	8	3
H5387016-UNF3/8	24	7,85	3,18	27	6,4	63	27	8	4

WALTER SELECT
●● Primary application
● Other application

B 1120 | XIII | D 1 | B 1083

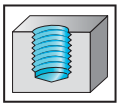
Solid carbide orbital thread milling cutters
TMO

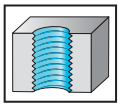


– Universal orbital thread milling cutter

≤ 3×D_N | 15° | 48HRC

UNF
ASME B1.1

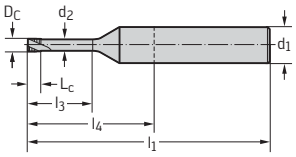




	P	M	K	N	S	H	O
TICN	●●	●●	●●	●●	●●		●
Uncoated	●●	●●	●●	●●	●●		●

Tool

Shank DIN 6535 HA



Designation TICN	Designation Uncoated	Threads per inch	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	H538800-UNF4	48	2,15	1,59	21	1,36	57	21	6	3
H5388006-UNF6	H538800-UNF6	40	2,75	1,91	21	1,86	57	21	6	3
H5388006-UNF10	H538800-UNF10	32	3,85	2,38	21	2,75	57	21	6	3
H5388006-UNF1/4	H538800-UNF1/4	28	5,25	2,72	21	4	57	21	6	3
H5388006-UNF5/16	H538800-UNF5/16	24	6,55	3,18	27	5,1	63	27	8	3

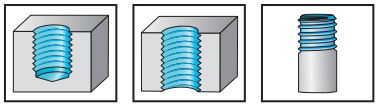
B7

B 1120 | XIII | D 1 | B 1083



Toolholders for indexable inserts





≤ 2×D_N

	P	M	K	N	S	H	O
T91 . .	●●	●●	●●	●●	●●		●

Tool	Designation	D_C mm	d_1 mm	d_2 mm	l_1 mm	l_3 mm	Number of indexable inserts	Insert size
Parallel shank with flat in accordance with DIN 1835 B	T9131000-16X3	15,5	16	12,2	91	20,5	1	3
	T9131000-25X4	18	25	13,4	88	30	1	4
	T9131000-25X5	25	25	19	98	40	1	5
	T9111000-16X3	17	16	13,6	90	22	1	3
	T9111000-20X3	20	20	16,6	95	43	1	3
	T9111000-25X5	30	25	24	110	52	1	5
	T9111000-32X5	37	32	31	120	58	1	5
	T9141000-25X3	22	25	18,6	125	25	1	3
	T9141000-32X5	37	32	31	160	98	1	5
	T9161000-25X3	26	25	22,5	100	43	2	3

Assembly parts

	Insert size	3	3	4	5
	Specification	3	3M*	4	5
	Clamping screw for indexable insert	T9111030-3XT10 (Torx 10)	T9111010-3MXT10 (Torx 10)	T9111040-4XT20 (Torx 20)	T9111050-5XT25 (Torx 25)
	Tightening torque	1,5 / 2,0 Nm	1,5 / 2,0 Nm	5,0 Nm	6,0 Nm

* For metric threads, T9131000-16X3 toolholder

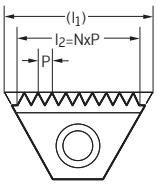
Accessories

	Insert size	3	4	5
	Torx key Designation	FS 1050	–	–
	Screwdriver Designation	–	FS 228	FS 2167
	Key size	Torx 10	Torx 20	Torx 25

B7

D 1 B 1083

Thread cutting insert



M-MF
DIN 13

G
DIN EN ISO 228

	P	M	K	N	S	H	O
TiCN	●●	●●	●●	●●	●●		●

	Designation	Thread type	Number of cutting edges	P mm	l_2 mm	l_1 mm	N	Insert size
	T0192106-2.5X3	M	1	2,5	12,5	16	5	3
	T0192106-3.0X4	M	1	3	18	22	6	4
	T1192206-3.5X5	M-MF	2	3,5	24,5	27	7	5
	T1192206-4.0X5	M-MF	2	4	24	27	6	5
	T1192206-4.5X5	M-MF	2	4,5	22,5	27	5	5
	T1192206-5.0X5	M-MF	2	5	20	27	4	5
	T1291206-1.0X3	MF	2	1	15	16	15	3
	T1291206-1.5X3	MF	2	1,5	15	16	10	3
	T1291206-1.5X5	MF	2	1,5	25,5	27	17	5
	T1291206-2.0X3	MF	2	2	14	16	7	3
	T1291206-2.0X5	MF	2	2	24	27	12	5
	T1291206-3.0X5	MF	2	3	24	27	8	5
	T4691206-11X3	G, Rp	2	11	13,85	16	6	3
	T4691206-11X5	G, Rp	2	11	23,09	27	10	5
	T4691206-14X3	G, Rp	2	14	14,51	16	8	3

B7

D 1 B 1083

Selection table –
Thread milling cutters with indexable inserts

Metric

P	Ø min.	max. thread depth l_3	Toolholder	Insert	Insert size
1,0	18,0	20,5	T9131000-16x3	T1291206-1.0x3	3
	19,0	22,0	T9111000-16x3		
	22,0	43,0	T9111000-20x3		
	24,0	25,0	T9141000-25x3		
	28,0	43,0	T9161000-25x3		
1,5	18,5	20,5	T9131000-16x3	T1291206-1,5x3	
	20,5	22,0	T9111000-16x3		
	23,5	43,0	T9111000-20x3		
	23,5	25,0	T9141000-25x3		
	29,5	43,0	T9161000-25x3		
	28,5	40,0	T9131000-25x5	T1291206-1,5x5	5
	33,5	52,0	T9111000-25x5		
	41,5	58,0	T9111000-32x5		
	41,5	98,0	T9141000-32x5		
2,0	20,0	20,5	T9131000-16x3	T1291206-2.0x3	3
	21,0	22,0	T9111000-16x3		
	24,0	43,0	T9111000-20x3		
	26,0	25,0	T9141000-25x3		
	31,0	43,0	T9161000-25x3		
	20,0	20,5	T9131000-25x5	T1291206-2,0x5	5
	35,0	52,0	T9111000-25x5		
	42,0	58,0	T9111000-32x5		
	42,0	98,0	T9141000-32x5		
2,5	17,5	20,5	T9111000-16x3	T0192106-2,5x3	
3,0	21,0	30,0	T9131000-25x4	T0192106-3.0x4	4
3,5	26,5	40,0	T9131000-25x5	T1192206-3,5x5	5
4,0	32,0	52,0	T9111000-25x5	T1192206-4,0x5	
4,5	37,5			T1192206-4,5x5	
5,0	43,0			T1192206-5,0x5	

Selection table –
Thread milling cutters with indexable inserts

Pipe thread

P	Ø min.	max. thread depth l_3	Toolholder	Insert	Insert size
14	18,5	20,5	T9131000-16x3	T4691206-14x3	3
	21,0	22,0	T9111000-16x3	T4691206-11x3	
	24,5	43,0	T9111000-20x3		
	28,3	25,0	T9141000-25x3		
11	30,3	20,5	T9131000-16x3		
		22,0	T9111000-16x3		
		43,0	T9111000-20x3		
		25,0	T9111000-25x3		
		25,0	T9141000-25x3		
		43,0	T9161000-25x3		
		40,0	T9131000-25x5	T4691206-11x5	5
		52,0	T9111000-25x5		
		58,0	T9111000-32x5		

B 7

Cutting data for thread milling

= Cooling lubricant recommended ***

E = Emulsion
M = MQL
A = Compressed air

v_c = Cutting speed
f_z = Feed per tooth
f = Feed per revolution

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]		
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	E M A	
		C > 0.25% to ≤ 0.55%	Annealed	190	640	P2	E M A	
		C > 0.25% to ≤ 0.55%	Heat-treated	210	710	P3	E M A	
		C > 0.55%	Annealed	190	640	P4	E M A	
		C > 0.55%	Heat-treated	300	1010	P5	E M A	
		Free cutting steel (short-chipping)	Annealed	220	750	P6	E M A	
	Low-alloyed steel	Annealed		175	590	P7	E M A	
		Heat-treated		285	960	P8	E M A	
		Heat-treated		380	1280	P9	E M A	
		Heat-treated		430	1480	P10	E M A	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	E M A	
		Hardened and tempered		300	1010	P12	E M A	
		Hardened and tempered		380	1280	P13	E M A	
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	E M A	
		Martensitic, heat-treated		330	1110	P15	E M A	
M	Stainless steel	Austenitic, quench hardened		200	680	M1	E	
		Austenitic, precipitation hardened (PH)		300	1010	M2	E	
		Austenitic/ferritic, duplex		230	780	M3	E	
K	Malleable cast iron	Ferritic		200	400	K1	E M A	
		Pearlitic		260	700	K2	E M A	
	Grey cast iron	Low tensile strength		180	200	K3	E M A	
		High tensile strength/austenitic		245	350	K4	E M A	
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	E M A	
		Pearlitic		265	700	K6	E M A	
	GGV (CGI)			230	400	K7	E M A	
N	Wrought aluminium alloys	Not hardenable		30	–	N1	E M A	
		Hardenable, hardened		100	340	N2	E M A	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	E M A	
		≤ 12% Si, hardenable, hardened		90	310	N4	E M A	
		> 12% Si, not hardenable		130	450	N5	E M A	
	Magnesium-based alloys			70	250	N6	A	
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	E M A	
		Brass, bronze, red brass		90	310	N8	E M A	
		Cu-alloys, short-chipping		110	380	N9	E M A	
		High-tensile, Ampco		300	1010	N10	E M A	
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	E	
			Hardened	280	940	S2	E	
		Ni or Co base	Annealed	250	840	S3	E	
			Hardened	350	1180	S4	E	
			Cast	320	1080	S5	E	
	Titanium alloys	Pure titanium		200	680	S6	E	
		α and β alloys, hardened		375	1260	S7	E	
		β alloys		410	1400	S8	E	
	Tungsten alloys			300	1010	S9	E	
	Molybdenum alloys			300	1010	S10	E	
H	Hardened steel	Hardened and tempered		50 HRC	–	H1	M A	
		Hardened and tempered		55 HRC	–	H2	M A	
		Hardened and tempered		60 HRC	–	H3	M A	
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4	M A	
O	Thermoplastics	Without abrasive fillers				O1	E M A	
	Thermosetting plastics	Without abrasive fillers				O2	E M A	
	Plastic, glass fibre reinforced	GFRP				O3	E M A	
	Plastic, carbon fibre reinforced	CFRP				O4	E M A	
	Plastic, aramid fibre reinforced	AFRP				O5	E M A	
	Graphite (technical)			80 Shore		O6	E M A	

[1] The classification of the machining groups can be found from page B 1174 onwards.

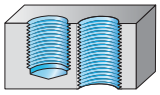
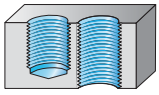
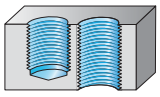
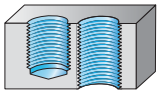
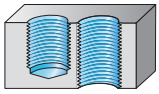
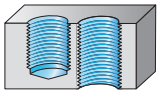
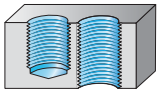
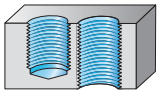
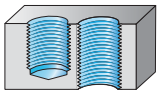
* The feed per tooth is valid for a thread depth of $1 \times D_N$. If deeper threads are machined, it may be necessary to increase the number of radial cuts.
** The feed per tooth for $3 \times D_N$ tools with D_c < 1.6 mm must be reduced by 30-50%.
*** Emulsion must always be used for drill thread milling cutters.

The specified cutting data are average standard values. For special applications, adjustment is recommended.
The values in brackets define the number of radial cuts. If no value in brackets is provided, one radial cut is recommended.

	Thread milling cutters*						Orbital thread milling cutters					Drill thread milling cutters*						
	v_c [m/min]		f_z [mm]				v_c [m/min]		f_z [mm]**			v_c [m/min]	$D_c \leq 5$ mm		$D_c > 5$ and ≤ 10 mm		$D_c > 10$ mm	
	Uncoated	Coated	$D_c \leq 3$ mm	$D_c > 3$ and ≤ 7 mm	$D_c > 7$ and ≤ 9 mm	$D_c > 9$ mm	Uncoated	Coated	$D_c \leq 1.5$ mm	$D_c > 1.5$ and ≤ 3 mm	$D_c > 3$ mm	Coated	f_z [mm]	f [mm/rev]	f_z [mm]	f [mm/rev]	f_z [mm]	f [mm/rev]
		115	0,015	0,045	0,070	0,1		85	0,025	0,040	0,100							
		155	0,012	0,045	0,070	0,1		115	0,020	0,040	0,100							
		130	0,02 (2)	0,045	0,070	0,1		100	0,020	0,040	0,100							
		130	0,02 (2)	0,045	0,070	0,1		100	0,015	0,040	0,100							
		95	0,02 (2)	0,045	0,070	0,1		70	0,015	0,040	0,100							
		130	0,012	0,045	0,070	0,1		100	0,020	0,040	0,100							
		130	0,012	0,045	0,070	0,1		100	0,020	0,040	0,100							
		80	0,02 (2)	0,040	0,070	0,1		60	0,010	0,040	0,100							
		75	0,02 (2)	0,040	0,070	0,1		55	0,010	0,040	0,100							
		65	0,02 (2)	0,040	0,070	0,1		45	0,010	0,040	0,100							
		150	0,025 (3)	0,065 (2)	0,070	0,1		100	0,007	0,040	0,100							
		110	0,03 (3	0,065 (2)	0,070	0,1		70	0,004	0,040	0,100							
		90	0,03 (3)	0,065 (2)	0,070	0,1		55	0,004	0,040	0,100							
		55	0,02 (2)	0,065 (2)	0,070	0,1		30	0,009	0,040	0,100							
		45	0,03 (3)	0,075 (3)	0,095 (2)	0,1 (2)		25	0,004	0,040	0,100							
		55	0,015 (2)	0,030	0,050	0,1		35	0,008	0,030	0,095							
		40	0,02 (4)	0,04 (2)	0,050	0,1 (2)		20	0,004	0,030	0,095							
		45	0,013 (2)	0,030	0,050	0,1		30	0,007	0,030	0,095							
	45	105	0,020	0,050	0,075	0,1	40	70	0,030	0,050	0,100	85	0,040	0,120	0,060	0,200	0,095	0,300
	45	100	0,025 (2)	0,050	0,075	0,1	40	70	0,015	0,050	0,100	85	0,040	0,120	0,060	0,200	0,095	0,300
	60	130	0,020	0,050	0,075	0,1	50	90	0,030	0,050	0,100	105	0,040	0,120	0,060	0,200	0,095	0,300
	45	110	0,025 (2)	0,050	0,075	0,1	40	75	0,020	0,050	0,100	90	0,040	0,120	0,060	0,200	0,095	0,300
	45	105	0,020	0,050	0,075	0,1	40	70	0,030	0,050	0,100	85	0,040	0,120	0,060	0,200	0,095	0,300
	45	100	0,02 (2)	0,040	0,075	0,1	40	65	0,010	0,050	0,100	85	0,040	0,120	0,060	0,200	0,095	0,300
	40	85	0,025 (2)	0,050	0,075	0,1	30	60	0,015	0,050	0,100	75	0,040	0,120	0,060	0,200	0,095	0,300
		400	0,030	0,075	0,100	0,1		400	0,050	0,065	0,100	400	0,070	0,200	0,120	0,300	0,170	0,400
		400	0,030	0,075	0,100	0,1		400	0,050	0,065	0,100	400	0,070	0,200	0,120	0,300	0,170	0,400
		400	0,030	0,075	0,100	0,1		360	0,050	0,065	0,100	400	0,070	0,200	0,120	0,300	0,170	0,400
		400	0,030	0,075	0,100	0,1		360	0,050	0,065	0,100	400	0,070	0,200	0,120	0,300	0,170	0,400
		170	0,030	0,075	0,100	0,1	95	130	0,050	0,065	0,100	195	0,070	0,200	0,120	0,300	0,170	0,400
		400	0,030	0,075	0,100	0,1		360	0,050	0,065	0,100	480	0,070	0,200	0,120	0,300	0,170	0,400
		360	0,030	0,075	0,100	0,1		205	0,050	0,065	0,100							
		360	0,030	0,075	0,100	0,1		205	0,045	0,065	0,100							
		360	0,030	0,075	0,100	0,1		205	0,050	0,065	0,100							
		50	0,030	0,075	0,100	0,1		30	0,050	0,065	0,100							
		35	0,015 (2)	0,030	0,050	0,1		20	0,011	0,030	0,095							
		25	0,015 (2)	0,05 (2)	0,050	0,085		15	0,009	0,030	0,095							
		40	0,015 (2)	0,05 (2)	0,050	0,09		20	0,010	0,030	0,095							
		25	0,02 (3)	0,05 (2)	0,050	0,1 (2)		15	0,007	0,030	0,095							
		25	0,013 (2)	0,05 (2)	0,050	0,1 (2)		15	0,007	0,030	0,095							
		40	0,011	0,035	0,050	0,1		20	0,020	0,030	0,095							
		40	0,015 (2)	0,035	0,050	0,1		25	0,008	0,030	0,095							
		20	0,015 (2)	0,035	0,050	0,1		10	0,008	0,030	0,095							
		50	0,015 (2)	0,030	0,050	0,09		30	0,011	0,030	0,095							
		60	0,015 (2)	0,05 (2)	0,050	0,09		30	0,009	0,030	0,095							
		55	0,02 (3)	0,065 (2)	0,070	0,1		40	0,005	0,040	0,075							
		35	0,011	0,045	0,070	0,1		30	–	0,040	0,075							
		30	0,011	0,060 (3)	0,08 (3)	0,1 (3)		25	–	0,006	0,060							
		60	0,011	0,065 (2)	0,070	0,1		45	–	0,040	0,075							
		290	0,011	0,035	0,050	0,1		155	0,020	0,030	0,090							
	90	145	0,011	0,035	0,050	0,1	70	105	0,020	0,030	0,090							
	30	65	0,011	0,035	0,050	0,1	25	40	0,020	0,030	0,090							
	30	65		0,035	0,050	0,1	25	40	0,020	0,030	0,090							
	30	65		0,035	0,050	0,1	25	40	0,020	0,030	0,090							
	175	215		0,035	0,050	0,1	150	155	0,020	0,030	0,090	175	0,025	0,1	0,045	0,15	0,06	0,2

Type description

Thread milling cutters

Type description		Machining	Materials P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Thread depth	Page
TC610 	– Universal thread milling cutter		●●	●●	●●	●●	●●		●	20°	$1,5 \times D_N$	B 1090
TC611 	– Universal thread milling cutter		●●	●●	●●	●●	●●		●	20°	$2,0 \times D_N$	B 1091
TMC 	– Universal thread milling cutter with countersink		●●	●●	●●	●●	●●		●	27°	$2,0 \times D_N$	B 1105
TME 	– Universal thread milling cutter for external thread		●●	●●	●●	●●	●●		●	20°	$2,0 \times D_N$	B 1095
TMO 	– Universal orbital thread milling cutter		●●	●●	●●	●●	●●		●	15°	$2,0 \times D_N$ $3,0 \times D_N$	B 1108
TMI 	– Universal indexable insert thread milling cutter		●●	●●	●●	●●	●●		●	0°	$1,0 \times D_N$ $1,5 \times D_N$	B 1116
TMG HRC 	– Thread milling cutter for hardened materials from 48 to 63 HRC		●●		●●		●	●●	●	10°	$1,5 \times D_N$	B 1093
TMO HRC 	– Orbital thread milling cutter for hardened materials from 48 to 63 HRC		●●		●●		●	●●	●	15°	$2,0 \times D_N$	B 1110
TMG Ni 	– Thread milling cutter for nickel alloys		●●	●●		●	●●		●	27°	$1,5 \times D_N$	B 1100
TMD 	– Drill thread milling cutter for short-chipping aluminium and grey cast iron materials				●●	●●				27°	$2,0 \times D_N$	B 1107

●● Primary application
● Additional application

B7

Product families

Thread milling cutters	
TC610 / TC611	Universal thread milling cutter
TMC	Universal thread milling cutter with countersink
TMD	Drill thread milling cutter
TME	Universal thread milling cutter for external thread
TMG HRC	Thread milling cutter for hardened materials from 48 to 63 HRC
TMG Ni	Thread milling cutter for nickel alloys
TMI	Universal indexable insert thread milling cutter
TMO	Universal orbital thread milling cutter
TMO HRC	Orbital thread milling cutter for hardened materials from 48 to 63 HRC

Grade description

Walter grade description	Standard designation	Materials							Range of applications	Coating process	Coating composition	Tool example
		P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	01 05 10 15 20 25 30 35 40 45			
WB10RD	HC – 10	●●	●●	●●	●●	●●		●		PVD	TiAlN + ZrN	
WJ30RC	HC – 30	●●	●●	●●	●●	●●		●		PVD	TiALN	

HC = Coated carbide

●● Primary application
● Additional application

B7

Process principles

Basic aspects of thread milling

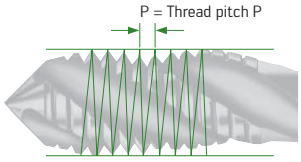
– A machine tool with a 3D CNC control system is required (largely standard today)

– Conventional thread milling is cost-effective up to approx. $2 \times D_N$, while orbital thread milling is beneficial for larger thread depths

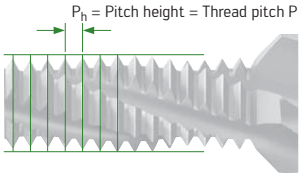
– For larger thread dimensions, thread milling is generally quicker than tapping and thread forming

In contrast to tapping and thread forming, the pitch is created by the CNC control system when carrying out thread milling.

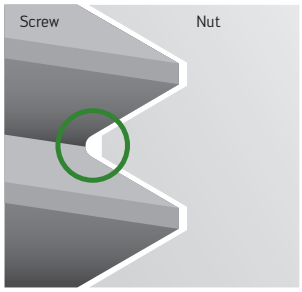
Theoretically, an internal thread milling cutter can also be used to create an external thread. However, because the external threads are rounded to minimise the notch effect in the core and the outer diameter created is too small, the threads created in this way will not comply with the thread standard.
The gauge accuracy will nevertheless be maintained, as the thread ring gauge tests the pitch diameter.

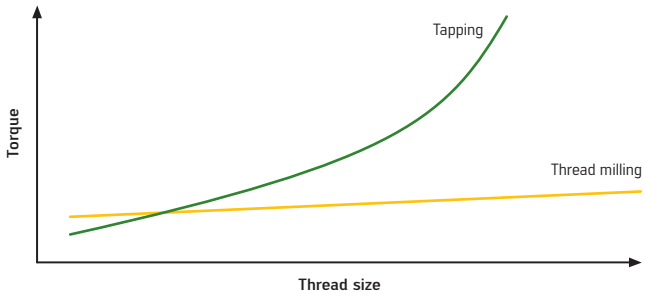


Tapping: The thread pitch P is created by the tap/thread former.



Thread milling: The thread pitch P is created by the CNC control system (circular program).





It is also possible to create large threads on machines with lower drive power, as, in contrast to tapping and thread forming, the torque required for thread milling only increases moderately as the thread size increases.

Thread milling is an extremely reliable production process. Chip removal is generally unproblematic, as the process produces short chips. In addition, thread milling does not require any special chucks; almost all common milling chucks can be used for thread milling as well.

The laws of physics mean that thread milling cutters are subject to less deflection at the shank than at the front cutting edge. As shown in the adjacent curve formula, this leads to conical threads when using conventional thread milling cutters.
In order to counteract this physical law, the geometric design of thread milling cutters is slightly conical. Problems with this resulting from difficult machining conditions (e.g. deep threads) can be remedied via one of the following measures:

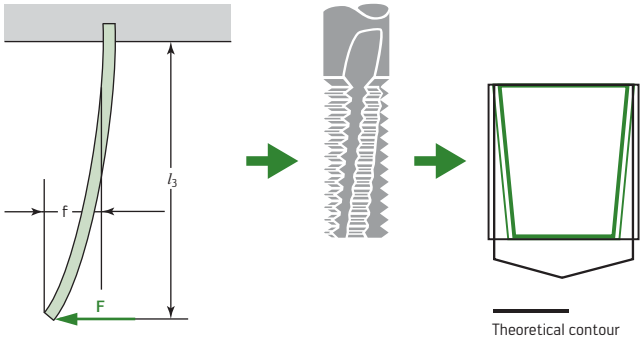
– (Multiple) radial cutting pass(es)

– Using conventional milling for all radial cuts

– Carrying out a non-cutting pass without additional feed at the end of the process (radial cutting passes are preferable to carrying out a non-cutting pass due to their wear behaviour)

Note:
Orbital thread milling cutters (TMO) are a good alternative, as they can be used to create parallel threads right to the bottom of the hole. With orbital thread milling cutters, the relevant projection length for the curvature does not change across the entire length of the thread, as only one row of cutting edges is engaged at any given time. This means that the curvature remains constant.

The measures listed above increase the cycle time, but are unavoidable in some cases where it is not otherwise possible to ensure that the thread remains true to gauge. Measures for reducing the conicity must often be implemented in particular for threads with tight tolerances and when working with materials with difficult cutting properties (such as Inconel).



$$f = \frac{F \times l_3^3}{3 \times E \times I}$$

f = Curvature	E = Modulus of elasticity
F = Cutting force	I = Grade 2 surface torque
l_3 = Projection length	L_c = Cutting edge length

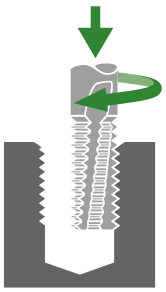
B7

Machining strategies

Thread milling processes

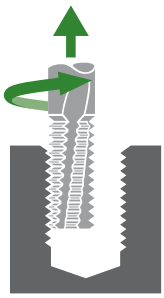
There are two fundamentally different thread milling processes:

Conventional milling



Conventional milling is preferred when machining hardened materials, or as a remedy for conical threads. (from top to bottom in right-hand threads)

Synchronous milling



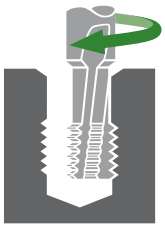
Synchronous milling increases tool life and prevents chatter marks, while facilitating thread conicity. (from bottom to the top in right-hand threads)

Note:
Walter GPS automatically determines the right process for the relevant application and takes into account the specific details relating to the tool and the machining process.

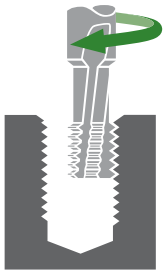
Cutting pass

The cuts can be made in a number of passes in order to reduce the forces acting on the tool:

Axial passes



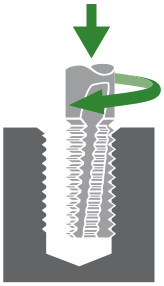
First cut



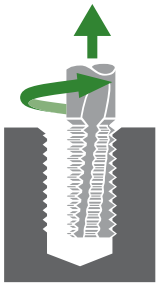
Second cut

Note:
Ensure that the thread milling cutter is always moved by a multiple of the pitch when making axial cutting passes.

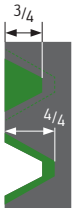
Radial passes



First cut



Second cut



First cut
Conventional milling

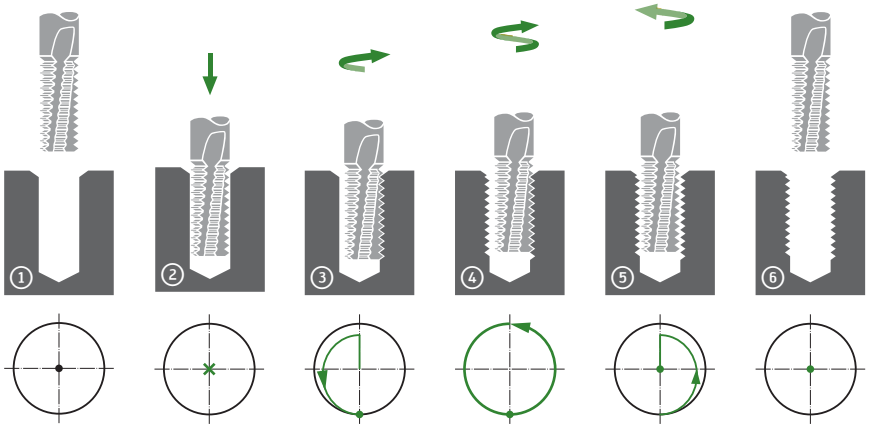
Second cut
Synchronous milling

Advantages:
- Greater thread depths can be created
- Reduced risk of tool breakage
- Thread milling is possible even with a relatively unstable clamping arrangement
- Counteracts conical threads

Disadvantages:
- Increased tool wear
- Higher production time
- Axial passes can result in burr at the transition

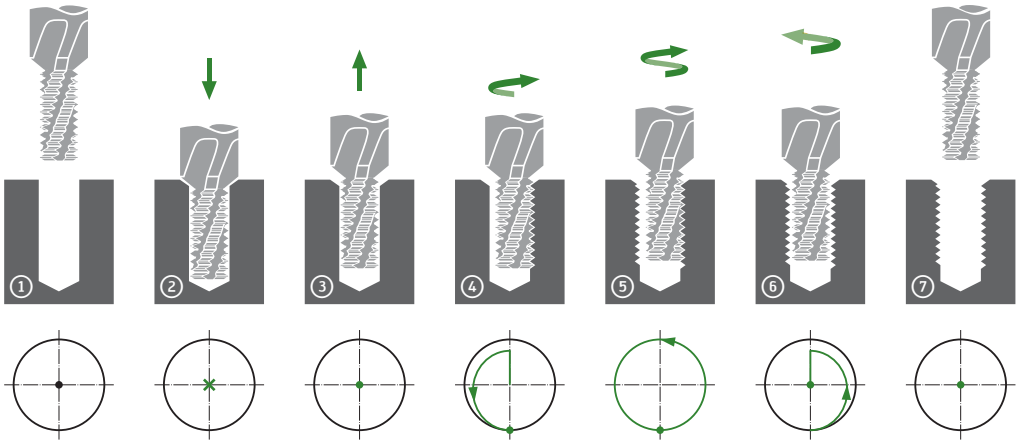
Machining strategies
Basic strategies

Thread milling



Positioning over core hole | Plunging | Descending loop & radial cut | Creating the thread using 360° helix | Exit loop | Returning the tool to the start position

Thread milling with countersink



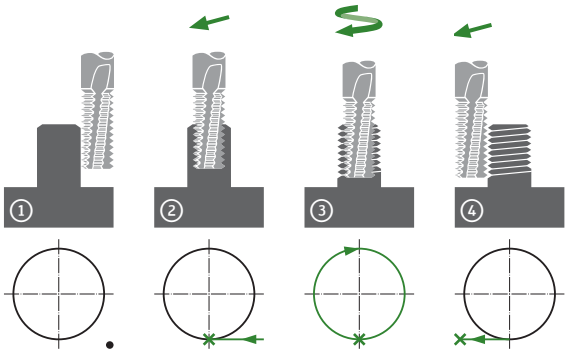
Positioning over core hole | Plunging and countersinking | Feeding back | Descending loop & radial cut | Creating the thread using 360° helix | Exit loop | Returning the tool to the start position

- Start position
- Movement out of the level
- Movement into the level
- Direction of movement on the x-axis and y-axis

Machining strategies

Basic strategies (continued)

External thread milling



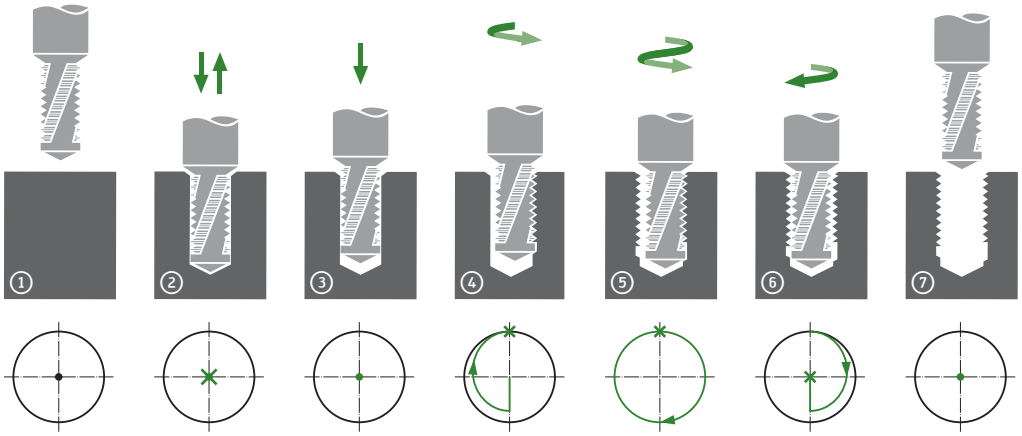
Positioning

Approaching at the inclination angle

Thread milling using 360° helix

Withdrawing at the inclination angle

Drilling and thread milling



Positioning over core hole

Drilling, countersinking the core hole and chip removal

Plunging

Descending loop

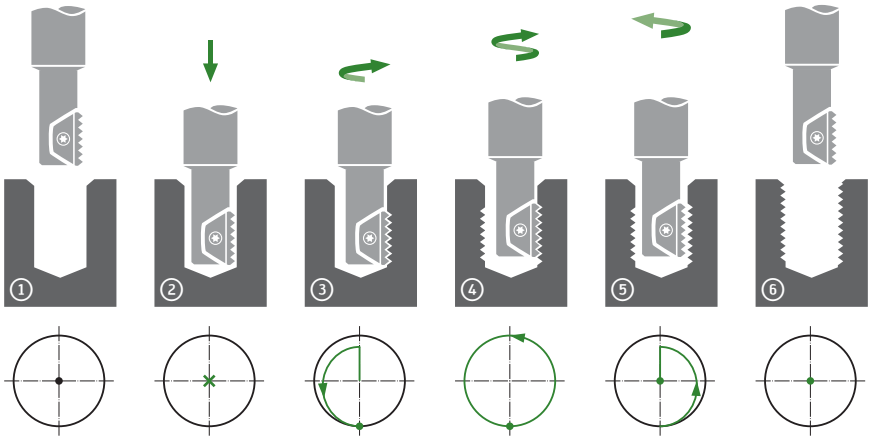
Creating the thread via conventional milling using 360° helix

Exit loop

Returning the tool to the start position

- Start position
- Movement out of the level
- Movement into the level
- Direction of movement on the x-axis and y-axis

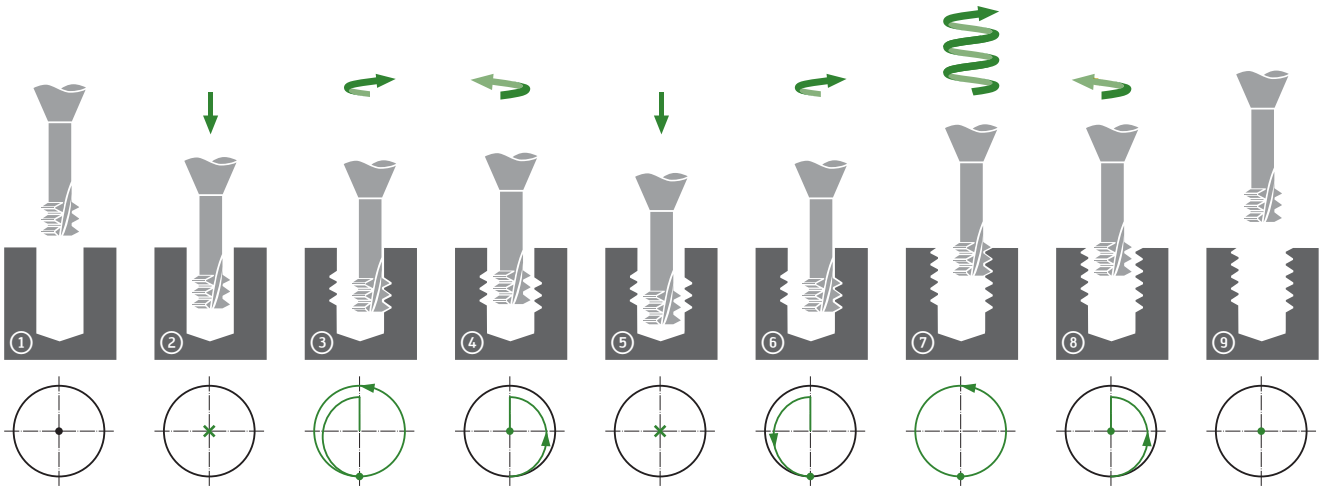
Indexable insert thread milling



1	2	3	4	5	6
Positioning over core hole	Plunging	Descending loop & radial cut	Creating the thread using 360° helix	Exit loop	Returning the tool to the start position

Steps 2-5 are repeated until the thread depth is achieved.

Orbital thread milling



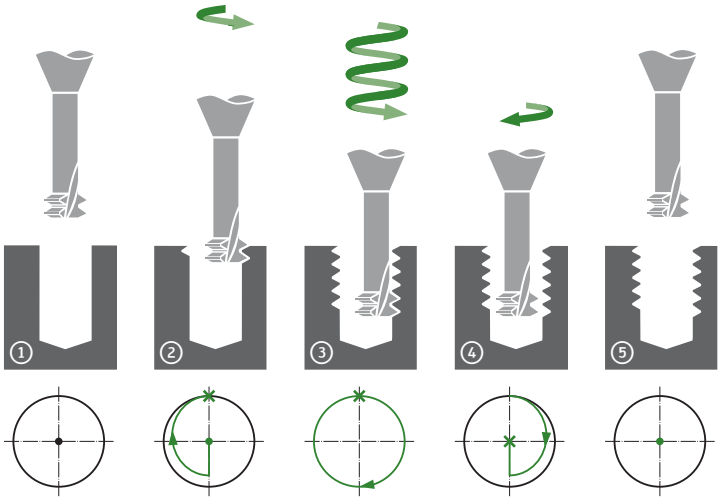
1	2	3	4	5	6	7	8	9
Positioning over core hole	Plunging	Descending loop + 360° helix	Exit loop	Plunging	Descending loop	Creating the thread using helix	Exit loop	Returning the tool to the start position

- Start position
- Movement out of the level
- × Movement into the level
- → Direction of movement on the x-axis and y-axis

Machining strategies

Basic strategies (continued)

Orbital thread milling in hardened materials



Positioning over core hole

Descending loop

Creating the thread via conventional milling using helix

Exit loop

Returning the tool to the start position

- Start position
- Movement out of the level
- Movement into the level
- Direction of movement on the x-axis and y-axis

CNC programming

It is generally recommended to use Walter GPS to generate the CNC program for thread milling. Unlike predefined machine cycles, Walter GPS takes into account the stability of the tool and the material to be machined. On the basis of this information, it automatically selects the optimum cutting parameters and includes radial cutting passes in the program sequence if necessary. CNC programs can normally be generated for all commonly used control systems. Every line of the program includes comments, enabling users to understand the program sequence and to adjust individual values, which is not possible with machine cycles. In addition, using Walter GPS enables the required thread tolerance to be achieved with the very first thread – eliminating the need to carry out time-consuming gradual adjustment to achieve suitable correction values.

Every thread milling cutter is measured during production and labelled with the programming radius ("Rprg."). The programming radius is calculated on the basis of the actual pitch diameter measured. As the thread is gauged on the pitch diameter, it is vital that this is taken into account in the programming. Not all users are able to measure the pitch diameter of a thread milling cutter and calculate the Rprg. The labelling of the tools with the Rprg. as standard therefore offers significant advantages for ensuring optimum processes, as users can simply read the Rprg. on the shank of the tool and input it directly into the tool memory of the machine. If the Rprg. is entered without correction, the thread milling cutter will move along the path of the smallest permitted pitch diameter.

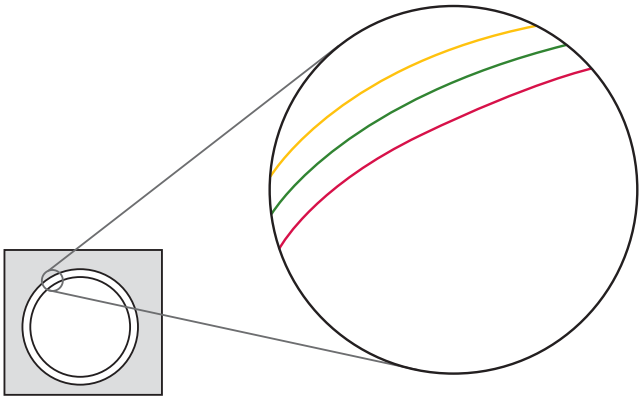
As using the Rprg. by itself only results in the use of the minimum permitted pitch diameter, the value entered must be corrected on the basis of the selected tolerance. The top line of the CNC program generated by Walter GPS can be used to do so. Reducing the Rprg. by the specified correction value (in the adjacent example, this is 0.038 mm) results in a movement sequence in which the pitch diameter of the milled thread is situated in the middle of the tolerance range.

If the tool becomes worn during machining, the deflection increases and the pitch diameter is reduced. This can be offset by correcting the Rprg. It is recommended to use correction increments of 0.01 mm.

Note: If the tool memory uses diameters instead of radii, the Rprg. must be doubled before it is entered. Failing to do so will result in a collision, breaking the tool.



Comment	Code
Tool radius presetting	;Tol. 6H: R='Rprg'-0.038 mm
Tool request	N01 M6 T
Selection of working plane	N02 G90 G17



Maximum permitted pitch diameter

Middle of the tolerance range
(achieved using the correction value calculated by Walter GPS.)

Minimum permitted pitch diameter
(achieved if the Rprg. is entered without correction.)

B 7

Modifications

Thread milling cutters

	Modification	Effect
	Countersink and facing step	Countersinking and facing step in one tool
	Coolant grooves on the shank	Targeted cooling without weakening the tool cross section in the cutting area
	Radial coolant outlets	Targeted cooling for through-hole threads
	Threads removed	Reduced cutting forces, as fewer teeth are engaged at once. Increased machining time, as several passes are necessary.
	Deburring cutting edge	Removal of the incomplete thread at the thread start area without an additional operation
	First thread profile lengthened on the face	Chamfering of the core hole
	Grinding of the neck	Enables axial cutting passes to be made (useful for deep threads)

Solutions

		Thread milling problems					
		Chatter marks	Low tool life	Cutting edges chipping	Conical threads*	Tool breakage	Gauge accuracy
Cutting data/strategy/settings	f_z in [mm/tooth]	+	+	□	-	-	
	v_c in [m/min]	-	-	□		□	
	Programming			□		□	□
	Synchronous milling	■	■				
	Conventional milling				■		■
	Cutting pass	■		■	■	■	■
	Programming radius [Rprg.]						□
	Cooling		+	+			
Workpiece	Clamping arrangement	□	+	+	□	□	□
	Pilot hole diameter	□	+	□	□	□	+
	Chip removal		+	+	□	□	
Tool	Stability/geometry	□	+	+	□	□	+
	Projection length	-	-	-	-	-	-
	Coating		□				
	Concentricity	□	□	□		□	□

□ check ■ preferably use - reduce + improve/increase

* Using tools in the TMO family is an excellent alternative for creating parallel threads.

TMO – Specialists for demanding tasks:
Tools in the TMO family are often used as problem-solvers where

- deep threads need to be created
- hardened materials are to be machined
- conventional thread milling cutters create conical threads

Cooling and lubrication:
Problems caused due to cooling and lubrication and the corresponding measures for remedying these problems are located in the "Cooling and lubrication" section.

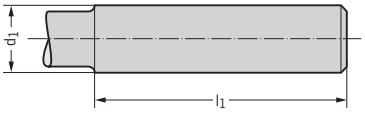
Hard machining:

- Only use tools specially designed for hard machining (TMO HRC or TMG HRC)
- Carry out machining using conventional milling where possible (see Walter GPS recommendation)
- Select the largest permitted pilot hole diameter
- If problems with the cylindricity of threads occur, carry out several radial cuts or use tools from the TMO HRC family
- Do not use cooling lubricant. Instead, remove the hard chips from the drilled hole by blasting with air or using minimum quantity lubrication

Shank dimensions in accordance with DIN 6535

Parallel shank DIN 6535 HA

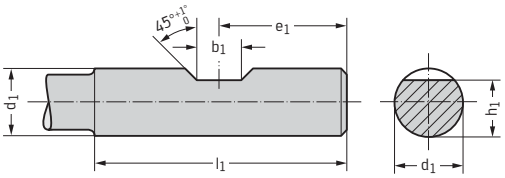
Form HA
for d_1 = 2-32 mm



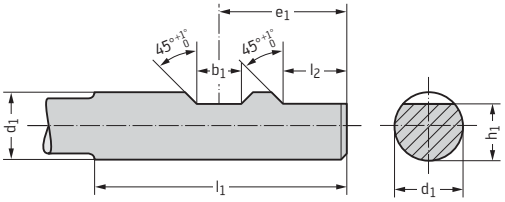
d_1 h6 [mm]	2	6	10	12	16	20	25	32
l_1 +2 [mm]	28	36	40	45	48	50	56	60

Parallel shank DIN 6535 HB

Form HB
with a clamping face for d_1 = 6-20 mm



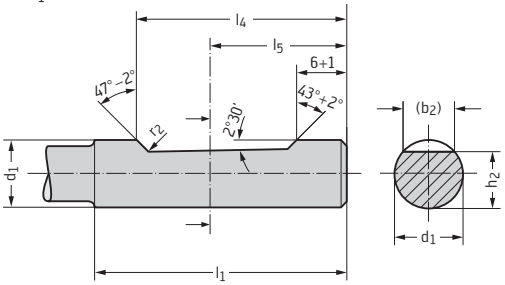
Form HB
with two clamping faces for d_1 = 25 and 32 mm



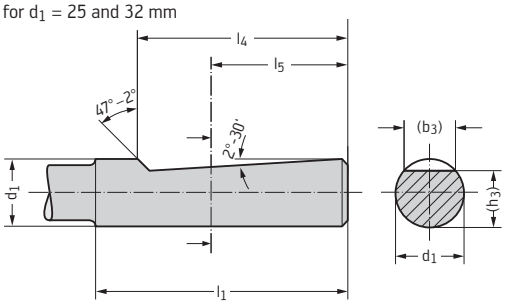
d_1 h6 [mm]	b_1 +0,05 [mm]	e_1 −1 [mm]	h_1 h11 [mm]	l_1 +2 [mm]	l_2 +1 [mm]
6	4,2	18	5,1	36	–
8	5,5	18	6,9	36	–
10	7	20	8,5	40	–
12	8	22,5	10,4	45	–
14	8	22,5	12,7	45	–
16	10	24	14,2	48	–
18	10	24	16,2	48	–
20	11	25	18,2	50	–
25	12	32	23,0	56	17
32	14	38	30,0	60	19

Parallel shank DIN 6535 HE

Form HE
for d_1 = 6-20 mm



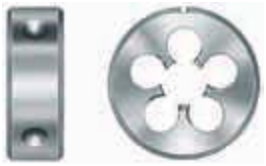
Form HE
for d_1 = 25 and 32 mm



d_1 h6 [mm]	(b_2) ≈ [mm]	(b_3) [mm]	h_2 h11 [mm]	(h_3) [mm]	l_1 +2 [mm]	l_4 −1 [mm]	l_5 Nominal dimension [mm]	r_2 min. [mm]
6	4,3	–	5,1	–	36	25	18	1,2
8	5,5	–	6,9	–	36	25	18	1,2
10	7,1	–	8,5	–	40	28	20	1,2
12	8,2	–	10,4	–	45	33	22,5	1,2
14	8,1	–	12,7	–	45	33	22,5	1,2
16	10,1	–	14,2	–	48	36	24	1,6
18	10,8	–	16,2	–	48	36	24	1,6
20	11,4	–	18,2	–	50	38	25	1,6
25	13,6	9,3	23,0	24,1	56	44	32	1,6
32	15,5	9,9	30,0	31,2	60	48	35	1,6

		Page
HSS(-E) threading dies	M	B 1136
	MF	B 1138
	UNC	B 1139
	UNF	B 1140
	G	B 1141

HSS threading dies
Protocut®



– For long-chipping and short-chipping materials

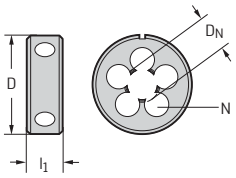
~1,75 x P

36HRC
1200
–200
N/mm²

M	6g	
DIN 13		

	P	M	K	N	S	H	O
Uncoated	●●			●●			

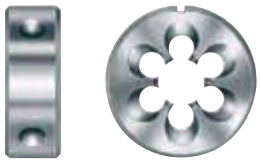
EN 22568



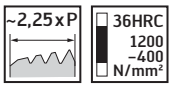
Designation Uncoated	D_N	P mm	D f10 mm	l_1 mm	N
60000-M1	M 1	0,25	16	5	3
60000-M1.2	M 1.2	0,25	16	5	3
60000-M1.4	M 1.4	0,3	16	5	3
60000-M1.6	M 1.6	0,35	16	5	3
60000-M2	M 2	0,4	16	5	3
60000-M2.5	M 2.5	0,45	16	5	3
60000-M3	M 3	0,5	20	5	3
60000-M4	M 4	0,7	20	5	3
60000-M5	M 5	0,8	20	7	4
60000-M6	M 6	1	20	7	4
60000-M8	M 8	1,25	25	9	4
60000-M10	M 10	1,5	30	11	4
60000-M12	M 12	1,75	38	14	4
60000-M14	M 14	2	38	14	5
60000-M16	M 16	2	45	18	5
60000-M20	M 20	2,5	45	18	5
60000-M24	M 24	3	55	22	5
60000-M30	M 30	3,5	65	25	6

≤ M 1.4: 6h, ≥ M 1.6: 6g

HSS-E threading dies
Protocut® Inox



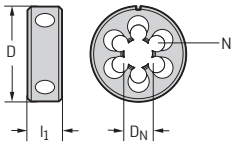
– For long-chipping materials



M	6g	
DIN 13		

	P	M	K	N	S	H	O
Uncoated	●●	●●					

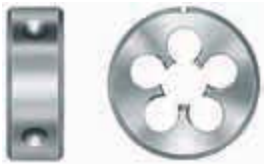
EN 22568



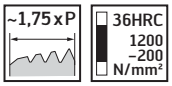
Designation Uncoated	D_N	P mm	D f10 mm	l_1 mm	N
60003-M2	M 2	0,4	16	5	4
60003-M2.5	M 2.5	0,45	16	5	4
60003-M3	M 3	0,5	20	5	4
60003-M3.5	M 3.5	0,6	20	5	4
60003-M4	M 4	0,7	20	5	4
60003-M5	M 5	0,8	20	7	4
60003-M6	M 6	1	20	7	4
60003-M7	M 7	1	25	9	4
60003-M8	M 8	1,25	25	9	5
60003-M10	M 10	1,5	30	11	5
60003-M12	M 12	1,75	38	14	5
60003-M14	M 14	2	38	14	5
60003-M16	M 16	2	45	18	5
60003-M18	M 18	2,5	45	18	5
60003-M20	M 20	2,5	45	18	5

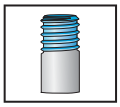
WALTER SELECT
●● Primary application
● Other application

HSS threading dies
Protocut®



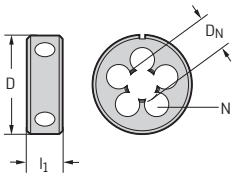
– For long-chipping and short-chipping materials



MF DIN 13	6g	

	P	M	K	N	S	H	O
Uncoated	●●			●●			

EN 22568



Designation Uncoated	D_N	P mm	D f10 mm	l_1 mm	N
61000-M5X0.5	M 5	0,5	20	5	4
61000-M6X0.5	M 6	0,5	20	5	4
61000-M6X0.75	M 6	0,75	20	7	4
61000-M8X0.75	M 8	0,75	25	9	5
61000-M8X1	M 8	1	25	9	5
61000-M10X1	M 10	1	30	11	5
61000-M12X1	M 12	1	38	10	5
61000-M14X1	M 14	1	38	10	5
61000-M16X1	M 16	1	45	14	5
61000-M18X1	M 18	1	45	14	5
61000-M20X1	M 20	1	45	14	6
61000-M10X1.25	M 10	1,25	30	11	5
61000-M12X1.25	M 12	1,25	38	10	5
61000-M12X1.5	M 12	1,5	38	10	4
61000-M14X1.5	M 14	1,5	38	10	5
61000-M16X1.5	M 16	1,5	45	14	5
61000-M18X1.5	M 18	1,5	45	14	5
61000-M20X1.5	M 20	1,5	45	14	6
61000-M22X1.5	M 22	1,5	55	16	5
61000-M24X1.5	M 24	1,5	55	16	6
61000-M30X1.5	M 30	1,5	65	18	6

HSS threading dies
Protocut®



– For long-chipping and short-chipping materials

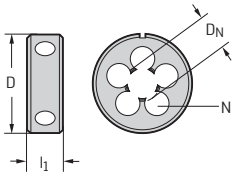




UNC	2A	
ASME B1.1		

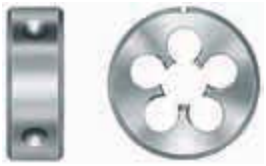
	P	M	K	N	S	H	O
Uncoated	●●			●●			

EN 22568



Designation Uncoated	D_N-P Nom	D_N mm	D f10 mm	l_1 mm	N
62000-UNC2	UNC 2-56	2,184	16	5	4
62000-UNC4	UNC 4-40	2,845	16	5	4
62000-UNC6	UNC 6-32	3,505	20	7	4
62000-UNC8	UNC 8-32	4,166	20	7	4
62000-UNC1/4	UNC 1/4-20	6,35	20	7	4
62000-UNC5/16	UNC 5/16-18	7,938	25	9	4
62000-UNC3/8	UNC 3/8-16	9,525	30	11	4
62000-UNC7/16	UNC 7/16-14	11,113	30	11	4
62000-UNC1/2	UNC 1/2-13	12,7	38	14	4
62000-UNC9/16	UNC 9/16-12	14,288	38	14	4
62000-UNC5/8	UNC 5/8-11	15,875	45	18	4
62000-UNC3/4	UNC 3/4-10	19,05	45	18	5
62000-UNC1X8	UNC 1"-8	25,4	55	22	5

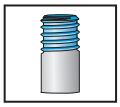
HSS threading dies
Protocut®



– For long-chipping and short-chipping materials

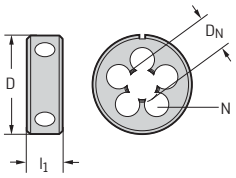




UNF	2A	
ASME B1.1		

	P	M	K	N	S	H	O
Uncoated	●●			●●			

EN 22568

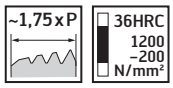


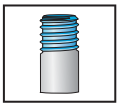
Designation Uncoated	D_N-P Nom	D_N mm	D f10 mm	l_1 mm	N
63000-UNF10	UNF 10-32	4,826	20	7	4
63000-UNF1/4	UNF 1/4-28	6,35	20	7	4
63000-UNF5/16	UNF 5/16-24	7,938	25	9	4
63000-UNF3/8	UNF 3/8-24	9,525	30	11	4
63000-UNF7/16	UNF 7/16-20	11,113	30	11	5
63000-UNF1/2	UNF 1/2-20	12,7	38	10	5
63000-UNF9/16	UNF 9/16-18	14,288	38	10	5
63000-UNF5/8	UNF 5/8-18	15,875	45	14	5
63000-UNF3/4	UNF 3/4-16	19,05	45	14	6
63000-UNF7/8	UNF 7/8-14	22,225	55	16	5

HSS threading dies
Protocut®



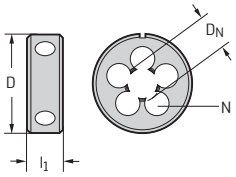
– For long-chipping and short-chipping materials



G DIN EN ISO 228	Class A	

	P	M	K	N	S	H	O
Uncoated	●●			●●			

EN 24231



Designation Uncoated	D_N Nom	D_N mm	Threads per inch	D f10 mm	l_1 mm	N
64000-G1/8	G 1/8-28	9,728	28	30	11	5
64000-G1/4	G 1/4-19	13,157	19	38	10	5
64000-G3/8	G 3/8-19	16,662	19	45	14	5
64000-G1/2	G 1/2-14	20,955	14	45	14	6
64000-G3/4	G 3/4-14	26,441	14	55	16	6
64000-G1	G 1"-11	33,249	11	65	18	7



	Page
Coatings and surface treatments	B 1144
Cooling and lubrication	B 1146
Information on the core hole	B 1150
Thread – Pilot hole diameter	B 1151
Thread types in accordance with DIN	B 1162
Tolerance units	B 1170
Calculation formulae – Thread machining	B 1172
Cutting forces of Walter machining groups	B 1173
Material comparison table	B 1174
Hardness comparison table	B 1196
ISO tolerances	B 1197

Coatings and surface treatments

Surface treatment and hard material coatings for increased performance

Surface coating has developed into a proven technological process for improving the performance of metal cutting tools. In contrast to surface treatment, the tool surface remains chemically unaltered and a thin layer is applied.

For Walter Prototyp high-speed steel and carbide tools, the coating is applied using PVD processes, which work at process temperatures of below 600 °C and therefore do not result in any change to the base material. Hard material layers have a greater hardness and wear resistance than the substrate itself.

In addition
– they separate the substrate and the material to be cut from each other
– they act as a thermal insulation layer

Note:
This also means that coated tools have a longer tool life – even at higher cutting speeds.

Tapping/thread forming

Surface treatment/ coating	Areas of use	Properties	Tool example
Uncoated	– Very deep blind holes in soft steels – Used if there are problems with chip removal	– Lower v_c/tool life quantity compared to coated tools – Tightly rolled chips	
NIT	– Grey cast iron (GJL) materials – AlSi alloys with a content of 6-18% – Ampco	– Improved wear resistance thanks to increased surface hardness – Reduced toughness	
VAP	– Primarily for stainless materials – In materials that are soft, tough or have a tendency towards weld formations – For very deep blind hole threads	– Improved cooling lubricant adhesion resulting in reduced weld formations – Lower v_c/tool life quantity compared to coated tools – Improved chip removal	
NID (NIT + VAP)	– Through hole: Steel up to 1200 N/mm², cast iron and aluminium machining – Blind hole: Short-chipping materials only (grey cast iron (GJL), AlSi alloys with > 7% silicon content, C70); steels with high pearlite content – Not for stainless materials that tend to cause jamming	– Longer tool life thanks to increased surface hardness – Reduced toughness – Nidamised means nitrided and vaporised	
TiN	– Low-alloy steels – Stainless materials – Suitable for Ni alloys	– Universal coating – Suitable for many materials – Not for Ti alloys	
TiN / VAP	– Very deep blind holes – Steels in general	– Better chip formation compared to fully TiN-coated tools	

Tapping/thread forming

Surface treatment/ coating	Areas of use	Properties	Tool example
TiCN	– Alloyed and unalloyed steels – Abrasive materials such as grey cast iron, AlSi alloys (> 5% silicon content), copper alloys and bronze alloys – Suitable for Ni alloys	– Resistant to wear when machining abrasive materials – Highly suited to solid carbide tools – Not for Ti alloys	
THL	– Steels in general and stainless steels in particular – Deep blind holes – MQL machining	– Better chip formation than TiN and TiCN – Tends to cause weld formations in materials containing manganese	
CrN	– Tapping in aluminium and copper alloys – Thread forming in Ti alloys – Machining lubricating steels	– Reduces weld formations	
TAFT	– Stainless steels – ISO K materials	– Good chip formation – Reduces weld formations	
ACN	– Ti alloys – Ni alloys	– No affinity for Ti alloys, because it is a titanium-free layer	

Thread milling

Surface treatment/ coating	Areas of use	Properties	Tool example
Uncoated	– For use in aluminium and Ti alloys	– Sharp cutting edges	
TiCN	– Universal use up to 48 HRC	– Good performance in many materials	
TAX	– For hardened and abrasive materials	– Higher temperature resistance than TiCN	
NHC	– ISO N materials	– High temperature resistance – Reduced tendency towards adhesion – Resistant to abrasive wear – High layer hardness – Sharp cutting edges	

Cooling and lubrication

It is common to talk about "coolant" in this context, although for thread cutting and thread forming in particular, lubrication is more important than cooling. The following different methods are used:

– External coolant supply
– External coolant supply via outlets parallel to the axis on the chuck
– "Internal" coolant supply via flutes on the shank
– **I**nternal **c**oolant supply (= **IC**) with **a**xial **c**oolant outlet (= **AC**)
– Internal coolant supply with **r**adial **c**oolant outlet (= **RC**)

External coolant supply is the most widely used method. It works in most cases. When machining blind hole threads vertically, the core hole fills with coolant (with the exception of very small drill diameters) and this facilitates the thread machining process.

When producing through-hole threads, the core hole is unable to be filled, however, because the chips are transported in the direction of feed and no chips are created in the first place during thread forming. The coolant may still be able to penetrate right to the chamfer/lead even in deep threads. The coolant jet should be set as parallel as possible to the tool axis.

External coolant supply becomes difficult when machining deep threads with the spindle in a horizontal position, as the coolant is not always able to penetrate through to the cutting edge. During blind hole tapping, the removal of chips also hinders the coolant supply.

Supplying coolant parallel to the axis via cooling grooves on the shank boasts significant advantages, as the coolant is always reliably supplied to the cutting edge, regardless of the tool length. The only thing that should be borne in mind with this method is that the coolant will be ejected radially as the speed increases if the coolant pressure is too low.

The internal coolant supply ensures that the coolant is continuously supplied to the cutting edge, ensuring optimum cooling and lubrication of the cutting edge at all times. It also assists with chip evacuation where necessary.

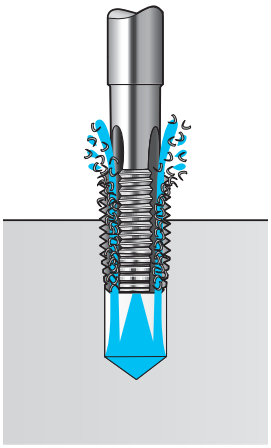
Material groups	Material	Thread cutting	Thread forming	Thread milling
P	Steel	Emulsion 5%	Emulsion 5–10%	Emulsion/MQL/air blast
	Steel 850–1200 N/mm²	Emulsion 5–10%	Emulsion 10% or oil (Protofluid)	Emulsion/MQL/air blast
	Steel 1200–1400 N/mm²	Emulsion 10% or oil (Protofluid)	Emulsion 10% or oil (Protofluid or Hardcut 525)	Emulsion/MQL/air blast
	Steel 1400–1600 N/mm² Equivalent to 44–49 HRC	Oil (Protofluid or Hardcut 525)	Forming is generally not possible	Emulsion/MQL/air blast
M	Stainless steel	Emulsion 5-10% or oil (Protofluid)	Oil (Protofluid) [Emulsion 5-10% only possible with special tools, e.g. Protodyn® S Eco stainless steel]	Emulsion
K	GJL grey cast iron	Emulsion 5%	Forming is not possible	Emulsion/MQL/air blast
	GJS ductile cast iron (GGG)	Emulsion 5%	Emulsion 10%	Emulsion/MQL/air blast
N	Aluminium up to max. 12% Si	Emulsion 5–10%	Emulsion 5–15%	Emulsion/MQL/air blast
	Aluminium over 12% Si	Emulsion 5–10%	Emulsion 5-10% Forming only practical in exceptional cases	Emulsion/MQL/air blast
	Magnesium	Oil (Protofluid)	Forming is not possible at room temperature	Dry
	Copper	Emulsion 5–10%	Emulsion 5–10%	Emulsion/MQL/air blast
S	Titanium alloys	Emulsion 10% or oil (Protofluid or Hardcut 525)	Oil (Hardcut 525)	Emulsion
	Nickel alloys	Emulsion 10% or oil (Protofluid or Hardcut 525)	Oil (Protofluid or Hardcut 525)	Emulsion
H	Steel > 49 HRC	Oil (Hardcut 525) possible only with carbide tools	Forming is not possible	Dry/MQL
O	Plastics	Emulsion 5%	Forming does not produce dimensionally accurate threads	Emulsion/MQL

Tapping

Short chips

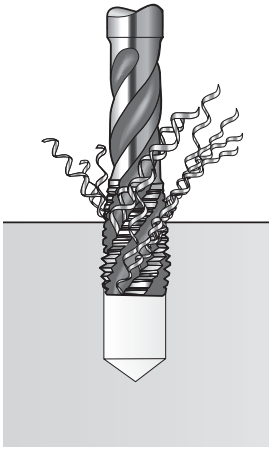
The best results in terms of performance and process reliability are attained if the chips can be broken short. These short chips can then be easily flushed out of the thread by the coolant. The best way to break the chips short is with straight-fluted taps (e.g. Paradur® HT).
Internal cooling with an axial outlet is recommended for blind hole threads.

Note:
When creating blind hole threads in short-chipping materials without internal coolant, the chips collect at the bottom of the hole. If the safety margin has been measured too tight, the tool runs up against the chips and may break.



Long chips (chips cannot be broken)

When working with steels below 1000 N/mm² or with stainless steels and other extremely tough materials, it is generally not possible to break the chips short. In these cases, the chips must be removed using helical tools. If internal coolant is available, the coolant only helps with chip evacuation. In some cases, taps with a shallower helix can be used, which increases the tool life.



Cooling and lubrication

(continued)

Thread forming

Cooling and, in particular, lubrication are of central importance for thread forming. Insufficient lubrication causes a sharp drop in the surface quality of the thread, as these photographs show:

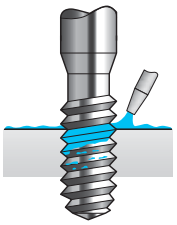


Flaky surface due to insufficient lubrication; Remedy: Lubrication grooves

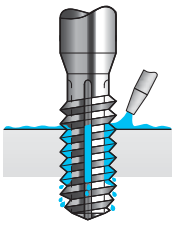


Smooth surface due to excellent lubrication

There are two different basic tool types: **Thread formers with lubrication grooves** and **thread formers without lubrication grooves**. The different ranges of applications are explained below.



Without lubrication grooves



With lubrication grooves

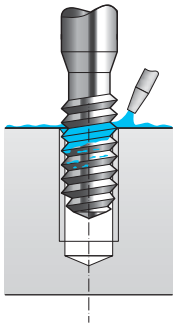
The area of application for tools without lubrication grooves is limited to:

- Sheet metal extrusions
- Through-hole threads up to 1.5 × D_N (because coolant cannot collect in the core hole)
- Blind hole threads when machining vertically (internal coolant is recommended for extremely deep blind hole threads)

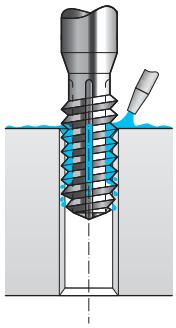
Lubrication grooves ensure uniform lubrication even at the bottom of deep threads, which is why thread formers with lubrication grooves can be used universally.
Vertical through-hole threads up to approx. 3.5 × D_N can be created with lubrication grooves even without internal coolant.

There are four different cases to consider for the tool design:

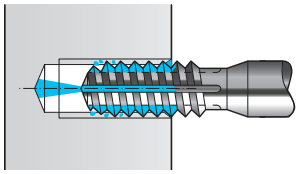
Vertical
blind hole machining
Lubrication grooves and internal coolant supply are not required; external coolant supply is sufficient (internal cooling is recommended for very deep threads, though an axial coolant outlet is sufficient).



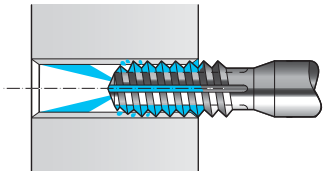
Vertical
through hole machining
(> 1.5 × D_N)
Lubrication grooves are required; internal coolant supply is not necessary. Cooling lubricant supplied externally can penetrate through to the shaped edges via the lubrication grooves (for extremely deep threads, internal cooling with radial outlet is recommended).



Horizontal
blind hole machining
Lubrication grooves and internal coolant supply are necessary. Axial coolant outlet is sufficient.



Horizontal
through hole machining
Lubrication grooves are required. Internal coolant supply with radial outlet is recommended.



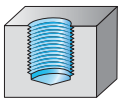
Thread milling

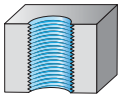
Wet machining is generally recommended for **thread milling**, however it should only be used if evenly distributed coolant can be guaranteed, as otherwise thermal shocks could occur, encouraging the formation of microcracks, which in turn result in fractures and thereby reduce the tool life.

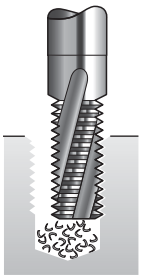
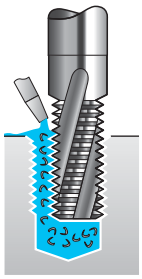
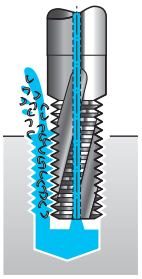
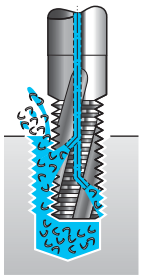
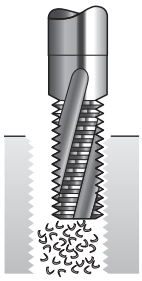
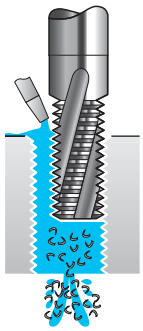
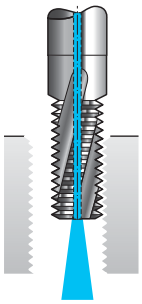
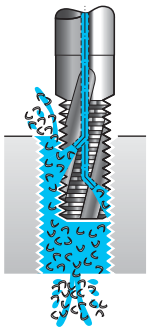
For blind hole machining, it is generally recommended to use a tool with axial coolant outlet. In this case, the best option is to use emulsion. No thermal shocks occur, because the tool is completely submerged. In addition, the coolant jet facilitates chip removal and therefore ensures that the process is reliable. Alternatively, internally supplied compressed air or MQL can also be used here, but this results in a shorter tool life. Using externally supplied emulsion is not recommended when creating blind hole threads, as doing so can cause chips to collect in the core hole, which negatively affects the tool life. Externally supplied cooling lubricant also results in an increased risk of thermal shocks.

For creating through hole threads, it is recommended to use emulsion or MQL, supplied externally. Alternatively, compressed air can be used. Wet machining may lead to problems in some circumstances, as it is not always possible to guarantee evenly distributed cooling of the tool with external coolant supply. With smaller thread dimensions in particular, there is the risk that externally supplied coolant may not completely penetrate the small diameter pilot hole. This means that evenly distributed cooling of the tool is not ensured, leading to an increased risk of thermal shocks.

Note:
When carrying out thread milling, having no cooling is less of a problem than having intermittent cooling.





Machining	Dry	External	AC[1]	RC[2]	Dry	External	AC[1]	RC[2]
Recommendation	–	•	••	•	••	••	–	••
Illustration								
Reasoning	Chips remain in the drilled hole and could cause fracture	Chips partially remain in the drilled hole	Chips are optimally flushed out	Chips are partially flushed out	Chips fall downwards out of the drilled hole	Chips are flushed out downwards	No cooling effect	Chips are flushed out

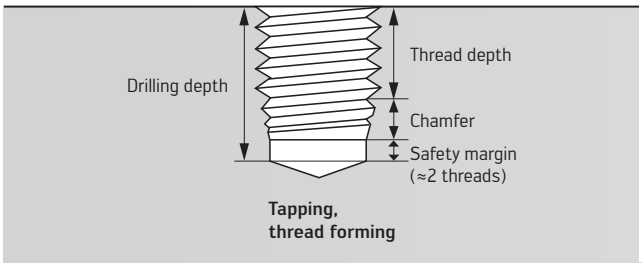
•• Primary application
• Additional application

[1] Internal coolant supply with axial outlet
[2] Internal coolant supply with radial outlets

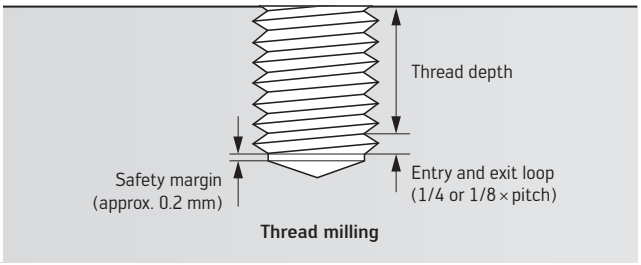
Information on the core hole and pilot hole diameter

Depth of the core hole for tapping, thread forming and thread milling

Drilling depth ≥ useable thread depth (+ chamfer length) + safety margin



Tapping, thread forming



Thread milling

Please note: Any existing tip on the threading tool must be taken into account when calculating the required depth of the core hole. In doing so, it is important to make a distinction between a full point and a reduced point.

Unlike taps and thread formers, thread milling cutters do not have a chamfer/lead area or a tip – the drilled depth can be used as effectively as possible. This means that they only require a very small axial safety margin.

Diameter of the core hole for tapping and thread milling

Rule of thumb: **Hole diameter = nominal diameter – pitch**

Example: M10 dimensions
Hole diameter → 10.0 mm – 1.5 mm = **8.5 mm**

Pilot hole diameter for thread forming

Rule of thumb: **Hole diameter = nominal diameter – f* × pitch**

* 6H tolerance: f = 0.45;
6G tolerance: f = 0.42

Example: M10 dimensions
Hole diameter → 10.0 mm – 0.45 × 1.5 mm = 9.325 mm = **9.33 mm**

Specific information on the core hole in thread forming

Note:
The recommended pilot hole diameter is marked on the shank of Walter Prototyp thread formers.



When selecting the drilling and reaming tool, the permissible tolerances for the pilot hole diameter listed in the adjacent table must be taken into account in order to ensure a reliable forming process and an adequate tool life.

Due to these tolerances, which are tighter than the tolerances for tapping, thread forming is not always more cost-effective than tapping.

In thread forming, the core diameter of the thread is created during the forming process. It is therefore dependent on the flow characteristics of the material. In contrast to this, the core diameter for tapping and thread milling is already determined by the core hole. It is therefore essential to test the thread core diameter after the forming process to ensure that it is true to gauge.

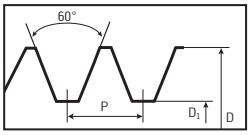
Tolerances of the pilot hole diameter

Pitch	Pilot hole diameter tolerance
≤ 0.3 mm	±0.01 mm
> 0.3 mm to < 0.5 mm	±0.02 mm
≥ 0.5 mm to < 1 mm	±0.03 mm
≥ 1 mm	±0.05 mm

Note:
The Walter Titex product range is designed to match the pilot hole diameters for tapping and thread forming.

Thread pilot hole diameters
Tapping/thread milling

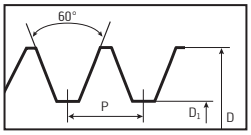
ISO metric thread



M ISO metric coarse-pitch thread
DIN 13 and DIN ISO 965-1

D	P	D_1		
Dia.	mm	Min. mm	Max. mm 5H/6H	Dia. mm
M1*	0,25	0,729	0,785	0,75
M1.1*	0,25	0,829	0,885	0,85
M1.2*	0,25	0,929	0,985	0,95
M1.4*	0,30	1,075	1,142	1,10
M1.6	0,35	1,221	1,321	1,25
M1.7	0,35	1,321	1,421	1,35
M1.8	0,35	1,421	1,521	1,45
M2	0,40	1,567	1,679	1,60
M2.2	0,45	1,713	1,838	1,75
M2.3	0,40	1,813	1,938	1,85
M2.5	0,45	2,013	2,138	2,05
M2.6	0,45	2,113	2,238	2,15
M3	0,50	2,459	2,599	2,50
M3.5	0,60	2,850	3,010	2,90
M4	0,70	3,242	3,422	3,30
M4.5	0,75	3,688	3,878	3,70
M5	0,80	4,134	4,334	4,20
M6	1,00	4,917	5,153	5,00
M7	1,00	5,917	6,153	6,00
M8	1,25	6,647	6,912	6,80
M9	1,25	7,647	7,912	7,80
M10	1,50	8,376	8,676	8,50
M11	1,50	9,376	9,676	9,50
M12	1,75	10,106	10,441	10,20
M14	2,00	11,835	12,210	12,00
M16	2,00	13,835	14,210	14,00
M18	2,50	15,294	15,744	15,50
M20	2,50	17,294	17,744	17,50
M22	2,50	19,294	19,744	19,50
M24	3,00	20,752	21,252	21,00
M27	3,00	23,752	24,252	24,00
M30	3,50	26,211	26,771	26,50
M33	3,50	29,211	29,771	29,50
M36	4,00	31,670	32,270	32,00
M39	4,00	34,670	35,270	35,00
M42	4,50	37,129	37,799	37,50
M45	4,50	40,129	40,799	40,50
M48	5,00	42,587	43,297	43,00
M52	5,00	46,587	47,297	47,00
M56	5,50	50,046	50,796	50,50
M60	5,50	54,046	54,796	54,50
M64	6,00	57,505	58,305	58,00
M68	6,00	62,505	62,305	62,00

*5H max.

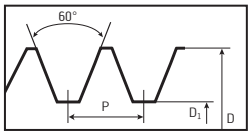


MF ISO metric fine-pitch thread
DIN 13 and DIN ISO 965-1

D	D_1		
Dia. × P	Min. mm	Max. mm 6H	Dia. mm
M2 × 0.25	1,729	1,785	1,75
M2.2 × 0.25	1,929	1,985	1,95
M2.3 × 0.25	2,029	2,085	2,05
M2.5 × 0.35	2,121	2,221	2,15
M3 × 0.25	2,729	2,785	2,75
M3 × 0.35	2,621	2,721	2,65
M3.5 × 0.35	3,121	3,221	3,15
M4 × 0.35	3,621	3,721	3,65
M4 × 0.5	3,459	3,599	3,50
M4.5 × 0.5	3,959	4,099	4,00
M5 × 0.35	4,621	4,721	4,65
M5 × 0.5	4,459	4,599	4,50
M5 × 0.75	4,188	4,378	4,20
M6 × 0.5	5,459	5,599	5,50
M6 × 0.75	5,188	5,378	5,25
M7 × 0.5	6,459	6,599	6,50
M7 × 0.75	6,188	6,378	6,25
M8 × 0.5	7,459	7,599	7,50
M8 × 0.75	7,188	7,378	7,25
M8 × 1	6,917	7,153	7,00
M9 × 0.75	8,188	8,378	8,25
M9 × 1	7,917	8,153	8,00
M10 × 0.5	9,459	9,599	9,50
M10 × 0.75	9,188	9,378	9,25
M10 × 1	8,917	9,153	9,00
M10 × 1.25	8,647	8,912	8,75
M11 × 1	9,917	10,153	10,00
M12 × 0.5	11,459	11,599	11,50
M12 × 1	10,917	11,153	11,00
M12 × 1.25	10,647	10,912	10,75
M12 × 1.5	10,376	10,676	10,50
M13 × 1	11,917	12,153	12,00
M14 × 0.75	13,188	13,378	13,20
M14 × 1	12,917	13,153	13,00
M14 × 1.25	12,647	12,912	12,75
M14 × 1.5	12,376	12,676	12,50
M15 × 1	13,917	14,153	14,00
M15 × 1.5	13,376	13,676	13,50
M16 × 0.75	15,188	15,378	15,20
M16 × 1	14,917	15,153	15,00
M16 × 1.25	14,647	14,912	14,80
M16 × 1.5	14,376	14,676	14,50
M17 × 1	15,917	16,153	16,00
M18 × 1	16,917	17,153	17,00
M18 × 1.5	16,376	16,676	16,50
M18 × 2	15,835	16,210	16,00
M20 × 1	18,917	19,153	19,00
M20 × 1.5	18,376	18,676	18,50
M20 × 2	17,835	18,210	18,00
M22 × 1	20,917	21,153	21,00
M22 × 1.5	20,376	20,676	20,50
M22 × 2	19,835	20,210	20,00

Thread pilot hole diameters
Tapping/thread milling (continued)

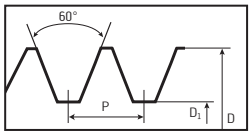
ISO metric thread



MF ISO metric fine-pitch thread
DIN 13 and DIN ISO 965-1

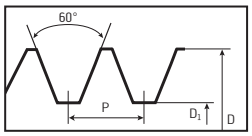
D	D_1		
	Min. mm	Max. mm	
Dia. × P		6H	Dia. mm
M24 × 1.5	22,376	22,676	22,50
M24 × 2	21,835	22,210	22,00
M25 × 1	22,917	23,153	23,00
M25 × 1.5	23,376	23,676	23,50
M26 × 1.5	24,376	24,676	24,50
M27 × 1	25,917	26,153	26,00
M27 × 1.5	25,376	25,676	25,50
M27 × 2	24,835	25,210	25,00
M28 × 1.5	26,376	26,676	26,50
M28 × 2	25,835	26,210	26,00
M30 × 1	28,917	29,153	29,00
M30 × 1.5	28,376	28,676	28,50
M30 × 2	27,835	28,210	28,00
M32 × 1.5	30,376	30,676	30,50
M32 × 2	29,835	30,210	30,00
M33 × 1.5	31,376	31,676	31,50
M33 × 2	30,835	31,210	31,00
M34 × 1.5	32,376	32,676	32,50
M35 × 1.5	33,376	33,676	33,50
M36 × 1.5	34,376	34,676	34,50
M36 × 2	33,835	34,210	34,00
M36 × 3	32,752	33,252	33,00
M38 × 1.5	36,376	36,676	36,50
M39 × 1.5	37,376	37,676	37,50
M39 × 2	36,835	37,210	37,00
M39 × 3	35,752	36,252	36,00
M40 × 1.5	38,376	38,676	38,50
M40 × 2	37,835	38,210	38,00
M40 × 3	36,752	37,252	37,00
M42 × 1.5	40,376	40,676	40,50
M42 × 2	39,835	40,210	40,00
M42 × 3	38,752	39,252	39,00
M45 × 1.5	43,376	43,676	43,50
M45 × 2	42,835	43,210	43,00
M45 × 3	41,752	42,252	42,00
M48 × 1.5	46,376	46,676	46,50
M48 × 2	45,835	46,210	46,00
M48 × 3	44,752	45,252	45,00
M50 × 1.5	48,376	48,676	48,50
M50 × 2	47,835	48,210	48,00
M50 × 3	46,752	47,252	47,00
M52 × 1.5	50,376	50,676	50,50
M52 × 2	49,835	50,210	50,00
M52 × 3	46,587	47,087	49,00
M56 × 1.5	54,376	54,676	54,50
M56 × 2	53,835	54,210	54,00
M56 × 3	52,752	53,252	53,00
M58 × 1.5	56,376	56,676	56,50
M60 × 1.5	58,376	58,676	58,50
M60 × 2	57,835	58,210	58,00
M60 × 3	56,752	57,252	57,00

American thread



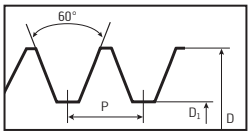
UN Eight-thread series in accordance with ASME B1.1

D	D_1		
Dia. P Gg/1"	Min. mm 2B/3B	Max. mm 2B	Dia. mm
1 1/8–8 UN	25,138	25,962	25,40
1 1/4–8 UN	28,313	29,126	28,50
1 3/8–8 UN	31,488	32,123	32,00
1 1/2–8 UN	34,663	35,456	35,00
1 5/8–8 UN	37,838	38,623	38,10
1 3/4–8 UN	41,013	41,790	41,50
1 7/8–8 UN	44,188	44,957	44,45
2–8 UN	47,363	48,125	48,00
2 1/4–8 UN	53,713	54,462	54,00



UNF Fine-pitch thread in accordance with ASME B1.1

D	D_1		
Dia. P Gg/1"	Min. mm 2B/3B	Max. mm 2B	Dia. mm
0–80 UNF	1,181	1,306	1,25
1–72 UNF	1,473	1,613	1,55
2–64 UNF	1,755	1,913	1,85
3–56 UNF	2,024	2,197	2,15
4–48 UNF	2,271	2,459	2,40
5–44 UNF	2,550	2,741	2,70
6–40 UNF	2,819	3,023	2,95
8–36 UNF	3,404	3,607	3,50
10–32 UNF	3,962	4,166	4,10
12–28 UNF	4,496	4,724	4,60
1/4–28 UNF	5,367	5,580	5,50
5/16–24 UNF	6,792	7,038	6,90
3/8–24 UNF	8,379	8,626	8,50
7/16–20 UNF	9,738	10,030	9,90
1/2–20 UNF	11,326	11,618	11,50
9/16–18 UNF	12,761	13,084	12,90
5/8–18 UNF	14,348	14,671	14,50
3/4–16 UNF	17,330	17,689	17,50
7/8–14 UNF	20,262	20,663	20,40
1–12 UNF	23,109	23,569	23,25
1 1/8–12 UNF	26,284	26,744	26,50
1 1/4–12 UNF	29,459	29,919	29,50
1 3/8–12 UNF	32,634	33,094	33,00
1 1/2–12 UNF	35,809	36,269	36,10

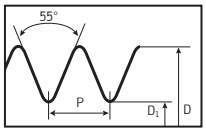


UNC Coarse-pitch thread in accordance with ASME B1.1

D	D_1		
Dia. P Gg/1"	Min. mm 2B/3B	Max. mm 2B	Dia. mm
1–64 UNC	1,425	1,582	1,55
2–56 UNC	1,694	1,872	1,85
3–48 UNC	1,941	2,146	2,10
4–40 UNC	2,156	2,385	2,35
5–40 UNC	2,487	2,697	2,65
6–32 UNC	2,642	2,896	2,85
8–32 UNC	3,302	3,531	3,50
10–24 UNC	3,683	3,962	3,90
12–24 UNC	4,343	4,597	4,50
1/4–20 UNC	4,976	5,268	5,10
5/16–18 UNC	6,411	6,734	6,60
3/8–16 UNC	7,805	8,164	8,00
7/16–14 UNC	9,149	9,550	9,40
1/2–13 UNC	10,584	11,013	10,80
9/16–12 UNC	11,996	12,456	12,20
5/8–11 UNC	13,376	13,868	13,50
3/4–10 UNC	16,299	16,833	16,50
7/8–9 UNC	19,169	19,748	19,50
1–8 UNC	21,963	22,598	22,25
1 1/8–7 UNC	24,648	25,348	25,00
1 1/4–7 UNC	27,823	28,524	28,00
1 1/2–6 UNC	33,518	34,295	34,00
1 3/4–5 UNC	38,951	39,814	39,50
2–4,5 UNC	44,689	45,598	45,00

Thread pilot hole diameters
Tapping/thread milling (continued)

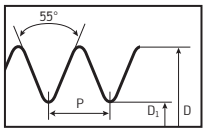
Pipe thread



G Pipe thread
in accordance with DIN EN ISO 228

D	D_1		
Dia. P Gg/1"	Min. mm	Max. mm	Dia. mm DIN 336 / ISO 2306
G 1/16–28	6,561	6,843	6,80
G 1/8–28	8,566	8,848	8,80
G 1/4–19	11,445	11,890	11,80
G 3/8–19	14,950	15,395	15,25
G 1/2–14	18,632	19,173	19,00
G 5/8–14	20,588	21,129	21,00
G 3/4–14	24,118	24,659	24,50
G 7/8–14	27,878	28,419	28,25
G 1–11	30,292	30,932	30,75
G 1 1/8–11	34,940	35,580	35,50
G 1 1/4–11	38,953	39,593	39,50
G 1 3/8–11	41,366	42,006	41,90
G 1 1/2–11	44,846	45,486	45,25
G 1 3/4–11	50,789	51,429	51,00
G 2–11	56,657	57,297	57,00
G 2 1/4–11	62,753	63,393	63,00
G 2 1/2–11	72,227	72,867	72,60
G 3–11	84,927	85,567	85,00

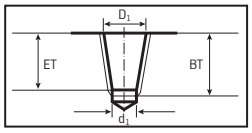
Whitworth thread



Rp Whitworth pipe thread
in accordance with DIN EN 10226-1

D	D_1		
Dia. P Gg/1"	Min. mm	Max. mm	Dia. mm DIN 336 / ISO 2306
Rp 1/16–28	6,490	6,632	6,55
Rp 1/8–28	8,495	8,637	8,60
Rp 1/4–19	11,341	11,549	11,50
Rp 3/8–19	14,846	15,054	15,00
Rp 1/2–14	18,490	18,774	18,50
Rp 5/8–14	20,446	20,730	20,50
Rp 3/4–14	23,976	24,260	24,00
Rp 1–11	30,112	30,472	30,25
Rp 1 1/4–11	38,773	39,133	39,00
Rp 1 1/2–11	44,629	45,063	45,00
Rp 2–11	56,440	56,874	56,50
Rp 2 1/2–11	72,010	72,444	72,20
Rp 3–11	84,710	85,144	85,00

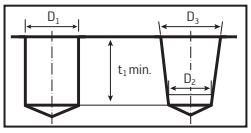
Whitworth thread



Rc Tapered pipe thread, taper 1:16 in accordance with DIN EN 10226-2

Dia. P Gg/1"	d_1 mm	D_1 mm	ET mm	Min. BT mm
Rc 1/16–28	6,3	6,49	8,31	10,0
Rc 1/8–28	8,3	8,50	8,31	10,1
Rc 1/4–19	11,0	11,35	12,37	15,0
Rc 3/8–19	14,5	14,85	12,77	15,4
Rc 1/2–14	18,1	18,49	16,83	20,5
Rc 3/4–14	23,5	23,98	18,13	21,8
Rc 1–11	29,6	30,11	21,42	26,0
Rc 1 1/4–11	38,1	38,78	23,72	28,3
Rc 1 1/2–11	44,0	44,67	23,72	28,3
Rc 2–11	55,6	56,48	28,02	32,6
Rc 2 1/2–11	71,1	72,00	31,32	37,1
Rc 3–11	83,6	84,71	34,42	40,2

American pipe thread



NPT American standard pipe thread in accordance with ASME B1.20.1, taper 1:16

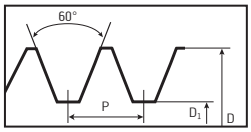
Dia. P Gg/1“	D_1 mm	D_2 mm	D_3 mm	t_1 mm
1/16–27 NPT	6,15	5,95	6,39	10,7
1/8–27 NPT	8,40	8,31	8,74	10,8
1/4–18 NPT	11,10	10,73	11,36	15,6
3/8–18 NPT	14,30	14,15	14,80	16,0
1/2–14 NPT	17,90	17,47	18,32	20,8
3/4–14 NPT	23,30	22,79	23,67	21,3
1–11,5 NPT	29,00	28,64	29,69	25,6
1 1/4–11,5 NPT	37,70	37,37	38,45	26,1
1 1/2–11,5 NPT	43,70	43,44	44,52	26,1
2–11,5 NPT	55,60	55,45	56,56	26,5
2 1/2–8 NPT	66,30	66,14	67,62	36,3
3–8 NPT	82,30	81,90	83,52	38,5

NPTF American standard pipe thread in accordance with ASME B1.20.3, taper 1:16

Dia. P Gg/1“	D_1 mm	D_2 mm	D_3 mm	t_1 mm
1/16–27 NPTF	6,1	5,97	6,41	10,3
1/8–27 NPTF	8,4	8,33	8,77	10,3
1/4–18 NPTF	11,0	10,77	11,40	15,0
3/8–18 NPTF	14,5	14,19	14,84	15,3
1/2–14 NPTF	17,5	17,48	18,33	19,9
3/4–14 NPTF	23,0	22,84	23,72	20,4
1–11 1/2 NPTF	29,0	28,62	29,76	24,5
1 1/4–11,5 NPTF	37,5	37,44	38,52	25,0
1 1/2–11,5 NPTF	43,5	43,50	44,59	25,0
2–11,5 NPTF	56,0	55,51	56,62	25,4
2 1/2–8 NPTF	66,0	66,03	67,71	38,0
3–8 NPTF	82,0	81,80	83,62	40,0

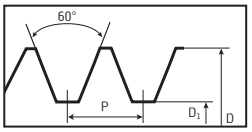
Thread pilot hole diameters
Tapping/thread milling (continued)

Thread insert



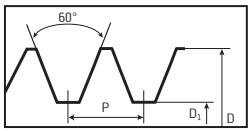
EG M
ISO metric coarse-pitch thread in accordance with DIN 8140

D	P	D_1		
Dia.	mm	Min. mm	Max. mm	Dia. mm
EG M2,5	0,45	2,597	2,697	2,65
EG M3	0,50	3,109	3,221	3,15
EG M3,5	0,60	3,630	3,755	3,70
EG M4	0,70	4,152	4,292	4,20
EG M5	0,80	5,174	5,334	5,25
EG M6	1,00	6,217	6,407	6.30
EG M8	1,25	8,217	8,483	8,40
EG M10	1,50	10,324	10,560	10,50
EG M12	1,75	12,380	12,645	12,50
EG M14	2,00	14,433	14,733	14,50
EG M16	2,00	16,433	16,733	16,50
EG M18	2,50	18,542	18,897	18,80
EG M20	2,50	20,542	20,897	20,80
EG M22	2,50	22,542	22,897	22,80
EG M24	3,00	24,649	25,049	24,75



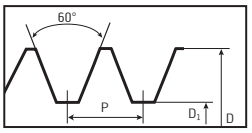
EG MF
ISO metric fine-pitch thread in accordance with DIN 8140

D	D_1		
Dia. × P	Min. mm	Max. mm	Dia. mm
EG M8 × 1	8,217	8,407	8,3
EG M10 × 1	10,217	10,407	10,3
EG M10 × 1.25	10,217	10,438	10,4
EG M12 × 1.25	12,217	12,438	12,4
EG M12 × 1.5	12,324	12,560	12,5
EG M14 × 1.5	14,324	14,560	14,5
EG M16 × 1.5	16,324	16,560	16,5
EG M18 × 1.5	18,324	18,560	18,5
EG M18 × 2	18,433	18,733	18,5
EG M20 × 1.5	20,324	20,560	20,5



EG UNC
Unified coarse-pitch threads for wire inserts

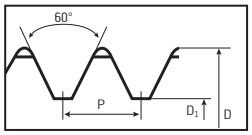
D	D_1		
Dia.	Min. mm	Max. mm	Dia. mm
EG Nr. 2–56	2,282	2,441	2,35
EG Nr. 3–48	2,630	2,804	2,70
EG Nr. 4–40	2,982	3,180	3,05
EG Nr. 5–40	3,312	3,487	3,40
EG Nr. 6–32	3,677	3,879	3,70
EG Nr. 8–32	4,338	4,524	4,40
EG Nr. 10–24	5,055	5,283	5,10
EG Nr. 12–24	5,715	5,944	5,80
EG 1/4–20	6,625	6,868	6,70
EG 5/16–18	8,244	8,489	8,40
EG 3/8–16	9,869	10,127	10,00
EG 7/16–14	11,505	11,783	11,70
EG 1/2–13	13,123	13,393	13,30
EG 9/16–12	14,747	15,031	15,00
EG 5/8–11	16,376	16,673	16,50
EG 3/4–10	19,598	19,908	19,75



EG UNF
Unified fine-pitch threads for wire thread inserts

D_1		
Dia.	Min. mm	Max. mm	Dia. mm
EG Nr. 2–64	2,270	2,405	2,30
EG Nr. 3–56	2,614	2,758	2,65
EG Nr. 4–48	2,962	3,122	3,00
EG Nr. 5–44	3,300	3,467	3,30
EG Nr. 6–40	3,644	3,818	3,70
EG Nr. 8–36	4,321	4,498	4,40
EG Nr. 10–32	4,999	5,184	5,10
EG 1/4–28	6,545	6,721	6,60
EG 5/16–24	8,166	8,351	8,20
EG 3/8–24	9,754	9,931	9,80
EG 7/16–20	11,387	11,585	11,40
EG 1/2–20	12,970	13,172	13,00

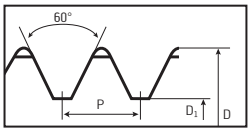
ISO metric thread



MJ Coarse-pitch thread in accordance with DIN ISO 5855

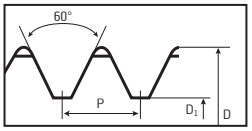
D	D_1		
Dia. × P	Min. mm	Max. mm	Dia. mm
MJ3 × 0.5	2,513	2,653	2,60
MJ4 × 0.7	3,318	3,498	3,40
MJ5 × 0.8	4,221	4,421	4,30
MJ6 × 1	5,026	5,215	5,10
MJ8 × 1.25	6,782	6,994	6,90
MJ10 × 1.5	8,539	8,779	8,70
MJ12 × 1.75	10,295	10,563	10,50
MJ16 × 2	14,051	14,351	14,30

American thread



UNJC Coarse-pitch thread in accordance with ASME B1.15 and ISO 3161

D	D_1		
Dia. P Gg/1"	Min. mm 3B	Max. mm 3B	Dia. mm
1–64 UNJC	1,467	1,570	1,50
2–56 UNJC	1,742	1,860	1,80
3–48 UNJC	1,999	2,137	2,05
4–40 UNJC	2,226	2,391	2,30
5–40 UNJC	2,556	2,721	2,65
6–32 UNJC	2,732	2,938	2,80
8–32 UNJC	3,393	3,599	3,50
10–24 UNJC	3,795	4,064	3,90
12–24 UNJC	4,455	4,704	4,60
1/4–20 UNJC	5,113	5,387	5,20
5/16–18 UNJC	6,563	6,833	6,70
3/8–16 UNJC	7,978	8,255	8,10
7/16–14 UNJC	9,344	9,637	9,50
1/2–13 UNJC	10,796	11,093	10,90
9/16–12 UNJC	12,226	12,480	12,30
5/8–11 UNJC	13,625	13,902	13,70
3/4–10 UNJC	16,575	16,880	16,75

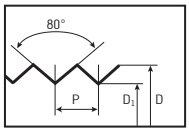


UNJF Fine-pitch thread in accordance with ASME B1.15 and ISO 3161

D	D_1		
Dia. P Gg/1"	Min. mm 3B	Max. mm 3B	Dia. mm
0–80 UNJF	1,215	1,297	1,25
1–72 UNJF	1,510	1,602	1,55
2–64 UNJF	1,797	1,900	1,85
3–56 UNJF	2,073	2,191	2,10
4–48 UNJF	2,329	2,467	2,40
5–44 UNJF	2,613	2,763	2,70
6–40 UNJF	2,886	3,051	2,95
8–36 UNJF	3,479	3,662	3,60
10–32 UNJF	4,053	4,253	4,15
12–28 UNJF	4,602	4,815	4,70
1/4–28 UNJF	5,466	5,662	5,60
5/16–24 UNJF	6,907	7,110	7,00
3/8–24 UNJF	8,494	8,680	8,60
7/16–20 UNJF	9,875	10,083	10,00
1/2–20 UNJF	11,463	11,660	11,50
9/16–18 UNJF	12,913	13,123	13,00
5/8–18 UNJF	14,500	14,702	14,50

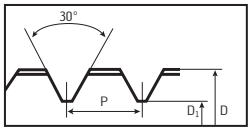
Thread pilot hole diameters
Tapping/thread milling (continued)

Miscellaneous



Pg Steel conduit thread in accordance with DIN 40430

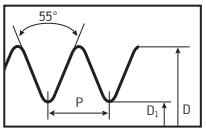
D	D_1		
Dia. P Gg/1"	Min. mm	Max. mm	Dia. mm
Pg 7 × 20	11,29	11,43	11,40
Pg 9 × 18	13,85	14,01	14,00
Pg 11 × 18	17,25	17,41	17,25
Pg 13,5 × 18	19,05	19,21	19,00
Pg 16 × 18	21,15	21,31	21,25
Pg 21 × 16	26,79	27,03	27,00
Pg 29 × 16	35,49	35,73	35,50
Pg 36 × 16	45,49	45,73	45,50
Pg 42 × 16	52,49	52,73	52,50
Pg 48 × 16	57,79	58,03	58,00



Tr ISO metric trapezoidal thread

D	D_1		
Dia. × P	Min. mm	Max. mm	Dia. mm
8 × 1.5	6,5	6,69	6,60
9 × 2	7,0	7,236	7,20
10 × 2	8,0	8,236	8,20
11 × 3	8,0	8,315	8,25
12 × 3	9,0	9,315	9,25
14 × 3	11,0	11,315	11,25
16 × 4	12,0	12,375	12,25
18 × 4	14,0	14,375	14,25
20 × 4	16,0	16,375	16,25
22 × 5	17,0	17,45	17,25
24 × 5	19,0	19,45	19,25
26 × 5	21,0	21,45	21,25
28 × 5	23,0	23,45	23,25
30 × 6	24,0	24,5	24,25
32 × 6	26,0	26,5	26,25
34 × 6	28,0	28,5	28,25
36 × 6	30,0	30,5	30,25
38 × 7	31,0	31,56	31,50
40 × 7	33,0	33,56	33,50
42 × 7	35,0	35,56	35,50
44 × 7	37,0	37,56	37,50
46 × 8	38,0	38,63	38,50
48 × 8	40,0	40,63	40,50
50 × 8	42,0	42,63	42,50
52 × 8	44,0	44,63	44,50

Whitworth thread



BSW Whitworth thread in accordance with BS 84

D	D_1		
Dia. P Gg/1"	Medium min. mm	Class max. mm	Dia. mm
1/16–60	1,045	1,231	1,20
3/32–48	1,703	1,911	1,90
1/8–40	2,362	2,590	2,50
5/32–32	2,952	3,213	3,10
3/16–24	3,407	3,745	3,60
7/32–24	4,201	4,539	4,50
1/4–20	4,724	5,155	5,00
5/16–18	6,131	6,591	6,50
3/8–16	7,493	7,988	7,90
7/16–14	8,790	9,330	9,20
1/2–12	9,989	10,590	10,50
9/16–12	11,577	12,178	12,00
5/8–11	12,919	13,558	13,40
3/4–10	15,798	16,484	16,40
7/8–9	18,612	19,354	19,25
1–8	21,335	22,148	22,00
1 1/8–7	23,929	24,833	24,75
1 1/4–7	27,104	28,008	27,50
1 3/8–6	29,505	30,529	30,00
1 1/2–6	32,680	33,704	33,50
1 5/8–5	34,771	35,965	35,50
1 3/4–5	37,946	39,140	39,00
1 7/8–4,5	40,398	41,705	41,50
2–4 1/2	43,573	44,880	44,50
2 1/4–4	49,020	50,468	50,00
2 1/2–4	55,370	56,818	56,00

Thread pilot hole diameters
Thread forming

M ISO metric coarse-pitch thread
DIN 13 and DIN ISO 965-1

Dia.	P mm	 Dia. mm
M1	0,25	0,88
M1.1	0,25	0,98
M1.2	0,25	1,08
M1.4	0,30	1,26
M1.6	0,35	1,45
M1.7	0,35	1,55
M1.8	0,35	1,65
M2	0,40	1,82
M2.2	0,45	2,00
M2.3	0,40	2,10
M2.5	0,45	2,30
M2.6	0,45	2,40
M3	0,50	2,80
M3.5	0,60	3,25
M4	0,70	3,70
M5	0,80	4,65
M6	1,00	5,55
M8	1,25	7,40
M10	1,50	9,30
M12	1,75	11,20
M14	2,00	13,10
M16	2,00	15,10
M18	2,50	16,90
M20	2,50	18,90
M22	2,50	20,90
M24	3,00	22,70

MF ISO metric fine-pitch thread
DIN 13 and DIN ISO 965-1

Dia. × P	 Dia. mm
M4 × 0.5	3,80
M5 × 0.5	4,80
M6 × 0.5	5,80
M6 × 0.75	5,65
M7 × 0.75	6,65
M8 × 0.75	7,65
M8 × 1	7,55
M10 × 0.75	9,65
M10 × 1	9,55
M10 × 1.25	9,40
M12 × 1	11,55
M12 × 1.25	11,40
M12 × 1.5	11,30
M14 × 1	13,55
M14 × 1.5	13,30
M16 × 1	15,55
M16 × 1.5	15,30
M18 × 1	17,55
M18 × 1.5	17,30
M20 × 1.5	19,30
M20 × 2	19,10
M22 × 1.5	21,30

UNC Coarse-pitch thread
in accordance with ASME B1.1

Dia. P Gg/1“	 Dia. mm
2–56 UNC	1,97
3–48 UNC	2,26
4–40 UNC	2,55
5–40 UNC	2,87
6–32 UNC	3,15
8–32 UNC	3,80
10–24 UNC	4,30
12–24 UNC	5,00
1/4–20 UNC	5,75
5/16–18 UNC	7,25
3/8–16 UNC	8,75
7/16–14 UNC	10,30
1/2–13 UNC	11,80
9/16–12 UNC	13,30
5/8–11 UNC	14,80
3/4–10 UNC	17,90

UNF Fine-pitch thread
in accordance with ASME B1.1

Dia. P Gg/1“	 Dia. mm
2–64 UNF	2,00
3–56 UNF	2,30
4–48 UNF	2,60
5–44 UNF	2,90
6–40 UNF	3,20
8–36 UNF	3,85
10–32 UNF	4,45
12–28 UNF	5,05
1/4–28 UNF	5,90
5/16–24 UNF	7,45
3/8–24 UNF	9,00
7/16–20 UNF	10,50
1/2–20 UNF	12,10
9/16–18 UNF	13,70
5/8–18 UNF	15,25
3/4–16 UNF	18,40
7/8–14 UNF	21,40
1–12 UNF	24,45

Thread pilot hole diameters
Thread forming (continued)

UNEF Extra fine-pitch thread in accordance with ASME B1.1

Dia. P Gg/1"	Dia. mm
1/4–32 UNEF	6,00
5/16–32 UNEF	7,60
3/8–32 UNEF	9,10
7/16–28 UNEF	10,70
1/2–28 UNEF	12,30
9/16–24 UNEF	13,80
5/8–24 UNEF	15,40
3/4–20 UNEF	18,50
7/8–20 UNEF	21,60
1–20 UNEF	24,80

G Pipe thread in accordance with DIN EN ISO 228

Dia. P Gg/1"	Dia. mm
G 1/16	7,25
G 1/8–28	9,25
G 1/4–28	12,50
G 3/8–19	16,00
G 1/2–19	20,00
G 5/8–14	22,00
G 3/4–14	25,50
G 7/8–14	29,25
G 1–11	32,00

EG M ISO metric coarse-pitch thread in accordance with DIN 8140

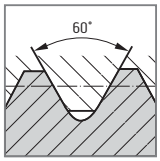
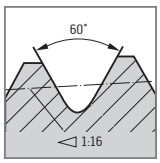
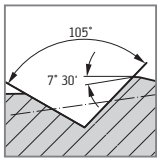
Dia.	P mm	Dia. mm
EG M3	0,50	3,40
EG M4	0,70	4,60
EG M5	0,80	5,65
EG M6	1,00	6,85
EG M8	1,25	9,05
EG M10	1,50	11,30
EG M12	1,75	13,50

BSW Whitworth thread in accordance with BS 84

Dia. P Gg/1"	Dia. mm
3/32–48	2,10
1/8–40	2,85
5/32–32	3,55
3/16–24	4,20
1/4–20	5,70
5/16–18	7,20
3/8–16	8,70
7/16–14	10,20
1/2–12	11,60
9/16–12	13,20
5/8–11	14,70
11/16–11	16,25
3/4–10	17,70
7/8–9	20,75
1–8	23,75

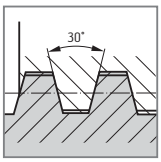
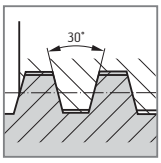
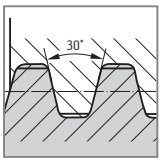
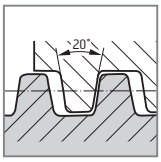
Thread types

DIN thread types (excerpt from DIN 202)

Profile (diagram)	Name	Code letters	Short designation[1] Examples	Nominal size	As specified in	Application	
	**ISO metric thread (single-start or multi-start)**	**M**	M0,8	0,3–0,9 mm	DIN 14-1 – DIN 14-4	Watches and precision engineering	
			M0,8[2]	1–68 mm	DIN 13-1	General purpose (coarse-pitch threads)	
			M24 × 4 P 2		DIN 13-52		
			M6 × 0,75[2] M8 × 1 – LH[2]	1–1 000 mm	DIN 13-2 – DIN 13-11	General purpose, to be used where the pitch of the coarse-pitch thread is too large (fine-pitch thread)	
			M24 × 4 P 2		DIN 13-52		
			M64 × 4	64 mm and 76 mm	DIN 6630	External thread for barrel joints	
			M30 × 2 – 4H5H	1,4–355 mm	LN 9163-1 – LN 9163-7 LN 9163-10 and LN 9163-11	Aerospace	
	ISO metric thread with transition tolerance range (formerly thread for interference fits)		M10 Sn 4 M10 Sk 6	3–150 mm	DIN 13-51	Screw-in end on studs	Non-sealing
			M10 Sn 4 sealing				Sealing
	Metric thread with large clearance		M36	12–180 mm	DIN 2510-2	Bolted connections with reduced shank	
	ISO metric screw thread, helical coil thread for thread inserts	**EG M**	EG M20	2–52 mm	DIN 8140-2	Helical coil thread (coarse-pitch and fine-pitch thread) for wire thread inserts	
	ISO metric thread for interference fits	**MFS**	MFS 12 × 1,5	5–16 mm	DIN 8141-1	Interference fits in aluminium cast alloys (coarse-pitch and fine-pitch thread)	
	**Metric tapered external thread**	**M**	M30 × 2 keg	6–16 mm	DIN 158-1	Screw plugs and lubricating nipples	
			M30 × 2 keg (short)				
	**Self-forming tapered external thread**	**S**	S8 × 1	6–10 mm	DIN 71412	Tapered lubricating nipples; Thread similar to DIN 158-1, but with 105° thread profile angle	

[1] Full designations are given in the relevant standards.
[2] Designation in accordance with DIN ISO 965-1

DIN thread types (excerpt from DIN 202)

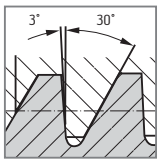
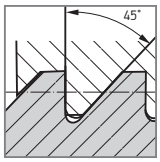
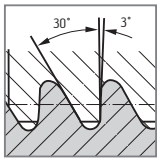
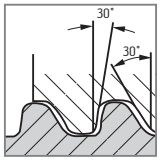
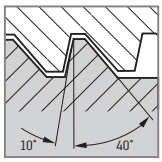
Profile (diagram)	Name	Code letters	Short designation[1] Examples	Nominal size	As specified in	Application
	**ISO metric trapezoidal thread (single-start or multi-start)**	**TR**	Tr40 × 7	8–300 mm	DIN 103-1 – DIN 103-8	General
			Tr40 × 14 P7			
	ISO metric flat trapezoidal thread (single-start or multi-start)		Tr40 × 7		DIN 380-1 and DIN 380-2	
			Tr40 × 14 P7			
	**Trapezoidal thread (single-start or two-start) with clearance**	**TR**	Tr48 × 12	48 mm	DIN 263-1 and DIN 263-2	Rail vehicles
			Tr40 × 16 P8	40 mm		
			Tr32 × 1,5	10–56 mm	DIN 6341-2	Draw-in collets
	**Rounded trapezoidal thread**	**TR**	Tr40 × 5	26–80 mm	DIN 30295-1 and DIN 30295-2	Rail vehicles
	**Trapezoidal thread**	**KT**	KT22	10–50 mm	DIN 6063-2	Plastic containers

[1] Full designations are given in the relevant standards.

Thread types

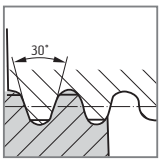
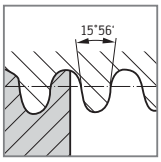
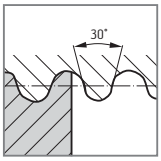
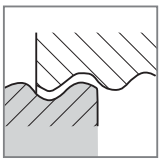
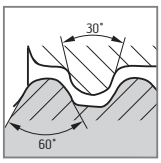
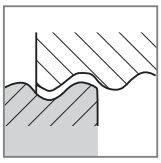
(continued)

DIN thread types (excerpt from DIN 202)

Profile (diagram)	Name	Code letters	Short designation [1] Examples	Nominal size	As specified in	Application
	**Metric buttress thread (single-start or multi-start)**	**S**	S 48 × 8	10–640 mm	DIN 513-1 – DIN 513-3	Absorbing forces acting in one direction
			S 40 × 14 P 7			
	**45° buttress thread**	**S**	S 630 × 20	100–1 250 mm	DIN 2781	Hydraulic presses
	**Buttress thread**	**S**	S 25 × 1,5	6–40 mm	DIN 20401-1 and DIN 20401-2	Mining
			S 22	10–50 mm	DIN 55525	Plastic and glass containers in packaging
		GS	GS 22			
		KS	KS 22			
			KS 22	10–50 mm	DIN 6063-1	Plastic containers in packaging

[1] Full designations are given in the relevant standards.

DIN thread types (excerpt from DIN 202)

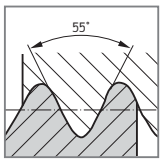
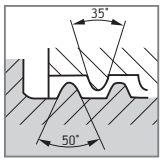
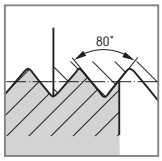
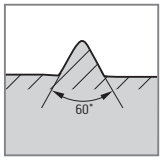
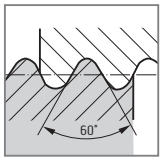
Profile (diagram)	Name	Code letters	Short designation [1] Examples	Nominal size	As specified in	Application
	**Parallel knuckle thread (single-start or multi-start)**	**Rd**	Rd 40 × 1/6 Rd 40 × 1/3 P 1/6	8–200 mm	DIN 405-1 and DIN 405-2	General
	Parallel knuckle thread		Rd 40 × 5	10–300 mm	DIN 20400	Mining, with increased load-bearing depth
			Rd 80 × 10	50–320 mm	DIN 15403	Lifting hooks
			Rd 70	20–100 mm	DIN 7273-1	Steel sheet pieces and associated couplings
	**Parallel round screw thread with clearance**	**Rd**	Rd 59 × 7	34–79 mm	DIN 262-1 and DIN 262-2	Rail vehicles
			Rd 59 × 7 left			
			Rd 50 × 7	50 mm	DIN 264-1 and DIN 264-2	Rail vehicles
			Rd 50 × 7 left			
	**Parallel knuckle thread**	**Rd**	Rd 40 × 1/7	40 mm, 80 mm and 110 mm	DIN 3182-1	Respiratory protective devices
		**GL**	GL 25 × 3	8–40 mm	DIN 168-1	Glass containers
	**Edison thread**	**E**	E27	14 mm 16 mm 18 mm 27 mm 33 mm	DIN 40400	D-type fuses; E14 and E27 also for lamp caps and holders
			E5	5 mm	DIN EN 60061-1	Lamp caps
			E10	10 mm		
			E40	40 mm		
		–	28 × 2	28 mm and 40 mm	DIN EN 60399	External thread for lampholders and internal thread for shade holder rings

[1] Full designations are given in the relevant standards.

Thread types

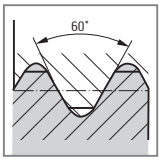
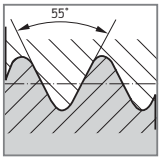
(continued)

DIN thread types (excerpt from DIN 202)

Profile (diagram)	Name	Code letters	Short designation [1] Examples	Nominal size	As specified in	Application
	**Parallel Whitworth thread**	**W**	W $^{3}/_{16}$	$^{3}/_{16}$	DIN 49301	D-type screw-in gauge rings; DII and DIII in electrical engineering
	**Glass thread**	**Glass thread**	74.5 glass thread	74,5 mm 84,5 mm 99 mm 123,5 mm 158 mm 188 mm	DIN 40450	Electrical engineering for glass guards and caps
	**Steel conduit thread**	**Pg** [2]	Pg 21	7–48 mm	DIN 40430	Electrical engineering
	**Tapping screw thread**	**ST**	ST 3,5	1,5–9,5 mm	DIN EN ISO 1478	Tapping screws
	Wood screw thread	–	4	1,6–20 mm	DIN 7998	Wood screws
	**Bicycle thread**	**FG**	FG 9,5	2–34,8 mm	DIN 79012	Bicycles and mopeds
		–	1,375–24 6H/6g	1,375 mm	DIN EN ISO 6698	Assembly of freewheels on bicycle hubs

[1] Full designations are given in the relevant standards.
[2] With DIN notice 04/99, it was announced that the DIN standards relating to screw connections with steel conduit threads have been withdrawn and are superseded by metric cable glands in accordance with DIN EN 50262.

Thread types in accordance with standards of other countries

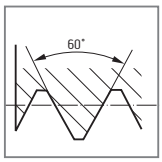
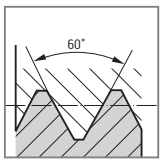
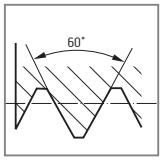
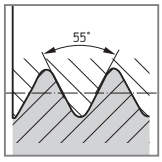
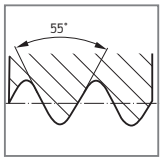
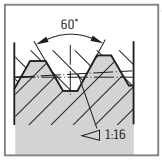
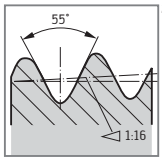
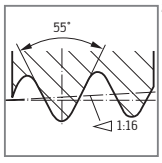
Profile (diagram)	Name	Code letters	Short designation Examples	As specified in	Application
	**Unified screw thread**	**UNC** **UNF** **UNEF** } [1]	Nr. 6 (0.138)– 32 UNC-2A	ASME B1.1	USA United Kingdom
		UN **UNC** **UNF** **UNEF** **UNS**	1/4–20 UNC-2A or 0.250–20 UNC-2A	ASME B1.1 BS 1580	USA United Kingdom
		UNR **UNRC** **UNRF** **UNREF** **UNRS** } [2]	7/16–20 UNRF-2A or 0.4375–20 UNRF-2A	ASME B1.1	USA
		UNJ **UNJC** **UNJF** **UNJEF**	0.250–28 UNJF-3A	ASME B1.15 BS 4084	USA United Kingdom
	**Whitworth thread**	**BSW** **BSF**	1/4 in.–20 BSW	BS 84	United Kingdom
	B.A. thread	**B.A.**	11 B.A.	BS 93	

[1] For thread diameters of less than 1/4 inch
[2] External thread with rounded thread root

Thread types

(continued)

Thread types in accordance with standards of other countries

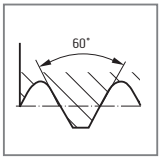
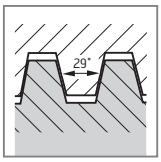
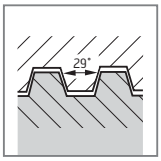
Profile (diagram)	Name	Code letters	Short designation Examples	As specified in	Application
	**Parallel pipe thread**	**NPSC**	1/8–27 NPSC	ANSI / ASME B1.20.1	USA
		**NPSM** **NPSL**			
		NPSH **NH**	1/2–14 NPSH 3/4–11.5 NH	ASME B1.20.7	
		**Dryseal NPSF** **Dryseal NPSI**	1/8–28 NPSF	ASME B1.20.3	
		**G ≙ BSP ≙ PF**	G 1 1/4	DIN EN ISO 228-1 BS 2779	United Kingdom
		**Rp ≙ BSPP ≙ PF**	Rp ¼	DIN EN 10226-1 BS 21 ISO 7/1	
 [2]	**Tapered pipe thread**	**NPT** **NPTR**	3/8–18 NPT	ASME B1.20.1	USA
		Dryseal NPTF **Dryseal PTF-SAE-SHORT**	1/8–27 NPTF-1 [3]	ANSI B1.20.3	
 [2]		**R** [1]	R ½	DIN EN 10226-1 BS 21 ISO 7/1	United Kingdom
 [2]		**Rc ≙ BSPT ≙ PT**	Rc 1/2		

[1] External thread

[2] Profile perpendicular to the axis.

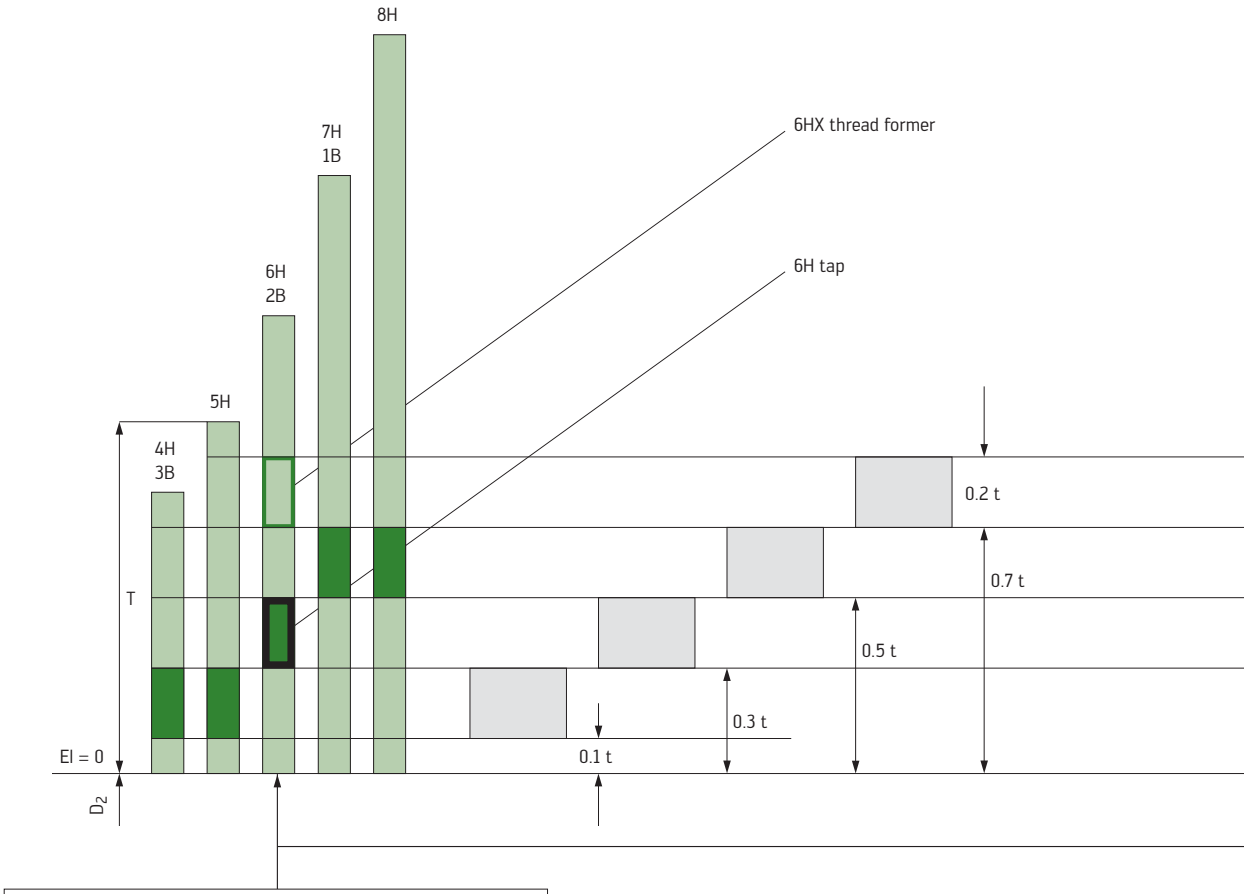
[3] –1 or –2 is the NPTF thread class; –1 is the gauging system **without** checking the bottom or point flat.
–2 is the gauging system **with** checking the bottom or point flat (= new gauging system in accordance with ANSI B1.20.5).

Thread types in accordance with standards of other countries

Profile (diagram)	Name	Code letters	Short designation Examples	As specified in	Application
	**Wire thread insert**	**UNC-STI** **UNF-STI**	1/4–20 UNC-2B-STI or 0.125–20 UNC-2B-STI	ASME B18.29.1	USA
	**Trapezoidal thread**	**ACME**	1 3/4–4 ACME-2G	ASME B1.5	USA
				BS 1104	United Kingdom
		**Stub-ACME**	0.500–20 STUB ACME	ANSI B1.8	USA

Tolerance units

4H to 8H internal thread

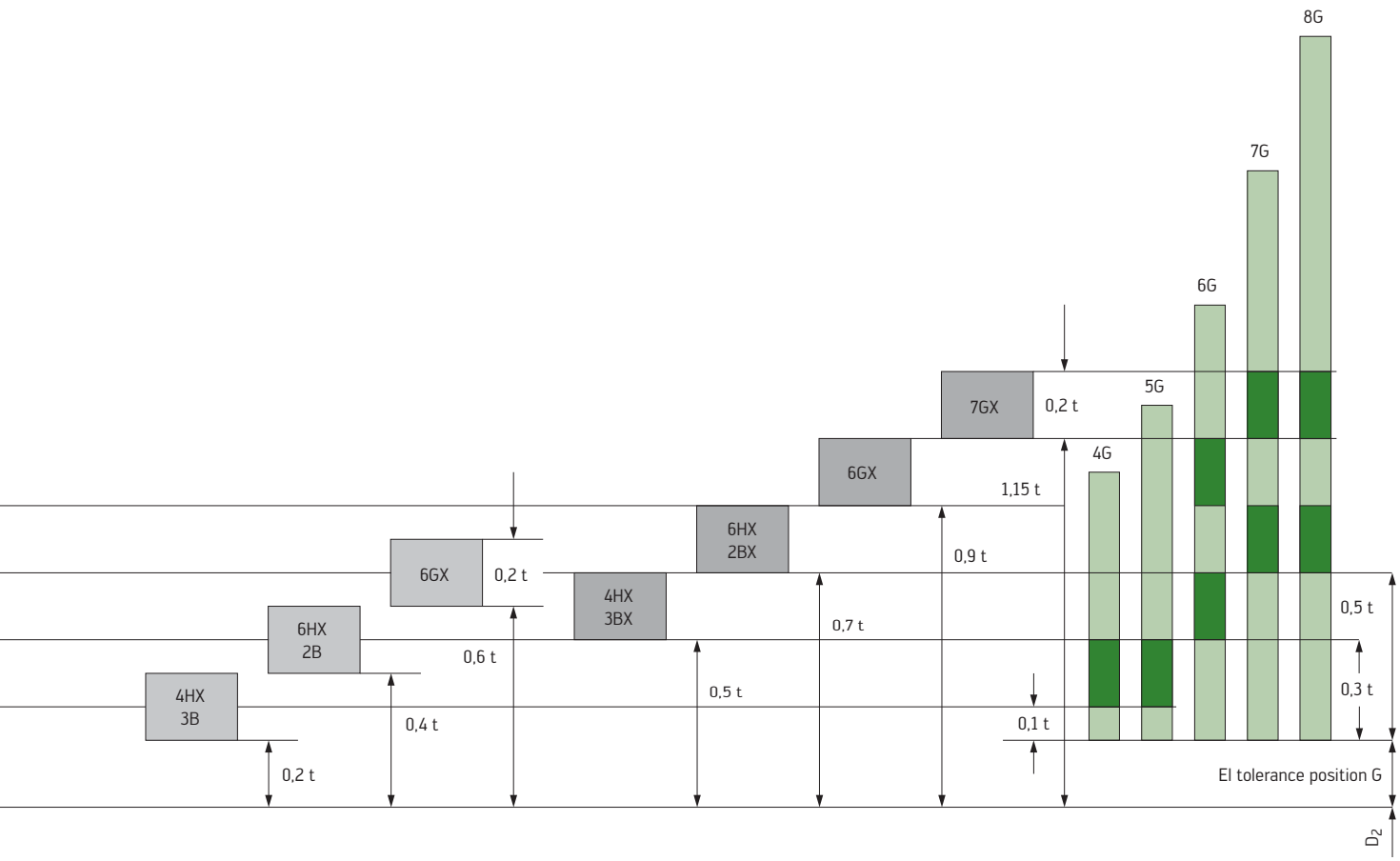


Example of 6HX thread former:
The thread former has a significantly higher pitch diameter than the tap. It is also in the X-position.

Tolerance classes

Tool tolerance class				Achievable tolerance classes					Technical application
ISO	DIN	ASME	Factory standard						
ISO 1	4H		4BX	ISO 1/4H	5H				Screw connection with minimum clearance
ISO 2	6H		6HX	4G	5G	ISO 2/6H			H-position: Normal screw connection G-position: For electroplated coatings
ISO 3	6G		6GX			ISO 3/6G	7H	8H	H-position: Screw connection with large clearance G-position: For electroplated coatings
	7G		7GX				7G	8G	To prevent distortion during heat treatment, for electroplated coatings
		3B	3BX	3B			2B		Screw connection with minimum clearance
		2B	2BX				2B		Normal screw connection

4G to 8G internal thread



Example of 6H tap:
The average pitch diameter for the tap is approximately in the bottom third of the tolerance range for the female thread.

- Tap
- Oversize tap
- Thread former

D_2 = Pitch diameter of the basic profile
t = Tolerance unit in accordance with DIN 13 Part 15 ANSI/ASME B1.1

Note:
All tolerance positions can be created with the same thread milling cutter. For more information, see the "Thread milling – CNC programming" section.

Thread tapping and forming calculation formulae

Tapping and thread forming calculation formulae:

Speed

$$n = \frac{v_c \times 1000}{D_N \times \pi} \quad [rpm]$$

Cutting speed

$$v_c = \frac{D_N \times \pi \times n}{1000} \quad [m/min]$$

Specific cutting force

$$k_c = k_{c1.1}{}^{*} \times \left[\frac{p^2}{2 \times Z \times L_f}\right]^{m_c{}^{*}}$$

Tap torque

$$M_d = \frac{k_c \times D_N \times p^2}{8000} \times \left[\frac{L_c}{D_N}\right]^{\delta} \times \left[1.12 - \frac{\gamma}{100}\right] \quad [Nm]$$

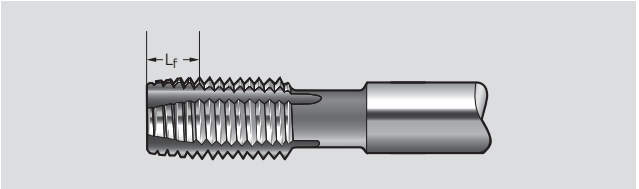
Thread former torque

$$M_d = \frac{k_c \times D_N \times p^2}{4000} \times \left[\frac{L_c}{D_N}\right]^{0.15} \quad [Nm]$$

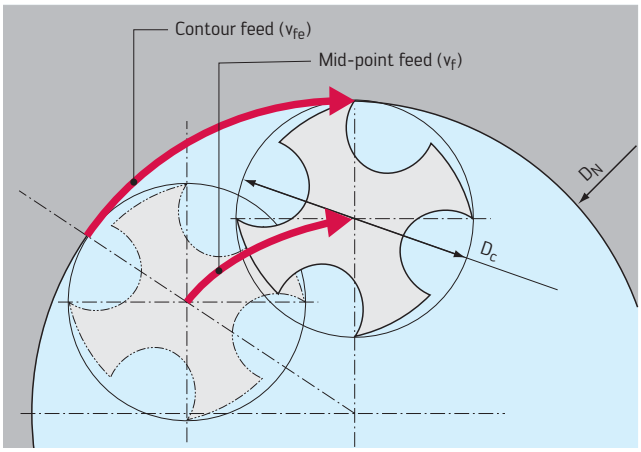
Power at the tap

$$P = \frac{M_D \times n}{9500 \times \eta} \quad [kW]$$

Taps and thread formers



Thread milling



Thread milling calculation formulae:

Speed

$$n = \frac{v_c \times 1000}{D_c \times \pi} \quad [rpm]$$

Cutting speed

$$v_c = \frac{D_c \times \pi \times n}{1000} \quad [m/min]$$

Contour feed

$$v_{fe} = n \times f_z \times z \quad [mm/min]$$

Mid-point feed for internal thread milling

$$v_f = \frac{v_{fe}\,(D_N - D_C)}{D_N} \quad [mm/min]$$

Mid-point feed for external thread milling

$$v_f = \frac{v_{fe}\,(D_N + D_C)}{D_N} \quad [mm/min]$$

Tool diameter	D_c	[mm]
Thread nominal diameter	D_N	[mm]
Cutting speed	v_c	[m/min]
Mid-point feed	v_f	[mm/min]
Contour feed	v_{fe}	[mm/min]
Speed	n	[rpm]
Thread pitch	P	[mm]
Number of flutes	z	
Thread depth	L_c	[mm]
Chamfer length	L_f	[mm]
Rake angle	γ	
Chip thickness	hm	[mm]
Correction factor	δ (0.55 to 0.25)	
Specific cutting force	k_c	[N/mm²]
Cutting force	F_c	[N]
Torque	M_d	[Nm]
Power at the tap	P	[kW]
Power requirement	P_{mot}	[kW]
Machine efficiency (< 1)	η	

*For m_c and $k_{c1.1}$, see table on page B 1173
Not applicable to multi-start, trapezoidal and conical taps

Cutting forces of Walter machining groups

Description	Tensile strength min R_m [N/mm²]	Tensile strength max R_m [N/mm²]	Spec. cutting force $k_{c1.1}$ [N/mm²]	Increase value m_c	Walter machining group
Non-alloyed and low-alloy steels, C > 0.25%, low and medium tensile strength	350	750	1500	0,21	P1, P6
Non-alloyed and low-alloy steels, C > 0.55%, not heat-treated	400	900	1700	0,25	P2, P3, P4, P7, P14
Low and high-alloy steels, low heat treatment level	750	1100	2000	0,25	P5, P8, P11, P12
Stainless ferritic/martensitic steels, heat-treated	800	1400	2200	0,25	P15
Low and high-alloy steels, medium heat treatment level	1100	1400	2500	0,25	P9
Low and high-alloy steels, high heat treatment level	1200	1600	3000	0,25	P10, P13
Stainless, austenitic steels	400	900	1800	0,21	M1
Stainless, austenitic/ferritic steels + duplex	600	1000	2000	0,21	M3
Stainless, austenitic steels, precipitation hardened (PH steels)	700	1500	2400	0,21	M2
Grey cast iron + CGI + malleable cast iron, low tensile strength	200	400	800	0,28	K1, K3, K7
Ductile cast iron with low tensile strength + malleable cast iron with higher tensile strength	400	600	950	0,28	K2, K5
Grey cast iron with higher tensile strength	300	400	1200	0,28	K4,
Ductile cast iron with high tensile strength + ADI high tensile strength, unalloyed + alloyed	600	800	1400	0,28	K6
Wrought aluminium alloy, not hardened			350	0,25	N1
Wrought aluminium alloy, hardened			600	0,25	N2
Cast aluminium alloy < 12% Si, not hardened			600	0,25	N3
Cast aluminium alloy < 12% Si, hardened, cast aluminium alloy ≥ 12%			700	0,25	N4, N5
Pure copper, copper alloy (brass, bronze) with low tensile strength			550	0,25	N7, N8, N9
High tensile copper alloys, bronze with high strength			1000	0,25	N10
Heat-resistant alloys, iron-based, annealed			2400	0,25	S1
Heat-resistant alloys, iron-based, hardened			2500	0,25	S2
Pure titanium			1300	0,25	S6
Titanium alloys, alpha, alpha/beta and beta alloys			1500	0,25	S7, S8
Heat-resistant alloys, nickel-cobalt-based, annealed			2800	0,25	S3
Heat-resistant alloys, nickel-cobalt-based, hardened			2900	0,25	S4
Heat-resistant alloys, nickel-cobalt-based, cast			3000	0,25	S5
Hardened steels 46 – 52 HRC			3000	0,25	H1
Hardened steels 52 – 58 HRC			3700	0,25	H2
Hardened steels 58 – 62 HRC			4300	0,25	H3
Hardened cast iron 50 – 60 HRC			3500	0,25	H4
Thermoplasts and thermosetting plastics, without abrasive fillers			150	0,2	O1, O2
Fibre-reinforced plastics			300	0,3	O3, O4, O5
Graphite			400	0,25	O6

Comments:
The information consists of standard values and refers to a neutral cutting edge geometry.
The condition of the material and the cutting edge geometry considerably influences the cutting forces.

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	Building and construction steels						
	P1	1.0401		C 15	C15		
	P1	1.0402		C 22	C22		
	P2	1.0501		C 35	C35		
	P2	1.0503		C 45	C45		
	P4	1.0535		C 55	C55		
	P4 / P5	1.0601		C 60	C60		
	P6	1.0715		9 SMn 28	11SMn30		
	P6	1.0718		9 SMnPb 28	11SMnPb30		
	P6	1.0722		10 SPb 20	10SPb20		
	P6	1.0726		35 S 20	35S20		
	P6	1.0736		9 SMn 36	11SMn37		
	P6	1.0737		9 SMnPb 36	11SMnPb37	Ledloy	
	P7 / P10	1.0904			55Si7		
	P7 / P10	1.0961		60 SiCr 7	S340MGC, 60SiCr7		
	P1	1.1141		Ck 15	C15E		
	P7 / H2	1.1157		40 Mn 4	40Mn4		
	P1 / P3	1.1158		Ck 25	C25E		
	P7	1.1167		36 Mn 5	36Mn5		
	P7	1.1170		28 Mn 6	28Mn6		
	P2	1.1183		Cf 35	C35G		
	P2	1.1191		Ck 45	C45E		
	P4 / P5	1.1203		Ck 55	C55E		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	080M15, 144917CS, 040A15, 080A15		C18RR, XC18	C15, C16, 1C15	1350	F.111	S 15 C, JIS S 15C	J 409 grade 1015
	040 A 15, 055 M 15, En 2, 22 CS, 22 HS, C 22, 070 M 20	2D, 2	AF42C20, XC25, 1C22	C20, C21	1450	1C22, F112	S 20 C, S22C, JIS S 20C	1020
	080A32, 080A35, 080M36, 1449.40CS		C35, 1C35, AF55C35	C35, 1C35	1572, 155	F.113	S 35 C	1035
	060A47, 080M46, 1449.50HS, 1449.50CS		1C45, AF 65 C 45	C45, 1C45	1650	F.114	JIS S 45C	1045
	070M55, 5770-50	9	C54, 1C55, AF 70 C 55	C55, 1C55	1655	F.115	S 55 C	1055
	060A62, 5770-60, 1449 60HS.CS		C60, 1C60, AF70C55	C60, 1C60		F.115	S 58 C	1060
	230M07		S250	CF9Mn28	1912	F.2111 - 11SMn28	JIS SUM22	1213
			S250Pb	CF9SMnPb28	1914	F.2112 - 11SMnPb28	SUM22L, SUM23L, SUM24L	12L13, 12L14, J 403 grade 12L14, J 1397 grade 12L14
	212M36		35MF6		1957	F.210G		J 403 grade 1141
	240M07	1B	S300	CF9SMn36		F.2113 - 12 SMn 35	SUM 25	J 403 grade 1213, J 403 grade 1215, J 1392 grade 1213
			S300Pb	CF9SMnPb36	1926	F.2114 - 12 SMnPb 35		J 403 grade 12L14, J 1397 grade 12L14
	250A53	45	55S7		2085	F.1440 - 56 Si 7		9255
	250A61		60SC7			F.1442 - 60 SiCr 8		9262
	040A15, 080M15, S14, CS17	32C			1370	F.1511 - C 16 k, F.1110 - C 15 k	S 15, S 15 CK, JIS S 15 C	1015
	150M36	15	35M5					1035, 1041
	070M26		2C25			F.1120 - C 25 k, C25K (F1120)	S 25 C, S 28 C	1025
	150M36	15 B	40M5		2120	F.1203 - 36 Mn5	SMn 438 (H), SCMn 3	1335
	150M28, 150M19, S92	14A, 14B	20M5	C28Mn		28Mn6	SCMn1	1027
	060A35, 080A35		XC38H1TS	C36, C38			S 35 C	1035
	080M46, 060A47		C45RR, XC42H1, XC45, 2C45, XC48, XC48H1		1672	F1140-C45k, F1142-C48k	S 45 C, S 48 C	1045
	060A57	9	XC55H1, 2C55, XC54		1655	F.1150 - C 55 k	S 55 C	1055

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Building and construction steels** (continued)						
	P2 / P3	1.1213		Cf 53	C53G		
	P4 / P5	1.1221		Ck 60	C60E		
	P4 / H1	1.1274		Ck 101	C101E, C100S		
	P11	1.3401		X 120 Mn 12	X120Mn12		
	P7 / H2	1.3505		100 Cr 6	100Cr6		
	P7	1.5415		15 Mo 3	16Mo3		
	P3	1.5423		16 Mo 5	16Mo5		
	P7	1.5622		14 Ni 6	14Ni6		
	P11	1.5662		X 8 Ni 9	X8Ni9		
	P11	1.5680		12 Ni 19	X12Ni5, 12Ni19		
	P9	1.5710		36 NiCr 6	36NiCr6		
	P7	1.5732		14 NiCr 10	14NiCr10		
	P7	1.5752		14 NiCr 14	15NiCr13		
	P7 / P9	1.6511		36 CrNiMo 4	36CrNiMo4		
	P7	1.6523		20NiCrMo2-2	21NiCrMo2		
	P9	1.6546		40 NiCrMo 22	40NiCrMo2-2, 40NiCrMo2KD		
	P7 / P9	1.6582		34 CrNiMo 6	34CrNiMo6		
	P7	1.6587		17 CrNiMo 8, 17 CrNiMo 6, 17 CrNiMo 6 BG	17CrNiMo6, 18CrNiMo7-6		
	P7	1.6657		14 NiCrMo 134	14NiCrMo13-4		
	P7	1.7015		15 Cr 3	15Cr2KD		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	060A52, 070M55		XC48H1TS				S 50 C	1050, 1055
	060A62, 070M60, CS60		C60RR, XC60, 2C60		1665, 168	F.511, F.512	S 58 C	1060
	060A96, 5770-95, CS95		C100RR, C100, XC100, E 100		1870		SUP4	1095
			Z120M12, Z120Mn12		2183	F.82551-AM-X 120 Mn 12	SCMnH1, SCMnH11	
	BL3, 534A99, 535A99, 2S135, S135		Y100C6, 100C6, 100Cr6	100Cr6	2258	F.5230 100 Cr6, F.1310-100 Cr 6, F.131	SUJ 2, SUJ 4	L3, 52100
	1501-240, 1503-243B, 3606-243, 3059-243		15D3, 15Mo3	16Mo3 (KG KW)	2912	F.2601-16 Mo 3		ASTM A20, GR
	1503-245-420			16Mo5KG, 16Mo5KW		F.2602-16Mo5	SB 450 M, SB 480 M	4520
			16N6, 15N6, 15Ni6	14Ni6KG, 14Ni6KT		F.2641-15Ni6		ASTM A350 LF5
	1501-509;510, 3603-509LT, 1502-502-650, 509-690, 1503-509-690		Z8N9, 9Ni490	X10Ni9, X12Ni09		F.2645-X8 Ni09	SL9N53(60)	ASTM A353
			Z18N5, 5Ni390					2515, 2517
	640A35		35NC6				SNC 236	3135
			14NC11	16NiCr11		F.1540-15NiCr11	SNC 415 (H)	3415
	655M13, 655A12, 655H13	36A, 36B	14NC11, 12NC15, 14NC12, 13NiCr14				SNC 815 (H), SNC22, JIS SNC 815	3310, 3415, 9314
	816M40	110	40NCD3, 36CrNiMo4, 35NCD5	38NiCrMo7 (KB)		F.1280-35NiCrMo4		9840
	805H20, 805M20, 806M20	362	20NCD2, 22NCD2	20NiCrMo2	2506	F1552-20NiCrMo2, F1534-20NiCrMo3	SNCM 220 (H)	J 1268 grade 8620H, 8620
	311-Type7		40NCD2	40NiCrMo2 (KB)		F1204-40NiCrMo2, F1205-40NiCrMo2DF	SNCM 240	8740
	816M40, 817M40	24	35NCD6, 34CrNiMo6, 34CrNiMo8	35NiCrMo6KB	2541	F1272-40NiCrMo7, 34CrNiMo6	SNCM 447, JIS SNc M447	4340
	820A16		18NCD6	18NiCrMo7		F.1560-14 NiCrMo13, F.156		
	832H13, 832M13, S157	36C	16NCD13	15NiCrMo13		F1560-14NiCrMo13, F.1569-14NiCrMo131		
	523M15	206	12C3, 15Cr2, 18C3				SCr 415 (H)	5132

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Building and construction steels** (continued)						
	P7 / P8	1.7033		34 Cr 4	34Cr4		
	P7 / P9	1.7035		41 Cr 4	41Cr4		
	P9	1.7045		42 Cr 4	42Cr4		
	P7	1.7131		16 MnCr 5	16MnCr5		
	P7 / P9	1.7176		55 Cr 3	55Cr3		
	P8	1.7218		25 CrMo 4	25CrMo4		
	P7 / P9	1.7220		34 CrMo 4	34CrMo4		
	P7 / P9	1.7223		41 CrMo 4	41CrMo4		
	P7 / P9	1.7225		42 CrMo 4	42CrMo4		
	P7	1.7262		15 CrMo 5	15CrMo5		
	P7	1.7335		13 CrMo 4 4	13CrMo4-5		
	P7 / P10	1.7361		32 CrMo 12	32CrMo12		
	P7	1.7380		10 CrMo 9 10	10CrMo9-10		
	P7	1.7715		14 MoV 6 3	14MoV6-3		
	P7 / P9	1.8159		50 CrV 4	51CrV4		
	P7	1.8509		41 CrAlMo 7	41CrAlMo7	Nitralloy 135	
	P7 / P10	1.8523		39 CrMoV 13 9	40CrMoV13-9		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	530A32, 530H32, 530M32		32C4, 34Cr4	34Cr4(KB)		F.8221-35 Cr 4, F.224	SCr 435 (H)	5132
	530M40, 530A40, 530H40	18	42C4, 41Cr4	41Cr4, 41Cr4KB		38Cr4, 38Cr41, 42Cr4, F.1202-42Cr4	SCR4, SCr 440 (H)	5140
	530A40	18	42C4, 42C4TS	41Cr4	2245	F1201, F1202, F1206, F.1202-42Cr4	SCR4, SCr 440 (H), SCr 440	5140, 5140H
	527M17, 590H17, 590M17		16MC5, 16MC4, 16MnCr5	16MnCr5	2511, 2173	F.1515-16 MnCr5, F.151		J 1268 grade 4118H, C5115
	525A58, 525A60, 525H60	48	55Cr3, 55C3	55Cr3	2253	F.1431-55 Cr3, F.143	SUP 9 (A)	5155
	1717CDS110, 708A25		25CD4, 25CrMo4	25CrMo4 (KB)	2225	F8372-AM26CrMo4, F8330-AM25CrMo4, F1256-30CrMo4-1, F.222	SCM420, SCM430, SCCrM1	4130
	708A37	19B	35CD4, 34CrMo4, 35CD4 / 34CrMo5	34CrMo4KB, 35CrMo4, 35CrMo4F	2234	F8331-AM34CrMo4, F8231-34CrMo4, F1250-35CrMo4, F1254-35CrMo4DF, F.125	SCM 432, SCCrM 3, SCM 435 H	4135, 4137, J 1268 grade 4135H
	708M40, 3111-5.1		42CD4TS	41CrMo4		F8332-AM42CrMo4, F8232-42CrMo4, F1252-40CrMo4	SCm 440, JIS SCM 440	4140
	708A42, 708M40, 709M40	19A	42CD4, 42CrMo4	38CrMo4KB, 42CrMo4, G40CrMo4	2244	F8332-AM42CrMo4, F8232-42CrMo4, F1252-40CrMo4	SCM 440 (H), SNB 7, JIS SCM 440	4140
			12CD4			F.1551-12CrMo4	SCM 415 (H)	
	620-440, 1503-620-440, 1502, 620-470, 3606-620, 620-540, 3604-620-440		15CD3.05, 15CD4.05	14CrMo3, 16CrMo3	2216	F.2631-14CrMo45	SFVA F 12	A387 grade 12Cl2, ASTM A182
	722M24	40B	30CD12	32CrMo12	2240	F.124.A		
	3059-622-490, 3606-622, 1502-622, 3604-622, 622Gr.31, 622Gr.45		12CD9.10, 10CrMo9-10, 10CrMo9-11	12CrMo9 (KW KG), G14CrMo9, 10	2218	TU.H	SFVAF22A, BSCMV4, SCPH32-CF	A387 grade 22, A387 grade 22Cl2, ASTM A182
	1503-660-460, 3604-660					F.2621-13 MoCrV6		
	735A50, 735A51, 735H51, 735M50	47	50CV4, 51CrV4, 50CrV4	50CrV4	2230	F.1430-51CrV4	SUP 10	6150
	905M39	41B	40CAD6.12	41CrAlMo7	2940	F.1740-41CrAlMo7	SACM 645, JIS SACM 645	Nitralloy 135
	897M39	40C						

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	Stainless and heat-resistant steels						
	P14 / P15	1.4000		X 7 Cr 13	X6Cr13		
	P14	1.4001		X 7 Cr 14	X7Cr14		
	P14 / P15	1.4006		X 10 Cr 13, X 12 Cr 13	X12Cr13, X10Cr13		
	P14	1.4016		X 6 Cr 17	X6Cr17		
	P15	1.4027		G-X 20 Cr 14	GX20Cr14		
	P15	1.4034		X 46 Cr 13	X46Cr13		
	P15	1.4057		X 20 CrNi 17 2	X19CrNi17-2, X17CrNi16-2		
	P14 / P15	1.4104		X 12 CrMoS 17	X14CrMoS17		
	P14	1.4113		X 6 CrMo 17 1	X6CrMo17-1		
	P15	1.4313		X 4 CrNi 13 4	X3CrNiMo13-4		
	P15	1.4718		X 45 CrSi 9 3	X45CrSi9-3-1		
	P14	1.4724		X 10 CrAl 13, X 10 CrAlSi 13	X10CrAlSi13, X10CrAl13		
	P14	1.4742		X 10 CrAl 18, X 10 CrAlSi 18	X10CrAl18, X10CrAlSi18		
	P15	1.4747		X 80 CrNiSi 20	X80CrNiSi20	Sil XB	
	P14	1.4762		X 10 CrAl 24, X 10 CrAlSi 25	X10CrAl24, X10CrAlSi25		
	Tool steels						
	P4	1.1545		C 105 W 1	C105U		
	P4	1.1663		C 125 W	C125W, C125U		
	P7 / H2	1.2067		100 Cr 6	99Cr6, 102Cr6		
	P11 / H3	1.2080		X 210 Cr 12	X210Cr12		
	P11 / H1	1.2344		X 40 CrMoV 5 1	X40CrMoV5-1		
	P11 / H3	1.2363		X 100 CrMoV 5 1	X100CrMoV5-1		
	P7 / H2	1.2419		105 WCr 6	107WCr5, 105WCr6, 100WCr6		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	403S17		Z6013, Z6Cr13, Z8C12	X6Cr13	2301	F.3110-X6 Cr13	SUS403, SUS410S, SUS429	403, 13/6
	403S17		Z3014, Z8C13FF	X6Cr13		F.8401-AM-X12 Cr13	SUS403, SUS410S, SUS429	403, 410S, 429
	410S21, 410C21, ANC1A		Z12C13, Z12Cr13, Z10C13	X12Cr13, X10Cr13	2302	F.3401-X12 Cr13	SUS 410, JIS SUS 410	410
	430S15, 430S17, 430S18	60	Z8C17, Z6Cr17	X8Cr17	2320	F.3113-X8 Cr17	SUS 430	430
	ANC1B, ANC1C, 420C24, 420C29		Z20C13M				SCS 2	
	420S45		Z40C14, Z40Cr14, Z38C13M, Z44C14	X40Cr14		F.3405-X46 Cr13		420
	431S29, 6S80, S80	57	Z15CN16.02	X16CrNi16	2321	F.3427-X15 CrNi16, F.313, F3427-X19CrNi172	SUS 431, JIS SUS 431	431
			Z10CF17	X10CrS17	2383	F3117-X10CrS17, F3413-X14CrMoS17	SUS 431, SUS430F	430F, J 405 grade 51435
	434S17		Z8CD17.01	X8CrMo17	2325	F3116-X6CrMo171	SUS 434	434
	425C11, 425C12		Z5CN13.4, Z4CND13.4M, Z6CN13-4, Z8CD17-01	GX6CrNi13 04	2385		SCS 5, SCS 6	CA6. 13/4
	401S45	52	Z45CS9	X45CrSi8		F.3220-X 4 ScrSi 09-03	SUH 1	HNV3
	403S17		Z10C13, Z13C13	X10CrAl12		F.13152-X 10 CrAl13		405
	430S15	60	Z10CAS18, Z12CAS18	X8Cr17		F.3153-X 10 CrAl 18	SUH 21	430
	443S65	59	Z80CSN20.02			F.3222-X 80CrSiNi20-02	SUH 4	HNV6
			Z10CAS24, Z12CAS25	X16Cr26	2322	F.3154-X 10 CrAl24	SUH 446	446
			C105E2U, Y1105	C100KU	1880	F515, F516	SK 3 (TC105)	W110
			Y2120			F.5123 C120		W112
	BL3, 534A99		100Cr6RR, 100C6, Y100C6		2258	F.5230 100 Cr6, F.1310 - 100 Cr6, F.131	SUJ 2, SUJ 4	L3, 52100, L1
	BD3		X200Cr12, Z200C12	X205Cr12KU		F.5212 X210 Cr12	SKD 1, SKS	D3
	BH13		X40CrMoV5, Z40CDV5	X40CrMoV511KU	2242	F.5318 X40 CrMoV5	SKD 61	H13, P20
	BA2		X100CrMoV5, Z100CDV5	X100CrMoV51KU	2260	F.5227 X100 CrMoV5	SKD 12, JIS SKD 12	A2, D2
			105WC13	107WCr5KU	2140	F.5233 105 WCr5, F.523	SKS 2, SKS 3, SKS 31	

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Tool steels** (continued)						
	P14 / H3	1.2436		X 210 CrW 12	X210CrW12-1, X210CrW12		
	P7 / H2	1.2542		45 WCrV 7	45WCrV8, 45WCrV7		
	P11 / P13	1.2581		X 30 WCrV 9 3	X30WCrV9-3		
	P14 / H3	1.2601		X 165 CrMoV 12	X165CrMoV12		
	P7 / P10 / H1	1.2713		55 NiCrMoV 6	55NiCrMoV6		
	P7 / H3	1.2833		100 V 1	100V1		
	P11 / H3	1.3243		S 6-5-2-5	HS6-5-2-5		
	P11 / H3	1.3255		S 18-1-2-5	HS18-1-2-5		
	P11 / H3	1.3343		S 6-5-2	HS6-5-2		
	P11 / H3	1.3348		S 2-9-2	HS2-9-2		
	P11 / H3	1.3355		S 18-0-1	HS18-0-1		
M	**Stainless and heat-resistant steels**						
	M1	1.4301		X 5 CrNi 18 10	X5CrNi18-10		
	M1	1.4305		X 10 CrNiS 18 9	X8CrNiS18-9		
	M1	1.4306		X 2 CrNi 19 11	X2CrNi19-11		
	M1	1.4308		G-X 6 CrNi 18 9	GX5CrNi19-10		
	M2	1.4310		X 12 CrNi 17 7	X9CrNi18-8, X10CrNi18-8		
	M1	1.4311		X 2 CrNiN 18 10	X2CrNiN18-10		
	M1	1.4401		X 5 CrNiMo 17 12 2	X5CrNiMo17-12-2, X4CrNiMo17-12-2, X5CrNiMo18-10		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
			X210CrW12-1, Z210CW12-01, Z 210 CW 12	X215CrW121KU	2312	F.5213 X210 CrW12, F.521		D6
	BS1		45WCrV8, 45WCrV20	45WCrV8KU	2710	F.5241 45 WCrSi 8, F.524, F524145WCrSi 8		S1
	BH21		X30WCrV9, Z30WCV9	X30WCrV93KU		F.5323 X30 WCrV9	SKD 5	O1, H21
				X165CrMoW12KU	2310	F.5211 X160 CrMoV12		
	BH224					F.528, F520S		L6
	BW2		C105E2UV1, Y1105V, 100V2	102V2KU			SKS 43	W210
	BM35		Z85WDKCV06-05-05-04-02, Z90WDKCV06-05-05-04-02	HS6-5-2-5	2723	F.5613 6-5-2-5	SKH 55	S7, M35
	BT4		Z80WKCV18-05-04-01	HS18-1-1-5		F.5530 18-1-1-5	SKH 3	T4
	BM2		Z85WDCV06-05-04-02	HS6-5-2-5	2722	F.5603 6-5-2	SKH 51	M2
			Z100DCWV09-04-02-02	HS2-9-2	2782	F.5607 2-9-2		M7
	BT1		Z80WCV18-04-01	HS18-0-1		F.5520 18-0-1	SKH 2	T1
	304S15, 304S16, 304S31, 304S11, 304S17, LW21, LWCF21	58E	Z4CN19-10FF, Z5CN17-08, Z6CN18-09, Z7CN18-09	X5CrNi18 10	2332, 233	F.3451-X5 CrNi18-10, F.314, F.3504-X6CrNi19 10, F3504-X5CrNi1810	SUS 304	304, 304H
	303S21, 303S22, 303S31	58M	Z10CNF18.09, Z8CNF18-09	X10CrNiS18 09	2346	F.3508-X10CrNiS18-09	SUS 303, JIS SUS 303	J 405 grade 30303, 303
	304S11, LW20, LWCF20, S536, T74, 304C12 (LT196), 305S11		Z1CN18-12, Z2CN18-10, Z3CN19.10M, Z3CN18-10, Z3CN19-11, Z3CN19-11FF	X3CrNi18 11, X2CrNi18 11, GX2CrNi19 10	2352	F.3503-X 2CrNi19-10, F3503-X 2CrNi18-10	JIS SCS 19, JIS SUS 304L	304L
	304C15, 304C15 (LT196)		Z6CN18.10M				SCS 13	
	301S21, 301S22, 302S26		Z12CN17.07, Z12CN18.07, Z11CN17-08, Z11CN18-08, Z12CN18-09	X12CrNi17 07	2331	F.3517-X12CrNi17 07	SUS 301	301
	304S62		Z3CN18-07Az, Z3CN18-10AZ	X2CrNiN18 11	2371	F3541-X2CrNiN1810	SUS 304 LN	304LN
	316S13, 316S17, 316S19, 316S31, 316S33, 316S16		Z6CND17.11, Z3CD17-11-01, Z6CND17-11, Z6CND17-11-02FF, Z7CND17-11-02, Z7CND17-12-02	X5CrNiMo17 12	2347	F.3543-X5CrNiMo17-12, F.3543-X6 CrNiMo17-12-03, F3543-X5CrNiMo17-122	SUS 316	316

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
M	**Stainless and heat-resistant steels** (continued)						
	M1	1.4408		G-X 6 CrNiMo 18 10	GX5CrNiMo19-11-2		
	M1	1.4429		X 2 CrNiMoN 17 13 3	X2CrNiMoN17-13-3		
	M1	1.4435		X 2 CrNiMo 18 14 3, X 2 CrNiMo 18 12	X2CrNiMo18-14-3		
	M1	1.4438		X 2 CrNiMo 18 16 4	X2CrNiMo18-15-4		
	M1	1.4460		X 4 CrNiMoN 27 5 2	X3CrNiMoN27-5-2		
	M1	1.4541		X 6 CrNiTi 18 10	X6CrNiTi18-10		
	M1	1.4550		X 6 CrNiNb 18 10	X6CrNiNb18-10		
	M1	1.4571		X 6 CrNiMoTi 17 12 2	X6CrNiMoTi17-12-2		
	M1	DIN 1.4565, 1.4581		G-X 5 CrNiMiNb 18 10	GX5CrNiMoNb19-11-2		
	M1	1.4583		X 10 CrNiMoNb 18 12	X10CrNiMoNb18-12		
	M1	1.4828		X 15 CrNiSi 20 12	X15CrNiSi20-12		
	M2	1.4871		X 53 CrMnNiN 21 9	X53CrMnNiN21-9		
	M1	1.4878		X 12 CrNiTi 18 9	X12CrNiTi18-9, X10CrNiTi18-10		
	Heat-resistant alloys, Fe-based						
	M1	1.4558		X 2 NiCrAlTi 32 20	X2NiCrAlTi32-20		
	M1	1.4563		X 1 NiCrMoCu 31 27 4	X1NiCrMoCu31-27-4		
	M1	1.4864		X 12 NiCrSi 36 16	X12NiCrSi36-16, X12NiCrSi35-16	Incoloy DS	
	M1	1.4958		X 5 NiCrAlTi31-20	X5NiCrAlTi31-20		
	M1	1.4977			X 40 CoCrNi 20 20		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI/ SAE
	316C16, 316C16 (LT196), ANC4B					F.8414-AM-X7 CrNiMo20 10	SCS 14	
	316S62, 316S63		Z2CND17.13Az	X2CrNiMoN17 13	2375	F3543-X2CrNiMoN17133	SUS 316 LN	316LN
	316S11, 316S13, 316S14, 316S31, LW22, LWCF22, 316S12		Z2CND17.13, Z3CND17-12-03, Z3CND18-14-03	X2CrNiMo17 13	2353	F.3533-X2 CrNiMo 17-12-03, F.3534-X6 CrNiMo 17-12-03		316L
	317S12		Z2CND19.15, Z2CND19-15-04, Z3CND19-15-04	X2CrNiMo18 16	2367	F3539-X2CrNiMo18164	SUS 317 L	317L
			Z3CND25-07Az, Z5CND27-05Az		2324	F3309-X8CrNiMo27-05, F3552-X8CrNiMo266	SUS 329 J1	329
	321S12, 321S31, 321S51 (1010, 1105) LW24, LWCF24	58B, 58C	Z6CNT18.10	X6CrNiTi18 11	2337	F.3553-X7 CrNiTi 18-11, F.3523-X 6 CrNiTi 18-11, 09 Ch 18N10T, F3523-X6CrNiTi1810	SUS 321, JIS SUS 321	321, 15/5 PH, 17/4 PH
	347S20, 347S31, 347S51, ANC3B	58F, 58G	Z6CNNb18.10	X6CrNiNb18 11, X8CrNiNb18 11	2338	F.3552-X 7 CrNiNb 18-11, F.3524-X 67 CrNiNb 18-11, F3524-X6CrNiNb1810	SUS 347	347, 13/8 MO
	320S31, 320S17, 320S18	58J	Z6CNDT17.12	X6CrNiMoTi17 12	2350	F.3552-X 6 CrNiMoTi17-12-03, F3535-X6CrNiMoTi17122	SUS 316 Ti	316Ti, 326Ti
	318C17, ANC4C		Z4CNDNb18.12M	GX6crNiMoNb20 11			SCS 22	Nitronic 50.60
				X6CrNiMoNb17 13				
	309S24		Z15CNS20.12, Z17CNS20-12, Z9CN24-13	X16CrNi23 14		F3312-X15CrNiSi20-12	SUH 309	309
	349S54		Z52CMN21.09, Z53CMNS21-09Az, Z53CMN21-09Az	X53CrMnNiN21 9		F.3217-X53 CrMnNiN 21-09	SUH 35, SUH 36	EV8, 2205 Duplex
	321S20, 321S51	58B, 58C	T6CNT18.12 (B), Z6CNT18-10		2337	F.3523-X 6CrNiTi 18 11	SUS 321	321
								N08800 Incoloy 800
								N08028 Alloy 28
	NA17		Z12NCS37.18, Z12NCS35.16, Z20NCS33-16			F.3313-X12 CrNi 36-16	SUH 330	N08830 Alloy 330
			Z 42 CNKDWNb					

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
K	**Grey cast iron**						
	K3	0.6010	EN-JL1010	GG-10, GG 10	EN-GJL-100		
	K3	0.6015	EN-JL1020	GG-15, GG 15	EN-GJL-150		
	K3	0.6020	EN-JL1030	GG-20, GG 20	EN-GJL-200		
	K3	0.6025	EN-JL1040	GG-25, GG 25	EN-GJL-250		
	K4	0.6030	EN-JL1050	GG-30, GG 30	EN-GJL-300		
	K4	0.6035	EN-JL1060	GG-35, GG 35	EN-GJL-350		
	K4	0.6040		GG-40, GG 40	EN-GJL-400		
	K4	0.6660		GGL-NiCr 20 2			
	K4			GG-26Cr, GG 26Cr	EN-GJL-260 Cr		
	K7			GGV 45	EN-GJV-450		
	Ductile cast iron						
	K5	0.7040	EN-JS1030	GGG-40	EN-GJS-400-15		
	K6	0.7050	EN-JS1050	GGG-50	EN-GJS-500-7		
	K6	0.7060	EN-JS1060, EN-JS 1092	GGG-60	EN-GJS-600-3, EN-GJS-600-3U		
	K6	0.7070	EN-JS1070, EN-JS 1102	GGG-70	EN-GJS-700-2, EN-GJS-700-2U		
	Malleable cast iron						
	K1	0.8035	EN-JM 1010	GTW-35, GTW-35-04	GTW-35-04, EN-GJMW-350-4		
	K1	0.8040	EN-JM 1030	GTW-40-05, GTW-40	EN-GJMW-400-5, GTW-40-05		
	K1	0.8045	EN-JM 1040	GTW-45-07, GTW-45	EN-GJMW-450-7		
	K1	0.8135	EN-JM 1130	GTS-35-10, GTS-35	EN-GJMB 350-10		
	K1	0.8145	EN-JM 1140	GTS-45-06, GTS-45	EN-GJMB 450-6, GTS-45-06		
	K1	0.8155	EN-JM 1160	GTS-55-04, GTS-55	EN-GJMB 550-4, GTS-55-04		
	K2	0.8165	EN-JM 1180	GTS 65-02, GTS-65	EN-GJMB 650-2, GTS-65-02		
	K2	0.8170	EN-JM 1190	GTS 70-02, GTS-70	EN-GJMB 700-2, GTS-70-02		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
			Ft10D, FGL100	G10	0110	FG 10	FC 100, FC10	ASTM A-48-76
	Grade 150		Ft15D, FGL150	G15	0115	FG 15	FC 150	NO 20B
	Grade 220		Ft20D, FGL200	G20	0120	FG 20	FC 200, FC20	NO 30B
	Grade 260		Ft25D, FGL250	G25	0125	FG 25	FC25, FC 250	NO 35B
	Grade 300		Ft30D, FGL300	G30	0130	FG 30	FC 300	NO 40B
	Grade 350		Ft35D, FGL350	G35	0135	FG 35	FC 350	NO 55B
	Grade 400		Ft40D, FGL400		0140			
	L-NiCr20 2		L-NC 20 2		0523			
	420 / 12		FGS 400-12	GS400-12	0717		FCD 400, FCD40	60/40/18
	500 / 7		FGS 500-7	GS500-7	0727		FCD 500, FCD50	70/50/05
	600 / 3		FGS 600-3	GS600-3	0732		FCD 600, FCD60	80/55/06
	700 / 2		FGS 700-2	GS700-2	0737		FCD 700, FCD70	100/70/03 120/90/02
	W 35-04		MB 35-7				FCMW 330	
	W 410 / 4		MB 40-10				FCMW 350	
	45-07		MB 45-7				FCMWP 440	
	B 340 / 12		MN 35-10		0815		FCMB 340	32510
	P 440 / 7, P 45-06		MP 50-5		0854			40010
	P 540 / 5, P 55-04		MP 60-3		0856			50005
	P 65-02				0862			60004
	P 70-02		MP 70-2		0862			70003

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
N	**Aluminium alloys**						
	N1	3.0255	EN AW-1050A	Al99.5	Al99.5		
	N4	3.1371	EN AC-21000	G-AlCu4TiMg	G-AlCu4TiMg		
	N2	3.1655	EN AW-2011	AlCuBiPb	AlCu6BiPb		
	N2	3.1734		Y-Alloy	AlCu4Mg1.5Ni2, WL 3.1734		
	N4	3.2371	EN AC-42100	G-AlSi7Mg	G-AlSi7Mg, AlSi7Mg		
	N4	3.2373	EN AC-43300	G-AlSi9Mg	G-AlSi9Mg, AlSi9Mg		
	N4	3.2381	EN AC-43000	G-AlSi10Mg	G-AlSi10Mg, AlSi10Mg		
	N4	3.2382	EN AC-43400	GD-AlSi10Mg	AlSi10Mg(Fe)		
	N4	3.2383	EN AC-43200	G-AlSi10MgCu	G-AlSi10MgCu, AlSi10Mg (Cu)		
	N3	3.2581	EN AC-44200	G-AlSi12	G-AlSi12, AlSi12		
	N3	3.2582	EN AC-44300	GD-AlSi12	GD-AlSi12, AlSi12 (Fe)		
	N3	3.2583	EN AC-47000	G-AlSi12 (Cu)	G-AlSi12 (Cu)		
	N2	3.3315	EN AW-5005A	AlMg1	AlMg1C		
	N3	3.3561	EN AC-51300	G-AlMg5	G-AlMg5		
	N2	3.4345	EN AW-7022	AlZnMgCu0.5	AlZnMgCu0.5		
	N4	DIN 3.3211					
	N4	DIN 3.4365					
	Copper alloys						
	N7	2.0240	CW502L	CuZn15	CuZn15	Medium red tombac, gold tombac	
	N7	2.0265	CW505L	CuZn30	CuZn30	Half tombac, soldered brass, cartridge brass, polished brass, metarsic	
	N7	2.0321	CW508L	CuZn37	CuZn37	Pressed brass, etching quality, tuned brass, soft brass, stamped brass	
	N7	2.0592	CC765S	G-CuZn35Al1, GK-CuZn35Al1, GZ-CuZn35Al1	CuZn35Mn2Al1Fe1-C		
	N7	2.0596	CC764S	G-CuZn34Al2, GK-CuZn34Al2, GZ-CuZn34Al2	CuZn34Mn3Al2Fe1-C		
	N7	2.0966	CW307G	CuAl10Ni5Fe4	CuAl10Ni5Fe4		
	N7	2.0975	CC333G	G-CuAl11Ni, G-CuAl10Ni	G-CuAl11Ni		
	N7	2.1050	CC480K	G-CuSn10Zn	CuSn10-C		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	1B		A5	4507	4007	L-3051	A1x1, A1050	1050A
			A-U5GT			L-2140	AC1B	B26
	FC1		A-U5PbBi	6362	4355	L-3182	A2011	2011
	LM14		A-U4NT	3045		L-2150	AC5A	
	2L99, LM25		A-S7G0.3	7257	4244	L-2651	AC4C, JIS AC4 CH (AL 9)	B25
			A7-S10G	3051	4253		AC4A, JIS AC4 A (AL 4)	A13560
	LM9		A-S10G	3051	4253	L-2560, L-2561	JIS AC4 A (AL 4V)	A13600
	LM9		A-S10G	3051	4253	L-2560, L-2561	AC4A	
			A-S9GU				JIS ADC3 (AL 4)	A360.2
	LM6		A-S13	4514	4261	L-2520, L-2521	AC3A	A413.2
	LM6, LM20		A-S13, A-S12	4514, G-AlSi13	4261	L-2520, 21	AC3A	A413.0
	LM20		A-S12U	3048	4260	L-2530	ADC1 (AK 12), AC3A (AL 12)	413.1
	N41		A-G0, 6	5764	4106	L-3350	A2x8, A5005	5005A
	N6, LM5		A-G6	3058	4146	L-3320	JIS AC7A (AL28)	5056A, 514.1
			A-Z5GU0.6					
								6061-T6
								7075-T6
	CZ 102		CuZn15				C2300	C23000
	CZ 106		CuZn30				C2600	C26000
	CZ 108		CuZn37				C2720	C27400
	HTB 1							C86500
								C86200
	CA 104		CuAl9Ni5Fe3Mn, U-A10N					C63000
	AB2		CuAl11Ni5Fe	G-CuAl11Fe4Ni4				B-148-52
	G1, CT1							C90700

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
N	**Copper alloys** (continued)						
	N7	2.1052	CC483K	G-CuSn12, GZ-CuSn12, GC-CuSn12	CuSn12-C		
	N9	2.1090	CC493K	G-CuSn7ZnPb, GZ-CuSn7ZnPb, GC-CuSn7ZnPb	CuSn7Zn4Pb7-C	Rotguss 7	
	N9	2.1096	CC491K	G-CuSn5ZnPb	CuSn5Zn5Pb5-C	Rotguss 5	
	N9	2.1098	CC490K	G-CuSn2ZnPb	CuSn3Zn8Pb5-C	Alloy 5A	
	N9	2.1176	CC495K	G-CuPb10Sn, GZ-CuPb10Sn, GC-CuPb10Sn	CuSn10Pb10-C		
	N9	2.1182	CC496K	G-CuPb15Sn, GZ-CuPb15Sn, GC-CuPb15Sn	CuSn7Pb15-C		
	N9	2.1188	CC497K	G-CuPb20Sn	CuSn5Pb20-C		
	N7	2.1293	CW106C	CuCrZr	CuCr1Zr		
	N7			CuAl6.5Fe2.5Sn0.25		AMPCO 8	
	N7					AMPCO 6	
	N10			CuAl13Fe4.5		AMPCO 21	
	N10					AMPCO 26	
	Magnesium-based alloys						
	N6	3.5101	EN-MC35110	G-MgZn 4 SE 1 Zr 1	EN-MCMgZn4RE1Zr, G-MgZn4SE1Zr1		
	N6	3.5103	EN-MC65120	G-MgSE 3 Zn 2 Zr 1	EN-MCMgRE3Zn2Zr, G-MgSE3Zn2Zr1		
	N6	3.5106	EN-MC65210	G-MgAg 3 SE 2 Zr 1	EN-MCMgRE2Ag2Zr, G-MgAg3SE2Zr1		
	N6	3.5161		MgZn6Zr, MgZn 6 Zr F 29	MgZn6Zr, MgZn6Zr F29		
	N6	3.5200		MgMn2	MgMn2		
	N6	3.5312		MgAl3Zn	MgAl3Zn		
	N6	3.5470	EN-MC21320	MgAl4Si1	EN-MCMgAl4Si		
	N6	3.5612		MgAl6Zn	MgAl6Zn		
	N6	3.5632	EN-MC21150	G-MgAl 6 Zn 3	G-MgAl6Zn3	AZ63	
	N6	3.5662		G-MgAl 6	G-MgAl6		
	N6	3.5812	EN-MC21110	G-MgAl 8 Zn 1	G-MgAl8Zn1	AZ81 hp	
	N6	3.5912	EN-MC21120	GD-MgAl 9 Zn 1	GD-MgAl9Zn1	AZ91	

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	Pb2		A53-707, CuSn12					Amcoloy 712, B505
			CuSn7Pb6Zn4					C93200
	LG2		CuPb5Sn5Zn5					C83600
	LG1							
	LB2		CuPb10Sn10					C93700
	LB1							C93800
	LB5		CuPb20Sn5					C94100
	CC 102			CuCrZr				C18200
								AMPCO 8
								AMPCO 6
								AMPCO 21
								AMPCO 26
	RZ5, MAG5, MAG9, TZ6		G-Z4TR, ZH62					ZE41
	ZRE1, MAG6		G-TR3Z2					EZ33
	MSR, QE22		G-Ag2, 5					QE22
	ZW1, ZW3, ZW6, ZW21, MAG 161, MAG 131, MAG 141, MAG 151							M1
	MAG 101, AM503		G-M2					
	AZ31, MAG 111		G-A3Z1, AZ31					52, 510
			G-A4S1					
	MAG121, AZM		G-A6Z1, AZ61					520, 531
			AZ63					
	MAG1, MAG2, AZ80, AZ81, A8		G-A9, AZ81	AZ81 hp			AZ81 hp	AZ81
	AZ91, MAG3, MAG7		G-A9Z1, AZ91	AZ91 hp				HK31

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
S	**Titanium and titanium alloys**						
	S6	3.7025		Ti 1	Ti 99.8	TitaniumGrade1	
	S7	3.7115.1		TiAl 5 Sn 2	TiAl5Sn2.5		
	S6	3.7124		TiCu2	TiCu2		
	S7	3.7164, 3.7165		TiAl 6 V 4	TiAl6V4	TitaniumGrade5	
	Ni/Co-based heat-resistant alloys						
	S3	2.4360		NiCu30Fe	NiCu30	Monel 400	
	S4	2.4375		NiCu30Al	NiCu30Al3Ti	Monel K500	
	S3	2.4630		NiCr20Ti		Nimonic 75	
	S3	2.4642		NiCr30Fe		Inconel 690, Alloy 690	
	S4	2.4668		NiCr19Fe19NbMo, NiCr19Fe19Nb5Mo3, NiCr19NbMo	NiCr19Nb5Mo3	Inconel 718, Udimet 630	
	S4	2.4669		NiCr15Fe7TiAl, Alloy X-750	NiCr15Fe7Ti2Al	Inconel X-750, Alloy X-750	
	S3	2.4856		NiCr22Mo9Nb, Alloy 625	NiCr22Mo9Nb	Inconel 625	
	S3	2.4858		NiCr21Mo, Alloy 825	NiFe30Cr21Mo3	Incoloy 825	
	S4	DIN 2.4698					
	S4	DIN 2.4654					
H	**Hardened cast iron**						
	H4	0.9640		G-X300CrMoNi1521	GX300CrMoNi15-2-1		
	H4	0.9645		G-X260CrMoNi2021	GX260CrMoNi20-2-1		
	H4	0.9650		G-X260Cr27	GX260Cr27		
	H4	0.9655		G-X300CrMo271	GX300CrMo27-1		
	Chilled cast iron						
	H4	0.9620		G-X260NiCr42	GX260NiCr42	Ni-Hard 2	
	H4	0.9625		G-X330NiCr42	GX330NiCr42	Ni-Hard 1	
	H4	0.9630		G-X300CrNiSi952	GX300CrNiSi952	Ni-Hard 4	
	H4	0.9635		G-X300CrMo153	GX300CrMo15-3		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	TA.1		T-35			Ti-P01		R2050
								R54620
	TA.21, TA.22, TA.23, TA.24, TA.52, TA.53, TA.54, TA.55, TA.58		T-U2			Ti-P11		
	TA.10, TA.11, TA.12, TA.13, TA.28, TA.56		T-A6V			Ti-P63		4911, 4928, 4935, 4954, 4965, 4967, 6AL4V
	3072-76, NA13		NU30					Monel 400
	3072-76, HC202, 3146, Na18							AMS 4676, Monel K500
	HR5, 703 B, 203-4		NC 20 T					Nitronic 75, Nimonic 90/120
								Inconel 690
	HR 8		NC 19 FeNb					Inconel 718
	HR 505		NC 15 FeTNb					5542G, Inconel X-750
			NC 22 FeDNB					Incoloy 825
	3072-76		NC 21 FeDU					
								Hastelloy C
								Waspaloy
	Grade3A, Grade3B, BS4844							
	Grade3C							
	Grade3D				0466			A532111A 25% CR
	Grade3E							A532111A 25% CR
	Grade2A, BS4844 (1986) 2A				0512			Ni hard 2
	Grade2B, BS4844 (1986) 2B				0513			Ni hard 1
	Grade2C, Grade2D, Grade2E, BS4844 (1986) 2E				0457			Ni hard 4
	Grade3A;B, Grade3B							

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
0	**Thermosetting plastic**						
	02					EP, epoxide, epoxy	
	02					Bakelite	
	02					Pertinax	
	02					Resitex	
	Thermoplastic						
	01					PMMA, polymethyl metacrylate, Plexiglass, acrylic glass	
	01					PC, polycarbonate, Makrolon	
	01					PA, polyacrylamide	

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
								Epoxy, Bakelite
								Phenolic
								Phenolic w/glass
								Resitex
								Plexiglas, acrylic, polycarbonate
								UHMW
								Acetal plastics, Delrin, Celcon, Teflon, nylon

Hardness comparison table
Tensile strength, Brinell, Vickers and Rockwell hardness (extract from DIN 50150)

Tensile strength R_m N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRC
255	80	76,0	
270	85	80,7	
285	90	85,5	
305	95	90,2	
320	100	95,0	
335	105	99,8	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	156	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	235	223	
770	240	228	20,3
785	245	233	21,3
800	250	238	22,2
820	255	242	23,1
835	260	247	24,0
850	265	252	24,8
865	270	257	25,6
880	275	261	26,4
900	280	266	27,1
915	285	271	27,8
930	290	276	28,5
950	295	280	29,2
965	300	285	29,8
995	310	295	31,0
1030	320	304	32,2
1060	330	314	33,3
1095	340	323	34,4
1125	350	333	35,5
1155	360	342	36,6
1190	370	352	37,7
1220	380	361	38,8
1255	390	371	39,8
1290	400	380	40,8
1320	410	390	41,8
1350	420	399	42,7
1385	430	409	43,6

Tensile strength R_m N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRC
1420	440	418	44,5
1455	450	428	45,3
1485	460	437	46,1
1520	470	447	46,9
1555	480	(456)	47,7
1595	490	(466)	48,4
1630	500	(475)	49,1
1665	510	(485)	49,8
1700	520	(494)	50,5
1740	530	(504)	51,1
1775	540	(513)	51,7
1810	550	(523)	52,3
1845	560	(532)	53,0
1880	570	(542)	53,6
1920	580	(551)	54,1
1955	590	(561)	54,7
1995	600	(570)	55,2
2030	610	(580)	55,7
2070	620	(589)	56,3
2105	630	(599)	56,8
2145	640	(608)	57,3
2180	650	(618)	57,8
	660		58,3
	670		58,8
	680		59,2
	690		59,7
	700		60,1
	720		61,0
	740		61,8
	760		62,5
	780		63,3
	800		64,0
	820		64,7
	840		65,3
	860		65,9
	880		66,4
	900		67,0
	920		67,5
	940		68,0

Any hardness values converted on the basis of this table will be approximate only.
See DIN 50150.
Values in brackets are theoretically calculated values.

Material property	Unit/test method	Symbol
Tensile strength	N/mm²	R_m
Vickers hardness	Diamond pyramid 136° Testing force F ≥ 98 N	HV
Brinell hardness Calculated from: HB = 0.95 × HV	$0.102 \times F/D^2 = 30$ N/mm² F = testing force in N D = sphere diameter in mm	HB
Rockwell hardness C	Diamond cone 120° Overall testing force 1471 ± 9 N	HRC

ISO tolerances

Nominal size range in mm	Tolerances* for external dimensions																
	d11	e8	h5	h6	h7	h8	h9	h10	h11	h12	js14	js16	k6	k10	k11	k12	m7
> 3	−20 −80	−14 −28	0 −4	0 −6	0 −10	0 −14	0 −25	0 −40	0 −60	0 −100	+125 −125	+300 −300	+6 0	+40 0	+60 0	+100 0	+12 +2
> 3 ≤ 6	−30 −105	−20 −38	0 −5	0 −8	0 −12	0 −18	0 −30	0 −48	0 −75	0 −120	+150 −150	+375 −375	+9 +1	+48 0	+75 0	+120 0	+16 +4
> 6 ≤ 10	−40 −130	−25 −47	0 −6	0 −9	0 −15	0 −22	0 −36	0 −58	0 −90	0 −150	+180 −180	+450 −450	+10 +1	+58 0	+90 0	+150 0	+21 +6
> 10 ≤ 18	−50 −160	−32 −59	0 −8	0 −11	0 −18	0 −27	0 −43	0 −70	0 −110	0 −180	+215 −215	+550 −550	+12 +1	+70 0	+110 0	+180 0	+25 +7
> 18 ≤ 30	−65 −195	−40 −73	0 −9	0 −13	0 −21	0 −33	0 −52	0 −84	0 −130	0 −210	+260 −260	+650 −650	+15 +2	+84 0	+130 0	+210 0	+29 +8
> 30 ≤ 50	−80 −240	−50 −89	0 −11	0 −16	0 −25	0 −39	0 −62	0 −100	0 −160	0 −250	+310 −310	+800 −800	+18 +2	+100 0	+160 0	+250 0	+34 +9
> 50 ≤ 80	−100 −290	−60 −106	0 −13	0 −19	0 −30	0 −46	0 −74	0 −120	0 −190	0 −300	+370 −370	+950 −950	+21 +2	+120 0	+190 0	+300 0	+41 +11
> 80 ≤ 120	−120 −340	−72 −126	0 −15	0 −22	0 −35	0 −54	0 −87	0 −140	0 −220	0 −350	+435 −435	+1100 −1100	+25 +3	+140 0	+220 0	+350 0	+48 +13
> 120 ≤ 180	−145 −395	−85 −148	0 −18	0 −25	0 −40	0 −63	0 −100	0 −160	0 −250	0 −400	+500 −500	+1250 −1250	+28 +3	+160 0	+250 0	+400 0	+55 +15
> 180 ≤ 250	−170 −460	−100 −172	0 −20	0 −29	0 −46	0 −72	0 −115	0 −185	0 −290	0 −460	+575 −575	+1450 −1450	+33 +4	+185 0	+290 0	+460 0	+63 +17

Nominal size range in mm	Tolerances* for external dimensions
	z9
> 3	+51 +26
> 3 ≤ 6	+65 +35
> 6 ≤ 10	+78 +42
> 10 ≤ 14	+93 +50
> 14 ≤ 18	+103 +60
> 18 ≤ 24	+125 +73
> 24 ≤ 30	+140 +88
> 30 ≤ 40	+174 +112
> 40 ≤ 50	+196 +136
> 50 ≤ 65	+246 +172
> 65 ≤ 80	+284 +210
> 80 ≤ 100	+345 +258
> 100 ≤ 120	+397 +310
> 120 ≤ 140	+465 +365
> 140 ≤ 160	+515 +415
> 160 ≤ 180	+565 +465
> 180 ≤ 200	+635 +520

Nominal size range in mm	Tolerances* for internal dimensions			
	H6	H7	H11	H12
> 3	+6 0	+10 0	+60 0	+0,10 0
> 3 ≤ 6	+8 0	+12 0	+75 0	+0,12 0
> 6 ≤ 10	+9 0	+15 0	+90 0	+0,15 0
> 10 ≤ 18	+11 0	+18 0	+110 0	+0,18 0
> 18 ≤ 30	+13 0	+21 0	+130 0	+0,21 0
> 30 ≤ 50	+16 0	+25 0	+160 0	+0,25 0
> 50 ≤ 80	+19 0	+30 0	+190 0	+0,30 0
> 80 ≤ 120	+22 0	+35 0	+220 0	+0,35 0
> 120 ≤ 180	+25 0	+40 0	+250 0	+0,40 0
> 180 ≤ 250	+29 0	+46 0	+290 0	+0,46 0

* Tolerances in µm in accordance with DIN ISO 286



Walter General Catalogue

Contents

		Page
A – Turning catalogue		A 2
	A 1: ISO turning	A 4
	A 2: Grooving	A 269
	A 3: Thread turning	A 421
	A 4: General information – Turning	A 465
B – Drilling and threading catalogue		B 2 and B 706
Drilling	B 1: Solid drilling	B 4
	B 2: Counterboring and precision boring	B 494
	B 3: Reaming	B 651
	B 4: General information – Drilling	B 695
Threading	B 5: Tapping	B 708
	B 6: Thread forming	B 1023
	B 7: Thread milling	B 1083
	B 8: Threading dies	B 1135
	B 9: General information – Threading	B 1143
C – Milling catalogue		C 2
	C 1: Solid carbide, PCD and HSS milling tools	**C 4**
	C 2: Milling tools with indexable inserts	**C 274**
	C 3: General information – Milling	**C 667**
D – Adaptors catalogue		
	D 1: Stationary adaptors	D 3
	D 2: Rotating adaptors	D 50
	D 3: General information – Adaptors	D 159

Tools for milling

The competence brands Walter and Walter Prototyp offer you the ideal solution for your workpiece and material requirements.

A wide range of milling tool types and geometries: From mini milling cutters with diameters of 0.3 mm made from solid carbide to cartridge-type face milling cutters with indexable inserts with diameters of up to 315 mm. In addition, the wide variety of available cutting tool materials, such as coated carbide, PCD, CBN or HSS, ensures a broad range of applications.

1 MC341 Supreme
[from page C 37]
- Solid carbide high-performance milling cutters – Specially developed for steel
- For roughing with maximum metal removal rates and for finishing

2 ConeFit
[from page C 128]
- Modular solid carbide milling system with maximum concentricity
- In a wide range of shank variants and geometries
- Diameter range: 10–25 mm

3 Xtra·tec® F4080 octagon face milling cutters
[from page C 414]
- For face milling, circular interpolation milling, ramping and pocketing
- Cost-effective eight-edge indexable insert

4 Xtra·tec® F4042/F4042R shoulder milling cutters
[from page C 446]
- Wide product selection: Five insert sizes, corner radii from 0.2 to 6.0 mm
- Additional geometries – adapted to suit the specific machining task

5 Walter BLAXX F5055 slitting cutters
[from page C 532]
- Extremely high retaining forces as a result of the optimised top clamp
- System indexable insert: Suitable for use in slitting cutters and groove turning holders

6 Xtra·tec® F4038/F4138/F4238/F4338 porcupine milling cutters
[from page C 470]
- For shoulder milling and trimming in a wide variety of materials
- Diameter range: 20–125 mm; Cutting lengths: Up to 124 mm
- High machining volume



7 MC326 and MC726 Supreme
[from page C 68]
- Very long tool edge life and high cutting data
- Walter's own coating with tough, new substrate, WK40FT grade and special cutting edge treatment

8 Xtra·tec® F4033/F4047/F4048 face milling cutters
[from page C 396]
- Eight-edge system inserts for wide range of approach angles
- Maximum productivity for face milling thanks to highly positive geometries and stable, negative indexable inserts

9 MC416 Advance
[from page C 118]
- For all forms of five-axis machining applications as well as for machines with three axes and Z constant machining
- High-performance WJ30TF grade

10 Protostar® N50 multipurpose cutters
[from page C 21]
- Optimum productivity in trimming applications due to large number of teeth (6, 7 or 8)
- Optimum chip removal thanks to 50° helix angle

11 Walter BLAXX M3024 heptagon face milling cutters
[from page C 422]
- For machining long-chipping materials and cast iron materials
- 14-edge indexable insert and highest tooth pitch for maximum machining volume

12 Walter BLAXX F5041/F5141/F5241 shoulder milling cutters
[from page C 458]
- Unique indexable insert design with four cutting edges per insert and exact 90° corners at the shoulder
- Tangential indexable inserts with helical cutting edges for soft, positive cutting

13 M4002 High-feed face milling cutters
[from page C 424]
- High degree of cost efficiency thanks to system indexable inserts which can be used universally
- Low power requirement thanks to highly positive geometries

14 Walter BLAXX F5038/F5138 porcupine milling cutters
[from page C 480]
- Unique indexable insert design with four cutting edges per insert and exact 90° corners at the shoulder
- System indexable insert from the Walter BLAXX shoulder milling cutter range

15 M4574 chamfer milling cutters
[from page C 564]
- High degree of cost efficiency thanks to system indexable inserts which can be used universally
- For chamfering and back chamfering



C – Milling catalogue

C 1: Solid carbide, PCD and HSS milling tools

		Page
Solid carbide milling tools	Product range overview	C 7
	Designation key	C 12
	Walter Select – Solid carbide milling cutters	C 14
	Walter Select – Shoulder milling cutters	C 16
	Shoulder milling cutters	C 18
	Walter Select – Shoulder/slot milling cutters	C 32
	Shoulder/slot milling cutters	C 37
	Walter Select – Copy milling cutters	C 102
	Copy milling cutters	C 104
	Walter Select – Profiling cutters	C 122
	Profiling cutters	C 123
Solid carbide milling tools with ConeFit interface	Product range overview	C 128
	System overview	C 130
	Walter Select – Solid carbide milling cutters with ConeFit interface	C 132
	Walter Select – Shoulder milling cutters	C 134
	Shoulder milling cutters	C 135
	Walter Select – Shoulder/slot milling cutters	C 136
	Shoulder/slot milling cutters	C 138
	Walter Select – Copy milling cutters	C 150
	Copy milling cutters	C 151
	Walter Select – Profiling cutters	C 154
	Profiling cutters	C 156

		Page
HSS milling tools	Product range overview	C 165
	Walter Select – HSS milling tools	C 168
	Walter Select – Shoulder/slot milling cutters	C 170
	Shoulder/slot milling cutters	C 172
	Walter Select – Copy milling cutters	C 199
	Copy milling cutters	C 200
	Walter Select – Profiling cutters	C 202
	Profiling cutters	C 204
Brazed milling tools	Product range overview	C 210
	Designation key	C 211
	Walter Select – Brazed cutters	C 212
	Walter Select – Shoulder milling cutters	C 214
	Shoulder milling cutters	C 216
Technical information	Cutting data	C 222
	Feed determination	C 256
	Cutting speed: Correction factors	C 262
	Cutting tool materials	C 263
	Grade description	C 264
	Surfaces and coatings	C 265
	Type description	C 266
	Assembly instructions	C 270
	High-feed geometry	C 271
	Recommended copying and finishing application	C 272
	Maximum feed angle	C 272



Solid carbide milling tools product range overview
Shoulder milling cutters

Machining						
Helix angle	**45°**	**50°**	**30°**	**50°**	**60°**	**45°**
Designation	**H7073417 Protostar® Ti**	**H8082228 H8083128 Protostar® Ultra**	**H3178128 Protostar® Ultra**	**H3021138 H3023138 Protostar®**	**MC129 Advance**	**MC122 Advance**
Dia. range [mm]	16–25	3–25	5–16	3–25	6–20	2–25
Z	4–5	4–8	6–16	4–8	6	4–8
Corner radius [mm]	3–4	0–4	0	0–4	0	0
Page	C 18	C 19	C 20	C 21	C 22	C 23
						

Machining		
Helix angle	**30°**	
Designation	**MC111 Advance MC112 Advance**	**H3058917 H404491 H4044918 Protostar®**
Dia. range [mm]	2–25	0,4–25
Z	4	2–6
Corner radius [mm]	0–2	0–0,3
Page	C 26	C 30
		

Solid carbide milling tools product range overview
Shoulder/slot milling cutters

Machining						
Helix angle	**50°**	**45°**	**50°**	**35°**	**35° / 38°**	
Designation	**MC341 Supreme**	**H4033217 H4036217 H4133217 Proto·max™ST**	**H4034217 H4038217 H4134217 H4138217 Proto·max™ST**	**H4135217 H4137217 Proto·max™ST**	**H2034217 H2038217 H2134217 H2138217 Proto·max™Inox**	**MC251 Advance**
Dia. range [mm]	6–20	2–20	3–20	6–25	6–20	3–20
Z	4	3	4	5	4	4
Corner radius [mm]	0	0–0,4	0–4	0–4	0–4	0–6
Page	C 37	C 38	C 39	C 41	C 42	C 44
						

Machining						
Helix angle	**45°**	**30°**	**25°**	**30°**		**40°**
Designation	**H602311 H6023114 H602411 H602511 H602551 Protostar®**	**H901411 H901451 Protostar®**	**H602641 H602681 H602881 H6028818 Protostar®**	**MB266 Supreme**	**MB265 Supreme**	**H608411 H608771 H608871 H618911 Protostar®**
Dia. range [mm]	1–25	2–12	2–20	12–25	16–25	6–25
Z	2–3	1–2	2	3	3	3
Corner radius [mm]	0–0,5	0	0–4	0,5–4	2–4	0
Page	C 45	C 48	C 49	C 51	C 52	C 53
						

Solid carbide milling tools product range overview
Shoulder/slot milling cutters

Machining						
Helix angle	**40°**	**30°**	**50°**	**50°**	**30°**	
Designation	**H7073717 Protostar® Ti**	**H3183017 Protostar® Ti**	**H3070118 H3070318 H3071118 H3071318 H3170318 ... Tough Guys**	**H3094728 Protostar® Flash**	**H4044928 H8005728 H8005828 H8005928 H8015728 ... Protostar® Ultra**	**H3027419 H4044919 H8095919 Protostar®**
Dia. range [mm]	12–20	8–16	2–20	4–20	0,4–20	0,4–16
Z	4	4	3–4	4	2–4	2–4
Corner radius [mm]	0,2–4	0	0–4	0	0,05–2	0–1
Page	C 55	C 56	C 57	C 61	C 62	C 65
						

Machining						
Helix angle	**50°**	**50°**	**45°**	**30°**		**35°**
Designation	**MC326 Supreme MC726 Supreme**	**H3094718 Protostar® Flash**	**MC321 Advance MC322 Advance MC324 Advance**	**MC213 Advance MC216 Advance**	**MC716 Advance**	**MC232 Perform**
Dia. range [mm]	2–25	4–20	1–20	0,6–20	1,8–20	2–20
Z	3–5	4	3–5	2–4	2–3	2–4
Corner radius [mm]	0–4	0	0–2	0–1,5	0	0
Page	C 68	C 80	C 81	C 86	C 93	C 95
						

Solid carbide milling tools product range overview
Shoulder/slot milling cutters

Machining					
Helix angle	**45°**	**40°**	**30°**	**40°**	**30°**
Designation	**H3185378 H3186378 Protostar® Qmax**	**H3182378 H3183378 Protostar® Qmax**	**H3187278 Protostar® Qmax**	**H4189278 H4189378 Protostar® Qmax**	**H3180278 H4180378 Protostar® Qmax**
Dia. range [mm]	12–25	5–20	6–25	5–25	6–25
Z	5–8	4	3	4	4
Corner radius [mm]	0–4	0–4	0	0	0
Page	C 97	C 98	C 99	C 100	C 101
					

Solid carbide milling tools product range overview
Copy milling cutters

Machining						
Helix angle	**30°**					
Designation	**H602111 Protostar®**	**H404691 H4046918 Protostar®**	**H8004028 H8004128 H8004728 H8006428 ... Protostar® Ultra**	**H4046988 H8004788 Proto·max™Ultra**	**H4046928 H4046919 H8001119 H8001919 H8006419 H8016419 Protostar®**	**MC413 Advance MC416 Advance**
Dia. range [mm]	2–16	0,3–3	0,3–16	1–12	0,3–12	1–20
Z	2	2	2–4	2	2–4	2–4
Corner radius [mm]	1–8	0,15–1,5	0,15–8	0,5–6	0,15–6	0,5–10
Page	C 104	C 105	C 106	C 111	C 113	C 118
						

Solid carbide milling tools product range overview
Profiling cutters

Machining					
Helix angle	**0°**				
Designation	**MC500 Advance**	**MC501 Advance**	**MC502 Advance**	**MC503 Advance**	**MC504 Advance**
Dia. range [mm]	6–10	6–12	10	6–20	6–12
Z	4	4–6	4	3–4	4–6
Type	60°	90°	120°	R0,5mm-6mm	90°
Page	C 123	C 124	C 125	C 126	C 127
					

Designation key – Solid carbide milling tools

Example:

M	C	3	26	–	12.0	A	4	B	200	A	–	W	K	40	TF
1	2	3	4	5	6	7	8	9	10	11		Grade			

1	
Tool group	
M	Milling

2	
Generation	

3	
Tool type	
1	Shoulder milling cutters
2	Shoulder/slot/porcupine milling cutters helix angle ≤ 39°
3	Shoulder/slot/porcupine milling cutters helix angle ≥ 40°
4	Ball nose mill/ copy milling cutters
5	Profiling cutters
7	Slot drill mills/ circular interpolation mills

4		
Tool type		
00	Universal	Helix angle 0°, chamfer milling cutters 60°
01	Universal	Helix angle 0°, chamfer milling cutters 90°
02	Universal	Helix angle 0°, chamfer milling cutters 120°
03	Universal	Helix angle 0°, quadrant profiling cutters
04	Universal	Helix angle 0°, forward/backward deburrers
11	Universal	Helix angle 30°, type N
12	Universal	Helix angle 30°, type HSC
13	Universal	Helix angle 30°, type HSC, long version
16	Universal	Helix angle 30°, type 30
21	Universal	Helix angle 45°, short version
22	Universal	Helix angle 45°, type N
24	Universal	Helix angle 45°, type 45
26	Universal	Helix angle 50°, unequal groove depth, differential pitch
29	Universal	Helix angle 60°, type N, multipurpose cutter
32	Universal	Helix angle 35°
41	ISO P	Helix angle 50°, HPC, differential pitch
51	ISO M	Helix angle 35°/38°, without internal cooling
65	ISO N	Helix angle 30°, Al geometry, RAPAX G30 roughing profile, Axial internal cooling
66	ISO N	Helix angle 30°, Al geometry, Axial internal cooling

5	
Delimiters	
–	Metric
.	Inches

6	
Cutting diameter	

7	
Shank type	
A	Parallel shank
W	Weldon shank

8	
Number of teeth	

9	
Design standard	
A	DIN 6527 K
B	DIN 6527 L
P	P standard
L	P standard L
X	P standard XL

10	
Corner radius	

11	
Variant	
A	Neck length XS
B	Neck length S
C	Neck length M
J	Depth of cut S

Grade designation key
for solid carbide and HSS cutting tool materials

Example:

W	K	40	TF
Walter	1	2	3

1

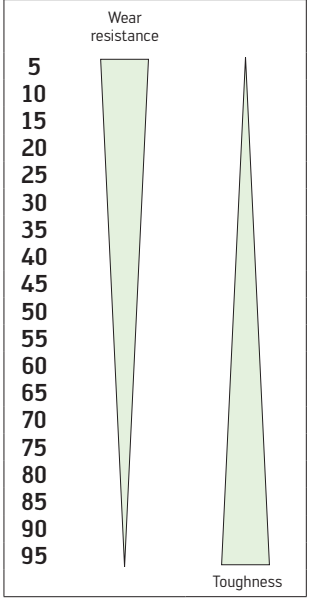
Substrate

Solid carbide
- B
- J
- K

HSS

2

Range of applications



3

Coating

TF	TiAlN
UU	Uncoated
CA	CrN
RC	TiAlN + AlTi
TZ	AlTiN + ZrN
ED	AlCrN

Walter Select – Solid carbide milling tools

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page C 671 onwards.

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

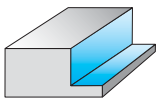
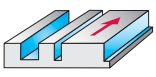
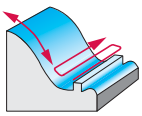
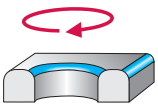
STEP 2

Select the **machining conditions**:

Machine stability, clamping system and workpiece		
very good	good	moderate
		

STEP 3

Select your **machining method** based on the main categories and subcategories and then go to the relevant Walter Select product range overview (see table, e.g. page C 16).

Machining method			
			
Shoulder milling – No corner radius – With corner radius	**Shoulder/slot milling** – No corner radius – With chamfer – With corner radius – With roughing profile	**Radius copy milling**	**Profile milling** – Chamfering and deburring – Corner rounding
Page C 16	Page C 32	Page C 102	Page C 122

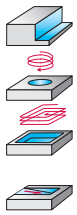
STEP 4

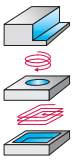
Select the appropriate tool for your **machining conditions** and then go to the ordering page.

Walter Select Solid carbide milling tools
Shoulder milling cutters

Machining

WALTER SELECT
●● Primary application
● Other application



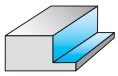


Helix angle	45°	50°	30°	50°	60°
Designation	H7073417 Protostar® Ti	H8082228 H8083128 Protostar® Ultra	H3178128 Protostar® Ultra	H3021138 H3023138 Protostar®	MC129 Advance
Dia. range [mm]	16–25	3–25	5–16	3–25	6–20
Z	4–5	4–8	6–16	4–8	6
Corner radius [mm]	3–4	0–4	0	0–4	0
Standard	P STANDARD XL	P STANDARD L DIN 6527			

STEP 5

Based on the **material group** to be machined, look for the appropriate **cutting speed** by referring to **a_e to D_c from page** C 222 (e.g. A) **onwards** and also the **VT feed group**.

Cutting data for solid carbide shoulder milling



Product family	λ
MC129	60°
Ø 6–20 mm	
Z = 6	
WJ30TF	

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Starting values for cutting speed v_c [m/min] a_e / D_c 1/2	1/4	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		191	232	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		261	317	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		222	270	A
		C > 0.55%	Annealed	190	640	P4		222	270	A
		C > 0.55%	Heat-treated	300	1010	P5		157	191	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6		222	270	A
	Low-alloyed steel	Annealed		175	590	P7		222	270	A
		Heat-treated		285	960	P8		138	168	A
		Heat-treated		380	1280	P9		129	157	A
		Heat-treated		430	1480	P10		109	133	A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		222	270	A
		Hardened and tempered		300	1010	P12		157	191	A
		Hardened and tempered		380	1280	P13		129	157	A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		95	116	A
				330	1110	P15				A

STEP 6

Based on the feed group, determine the correct **feed value (page** C 256 **a_e to D_c)** for your **machining conditions**.

Feed determination

The specified feed rates are average standard va
For special applications, adjustment is recomme

A Material groups ISO P, ISO K and titanium alloys

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 0,3 mm	Ø 0,5 mm	Ø 1 mm	Ø 2 mm	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12
0,01	0,02	0,02	0,03	0,06	0,09	0,12	0,15	0,15	0,20	
0,05	0,01	0,01	0,02	0,04	0,07	0,10	0,12	0,15	0,20	
0,1	0,01	0,01	0,02	0,03	0,05	0,08	0,10	0,15	0,20	0,20
0,2	0,01	0,01	0,01	0,03	0,04	0,06	0,08	0,15	0,18	0,20
0,5		0,01	0,01	0,02	0,03	0,05	0,07	0,12	0,15	0,15
1			0,01	0,02	0,03	0,04	0,06	0,09	0,12	0,12
2				0,02	0,03	0,03	0,05	0,08	0,11	0,12
3					0,02	0,02	0,04	0,07	0,10	0,12
5						0,02	0,04	0,07	0,10	0,12
6							0,03	0,06	0,08	0,10
8								0,05	0,07	0,09
10									0,06	0,08
12										0,07
14										
16										
18										
20										
25										
32										

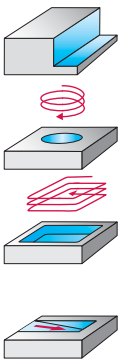
Walter Select Solid carbide milling tools
Shoulder milling cutters

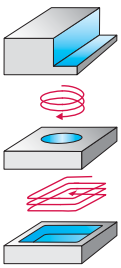
Machining

WALTER SELECT

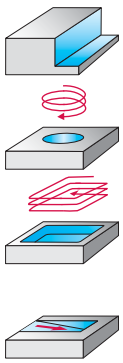
●● Primary application

● Other application





Helix angle	45°	50°	30°	50°	60°	
Designation	**H7073417 Protostar® Ti**	**H8082228 H8083128 Protostar® Ultra**	**H3178128 Protostar® Ultra**	**H3021138 H3023138 Protostar®**	**MC129 Advance**	
Dia. range [mm]	16–25	3–25	5–16	3–25	6–20	
Z	4–5	4–8	6–16	4–8	6	
Corner radius [mm]	3–4	0–4	0	0–4	0	
Standard	P STANDARD XL	P STANDARD L DIN 6527 L	DIN 6527 L	DIN 6527 L	DIN 6527 L	
Shank	DIN 6535 HA	DIN 6535 HA	DIN 6535 HB	DIN 6535 HA	DIN 6535 HA	
Page	C 18	C 19	C 20	C 21	C 22	
						
P Steel				●●	●●	
M Stainless steel				●	●	
K Cast iron					●	
N NF metals						
S Materials with difficult cutting properties	●●			●	●	
H Hard materials		●●	●●			
O Other						

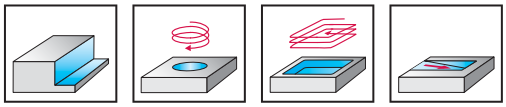


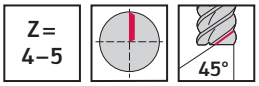
	45°	30°	
	MC122 Advance	MC111 Advance MC112 Advance	H3058917 H404491 H4044918 Protostar®
	2–25	2–25	0,4–25
	4–8	4	2–6
	0	0–2	0–0,3
	DIN 6527 L P STANDARD L P STANDARD XL	DIN 6527 K DIN 6527 L P STANDARD XL P STANDARD L	P STANDARD MINI P STANDARD S
	DIN 6535 HA DIN 6535 HB	DIN 6535 HA DIN 6535 HB	DIN 6535 HA
	C 23	C 26	C 30
			
	●●	●●	●●
	●	●	●
	●	●	
		●	●●
	●	●	

Solid carbide shoulder milling cutters
H7073417
Protostar® Ti



– Type Ti 45 extra long

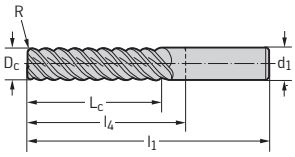




	P	M	K	N	S	H	O
ACN					●●		

P STANDARD XL

Shank DIN 6535 HA



Designation ACN	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H7073417-16X50-3	16	3	50	115	67	16	4
H7073417-16X90-3	16	3	90	145	97	16	4
H7073417-16X50	16	4	50	115	67	16	4
H7073417-16X90	16	4	90	145	97	16	4
H7073417-20X55-3	20	3	55	125	75	20	4
H7073417-20X100-3	20	3	100	170	120	20	4
H7073417-20X55	20	4	55	125	75	20	4
H7073417-20X100	20	4	100	170	120	20	4
H7073417-25X90-3	25	3	90	153	97	25	5
H7073417-25X125-3	25	3	125	188	132	25	5
H7073417-25X90	25	4	90	153	97	25	5
H7073417-25X125	25	4	125	188	132	25	5

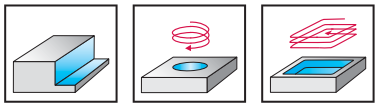
Shoulder milling $a_e \leq 0.3 \times D_c$

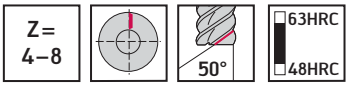
XIII D 1 C 222 C 264

Solid carbide shoulder milling cutters
H8083128 / H8082228
Protostar® Ultra



– Type H 50

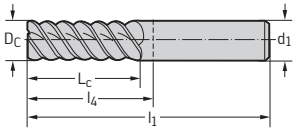




TAX	P	M	K	N	S	H	O
						●●	

P STANDARD L

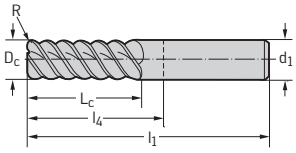
Shank DIN 6535 HA



Designation TAX	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8083128-3X8	3	8	57	21	6	4
H8083128-4X11	4	11	57	21	6	4
H8083128-5X13	5	13	57	21	6	4
H8083128-6X13	6	13	57	21	6	6
H8083128-6X26	6	26	70	34	6	6
H8083128-8X19	8	19	63	27	8	6
H8083128-8X36	8	36	80	44	8	6
H8083128-10X22	10	22	72	32	10	6
H8083128-10X46	10	46	100	60	10	6
H8083128-12X26	12	26	83	38	12	6
H8083128-12X55	12	55	110	65	12	6
H8083128-16X32	16	32	92	44	16	6
H8083128-16X66	16	66	130	82	16	6
H8083128-20X38	20	38	104	54	20	8
H8083128-20X80	20	80	145	95	20	8
H8083128-25X45	25	45	121	65	25	8
H8083128-25X90	25	90	153	97	25	8

DIN 6527 L

Shank DIN 6535 HA



Designation TAX	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8082228-3-0.5	3	0,5	8	57	21	6	4
H8082228-4-0.5	4	0,5	11	57	21	6	4
H8082228-4-1	4	1	11	57	21	6	4
H8082228-5-0.5	5	0,5	13	57	21	6	6
H8082228-5-1	5	1	13	57	21	6	6
H8082228-6-0.5	6	0,5	13	57	21	6	6
H8082228-6-1	6	1	13	57	21	6	6
H8082228-8-0.5	8	0,5	19	63	27	8	6
H8082228-8-1	8	1	19	63	27	8	6
H8082228-8-2	8	2	19	63	27	8	6
H8082228-10-0.5	10	0,5	22	72	32	10	6
H8082228-10-1	10	1	22	72	32	10	6
H8082228-10-1.5	10	1,5	22	72	32	10	6
H8082228-10-2	10	2	22	72	32	10	6
H8082228-12-1	12	1	26	83	38	12	6
H8082228-12-1.5	12	1,5	26	83	38	12	6
H8082228-12-3	12	3	26	83	38	12	6
H8082228-16-1.5	16	1,5	32	92	44	16	6
H8082228-16-2	16	2	32	92	44	16	6
H8082228-16-4	16	4	32	92	44	16	6
H8082228-20-1.5	20	1,5	38	104	54	20	8
H8082228-20-2	20	2	38	104	54	20	8
H8082228-20-4	20	4	38	104	54	20	8

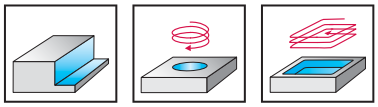
Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

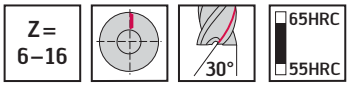
XIII D 1 C 223 C 264

Solid carbide shoulder milling cutters
H3178128
Protostar® Ultra



– Type H 30

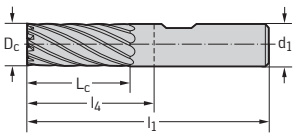




TAX	P	M	K	N	S	H	O
						●●	

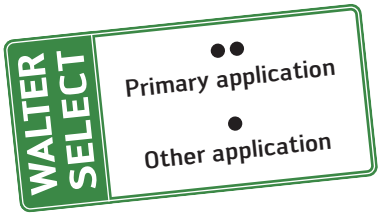
DIN 6527 L

Shank DIN 6535 HB



Designation TAX	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H3178128-5	5	13	57	21	6	6
H3178128-6	6	13	57	21	6	6
H3178128-8	8	19	63	27	8	8
H3178128-10	10	22	72	32	10	10
H3178128-12	12	26	83	38	12	12
H3178128-16	16	32	92	44	16	16

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.05 \times D_c$

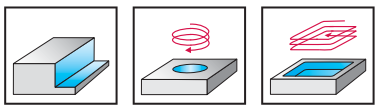


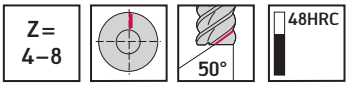
XIII D 1 C 223 C 264

Solid carbide shoulder milling cutters
H3021138 / H3023138
Protostar®



– Type N 50

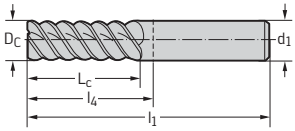




TAX	P	M	K	N	S	H	O
	●●	●			●		

DIN 6527 L

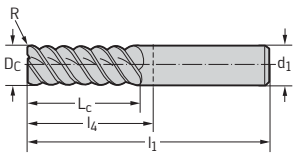
Shank DIN 6535 HA



Designation TAX	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3021138-3	3	8	57	21	6	4
H3021138-4	4	11	57	21	6	4
H3021138-5	5	13	57	21	6	5
H3021138-6	6	13	57	21	6	6
H3021138-8	8	19	63	27	8	6
H3021138-10	10	22	72	32	10	6
H3021138-12	12	26	83	38	12	6
H3021138-16	16	32	92	44	16	6
H3021138-20	20	38	104	54	20	8
H3021138-25	25	45	121	65	25	8

DIN 6527 L

Shank DIN 6535 HA



Designation TAX	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3023138-6-0.5	6	0,5	13	57	21	6	6
H3023138-8-0.5	8	0,5	19	63	27	8	6
H3023138-8-1	8	1	19	63	27	8	6
H3023138-10-0.5	10	0,5	22	72	32	10	6
H3023138-10-1	10	1	22	72	32	10	6
H3023138-10-1.5	10	1,5	22	72	32	10	6
H3023138-10-2	10	2	22	72	32	10	6
H3023138-12-0.5	12	0,5	26	83	38	12	6
H3023138-12-1	12	1	26	83	38	12	6
H3023138-12-1.5	12	1,5	26	83	38	12	6
H3023138-12-2	12	2	26	83	38	12	6
H3023138-12-3	12	3	26	83	38	12	6
H3023138-16-0.5	16	0,5	32	92	44	16	6
H3023138-16-1	16	1	32	92	44	16	6
H3023138-16-2	16	2	32	92	44	16	6
H3023138-16-3	16	3	32	92	44	16	6
H3023138-16-4	16	4	32	92	44	16	6
H3023138-20-1	20	1	38	104	54	20	8
H3023138-20-2	20	2	38	104	54	20	8
H3023138-20-3	20	3	38	104	54	20	8
H3023138-20-4	20	4	38	104	54	20	8
H3023138-25-1	25	1	45	121	65	25	8
H3023138-25-2	25	2	45	121	65	25	8
H3023138-25-4	25	4	45	121	65	25	8

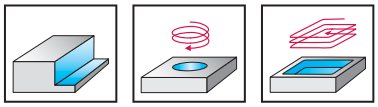
Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

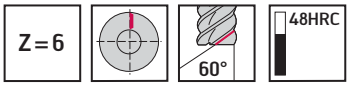
XIII D 1 C 223 C 264

Solid carbide shoulder milling cutters
MC129 Advance



– Type N 60

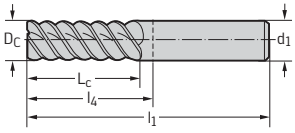




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

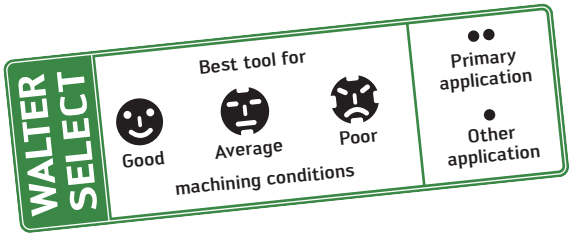
DIN 6527 L

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC129-06.0A6B-	6	13	57	21	6	6	●●
MC129-08.0A6B-	8	19	63	27	8	6	●●
MC129-10.0A6B-	10	22	72	32	10	6	●●
MC129-12.0A6B-	12	26	83	38	12	6	●●
MC129-14.0A6B-	14	26	83	38	14	6	●●
MC129-16.0A6B-	16	32	92	44	16	6	●●
MC129-20.0A6B-	20	38	104	54	20	6	●●

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$
Ordering example for the WJ30TF grade: MC129-06.0A6B-WJ30TF

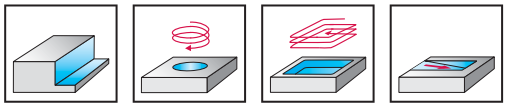


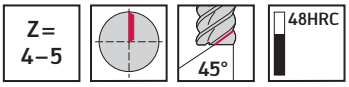
XIII
D 1
C 224
C 264

Solid carbide shoulder milling cutters
MC122 Advance



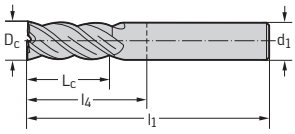
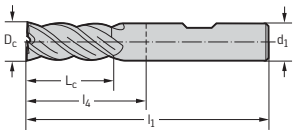
– Type N 45





	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

DIN 6527 L

	Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
Shank DIN 6535 HA	MC122-02.0A4B-	2	7	57	21	6	4	●
	MC122-03.0A4B-	3	8	57	21	6	4	●
	MC122-04.0A4B-	4	11	57	21	6	4	●
	MC122-05.0A4B-	5	13	57	21	6	4	●
	MC122-06.0A4B-	6	13	57	21	6	4	●
	MC122-08.0A4B-	8	19	63	27	8	4	●
	MC122-10.0A4B-	10	22	72	32	10	4	●
	MC122-12.0A4B-	12	26	83	38	12	4	●
	MC122-14.0A4B-	14	26	83	38	14	4	●
	MC122-16.0A4B-	16	32	92	44	16	4	●
	MC122-18.0A5B-	18	32	92	44	18	5	●
	MC122-20.0A5B-	20	38	104	54	20	5	●
Shank DIN 6535 HB	MC122-02.0W4B-	2	7	57	21	6	4	●
	MC122-03.0W4B-	3	8	57	21	6	4	●
	MC122-04.0W4B-	4	11	57	21	6	4	●
	MC122-05.0W4B-	5	13	57	21	6	4	●
	MC122-06.0W4B-	6	13	57	21	6	4	●
	MC122-08.0W4B-	8	19	63	27	8	4	●
	MC122-10.0W4B-	10	22	72	32	10	4	●
	MC122-12.0W4B-	12	26	83	38	12	4	●
	MC122-14.0W4B-	14	26	83	38	14	4	●
	MC122-16.0W4B-	16	32	92	44	16	4	●
	MC122-20.0W5B-	20	38	104	54	20	5	●
	MC122-25.0A5B-	25	45	121	65	25	5	●

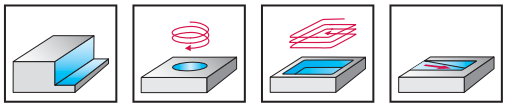
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$
Ordering example for the WJ30TF grade: MC122-02.0A4B-WJ30TF

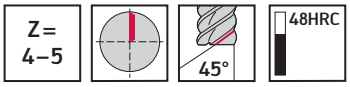
XIII D 1 C 225 C 264

Solid carbide shoulder milling cutters
MC122 Advance



– Type N 45 extra long



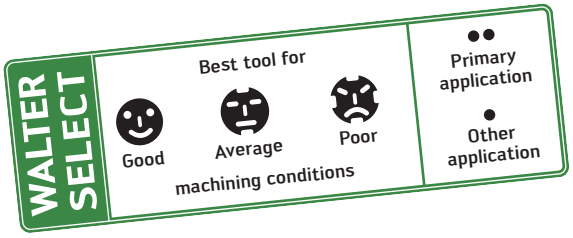


	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

P STANDARD L

	Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
Shank DIN 6535 HA	MC122-06.0A4L-	6	22	65	29	6	4	●●
	MC122-08.0A4L-	8	28	80	44	8	4	●●
	MC122-10.0A4L-	10	32	100	60	10	4	●●
	MC122-12.0A4L-	12	40	100	55	12	4	●●
	MC122-14.0A4L-	14	50	104	59	14	4	●●
	MC122-16.0A5L-	16	50	115	67	16	5	●●
	MC122-20.0A5L-	20	55	125	75	20	5	●●
Shank DIN 6535 HB	MC122-06.0W4L-	6	22	65	29	6	4	●●
	MC122-08.0W4L-	8	28	80	44	8	4	●●
	MC122-10.0W4L-	10	32	100	60	10	4	●●
	MC122-12.0W4L-	12	40	100	55	12	4	●●
	MC122-14.0W4L-	14	50	104	59	14	4	●●
	MC122-16.0W5L-	16	50	115	67	16	5	●●
	MC122-20.0W5L-	20	55	125	75	20	5	●●

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.05 \times D_c$
Ordering example for the WJ30TF grade: MC122-10.0A4L-WJ30TF

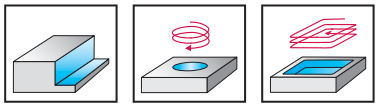


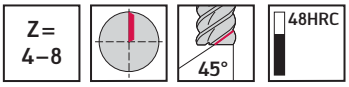
XIII D 1 C 225 C 264

Solid carbide shoulder milling cutters
MC122 Advance



– Type N 45 extra long





	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

P STANDARD XL

	Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
Shank DIN 6535 HA	MC122-06.0A4XK-	6	35	80	44	6	4	
	MC122-08.0A4XK-	8	45	97	61	8	4	
	MC122-10.0A4XK-	10	50	118	78	10	4	
	MC122-12.0A4XK-	12	60	120	75	12	4	
	MC122-16.0A5XK-	16	65	130	82	16	5	
	MC122-16.0A5XL-	16	80	145	97	16	5	
	MC122-20.0A6XK-	20	75	145	95	20	6	
	MC122-20.0A6XL-	20	100	170	120	20	6	
	MC122-25.0A8XK-	25	90	153	97	25	8	
	MC122-25.0A8XL-	25	125	188	132	25	8	
Shank DIN 6535 HB	MC122-04.0W4XK-	4	20	65	29	6	4	
	MC122-05.0W4XK-	5	25	65	29	6	4	
	MC122-06.0W4XK-	6	35	80	44	6	4	
	MC122-08.0W4XK-	8	45	97	61	8	4	
	MC122-10.0W4XK-	10	50	118	78	10	4	
	MC122-12.0W4XK-	12	60	120	75	12	4	
	MC122-14.0W4XK-	14	70	124	79	14	4	
	MC122-16.0W5XK-	16	65	130	82	16	5	
	MC122-16.0W5XL-	16	80	145	97	16	5	
	MC122-18.0W5XK-	18	90	155	107	18	5	
	MC122-20.0W6XK-	20	75	145	95	20	6	
	MC122-20.0W6XL-	20	100	170	120	20	6	
	MC122-25.0W8XK-	25	90	153	97	25	8	
	MC122-25.0W8XL-	25	125	188	132	25	8	

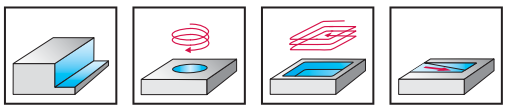
Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.05 \times D_c$
Ordering example for the WJ30TF grade: MC122-10.0A4XK-WJ30TF

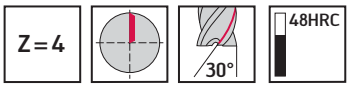
XIII D 1 C 225 C 264

Solid carbide shoulder milling cutters
MC111 Advance



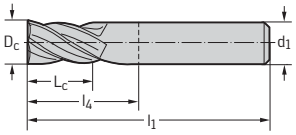
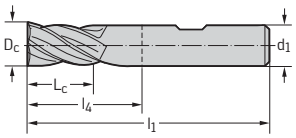
– Type N 30



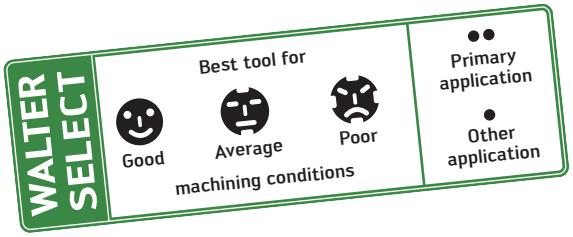


	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

DIN 6527 K

Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
Shank DIN 6535 HA							
							
MC111-02.0A4A-	2	4	50	14	6	4	☹
MC111-03.0A4A-	3	5	50	14	6	4	☹
MC111-04.0A4A-	4	8	54	18	6	4	☹
MC111-05.0A4A-	5	9	54	18	6	4	☹
MC111-06.0A4A-	6	10	54	18	6	4	☹
MC111-07.0A4A-	7	11	58	22	8	4	☹
MC111-08.0A4A-	8	12	58	22	8	4	☹
MC111-10.0A4A-	10	14	66	26	10	4	☹
MC111-12.0A4A-	12	16	73	28	12	4	☹
MC111-14.0A4A-	14	18	75	30	14	4	☹
MC111-16.0A4A-	16	22	82	34	16	4	☹
MC111-18.0A4A-	18	24	84	36	18	4	☹
MC111-20.0A4A-	20	26	92	42	20	4	☹
Shank DIN 6535 HB							
							
MC111-02.0W4A-	2	4	50	14	6	4	☹
MC111-03.0W4A-	3	5	50	14	6	4	☹
MC111-04.0W4A-	4	8	54	18	6	4	☹
MC111-05.0W4A-	5	9	54	18	6	4	☹
MC111-06.0W4A-	6	10	54	18	6	4	☹
MC111-07.0W4A-	7	11	58	22	8	4	☹
MC111-08.0W4A-	8	12	58	22	8	4	☹
MC111-10.0W4A-	10	14	66	26	10	4	☹
MC111-12.0W4A-	12	16	73	28	12	4	☹
MC111-14.0W4A-	14	18	75	30	14	4	☹
MC111-16.0W4A-	16	22	82	34	16	4	☹
MC111-18.0W4A-	18	24	84	36	18	4	☹
MC111-20.0W4A-	20	26	92	42	20	4	☹

Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$
Ordering example for the WJ30TF grade: MC111-10.0A4A-WJ30TF

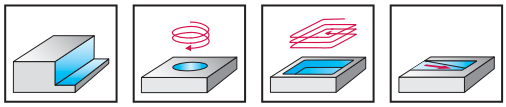


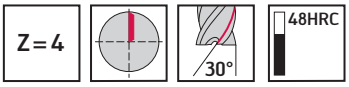
XIII D 1 C 225 C 264

Solid carbide shoulder milling cutters
MC111 Advance



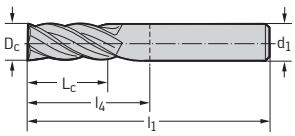
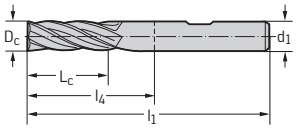
– Type N 30





	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

DIN 6527 L

Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
Shank DIN 6535 HA							
							
MC111-02.0A4B-	2	7	57	21	6	4	●
MC111-02.5A4B-	2,5	8	57	21	6	4	●
MC111-03.0A4B-	3	8	57	21	6	4	●
MC111-03.5A4B-	3,5	10	57	21	6	4	●
MC111-04.0A4B-	4	11	57	21	6	4	●
MC111-04.5A4B-	4,5	11	57	21	6	4	●
MC111-05.0A4B-	5	13	57	21	6	4	●
MC111-05.5A4B-	5,5	13	57	21	6	4	●
MC111-06.0A4B-	6	13	57	21	6	4	●
MC111-06.5A4B-	6,5	16	63	27	8	4	●
MC111-07.0A4B-	7	16	63	27	8	4	●
MC111-08.0A4B-	8	19	63	27	8	4	●
MC111-09.0A4B-	9	19	72	32	10	4	●
MC111-10.0A4B-	10	22	72	32	10	4	●
MC111-12.0A4B-	12	26	83	38	12	4	●
MC111-14.0A4B-	14	26	83	38	14	4	●
MC111-16.0A4B-	16	32	92	44	16	4	●
MC111-18.0A4B-	18	32	92	44	18	4	●
MC111-20.0A4B-	20	38	104	54	20	4	●
Shank DIN 6535 HB							
							
MC111-02.0W4B-	2	7	57	21	6	4	●
MC111-02.5W4B-	2,5	8	57	21	6	4	●
MC111-03.0W4B-	3	8	57	21	6	4	●
MC111-04.0W4B-	4	11	57	21	6	4	●
MC111-05.0W4B-	5	13	57	21	6	4	●
MC111-06.0W4B-	6	13	57	21	6	4	●
MC111-07.0W4B-	7	16	63	27	8	4	●
MC111-08.0W4B-	8	19	63	27	8	4	●
MC111-09.0W4B-	9	19	72	32	10	4	●
MC111-10.0W4B-	10	22	72	32	10	4	●
MC111-12.0W4B-	12	26	83	38	12	4	●
MC111-14.0W4B-	14	26	83	38	14	4	●
MC111-16.0W4B-	16	32	92	44	16	4	●
MC111-18.0W4B-	18	32	92	44	18	4	●
MC111-20.0W4B-	20	38	104	54	20	4	●
MC111-25.0W4B-	25	45	121	65	25	4	●

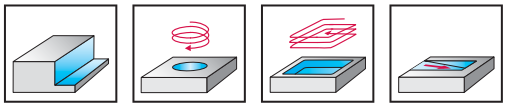
Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WJ30TF grade: MC111-10.0A4B-WJ30TF

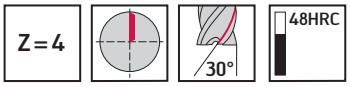
XIII D 1 C 225 C 264

Solid carbide shoulder milling cutters MC112 Advance



– Long reach
– Type HSC 30

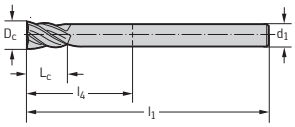




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

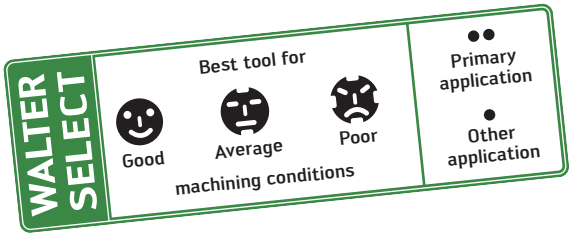
P STANDARD XL

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30TF
MC112-06.3A4X-	6,3	6	100	64	6	4	●●
MC112-08.3A4X-	8,3	8	100	64	8	4	●●
MC112-10.3A4X-	10,3	10	150	110	10	4	●●
MC112-12.5A4X-	12,5	12	150	105	12	4	●●
MC112-14.5A4X-	14,5	14	150	105	14	4	●●
MC112-16.5A4X-	16,5	16	150	102	16	4	●●

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Shank tolerance h6 with shank diameter $d_1 > 10$ mm
Ordering example for the WJ30TF grade: MC112-10.3A4X-WJ30TF

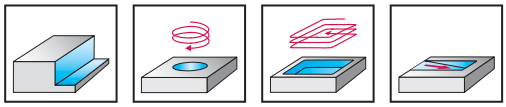


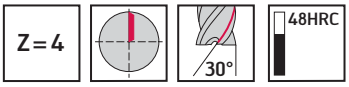
XIII D 1 C 225 C 264

Solid carbide shoulder milling cutters
MC112 Advance



– Long reach
– Type HSC 30

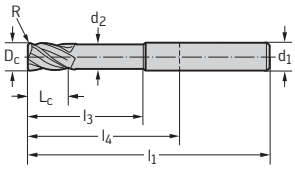




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

P STANDARD L

Shank DIN 6535 HA



Designation	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC112-04.0A4L050-	4	0,5	4	20	3,8	57	22	6	4	●
MC112-05.0A4L050-	5	0,5	5	20	4,75	57	21	6	4	●
MC112-06.0A4L100-	6	1	6	24	5,7	63	27	8	4	●
MC112-08.0A4L100-	8	1	8	29	7,6	72	32	10	4	●
MC112-10.0A4L150-	10	1,5	10	35	9,5	83	38	12	4	●
MC112-12.0A4L150-	12	1,5	12	36	11,4	83	38	12	4	●
MC112-16.0A4L200-	16	2	16	42	15,2	92	44	16	4	●

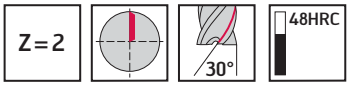
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WJ30TF grade: MC112-10.0A4L150-WJ30TF

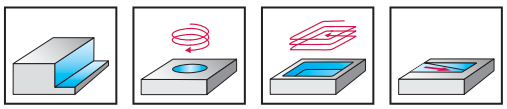
XIII D 1 C 225 C 264

Solid carbide shoulder milling cutters
H4044918 / H404491
Protostar®



– Long reach
– Type Mini HSC 30

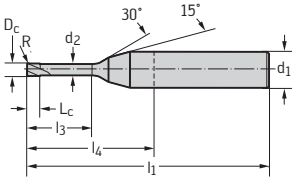




	P	M	K	N	S	H	O
TAX	●●			●			
Uncoated				●●			

P STANDARD MINI

Shank DIN 6535 HA



Designation TAX	Designation Uncoated	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H4044918-0.4-1	H404491-0.4-1	0,4	0,05	0,4	1	0,37	38	10	3	2
H4044918-0.4-2	H404491-0.4-2	0,4	0,05	0,4	2	0,37	38	10	3	2
H4044918-0.4-4	H404491-0.4-4	0,4	0,05	0,4	4	0,37	38	10	3	2
H4044918-0.5-1.25	H404491-0.5-1.25	0,5	0,05	0,5	1,25	0,47	38	10	3	2
H4044918-0.5-2.5	H404491-0.5-2.5	0,5	0,05	0,5	2,5	0,47	38	10	3	2
H4044918-0.5-5	H404491-0.5-5	0,5	0,05	0,5	5	0,47	38	10	3	2
H4044918-0.6-1.5	H404491-0.6-1.5	0,6	0,05	0,6	1,5	0,57	38	10	3	2
H4044918-0.6-3	H404491-0.6-3	0,6	0,05	0,6	3	0,57	38	10	3	2
H4044918-0.6-4.5	H404491-0.6-4.5	0,6	0,05	0,6	4,5	0,57	38	10	3	2
H4044918-0.6-6	H404491-0.6-6	0,6	0,05	0,6	6	0,57	38	10	3	2
H4044918-0.6-9	H404491-0.6-9	0,6	0,05	0,6	9	0,57	38	10	3	2
H4044918-0.8-2	H404491-0.8-2	0,8	0,05	0,8	2	0,77	38	10	3	2
H4044918-0.8-4	H404491-0.8-4	0,8	0,05	0,8	4	0,77	38	10	3	2
H4044918-0.8-6	H404491-0.8-6	0,8	0,05	0,8	6	0,77	38	10	3	2
H4044918-0.8-8	H404491-0.8-8	0,8	0,05	0,8	8	0,77	38	10	3	2
H4044918-0.8-12	H404491-0.8-12	0,8	0,05	0,8	12	0,77	60	32	3	2
H4044918-1-2.5	H404491-1-2.5	1	0,1	1	2,5	0,97	38	10	3	2
H4044918-1-5	H404491-1-5	1	0,1	1	5	0,97	60	32	3	2
H4044918-1-7.5	H404491-1-7.5	1	0,1	1	7,5	0,97	60	32	3	2
H4044918-1-10	H404491-1-10	1	0,1	1	10	0,97	60	32	3	2
H4044918-1-15	H404491-1-15	1	0,1	1	15	0,97	60	32	3	2
H4044918-1-20	H404491-1-20	1	0,1	1	20	0,97	60	32	3	2
H4044918-1.5-7.5	H404491-1.5-7.5	1,5	0,15	1,5	7,5	1,47	60	32	3	2
H4044918-1.5-15	H404491-1.5-15	1,5	0,15	1,5	15	1,47	60	32	3	2
H4044918-2-10	H404491-2-10	2	0,2	2	10	1,97	60	32	3	2
H4044918-2-15	H404491-2-15	2	0,2	2	15	1,97	60	32	3	2
H4044918-2-20	H404491-2-20	2	0,2	2	20	1,97	60	32	3	2
H4044918-2-30	H404491-2-30	2	0,2	2	30	1,97	60	32	3	2
H4044918-2.5-12.5	H404491-2.5-12.5	2,5	0,25	2,5	12,5	2,47	60	32	3	2
H4044918-2.5-25	H404491-2.5-25	2,5	0,25	2,5	25	2,47	60	32	3	2
H4044918-3-15	H404491-3-15	3	0,3	3	15	2,97	60	32	3	2
H4044918-3-22.5	H404491-3-22.5	3	0,3	3	22,5	2,97	60	32	3	2
H4044918-3-30	H404491-3-30	3	0,3	3	30	2,97	60	32	3	2

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.05 \times D_c$

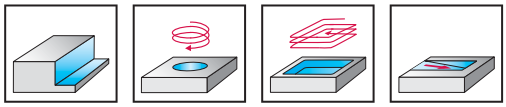
WALTER SELECT
●● Primary application
● Other application

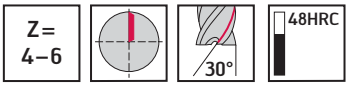
XIII D 1 C 225 C 264

Solid carbide shoulder milling cutters
H3058917
Protostar®



– Type N 30

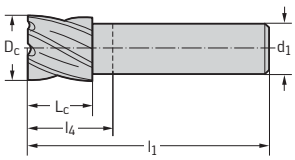




	P	M	K	N	S	H	O
TAX	●●	●					

P STANDARD S

Shank DIN 6535 HA



Designation TAX	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3058917-8	8	10	50	14	6	4
H3058917-10	10	12	50	14	8	4
H3058917-12	12	15	60	20	10	4
H3058917-14	14	15	60	20	10	4
H3058917-16	16	15	60	20	10	4
H3058917-20	20	18	65	20	12	5
H3058917-25	25	20	75	27	16	6

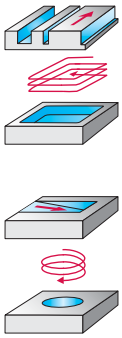
With reduced clamping diameter
For CNC automatic lathes
Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

XIII D 1 C 225 C 264

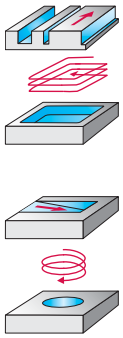
Walter Select Solid carbide milling tools
Shoulder/slot milling cutters

Machining

WALTER SELECT
●● Primary application
● Other application



Helix angle	50°	45°	50°	35°	38°	
Designation	**MC341 Supreme**	**H4033217 H4036217 H4133217 Proto·max™$_{ST}$**	**H4034217 H4038217 H4134217 H4138217 Proto·max™$_{ST}$**	**H4135217 H4137217 Proto·max™$_{ST}$**	**H2034217 H2038217 H2134217 H2138217 Proto·max™$_{Inox}$**	
Dia. range [mm]	6–20	2–20	3–20	6–25	6–20	
Z	4	3	4	5	4	
Corner radius [mm]	0	0–0,4	0–4	0–4	0–4	
Standard	P STANDARD	P STANDARD	P STANDARD	DIN 6527 L	DIN 6527 L	
Shank	DIN 6535 HA	DIN 6535 HA DIN 6535 HB	DIN 6535 HA DIN 6535 HB	DIN 6535 HB	DIN 6535 HA DIN 6535 HB	
Page	C 37	C 38	C 39	C 41	C 42	
						
P Steel	●●	●●	●●	●●		
M Stainless steel	●	●	●	●	●●	
K Cast iron						
N NF metals						
S Materials with difficult cutting properties					●	
H Hard materials						
O Other						

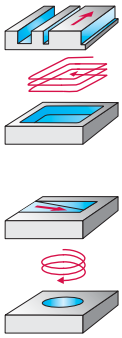


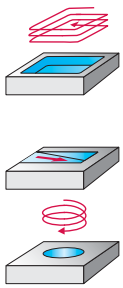
	38°	45°	30°	25°	30°		40°
	MC251 Advance	H602311 H6023114 H602411 H602511 H602551 Protostar®	H901411 H901451 Protostar®	H602641 H602681 H602881 H6028818 Protostar®	MB266 Supreme	MB265 Supreme	H608411 H608771 H608871 H618911 Protostar®
	3–20	1–25	2–12	2–20	12–25	16–25	6–25
	4	2–3	1–2	2	3	3	3
	0–6	0–0,5	0	0–4	0,5–4	2–4	0
	DIN 6527 L	DIN 6527 L P STANDARD L	DIN 6527 L	P STANDARD L	P STANDARD XL	P STANDARD XL	DIN 6527 L P STANDARD L
	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA DIN 6535 HB
	C 44	C 45	C 48	C 49	C 51	C 52	C 53
							
				●●			
	●●						
		●●	●●	●●	●●	●●	●●
	●						

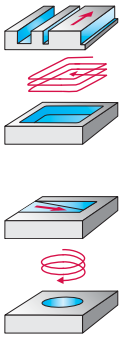
Walter Select Solid carbide milling tools
Shoulder/slot milling cutters

Machining

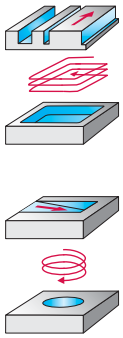
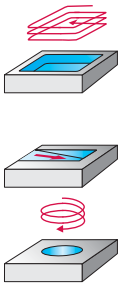
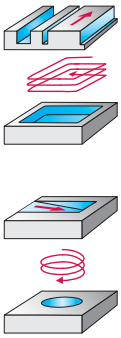
WALTER SELECT
●● Primary application
● Other application





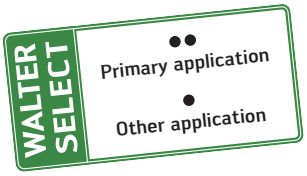


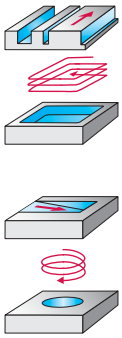
Helix angle	40°	30°	50°	50°	30°	
Designation	**H7073717 Protostar® Ti**	**H3183017 Protostar® Ti**	**H3070118 H3070318 H3071118 H3071318 H3170318 ... Tough Guys**	**H3094728 Protostar® Flash**	**H4044928 H8005728 H8005828 H8005928 H8015728 ... Protostar® Ultra**	
Dia. range [mm]	12–20	8–16	2–20	4–20	0,4–20	
Z	4	4	3–4	4	2–4	
Corner radius [mm]	0,2–4	0	0–4	0	0,05–2	
Standard	DIN 6527 L	DIN 6527 L	P STANDARD L DIN 6527 L	DIN 6527 L	DIN 6527 L P STANDARD L P STANDARD MINI	
Shank	DIN 6535 HA	DIN 6535 HB	DIN 6535 HA DIN 6535 HB	DIN 6535 HA	DIN 6535 HA	
Page	C 55	C 56	C 57	C 61	C 62	
						
P Steel			●			
M Stainless steel						
K Cast iron						
N NF metals						
S Materials with difficult cutting properties	●●	●●				
H Hard materials			●●	●●	●●	
O Other						

							
	30°	50°	50°	45°	30°		35°
	H3027419 H4044919 H8095919 Protostar®	MC326 Supreme MC726 Supreme	H3094718 Protostar® Flash	MC321 Advance MC322 Advance MC324 Advance	MC213 Advance MC216 Advance	MC716 Advance	MC232 Perform
	0,4–16	2–25	4–20	1–20	0,6–20	1,8–20	2–20
	2–4	3–5	4	3–5	2–4	2–3	2–4
	0–1	0–4	0	0–2	0–1,5	0	0
	P STANDARD L P STANDARD XL P STANDARD MINI	P STANDARD L DIN 6527 L DIN 6527 K	P STANDARD L	DIN 6527 K P STANDARD S DIN 6527 L	DIN 6527 L P STANDARD L P STANDARD XL	DIN 6527 K	DIN 6527 L
	DIN 6535 HA	DIN 6535 HA DIN 6535 HB	DIN 6535 HA	DIN 6535 HA DIN 6535 HB	DIN 6535 HA	DIN 6535 HB	DIN 6535 HA DIN 6535 HB
	C 65	C 68	C 80	C 81	C 86	C 93	C 95
							
		●●	●●	●●	●●	●●	●●
		●	●	●	●	●	●
		●	●	●	●	●	●
		●	●	●	●	●	
	●●						

Walter Select Solid carbide milling tools
Shoulder/slot milling cutters

Machining

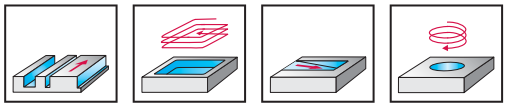


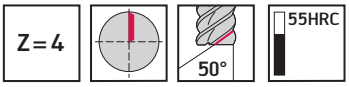


Helix angle	45°	40°	30°	40°	30°
Designation	**H3185378 H3186378 Protostar® Qmax**	**H3182378 H3183378 Protostar® Qmax**	**H3187278 Protostar® Qmax**	**H4189278 H4189378 Protostar® Qmax**	**H3180278 H4180378 Protostar® Qmax**
Dia. range [mm]	12–25	5–20	6–25	5–25	6–25
Z	5–8	4	3	4	4
Corner radius [mm]	0–4	0–4	0	0	0
Standard	DIN 6527 L	DIN 6527 L	DIN 6527 K	DIN 6527 L DIN 6527 K	DIN 6527 K DIN 6527 L
Shank	DIN 6535 HB	DIN 6535 HB	DIN 6535 HB	DIN 6535 HB	DIN 6535 HB
Page	C 97	C 98	C 99	C 100	C 101
					
P Steel	●●	●	●	●	●●
M Stainless steel	●	●●	●●	●●	●●
K Cast iron	●	●	●		●
N NF metals			●		●
S Materials with difficult cutting properties					
H Hard materials					
O Other					

Solid carbide shoulder/slot milling cutters
MC341 Supreme



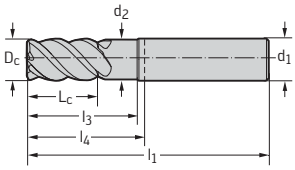




	P	M	K	N	S	H	O
WK40TZ	●●	●					

P STANDARD

Shank DIN 6535 HA



Designation	D_c h9 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WK40TZ
MC341-06.0A4P-	6	10	16	5,5	57	21	6	4	☻
MC341-08.0A4P-	8	13	22	7,6	63	27	8	4	☻
MC341-10.0A4P-	10	16	28	9,5	72	32	10	4	☻
MC341-12.0A4P-	12	19	33	11,4	83	38	12	4	☻
MC341-16.0A4P-	16	26	42	15,2	92	44	16	4	☻
MC341-20.0A4P-	20	32	52	19	104	54	20	4	☻

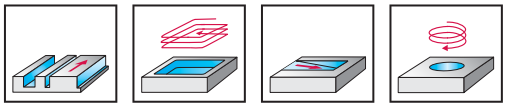
Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$
Ordering example for the WK40TZ grade: MC341-06.0A4P-WK40TZ

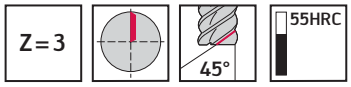
XIII D 1 C 226 C 264

Solid carbide shoulder/slot milling cutters
H4033217 / H4133217 / H4036217
Proto·max™ ST



– Long reach

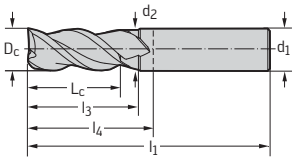




	P	M	K	N	S	H	O
TAZ	●●	●					

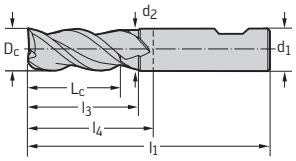
P STANDARD

Shank DIN 6535 HA



Designation TAZ	D_c h9 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H4033217-2	2	5	7,5	1,92	57	21	6	3
H4033217-3	3	7	10,5	2,9	57	21	6	3
H4033217-4	4	9	15	3,8	57	21	6	3
H4033217-5	5	11	16	4,75	57	21	6	3
H4033217-6	6	13	19	5,5	57	21	6	3
H4033217-8	8	18	25	7,6	63	27	8	3
H4033217-10	10	22	30	9,5	72	32	10	3
H4033217-12	12	26	36	11,4	83	38	12	3
H4033217-16	16	34	42	15,2	92	44	16	3
H4033217-20	20	42	52	19	104	54	20	3

Shank DIN 6535 HB

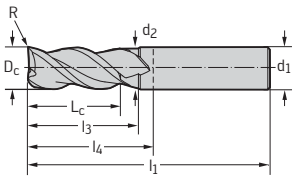


H4133217-10	10	22	30	9,5	72	32	10	3
H4133217-12	12	26	36	11,4	83	38	12	3
H4133217-16	16	34	42	15,2	92	44	16	3
H4133217-20	20	42	52	19	104	54	20	3

Slot milling $a_p \leq 2.0 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

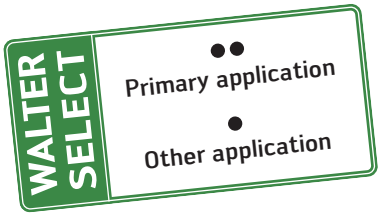
P STANDARD

Shank DIN 6535 HA



Designation TAZ	D_c e8 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H4036217-2	2	0,08	5	7,5	1,92	57	21	6	3
H4036217-3	3	0,08	7	10,5	2,9	57	21	6	3
H4036217-4	4	0,08	9	15	3,8	57	21	6	3
H4036217-5	5	0,16	11	16	4,75	57	21	6	3
H4036217-6	6	0,16	13	19	5,7	57	21	6	3
H4036217-8	8	0,16	18	25	7,6	63	27	8	3
H4036217-10	10	0,25	22	30	9,5	72	32	10	3
H4036217-12	12	0,25	26	36	11,4	83	38	12	3
H4036217-16	16	0,25	34	42	15,2	92	44	16	3
H4036217-20	20	0,4	42	52	19	104	54	20	3

Slot milling $a_p \leq 2.0 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

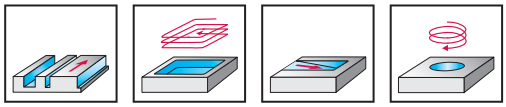


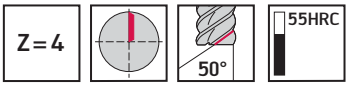
XIII D 1 C 227 C 264

Solid carbide shoulder/slot milling cutters
H4034217 / H4134217
Proto·max™ ST



– Long reach





	P	M	K	N	S	H	O
TAZ	●●	●					

P STANDARD

Designation TAZ	D_c h9 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
Shank DIN 6535 HA								
H4034217-3	3	5	8,5	2,9	57	21	6	4
H4034217-4	4	7	11	3,8	57	21	6	4
H4034217-5	5	8	14	4,75	57	21	6	4
H4034217-6	6	10	16	5,5	57	21	6	4
H4034217-8	8	13	22	7,6	63	27	8	4
H4034217-10	10	16	28	9,5	72	32	10	4
H4034217-12	12	19	33	11,4	83	38	12	4
H4034217-14	14	22	36	13,3	83	38	14	4
H4034217-16	16	26	42	15,2	92	44	16	4
H4034217-18	18	29	42	17,1	92	44	18	4
H4034217-20	20	32	52	19	104	54	20	4
Shank DIN 6535 HB								
H4134217-10	10	16	28	9,5	72	32	10	4
H4134217-12	12	19	33	11,4	83	38	12	4
H4134217-14	14	22	36	13,3	83	38	14	4
H4134217-16	16	26	42	15,2	92	44	16	4
H4134217-18	18	29	42	17,1	92	44	18	4
H4134217-20	20	32	52	19	104	54	20	4

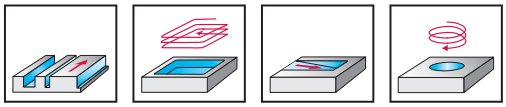
Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

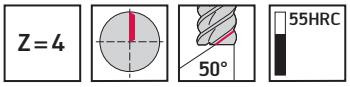
XIII D 1 C 227 C 264

Solid carbide shoulder/slot milling cutters
H4038217 / H4138217
Proto·max™ ST



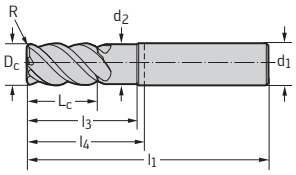
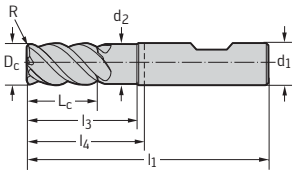
– Long reach





	P	M	K	N	S	H	O
TAZ	●●	●					

P STANDARD

Designation TAZ	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
Shank DIN 6535 HA									
									
H4038217-3-0.2	3	0,2	5	8,5	2,9	57	21	6	4
H4038217-3-0.5	3	0,5	5	8,5	2,9	57	21	6	4
H4038217-4-0.2	4	0,2	7	11	3,8	57	21	6	4
H4038217-4-0.5	4	0,5	7	11	3,8	57	21	6	4
H4038217-5-0.5	5	0,5	8	14	4,75	57	21	6	4
H4038217-5-1	5	1	8	14	4,75	57	21	6	4
H4038217-6-0.5	6	0,5	10	16	5,7	57	21	6	4
H4038217-6-1	6	1	10	16	5,7	57	21	6	4
H4038217-8-0.5	8	0,5	13	22	7,6	63	27	8	4
H4038217-8-1	8	1	13	22	7,6	63	27	8	4
H4038217-8-2	8	2	13	22	7,6	63	27	8	4
H4038217-10-0.5	10	0,5	16	28	9,5	72	32	10	4
H4038217-10-1	10	1	16	28	9,5	72	32	10	4
H4038217-10-2	10	2	16	28	9,5	72	32	10	4
H4038217-12-0.5	12	0,5	19	33	11,4	83	38	12	4
H4038217-12-1	12	1	19	33	11,4	83	38	12	4
H4038217-12-2	12	2	19	33	11,4	83	38	12	4
H4038217-16-0.5	16	0,5	26	42	15,2	92	44	16	4
H4038217-16-1	16	1	26	42	15,2	92	44	16	4
H4038217-16-2	16	2	26	42	15,2	92	44	16	4
H4038217-20-1	20	1	32	52	19	104	54	20	4
H4038217-20-2	20	2	32	52	19	104	54	20	4
H4038217-20-4	20	4	32	52	19	104	54	20	4
Shank DIN 6535 HB									
									
H4138217-10-0.5	10	0,5	16	28	9,5	72	32	10	4
H4138217-10-1	10	1	16	28	9,5	72	32	10	4
H4138217-10-2	10	2	16	28	9,5	72	32	10	4
H4138217-12-0.5	12	0,5	19	33	11,4	83	38	12	4
H4138217-12-1	12	1	19	33	11,4	83	38	12	4
H4138217-12-2	12	2	19	33	11,4	83	38	12	4
H4138217-16-0.5	16	0,5	26	42	15,2	92	44	16	4
H4138217-16-1	16	1	26	42	15,2	92	44	16	4
H4138217-16-2	16	2	26	42	15,2	92	44	16	4
H4138217-20-1	20	1	32	52	19	104	54	20	4
H4138217-20-2	20	2	32	52	19	104	54	20	4
H4138217-20-4	20	4	32	52	19	104	54	20	4

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

WALTER SELECT

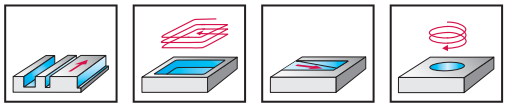
●● Primary application

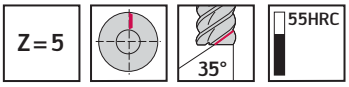
● Other application

XIII D 1 C 227 C 264

Solid carbide shoulder/slot milling cutters
H4135217 / H4137217
Proto·max™ ST



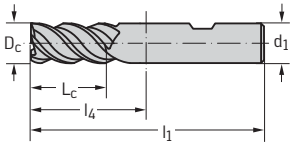




TAZ	P	M	K	N	S	H	O
	●●	●					

DIN 6527 L

Shank DIN 6535 HB

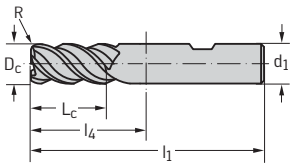


Designation TAZ	D_c h9 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H4135217-6	6	13	57	21	6	5
H4135217-8	8	19	63	27	8	5
H4135217-10	10	22	72	32	10	5
H4135217-12	12	26	83	38	12	5
H4135217-16	16	32	92	44	16	5
H4135217-20	20	38	104	54	20	5
H4135217-25	25	45	121	65	25	5

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 6527 L

Shank DIN 6535 HB



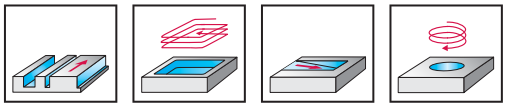
Designation TAZ	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H4137217-6-0.5	6	0,5	13	57	21	6	5
H4137217-6-1	6	1	13	57	21	6	5
H4137217-8-0.5	8	0,5	19	63	27	8	5
H4137217-8-1	8	1	19	63	27	8	5
H4137217-8-2	8	2	19	63	27	8	5
H4137217-10-0.5	10	0,5	22	72	32	10	5
H4137217-10-1	10	1	22	72	32	10	5
H4137217-10-2	10	2	22	72	32	10	5
H4137217-12-0.5	12	0,5	26	83	38	12	5
H4137217-12-1	12	1	26	83	38	12	5
H4137217-12-2	12	2	26	83	38	12	5
H4137217-16-0.5	16	0,5	32	92	44	16	5
H4137217-16-1	16	1	32	92	44	16	5
H4137217-16-2	16	2	32	92	44	16	5
H4137217-20-1	20	1	38	104	54	20	5
H4137217-20-2	20	2	38	104	54	20	5
H4137217-20-4	20	4	38	104	54	20	5
H4137217-25-1	25	1	45	121	65	25	5
H4137217-25-2	25	2	45	121	65	25	5
H4137217-25-4	25	4	45	121	65	25	5

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

XIII D 1 C 227 C 264

Solid carbide shoulder/slot milling cutters
H2034217 / H2134217
Proto·max™ Inox





Z = 4

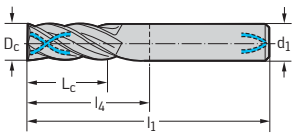


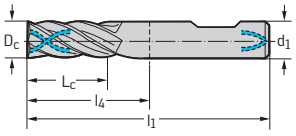
35°/38°

TAA	P	M	K	N	S	H	O
		●●			●		

DIN 6527 L

	Designation TAA	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
Shank DIN 6535 HA	H2034217-6	6	13	57	21	6	4
	H2034217-8	8	19	63	27	8	4
	H2034217-10	10	22	72	32	10	4
	H2034217-12	12	26	83	38	12	4
	H2034217-14	14	26	83	38	14	4
	H2034217-16	16	32	92	44	16	4
	H2034217-18	18	32	92	44	18	4
	H2034217-20	20	38	104	54	20	4
Shank DIN 6535 HB	H2134217-10	10	22	72	32	10	4
	H2134217-12	12	26	83	38	12	4
	H2134217-14	14	26	83	38	14	4
	H2134217-16	16	32	92	44	16	4
	H2134217-18	18	32	92	44	18	4
	H2134217-20	20	38	104	54	20	4





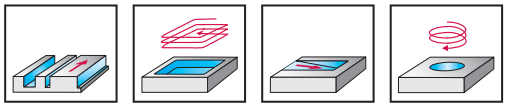
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

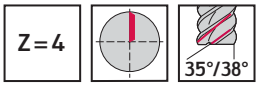
WALTER SELECT
●● Primary application
● Other application

XIII D 1 C 227 C 264

Solid carbide shoulder/slot milling cutters
H2038217 / H2138217
Proto·max™ Inox







TAA	P	M	K	N	S	H	O
		●●			●		

DIN 6527 L

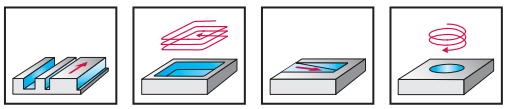
Designation TAA	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
Shank DIN 6535 HA							
H2038217-6-0.5	6	0,5	13	57	21	6	4
H2038217-6-1	6	1	13	57	21	6	4
H2038217-8-0.5	8	0,5	19	63	27	8	4
H2038217-8-1	8	1	19	63	27	8	4
H2038217-8-2	8	2	19	63	27	8	4
H2038217-10-0.5	10	0,5	22	72	32	10	4
H2038217-10-1	10	1	22	72	32	10	4
H2038217-10-2	10	2	22	72	32	10	4
H2038217-10-3	10	3	22	72	32	10	4
H2038217-12-0.5	12	0,5	26	83	38	12	4
H2038217-12-1	12	1	26	83	38	12	4
H2038217-12-2	12	2	26	83	38	12	4
H2038217-12-3	12	3	26	83	38	12	4
H2038217-16-0.5	16	0,5	32	92	44	16	4
H2038217-16-1	16	1	32	92	44	16	4
H2038217-16-2	16	2	32	92	44	16	4
H2038217-16-3	16	3	32	92	44	16	4
H2038217-20-1	20	1	38	104	54	20	4
H2038217-20-2	20	2	38	104	54	20	4
H2038217-20-3	20	3	38	104	54	20	4
H2038217-20-4	20	4	38	104	54	20	4
Shank DIN 6535 HB							
H2138217-10-0.5	10	0,5	22	72	32	10	4
H2138217-10-1	10	1	22	72	32	10	4
H2138217-10-2	10	2	22	72	32	10	4
H2138217-10-3	10	3	22	72	32	10	4
H2138217-12-0.5	12	0,5	26	83	38	12	4
H2138217-12-1	12	1	26	83	38	12	4
H2138217-12-2	12	2	26	83	38	12	4
H2138217-12-3	12	3	26	83	38	12	4
H2138217-16-0.5	16	0,5	32	92	44	16	4
H2138217-16-1	16	1	32	92	44	16	4
H2138217-16-2	16	2	32	92	44	16	4
H2138217-16-3	16	3	32	92	44	16	4
H2138217-20-1	20	1	38	104	54	20	4
H2138217-20-2	20	2	38	104	54	20	4
H2138217-20-3	20	3	38	104	54	20	4
H2138217-20-4	20	4	38	104	54	20	4

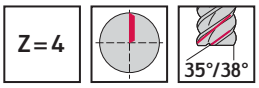
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

XIII D 1 C 227 C 264

Solid carbide shoulder/slot milling cutters
MC251 Advance



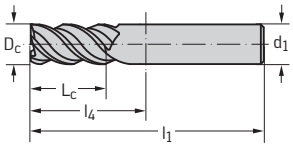




	P	M	K	N	S	H	O
WK40RC		●●			●		

DIN 6527 L

Shank DIN 6535 HA

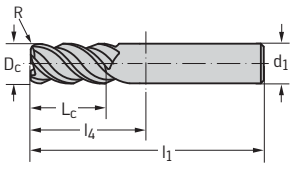


Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40RC
MC251-03.0-A4B-	3	8	57	21	6	4	●
MC251-04.0-A4B-	4	11	57	21	6	4	●
MC251-05.0-A4B-	5	13	57	21	6	4	●
MC251-06.0-A4B-	6	13	57	21	6	4	●
MC251-08.0-A4B-	8	19	63	27	8	4	●
MC251-10.0-A4B-	10	22	72	32	10	4	●
MC251-12.0-A4B-	12	26	83	38	12	4	●
MC251-16.0-A4B-	16	32	92	44	16	4	●
MC251-20.0-A4B-	20	38	104	54	20	4	●

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WK40RC grade: MC251-03.0-A4B-WK40RC

DIN 6527 L

Shank DIN 6535 HA



Designation	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40RC
MC251-03.0-A4B020-	3	0,2	8	57	21	6	4	●
MC251-03.0-A4B050-	3	0,5	8	57	21	6	4	●
MC251-04.0-A4B020-	4	0,2	11	57	21	6	4	●
MC251-04.0-A4B050-	4	0,5	11	57	21	6	4	●
MC251-05.0-A4B050-	5	0,5	13	57	21	6	4	●
MC251-05.0-A4B100-	5	1	13	57	21	6	4	●
MC251-06.0-A4B050-	6	0,5	13	57	21	6	4	●
MC251-06.0-A4B100-	6	1	13	57	21	6	4	●
MC251-08.0-A4B050-	8	0,5	19	63	27	8	4	●
MC251-08.0-A4B100-	8	1	19	63	27	8	4	●
MC251-08.0-A4B200-	8	2	19	63	27	8	4	●
MC251-10.0-A4B050-	10	0,5	22	72	32	10	4	●
MC251-10.0-A4B100-	10	1	22	72	32	10	4	●
MC251-10.0-A4B200-	10	2	22	72	32	10	4	●
MC251-10.0-A4B300-	10	3	22	72	32	10	4	●
MC251-12.0-A4B050-	12	0,5	26	83	38	12	4	●
MC251-12.0-A4B100-	12	1	26	83	38	12	4	●
MC251-12.0-A4B165-	12	1,65	26	83	38	12	4	●
MC251-12.0-A4B200-	12	2	26	83	38	12	4	●
MC251-12.0-A4B300-	12	3	26	83	38	12	4	●
MC251-16.0-A4B050-	16	0,5	32	92	44	16	4	●
MC251-16.0-A4B100-	16	1	32	92	44	16	4	●
MC251-16.0-A4B200-	16	2	32	92	44	16	4	●
MC251-20.0-A4B100-	20	1	38	104	54	20	4	●
MC251-20.0-A4B165-	20	1,65	38	104	54	20	4	●
MC251-20.0-A4B200-	20	2	38	104	54	20	4	●
MC251-20.0-A4B400-	20	4	38	104	54	20	4	●
MC251-20.0-A4B600-	20	6	38	104	54	20	4	●

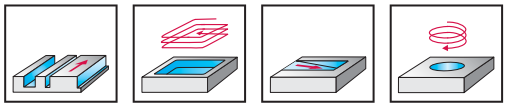
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WK40RC grade: MC251-03.0-A4B020-WK40RC

XIII D 1 C 228 C 264

Solid carbide shoulder/slot milling cutters
H6023114 / H602311
Protostar®



– Long reach
– Type AI 45

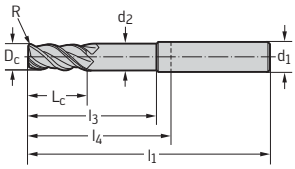




	P	M	K	N	S	H	O
CRN				●●			
Uncoated				●●			

DIN 6527 L

Shank DIN 6535 HA



Designation CRN	Designation Uncoated	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H6023114-1	H602311-1	1	0,2	3	6,5	0,96	57	21	6	3
H6023114-2	H602311-2	2	0,2	6	9,5	1,92	57	21	6	3
H6023114-3	H602311-3	3	0,3	7	10	2,9	57	21	6	3
H6023114-4	H602311-4	4	0,5	8	15	3,8	57	21	6	3
H6023114-5	H602311-5	5	0,5	10	16	4,75	57	21	6	3
H6023114-6	H602311-6	6	0,5	10	19	5,7	57	21	6	3
H6023114-8	H602311-8	8	0,5	16	25	7,6	63	27	8	3
H6023114-10	H602311-10	10	0,5	19	30	9,5	72	32	10	3
H6023114-12	H602311-12	12	0,5	22	36	11,4	83	38	12	3
H6023114-14	H602311-14	14	0,5	22	36	13,3	83	38	14	3
H6023114-16	H602311-16	16	0,5	26	42	15,2	92	44	16	3
H6023114-18	H602311-18	18	0,5	26	42	17,1	92	44	18	3
H6023114-20	H602311-20	20	0,5	32	52	19	104	54	20	3
H6023114-25	H602311-25	25	0,5	45	63	23,75	121	65	25	3

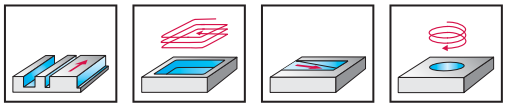
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

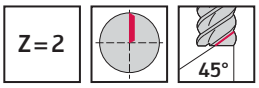
XIII D 1 C 229 C 264

Solid carbide shoulder/slot milling cutters
H602411 / H602511
Protostar®



– Long reach
– Type AI 45

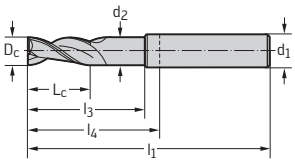




	P	M	K	N	S	H	O
Uncoated				●●			

DIN 6527 L

Shank DIN 6535 HA

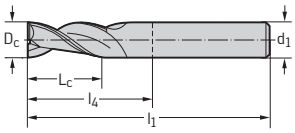


Designation Uncoated	D_c h10 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H602411-1	1	3	6,5	0,96	57	21	6	2
H602411-1.5	1,5	3	6,5	1,44	57	21	6	2
H602411-2	2	6	9,5	1,92	57	21	6	2
H602411-3	3	7	10	2,9	57	21	6	2
H602411-4	4	8	15	3,8	57	21	6	2
H602411-5	5	10	16	4,75	57	21	6	2
H602411-6	6	10	19	5,7	57	21	6	2
H602411-8	8	16	25	7,6	63	27	8	2
H602411-10	10	19	30	9,5	72	32	10	2
H602411-12	12	22	36	11,4	83	38	12	2
H602411-16	16	26	42	15,2	92	44	16	2
H602411-20	20	32	52	19	104	54	20	2

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

DIN 6527 L

Shank DIN 6535 HA



Designation Uncoated	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H602511-1	1	3	57	21	6	2
H602511-1.5	1,5	3	57	21	6	2
H602511-2	2	6	57	21	6	2
H602511-2.5	2,5	7	57	21	6	2
H602511-3	3	7	57	21	6	2
H602511-3.5	3,5	7	57	21	6	2
H602511-4	4	8	57	21	6	2
H602511-4.5	4,5	8	57	21	6	2
H602511-5	5	10	57	21	6	2
H602511-5.5	5,5	10	57	21	6	2
H602511-6	6	10	57	21	6	2
H602511-8	8	16	63	27	8	2
H602511-10	10	19	72	32	10	2
H602511-12	12	22	83	38	12	2
H602511-14	14	22	83	38	14	2
H602511-16	16	26	92	44	16	2
H602511-18	18	26	92	44	18	2
H602511-20	20	32	104	54	20	2

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

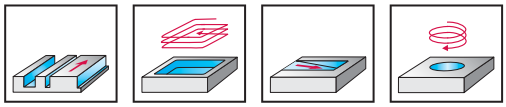
WALTER SELECT
●● Primary application
● Other application

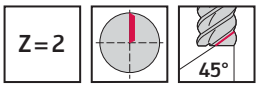
XIII D 1 C 229 C 264

Solid carbide shoulder/slot milling cutters
H602551
Protostar®



– Type AI 45 long

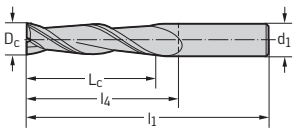




	P	M	K	N	S	H	O
Uncoated				●●			

P STANDARD L

Shank DIN 6535 HA



Designation Uncoated	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H602551-6	6	35	80	44	6	2
H602551-8	8	45	97	61	8	2
H602551-10	10	50	118	78	10	2
H602551-12	12	60	120	75	12	2
H602551-16	16	65	130	82	16	2
H602551-20	20	75	145	95	20	2

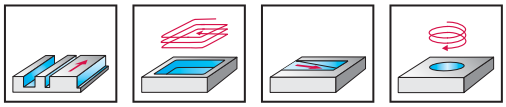
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

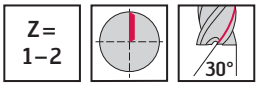
XIII D 1 C 229 C 264

Solid carbide shoulder/slot milling cutters
H901451 / H901411
Protostar®



– Type Al 30

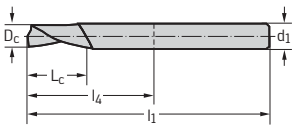




	P	M	K	N	S	H	O
Uncoated				●●			

DIN 6527 L

Shank DIN 6535 HA

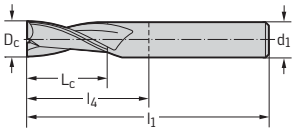


Designation Uncoated	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H901451-3	3	7	57	21	6	1
H901451-4	4	8	57	21	6	1
H901451-5	5	10	57	21	6	1
H901451-6	6	10	57	21	6	1
H901451-8	8	16	63	27	8	1
H901451-10	10	19	72	32	10	1

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 6527 L

Shank DIN 6535 HA



Designation Uncoated	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H901411-2	2	6	57	21	6	2
H901411-3	3	7	57	21	6	2
H901411-4	4	8	57	21	6	2
H901411-5	5	10	57	21	6	2
H901411-6	6	10	57	21	6	2
H901411-8	8	16	63	27	8	2
H901411-10	10	19	72	32	10	2
H901411-12	12	22	83	38	12	2

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

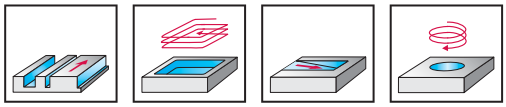
WALTER SELECT
●● Primary application
● Other application

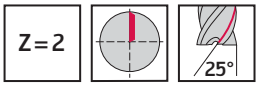
XIII D 1 C 229 C 264

Solid carbide shoulder/slot milling cutters
H602641 / H602681
Protostar®



– Type AI 25

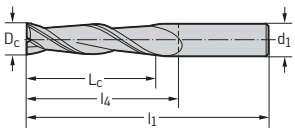




	P	M	K	N	S	H	O
Uncoated				●●			

P STANDARD L

Shank DIN 6535 HA

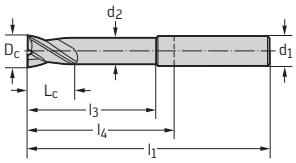


Designation Uncoated	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H602641-2	2	8	38	11	3	2
H602641-3	3	12	38	10	3	2
H602641-4	4	14	50	22	4	2
H602641-5	5	16	57	21	6	2
H602641-6	6	22	65	29	6	2
H602641-8	8	28	80	44	8	2
H602641-10	10	32	90	50	10	2
H602641-12	12	38	100	55	12	2
H602641-16	16	50	115	67	16	2
H602641-20	20	50	125	75	20	2

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

P STANDARD L

Shank DIN 6535 HA



Designation Uncoated	D_c h10 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H602681-2	2	3	9	1,92	38	10	3	2
H602681-3	3	4	12	2,9	38	12	3	2
H602681-4	4	6	14	3,8	50	22	4	2
H602681-5	5	8	16	4,75	57	21	6	2
H602681-6	6	10	28	5,7	65	29	6	2
H602681-8	8	12	35	7,6	80	44	8	2
H602681-10	10	14	45	9,5	90	50	10	2
H602681-12	12	16	50	11,4	100	55	12	2
H602681-16	16	20	63	15,2	115	67	16	2
H602681-20	20	20	70	19	125	75	20	2

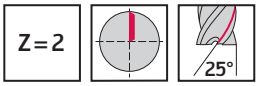
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

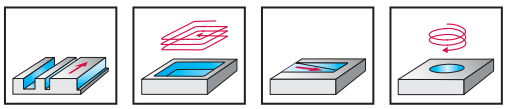
XIII D 1 C 229 C 264

Solid carbide shoulder/slot milling cutters
H6028818 / H602881
Protostar®



– Long reach
– Type AI 25

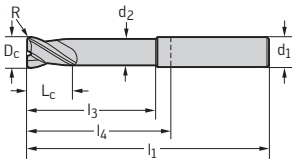




	P	M	K	N	S	H	O
TAX	●●			●●			
Uncoated				●●			

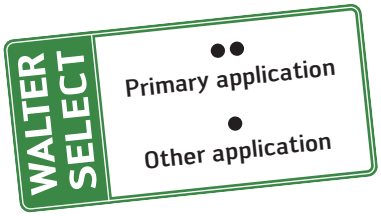
P STANDARD L

Shank DIN 6535 HA



Designation TAX	Designation Uncoated	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H6028818-6-0.5	H602881-6-0.5	6	0,5	10	28	5,7	65	29	6	2
H6028818-6-1	H602881-6-1	6	1	10	28	5,7	65	29	6	2
H6028818-8-1	H602881-8-1	8	1	12	35	7,6	80	44	8	2
H6028818-8-2	H602881-8-2	8	2	12	35	7,6	80	44	8	2
H6028818-10-1	H602881-10-1	10	1	14	45	9,5	90	50	10	2
H6028818-10-2	H602881-10-2	10	2	14	45	9,5	90	50	10	2
H6028818-12-1.5	H602881-12-1.5	12	1,5	16	50	11,4	100	55	12	2
H6028818-12-3	H602881-12-3	12	3	16	50	11,4	100	55	12	2
H6028818-16-2	H602881-16-2	16	2	20	63	15,2	115	67	16	2
H6028818-16-4	H602881-16-4	16	4	20	63	15,2	115	67	16	2
H6028818-20-2	H602881-20-2	20	2	20	70	19	125	75	20	2
H6028818-20-4	H602881-20-4	20	4	20	70	19	125	75	20	2

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

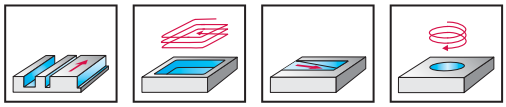


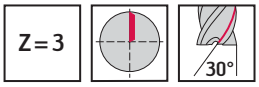
XIII
D 1
C 229
C 264

Solid carbide shoulder/slot milling cutters
MB266 Supreme



– Long reach

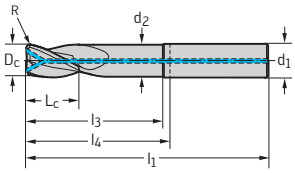




	P	M	K	N	S	H	O
WJ30UU				●●			

P STANDARD XL

Shank DIN 6535 HA



Designation	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30UU
MB266-12.0A3X050A-	12	0,5	12	68	11,5	115	70	12	3	●●
MB266-12.0A3X050B-	12	0,5	18	53	11,5	100	55	12	3	●●
MB266-12.0A3X050C-	12	0,5	24	36	11,5	83	38	12	3	●●
MB266-12.0A3X200A-	12	2	12	68	11,5	115	70	12	3	●●
MB266-12.0A3X200B-	12	2	18	53	11,5	100	55	12	3	●●
MB266-12.0A3X200C-	12	2	24	36	11,5	83	38	12	3	●●
MB266-16.0A3X050A-	16	0,5	16	80	15,2	130	82	16	3	●●
MB266-16.0A3X050B-	16	0,5	24	65	15,2	115	67	16	3	●●
MB266-16.0A3X050C-	16	0,5	32	42	15,2	92	44	16	3	●●
MB266-16.0A3X200A-	16	2	16	80	15,2	130	82	16	3	●●
MB266-16.0A3X200B-	16	2	24	65	15,2	115	67	16	3	●●
MB266-16.0A3X200C-	16	2	32	42	15,2	92	44	16	3	●●
MB266-16.0A3X300B-	16	3	24	65	15,2	115	67	16	3	●●
MB266-16.0A3X400A-	16	4	16	80	15,2	130	82	16	3	●●
MB266-16.0A3X400C-	16	4	32	42	15,2	92	44	16	3	●●
MB266-20.0A3X050A-	20	0,5	20	88	19	140	90	20	3	●●
MB266-20.0A3X050B-	20	0,5	30	73	19	125	75	20	3	●●
MB266-20.0A3X300A-	20	3	20	88	19	140	90	20	3	●●
MB266-20.0A3X300B-	20	3	30	73	19	125	75	20	3	●●
MB266-20.0A3X400B-	20	4	30	73	19	125	75	20	3	●●
MB266-25.0A3X050C-	25	0,5	37	72	23,75	130	74	25	3	●●
MB266-25.0A3X400A-	25	4	25	92	23,75	150	94	25	3	●●
MB266-25.0A3X400C-	25	4	37	72	23,75	130	74	25	3	●●

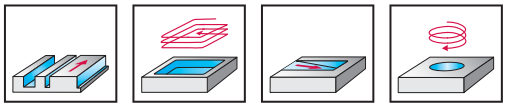
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30UU grade: MB266-12.0A3X050A-WJ30UU

XIII D 1 C 229 C 264

Solid carbide shoulder/slot milling cutters
MB265 Supreme



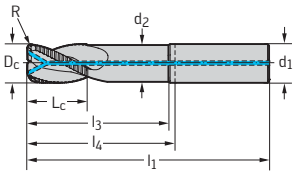
– Long reach



	P	M	K	N	S	H	O
WJ30CA				●●			
WJ30UU				●●			

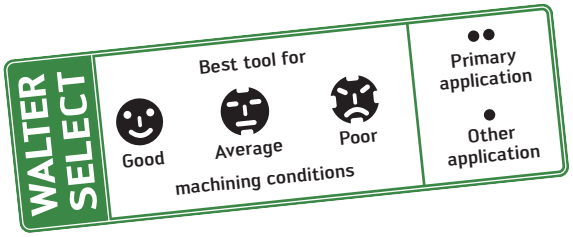
P STANDARD XL

Shank DIN 6535 HA



Designation	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30CA	WJ30UU
MB265-16.0A3X200A-	16	2	20	65	15,2	115	67	16	3	●	●
MB265-16.0A3X200B-	16	2	24	42	15,2	92	44	16	3	●	●
MB265-16.0A3X300A-	16	3	20	65	15,2	115	67	16	3		●
MB265-20.0A3X200A-	20	2	20	88	19	140	90	20	3	●	●
MB265-20.0A3X200B-	20	2	25	73	19	125	75	20	3	●	●
MB265-20.0A3X400B-	20	4	25	73	19	125	75	20	3		●
MB265-25.0A3X200A-	25	2	25	92	23,75	150	94	25	3		●
MB265-25.0A3X200B-	25	2	30	72	23,75	130	74	25	3		●
MB265-25.0A3X200C-	25	2	37	52	23,75	110	54	25	3	●	
MB265-25.0A3X300B-	25	3	30	72	23,75	130	74	25	3		●
MB265-25.0A3X400A-	25	4	25	92	23,75	150	94	25	3		●
MB265-25.0A3X400B-	25	4	30	72	23,75	130	74	25	3	●	●
MB265-25.0A3X400C-	25	4	37	52	23,75	110	54	25	3		●

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30CA grade: MB265-16.0A3X200A-WJ30CA

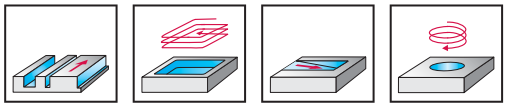


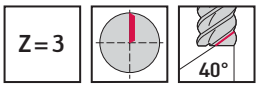
XIII
D 1
C 230
C 264

Solid carbide shoulder/slot milling cutters
H608411 / H608771
Protostar®



– Type Al Kordel G 40
– With V cutting edge

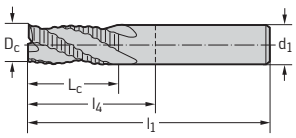




	P	M	K	N	S	H	O
Uncoated				●●			

DIN 6527 L

Shank DIN 6535 HA

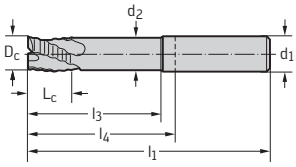


Designation Uncoated	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H608411-6	6	13	57	21	6	3
H608411-8	8	19	63	27	8	3
H608411-10	10	22	72	32	10	3
H608411-12	12	26	83	38	12	3
H608411-14	14	26	83	38	14	3
H608411-16	16	32	92	44	16	3
H608411-20	20	38	104	54	20	3

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

P STANDARD L

Shank DIN 6535 HA



Designation Uncoated	D_c h12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H608771-6	6	10	24	5,5	63	27	8	3
H608771-8	8	12	29	7,5	72	32	10	3
H608771-10	10	14	35	9,5	83	38	12	3
H608771-12	12	16	50	11,4	100	55	12	3
H608771-16	16	20	63	15,2	115	67	16	3
H608771-20	20	20	70	19	125	75	20	3
H608771-25	25	25	75	23,75	135	79	25	3

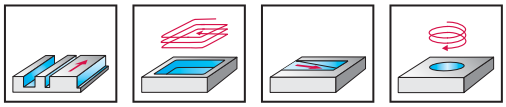
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

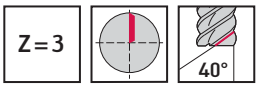
XIII D 1 C 231 C 264

Solid carbide shoulder/slot milling cutters
H608871 / H618911
Protostar®



– Long reach
– With V cutting edge and Al Kordel G 40

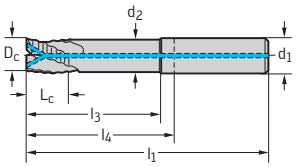




	P	M	K	N	S	H	O
Uncoated				●●			

P STANDARD L

Shank DIN 6535 HA

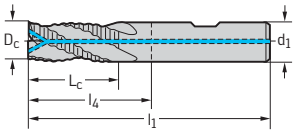


Designation Uncoated	D_c h12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H608871-6	6	10	24	5,5	63	27	8	3
H608871-8	8	12	29	7,5	72	32	10	3
H608871-10	10	14	35	9,5	83	38	12	3
H608871-12	12	16	50	11,4	100	55	12	3
H608871-16	16	20	63	15,2	115	67	16	3
H608871-20	20	20	70	19	125	75	20	3
H608871-25	25	25	75	23,75	135	79	25	3

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 6527 L

Shank DIN 6535 HB



Designation Uncoated	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H618911-6	6	13	57	21	6	3
H618911-8	8	19	63	27	8	3
H618911-10	10	22	72	32	10	3
H618911-12	12	26	83	38	12	3
H618911-14	14	26	83	38	14	3
H618911-16	16	32	92	44	16	3
H618911-20	20	38	104	54	20	3

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

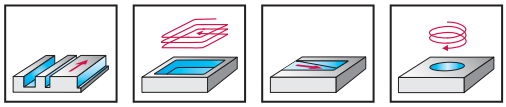
WALTER SELECT
●● Primary application
● Other application

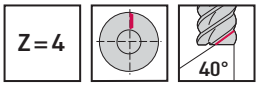
XIII D 1 C 231 C 264

Solid carbide shoulder/slot milling cutters
H7073717
Protostar® Ti



– Long reach
– Type Ti 40

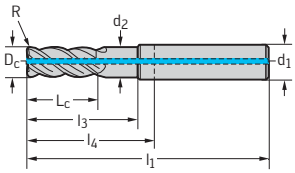




	P	M	K	N	S	H	O
ACN					●●		

DIN 6527 L

Shank DIN 6535 HA



Designation ACN	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H7073717-12-0.2	12	0,2	19	36	11,4	83	38	12	4
H7073717-12-2	12	2	19	36	11,4	83	38	12	4
H7073717-12-2.5	12	2,5	19	36	11,4	83	38	12	4
H7073717-16-0.2	16	0,2	26	42	15,2	92	44	16	4
H7073717-16-2	16	2	26	42	15,2	92	44	16	4
H7073717-16-2.5	16	2,5	26	42	15,2	92	44	16	4
H7073717-16-3	16	3	26	42	15,2	92	44	16	4
H7073717-16-4	16	4	26	42	15,2	92	44	16	4
H7073717-20-0.2	20	0,2	32	52	19	104	54	20	4
H7073717-20-2	20	2	32	52	19	104	54	20	4
H7073717-20-2.5	20	2,5	32	52	19	104	54	20	4
H7073717-20-3	20	3	32	52	19	104	54	20	4
H7073717-20-4	20	4	32	52	19	104	54	20	4

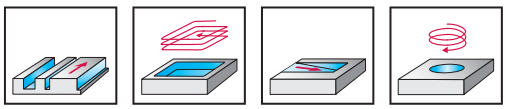
Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

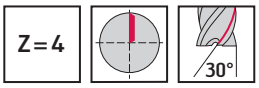
XIII D 1 C 231 C 264

Solid carbide shoulder/slot milling cutters
H3183017
Protostar® Ti



– Type NS 30

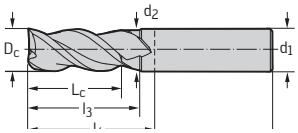




ACN	P	M	K	N	S	H	O
					●●		

DIN 6527 L

Shank DIN 6535 HB



Designation ACN	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3183017-8	8	19	63	27	8	4
H3183017-10	10	22	72	32	10	4
H3183017-12	12	26	83	38	12	4
H3183017-14	14	26	83	38	14	4
H3183017-16	16	32	92	44	16	4

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

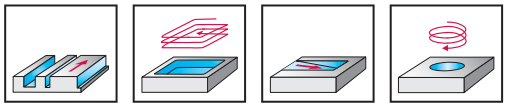
WALTER SELECT
●● Primary application
● Other application

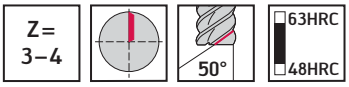
XIII D 1 C 231 C 264

Solid carbide shoulder/slot milling cutters
H3071118
Tough Guys



– Type H 50

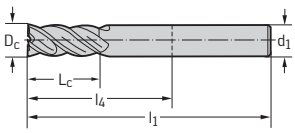




	P	M	K	N	S	H	O
TAX	●					●●	

P STANDARD L

Shank DIN 6535 HA



Designation TAX	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3071118-2	2	7	57	21	6	3
H3071118-3	3	8	57	21	6	3
H3071118-4	4	11	57	21	6	3
H3071118-5	5	13	57	21	6	3
H3071118-6	6	13	65	29	6	4
H3071118-8	8	19	80	44	8	4
H3071118-10	10	22	100	60	10	4
H3071118-12	12	26	100	55	12	4
H3071118-14	14	26	104	59	14	4
H3071118-16	16	32	115	67	16	4
H3071118-20	20	38	125	75	20	4

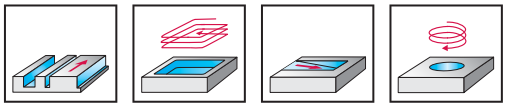
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

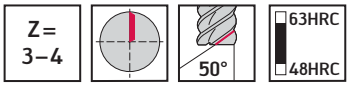
XIII D 1 C 231 C 264

Solid carbide shoulder/slot milling cutters
H3070118
Tough Guys



– Type H 50

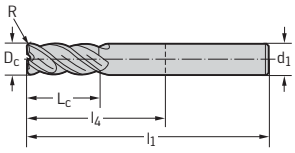




TAX	P	M	K	N	S	H	O
						●●	

P STANDARD L

Shank DIN 6535 HA



Designation TAX	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3070118-2	2	0,5	7	57	21	6	3
H3070118-3	3	0,5	8	57	21	6	3
H3070118-4-0.5	4	0,5	11	57	21	6	3
H3070118-4	4	1	11	57	21	6	3
H3070118-5-0.5	5	0,5	13	57	21	6	3
H3070118-5	5	1	13	57	21	6	3
H3070118-6-0.5	6	0,5	13	65	29	6	4
H3070118-6	6	1	13	65	29	6	4
H3070118-8-0.5	8	0,5	19	80	44	8	4
H3070118-8-1	8	1	19	80	44	8	4
H3070118-8	8	2	19	80	44	8	4
H3070118-10-0.5	10	0,5	22	100	60	10	4
H3070118-10-1	10	1	22	100	60	10	4
H3070118-10	10	2	22	100	60	10	4
H3070118-12-0.5	12	0,5	26	100	55	12	4
H3070118-12-1	12	1	26	100	55	12	4
H3070118-12-2	12	2	26	100	55	12	4
H3070118-12	12	3	26	100	55	12	4
H3070118-14-0.5	14	0,5	26	104	59	14	4
H3070118-14-1	14	1	26	104	59	14	4
H3070118-14-2	14	2	26	104	59	14	4
H3070118-14	14	3	26	104	59	14	4
H3070118-16-0.5	16	0,5	32	115	67	16	4
H3070118-16-1	16	1	32	115	67	16	4
H3070118-16-2	16	2	32	115	67	16	4
H3070118-16	16	4	32	115	67	16	4
H3070118-20-0.5	20	0,5	38	125	75	20	4
H3070118-20-1	20	1	38	125	75	20	4
H3070118-20-2	20	2	38	125	75	20	4
H3070118-20	20	4	38	125	75	20	4

Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

WALTER SELECT

●● Primary application

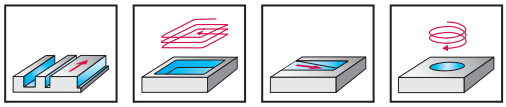
● Other application

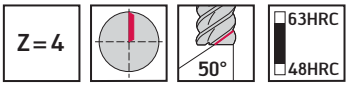
XIII D 1 C 231 C 264

Solid carbide shoulder/slot milling cutters
H3071318 / H3171318
Tough Guys



– Type H 50

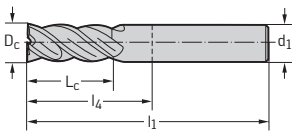


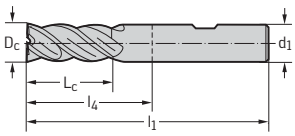


	P	M	K	N	S	H	O
TAX	●					●●	

DIN 6527 L

Designation TAX	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
Shank DIN 6535 HA						
H3071318-6	6	13	57	21	6	4
H3071318-8	8	19	63	27	8	4
H3071318-10	10	22	72	32	10	4
H3071318-12	12	26	83	38	12	4
H3071318-14	14	26	83	38	14	4
H3071318-16	16	32	92	44	16	4
H3071318-20	20	38	104	54	20	4
Shank DIN 6535 HB						
H3171318-6	6	13	57	21	6	4
H3171318-8	8	19	63	27	8	4
H3171318-10	10	22	72	32	10	4
H3171318-12	12	26	83	38	12	4
H3171318-14	14	26	83	38	14	4
H3171318-16	16	32	92	44	16	4
H3171318-20	20	38	104	54	20	4





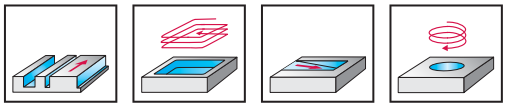
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

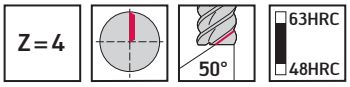
XIII D 1 C 231 C 264

Solid carbide shoulder/slot milling cutters
H3070318 / H3170318
Tough Guys



– Type H 50





TAX	P	M	K	N	S	H	O
						●●	

DIN 6527 L

Designation TAX	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
Shank DIN 6535 HA							
H3070318-6-0.5	6	0,5	13	57	21	6	4
H3070318-6-1	6	1	13	57	21	6	4
H3070318-8-0.5	8	0,5	19	63	27	8	4
H3070318-8-1	8	1	19	63	27	8	4
H3070318-8-2	8	2	19	63	27	8	4
H3070318-10-0.5	10	0,5	22	72	32	10	4
H3070318-10-1	10	1	22	72	32	10	4
H3070318-10-2	10	2	22	72	32	10	4
H3070318-12-0.5	12	0,5	26	83	38	12	4
H3070318-12-1	12	1	26	83	38	12	4
H3070318-12-2	12	2	26	83	38	12	4
H3070318-12-3	12	3	26	83	38	12	4
H3070318-14-0.5	14	0,5	26	83	38	14	4
H3070318-14-1	14	1	26	83	38	14	4
H3070318-14-2	14	2	26	83	38	14	4
H3070318-14-3	14	3	26	83	38	14	4
H3070318-16-0.5	16	0,5	32	92	44	16	4
H3070318-16-1	16	1	32	92	44	16	4
H3070318-16-2	16	2	32	92	44	16	4
H3070318-16-4	16	4	32	92	44	16	4
H3070318-20-0.5	20	0,5	38	104	54	20	4
H3070318-20-1	20	1	38	104	54	20	4
H3070318-20-2	20	2	38	104	54	20	4
H3070318-20-4	20	4	38	104	54	20	4
Shank DIN 6535 HB							
H3170318-6-0.5	6	0,5	13	57	21	6	4
H3170318-6	6	1	13	57	21	6	4
H3170318-8-0.5	8	0,5	19	63	27	8	4
H3170318-8-1	8	1	19	63	27	8	4
H3170318-8	8	2	19	63	27	8	4
H3170318-10-0.5	10	0,5	22	72	32	10	4
H3170318-10-1	10	1	22	72	32	10	4
H3170318-10	10	2	22	72	32	10	4
H3170318-12-0.5	12	0,5	26	83	38	12	4
H3170318-12-1	12	1	26	83	38	12	4
H3170318-12-2	12	2	26	83	38	12	4
H3170318-12	12	3	26	83	38	12	4
H3170318-14-0.5	14	0,5	26	83	38	14	4
H3170318-14-1	14	1	26	83	38	14	4
H3170318-14-2	14	2	26	83	38	14	4
H3170318-14	14	3	26	83	38	14	4
H3170318-16-0.5	16	0,5	32	92	44	16	4
H3170318-16-1	16	1	32	92	44	16	4
H3170318-16-2	16	2	32	92	44	16	4
H3170318-16	16	4	32	92	44	16	4
H3170318-20-0.5	20	0,5	38	104	54	20	4
H3170318-20-1	20	1	38	104	54	20	4
H3170318-20-2	20	2	38	104	54	20	4
H3170318-20	20	4	38	104	54	20	4

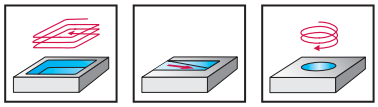
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

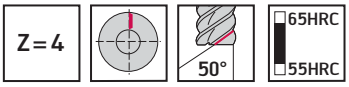
XIII D 1 C 231 C 264

Solid carbide shoulder/slot milling cutters
H3094728
Protostar® Flash



– Long reach
– Type Flash H 50

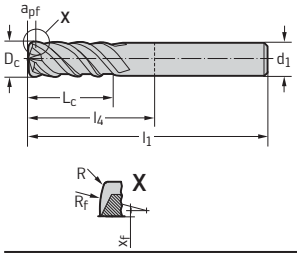




	P	M	K	N	S	H	O
TAX						●●	

DIN 6527 L

Shank DIN 6535 HA



Designation TAX	D_c h9 mm	a_{pf}	x_f mm	R_f	R_{ers} mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H3094728-4	4	0,12	0,6	4	0,618	0,5	11	57	21	6	4
H3094728-5	5	0,15	0,7	6	0,656	0,5	13	57	21	6	4
H3094728-6	6	0,2	0,7	9	0,693	0,5	15	57	21	6	4
H3094728-8	8	0,25	0,78	12	1,226	1	20	63	27	8	4
H3094728-10	10	0,3	0,8	15	1,773	1,5	26	72	32	10	4
H3094728-12	12	0,4	1	18	1,875	1,5	30	83	38	12	4
H3094728-16	16	0,5	1,5	24	2,465	2	36	92	44	16	4
H3094728-20	20	0,65	2,2	30	2,607	2	45	104	54	20	4

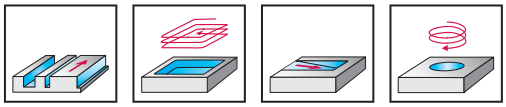
Shoulder milling $a_e \leq 0.5 \times D_c$

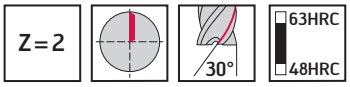
XIII D 1 C 232 C 264

Solid carbide shoulder/slot milling cutters
H8005728 / H8005928
Protostar® Ultra



– Long reach
– Type HSC 30

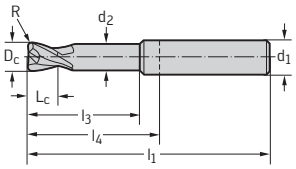




TAX	P	M	K	N	S	H	O
						●●	

DIN 6527 L

Shank DIN 6535 HA

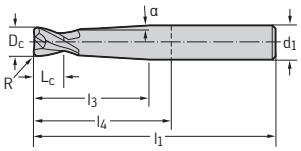


Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8005728-5	5	0,5	5	20	4,9	57	21	6	2
H8005728-6	6	1	6	24	5,9	63	27	8	2
H8005728-8	8	1	8	29	7,85	72	32	10	2
H8005728-10	10	1,5	10	35	9,85	83	38	12	2
H8005728-12	12	1,5	12	36	11,8	83	38	12	2

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

P STANDARD L

Shank DIN 6535 HA



Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	α	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8005928-2-0.5	2	0,5	2	18	4°	57	21	6	2
H8005928-3-0.5-19	3	0,5	3	19	4°	57	21	6	2
H8005928-3-0.5-37	3	0,5	3	37	1°	80	44	6	2
H8005928-4-0.5-20	4	0,5	4	20	4°	57	21	6	2
H8005928-4-0.5-50	4	0,5	4	50	1°	90	54	6	2
H8005928-6-0.5	6	0,5	6	52	1°	100	64	8	2
H8005928-6-1	6	1	6	52	1°	100	64	8	2

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

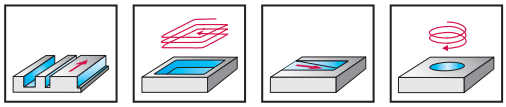
WALTER SELECT
●● Primary application
● Other application

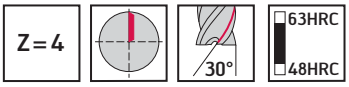
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
H8015728 / H8015828
Protostar® Ultra



– Long reach
– Type HSC 30

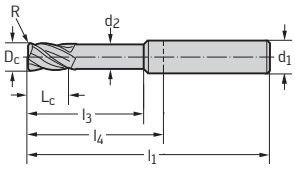




TAX	P	M	K	N	S	H	O
						●●	

P STANDARD L

Shank DIN 6535 HA

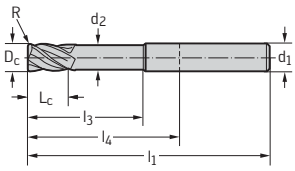


Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8015728-6	6	1	6	24	5,9	63	27	8	4
H8015728-8	8	1	8	29	7,85	72	32	10	4
H8015728-10	10	1,5	10	35	9,85	83	38	12	4
H8015728-12	12	1,5	12	36	11,8	83	38	12	4
H8015728-16	16	2	16	42	15,8	92	44	16	4
H8015728-20	20	2	20	52	19,75	104	54	20	4

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

P STANDARD L

Shank DIN 6535 HA



Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8015828-4-0.4-16	4	0,4	4	16	3,9	75	39	6	4
H8015828-4-0.4-24	4	0,4	4	24	3,9	75	39	6	4
H8015828-5-0.5-20	5	0,5	5	20	4,9	75	39	6	4
H8015828-5-0.5-30	5	0,5	5	30	4,9	75	39	6	4
H8015828-6-0.2-24	6	0,2	6	24	5,9	75	39	6	4
H8015828-6-0.2-35	6	0,2	6	35	5,9	75	39	6	4
H8015828-6-0.5-24	6	0,5	6	24	5,9	75	39	6	4
H8015828-6-0.5-35	6	0,5	6	35	5,9	75	39	6	4
H8015828-8-0.5-29	8	0,5	8	29	7,85	80	44	8	4
H8015828-8-0.5-43	8	0,5	8	43	7,85	80	44	8	4
H8015828-8-1.0-29	8	1	8	29	7,85	80	44	8	4
H8015828-8-1.0-43	8	1	8	43	7,85	80	44	8	4
H8015828-8-1.5-29	8	1,5	8	29	7,85	80	44	8	4
H8015828-10-0.3-35	10	0,3	10	35	9,85	100	60	10	4
H8015828-10-0.5-35	10	0,5	10	35	9,85	100	60	10	4
H8015828-10-0.5-59	10	0,5	10	59	9,85	100	60	10	4
H8015828-10-1.0-35	10	1	10	35	9,85	100	60	10	4
H8015828-10-1.0-59	10	1	10	59	9,85	100	60	10	4
H8015828-10-1.5-35	10	1,5	10	35	9,85	100	60	10	4
H8015828-10-1.5-59	10	1,5	10	59	9,85	100	60	10	4
H8015828-12-0.5-36	12	0,5	12	36	11,8	100	55	12	4
H8015828-12-0.5-54	12	0,5	12	54	11,8	100	55	12	4
H8015828-12-1.0-36	12	1	12	36	11,8	100	55	12	4
H8015828-12-1.0-54	12	1	12	54	11,8	100	55	12	4
H8015828-12-1.5-36	12	1,5	12	36	11,8	100	55	12	4
H8015828-12-1.5-54	12	1,5	12	54	11,8	100	55	12	4
H8015828-12-2.0-36	12	2	12	36	11,8	100	55	12	4
H8015828-12-2.0-54	12	2	12	54	11,8	100	55	12	4
H8015828-16-2.0-42	16	2	16	42	15,8	115	67	16	4

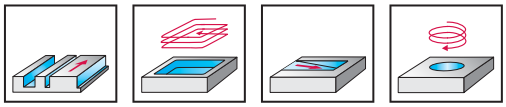
Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

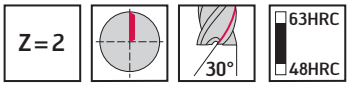
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
H4044928 / H8005828
Protostar® Ultra



– Long reach
– Type Mini HSC 30

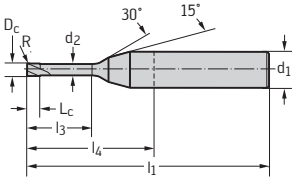




TAX	P	M	K	N	S	H	O
						●●	

P STANDARD MINI

Shank DIN 6535 HA

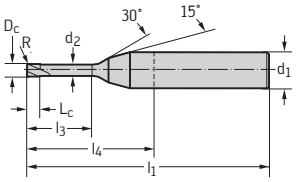


Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H4044928-0.4-1	0,4	0,05	0,4	1	0,37	38	10	3	2
H4044928-0.4-2	0,4	0,05	0,4	2	0,37	38	10	3	2
H4044928-0.5-1.25	0,5	0,05	0,5	1,25	0,47	38	10	3	2
H4044928-0.5-2.5	0,5	0,05	0,5	2,5	0,47	38	10	3	2
H4044928-0.5-3.75	0,5	0,05	0,5	3,75	0,47	38	10	3	2
H4044928-0.6-1.5	0,6	0,05	0,6	1,5	0,57	38	10	3	2
H4044928-0.6-3	0,6	0,05	0,6	3	0,57	38	10	3	2
H4044928-0.6-4.5	0,6	0,05	0,6	4,5	0,57	38	10	3	2
H4044928-0.8-2	0,8	0,05	0,8	2	0,77	38	10	3	2
H4044928-0.8-4	0,8	0,05	0,8	4	0,77	38	10	3	2
H4044928-0.8-6	0,8	0,05	0,8	6	0,77	38	10	3	2
H4044928-1-2.5	1	0,1	1	2,5	0,97	38	10	3	2
H4044928-1-5	1	0,1	1	5	0,97	60	32	3	2
H4044928-1-7.5	1	0,1	1	7,5	0,97	60	32	3	2
H4044928-1.5-4	1,5	0,15	1,5	4	1,47	38	10	3	2
H4044928-1.5-7.5	1,5	0,15	1,5	7,5	1,47	60	32	3	2
H4044928-1.5-12	1,5	0,15	1,5	12	1,47	60	32	3	2
H4044928-2-5	2	0,2	2	5	1,97	38	10	3	2
H4044928-2-10	2	0,2	2	10	1,97	60	32	3	2
H4044928-2-15	2	0,2	2	15	1,97	60	32	3	2
H4044928-2.5-6	2,5	0,25	2	6	2,47	38	10	3	2
H4044928-2.5-12.5	2,5	0,25	2	12,5	2,47	60	32	3	2
H4044928-2.5-20	2,5	0,25	2	20	2,47	60	32	3	2
H4044928-3-7.5	3	0,3	2	7,5	2,97	38	10	3	2
H4044928-3-15	3	0,3	2	15	2,97	60	32	3	2
H4044928-3-22.5	3	0,3	2	22,5	2,97	60	32	3	2

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

P STANDARD MINI

Shank DIN 6535 HA



Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8005828-0.6	0,6	0,06	0,6	2,4	0,57	54	18	6	2
H8005828-0.8	0,8	0,08	0,8	3,2	0,77	54	18	6	2
H8005828-1	1	0,1	1	4	0,97	65	29	6	2
H8005828-1.2	1,2	0,12	1,2	4,8	1,17	65	29	6	2
H8005828-1.5	1,5	0,15	1,5	6	1,47	65	29	6	2
H8005828-2-0.2	2	0,2	2	8	1,97	75	39	6	2
H8005828-2-0.5	2	0,5	2	8	1,97	75	39	6	2
H8005828-3-0.2	3	0,2	3	12	2,97	75	39	6	2
H8005828-3-0.3	3	0,3	3	12	2,97	75	39	6	2

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

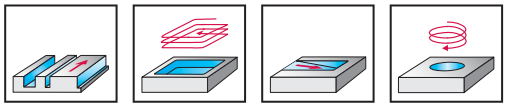
WALTER SELECT
●● Primary application
● Other application

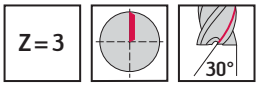
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
H3027419
Protostar®



– Type 30

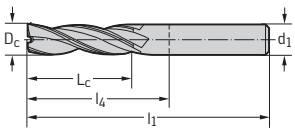




	P	M	K	N	S	H	O
DIA							●●

P STANDARD L

Shank DIN 6535 HA



Designation DIA	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3027419-1	1	4	38	10	3	3
H3027419-1.5	1,5	6	38	10	3	3
H3027419-2	2	8	38	11	3	3
H3027419-3	3	12	38	12	3	3
H3027419-4	4	14	50	22	4	3
H3027419-5	5	16	57	21	6	3
H3027419-6	6	22	65	29	6	3
H3027419-8	8	28	80	44	8	3
H3027419-10	10	32	100	60	10	3
H3027419-12	12	38	100	55	12	3
H3027419-16	16	50	115	67	16	3

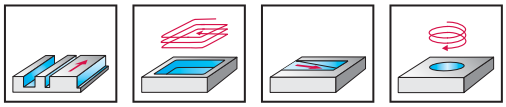
Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

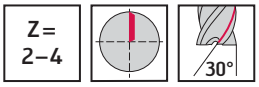
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
H8095919
Protostar®



– Long reach
– Type HSC 30

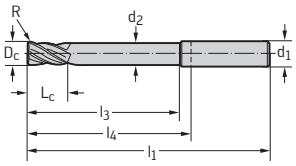




	P	M	K	N	S	H	O
DIA							●●

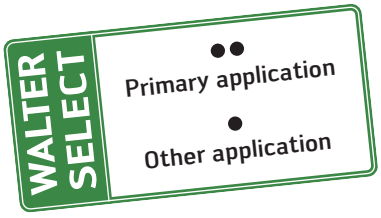
P STANDARD XL

Shank DIN 6535 HA



Designation DIA	D_c h8 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8095919-4-20	4	0,5	4	20	3,9	100	64	6	2
H8095919-4-30	4	0,5	4	30	3,9	100	64	6	2
H8095919-4-40	4	0,5	4	40	3,9	100	64	6	2
H8095919-5-25	5	0,5	5	25	4,9	100	64	6	2
H8095919-5-50	5	0,5	5	50	4,9	100	64	6	2
H8095919-6-30	6	0,5	6	30	5,9	100	64	6	4
H8095919-6-45	6	0,5	6	45	5,9	100	64	6	4
H8095919-6-60	6	0,5	6	60	5,9	100	64	6	4
H8095919-8-40	8	0,5	8	40	7,85	120	84	8	4
H8095919-8-60	8	0,5	8	60	7,85	120	84	8	4
H8095919-8-80	8	0,5	8	80	7,85	120	84	8	4
H8095919-10-50	10	1	10	50	9,85	150	110	10	4
H8095919-10-75	10	1	10	75	9,85	150	110	10	4
H8095919-12-60	12	1	12	60	11,8	150	105	12	4
H8095919-12-90	12	1	12	90	11,8	150	105	12	4

Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

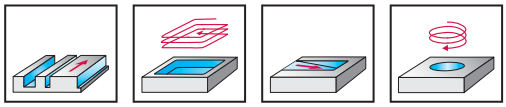


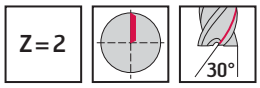
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
H4044919
Protostar®



– Long reach
– Type Mini HSC 30

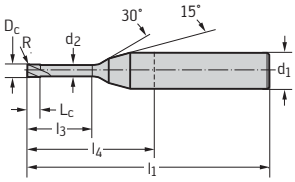




	P	M	K	N	S	H	O
DIA							●●

P STANDARD MINI

Shank DIN 6535 HA



Designation DIA	D_c h8 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H4044919-0.4-1	0,4	0,05	0,4	1	0,37	38	10	3	2
H4044919-0.4-2	0,4	0,05	0,4	2	0,37	38	10	3	2
H4044919-0.4-4	0,4	0,05	0,4	4	0,37	38	10	3	2
H4044919-0.5-1.25	0,5	0,05	0,5	1,25	0,47	38	10	3	2
H4044919-0.5-2.5	0,5	0,05	0,5	2,5	0,47	38	10	3	2
H4044919-0.5-5	0,5	0,05	0,5	5	0,47	38	10	3	2
H4044919-0.6-1.5	0,6	0,05	0,6	1,5	0,57	38	10	3	2
H4044919-0.6-3	0,6	0,05	0,6	3	0,57	38	10	3	2
H4044919-0.6-4.5	0,6	0,05	0,6	4,5	0,57	38	10	3	2
H4044919-0.6-6	0,6	0,05	0,6	6	0,57	38	10	3	2
H4044919-0.6-9	0,6	0,05	0,6	9	0,57	38	10	3	2
H4044919-0.8-2	0,8	0,05	0,8	2	0,77	38	10	3	2
H4044919-0.8-4	0,8	0,05	0,8	4	0,77	38	10	3	2
H4044919-0.8-6	0,8	0,05	0,8	6	0,77	38	10	3	2
H4044919-0.8-8	0,8	0,05	0,8	8	0,77	38	10	3	2
H4044919-0.8-12	0,8	0,05	0,8	12	0,77	60	32	3	2
H4044919-1-2.5	1	0,1	1	2,5	0,97	38	10	3	2
H4044919-1-5	1	0,1	1	5	0,97	60	32	3	2
H4044919-1-7.5	1	0,1	1	7,5	0,97	60	32	3	2
H4044919-1-10	1	0,1	1	10	0,97	60	32	3	2
H4044919-1-15	1	0,1	1	15	0,97	60	32	3	2
H4044919-1-20	1	0,1	1	20	0,97	60	32	3	2
H4044919-1.5-7.5	1,5	0,15	1,5	7,5	1,47	60	32	3	2
H4044919-1.5-15	1,5	0,15	1,5	15	1,47	60	32	3	2
H4044919-2-10	2	0,2	2	10	1,97	60	32	3	2
H4044919-2-15	2	0,2	2	15	1,97	60	32	3	2
H4044919-2-20	2	0,2	2	20	1,97	60	32	3	2
H4044919-2-30	2	0,2	2	30	1,97	60	32	3	2
H4044919-2.5-12.5	2,5	0,25	2,5	12,5	2,47	60	32	3	2
H4044919-2.5-25	2,5	0,25	2,5	25	2,47	60	32	3	2
H4044919-3-15	3	0,3	3	15	2,97	60	32	3	2
H4044919-3-22.5	3	0,3	3	22,5	2,97	60	32	3	2
H4044919-3-30	3	0,3	3	30	2,97	60	32	3	2

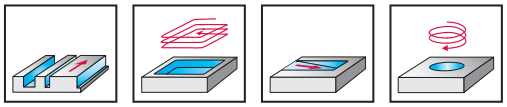
Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.05 \times D_c$

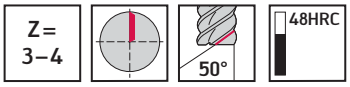
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



– Type N 50

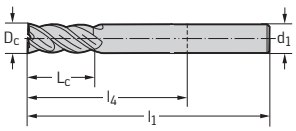




	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

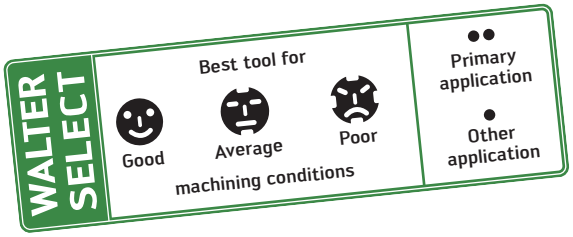
P STANDARD L

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
MC326-02.0A3L-	2	7	57	21	6	3	☺
MC326-02.5A3L-	2,5	8	57	21	6	3	☺
MC326-03.0A3L-	3	8	57	21	6	3	☺
MC326-03.5A3L-	3,5	10	57	21	6	3	☺
MC326-04.0A3L-	4	11	57	21	6	3	☺
MC326-04.5A3L-	4,5	11	57	21	6	3	☺
MC326-05.0A3L-	5	13	57	21	6	3	☺
MC326-06.0A4L-	6	13	65	29	6	4	☺
MC326-07.0A4L-	7	16	80	44	8	4	☺
MC326-08.0A4L-	8	19	80	44	8	4	☺
MC326-09.0A4L-	9	19	100	60	10	4	☺
MC326-10.0A4L-	10	22	100	60	10	4	☺
MC326-11.0A4L-	11	26	100	55	12	4	☺
MC326-12.0A4L-	12	26	100	55	12	4	☺
MC326-14.0A4L-	14	26	104	59	14	4	☺
MC326-16.0A4L-	16	32	115	67	16	4	☺
MC326-20.0A4L-	20	38	125	75	20	4	☺

Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-02.0A3L-WK40TF

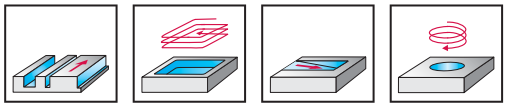


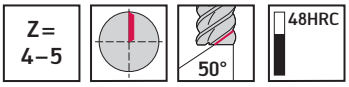
XIII
D 1
C 233
C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



– Type N 50

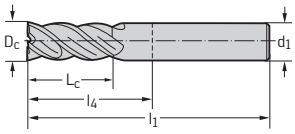


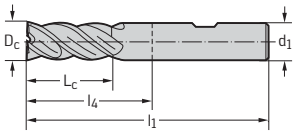


	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

DIN 6527 L

	Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
Shank DIN 6535 HA	MC326-06.0A4B-	6	13	57	21	6	4	☺
	MC326-08.0A4B-	8	19	63	27	8	4	☺
	MC326-10.0A4B-	10	22	72	32	10	4	☺
	MC326-12.0A4B-	12	26	83	38	12	4	☺
	MC326-14.0A4B-	14	26	83	38	14	4	☺
	MC326-16.0A4B-	16	32	92	44	16	4	☺
	MC326-18.0A4B-	18	32	92	44	18	4	☺
	MC326-20.0A4B-	20	38	104	54	20	4	☺
	MC326-25.0A5B-	25	45	121	65	25	5	☺
Shank DIN 6535 HB	MC326-06.0W4B-	6	13	57	21	6	4	☺
	MC326-08.0W4B-	8	19	63	27	8	4	☺
	MC326-10.0W4B-	10	22	72	32	10	4	☺
	MC326-12.0W4B-	12	26	83	38	12	4	☺
	MC326-14.0W4B-	14	26	83	38	14	4	☺
	MC326-16.0W4B-	16	32	92	44	16	4	☺
	MC326-18.0W4B-	18	32	92	44	18	4	☺
	MC326-20.0W4B-	20	38	104	54	20	4	☺
	MC326-25.0W5B-	25	45	121	65	25	5	☺





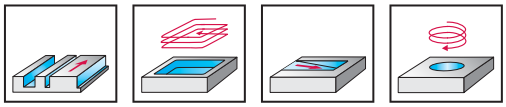
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-06.0A4B-WK40TF

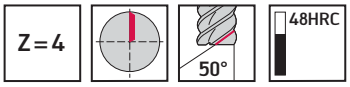
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



– Long reach
– Type N 50



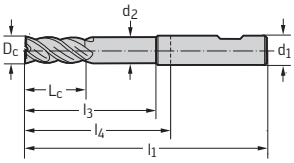


	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

DIN 6527 L

	Designation	D_c h10 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
Shank DIN 6535 HA	MC326-06.0A4BC-	6	13	19	5,7	57	21	6	4	☻
	MC326-08.0A4BC-	8	19	25	7,6	63	27	8	4	☻
	MC326-10.0A4BC-	10	22	30	9,5	72	32	10	4	☻
	MC326-12.0A4BC-	12	26	36	11,4	83	38	12	4	☻
	MC326-14.0A4BC-	14	26	36	13,3	83	38	14	4	☻
	MC326-16.0A4BC-	16	32	42	15,2	92	44	16	4	☻
	MC326-20.0A4BC-	20	38	52	19	104	54	20	4	☻
Shank DIN 6535 HB	MC326-06.0W4BC-	6	13	19	5,7	57	21	6	4	☻
	MC326-08.0W4BC-	8	19	25	7,6	63	27	8	4	☻
	MC326-10.0W4BC-	10	22	30	9,5	72	32	10	4	☻
	MC326-12.0W4BC-	12	26	36	11,4	83	38	12	4	☻
	MC326-14.0W4BC-	14	26	36	13,3	83	38	14	4	☻
	MC326-16.0W4BC-	16	32	42	15,2	92	44	16	4	☻
	MC326-20.0W4BC-	20	38	52	19	104	54	20	4	☻

Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-06.0A4BC-WK40TF

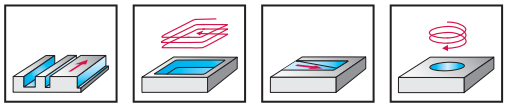


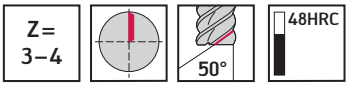
XIII
D 1
C 233
C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



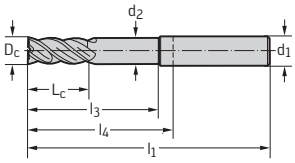
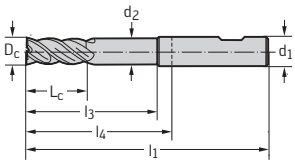
– Long reach
– Type N 50 long





	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

P STANDARD L

Shank DIN 6535 HA	Designation	D_c h10 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
	MC326-04.0A3LC-	4	11	15	3,8	57	21	6	3	☻
	MC326-05.0A3LC-	5	13	16	4,75	57	21	6	3	☻
	MC326-06.0A4LC-	6	13	27	5,7	65	29	6	4	☻
	MC326-08.0A4LC-	8	19	42	7,6	80	44	8	4	☻
	MC326-10.0A4LC-	10	22	58	9,5	100	60	10	4	☻
	MC326-12.0A4LC-	12	26	53	11,4	100	55	12	4	☻
	MC326-14.0A4LC-	14	26	57	13,3	104	59	14	4	☻
	MC326-16.0A4LC-	16	32	65	15,2	115	67	16	4	☻
	MC326-20.0A4LC-	20	38	73	19	125	75	20	4	☻
Shank DIN 6535 HB										
	MC326-04.0W3LC-	4	11	15	3,8	57	21	6	3	☻
	MC326-05.0W3LC-	5	13	16	4,75	57	21	6	3	☻
	MC326-06.0W4LC-	6	13	27	5,7	65	29	6	4	☻
	MC326-08.0W4LC-	8	19	42	7,6	80	44	8	4	☻
	MC326-10.0W4LC-	10	22	58	9,5	100	60	10	4	☻
	MC326-12.0W4LC-	12	26	53	11,4	100	55	12	4	☻
	MC326-14.0W4LC-	14	26	57	13,3	104	59	14	4	☻
	MC326-16.0W4LC-	16	32	65	15,2	115	67	16	4	☻
	MC326-20.0W4LC-	20	38	73	19	125	75	20	4	☻

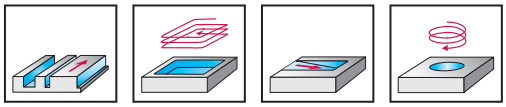
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-04.0A3LC-WK40TF

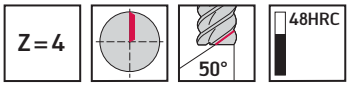
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



– Long reach
– Type N 50



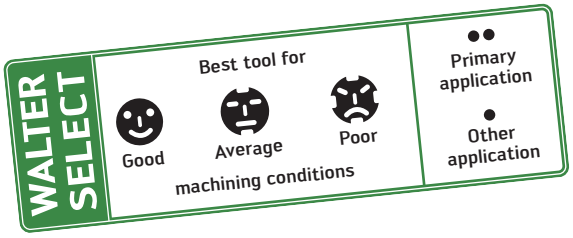


	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

DIN 6527 L

	Designation	D_c h10 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
Shank DIN 6535 HA	MC326-06.0A4BCJ-	6	6	19	5,7	57	21	6	4	☻
	MC326-08.0A4BCJ-	8	8	25	7,6	63	27	8	4	☻
	MC326-10.0A4BCJ-	10	10	30	9,5	72	32	10	4	☻
	MC326-12.0A4BCJ-	12	12	36	11,4	83	38	12	4	☻
	MC326-14.0A4BCJ-	14	14	36	13,3	83	38	14	4	☻
	MC326-16.0A4BCJ-	16	16	42	15,2	92	44	16	4	☻
Shank DIN 6535 HB	MC326-06.0W4BCJ-	6	6	19	5,7	57	21	6	4	☻
	MC326-08.0W4BCJ-	8	8	25	7,6	63	27	8	4	☻
	MC326-10.0W4BCJ-	10	10	30	9,5	72	32	10	4	☻
	MC326-12.0W4BCJ-	12	12	36	11,4	83	38	12	4	☻
	MC326-14.0W4BCJ-	14	14	36	13,3	83	38	14	4	☻
	MC326-16.0W4BCJ-	16	16	42	15,2	92	44	16	4	☻

Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-06.0A4BCJ-WK40TF

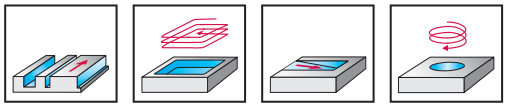


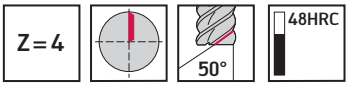
XIII
D 1
C 233
C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



– Type N 50

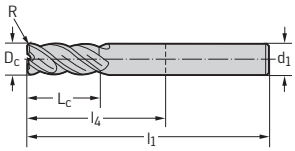


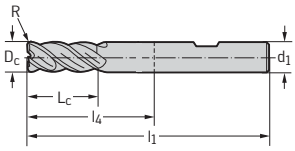


	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

DIN 6527 L

	Designation	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
Shank DIN 6535 HA	MC326-06.0A4B100-	6	1	13	57	21	6	4	☻
	MC326-08.0A4B200-	8	2	19	63	27	8	4	☻
	MC326-10.0A4B200-	10	2	22	72	32	10	4	☻
	MC326-12.0A4B300-	12	3	26	83	38	12	4	☻
	MC326-14.0A4B300-	14	3	26	83	38	14	4	☻
	MC326-16.0A4B300-	16	3	32	92	44	16	4	☻
	MC326-16.0A4B400-	16	4	32	92	44	16	4	☻
	MC326-20.0A4B300-	20	3	38	104	54	20	4	☻
	MC326-20.0A4B400-	20	4	38	104	54	20	4	☻
Shank DIN 6535 HB	MC326-06.0W4B100-	6	1	13	57	21	6	4	☻
	MC326-08.0W4B200-	8	2	19	63	27	8	4	☻
	MC326-10.0W4B200-	10	2	22	72	32	10	4	☻
	MC326-12.0W4B300-	12	3	26	83	38	12	4	☻
	MC326-14.0W4B300-	14	3	26	83	38	14	4	☻
	MC326-16.0W4B300-	16	3	32	92	44	16	4	☻
	MC326-16.0W4B400-	16	4	32	92	44	16	4	☻
	MC326-20.0W4B300-	20	3	38	104	54	20	4	☻
	MC326-20.0W4B400-	20	4	38	104	54	20	4	☻





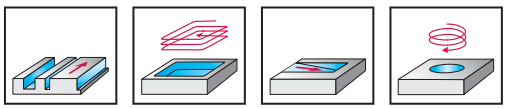
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-06.0A4B100-WK40TF

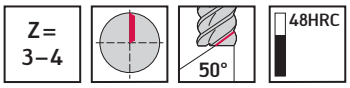
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



– Type N 50

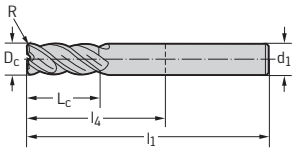




	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

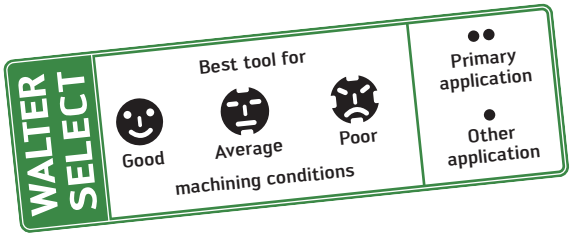
P STANDARD L

Shank DIN 6535 HA



Designation	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
MC326-04.0A3L100-	4	1	11	57	21	6	3	☻
MC326-05.0A3L100-	5	1	13	57	21	6	3	☻
MC326-06.0A4L100-	6	1	13	65	29	6	4	☻
MC326-08.0A4L200-	8	2	19	80	44	8	4	☻
MC326-10.0A4L200-	10	2	22	100	60	10	4	☻
MC326-12.0A4L300-	12	3	26	100	55	12	4	☻
MC326-14.0A4L300-	14	3	26	104	59	14	4	☻
MC326-16.0A4L300-	16	3	32	115	67	16	4	☻
MC326-16.0A4L400-	16	4	32	115	67	16	4	☻
MC326-20.0A4L300-	20	3	38	125	75	20	4	☻
MC326-20.0A4L400-	20	4	38	125	75	20	4	☻

Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-04.0A3L100-WK40TF

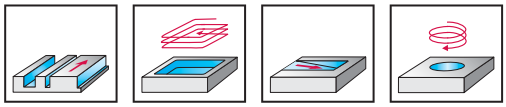


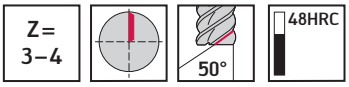
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



– Long reach
– Type N 50

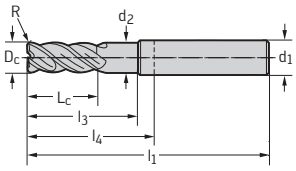




	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

DIN 6527 L

Shank DIN 6535 HA



Designation	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
MC326-02.0A3B020C-	2	0,2	7	9,5	1,92	57	21	6	3	☺
MC326-03.0A3B030C-	3	0,3	8	10	2,9	57	21	6	3	☺
MC326-04.0A3B050C-	4	0,5	11	15	3,8	57	21	6	3	☺
MC326-05.0A3B050C-	5	0,5	13	16	4,75	57	21	6	3	☺
MC326-06.0A4B050C-	6	0,5	13	19	5,7	57	21	6	4	☺
MC326-06.0A4B080C-	6	0,8	13	19	5,7	57	21	6	4	☺
MC326-06.0A4B100C-	6	1	13	19	5,7	57	21	6	4	☺
MC326-08.0A4B050C-	8	0,5	19	25	7,6	63	27	8	4	☺
MC326-08.0A4B080C-	8	0,8	19	25	7,6	63	27	8	4	☺
MC326-08.0A4B100C-	8	1	19	25	7,6	63	27	8	4	☺
MC326-08.0A4B150C-	8	1,5	19	25	7,6	63	27	8	4	☺
MC326-08.0A4B200C-	8	2	19	25	7,6	63	27	8	4	☺
MC326-10.0A4B050C-	10	0,5	22	30	9,5	72	32	10	4	☺
MC326-10.0A4B080C-	10	0,8	22	30	9,5	72	32	10	4	☺
MC326-10.0A4B100C-	10	1	22	30	9,5	72	32	10	4	☺
MC326-10.0A4B150C-	10	1,5	22	30	9,5	72	32	10	4	☺
MC326-10.0A4B200C-	10	2	22	30	9,5	72	32	10	4	☺
MC326-12.0A4B050C-	12	0,5	26	36	11,4	83	38	12	4	☺
MC326-12.0A4B080C-	12	0,8	26	36	11,4	83	38	12	4	☺
MC326-12.0A4B100C-	12	1	26	36	11,4	83	38	12	4	☺
MC326-12.0A4B150C-	12	1,5	26	36	11,4	83	38	12	4	☺
MC326-12.0A4B200C-	12	2	26	36	11,4	83	38	12	4	☺
MC326-12.0A4B250C-	12	2,5	26	36	11,4	83	38	12	4	☺
MC326-12.0A4B300C-	12	3	26	36	11,4	83	38	12	4	☺
MC326-14.0A4B100C-	14	1	26	36	13,3	83	38	14	4	☺
MC326-14.0A4B150C-	14	1,5	26	36	13,3	83	38	14	4	☺
MC326-14.0A4B200C-	14	2	26	36	13,3	83	38	14	4	☺
MC326-14.0A4B300C-	14	3	26	36	13,3	83	38	14	4	☺
MC326-16.0A4B050C-	16	0,5	32	42	15,2	92	44	16	4	☺
MC326-16.0A4B100C-	16	1	32	42	15,2	92	44	16	4	☺
MC326-16.0A4B200C-	16	2	32	42	15,2	92	44	16	4	☺
MC326-16.0A4B250C-	16	2,5	32	42	15,2	92	44	16	4	☺
MC326-16.0A4B300C-	16	3	32	42	15,2	92	44	16	4	☺
MC326-16.0A4B400C-	16	4	32	42	15,2	92	44	16	4	☺
MC326-20.0A4B050C-	20	0,5	38	52	19	104	54	20	4	☺
MC326-20.0A4B100C-	20	1	38	52	19	104	54	20	4	☺
MC326-20.0A4B200C-	20	2	38	52	19	104	54	20	4	☺
MC326-20.0A4B250C-	20	2,5	38	52	19	104	54	20	4	☺
MC326-20.0A4B300C-	20	3	38	52	19	104	54	20	4	☺
MC326-20.0A4B400C-	20	4	38	52	19	104	54	20	4	☺

Continued

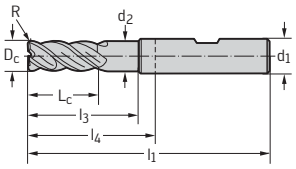
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-02.0A3B020C-WK40TF

XIII D 1 C 233 C 264

Continued

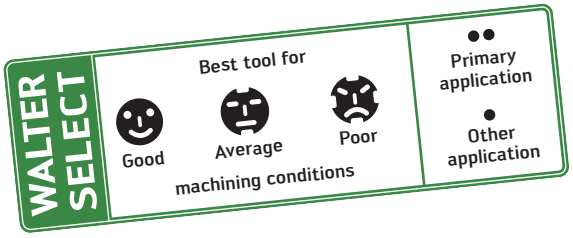
DIN 6527 L

Shank DIN 6535 HB



Designation	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
MC326-02.0W3B020C-	2	0,2	7	9,5	1,92	57	21	6	3	☻
MC326-03.0W3B030C-	3	0,3	8	10	2,9	57	21	6	3	☻
MC326-04.0W3B050C-	4	0,5	11	15	3,8	57	21	6	3	☻
MC326-05.0W3B050C-	5	0,5	13	16	4,75	57	21	6	3	☻
MC326-06.0W4B050C-	6	0,5	13	19	5,7	57	21	6	4	☻
MC326-06.0W4B100C-	6	1	13	19	5,7	57	21	6	4	☻
MC326-08.0W4B050C-	8	0,5	19	25	7,6	63	27	8	4	☻
MC326-08.0W4B100C-	8	1	19	25	7,6	63	27	8	4	☻
MC326-08.0W4B150C-	8	1,5	19	25	7,6	63	27	8	4	☻
MC326-08.0W4B200C-	8	2	19	25	7,6	63	27	8	4	☻
MC326-10.0W4B050C-	10	0,5	22	30	9,5	72	32	10	4	☻
MC326-10.0W4B100C-	10	1	22	30	9,5	72	32	10	4	☻
MC326-10.0W4B150C-	10	1,5	22	30	9,5	72	32	10	4	☻
MC326-10.0W4B200C-	10	2	22	30	9,5	72	32	10	4	☻
MC326-12.0W4B050C-	12	0,5	26	36	11,4	83	38	12	4	☻
MC326-12.0W4B100C-	12	1	26	36	11,4	83	38	12	4	☻
MC326-12.0W4B150C-	12	1,5	26	36	11,4	83	38	12	4	☻
MC326-12.0W4B200C-	12	2	26	36	11,4	83	38	12	4	☻
MC326-12.0W4B250C-	12	2,5	26	36	11,4	83	38	12	4	☻
MC326-12.0W4B300C-	12	3	26	36	11,4	83	38	12	4	☻
MC326-14.0W4B100C-	14	1	26	36	13,3	83	38	14	4	☻
MC326-14.0W4B150C-	14	1,5	26	36	13,3	83	38	14	4	☻
MC326-14.0W4B200C-	14	2	26	36	13,3	83	38	14	4	☻
MC326-14.0W4B300C-	14	3	26	36	13,3	83	38	14	4	☻
MC326-16.0W4B050C-	16	0,5	32	42	15,2	92	44	16	4	☻
MC326-16.0W4B100C-	16	1	32	42	15,2	92	44	16	4	☻
MC326-16.0W4B200C-	16	2	32	42	15,2	92	44	16	4	☻
MC326-16.0W4B250C-	16	2,5	32	42	15,2	92	44	16	4	☻
MC326-16.0W4B300C-	16	3	32	42	15,2	92	44	16	4	☻
MC326-16.0W4B400C-	16	4	32	42	15,2	92	44	16	4	☻
MC326-20.0W4B050C-	20	0,5	38	52	19	104	54	20	4	☻
MC326-20.0W4B100C-	20	1	38	52	19	104	54	20	4	☻
MC326-20.0W4B200C-	20	2	38	52	19	104	54	20	4	☻
MC326-20.0W4B250C-	20	2,5	38	52	19	104	54	20	4	☻
MC326-20.0W4B300C-	20	3	38	52	19	104	54	20	4	☻
MC326-20.0W4B400C-	20	4	38	52	19	104	54	20	4	☻

Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-02.0A3B020C-WK40TF

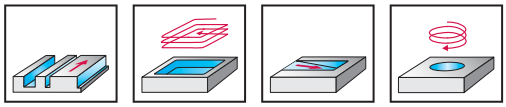


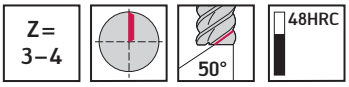
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
MC326 Supreme



– Long reach
– Type N 50 long





	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

P STANDARD L

Designation	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
Shank DIN 6535 HA										
MC326-04.0A3L100C-	4	1	11	15	3,8	57	21	6	3	☺
MC326-05.0A3L100C-	5	1	13	16	4,75	57	21	6	3	☺
MC326-06.0A4L050C-	6	0,5	13	27	5,7	65	29	6	4	☺
MC326-06.0A4L100C-	6	1	13	27	5,7	65	29	6	4	☺
MC326-08.0A4L050C-	8	0,5	19	42	7,6	80	44	8	4	☺
MC326-08.0A4L100C-	8	1	19	42	7,6	80	44	8	4	☺
MC326-08.0A4L200C-	8	2	19	42	7,6	80	44	8	4	☺
MC326-10.0A4L050C-	10	0,5	22	58	9,5	100	60	10	4	☺
MC326-10.0A4L100C-	10	1	22	58	9,5	100	60	10	4	☺
MC326-10.0A4L200C-	10	2	22	58	9,5	100	60	10	4	☺
MC326-12.0A4L050C-	12	0,5	26	53	11,4	100	55	12	4	☺
MC326-12.0A4L100C-	12	1	26	53	11,4	100	55	12	4	☺
MC326-12.0A4L300C-	12	3	26	53	11,4	100	55	12	4	☺
MC326-14.0A4L050C-	14	0,5	26	57	13,3	104	59	14	4	☺
MC326-14.0A4L100C-	14	1	26	57	13,3	104	59	14	4	☺
MC326-14.0A4L300C-	14	3	26	57	13,3	104	59	14	4	☺
MC326-16.0A4L050C-	16	0,5	32	65	15,2	115	67	16	4	☺
MC326-16.0A4L100C-	16	1	32	65	15,2	115	67	16	4	☺
MC326-16.0A4L200C-	16	2	32	65	15,2	115	67	16	4	☺
MC326-16.0A4L300C-	16	3	32	65	15,2	115	67	16	4	☺
MC326-16.0A4L400C-	16	4	32	65	15,2	115	67	16	4	☺
MC326-20.0A4L100C-	20	1	38	73	19	125	75	20	4	☺
MC326-20.0A4L200C-	20	2	38	73	19	125	75	20	4	☺
MC326-20.0A4L300C-	20	3	38	73	19	125	75	20	4	☺
MC326-20.0A4L400C-	20	4	38	73	19	125	75	20	4	☺
Shank DIN 6535 HB										
MC326-04.0W3L100C-	4	1	11	15	3,8	57	21	6	3	☺
MC326-05.0W3L100C-	5	1	13	16	4,75	57	21	6	3	☺
MC326-06.0W4L050C-	6	0,5	13	27	5,7	65	29	6	4	☺
MC326-06.0W4L100C-	6	1	13	27	5,7	65	29	6	4	☺
MC326-08.0W4L050C-	8	0,5	19	42	7,6	80	44	8	4	☺
MC326-08.0W4L100C-	8	1	19	42	7,6	80	44	8	4	☺
MC326-08.0W4L200C-	8	2	19	42	7,6	80	44	8	4	☺
MC326-10.0W4L050C-	10	0,5	22	58	9,5	100	60	10	4	☺
MC326-10.0W4L100C-	10	1	22	58	9,5	100	60	10	4	☺
MC326-10.0W4L200C-	10	2	22	58	9,5	100	60	10	4	☺
MC326-12.0W4L050C-	12	0,5	26	53	11,4	100	55	12	4	☺
MC326-12.0W4L100C-	12	1	26	53	11,4	100	55	12	4	☺
MC326-12.0W4L300C-	12	3	26	53	11,4	100	55	12	4	☺
MC326-14.0W4L050C-	14	0,5	26	57	13,3	104	59	14	4	☺
MC326-14.0W4L100C-	14	1	26	57	13,3	104	59	14	4	☺
MC326-14.0W4L300C-	14	3	26	57	13,3	104	59	14	4	☺
MC326-16.0W4L050C-	16	0,5	32	65	15,2	115	67	16	4	☺
MC326-16.0W4L100C-	16	1	32	65	15,2	115	67	16	4	☺
MC326-16.0W4L200C-	16	2	32	65	15,2	115	67	16	4	☺
MC326-16.0W4L300C-	16	3	32	65	15,2	115	67	16	4	☺
MC326-16.0W4L400C-	16	4	32	65	15,2	115	67	16	4	☺

Continued

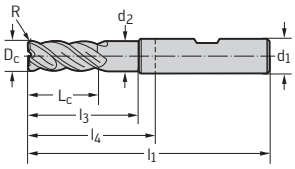
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-04.0A3L100C-WK40TF

XIII D 1 C 233 C 264

Continued

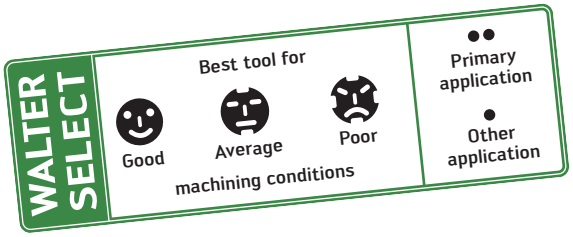
P STANDARD L

Shank DIN 6535 HB



Designation	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
MC326-20.0W4L100C-	20	1	38	73	19	125	75	20	4	☺
MC326-20.0W4L200C-	20	2	38	73	19	125	75	20	4	☺
MC326-20.0W4L300C-	20	3	38	73	19	125	75	20	4	☺
MC326-20.0W4L400C-	20	4	38	73	19	125	75	20	4	☺

Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC326-04.0A3L100C-WK40TF

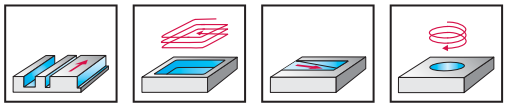


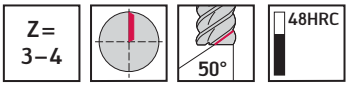
XIII D 1 C 233 C 264

Solid carbide routing cutters
MC726 Supreme



– Type N 50





	P	M	K	N	S	H	O
WK40TF	●●	●	●		●		

DIN 6527 K

Designation	D_c e8 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WK40TF
Shank DIN 6535 HA								
MC726-02.8A3A008J-	2,8	0,08	3	50	14	6	3	☺
MC726-03.0A3A008J-	3	0,08	3	50	14	6	3	☺
MC726-03.8A3A008J-	3,8	0,08	4	54	18	6	3	☺
MC726-04.0A3A008J-	4	0,08	4	54	18	6	3	☺
MC726-04.8A3A016J-	4,8	0,16	5	54	18	6	3	☺
MC726-05.0A3A016J-	5	0,16	5	54	18	6	3	☺
MC726-05.8A4A016J-	5,75	0,16	6	54	18	6	4	☺
MC726-06.0A4A016J-	6	0,16	6	54	18	6	4	☺
MC726-07.8A4A016J-	7,75	0,16	8	58	22	8	4	☺
MC726-08.0A4A016J-	8	0,16	8	58	22	8	4	☺
MC726-09.7A4A025J-	9,7	0,25	10	66	26	10	4	☺
MC726-10.0A4A025J-	10	0,25	10	66	26	10	4	☺
MC726-12.0A4A025J-	12	0,25	12	73	28	12	4	☺
MC726-14.0A4A025J-	14	0,25	14	75	30	14	4	☺
MC726-16.0A4A025J-	16	0,25	16	82	34	16	4	☺
Shank DIN 6535 HB								
MC726-02.8W3A008J-	2,8	0,08	3	50	14	6	3	☺
MC726-03.0W3A008J-	3	0,08	3	50	14	6	3	☺
MC726-03.8W3A008J-	3,8	0,08	4	54	18	6	3	☺
MC726-04.0W3A008J-	4	0,08	4	54	18	6	3	☺
MC726-04.8W3A016J-	4,8	0,16	5	54	18	6	3	☺
MC726-05.0W3A016J-	5	0,16	5	54	18	6	3	☺
MC726-05.8W4A016J-	5,75	0,16	6	54	18	6	4	☺
MC726-06.0W4A016J-	6	0,16	6	54	18	6	4	☺
MC726-07.8W4A016J-	7,75	0,16	8	58	22	8	4	☺
MC726-08.0W4A016J-	8	0,16	8	58	22	8	4	☺
MC726-09.7W4A025J-	9,7	0,25	10	66	26	10	4	☺
MC726-10.0W4A025J-	10	0,25	10	66	26	10	4	☺
MC726-12.0W4A025J-	12	0,25	12	73	28	12	4	☺
MC726-14.0W4A025J-	14	0,25	14	75	30	14	4	☺
MC726-16.0W4A025J-	16	0,25	16	82	34	16	4	☺

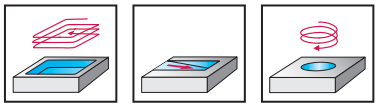
Slot milling $a_p \leq 0.9 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WK40TF grade: MC726-02.8A3A008J-WK40TF

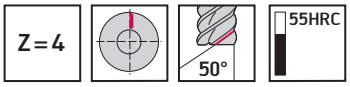
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
H3094718
Protostar® Flash



– Long reach
– Type Flash N 50

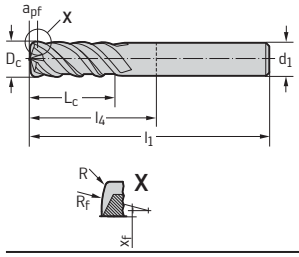




	P	M	K	N	S	H	O
TAX	●●	●	●		●		

P STANDARD L

Shank DIN 6535 HA



Designation TAX	D_c h9 mm	a_{pf}	x_f mm	R_f	R_{ers} mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3094718-4	4	0,2	0,8	2	0,673	0,5	11	57	21	6	4
H3094718-5	5	0,25	1,1	2,5	0,714	0,5	13	57	21	6	4
H3094718-6	6	0,3	1,4	3	0,755	0,5	15	57	21	6	4
H3094718-6-100	6	0,3	1,4	3	0,755	0,5	15	100	64	6	4
H3094718-8	8	0,5	1,54	4	1,379	1	20	63	27	8	4
H3094718-8-120	8	0,5	1,54	4	1,379	1	20	120	84	8	4
H3094718-10	10	0,7	1,7	5	1,998	1,5	26	72	32	10	4
H3094718-10-150	10	0,7	1,7	5	1,998	1,5	26	150	110	10	4
H3094718-12	12	0,8	2,25	6	2,103	1,5	30	83	38	12	4
H3094718-16	16	1	3,1	8	2,747	2	36	92	44	16	4
H3094718-20	20	1,3	4	10	3,072	2	45	104	54	20	4

Shoulder milling $a_e \leq 0.5 \times D_c$

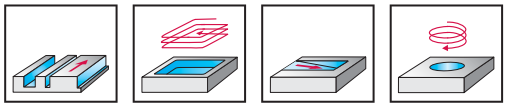
WALTER SELECT
●● Primary application
● Other application

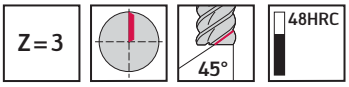
XIII D 1 C 233 C 264

Solid carbide shoulder/slot milling cutters
MC321 Advance



– Type N 45

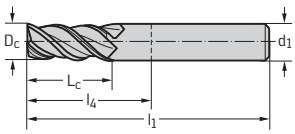




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

DIN 6527 K

Shank DIN 6535 HA

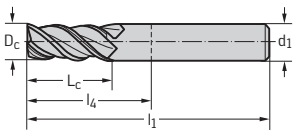


Designation	D_c h11 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC321-02.0A3A-	2	6	50	14	6	3	●
MC321-03.0A3A-	3	7	50	14	6	3	●
MC321-04.0A3A-	4	8	54	18	6	3	●
MC321-05.0A3A-	5	10	54	18	6	3	●
MC321-06.0A3A-	6	10	54	18	6	3	●
MC321-08.0A3A-	8	16	58	22	8	3	●
MC321-10.0A3A-	10	19	66	26	10	3	●
MC321-12.0A3A-	12	22	73	28	12	3	●

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC321-02.0A3A-WJ30TF

P STANDARD S

Shank DIN 6535 HA



Designation	D_c h11 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC321-02.0A3S-	2	3	39	8	6	3	●
MC321-03.0A3S-	3	4	39	9	6	3	●
MC321-04.0A3S-	4	5	39	11	6	3	●
MC321-05.0A3S-	5	6	39	12	6	3	●
MC321-06.0A3S-	6	7	39	12	6	3	●
MC321-08.0A3S-	8	9	44	17	8	3	●
MC321-10.0A3S-	10	11	51	20	10	3	●
MC321-12.0A3S-	12	13	56	22	12	3	●

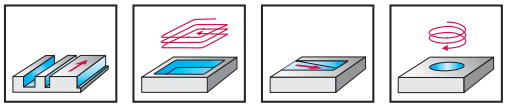
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC321-02.0A3S-WJ30TF

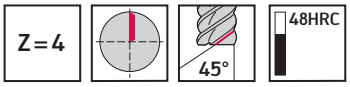
XIII D 1 C 234 C 264

Solid carbide shoulder/slot milling cutters
MC321 Advance



– Type N 45

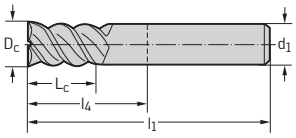




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

DIN 6527 K

Shank DIN 6535 HA

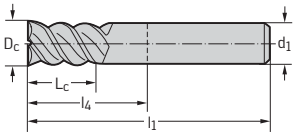


Designation	D_c h11 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC321-02.0A4A-	2	6	50	14	6	4	●●
MC321-03.0A4A-	3	7	50	14	6	4	●●
MC321-04.0A4A-	4	8	54	18	6	4	●●
MC321-05.0A4A-	5	10	54	18	6	4	●●
MC321-06.0A4A-	6	10	54	18	6	4	●●
MC321-08.0A4A-	8	16	58	22	8	4	●●
MC321-10.0A4A-	10	19	66	26	10	4	●●
MC321-12.0A4A-	12	22	73	28	12	4	●●

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC321-02.0A4A-WJ30TF

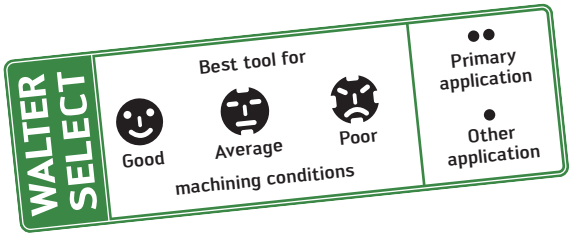
P STANDARD S

Shank DIN 6535 HA



Designation	D_c h11 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC321-02.0A4S-	2	3	39	8	6	4	●●
MC321-03.0A4S-	3	4	39	9	6	4	●●
MC321-04.0A4S-	4	5	39	11	6	4	●●
MC321-05.0A4S-	5	6	39	12	6	4	●●
MC321-06.0A4S-	6	7	39	12	6	4	●●
MC321-08.0A4S-	8	9	44	17	8	4	●●
MC321-10.0A4S-	10	11	51	20	10	4	●●
MC321-12.0A4S-	12	13	56	22	12	4	●●

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC321-02.0A4S-WJ30TF

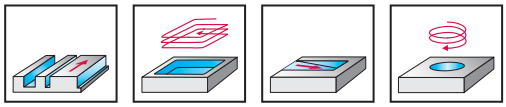


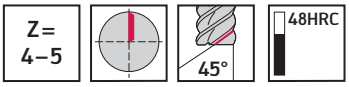
XIII D 1 C 234 C 264

Solid carbide shoulder/slot milling cutters
MC322 Advance



– Type N 45 extra short

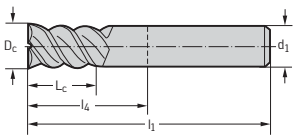




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

DIN 6527 K

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC322-06.0A4A-	6	10	54	18	6	4	●
MC322-08.0A4A-	8	12	58	22	8	4	●
MC322-10.0A4A-	10	14	66	26	10	4	●
MC322-12.0A4A-	12	16	73	28	12	4	●
MC322-16.0A4A-	16	22	82	34	16	4	●
MC322-20.0A5A-	20	26	92	42	20	5	●

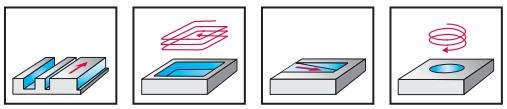
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$
Ordering example for the WJ30TF grade: MC322-10.0A4A-WJ30TF

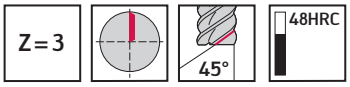
XIII D 1 C 234 C 264

Solid carbide shoulder/slot milling cutters
MC324 Advance



– Type 45

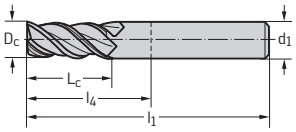




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

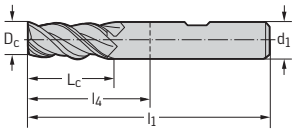
DIN 6527 L

Shank DIN 6535 HA



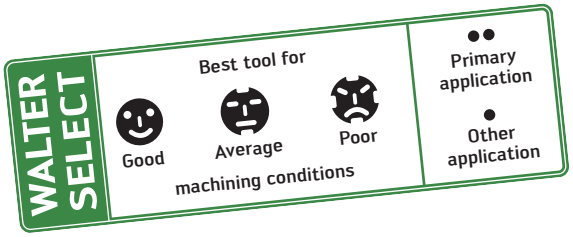
Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC324-01.0A3B-	1	3	57	21	6	3	☹
MC324-01.5A3B-	1,5	3	57	21	6	3	☹
MC324-02.0A3B-	2	6	57	21	6	3	☹
MC324-02.5A3B-	2,5	7	57	21	6	3	☹
MC324-03.0A3B-	3	7	57	21	6	3	☹
MC324-03.5A3B-	3,5	7	57	21	6	3	☹
MC324-04.0A3B-	4	8	57	21	6	3	☹
MC324-04.5A3B-	4,5	8	57	21	6	3	☹
MC324-05.0A3B-	5	10	57	21	6	3	☹
MC324-05.5A3B-	5,5	10	57	21	6	3	☹
MC324-06.0A3B-	6	10	57	21	6	3	☹
MC324-07.0A3B-	7	13	63	27	8	3	☹
MC324-08.0A3B-	8	16	63	27	8	3	☹
MC324-09.0A3B-	9	16	72	32	10	3	☹
MC324-10.0A3B-	10	19	72	32	10	3	☹
MC324-12.0A3B-	12	22	83	38	12	3	☹
MC324-14.0A3B-	14	22	83	38	14	3	☹
MC324-16.0A3B-	16	26	92	44	16	3	☹
MC324-18.0A3B-	18	26	92	44	18	3	☹
MC324-20.0A3B-	20	32	104	54	20	3	☹

Shank DIN 6535 HB



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC324-01.0W3B-	1	3	57	21	6	3	☹
MC324-01.5W3B-	1,5	3	57	21	6	3	☹
MC324-02.0W3B-	2	6	57	21	6	3	☹
MC324-02.5W3B-	2,5	7	57	21	6	3	☹
MC324-03.0W3B-	3	7	57	21	6	3	☹
MC324-03.5W3B-	3,5	7	57	21	6	3	☹
MC324-04.0W3B-	4	8	57	21	6	3	☹
MC324-04.5W3B-	4,5	8	57	21	6	3	☹
MC324-05.0W3B-	5	10	57	21	6	3	☹
MC324-05.5W3B-	5,5	10	57	21	6	3	☹
MC324-06.0W3B-	6	10	57	21	6	3	☹
MC324-08.0W3B-	8	16	63	27	8	3	☹
MC324-09.0W3B-	9	16	72	32	10	3	☹
MC324-10.0W3B-	10	19	72	32	10	3	☹
MC324-12.0W3B-	12	22	83	38	12	3	☹
MC324-14.0W3B-	14	22	83	38	14	3	☹
MC324-16.0W3B-	16	26	92	44	16	3	☹
MC324-20.0W3B-	20	32	104	54	20	3	☹

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC324-01.0A3B-WJ30TF

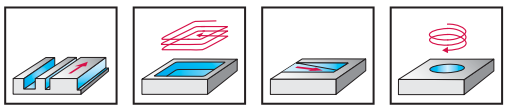


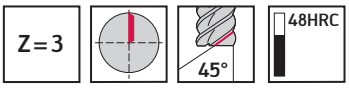
XIII D 1 C 234 C 264

Solid carbide shoulder/slot milling cutters
MC324 Advance



– Type 45

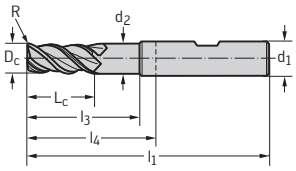




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

DIN 6527 L

Shank DIN 6535 HB



Designation	D_c h9 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC324-12.0W3B150C-	12	1,5	22	36	11,4	83	38	12	3	●
MC324-14.0W3B150C-	14	1,5	22	36	13,3	83	38	14	3	●
MC324-16.0W3B200C-	16	2	26	42	15,2	92	44	16	3	●
MC324-18.0W3B200C-	18	2	26	42	17,1	92	44	18	3	●
MC324-20.0W3B200C-	20	2	32	52	19	104	54	20	3	●

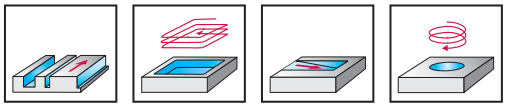
Ordering example for the WJ30TF grade: MC324-12.0W3B150C-WJ30TF

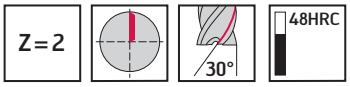
XIII D 1 C 234 C 264

Solid carbide shoulder/slot milling cutters
MC216 Advance



– Type 30

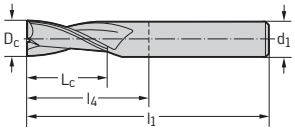




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

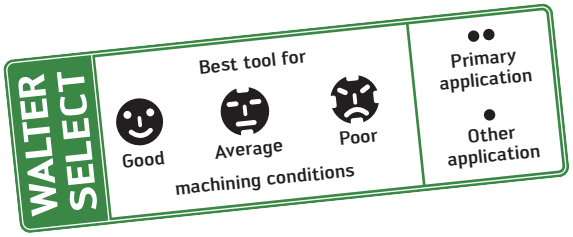
DIN 6527 L

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC216-02.0A2B-	2	6	57	21	6	2	●●
MC216-02.5A2B-	2,5	7	57	21	6	2	●●
MC216-03.0A2B-	3	7	57	21	6	2	●●
MC216-03.5A2B-	3,5	7	57	21	6	2	●●
MC216-04.0A2B-	4	8	57	21	6	2	●●
MC216-04.5A2B-	4,5	8	57	21	6	2	●●
MC216-05.0A2B-	5	10	57	21	6	2	●●
MC216-06.0A2B-	6	10	57	21	6	2	●●
MC216-07.0A2B-	7	13	63	27	8	2	●●
MC216-08.0A2B-	8	16	63	27	8	2	●●
MC216-09.0A2B-	9	16	72	32	10	2	●●
MC216-10.0A2B-	10	19	72	32	10	2	●●
MC216-11.0A2B-	11	22	83	38	12	2	●●
MC216-12.0A2B-	12	22	83	38	12	2	●●
MC216-14.0A2B-	14	22	83	38	14	2	●●
MC216-16.0A2B-	16	26	92	44	16	2	●●
MC216-18.0A2B-	18	26	92	44	18	2	●●
MC216-20.0A2B-	20	32	104	54	20	2	●●

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC216-10.0A2B-WJ30TF

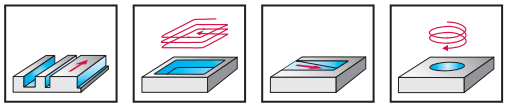


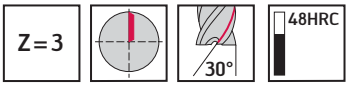
XIII D 1 C 235 C 264

Solid carbide shoulder/slot milling cutters
MC216 Advance



– Type N 30

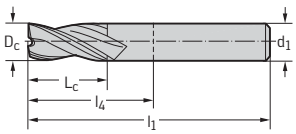




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

DIN 6527 L

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC216-02.0A3B-	2	6	57	21	6	3	●
MC216-02.5A3B-	2,5	7	57	21	6	3	●
MC216-03.0A3B-	3	7	57	21	6	3	●
MC216-03.5A3B-	3,5	7	57	21	6	3	●
MC216-04.0A3B-	4	8	57	21	6	3	●
MC216-04.5A3B-	4,5	8	57	21	6	3	●
MC216-05.0A3B-	5	10	57	21	6	3	●
MC216-05.5A3B-	5,5	10	57	21	6	3	●
MC216-06.0A3B-	6	10	57	21	6	3	●
MC216-06.5A3B-	6,5	13	63	27	8	3	●
MC216-07.0A3B-	7	13	63	27	8	3	●
MC216-07.5A3B-	7,5	16	63	27	8	3	●
MC216-08.0A3B-	8	16	63	27	8	3	●
MC216-09.0A3B-	9	16	72	32	10	3	●
MC216-10.0A3B-	10	19	72	32	10	3	●
MC216-11.0A3B-	11	22	83	38	12	3	●
MC216-12.0A3B-	12	22	83	38	12	3	●
MC216-13.0A3B-	13	22	83	38	14	3	●
MC216-14.0A3B-	14	22	83	38	14	3	●
MC216-15.0A3B-	15	26	92	44	16	3	●
MC216-16.0A3B-	16	26	92	44	16	3	●
MC216-18.0A3B-	18	26	92	44	18	3	●
MC216-20.0A3B-	20	32	104	54	20	3	●

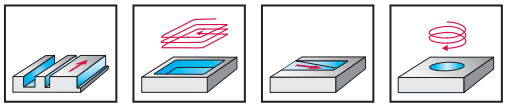
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC216-10.0A3B-WJ30TF

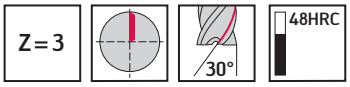
XIII D 1 C 235 C 264

Solid carbide shoulder/slot milling cutters
MC216 Advance



– Type N 30

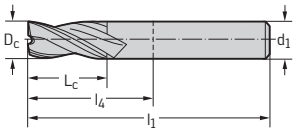




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

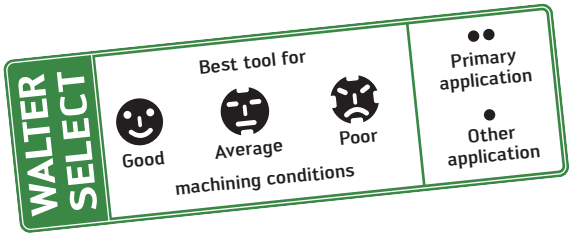
DIN 6527 L

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC216-01.0A3BJ-	1	3	38	10	3	3	☹
MC216-01.1A3BJ-	1,1	3	38	10	3	3	☹
MC216-01.2A3BJ-	1,2	3	38	10	3	3	☹
MC216-01.3A3BJ-	1,3	3	38	10	3	3	☹
MC216-01.4A3BJ-	1,4	3	38	10	3	3	☹
MC216-01.5A3BJ-	1,5	3	38	10	3	3	☹
MC216-01.6A3BJ-	1,6	3	38	10	3	3	☹
MC216-01.7A3BJ-	1,7	3	38	10	3	3	☹
MC216-01.8A3BJ-	1,8	3	38	10	3	3	☹
MC216-01.9A3BJ-	1,9	3	38	10	3	3	☹
MC216-02.0A3BJ-	2	3	38	10	3	3	☹
MC216-02.0A3BK-	2	6	38	10	3	3	☹
MC216-02.1A3BJ-	2,1	3	38	10	3	3	☹
MC216-02.2A3BJ-	2,2	3	38	10	3	3	☹
MC216-02.3A3BJ-	2,3	3	38	10	3	3	☹
MC216-02.4A3BJ-	2,4	3	38	10	3	3	☹
MC216-02.5A3BJ-	2,5	3	38	10	3	3	☹
MC216-02.5A3BK-	2,5	7	38	10	3	3	☹
MC216-02.6A3BJ-	2,6	3	38	10	3	3	☹
MC216-02.7A3BJ-	2,7	3	38	10	3	3	☹
MC216-02.8A3BJ-	2,8	3	38	10	3	3	☹
MC216-02.9A3BJ-	2,9	3	38	10	3	3	☹
MC216-03.0A3BJ-	3	3	38	10	3	3	☹
MC216-03.0A3BK-	3	7	38	10	3	3	☹

Shank 3 mm
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC216-01.0A3BJ-WJ30TF

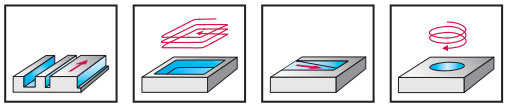


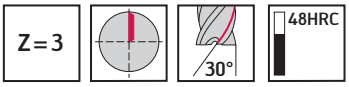
XIII D 1 C 235 C 264

Solid carbide shoulder/slot milling cutters
MC216 Advance



– Type 30 extra long

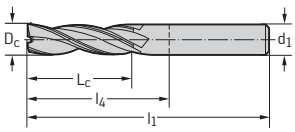




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

P STANDARD L

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC216-01.0A3L-	1	4	38	10	3	3	●
MC216-01.5A3L-	1,5	6	38	10	3	3	●
MC216-02.0A3L-	2	8	38	11	3	3	●
MC216-03.0A3L-	3	12	38	12	3	3	●
MC216-04.0A3L-	4	14	50	22	4	3	●
MC216-05.0A3L-	5	16	57	21	6	3	●
MC216-06.0A3L-	6	22	65	29	6	3	●
MC216-08.0A3L-	8	28	80	44	8	3	●
MC216-10.0A3L-	10	32	100	60	10	3	●
MC216-12.0A3L-	12	38	100	55	12	3	●
MC216-16.0A3L-	16	50	115	67	16	3	●
MC216-20.0A3L-	20	50	125	75	20	3	●

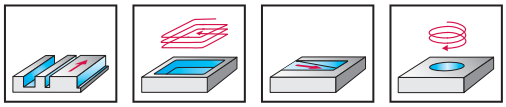
Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WJ30TF grade: MC216-01.0A3L-WJ30TF

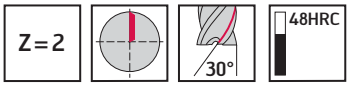
XIII D 1 C 235 C 264

Solid carbide shoulder/slot milling cutters MC213 Advance



– Long reach
– Type HSC 30 long

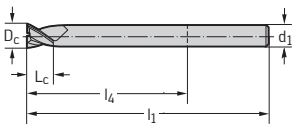




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

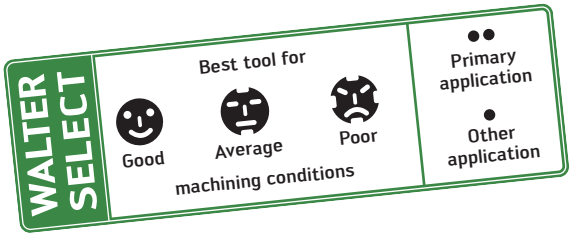
P STANDARD XL

Shank DIN 6535 HA



Designation	D_c h10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30TF
MC213-06.3A2X-	6,3	6	100	64	6	2	●●
MC213-08.3A2X-	8,3	8	100	64	8	2	●●
MC213-10.3A2X-	10,3	10	150	110	10	2	●●
MC213-12.5A2X-	12,5	12	150	105	12	2	●●
MC213-14.5A2X-	14,5	14	150	105	14	2	●●
MC213-16.5A2X-	16,5	16	150	102	16	2	●●

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$
Ordering example for the WJ30TF grade: MC213-10.3A2X-WJ30TF

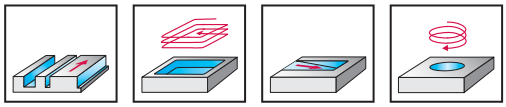


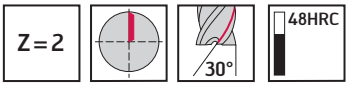
XIII
D 1
C 235
C 264

Solid carbide shoulder/slot milling cutters
MC213 Advance



– Long reach
– Type HSC 30 long

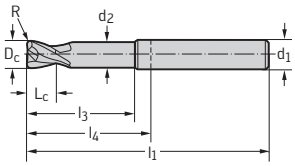




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

P STANDARD L

Shank DIN 6535 HA



Designation	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30TF
MC213-00.6A2L006C-	0,6	0,06	0,6	2,4	0,56	54	18	6	2	●
MC213-00.8A2L008C-	0,8	0,08	0,8	3,2	0,76	54	18	6	2	●
MC213-01.0A2L010C-	1	0,1	1	4	0,96	65	29	6	2	●
MC213-01.5A2L015C-	1,5	0,15	1,5	6	1,44	65	29	6	2	●
MC213-02.0A2L020C-	2	0,2	2	8	1,92	72	36	6	2	●
MC213-02.0A2L050C-	2	0,5	2	8	1,92	72	36	6	2	●
MC213-03.0A2L020C-	3	0,2	3	12	2,9	72	36	6	2	●
MC213-03.0A2L030C-	3	0,3	3	12	2,9	72	36	6	2	●
MC213-04.0A2L040C-	4	0,4	4	16	3,8	72	36	6	2	●
MC213-05.0A2L050C-	5	0,5	5	20	4,75	72	36	6	2	●
MC213-06.0A2L020C-	6	0,2	6	24	5,7	72	36	6	2	●
MC213-06.0A2L050C-	6	0,5	6	24	5,7	72	36	6	2	●
MC213-08.0A2L030C-	8	0,3	8	29	7,6	80	44	8	2	●
MC213-08.0A2L050C-	8	0,5	8	29	7,6	80	44	8	2	●
MC213-08.0A2L100C-	8	1	8	29	7,6	80	44	8	2	●
MC213-08.0A2L150C-	8	1,5	8	29	7,6	80	44	8	2	●
MC213-10.0A2L030C-	10	0,3	10	35	9,5	100	60	10	2	●
MC213-10.0A2L050C-	10	0,5	10	35	9,5	100	60	10	2	●
MC213-10.0A2L100C-	10	1	10	35	9,5	100	60	10	2	●
MC213-10.0A2L150C-	10	1,5	10	35	9,5	100	60	10	2	●
MC213-12.0A2L050C-	12	0,5	12	36	11,4	100	55	12	2	●
MC213-12.0A2L100C-	12	1	12	36	11,4	100	55	12	2	●
MC213-12.0A2L150C-	12	1,5	12	36	11,4	100	55	12	2	●

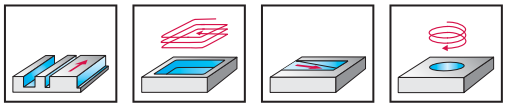
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
Ordering example for the WJ30TF grade: MC213-00.6A2L006C-WJ30TF

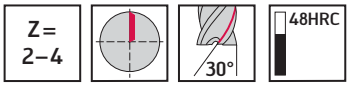
XIII D 1 C 235 C 264

Solid carbide shoulder/slot milling cutters MC213 Advance



– Long reach
– Type HSC 30

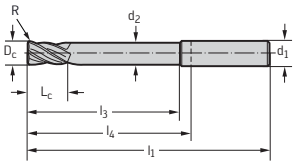




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

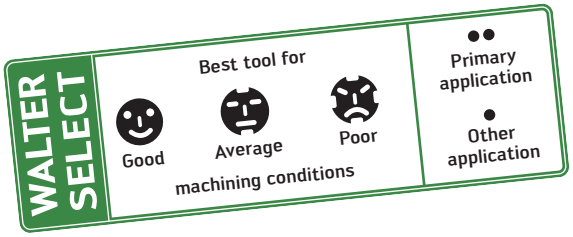
P STANDARD XL

Shank DIN 6535 HA



Designation	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30TF
MC213-04.0A2X050R-	4	0,5	4	20	3,9	100	64	6	2	●●
MC213-04.0A2X050S-	4	0,5	4	30	3,9	100	64	6	2	●●
MC213-04.0A2X050T-	4	0,5	4	40	3,9	100	64	6	2	●●
MC213-05.0A2X050R-	5	0,5	5	25	4,9	100	64	6	2	●●
MC213-05.0A2X050S-	5	0,5	5	50	4,9	100	64	6	2	●●
MC213-06.0A4X050R-	6	0,5	6	30	5,9	100	64	6	4	●●
MC213-06.0A4X050S-	6	0,5	6	45	5,9	100	64	6	4	●●
MC213-06.0A4X050T-	6	0,5	6	60	5,9	100	64	6	4	●●
MC213-08.0A4X050R-	8	0,5	8	40	7,85	120	84	8	4	●●
MC213-08.0A4X050S-	8	0,5	8	60	7,85	120	84	8	4	●●
MC213-08.0A4X050T-	8	0,5	8	80	7,85	120	84	8	4	●●
MC213-10.0A4X100S-	10	1	10	50	9,85	150	110	10	4	●●
MC213-10.0A4X100T-	10	1	10	75	9,85	150	110	10	4	●●
MC213-12.0A4X100S-	12	1	12	60	11,8	150	105	12	4	●●

Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$
Ordering example for the WJ30TF grade: MC213-10.0A4X100S-WJ30TF

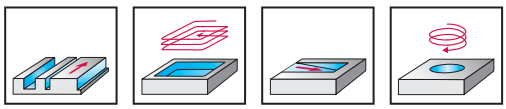


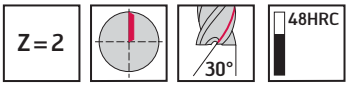
XIII D 1 C 235 C 264

Solid carbide routing cutters
MC716 Advance



– Type 30

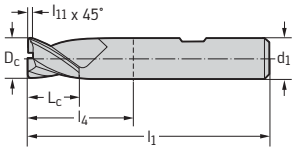




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

DIN 6527 K

Shank DIN 6535 HB



Designation	D_c e8 mm	l_{11} mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC716-02.0W2A-	2	0,1	3	50	14	6	2	●
MC716-02.5W2A-	2,5	0,1	3	50	14	6	2	●
MC716-02.8W2A-	2,8*	0,1	4	50	14	6	2	●
MC716-03.0W2A-	3	0,1	4	50	14	6	2	●
MC716-03.5W2A-	3,5	0,1	4	50	14	6	2	●
MC716-03.8W2A-	3,8*	0,1	5	54	18	6	2	●
MC716-04.0W2A-	4	0,1	5	54	18	6	2	●
MC716-04.8W2A-	4,8*	0,1	6	54	18	6	2	●
MC716-05.0W2A-	5	0,1	6	54	18	6	2	●
MC716-05.75W2A-	5,75*	0,1	7	54	18	6	2	●
MC716-06.0W2A-	6	0,1	7	54	18	6	2	●
MC716-07.75W2A-	7,75*	0,1	9	58	22	8	2	●
MC716-08.0W2A-	8	0,1	9	58	22	8	2	●
MC716-09.0W2A-	9	0,2	10	66	26	10	2	●
MC716-09.7W2A-	9,7*	0,2	11	66	26	10	2	●
MC716-10.0W2A-	10	0,2	11	66	26	10	2	●
MC716-11.7W2A-	11,7*	0,2	12	73	28	12	2	●
MC716-12.0W2A-	12	0,2	12	73	28	12	2	●
MC716-13.7W2A-	13,7*	0,2	14	75	30	14	2	●
MC716-15.7W2A-	15,7*	0,2	16	82	34	16	2	●
MC716-16.0W2A-	16	0,2	16	82	34	16	2	●
MC716-20.0W2A-	20	0,3	20	92	42	20	2	●

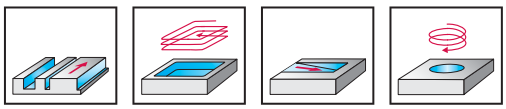
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
* Undersize milling cutter with cutting edge tolerance h10
Ordering example for the WJ30TF grade: MC716-02.0W2A-WJ30TF

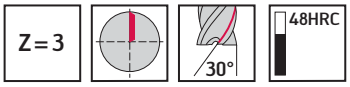
XIII D 1 C 235 C 264

Solid carbide routing cutters
MC716 Advance



– Type 30

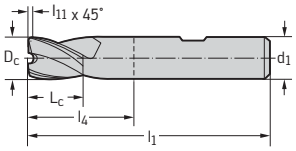




	P	M	K	N	S	H	O
WJ30TF	●●	●	●		●		

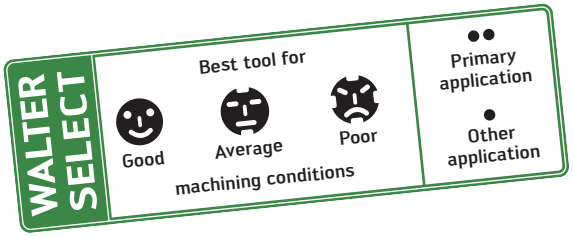
DIN 6527 K

Shank DIN 6535 HB



Designation	D_c e8 mm	l_{11} mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC716-01.8W3A-	1,8*	0,1	3	50	14	6	3	☹
MC716-02.0W3A-	2	0,1	3	50	14	6	3	☹
MC716-02.5W3A-	2,5	0,1	3	50	14	6	3	☹
MC716-02.8W3A-	2,8*	0,1	4	50	14	6	3	☹
MC716-03.0W3A-	3	0,1	4	50	14	6	3	☹
MC716-03.5W3A-	3,5	0,1	4	50	14	6	3	☹
MC716-03.8W3A-	3,8*	0,1	5	54	18	6	3	☹
MC716-04.0W3A-	4	0,1	5	54	18	6	3	☹
MC716-04.8W3A-	4,8*	0,1	6	54	18	6	3	☹
MC716-05.0W3A-	5	0,1	6	54	18	6	3	☹
MC716-05.75W3A-	5,75*	0,1	7	54	18	6	3	☹
MC716-06.0W3A-	6	0,1	7	54	18	6	3	☹
MC716-06.75W3A-	6,75*	0,1	8	58	22	8	3	☹
MC716-07.0W3A-	7	0,1	8	58	22	8	3	☹
MC716-07.75W3A-	7,75*	0,1	9	58	22	8	3	☹
MC716-08.0W3A-	8	0,1	9	58	22	8	3	☹
MC716-09.0W3A-	9	0,2	10	66	26	10	3	☹
MC716-09.7W3A-	9,7*	0,2	11	66	26	10	3	☹
MC716-10.0W3A-	10	0,2	11	66	26	10	3	☹
MC716-11.7W3A-	11,7*	0,2	12	73	28	12	3	☹
MC716-12.0W3A-	12	0,2	12	73	28	12	3	☹
MC716-13.7W3A-	13,7*	0,2	14	75	30	14	3	☹
MC716-14.0W3A-	14	0,2	14	75	30	14	3	☹
MC716-15.7W3A-	15,7*	0,2	16	82	34	16	3	☹
MC716-16.0W3A-	16	0,2	16	82	34	16	3	☹
MC716-17.7W3A-	17,7*	0,2	18	84	36	18	3	☹
MC716-20.0W3A-	20	0,3	20	92	42	20	3	☹

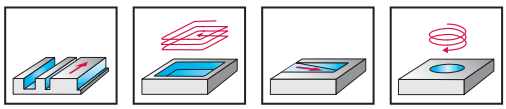
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$
* Undersize milling cutter with cutting edge tolerance h10
Ordering example for the WJ30TF grade: MC716-01.8W3A-WJ30TF

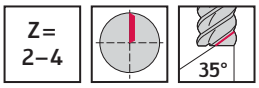


XIII D 1 C 235 C 264

Solid carbide shoulder/slot milling cutters
MC232 Perform



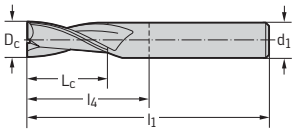


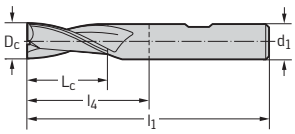


	P	M	K	N	S	H	O
WJ30ED	●●	●	●				

DIN 6527 L

	Designation	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30ED
Shank DIN 6535 HA	MC232-02.0A2B-	2	6	57	29	4	2	
	MC232-02.5A2B-	2,5	7	57	29	4	2	
	MC232-03.0A2B-	3	7	57	29	4	2	
	MC232-03.5A2B-	3,5	7	57	29	4	2	
	MC232-04.0A2B-	4	8	57	29	4	2	
Shank DIN 6535 HB	MC232-05.0W2B-	5	10	57	21	6	2	
	MC232-06.0W2B-	6	10	57	21	6	2	
	MC232-08.0W2B-	8	16	63	27	8	2	
	MC232-10.0W2B-	10	19	72	32	10	2	
	MC232-12.0W2B-	12	22	83	38	12	2	
	MC232-16.0W2B-	16	26	92	44	16	2	
	MC232-20.0W2B-	20	32	104	54	20	2	

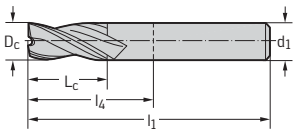


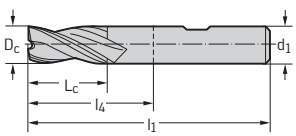


Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$
Ordering example for the WJ30ED grade: MC232-02.0A2B-WJ30ED

DIN 6527 L

	Designation	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30ED
Shank DIN 6535 HA	MC232-02.0A3B-	2	6	57	29	4	3	
	MC232-02.5A3B-	2,5	7	57	29	4	3	
	MC232-03.0A3B-	3	7	57	29	4	3	
	MC232-03.5A3B-	3,5	7	57	29	4	3	
	MC232-04.0A3B-	4	8	57	29	4	3	
Shank DIN 6535 HB	MC232-05.0W3B-	5	10	57	21	6	3	
	MC232-06.0W3B-	6	10	57	21	6	3	
	MC232-08.0W3B-	8	16	63	27	8	3	
	MC232-10.0W3B-	10	19	72	32	10	3	
	MC232-12.0W3B-	12	22	83	38	12	3	
	MC232-16.0W3B-	16	26	92	44	16	3	
	MC232-20.0W3B-	20	32	104	54	20	3	



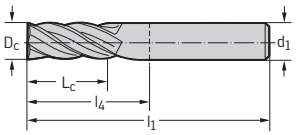


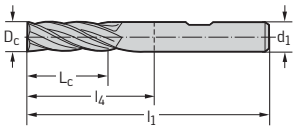
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$
Ordering example for the WJ30ED grade: MC232-02.0A3B-WJ30ED

XIII D 1 C 235 C 264

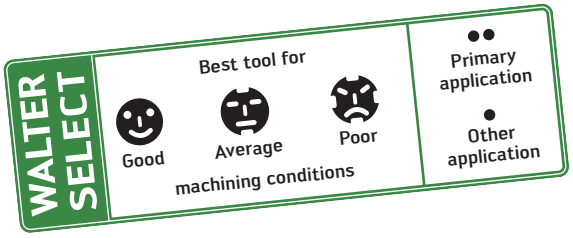
DIN 6527 L

	Designation	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30ED
Shank DIN 6535 HA	MC232-02.0A4B-	2	7	57	29	4	4	☻
	MC232-02.5A4B-	2,5	8	57	29	4	4	☻
	MC232-03.0A4B-	3	8	57	29	4	4	☻
	MC232-03.5A4B-	3,5	10	57	29	4	4	☻
	MC232-04.0A4B-	4	11	57	29	4	4	☻
Shank DIN 6535 HB	MC232-05.0W4B-	5	13	57	21	6	4	☻
	MC232-06.0W4B-	6	13	57	21	6	4	☻
	MC232-08.0W4B-	8	19	63	27	8	4	☻
	MC232-10.0W4B-	10	22	72	32	10	4	☻
	MC232-12.0W4B-	12	26	83	38	12	4	☻
	MC232-16.0W4B-	16	32	92	44	16	4	☻
	MC232-20.0W4B-	20	38	104	54	20	4	☻





Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$
Ordering example for the WJ30ED grade: MC232-02.0A4B-WJ30ED

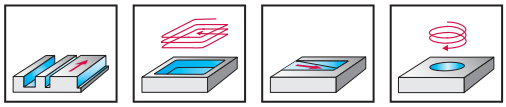


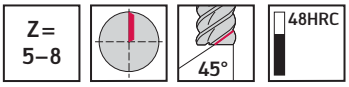
XIII D 1 C 235 C 264

Solid carbide shoulder/slot milling cutters
H3185378 / H3186378
Protostar® Qmax



– Type HR Kordel F 45

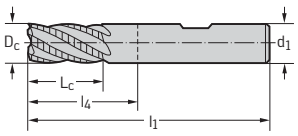




	P	M	K	N	S	H	O
TAX	●●	●	●				

DIN 6527 L

Shank DIN 6535 HB

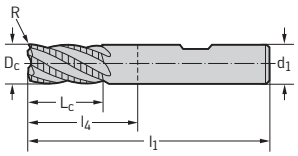


Designation TAX	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3185378-12	12	26	83	38	12	5
H3185378-14	14	26	83	38	14	6
H3185378-16	16	32	92	44	16	6
H3185378-18	18	32	92	44	18	6
H3185378-20	20	38	104	54	20	6
H3185378-25	25	45	121	65	25	8

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 6527 L

Shank DIN 6535 HB



Designation TAX	D_c h12 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3186378-12-1	12	1	26	83	38	12	5
H3186378-12-1.5	12	1,5	26	83	38	12	5
H3186378-12-2	12	2	26	83	38	12	5
H3186378-12-3	12	3	26	83	38	12	5
H3186378-16-1	16	1	32	92	44	16	6
H3186378-16-2	16	2	32	92	44	16	6
H3186378-16-3	16	3	32	92	44	16	6
H3186378-16-4	16	4	32	92	44	16	6
H3186378-20-2	20	2	38	104	54	20	6
H3186378-20-3	20	3	38	104	54	20	6
H3186378-20-4	20	4	38	104	54	20	6

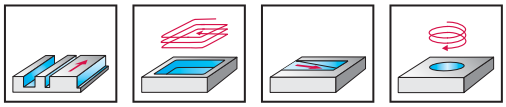
Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

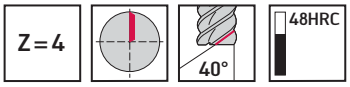
XIII D 1 C 235 C 264

Solid carbide shoulder/slot milling cutters
H3182378 / H3183378
Protostar® Qmax



– Type HR Kordel F 40

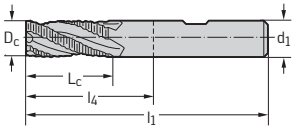




	P	M	K	N	S	H	O
TAX	●	●●	●				

DIN 6527 L

Shank DIN 6535 HB

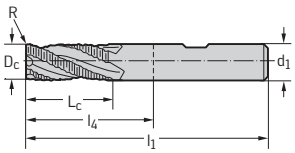


Designation TAX	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3182378-5	5	13	57	21	6	4
H3182378-6	6	13	57	21	6	4
H3182378-8	8	19	63	27	8	4
H3182378-10	10	22	72	32	10	4
H3182378-12	12	26	83	38	12	4
H3182378-14	14	26	83	38	14	4
H3182378-16	16	32	92	44	16	4
H3182378-18	18	32	92	44	18	4
H3182378-20	20	38	104	54	20	4

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

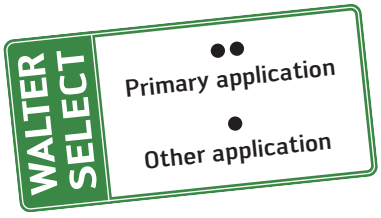
DIN 6527 L

Shank DIN 6535 HB



Designation TAX	D_c h12 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3183378-6-1	6	1	13	57	21	6	4
H3183378-8-1	8	1	19	63	27	8	4
H3183378-10-1	10	1	22	72	32	10	4
H3183378-10-1.5	10	1,5	22	72	32	10	4
H3183378-10-2	10	2	22	72	32	10	4
H3183378-12-1	12	1	26	83	38	12	4
H3183378-12-1.5	12	1,5	26	83	38	12	4
H3183378-12-2	12	2	26	83	38	12	4
H3183378-12-3	12	3	26	83	38	12	4
H3183378-16-1	16	1	32	92	44	16	4
H3183378-16-2	16	2	32	92	44	16	4
H3183378-16-3	16	3	32	92	44	16	4
H3183378-16-4	16	4	32	92	44	16	4
H3183378-20-2	20	2	38	104	54	20	4
H3183378-20-3	20	3	38	104	54	20	4
H3183378-20-4	20	4	38	104	54	20	4

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

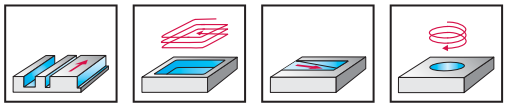


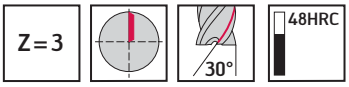
XIII D 1 C 236 C 264

Solid carbide shoulder/slot milling cutters
H3187278
Protostar® Qmax



– Type HR Kordel F 30

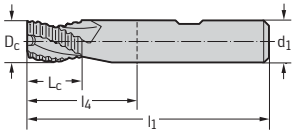




	P	M	K	N	S	H	O
TAX	●	●●	●	●			

DIN 6527 K

Shank DIN 6535 HB



Designation TAX	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3187278-6	6	7	54	18	6	3
H3187278-8	8	9	58	22	8	3
H3187278-10	10	11	66	26	10	3
H3187278-12	12	12	73	28	12	3
H3187278-14	14	14	75	30	14	3
H3187278-16	16	16	82	34	16	3
H3187278-18	18	18	84	36	18	3
H3187278-20	20	20	92	42	20	3
H3187278-25	25	26	121	65	25	3

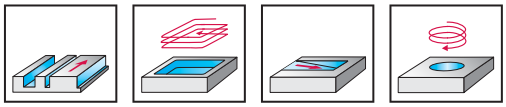
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

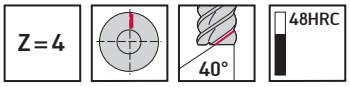
XIII D 1 C 237 C 264

Solid carbide shoulder/slot milling cutters
H4189378 / H4189278
Protostar® Qmax



– Long reach
– Type HR Kordel F 40

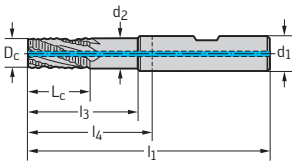




TAX	P	M	K	N	S	H	O
	●	●●					

DIN 6527 L

Shank DIN 6535 HB

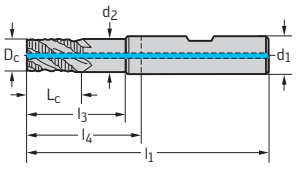


Designation TAX	D_c h12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H4189378-5	5	13	16	4,75	57	21	6	4
H4189378-6	6	13	19	5,5	57	21	6	4
H4189378-7	7	16	26	6,5	63	27	8	4
H4189378-8	8	19	25	7,5	63	27	8	4
H4189378-9	9	19	31	8,5	72	32	10	4
H4189378-10	10	22	30	9,5	72	32	10	4
H4189378-11	11	26	35	10,45	83	38	12	4
H4189378-12	12	26	36	11,4	83	38	12	4
H4189378-13	13	26	35	12,35	83	38	14	4
H4189378-14	14	26	36	13,3	83	38	14	4
H4189378-15	15	32	41	14,25	92	44	16	4
H4189378-16	16	32	42	15,2	92	44	16	4
H4189378-18	18	32	42	17,1	92	44	18	4
H4189378-20	20	38	52	19	104	54	20	4

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

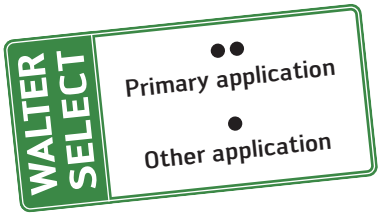
DIN 6527 K

Shank DIN 6535 HB



Designation TAX	D_c h12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H4189278-6	6	7	16	5,5	54	18	6	4
H4189278-8	8	9	20	7,5	58	22	8	4
H4189278-10	10	11	24	9,5	66	26	10	4
H4189278-12	12	12	26	11,4	73	28	12	4
H4189278-14	14	14	28	13,3	75	30	14	4
H4189278-16	16	16	32	15,2	82	34	16	4
H4189278-18	18	18	34	17,1	84	36	18	4
H4189278-20	20	20	40	19	92	42	20	4
H4189278-25	25	26	63	23,75	121	65	25	4

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

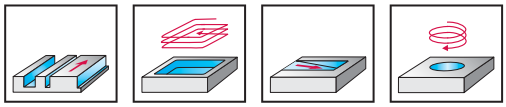


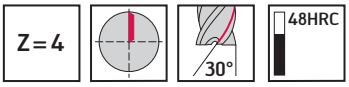
XIII D 1 C 237 C 264

Solid carbide shoulder/slot milling cutters
H3180278 / H4180378
Protostar® Qmax



– Type HNR Kordel F 30

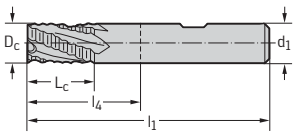




	P	M	K	N	S	H	O
TAX	●●	●●	●	●			

DIN 6527 K

Shank DIN 6535 HB

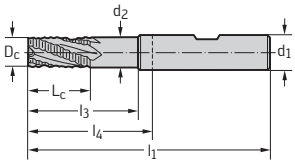


Designation TAX	D_c h12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H3180278-6	6	7	54	18	6	4
H3180278-8	8	9	58	22	8	4
H3180278-10	10	11	66	26	10	4
H3180278-12	12	12	73	28	12	4
H3180278-14	14	14	75	30	14	4
H3180278-16	16	16	82	34	16	4
H3180278-18	18	18	84	36	18	4
H3180278-20	20	20	92	42	20	4
H3180278-25	25	26	121	65	25	4

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 6527 L

Shank DIN 6535 HB



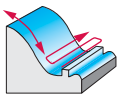
Designation TAX	D_c h12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
H4180378-6	6	13	19	5,5	57	21	6	4
H4180378-8	8	19	25	7,5	63	27	8	4
H4180378-10	10	22	30	9,5	72	32	10	4
H4180378-12	12	26	36	11,4	83	38	12	4
H4180378-14	14	26	36	13,3	83	38	14	4
H4180378-16	16	32	42	15,2	92	44	16	4
H4180378-20	20	38	52	19	104	54	20	4
H4180378-25	25	45	63	23,75	121	65	25	4

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

XIII D 1 C 237 C 264

Walter Select – Solid carbide milling tools
Copy milling cutters

Machining

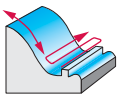


WALTER SELECT

●● Primary application

● Other application

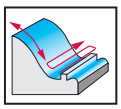
Helix angle	30°					
Designation	**H602111 Protostar®**	**H404691 H4046918 Protostar®**	**H4046928 H8004028 H8004128 H8004728 H8006428 ... Protostar® Ultra**	**H4046988 H8004788 Proto·max™Ultra**	**H4046919 H8001119 H8001919 H8006419 H8016419 Protostar®**	
Dia. range [mm]	2–16	0,3–3	0,3–16	1–12	0,3–12	
Z	2	2	2–4	2	2–4	
Corner radius [mm]	1–8	0,15–1,5	0,15–8	0,5–6	0,15–6	
Standard	P STANDARD L	P STANDARD MINI	DIN 6527 L P STANDARD L P STANDARD XL P STANDARD MINI	P STANDARD L P STANDARD MINI	DIN 6527 L P STANDARD L P STANDARD XL P STANDARD MINI	
Shank	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	
Page	C 104	C 105	C 106	C 111	C 114	
						
P Steel		●●				
M Stainless steel						
K Cast iron						
N NF metals	●●	●●				
S Materials with difficult cutting properties						
H Hard materials			●●	●●		
O Other					●●	

	
	30°
	MC413 Advance **MC416 Advance**
	1–20
	2–4
	0,5–10
	P STANDARD L DIN 6527 L P STANDARD XL
	DIN 6535 HA DIN 6535 HB
	C 118
	
	●●
	●
	●
	●
	●

Solid carbide ball-nose end mills
H602111
Protostar®



– Type AI 30



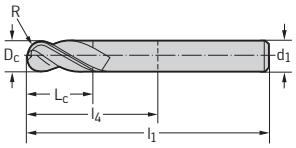
Z = 2



	P	M	K	N	S	H	O
Uncoated				●●			

P STANDARD L

Shank DIN 6535 HA



Designation Uncoated	D_c h9 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H602111-2	2	1	6	60	32	3	2
H602111-3	3	1,5	7	80	44	6	2
H602111-4	4	2	8	80	44	6	2
H602111-5	5	2,5	10	80	44	6	2
H602111-6	6	3	10	80	44	6	2
H602111-8	8	4	16	100	64	8	2
H602111-10	10	5	19	100	60	10	2
H602111-12	12	6	22	100	55	12	2
H602111-16	16	8	26	100	52	16	2

Shank tolerance h6 with shank diameter d_1 > 10 mm

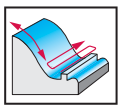
XIII D 1 C 238 C 264

Solid carbide mini ball-nose end mills
H4046918 / H404691
Protostar®



– Long reach
– Type HSC 30

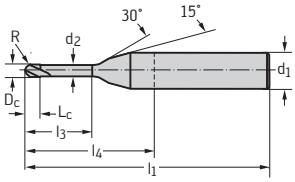
Z=2 | 30° | 48HRC



	P	M	K	N	S	H	O
TAX	●●			●			
Uncoated				●●			

P STANDARD MINI

Shank DIN 6535 HA



Designation TAX	Designation Uncoated	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H4046918-0.3-0.75	H404691-0.3-0.75	0,3	0,15	0,3	0,75	0,27	38	10	3	2
H4046918-0.3-1.5	H404691-0.3-1.5	0,3	0,15	0,3	1,5	0,27	38	10	3	2
H4046918-0.3-3	H404691-0.3-3	0,3	0,15	0,3	3	0,27	38	10	3	2
H4046918-0.4-1	H404691-0.4-1	0,4	0,2	0,4	1	0,37	38	10	3	2
H4046918-0.4-2	H404691-0.4-2	0,4	0,2	0,4	2	0,37	38	10	3	2
H4046918-0.4-4	H404691-0.4-4	0,4	0,2	0,4	4	0,37	38	10	3	2
H4046918-0.5-1.25	H404691-0.5-1.25	0,5	0,25	0,5	1,25	0,47	38	10	3	2
H4046918-0.5-2.5	H404691-0.5-2.5	0,5	0,25	0,5	2,5	0,47	38	10	3	2
H4046918-0.5-5	H404691-0.5-5	0,5	0,25	0,5	5	0,47	38	10	3	2
H4046918-0.6-1.5	H404691-0.6-1.5	0,6	0,3	0,6	1,5	0,57	38	10	3	2
H4046918-0.6-3	H404691-0.6-3	0,6	0,3	0,6	3	0,57	38	10	3	2
H4046918-0.6-6	H404691-0.6-6	0,6	0,3	0,6	6	0,57	38	10	3	2
H4046918-0.6-9	H404691-0.6-9	0,6	0,3	0,6	9	0,57	38	13	3	2
H4046918-0.8-2	H404691-0.8-2	0,8	0,4	0,8	2	0,77	38	10	3	2
H4046918-0.8-4	H404691-0.8-4	0,8	0,4	0,8	4	0,77	38	10	3	2
H4046918-0.8-6	H404691-0.8-6	0,8	0,4	0,8	6	0,77	38	10	3	2
H4046918-0.8-8	H404691-0.8-8	0,8	0,4	0,8	8	0,77	38	12	3	2
H4046918-0.8-12	H404691-0.8-12	0,8	0,4	0,8	12	0,77	60	32	3	2
H4046918-1-2.5	H404691-1-2.5	1	0,5	1	2,5	0,97	38	10	3	2
H4046918-1-5	H404691-1-5	1	0,5	1	5	0,97	60	32	3	2
H4046918-1-7.5	H404691-1-7.5	1	0,5	1	7,5	0,97	60	32	3	2
H4046918-1-10	H404691-1-10	1	0,5	1	10	0,97	60	32	3	2
H4046918-1-15	H404691-1-15	1	0,5	1	15	0,97	60	32	3	2
H4046918-1-20	H404691-1-20	1	0,5	1	20	0,97	60	32	3	2
H4046918-1.5-7.5	H404691-1.5-7.5	1,5	0,75	1,5	7,5	1,47	60	32	3	2
H4046918-1.5-15	H404691-1.5-15	1,5	0,75	1,5	15	1,47	60	32	3	2
H4046918-2-10	H404691-2-10	2	1	2	10	1,97	60	32	3	2
H4046918-2-15	H404691-2-15	2	1	2	15	1,97	60	32	3	2
H4046918-2-20	H404691-2-20	2	1	2	20	1,97	60	32	3	2
H4046918-2-30	H404691-2-30	2	1	2	30	1,97	60	32	3	2
H4046918-2.5-12.5	H404691-2.5-12.5	2,5	1,25	2,5	12,5	2,47	60	32	3	2
H4046918-2.5-25	H404691-2.5-25	2,5	1,25	2,5	25	2,47	60	32	3	2
H4046918-3-15	H404691-3-15	3	1,5	3	15	2,97	60	32	3	2
H4046918-3-22.5	H404691-3-22.5	3	1,5	3	22,5	2,97	60	32	3	2
H4046918-3-30	H404691-3-30	3	1,5	3	30	2,97	60	32	3	2

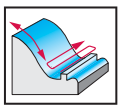
WALTER SELECT
●● Primary application
● Other application

XIII | D 1 | C 239 | C 264

Solid carbide ball-nose end mills
H8004028 / H8004128
Protostar® Ultra



– Long reach
– Type HSC 30



Z=2

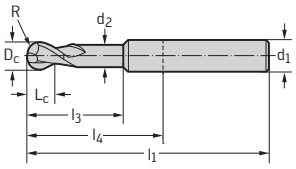


63HRC
48HRC

	P	M	K	N	S	H	O
TAX						●●	

DIN 6527 L

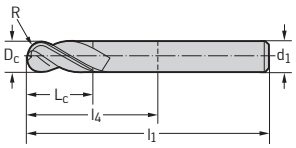
Shank DIN 6535 HA



Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8004028-5	5	2,5	5	20	4,9	57	21	6	2
H8004028-6	6	3	6	24	5,9	63	27	8	2
H8004028-8	8	4	8	29	7,6	72	32	10	2
H8004028-10	10	5	10	35	9,5	83	38	12	2
H8004028-12	12	6	12	36	11,4	83	38	12	2
H8004028-16	16	8	16	42	15,2	92	44	16	2

P STANDARD L

Shank DIN 6535 HA



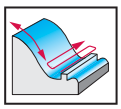
Designation TAX	D_c h7 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8004128-6-57	6	3	6	57	21	6	2
H8004128-6-80	6	3	6	80	44	6	2
H8004128-8-63	8	4	8	63	27	8	2
H8004128-8-100	8	4	8	100	64	8	2
H8004128-10-72	10	5	10	72	32	10	2
H8004128-10-100	10	5	10	100	60	10	2
H8004128-12-83	12	6	12	83	38	12	2
H8004128-12-100	12	6	12	100	55	12	2
H8004128-16-125	16	8	16	125	77	16	2

XIII D 1 C 239 C 264

Solid carbide ball-nose end mills
H8006428 / H8016428
Protostar® Ultra



– Long reach
– Type HSC 30

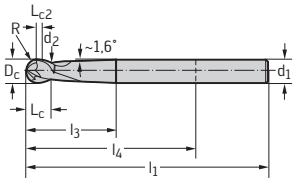


Z= 2–4 | 30° | 63HRC – 48HRC

	P	M	K	N	S	H	O
TAX						●●	

P STANDARD L

Shank DIN 6535 HA

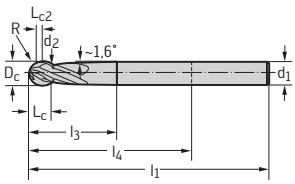


Designation TAX	D_c h7 mm	R mm	L_c mm	L_{c2} mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8006428-1	1	0,5	2	0	20		75	39	6	2
H8006428-2	2	1	3	1,5	20	1,7	75	39	6	2
H8006428-3	3	1,5	4	1,5	30	2,5	80	44	6	2
H8006428-4	4	2	5	1,5	30	3,3	80	44	6	2
H8006428-5	5	2,5	7	2	43	4,1	80	44	6	2
H8006428-6	6	3	7	2	30	4,7	100	64	6	2
H8006428-8	8	4	9	3	36	6,5	100	64	8	2
H8006428-10	10	5	11	3	43	8,2	100	60	10	2
H8006428-12	12	6	13	3	52	9,8	100	55	12	2
H8006428-16	16	8	15	3	61	13,4	150	102	16	2

With back cutting

P STANDARD L

Shank DIN 6535 HA



Designation TAX	D_c h7 mm	R mm	L_c mm	L_{c2} mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8016428-5	5	2,5	7	2	43	4,1	80	44	6	4
H8016428-6	6	3	7	2	30	4,7	100	64	6	4
H8016428-8	8	4	9	3	36	6,5	100	64	8	4
H8016428-10	10	5	11	3	43	8,2	100	60	10	4
H8016428-12	12	6	13	3	52	9,8	100	55	12	4
H8016428-16	16	8	15	3	61	13,4	150	102	16	4

With back cutting

WALTER SELECT

●● Primary application

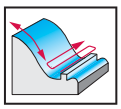
● Other application

XIII | D 1 | C 239 | C 264

Solid carbide ball-nose end mills
H8074128 / H8014028
Protostar® Ultra



– Type HSC 30



Z = 2–4

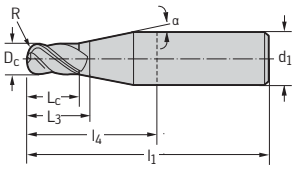




TAX	P	M	K	N	S	H	O
						●●	

P STANDARD L

Shank DIN 6535 HA

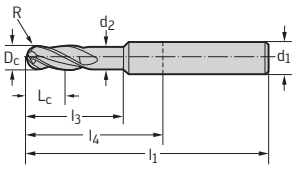


Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	α	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8074128-3	3	1,5	3	5	9,80°	57	21	6	2
H8074128-4	4	2	4	6	9,70°	80	44	6	2
H8074128-6	6	3	6			80	44	6	2
H8074128-8	8	4	8			100	64	8	2
H8074128-10	10	5	10			100	60	10	2

For finishing

DIN 6527 L

Shank DIN 6535 HA



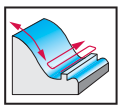
Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8014028-6	6	3	6	24	5,9	63	27	8	4
H8014028-8	8	4	8	29	7,6	72	32	10	4
H8014028-10	10	5	10	35	9,5	83	38	12	4
H8014028-12	12	6	12	36	11,4	83	38	12	4
H8014028-16	16	8	16	42	15,2	92	44	16	4

XIII D 1 C 239 C 264

Solid carbide ball-nose end mills
H8004728
Protostar® Ultra



– Long reach
– Type HSC 30



Z=2

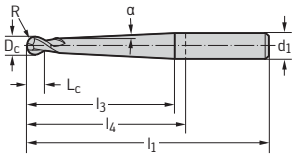


63HRC
48HRC

	P	M	K	N	S	H	O
TAX						●●	

P STANDARD XL

Shank DIN 6535 HA



Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	α	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8004728-1-2.5-57	1	0,5	1	17	2,5°	57	21	6	2
H8004728-1-2.5-80	1	0,5	1	36	2,5°	80	44	6	2
H8004728-1-4-57	1	0,5	1	17	4°	57	21	6	2
H8004728-1.5-2.5-57	1,5	0,8	1,5	17	2,5°	57	21	6	2
H8004728-1.5-4-57	1,5	0,8	1,5	17	4°	57	21	6	2
H8004728-2-2.5-57	2	1	2	18	2,5°	57	21	6	2
H8004728-2-2.5-80	2	1	2	40	2,5°	80	44	6	2
H8004728-2-4-57	2	1	2	18	4°	57	21	6	2
H8004728-2.5-2.5-57	2,5	1,3	2,5	18	2,5°	57	21	6	2
H8004728-2.5-4-57	2,5	1,3	2,5	18	4°	57	21	6	2
H8004728-3-2.5-57	3	1,5	3	19	2,5°	57	21	6	2
H8004728-3-2.5-80	3	1,5	3	38	2,5°	80	44	6	2
H8004728-3-4-57	3	1,5	3	19	4°	57	21	6	2
H8004728-4-2.5-57	4	2	4	20	2,5°	57	21	6	2
H8004728-4-2.5-80	4	2	4	27	2,5°	80	44	6	2
H8004728-4-4-57	4	2	4	25	4°	57	24,8	6	2
H8004728-4-10-80	4	2	4	14	9,7°	80	44	6	2
H8004728-5-10-80	5	2,5	4	13	9,4°	80	44	6	2

WALTER SELECT

●● Primary application

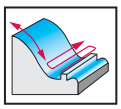
● Other application

XIII D 1 C 239 C 264

Solid carbide ball-nose end mills
H8014128
Protostar® Ultra



– Type HSC 30



Z=4

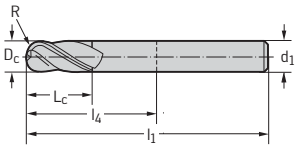




	P	M	K	N	S	H	O
TAX						●●	

DIN 6527 L

Shank DIN 6535 HA



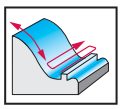
Designation TAX	D_c h7 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8014128-6-57	6	3	6	57	21	6	4
H8014128-6-80	6	3	6	80	44	6	4
H8014128-8-63	8	4	8	63	27	8	4
H8014128-8-100	8	4	8	100	64	8	4
H8014128-10-72	10	5	10	72	32	10	4
H8014128-10-100	10	5	10	100	60	10	4
H8014128-12-83	12	6	12	83	38	12	4
H8014128-12-100	12	6	12	100	55	12	4
H8014128-16-125	16	8	16	125	77	16	4

XIII D 1 C 239 C 264

Solid carbide ball-nose end mills
H8004788
Proto·max™ Ultra



– Long reach

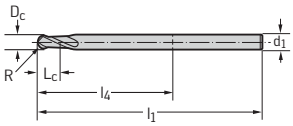


Z=2 | 30° | 70HRC

	P	M	K	N	S	H	O
TAS						●●	

P STANDARD L

Shank DIN 6535 HA



Designation TAS	D_c h7 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8004788-3-57	3	1,5	4,5	57	21	6	2
H8004788-3-70	3	1,5	4,5	70	34	6	2
H8004788-4-57	4	2	6	57	21	6	2
H8004788-4-70	4	2	6	70	34	6	2
H8004788-5-57	5	2,5	7,5	57	21	6	2
H8004788-5-80	5	2,5	7,5	80	44	6	2
H8004788-6-57	6	3	9	57	21	6	2
H8004788-6-90	6	3	9	90	54	6	2
H8004788-8-63	8	4	12	63	27	8	2
H8004788-8-100	8	4	12	100	64	8	2
H8004788-10-72	10	5	15	72	32	10	2
H8004788-10-100	10	5	15	100	60	10	2
H8004788-12-83	12	6	18	83	38	12	2
H8004788-12-110	12	6	18	110	65	12	2

WALTER SELECT

●● Primary application

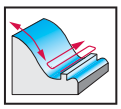
● Other application

XIII | D 1 | C 239 | C 264

Solid carbide mini ball-nose end mills
H4046988
Proto·max™ Ultra



– Long reach

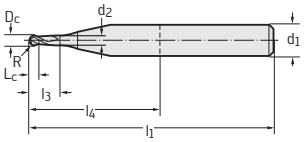


Z=2 | 30° | 70HRC

	P	M	K	N	S	H	O
TAS						●●	

P STANDARD MINI

Shank DIN 6535 HA



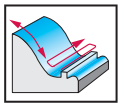
Designation TAS	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h4 mm	Z
H4046988-1-1.5	1	0,5	0,8	1,5	0,96	45	17	6	2
H4046988-1-3	1	0,5	0,8	3	0,96	45	17	6	2
H4046988-1-6	1	0,5	0,8	6	0,96	45	17	6	2
H4046988-1-8	1	0,5	0,8	8	0,96	45	17	6	2
H4046988-1-10	1	0,5	0,8	10	0,96	45	17	6	2
H4046988-1.2-1.8	1,2	0,6	1,1	1,8	1,15	45	17	6	2
H4046988-1.2-3.6	1,2	0,6	1,1	3,6	1,15	45	17	6	2
H4046988-1.5-2.25	1,5	0,75	1,4	2,25	1,44	45	17	6	2
H4046988-1.5-4.5	1,5	0,75	1,4	4,5	1,44	45	17	6	2
H4046988-1.5-8	1,5	0,75	1,4	8	1,44	45	17	6	2
H4046988-1.5-12	1,5	0,75	1,4	12	1,44	45	17	6	2
H4046988-2-3	2	1	1,7	3	1,92	45	17	6	2
H4046988-2-6	2	1	1,7	6	1,92	45	17	6	2
H4046988-2-8	2	1	1,7	8	1,92	45	17	6	2
H4046988-2-12	2	1	1,7	12	1,92	50	22	6	2
H4046988-2-16	2	1	1,7	16	1,92	50	22	6	2
H4046988-2-20	2	1	1,7	20	1,92	55	27	6	2
H4046988-2.5-3.75	2,5	1,25	2,2	3,75	2,42	45	17	6	2
H4046988-2.5-7.5	2,5	1,25	2,2	7,5	2,42	45	17	6	2
H4046988-2.5-12.5	2,5	1,25	2,2	12,5	2,42	50	22	6	2
H4046988-2.5-15	2,5	1,25	2,2	15	2,42	50	22	6	2

XIII | D 1 | C 239 | C 264

Solid carbide mini ball-nose end mills
H4046928
Protostar® Ultra



– Long reach
– Type HSC 30



Z=2

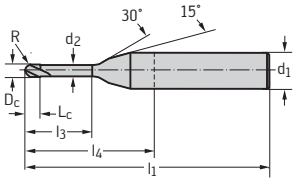


63HRC
48HRC

	P	M	K	N	S	H	O
TAX						●●	

P STANDARD MINI

Shank DIN 6535 HA



Designation TAX	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H4046928-0.3-0.75	0,3	0,15	0,3	0,75	0,27	38	10	3	2
H4046928-0.4-1	0,4	0,2	0,4	1	0,37	38	10	3	2
H4046928-0.4-2	0,4	0,2	0,4	2	0,37	38	10	3	2
H4046928-0.5-1.25	0,5	0,25	0,5	1,25	0,47	38	10	3	2
H4046928-0.5-2.5	0,5	0,25	0,5	2,5	0,47	38	10	3	2
H4046928-0.5-3.75	0,5	0,25	0,5	3,75	0,47	38	10	3	2
H4046928-0.6-1.5	0,6	0,3	0,6	1,5	0,57	38	10	3	2
H4046928-0.6-3	0,6	0,3	0,6	3	0,57	38	10	3	2
H4046928-0.6-4.5	0,6	0,3	0,6	4,5	0,57	38	10	3	2
H4046928-0.8-2	0,8	0,4	0,8	2	0,77	38	10	3	2
H4046928-0.8-4	0,8	0,4	0,8	4	0,77	38	10	3	2
H4046928-0.8-6	0,8	0,4	0,8	6	0,77	38	10	3	2
H4046928-1-2.5	1	0,5	1	2,5	0,97	38	10	3	2
H4046928-1-5	1	0,5	1	5	0,97	60	32	3	2
H4046928-1-7.5	1	0,5	1	7,5	0,97	60	32	3	2
H4046928-1.5-4	1,5	0,75	1,5	4	1,47	38	10	3	2
H4046928-1.5-7.5	1,5	0,75	1,5	7,5	1,47	60	32	3	2
H4046928-1.5-12	1,5	0,75	1,5	12	1,47	60	32	3	2
H4046928-2-5	2	1	2	5	1,97	38	10	3	2
H4046928-2-10	2	1	2	10	1,97	60	32	3	2
H4046928-2-15	2	1	2	15	1,97	60	32	3	2
H4046928-2.5-6	2,5	1,25	2,5	6	2,47	38	10	3	2
H4046928-2.5-12.5	2,5	1,25	2,5	12,5	2,47	60	32	3	2
H4046928-2.5-20	2,5	1,25	2,5	20	2,47	60	32	3	2
H4046928-3-7.5	3	1,5	3	7,5	2,97	38	10	3	2
H4046928-3-15	3	1,5	3	15	2,97	60	32	3	2
H4046928-3-22.5	3	1,5	3	22,5	2,97	60	32	3	2

WALTER SELECT

●● Primary application

● Other application

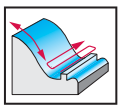
XIII D 1 C 239 C 264

Solid carbide ball-nose end mills
H8001119
Protostar®



Z = 2

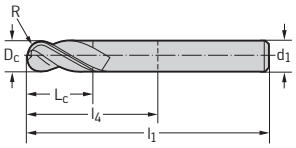




	P	M	K	N	S	H	O
DIA							●●

DIN 6527 L

Shank DIN 6535 HA



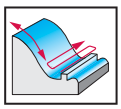
Designation DIA	D_c h8 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8001119-1	1	0,5	3	38	10	3	2
H8001119-1.5	1,5	0,75	3	38	10	3	2
H8001119-2	2	1	6	38	11	3	2
H8001119-2.5	2,5	1,25	7	38	12	3	2
H8001119-3	3	1,5	7	38	10	3	2
H8001119-4	4	2	8	57	21	6	2
H8001119-5	5	2,5	10	57	21	6	2
H8001119-6	6	3	10	57	21	6	2
H8001119-8	8	4	16	63	27	8	2
H8001119-10	10	5	19	72	32	10	2
H8001119-12	12	6	22	83	38	12	2

XIII D 1 C 239 C 264

Solid carbide ball-nose end mills
H8006419 / H8016419
Protostar®



– Long reach
– Type HSC 30



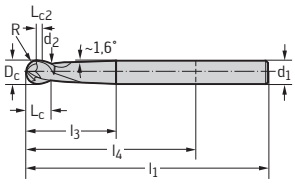
Z= 2–4



DIA	P	M	K	N	S	H	O
							●●

P STANDARD L

Shank DIN 6535 HA

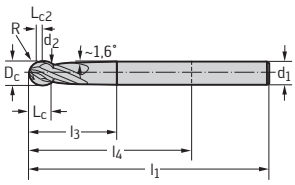


Designation DIA	D_c h8 mm	R mm	L_c mm	L_{c2} mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8006419-1	1	0,5	2	0	20		75	39	6	2
H8006419-2	2	1	3	1,5	20	1,7	75	39	6	2
H8006419-3	3	1,5	4	1,5	30	2,5	80	44	6	2
H8006419-4	4	2	5	1,5	30	3,3	80	44	6	2
H8006419-5	5	2,5	7	2	43	4,1	80	44	6	2
H8006419-6	6	3	7	2	30	4,7	100	64	6	2
H8006419-8	8	4	9	3	36	6,5	100	64	8	2
H8006419-10	10	5	11	3	43	8,2	100	60	10	2

With back cutting

P STANDARD L

Shank DIN 6535 HA



Designation DIA	D_c h8 mm	R mm	L_c mm	L_{c2} mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8016419-5-43	5	2,5	7	2	43	4,1	80	44	6	4
H8016419-6-30	6	3	7	2	30	4,7	100	64	6	4
H8016419-8-36	8	4	9	3	36	6,5	100	64	8	4
H8016419-10-43	10	5	11	3	43	8,2	100	60	10	4
H8016419-12-52	12	6	13	3	52	9,8	100	55	12	4

With back cutting

WALTER SELECT

●● Primary application

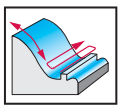
● Other application

XIII D 1 C 239 C 264

Solid carbide ball-nose end mills
H8001919
Protostar®



– Long reach



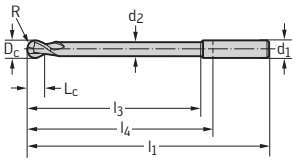
Z= 2–4



	P	M	K	N	S	H	O
DIA							●●

P STANDARD XL

Shank DIN 6535 HA



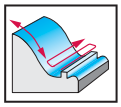
Designation DIA	D_c h8 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H8001919-4-20	4	2	4	20	3,9	100	64	6	2
H8001919-4-30	4	2	4	30	3,9	100	64	6	2
H8001919-4-40	4	2	4	40	3,9	100	64	6	2
H8001919-5-25	5	2,5	5	25	4,9	100	64	6	2
H8001919-5-50	5	2,5	5	50	4,9	100	64	6	2
H8001919-6-30	6	3	6	30	5,9	100	64	6	4
H8001919-6-45	6	3	6	45	5,9	100	64	6	4
H8001919-6-60	6	3	6	60	5,9	100	64	6	4
H8001919-8-40	8	4	8	40	7,85	120	84	8	4
H8001919-8-60	8	4	8	60	7,85	120	84	8	4
H8001919-8-80	8	4	8	80	7,85	120	84	8	4
H8001919-10-50	10	5	10	50	9,85	150	110	10	4
H8001919-10-75	10	5	10	75	9,85	150	110	10	4
H8001919-12-60	12	6	12	60	11,8	150	105	12	4
H8001919-12-90	12	6	12	90	11,8	150	105	12	4

XIII D 1 C 239 C 264

Solid carbide mini ball-nose end mills
H4046919
Protostar®



– Long reach
– Type HSC 30



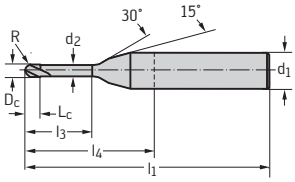
Z = 2



	P	M	K	N	S	H	O
DIA							●●

P STANDARD MINI

Shank DIN 6535 HA



Designation DIA	D_c h8 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z
H4046919-0.3-0.75	0,3	0,15	0,3	0,75	0,27	38	10	3	2
H4046919-0.3-1.5	0,3	0,15	0,3	1,5	0,27	38	10	3	2
H4046919-0.3-3	0,3	0,15	0,3	3	0,27	38	10	3	2
H4046919-0.4-1	0,4	0,2	0,4	1	0,37	38	10	3	2
H4046919-0.4-2	0,4	0,2	0,4	2	0,37	38	10	3	2
H4046919-0.4-4	0,4	0,2	0,4	4	0,37	38	10	3	2
H4046919-0.5-1.25	0,5	0,25	0,5	1,25	0,47	38	10	3	2
H4046919-0.5-2.5	0,5	0,25	0,5	2,5	0,47	38	10	3	2
H4046919-0.5-5	0,5	0,25	0,5	5	0,47	38	10	3	2
H4046919-0.6-1.5	0,6	0,3	0,6	1,5	0,57	38	10	3	2
H4046919-0.6-3	0,6	0,3	0,6	3	0,57	38	10	3	2
H4046919-0.6-6	0,6	0,3	0,6	6	0,57	38	10	3	2
H4046919-0.6-9	0,6	0,3	0,6	9	0,57	38	13	3	2
H4046919-0.8-2	0,8	0,4	0,8	2	0,77	38	10	3	2
H4046919-0.8-4	0,8	0,4	0,8	4	0,77	38	10	3	2
H4046919-0.8-6	0,8	0,4	0,8	6	0,77	38	10	3	2
H4046919-0.8-8	0,8	0,4	0,8	8	0,77	38	12	3	2
H4046919-0.8-12	0,8	0,4	0,8	12	0,77	60	32	3	2
H4046919-1-2.5	1	0,5	1	2,5	0,97	38	10	3	2
H4046919-1-5	1	0,5	1	5	0,97	60	32	3	2
H4046919-1-7.5	1	0,5	1	7,5	0,97	60	32	3	2
H4046919-1-10	1	0,5	1	10	0,97	60	32	3	2
H4046919-1-15	1	0,5	1	15	0,97	60	32	3	2
H4046919-1-20	1	0,5	1	20	0,97	60	32	3	2
H4046919-1.5-7.5	1,5	0,75	1,5	7,5	1,47	60	32	3	2
H4046919-1.5-15	1,5	0,75	1,5	15	1,47	60	32	3	2
H4046919-2-10	2	1	2	10	1,97	60	32	3	2
H4046919-2-15	2	1	2	15	1,97	60	32	3	2
H4046919-2-20	2	1	2	20	1,97	60	32	3	2
H4046919-2-30	2	1	2	30	1,97	60	32	3	2
H4046919-2.5-12.5	2,5	1,25	2,5	12,5	2,47	60	32	3	2
H4046919-2.5-25	2,5	1,25	2,5	25	2,47	60	32	3	2
H4046919-3-15	3	1,5	3	15	2,97	60	32	3	2
H4046919-3-22.5	3	1,5	3	22,5	2,97	60	32	3	2
H4046919-3-30	3	1,5	3	30	2,97	60	32	3	2

WALTER SELECT

●● Primary application

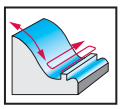
● Other application

XIII D 1 C 239 C 264

Solid carbide ball-nose end mills
MC416 Advance



– Type 30



Z=4 | 30° | 48HRC

	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

P STANDARD L

	Designation	D_c h7 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
Shank DIN 6535 HA	MC416-03.0A4L-	3	1,5	8	80	44	6	4	●
	MC416-04.0A4L-	4	2	11	80	44	6	4	●
	MC416-05.0A4L-	5	2,5	13	80	44	6	4	●
	MC416-06.0A4L-	6	3	13	80	44	6	4	●
	MC416-07.0A4L-	7	3,5	16	100	64	8	4	●
	MC416-08.0A4L-	8	4	19	100	64	8	4	●
	MC416-09.0A4L-	9	4,5	19	100	60	10	4	●
	MC416-10.0A4L-	10	5	22	100	60	10	4	●
	MC416-12.0A4L-	12	6	26	100	55	12	4	●
	MC416-16.0A4L-	16	8	32	100	52	16	4	●
	MC416-20.0A4L-	20	10	38	125	75	20	4	●
Shank DIN 6535 HB	MC416-03.0W4L-	3	1,5	8	80	44	6	4	●
	MC416-04.0W4L-	4	2	11	80	44	6	4	●
	MC416-05.0W4L-	5	2,5	13	80	44	6	4	●
	MC416-06.0W4L-	6	3	13	80	44	6	4	●
	MC416-08.0W4L-	8	4	19	100	64	8	4	●
	MC416-10.0W4L-	10	5	22	100	60	10	4	●
	MC416-12.0W4L-	12	6	26	100	55	12	4	●
	MC416-16.0W4L-	16	8	32	100	52	16	4	●
	MC416-20.0W4L-	20	10	38	125	75	20	4	●

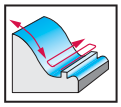
Ordering example for the WJ30TF grade: MC416-03.0A4L-WJ30TF

XIII | D 1 | C 240 | C 264

Solid carbide ball-nose end mills
MC416 Advance



– Type 30

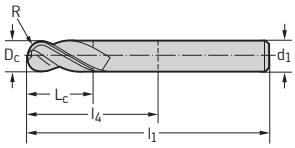


Z=2 | 30° | 48HRC

	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

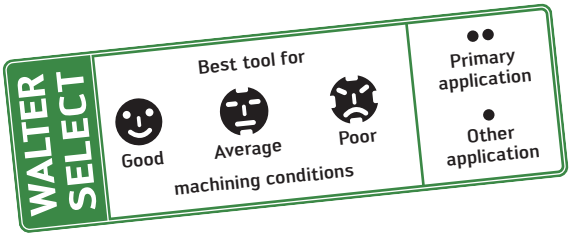
DIN 6527 L

Shank DIN 6535 HA



Designation	D_c h7 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC416-01.0A2B-	1	0,5	3	38	10	3	2	●
MC416-01.5A2B-	1,5	0,75	3	38	10	3	2	●
MC416-02.0A2B-	2	1	6	38	11	3	2	●
MC416-02.5A2B-	2,5	1,25	7	38	12	3	2	●
MC416-03.0A2B-	3	1,5	7	38	10	3	2	●
MC416-04.0A2B-	4	2	8	57	21	6	2	●
MC416-05.0A2B-	5	2,5	10	57	21	6	2	●
MC416-06.0A2B-	6	3	10	57	21	6	2	●
MC416-07.0A2B-	7	3,5	13	63	27	8	2	●
MC416-08.0A2B-	8	4	16	63	27	8	2	●
MC416-09.0A2B-	9	4,5	16	72	32	10	2	●
MC416-10.0A2B-	10	5	19	72	32	10	2	●
MC416-12.0A2B-	12	6	22	83	38	12	2	●
MC416-14.0A2B-	14	7	22	83	38	14	2	●
MC416-16.0A2B-	16	8	26	92	44	16	2	●
MC416-18.0A2B-	18	9	26	92	44	18	2	●
MC416-20.0A2B-	20	10	32	104	54	20	2	●

Ordering example for the WJ30TF grade: MC416-01.0A2B-WJ30TF

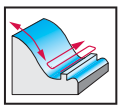


XIII | D 1 | C 240 | C 264

Solid carbide ball-nose end mills
MC413 Advance



– Long reach
– Type HSC 30



Z = 2–4

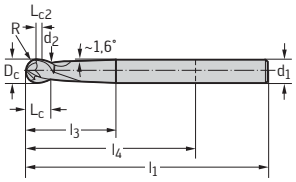


48HRC

	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

P STANDARD L

Shank DIN 6535 HA

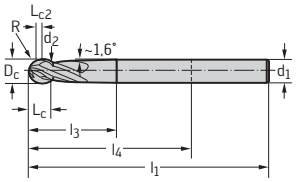


Designation	D_c h7 mm	R mm	L_c mm	L_{c2} mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30TF
MC413-01.0A2L-	1	0,5	2	0	20		75	39	6	2	●
MC413-02.0A2L-	2	1	3	1,5	20	1,7	75	39	6	2	●
MC413-03.0A2L-	3	1,5	4	1,5	30	2,5	80	44	6	2	●
MC413-04.0A2L-	4	2	5	1,5	30	3,3	80	44	6	2	●
MC413-05.0A2L-	5	2,5	7	2	43	4,1	80	44	6	2	●
MC413-06.0A2L-	6	3	7	2	30	4,7	100	64	6	2	●
MC413-08.0A2L-	8	4	9	3	36	6,5	100	64	8	2	●
MC413-10.0A2L-	10	5	11	3	43	8,2	100	60	10	2	●

With back cutting
Ordering example for the WJ30TF grade: MC413-01.0A2L-WJ30TF

P STANDARD L

Shank DIN 6535 HA



Designation	D_c h7 mm	R mm	L_c mm	L_{c2} mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30TF
MC413-05.0A4L-	5	2,5	7	2	43	4,1	80	44	6	4	●
MC413-06.0A4L-	6	3	7	2	30	4,7	100	64	6	4	●
MC413-08.0A4L-	8	4	9	3	36	6,5	100	64	8	4	●
MC413-10.0A4L-	10	5	11	3	43	8,2	100	60	10	4	●
MC413-12.0A4L-	12	6	13	3	52	9,8	100	55	12	4	●
MC413-16.0A4L-	16	8	15	3	61	13,4	150	102	16	4	●

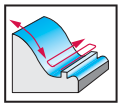
With back cutting
Shank tolerance h6 with shank diameter d_1 > 10 mm
Ordering example for the WJ30TF grade: MC413-05.0A4L-WJ30TF

XIII D 1 C 240 C 264

Solid carbide ball-nose end mills
MC413 Advance



– Long reach
– Type HSC 30

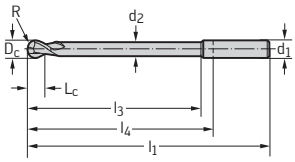


Z= 2–4 | 30° | 48HRC

	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

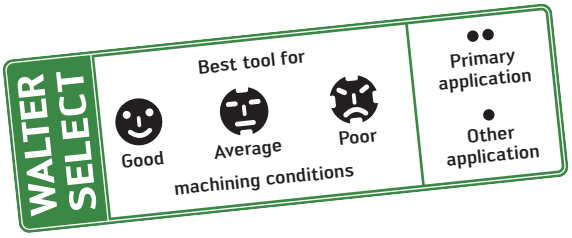
P STANDARD XL

Shank DIN 6535 HA



Designation	D_c h7 mm	R mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h5 mm	Z	WJ30TF
MC413-04.0A2XC-	4	2	4	20	3,9	100	64	6	2	☹
MC413-04.0A2XD-	4	2	4	30	3,9	100	64	6	2	☹
MC413-04.0A2XE-	4	2	4	40	3,9	100	64	6	2	☹
MC413-05.0A2XC-	5	2,5	5	25	4,9	100	64	6	2	☹
MC413-05.0A2XD-	5	2,5	5	50	4,9	100	64	6	2	☹
MC413-06.0A4XC-	6	3	6	30	5,9	100	64	6	4	☹
MC413-06.0A4XD-	6	3	6	45	5,9	100	64	6	4	☹
MC413-06.0A4XE-	6	3	6	60	5,9	100	64	6	4	☹
MC413-08.0A4XC-	8	4	8	40	7,85	120	84	8	4	☹
MC413-08.0A4XD-	8	4	8	60	7,85	120	84	8	4	☹
MC413-08.0A4XE-	8	4	8	80	7,85	120	84	8	4	☹
MC413-10.0A4XD-	10	5	10	50	9,85	150	110	10	4	☹
MC413-10.0A4XE-	10	5	10	75	9,85	150	110	10	4	☹
MC413-12.0A4XD-	12	6	12	60	11,8	150	105	12	4	☹

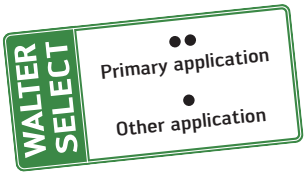
Shank tolerance h6 with shank diameter d_1 > 10 mm
Ordering example for the WJ30TF grade: MC413-04.0A2XC-WJ30TF

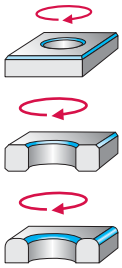


XIII | D 1 | C 240 | C 264

Walter Select – Solid carbide milling tools
Profiling cutters

Machining

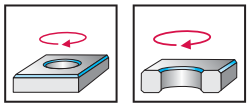




Helix angle	0°				
Designation	**MC500 Advance**	**MC501 Advance**	**MC502 Advance**	**MC503 Advance**	**MC504 Advance**
Dia. range [mm]	6–10	6–12	10	6–20	6–12
Z	4	4–6	4	3–4	4–6
Type	60°	90°	120°	R0,5mm-6mm	90°
Standard	P STANDARD L	P STANDARD L	P STANDARD L	DIN 6527 L	P STANDARD L
Shank	DIN 6535 HA DIN 6535 HB	DIN 6535 HA DIN 6535 HB	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
Page	C 123	C 124	C 125	C 126	C 127
					
P Steel	●●	●●	●●	●●	●●
M Stainless steel	●	●	●	●	●
K Cast iron	●	●	●	●	●
N NF metals	●	●	●	●	●
S Materials with difficult cutting properties	●	●	●	●	●
H Hard materials					
O Other					

Solid carbide chamfer milling cutter 60°
MC500 Advance



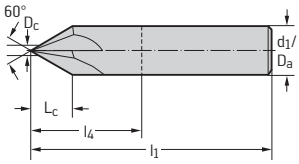


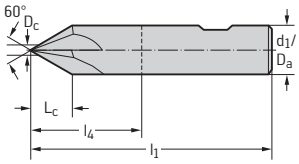
Z = 4 | 0° | 48HRC

	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

P STANDARD L

Designation	D_c mm	D_a mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	α	Z	WJ30TF
Shank DIN 6535 HA									
MC500-06.0A4L-	1	6	4,3	57	20	6	60°	4	●
MC500-10.0A4L-	1,5	10	7,35	100	59	10	60°	4	●
Shank DIN 6535 HB									
MC500-10.0W4L-	1,5	10	7,35	100	59	10	60°	4	●



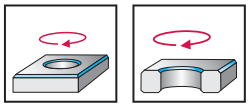


Shoulder milling $a_e \leq 0.3 \times D_a$
Ordering example for the WJ30TF grade: MC500-06.0A4L-WJ30TF

XIII | D 1 | C 242 | C 264

Solid carbide chamfer milling cutter 90°
MC501 Advance





Z = 4–6 | 0° | 48HRC

	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

P STANDARD L

Designation	D_c mm	D_a mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	α	Z	WJ30TF
Shank DIN 6535 HA									
MC501-06.0A4L-	1	6	2,5	57	21	6	90°	4	●●
MC501-08.0A5L-	2	8	3	80	43	8	90°	5	●●
MC501-10.0A4L-	1,5	10	4,25	100	59	10	90°	4	●●
MC501-12.0A6L-	3	12	4,5	83	37	12	90°	6	●●
Shank DIN 6535 HB									
MC501-06.0W4L-	1	6	2,5	57	21	6	90°	4	●●
MC501-08.0W5L-	2	8	3	80	43	8	90°	5	●●
MC501-10.0W4L-	1,5	10	4,25	100	59	10	90°	4	●●
MC501-12.0W6L-	3	12	4,5	83	37	12	90°	6	●●

Shoulder milling $a_e \leq 0.3 \times D_a$

Ordering example for the WJ30TF grade: MC501-06.0A4L-WJ30TF

WALTER SELECT

Best tool for

Good | Average | Poor

machining conditions

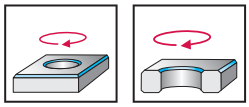
●● Primary application

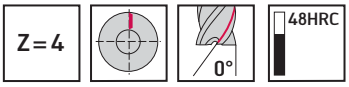
● Other application

XIII | D 1 | C 242 | C 264

Solid carbide chamfer milling cutter 120°
MC502 Advance



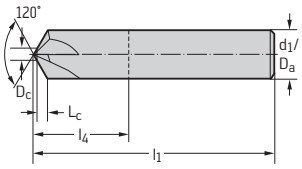




	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

P STANDARD L

Designation	D_c mm	D_a mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	α	Z	WJ30TF
Shank DIN 6535 HA									
MC502-10.0A4L-	1,5	10	2,45	100	60	10	120°	4	●

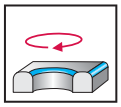


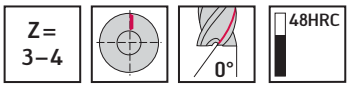
Shoulder milling $a_e \leq 0.3 \times D_a$
Ordering example for the WJ30TF grade: MC502-10.0A4L-WJ30TF

XIII D 1 C 242 C 264

Solid carbide quarter-round profiling cutters
MC503 Advance



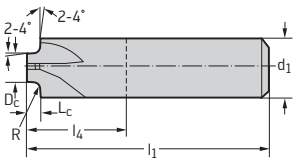




	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

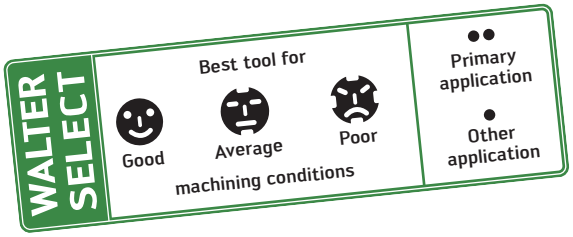
DIN 6527 L

Shank DIN 6535 HA



Designation	R mm	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC503-04.0A3B050-	0,5	4	0,5	57	21	6	3	☺
MC503-04.0A3B075-	0,75	4	0,75	57	21	6	3	☺
MC503-04.0A3B080-	0,8	4	0,8	57	21	6	3	☺
MC503-04.0A4B100-	1	4	1	63	27	8	4	☺
MC503-04.0A4B150-	1,5	4	1,5	63	27	8	4	☺
MC503-05.0A4B200-	2	5	2	72	32	10	4	☺
MC503-05.0A4B250-	2,5	5	2,5	72	32	10	4	☺
MC503-05.0A4B300-	3	5	3	83	38	12	4	☺
MC503-06.0A4B400-	4	6	4	83	38	14	4	☺
MC503-06.0A4B500-	5	6	5	92	44	16	4	☺
MC503-08.0A4B600-	6	8	6	104	54	20	4	☺

Ordering example for the WJ30TF grade: MC503-04.0A3B050-WJ30TF

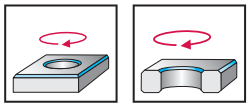


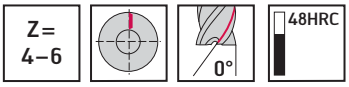
XIII
D 1
C 243
C 264

Solid carbide front/rear deburrers
MC504 Advance



– Long reach
– Type: Front/Rear deburrer

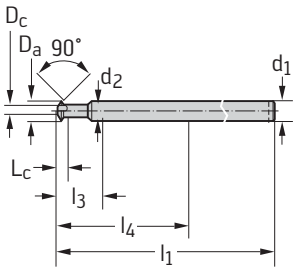




	P	M	K	N	S	H	O
WJ30TF	●●	●	●	●	●		

P STANDARD L

Shank DIN 6535 HA



Designation	D_a mm	D_c mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	WJ30TF
MC504-06.0A4LB-	6	0,4	4,25	19	3,9	100	64	6	4	●
MC504-08.0A4L-	8	5,9	2			100	64	6	4	●
MC504-10.0A6L-	10	5,9	4			100	64	6	6	●
MC504-12.0A6L-	12	5,9	6			100	64	6	6	●

Ordering example for the WJ30TF grade: MC504-06.0A4LB-WJ30TF

XIII D 1 C 243 C 264

Solid carbide milling tools with ConeFit interface product range overview
Shoulder milling cutters

Machining	
Helix angle	**50°**
Designation	**H3E21138 H3E23138 Protostar®**
Dia. range [mm]	10–25
Z	6–8
Corner radius [mm]	0–4
Page	C 135
	

Solid carbide milling tools with ConeFit interface product range overview
Shoulder/slot milling cutters

Machining						
Helix angle	**50°**		**50°**	**45°**	**50°**	**50°**
Designation	**H4E34217 H4E38217 Proto·max™$_{ST}$**	**H2EC34217 H2EC38217 Proto·max™$_{Inox}$**	**H2EC94717 Protostar® Flash**	**H6E2211 H6E2511 Protostar®**	**H3E20317 H3E21317 Tough Guys**	**H3E93718 H3E94718 Protostar® Flash**
Dia. range [mm]	10–20	10–25	10–25	10–25	10–25	10–25
Z	4	4–5	4–5	2–3	4–5	3–4
Corner radius [mm]	0–4	0–4	0	0	0–4	0
Page	C 138	C 139	C 140	C 141	C 143	C 144
						

Machining					
Helix angle	**10°**	**45°**	**10°**	**45°**	**40°**
Designation	**H1E92718 Protostar® Flash**	**H3E29148 Protostar®**	**H1E12018 Protostar®**	**H3E85378 Protostar® Qmax**	**H3E82378 Protostar® Qmax**
Dia. range [mm]	10–16	10–25	10–16	10–25	10–25
Z	2	3	2	5–8	4
Corner radius [mm]	0	0	0,2–4	0	0
Page	C 145	C 146	C 147	C 148	C 149
					

Solid carbide milling tools with ConeFit interface product range overview Copy milling cutters

Machining		
Helix angle	**40°**	**10°**
Designation	**H8E01118 H8E11118 Protostar®**	**H1E0111 H1E01118 Protostar®**
Dia. range [mm]	10–25	10–16
Z	2–4	2
Corner radius [mm]	5–12,5	5–8
Page	C 151	C 153
		

Solid carbide milling tools with ConeFit interface product range overview Profiling cutters

Machining						
Helix angle	**10°**	**0°**	**10°**	**0°**	**10°**	**0°**
Designation	**H1E58518 Protostar®**	**H3E58518 Protostar®**	**H1E58318 Protostar®**	**H3E58318 Protostar®**	**H1E58118 Protostar®**	**H3E58118 Protostar®**
Dia. range [mm]	10–12	10–12	10–16	10–16	10–12	12
Z	2	4–6	2	4–8	2	6
Type	60°	60°	90°	90°	120°	120°
Page	C 156	C 157	C 158	C 159	C 160	C 161
						

Machining		
Helix angle	**10°**	**0°**
Designation	**H1E58018 Protostar®**	**H3E68118 Protostar®**
Dia. range [mm]	12	10–20
Z	2	4
Type	150°	
Page	C 162	C 163
		

System overview

ConeFit

Cylindrical adaptors


Type B
Carbide
AK610 . . . C


Type A
Carbide
AK610 . . . C


Type C
Steel
AK610


Type B
Steel
AK610


Type A
Steel
AK610


Type A
Steel
reinforced
AK610

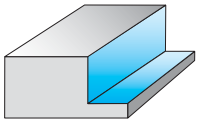
Monoblock adaptors


Walter Capto™
C5 + C6
AK681


HSK 63A
AK631


SK40 +
MAS–BT40
AK641

Shoulder milling

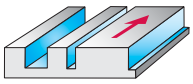


with radius


N50
Z = 6–8
H3E23138


N50
Z = 6–8
H3E21138

Slot/shoulder milling




Proto·max™ ST
Z = 4
H4E34217
H4E38217
(with radius)


Proto·max™ Inox
Z = 4–5
H2EC34217
H2EC 38217
H2EC94717
(with Flash profile)


Protostar® Flash
Z = 2–4
H3E94718
(with radius)
H3E93718
H1E92718
(Spade with radius)


AL45
Z = 2–3
H6E2211
H6E2511


Tough Guys
Z = 4–5
H3E20317
(with radius)
H3E21317


Protostar®
Z = 3
H3E29148

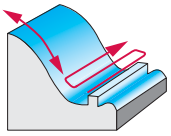
Spade with radius


N10
Z = 2
H1E12018


Protostar® Qmax
F45
Z = 5–8
H3E85378


Protostar® Qmax
F40
Z = 4
H3E82378

Radius copy milling



Spade



N10
Z = 2
H1E01118

Spade



N10
Z = 2
H1E0111

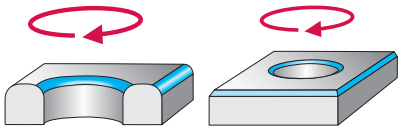


N40
Z = 2
H8E01118



N40
Z = 4
H8E11118

Profile milling



Spade



Chamfer milling
cutter 60°
Z = 2
H1E58518

Spade



Chamfer milling
cutter 90°
Z = 2
H1E58318

Spade



Chamfer milling
cutter 120°
Z = 2
H1E58118

Spade



Chamfer milling
cutter 150°
Z = 2
H1E58018



Chamfer milling
cutter 60°
Z = 4–6
H3E58518



Chamfer milling
cutter 90°
Z = 4–8
H3E58318



Chamfer milling
cutter 120°
Z = 6
H3E58118



Corner rounding
end mill
Z = 4
H3E68118

Walter Select – Solid carbide milling cutters with ConeFit interface

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page C 671 onwards:

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	P1–P15	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	M1–M3	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	K1–K7	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	N1–N10	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	S1–S10	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	H1–H4	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	O1–O6	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

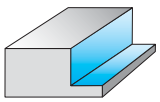
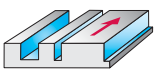
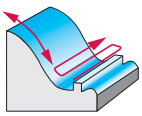
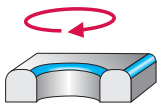
STEP 2

Select the **machining conditions**:

Machine stability, clamping system and workpiece		
very good	good	moderate
		

STEP 3

Select your **machining method** based on the main categories and subcategories and then go to the relevant Walter Select product range overview (see table, e.g. page C 134).

Machining method			
			
Shoulder milling – No corner radius – With corner radius	**Shoulder/slot milling** – No corner radius – With chamfer – With corner radius – With roughing profile	**Radius copy milling**	**Profile milling** – Chamfering and deburring – Corner rounding
Page C 134	Page C 136	Page C 150	Page C 154

STEP 4

Select the appropriate tool for your **machining conditions** and then go to the ordering page.

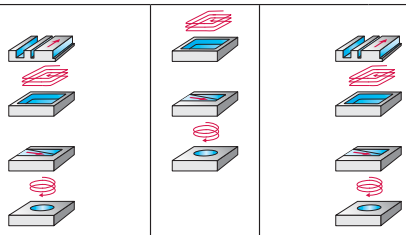
Walter Select – Solid carbide milling tools with ConeFit interface
Shoulder/slot milling cutters

Machining

WALTER SELECT

Primary application

Other application

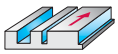


Helix angle	50°		50°	45°	50°
Designation	H4E34217 H4E38217 Proto-max™ ST	H2EC34217 H2EC38217 Proto-max™ Inox	H2EC94717 Protostar® Flash	H6E2211 H6E2511 Protostar®	H3E20317 H3E21317 Tough Guys
Dia. range [mm]	10–20	10–25	10–25	10–25	10–25
Z	4	4–5	4–5	2–3	4–5
Corner radius [mm]	0–4	0–4	0	0	0–4
Standard	PWZ	PWZ	PWZ	PWZ	PWZ
Shank	ConeFit	ConeFit	ConeFit	ConeFit	ConeFit
	C 138				

STEP 5

Based on the **material group** to be machined, look for the appropriate **cutting speed** by referring to **a_e to D_c from page** C 222 (e.g. A) **onwards** and also the **VT feed group**.

Cutting data for solid carbide shoulder/slot milling



Product family		λ
MC341 Supreme		50°

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group¹	Ø 6–20 mm, Z = 4, WK40TZ Starting values for cutting speed v_c [m/min] a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	201	265	365	A
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	316	403	575	A
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	316	403	575	A
		C > 0.55%	Annealed	190	640	P4	270	344	491	A
		C > 0.55%	Heat-treated	300	1010	P5	191	243	348	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	270	344	491	A
	Low-alloyed steel	Annealed		175	590	P7	270	344	491	A
		Heat-treated		285	960	P8	191	243	348	A
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	270	344	491	A
		Hardened and tempered		380	1010	P12	191	243	348	A
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	80	102	146	A
										A

STEP 6

Based on the feed group, determine the correct **feed value (page C 256 a_e to D_c)** for your **machining conditions**.

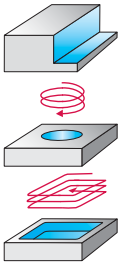
Feed determination

The specified feed rates are average standard val
For special applications, adjustment is recommen

A Material groups ISO P, ISO K and titanium alloys

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 0,3 mm	Ø 0,5 mm	Ø 1 mm	Ø 2 mm	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12
0,01	0,02	0,02	0,03	0,06	0,09	0,12	0,15	0,15	0,20	
0,05	0,01	0,01	0,02	0,04	0,07	0,10	0,12	0,15	0,20	
0,1	0,01	0,01	0,02	0,03	0,05	0,08	0,10	0,15	0,20	0,20
0,2	0,01	0,01	0,01	0,03	0,04	0,06	0,08	0,15	0,18	0,20
0,5		0,01	0,01	0,02	0,03	0,05	0,07	0,12	0,15	0,15
1			0,01	0,02	0,03	0,04	0,06	0,09	0,12	0,12
2				0,02	0,03	0,03	0,05	0,08	0,11	0,12
3					0,02	0,02	0,04	0,07	0,10	0,12
5						0,02	0,04	0,07	0,10	0,12
6							0,03	0,06	0,08	0,10
8								0,05	0,07	0,09
10									0,06	0,08
12										0,07
14										
16										
18										
20										
25										
32										

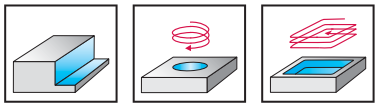
Walter Select – Solid carbide milling tools with ConeFit interface
Shoulder milling cutters

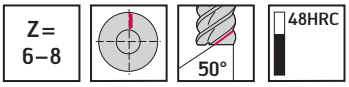
Machining	
WALTER SELECT ●● Primary application ● Other application	
Helix angle	**50°**
Designation	**H3E21138** **H3E23138** **Protostar®**
Dia. range [mm]	10–25
Z	6–8
Corner radius [mm]	0–4
Standard	PWZ
Shank	ConeFit
Page	C 135
	
P Steel	●●
M Stainless steel	●
K Cast iron	
N NF metals	
S Materials with difficult cutting properties	●
H Hard materials	
O Other	

Solid carbide shoulder milling cutters
H3E21138 / H3E23138
Protostar®



– Type N 50

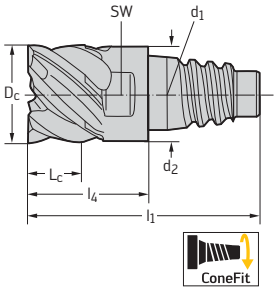




	P	M	K	N	S	H	O
TAX	●●	●			●		

PWZ

ConeFit

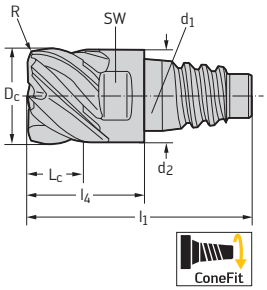


Designation TAX	D_c h10 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H3E21138-E10-10	10	5,5	9,7	23,6	12,4	8	E10	6
H3E21138-E12-12	12	6,5	11,7	28,3	14,5	10	E12	6
H3E21138-E16-16	16	8,5	15,5	35,7	18,7	12	E16	6
H3E21138-E20-20	20	11	19,3	40,8	21,3	16	E20	8
H3E21138-E25-25	25	13,5	24,2	49,6	25,6	20	E25	8

Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

PWZ

ConeFit



Designation TAX	D_c h9 mm	R mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H3E23138-E10-10-0.5	10	0,5	5,5	9,7	23,6	12,4	8	E10	6
H3E23138-E10-10-1	10	1	5,5	9,7	23,6	12,4	8	E10	6
H3E23138-E12-12-0.5	12	0,5	6,5	11,7	28,3	14,5	10	E12	6
H3E23138-E12-12-1	12	1	6,5	11,7	28,3	14,5	10	E12	6
H3E23138-E12-12-1.5	12	1,5	6,5	11,7	28,3	14,5	10	E12	6
H3E23138-E12-12-2	12	2	6,5	11,7	28,3	14,5	10	E12	6
H3E23138-E16-16-0.5	16	0,5	8,5	15,5	35,7	18,7	12	E16	6
H3E23138-E16-16-1	16	1	8,5	15,5	35,7	18,7	12	E16	6
H3E23138-E16-16-1.5	16	1,5	8,5	15,5	35,7	18,7	12	E16	6
H3E23138-E16-16-2	16	2	8,5	15,5	35,7	18,7	12	E16	6
H3E23138-E20-20-1	20	1	11	19,3	40,8	21,3	16	E20	8
H3E23138-E20-20-1.5	20	1,5	11	19,3	40,8	21,3	16	E20	8
H3E23138-E20-20-2	20	2	11	19,3	40,8	21,3	16	E20	8
H3E23138-E20-20-4	20	4	11	19,3	40,8	21,3	16	E20	8
H3E23138-E25-25-1	25	1	13,5	24,2	49,6	25,6	20	E25	8
H3E23138-E25-25-2	25	2	13,5	24,2	49,6	25,6	20	E25	8
H3E23138-E25-25-4	25	4	13,5	24,2	49,6	25,6	20	E25	8

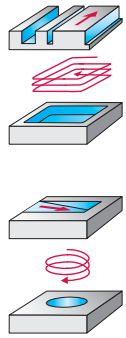
Slot milling $a_p \leq 0.1 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

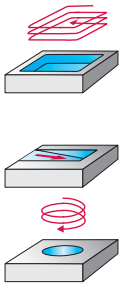
XIII D 1 C 223 C 264 ConeFit C 270

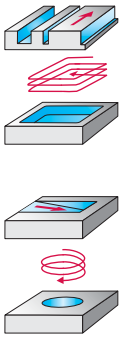
Walter Select – Solid carbide milling tools with ConeFit interface
Shoulder/slot milling cutters

Machining

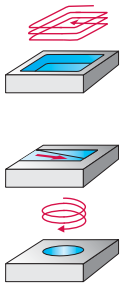
WALTER SELECT
●● Primary application
● Other application

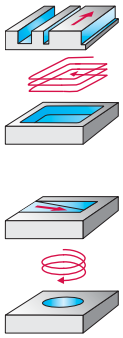






Helix angle	50°		50°	45°	50°	
Designation	**H4E34217 H4E38217 Proto·max™$_{ST}$**	**H2EC34217 H2EC38217 Proto·max™$_{Inox}$**	**H2EC94717 Protostar® Flash**	**H6E2211 H6E2511 Protostar®**	**H3E20317 H3E21317 Tough Guys**	
Dia. range [mm]	10–20	10–25	10–25	10–25	10–25	
Z	4	4–5	4–5	2–3	4–5	
Corner radius [mm]	0–4	0–4	0	0	0–4	
Standard	PWZ	PWZ	PWZ	PWZ	PWZ	
Shank	ConeFit	ConeFit	ConeFit	ConeFit	ConeFit	
Page	C 138	C 139	C 140	C 141	C 143	
						
P Steel	●●				●●	
M Stainless steel	●	●●	●●		●	
K Cast iron					●	
N NF metals				●●		
S Materials with difficult cutting properties		●	●		●	
H Hard materials						
O Other						

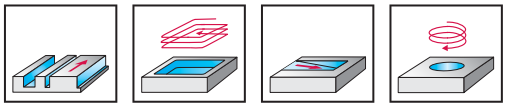


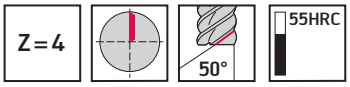


	50°	10°	45°	10°	45°	40°
	H3E93718 H3E94718 Protostar® Flash	**H1E92718 Protostar® Flash**	**H3E29148 Protostar®**	**H1E12018 Protostar®**	**H3E85378 Protostar® Qmax**	**H3E82378 Protostar® Qmax**
	10–25	10–16	10–25	10–16	10–25	10–25
	3–4	2	3	2	5–8	4
	0	0	0	0,2–4	0	0
	PWZ	PWZ	PWZ	PWZ	PWZ	PWZ
	ConeFit	ConeFit	ConeFit	ConeFit	ConeFit	ConeFit
	C 144	C 145	C 146	C 147	C 148	C 149
						
	●●	●●	●●	●●	●●	●
	●	●		●	●	●●
	●	●	●	●	●	●
	●	●				

Solid carbide shoulder/slot milling cutters
H4E34217 / H4E38217
Proto·max™ ST



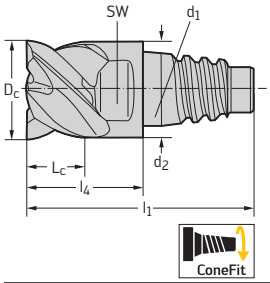




TAZ	P	M	K	N	S	H	O
	●●	●					

PWZ

ConeFit

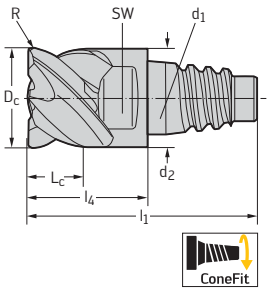


Designation TAZ	D_c h9 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H4E34217-E10-10	10	5,5	9,7	23,6	12,4	8	E10	4
H4E34217-E12-12	12	6,5	11,7	28,3	14,5	10	E12	4
H4E34217-E16-16	16	8,5	15,5	35,7	18,7	12	E16	4
H4E34217-E20-20	20	11	19,3	40,8	21,3	16	E20	4

Slot milling $a_p \leq 0.47 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

PWZ

ConeFit



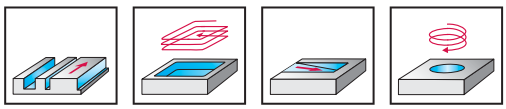
Designation TAZ	D_c h9 mm	R mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H4E38217-E10-10-0.5	10	0,5	5,5	9,7	23,6	12,4	8	E10	4
H4E38217-E10-10-1	10	1	5,5	9,7	23,6	12,4	8	E10	4
H4E38217-E10-10-1.5	10	1,5	5,5	9,7	23,6	12,4	8	E10	4
H4E38217-E10-10-2	10	2	5,5	9,7	23,6	12,4	8	E10	4
H4E38217-E10-10-3	10	3	5,5	9,7	23,6	12,4	8	E10	4
H4E38217-E12-12-0.5	12	0,5	6,5	11,7	28,3	14,5	10	E12	4
H4E38217-E12-12-1	12	1	6,5	11,7	28,3	14,5	10	E12	4
H4E38217-E12-12-1.5	12	1,5	6,5	11,7	28,3	14,5	10	E12	4
H4E38217-E12-12-2	12	2	6,5	11,7	28,3	14,5	10	E12	4
H4E38217-E12-12-3	12	3	6,5	11,7	28,3	14,5	10	E12	4
H4E38217-E12-12-4	12	4	6,5	11,7	28,3	14,5	10	E12	4
H4E38217-E16-16-0.5	16	0,5	8,5	15,5	35,7	18,7	12	E16	4
H4E38217-E16-16-1	16	1	8,5	15,5	35,7	18,7	12	E16	4
H4E38217-E16-16-1.5	16	1,5	8,5	15,5	35,7	18,7	12	E16	4
H4E38217-E16-16-2	16	2	8,5	15,5	35,7	18,7	12	E16	4
H4E38217-E16-16-3	16	3	8,5	15,5	35,7	18,7	12	E16	4
H4E38217-E16-16-4	16	4	8,5	15,5	35,7	18,7	12	E16	4
H4E38217-E20-20-0.5	20	0,5	11	19,3	40,8	21,3	16	E20	4
H4E38217-E20-20-1	20	1	11	19,3	40,8	21,3	16	E20	4
H4E38217-E20-20-2	20	2	11	19,3	40,8	21,3	16	E20	4
H4E38217-E20-20-3	20	3	11	19,3	40,8	21,3	16	E20	4
H4E38217-E20-20-4	20	4	11	19,3	40,8	21,3	16	E20	4

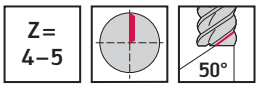
Slot milling $a_p \leq 0.47 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

XIII | D 1 | C 227 | C 264 | ConeFit C 270

Solid carbide shoulder/slot milling cutters
H2EC34217 / H2EC38217
Proto·max™ Inox



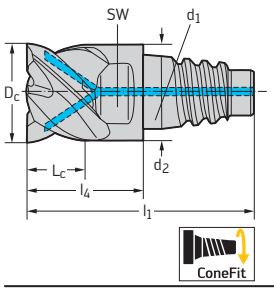




	P	M	K	N	S	H	O
TAA		●●			●		

PWZ

ConeFit

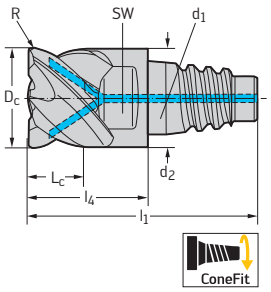


Designation TAA	D_c h10 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H2EC34217-E10-10	10	6	9,7	23,6	12,4	8	E10	4
H2EC34217-E12-12	12	7,5	11,7	28,3	14,5	10	E12	4
H2EC34217-E16-16	16	10	15,5	35,7	18,7	12	E16	4
H2EC34217-E20-20	20	12	19,3	40,8	21,3	16	E20	4
H2EC34217-E25-25	25	15	24,2	49,6	25,6	20	E25	5

Slot milling $a_p \le 0.4 \times D_c$
Shoulder milling $a_e \le 0.5 \times D_c$

PWZ

ConeFit



Designation TAA	D_c h9 mm	R mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H2EC38217-E10-10-0.5	10	0,5	6	9,7	23,6	12,4	8	E10	4
H2EC38217-E10-10-1	10	1	6	9,7	23,6	12,4	8	E10	4
H2EC38217-E10-10-1.5	10	1,5	6	9,7	23,6	12,4	8	E10	4
H2EC38217-E10-10-2	10	2	6	9,7	23,6	12,4	8	E10	4
H2EC38217-E10-10-3	10	3	6	9,7	23,6	12,4	8	E10	4
H2EC38217-E12-12-0.5	12	0,5	7,5	11,7	28,3	14,5	10	E12	4
H2EC38217-E12-12-1	12	1	7,5	11,7	28,3	14,5	10	E12	4
H2EC38217-E12-12-1.5	12	1,5	7,5	11,7	28,3	14,5	10	E12	4
H2EC38217-E12-12-2	12	2	7,5	11,7	28,3	14,5	10	E12	4
H2EC38217-E12-12-3	12	3	7,5	11,7	28,3	14,5	10	E12	4
H2EC38217-E12-12-4	12	4	7,5	11,7	28,3	14,5	10	E12	4
H2EC38217-E16-16-1	16	1	10	15,5	35,7	18,7	12	E16	4
H2EC38217-E16-16-1.5	16	1,5	10	15,5	35,7	18,7	12	E16	4
H2EC38217-E16-16-2	16	2	10	15,5	35,7	18,7	12	E16	4
H2EC38217-E16-16-3	16	3	10	15,5	35,7	18,7	12	E16	4
H2EC38217-E16-16-4	16	4	10	15,5	35,7	18,7	12	E16	4
H2EC38217-E20-20-1	20	1	12	19,3	40,8	21,3	16	E20	4
H2EC38217-E20-20-1.5	20	1,5	12	19,3	40,8	21,3	16	E20	4
H2EC38217-E20-20-2	20	2	12	19,3	40,8	21,3	16	E20	4
H2EC38217-E20-20-3	20	3	12	19,3	40,8	21,3	16	E20	4
H2EC38217-E20-20-4	20	4	12	19,3	40,8	21,3	16	E20	4
H2EC38217-E25-25-1	25	1	15	24,2	49,6	25,6	20	E25	5
H2EC38217-E25-25-1.5	25	1,5	15	24,2	49,6	25,6	20	E25	5
H2EC38217-E25-25-2	25	2	15	24,2	49,6	25,6	20	E25	5
H2EC38217-E25-25-3	25	3	15	24,2	49,6	25,6	20	E25	5
H2EC38217-E25-25-4	25	4	15	24,2	49,6	25,6	20	E25	5

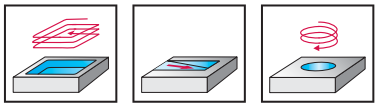
Slot milling $a_p \le 0.4 \times D_c$
Shoulder milling $a_e \le 0.5 \times D_c$

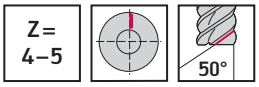
XIII | D 1 | C 227 | C 264 | C 270

Solid carbide shoulder/slot milling cutters
H2EC94717
Protostar® Flash



– Type Flash N 50

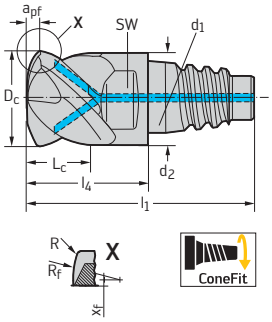




	P	M	K	N	S	H	O
TAA		●●			●		

PWZ

Designation TAA	D_c h9 mm	a_{pf}	x_f mm	R_f	R_{ers} mm	R mm	L_c mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
ConeFit												
H2EC94717-E10-10	10	0,7	1,7	5	1,998	1,5	6	23,6	12,4	8	E10	4
H2EC94717-E12-12	12	0,8	2,25	6	2,103	1,5	7,5	28,3	14,5	10	E12	4
H2EC94717-E16-16	16	1	3,1	8	2,747	2	10	35,7	18,7	12	E16	4
H2EC94717-E20-20	20	1,3	4	10	3,072	2	12	40,8	21,3	16	E20	4
H2EC94717-E25-25	25	1,6	5	12	4,206	3	15	49,6	25,6	20	E25	5



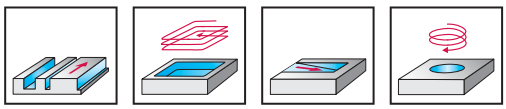
Shoulder milling $a_e \leq 0.5 \times D_c$

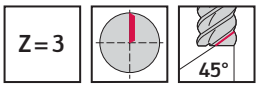
XIII D 1 C 227 C 264 C 270

Solid carbide shoulder/slot milling cutters
H6E2211
Protostar®



– Type AI 45

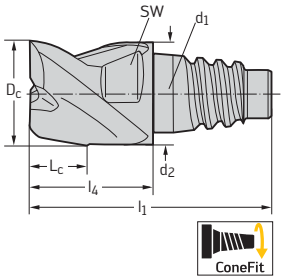




	P	M	K	N	S	H	O
Uncoated				●●			

PWZ

ConeFit



Designation Uncoated	D_c h10 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H6E2211-E10-10	10	5,5	9,7	23,6	12,4	8	E10	3
H6E2211-E12-12	12	6,5	11,7	28,3	14,5	10	E12	3
H6E2211-E16-16	16	8,5	15,5	35,7	18,7	12	E16	3
H6E2211-E20-20	20	11	19,3	40,8	21,3	16	E20	3
H6E2211-E25-25	25	13,5	24,2	49,6	25,6	20	E25	3

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

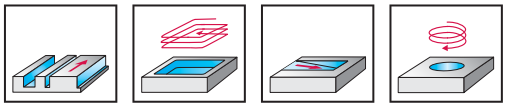
WALTER SELECT
●● Primary application
● Other application

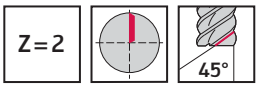
XIII D 1 C 229 C 264 ConeFit C 270

Solid carbide shoulder/slot milling cutters
H6E2511
Protostar®



– Type AI 45

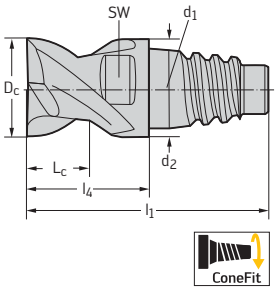




	P	M	K	N	S	H	O
Uncoated				●●			

PWZ

ConeFit



Designation Uncoated	D_c h10 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H6E2511-E10-10	10	5,5	9,7	23,6	12,4	8	E10	2
H6E2511-E12-12	12	6,5	11,7	28,3	14,5	10	E12	2
H6E2511-E16-16	16	8,5	15,5	35,7	18,7	12	E16	2
H6E2511-E20-20	20	11	19,3	40,8	21,3	16	E20	2
H6E2511-E25-25	25	13,5	24,2	49,6	25,6	20	E25	2

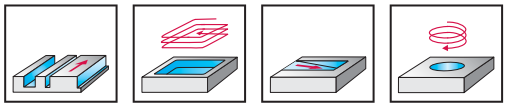
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

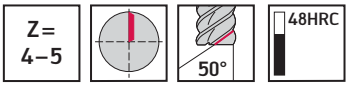
XIII D 1 C 229 C 264 ConeFit C 270

Solid carbide shoulder/slot milling cutters
H3E21317 / H3E20317
Tough Guys



– Type N 50

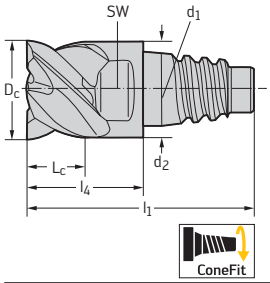




	P	M	K	N	S	H	O
TAX	●●	●	●		●		

PWZ

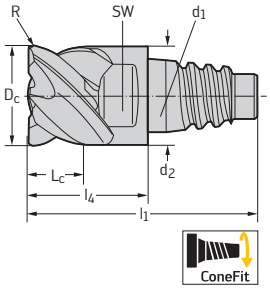
ConeFit



Designation TAX	D_c h10 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H3E21317-E10-10	10	5,5	9,7	23,6	12,4	8	E10	4
H3E21317-E12-12	12	6,5	11,7	28,3	14,5	10	E12	4
H3E21317-E16-16	16	8,5	15,5	35,7	18,7	12	E16	4
H3E21317-E20-20	20	11	19,3	40,8	21,3	16	E20	4
H3E21317-E25-25	25	13,5	24,2	49,6	25,6	20	E25	5

PWZ

ConeFit



Designation TAX	D_c h9 mm	R mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H3E20317-E10-10-0.5	10	0,5	5,5	9,7	23,6	12,4	8	E10	4
H3E20317-E10-10-1	10	1	5,5	9,7	23,6	12,4	8	E10	4
H3E20317-E10-10-1.5	10	1,5	5,5	9,7	23,6	12,4	8	E10	4
H3E20317-E10-10-2	10	2	5,5	9,7	23,6	12,4	8	E10	4
H3E20317-E10-10-3	10	3	5,5	9,7	23,6	12,4	8	E10	4
H3E20317-E12-12-0.5	12	0,5	6,5	11,7	28,3	14,5	10	E12	4
H3E20317-E12-12-1	12	1	6,5	11,7	28,3	14,5	10	E12	4
H3E20317-E12-12-1.5	12	1,5	6,5	11,7	28,3	14,5	10	E12	4
H3E20317-E12-12-2	12	2	6,5	11,7	28,3	14,5	10	E12	4
H3E20317-E12-12-3	12	3	6,5	11,7	28,3	14,5	10	E12	4
H3E20317-E12-12-4	12	4	6,5	11,7	28,3	14,5	10	E12	4
H3E20317-E16-16-0.5	16	0,5	8,5	15,5	35,7	18,7	12	E16	4
H3E20317-E16-16-1	16	1	8,5	15,5	35,7	18,7	12	E16	4
H3E20317-E16-16-1.5	16	1,5	8,5	15,5	35,7	18,7	12	E16	4
H3E20317-E16-16-2	16	2	8,5	15,5	35,7	18,7	12	E16	4
H3E20317-E16-16-3	16	3	8,5	15,5	35,7	18,7	12	E16	4
H3E20317-E16-16-4	16	4	8,5	15,5	35,7	18,7	12	E16	4
H3E20317-E20-20-0.5	20	0,5	11	19,3	40,8	21,3	16	E20	4
H3E20317-E20-20-1	20	1	11	19,3	40,8	21,3	16	E20	4
H3E20317-E20-20-1.5	20	1,5	11	19,3	40,8	21,3	16	E20	4
H3E20317-E20-20-2	20	2	11	19,3	40,8	21,3	16	E20	4
H3E20317-E20-20-3	20	3	11	19,3	40,8	21,3	16	E20	4
H3E20317-E20-20-4	20	4	11	19,3	40,8	21,3	16	E20	4
H3E20317-E25-25-1	25	1	13,5	24,2	49,6	25,6	20	E25	5
H3E20317-E25-25-1.5	25	1,5	13,5	24,2	49,6	25,6	20	E25	5
H3E20317-E25-25-2	25	2	13,5	24,2	49,6	25,6	20	E25	5
H3E20317-E25-25-3	25	3	13,5	24,2	49,6	25,6	20	E25	5
H3E20317-E25-25-4	25	4	13,5	24,2	49,6	25,6	20	E25	5

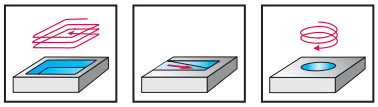
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

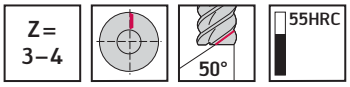
XIII D 1 C 233 C 264 C 270

Solid carbide shoulder/slot milling cutters
H3E94718 / H3E93718
Protostar® Flash



– Type Flash N 50

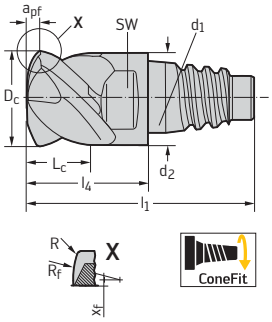




TAX	P	M	K	N	S	H	O
	●●	●	●		●		

PWZ

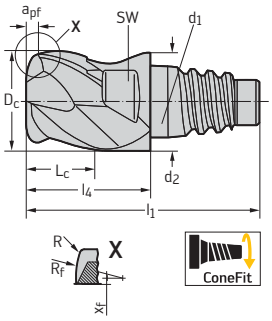
Designation TAX	D_c h9 mm	a_{pf}	x_f mm	R_f	R_{ers} mm	R mm	L_c mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
ConeFit												
H3E94718-E10-10	10	0,7	1,7	5	1,998	1,5	5,5	23,6	12,4	8	E10	4
H3E94718-E12-12	12	0,8	2,25	6	2,103	1,5	6,5	28,3	14,5	10	E12	4
H3E94718-E16-16	16	1	3,1	8	2,747	2	8,5	35,7	18,7	12	E16	4
H3E94718-E20-20	20	1,3	4	10	3,072	2	11	40,8	21,3	16	E20	4
H3E94718-E25-25	25	1,6	5	12	4,206	3	13,5	49,6	25,6	20	E25	4



Shoulder milling $a_e \leq 0.5 \times D_c$

PWZ

Designation TAX	D_c h9 mm	a_{pf}	x_f mm	R_f	R_{ers} mm	R mm	L_c mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
ConeFit												
H3E93718-E10-10	10	0,7	1,7	5	1,998	1,5	5,5	23,6	12,4	8	E10	3
H3E93718-E12-12	12	0,8	2,25	6	2,103	1,5	6,5	28,3	14,5	10	E12	3
H3E93718-E16-16	16	1	3,1	8	2,747	2	8,5	35,7	18,7	12	E16	3
H3E93718-E20-20	20	1,3	4	10	3,072	2	11	40,8	21,3	16	E20	3



Shoulder milling $a_e \leq 0.5 \times D_c$

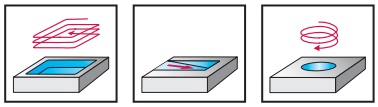
WALTER SELECT
●● Primary application
● Other application

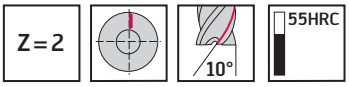
XIII D 1 C 233 C 264 C 270

Solid carbide shoulder/slot milling cutters
H1E92718
Protostar® Flash



– Type Flash N 10

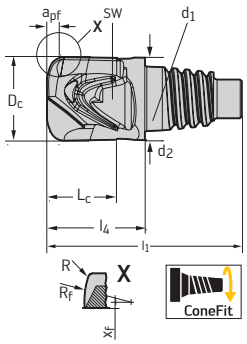




	P	M	K	N	S	H	O
TAX	●●	●	●		●		

PWZ

ConeFit



Designation TAX	D_c h12 mm	a_{pf}	x_f mm	R_f	R_{ers} mm	R mm	L_c mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H1E92718-E10-10	10	0,7	1,7	5	1,998	1,5	8	23	11,8	6	E10	2
H1E92718-E12-12	12	0,8	2,25	6	2,103	1,5	10	27,8	14	8	E12	2
H1E92718-E16-16	16	1	3,1	8	2,747	2	13	35,1	18,1	10	E16	2

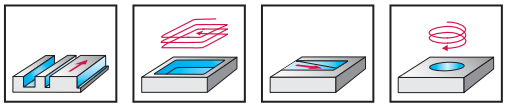
Shoulder milling $a_e \leq 0.5 \times D_c$

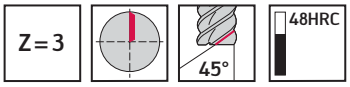
XIII D 1 C 233 C 264 C 270

Solid carbide shoulder/slot milling cutters
H3E29148
Protostar®



– Type 45

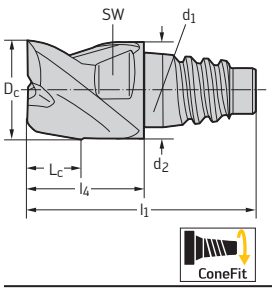




	P	M	K	N	S	H	O
TAX	●●		●				

PWZ

Designation TAX	D_c h10 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
ConeFit								
H3E29148-E10-10	10	5,5	9,7	23,6	12,4	8	E10	3
H3E29148-E12-12	12	6,5	11,7	28,3	14,5	10	E12	3
H3E29148-E16-16	16	8,5	15,5	35,7	18,7	12	E16	3
H3E29148-E20-20	20	11	19,3	40,8	21,3	16	E20	3
H3E29148-E25-25	25	13,5	24,2	49,6	25,6	20	E25	3



Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

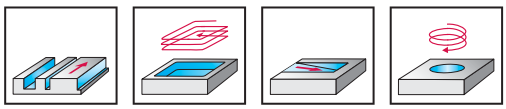
WALTER SELECT
●● Primary application
● Other application

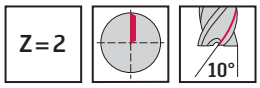
XIII D 1 C 234 C 264 ConeFit C 270

Solid carbide shoulder/slot milling cutters
H1E12018
Protostar®



– Type N 10

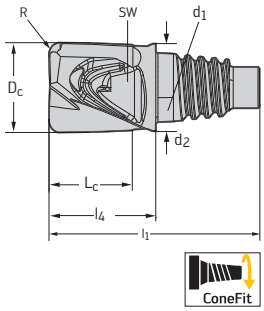




	P	M	K	N	S	H	O
TAX	●●	●	●				

PWZ

ConeFit



Designation TAX	D_c h10 mm	R mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H1E12018-E10-10-0.2	10	0,2	8	9,7	23	11,8	6	E10	2
H1E12018-E10-10-0.5	10	0,5	8	9,7	23	11,8	6	E10	2
H1E12018-E10-10-0.8	10	0,8	8	9,7	23	11,8	6	E10	2
H1E12018-E10-10-1	10	1	8	9,7	23	11,8	6	E10	2
H1E12018-E10-10-1.2	10	1,2	8	9,7	23	11,8	6	E10	2
H1E12018-E10-10-1.5	10	1,5	8	9,7	23	11,8	6	E10	2
H1E12018-E10-10-2	10	2	8	9,7	23	11,8	6	E10	2
H1E12018-E10-10-2.5	10	2,5	8	9,7	23	11,8	6	E10	2
H1E12018-E10-10-3	10	3	8	9,7	23	11,8	6	E10	2
H1E12018-E12-12-0.2	12	0,2	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-0.5	12	0,5	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-0.8	12	0,8	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-1	12	1	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-1.2	12	1,2	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-1.5	12	1,5	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-1.6	12	1,6	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-2	12	2	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-2.5	12	2,5	10	11,7	27,8	14	8	E12	2
H1E12018-E12-12-3	12	3	10	11,7	27,8	14	8	E12	2
H1E12018-E16-16-0.2	16	0,2	13	15,5	35,1	18,1	10	E16	2
H1E12018-E16-16-0.5	16	0,5	13	15,5	35,1	18,1	10	E16	2
H1E12018-E16-16-0.8	16	0,8	13	15,5	35,1	18,1	10	E16	2
H1E12018-E16-16-1	16	1	13	15,5	35,1	18,1	10	E16	2
H1E12018-E16-16-1.2	16	1,2	13	15,5	35,1	18,1	10	E16	2
H1E12018-E16-16-1.5	16	1,5	13	15,5	35,1	18,1	10	E16	2
H1E12018-E16-16-2	16	2	13	15,5	35,1	18,1	10	E16	2
H1E12018-E16-16-3	16	3	13	15,5	35,1	18,1	10	E16	2
H1E12018-E16-16-4	16	4	13	15,5	35,1	18,1	10	E16	2

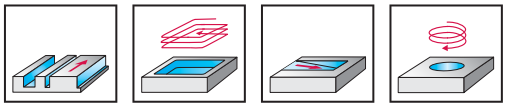
Slot milling $a_p \leq 0.8 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

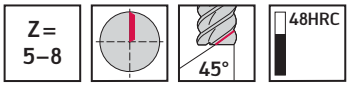
XIII D 1 C 235 C 264 ConeFit C 270

Solid carbide shoulder/slot milling cutters
H3E85378
Protostar® Qmax



– Type HR Kordel F 45

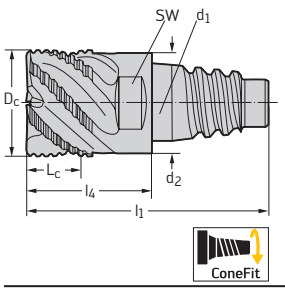




	P	M	K	N	S	H	O
TAX	●●	●	●				

PWZ

Designation TAX	D_c h12 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
ConeFit								
H3E85378-E10-10	10	5,5	9,7	23,6	12,4	8	E10	5
H3E85378-E12-12	12	6,5	11,7	28,3	14,5	10	E12	5
H3E85378-E16-16	16	8,5	15,5	35,7	18,7	12	E16	6
H3E85378-E20-20	20	11	19,3	40,8	21,3	16	E20	6
H3E85378-E25-25	25	13,5	24,2	49,6	25,6	20	E25	8



Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

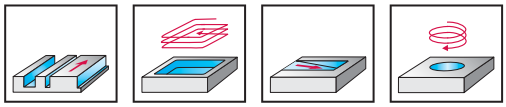
WALTER SELECT
●● Primary application
● Other application

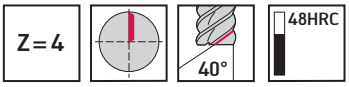
XIII D 1 C 235 C 264 ConeFit C 270

Solid carbide shoulder/slot milling cutters
H3E82378
Protostar® Qmax



– Type HR Kordel F 40

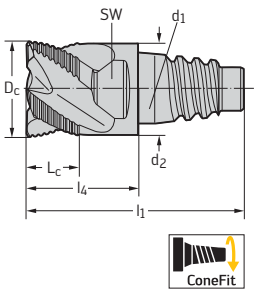




	P	M	K	N	S	H	O
TAX	●	●●	●				

PWZ

ConeFit

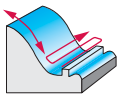


Designation TAX	D_c h12 mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H3E82378-E10-10	10	5,5	9,7	23,6	12,4	8	E10	4
H3E82378-E12-12	12	6,5	11,7	28,3	14,5	10	E12	4
H3E82378-E16-16	16	8,5	15,5	35,7	18,7	12	E16	4
H3E82378-E20-20	20	11	19,3	40,8	21,3	16	E20	4
H3E82378-E25-25	25	13,5	24,2	49,6	25,6	20	E25	4

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

XIII D 1 C 236 C 264 C 270

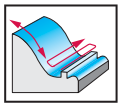
Walter Select – Solid carbide milling tools with ConeFit interface
Copy milling cutters

Machining		
WALTER SELECT ●● Primary application ● Other application		
Helix angle	**40°**	**10°**
Designation	**H8E01118 H8E11118 Protostar®**	**H1E0111 H1E01118 Protostar®**
Dia. range [mm]	10–25	10–16
Z	2–4	2
Corner radius [mm]	5–12,5	5–8
Standard	PWZ	PWZ
Shank	ConeFit	ConeFit
Page	C 151	C 153
		
P Steel	●●	●●
M Stainless steel	●●	●●
K Cast iron	●	●
N NF metals	●	●●
S Materials with difficult cutting properties		
H Hard materials		
O Other		

Solid carbide ball-nose end mills
H8E11118
Protostar®



– Type N 40

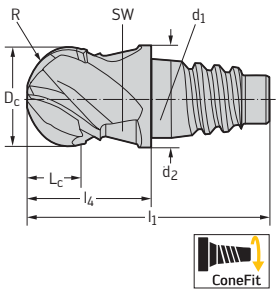




	P	M	K	N	S	H	O
TAX	●●	●●	●	●			

PWZ

ConeFit



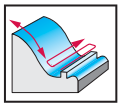
Designation TAX	D_c h9 mm	R mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H8E11118-E10-10	10	5	5,5	9,7	23,6	12,4	8	E10	4
H8E11118-E12-12	12	6	6,5	11,7	28,3	14,5	10	E12	4
H8E11118-E16-16	16	8	8,5	15,5	35,7	18,7	12	E16	4
H8E11118-E20-20	20	10	11	19,3	40,8	21,3	16	E20	4
H8E11118-E25-25	25	12,5	13,5	24,2	49,6	25,6	20	E25	4

XIII D 1 C 240 C 264 ConeFit C 270

Solid carbide ball-nose end mills
H8E01118
Protostar®



– Type N 40

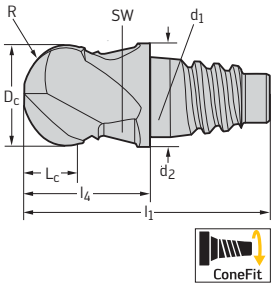




	P	M	K	N	S	H	O
TAX	●●	●●	●	●			

PWZ

ConeFit



Designation TAX	D_c h9 mm	R mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H8E01118-E10-10	10	5	5,5	9,7	23,6	12,4	8	E10	2
H8E01118-E12-12	12	6	6,5	11,7	28,3	14,5	10	E12	2
H8E01118-E16-16	16	8	8,5	15,5	35,7	18,7	12	E16	2
H8E01118-E20-20	20	10	11	19,3	40,8	21,3	16	E20	2

WALTER SELECT

●● Primary application

● Other application

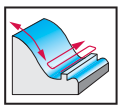
XIII D 1 C 240 C 264 ConeFit C 270

Solid carbide ball-nose end mills
H1E0111 / H1E01118
Protostar®



Z=2 | 10° | 48HRC

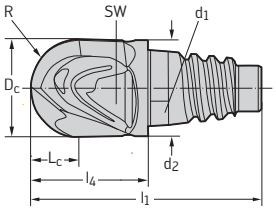
– Type N 10



	P	M	K	N	S	H	O
TAX	●●	●●	●	●●			
Uncoated				●●			

PWZ

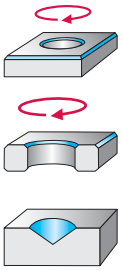
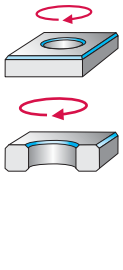
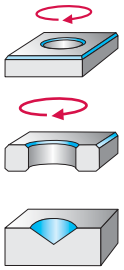
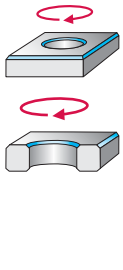
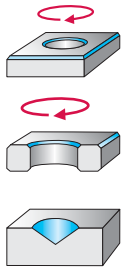
ConeFit

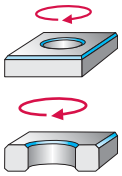
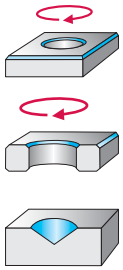
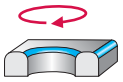


Designation TAX	Designation Uncoated	D_c h9 mm	R mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	Z
H1E01118-E10-10	H1E0111-E10-10	10	5	8	9,7	23	11,8	6	E10	2
H1E01118-E12-12	H1E0111-E12-12	12	6	10	11,7	27,8	14	8	E12	2
H1E01118-E16-16	H1E0111-E16-16	16	8	13	15,5	35,1	18,1	10	E16	2

XIII | D 1 | C 238 | C 264 | ConeFit C 270

Walter Select – Solid carbide milling tools with ConeFit interface
Profiling cutters

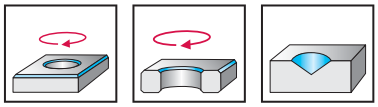
Machining WALTER SELECT ●● Primary application ● Other application						
Helix angle	**10°**	**0°**	**10°**	**0°**	**10°**	
Designation	**H1E58518 Protostar®**	**H3E58518 Protostar®**	**H1E58318 Protostar®**	**H3E58318 Protostar®**	**H1E58118 Protostar®**	
Dia. range [mm]	10–12	10–12	10–16	10–16	10–12	
Z	2	4–6	2	4–8	2	
Type	60°	60°	90°	90°	120°	
Standard	PWZ	PWZ	PWZ	PWZ	PWZ	
Shank	ConeFit	ConeFit	ConeFit	ConeFit	ConeFit	
Page	C 156	C 157	C 158	C 159	C 160	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●	●	●	●	●	
K Cast iron	●	●	●	●	●	
N NF metals	●	●	●	●	●	
S Materials with difficult cutting properties	●	●	●	●	●	
H Hard materials						
O Other						

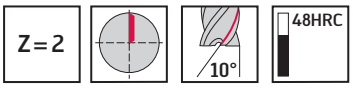
			
	0°	**10°**	**0°**
	H3E58118 Protostar®	**H1E58018 Protostar®**	**H3E68118 Protostar®**
	12	12	10–20
	6	2	4
	120°	150°	R1mm-8mm
	PWZ	PWZ	PWZ
	ConeFit	ConeFit	ConeFit
	C 161	C 162	C 163
			
	●●	●●	●●
	●	●	●
	●	●	●
	●	●	●
	●	●	●

Solid carbide chamfer milling cutter 60°
H1E58518
Protostar®



– Type: Chamfer milling cutter 60°

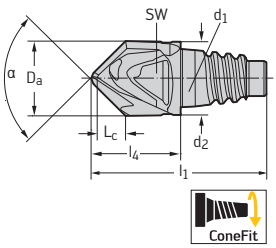




	P	M	K	N	S	H	O
TAX	●●	●	●	●	●		

PWZ

	Designation TAX	D_a mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	α	Z
ConeFit	H1E58518-E10-10	10	7,23	9,7	23	11,8	6	E10	60°	2
	H1E58518-E12-12	12	7,73	11,7	27,8	14	8	E12	60°	2

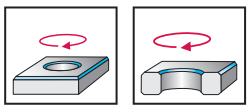


Shoulder milling $a_e \leq 0.5 \times D_a$

Solid carbide chamfer milling cutter 60°
H3E58518
Protostar®



– Type: Chamfer milling cutter 60°

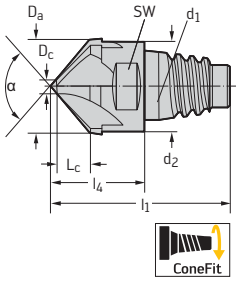


Z= 4–6 | 0° | 48HRC

	P	M	K	N	S	H	O
TAX	●●	●	●	●	●		

PWZ

ConeFit



Designation TAX	D_c mm	D_a mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	α	Z
H3E58518-E10-10	3,5	10	5,6	9,7	23,6	12,4	8	E10	60°	4
H3E58518-E12-12	4,5	12	6,5	11,7	28,3	14,5	10	E12	60°	6

Shoulder milling $a_e \leq 0.3 \times D_a$

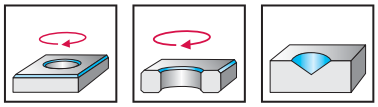
WALTER SELECT
●● Primary application
● Other application

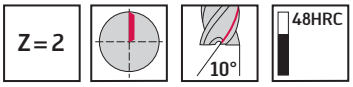
XIII | D 1 | C 242 | C 264 | ConeFit C 270

Solid carbide chamfer milling cutter 90°
H1E58318
Protostar®



– Type: Chamfer milling cutter 90°

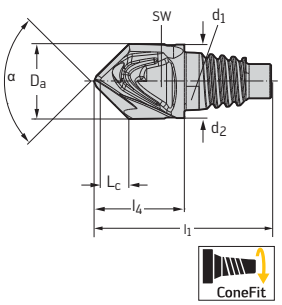




	P	M	K	N	S	H	O
TAX	●●	●	●	●	●		

PWZ

ConeFit



Designation TAX	D_a mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	α	Z
H1E58318-E10-10	10	4,23	9,7	23	11,8	6	E10	90°	2
H1E58318-E12-12	12	5,23	11,7	27,8	14	8	E12	90°	2
H1E58318-E16-16	16	7,23	15,5	35,1	18,1	10	E16	90°	2

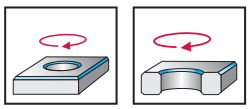
Shoulder milling $a_e \leq 0.5 \times D_a$

XIII D 1 C 242 C 264 ConeFit C 270

Solid carbide chamfer milling cutter 90°
H3E58318
Protostar®



– Type: Chamfer milling cutter 90°

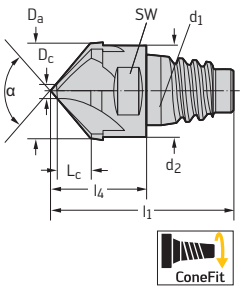


Z= 4–8 | 0° | 48HRC

	P	M	K	N	S	H	O
TAX	●●	●	●	●	●		

PWZ

ConeFit



Designation TAX	Dc mm	Da mm	Lc mm	d2 mm	l1 mm	l4 mm	SW mm	d1 mm	α	Z
H3E58318-E10-10	1,5	10	4,25	9,7	23,6	11,9	8	E10	90°	4
H3E58318-E12-12	3	12	4,5	11,7	28,3	13	10	E12	90°	6
H3E58318-E16-16	3	16	6,5	15,5	35,7	17,2	12	E16	90°	8

Shoulder milling $a_e \leq 0.3 \times D_a$

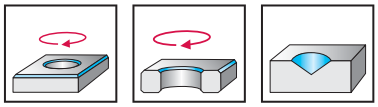
WALTER SELECT
●● Primary application
● Other application

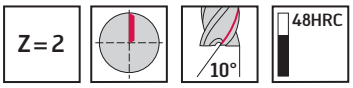
XIII | D 1 | C 242 | C 264 | ConeFit C 270

Solid carbide chamfer milling cutter 120°
H1E58118
Protostar®



– Type: Chamfer milling cutter 120°

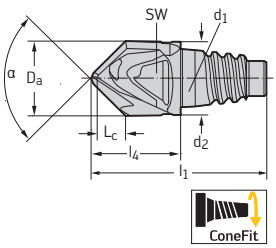




	P	M	K	N	S	H	O
TAX	●●	●	●	●	●		

PWZ

	Designation TAX	D_a mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	α	Z
ConeFit	H1E58118-E10-10	10	2,43	9,7	23	11,8	6	E10	120°	2
	H1E58118-E12-12	12	3,03	11,7	27,8	14	8	E12	120°	2

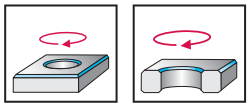


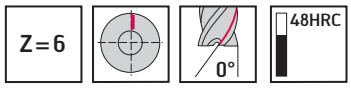
Shoulder milling $a_e \leq 0.5 \times D_a$

Solid carbide chamfer milling cutter 120°
H3E58118
Protostar®



– Type: Chamfer milling cutter 120°

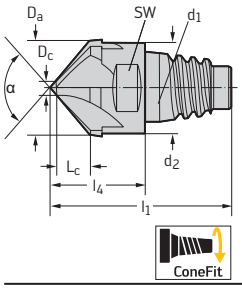




	P	M	K	N	S	H	O
TAX	●●	●	●	●	●		

PWZ

	Designation TAX	D_c mm	D_a mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	α	Z
ConeFit	H3E58118-E12-12	3	12	2,6	11,7	28,3	13,6	10	E12	120°	6



Shoulder milling $a_e \leq 0.3 \times D_a$

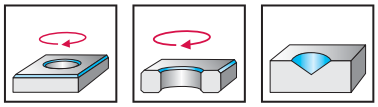
WALTER SELECT
●● Primary application
● Other application

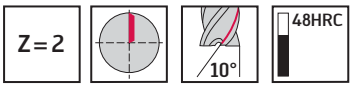
XIII D 1 C 242 C 264 ConeFit C 270

Solid carbide chamfer milling cutter 150°
H1E58018
Protostar®



– Type: Chamfer milling cutter 150°

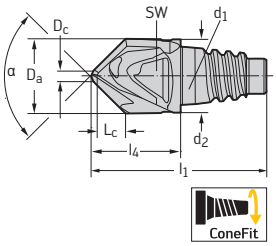




	P	M	K	N	S	H	O
TAX	●●	●	●	●	●		

PWZ

	Designation TAX	D_a mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1 mm	α	Z
ConeFit	H1E58018-E12-12	12	1,6	11,7	27,8	14	8	E12	150°	2

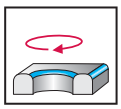


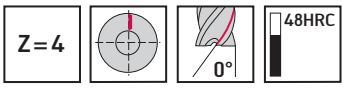
Shoulder milling $a_e \leq 0.5 \times D_a$

XIII D 1 C 242 C 264 ConeFit C 270

Solid carbide quarter-round profiling cutters
H3E68118
Protostar®



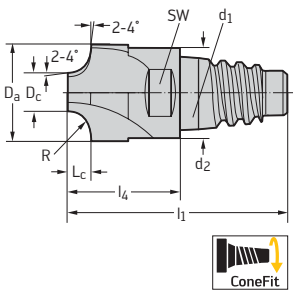




	P	M	K	N	S	H	O
TAX	●●	●	●	●	●		

PWZ

ConeFit



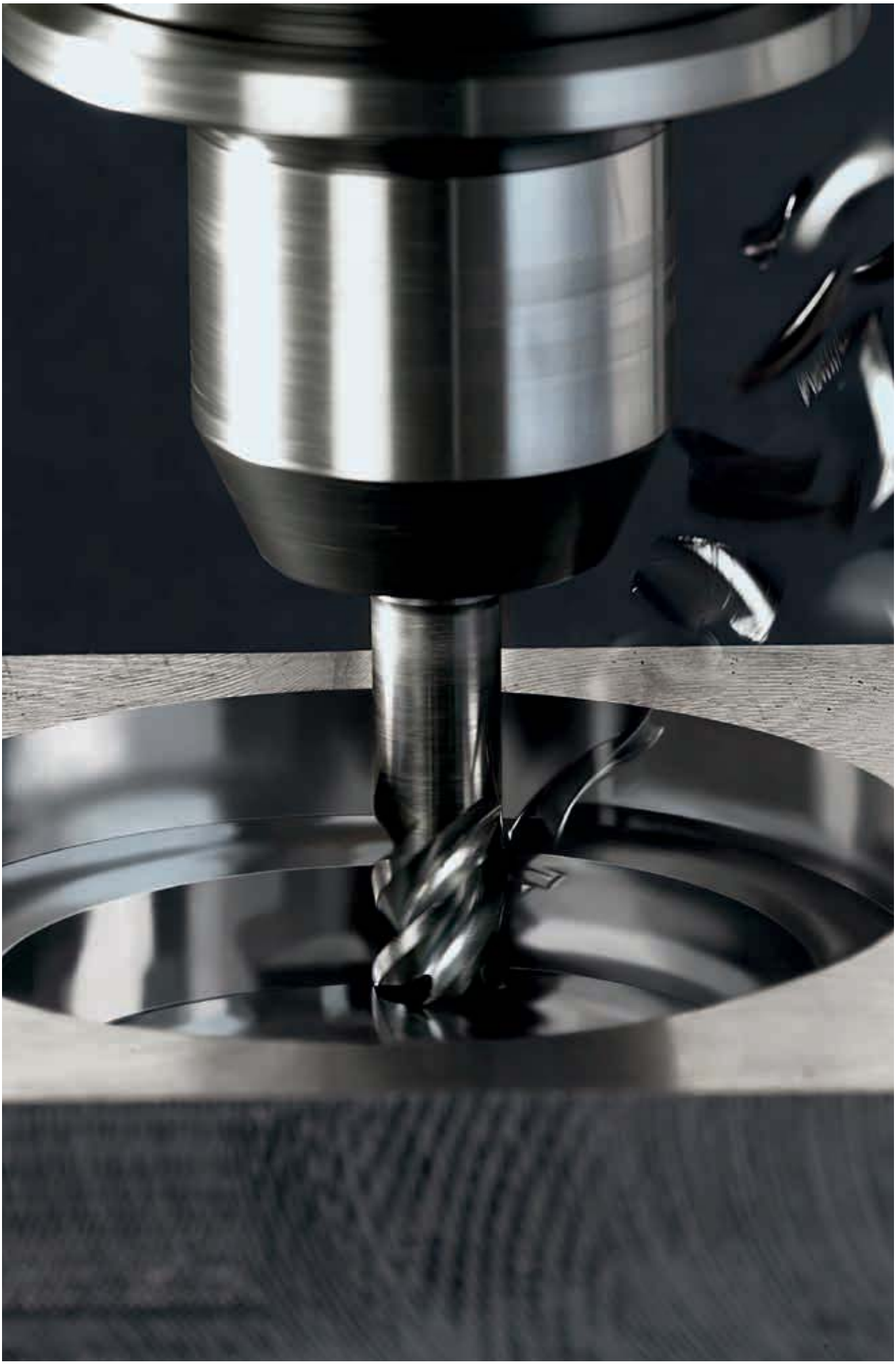
Designation TAX	R mm	D_c mm	D_a mm	L_c mm	d_2 mm	l_1 mm	l_4 mm	SW mm	d_1	Z
H3E68118-E10-10-1	1	5	10	1	9,7	23,6	12,4	8	E10	4
H3E68118-E10-10-2	2	5	10	2	9,7	23,6	12,4	8	E10	4
H3E68118-E12-12-3	3	5	12	3	11,7	28,3	14,5	10	E12	4
H3E68118-E10-10-3	3	4	10	3	9,7	23,6	12,4	8	E10	4
H3E68118-E16-16-4	4	6	16	4	15,5	35,7	18,7	12	E16	4
H3E68118-E16-16-5	5	6	16	5	15,5	35,7	18,7	12	E16	4
H3E68118-E20-20-6	6	8	20	6	19,3	40,8	21,3	16	E20	4

WALTER SELECT

●● Primary application

● Other application

XIII D 1 C 243 C 264 C 270



HSS milling tools product range overview
Shoulder/slot milling cutters

Machining						
Helix angle	**40°**		**25°**	**45°**	**40°**	**30°**
Designation	**P4117027 Protostar® HSS**	**P602612 P612612 Protostar® HSS**	**P632612 Protostar® HSS**	**P312301 P3123017 P3123117 Protostar® HSS**	**P312401 P312411 Protostar® HSS**	**P300611 P302201 P302211 P302621 P310611 ... Protostar® HSS**
Dia. range [mm]	2–20	6–20	16–25	3–30	2–25	1–50
Z	3	2	2	3–6	3	2–8
Corner radius [mm]	0	0	0	0	0	0
Page	C 172	C 173	C 174	C 175	C 176	C 177
						

Machining					
Helix angle	**35°**		**30°**		
Designation	**P312021 P3120217 P312028 P3120287 P4110217 Protostar® HSS**	**P312001 P3120017 P312011 P3120117 Protostar® HSS**	**P3120537 P3120937 Protostar® HSS**	**P3120387 P3128417 Protostar® HSS**	**P3120717 P3121017 P312111 Protostar® HSS**
Dia. range [mm]	5–40	6–50	6–32	6–32	6–40
Z	3–6	4–6	4–6	3–6	4–6
Corner radius [mm]	0	0	0	0	0
Page	C 189	C 192	C 194	C 195	C 196
					

HSS milling tools product range overview
Copy milling cutters

Machining	
Helix angle	**30°**
Designation	**P316601 P3166017 P8112017 Protostar® HSS**
Dia. range [mm]	2–20
Z	2–4
Corner radius [mm]	1–10
Page	C 200
	

HSS milling tools product range overview
Profiling cutters

Machining						
Helix angle	**12°**			**10°**	**0°**	
Designation	**P3148016 Protostar® HSS**	**P314801 Protostar® HSS**	**P314101 Protostar® HSS**	**P313231 Protostar® HSS**	**P315801 Protostar® HSS**	**P315821 Protostar® HSS**
Dia. range [mm]	11–32	11–50	16–50	4,5–45,5	12–32	12–32
Z	6–8	6–10	6–10	6–14	10–12	10–12
Page	C 204	C 204	C 205	C 206	C 207	C 207
						

HSS milling tools product range overview
Profiling cutters

Machining			
Helix angle	**0°**		
Designation	**P315831 Protostar® HSS**	**P315851 Protostar® HSS**	**P316881 Protostar® HSS**
Dia. range [mm]	12–32	12–32	10–48
Z	10–12	10–12	4–5
Page	C 208	C 208	C 209
			

Walter Select – HSS milling tools

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page C 671 onwards:

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

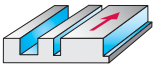
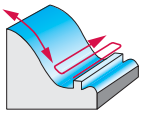
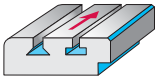
STEP 2

Select the **machining conditions**:

Machine stability, clamping system and workpiece		
very good	good	moderate
		

STEP 3

Select your **machining method** based on the main categories and subcategories and then go to the relevant Walter Select product range overview (see table, e.g. page C 170).

Machining method		
		
Shoulder/slot milling – No corner radius – With chamfer – With roughing profile	**Radius copy milling**	**Profile milling** – Slot milling – Corner rounding – T-slot milling – Dovetail milling
Page C 170	Page C 199	Page C 202

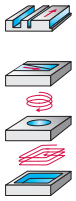
STEP 4

Select the appropriate tool for your **machining conditions** and then go to the ordering page.

Walter Select – HSS milling tools
Shoulder/slot milling cutters

Machining

WALTER SELECT
●● Primary application
● Other application

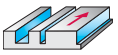


Helix angle	40°		25°	45°	40°
Designation	P4117027 Protostar® HSS	P602612 P612612 Protostar® HSS	P632612 Protostar® HSS	P312301 P3123017 P3123117 Protostar® HSS	P312401 P312411 Protostar® HS
Dia. range [mm]	2–20	6–20	16–25	3–30	2–25
Z	3	2	2	3–6	3
Corner radius [mm]	0	0	0		0

STEP 5

Based on the **material group** to be machined, look for the appropriate **cutting speed** by referring to **a_e to D_c from page** C 244 **onwards** and also the **VT feed group** (e.g. A).

Cutting data for HSS shoulder/slot milling



Product family		λ
P312001 P3120017	P312011 P3120117	35°

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group	Ø 6–50 mm, Z = 4–6, ACN / uncoated: Starting values for cutting speed v_c [m/min], a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	39	48	69	A
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	55	69	98	A
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	24	30	43	A
		C > 0.55%	Annealed	190	640	P4	24	30	43	A
		C > 0.55%	Heat-treated	300	1010	P5				A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	24	30	43	A
	Low-alloyed steel	Annealed		175	590	P7	24	30	43	A
		Heat-treated		285	960	P8	20	30	40	A
		Heat-treated		380	1280	P9				A
		Heat-treated		430	1480	P10				A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	24	30	43	A
		Hardened and tempered		300	1010	P12	20	20	30	A
		Hardened and tempered		380	1280	P13				A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	10	10	20	A
										A

STEP 6

Based on the feed group, determine the correct **feed value (page C 256 a_e to D_c.)** for your **machining conditions**

Feed determination

The specified feed rates are average standard v
For special applications, adjustment is recomme

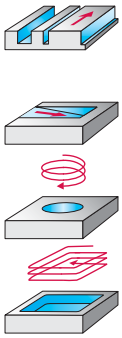
A Material groups ISO P, ISO K and titanium alloys

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 0,3 mm	Ø 0,5 mm	Ø 1 mm	Ø 2 mm	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12
0,01	0,02	0,02	0,03	0,06	0,09	0,12	0,15	0,15	0,20	
0,05	0,01	0,01	0,02	0,04	0,07	0,10	0,12	0,15	0,20	
0,1	0,01	0,01	0,02	0,03	0,05	0,08	0,10	0,15	0,20	0,20
0,2	0,01	0,01	0,01	0,03	0,04	0,06	0,08	0,15	0,18	0,20
0,5		0,01	0,01	0,02	0,03	0,05	0,07	0,12	0,15	0,15
1			0,01	0,02	0,03	0,04	0,06	0,09	0,12	0,12
2				0,02	0,03	0,03	0,05	0,08	0,11	0,12
3					0,02	0,02	0,04	0,07	0,10	0,12
5						0,02	0,04	0,07	0,10	0,12
6							0,03	0,06	0,08	0,10
8								0,05	0,07	0,09
10									0,06	0,08
12										0,07
14										
16										
18										
20										
25										
32										

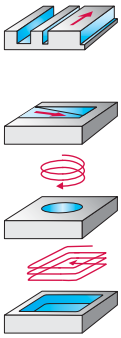
Walter Select – HSS milling tools
Shoulder/slot milling cutters

Machining

WALTER SELECT
●● Primary application
● Other application



Helix angle	40°		25°	45°	40°	
Designation	**P4117027 Protostar® HSS**	**P602612 P612612 Protostar® HSS**	**P632612 Protostar® HSS**	**P312301 P3123017 P3123117 Protostar® HSS**	**P312401 P312411 Protostar® HSS**	
Dia. range [mm]	2–20	6–20	16–25	3–30	2–25	
Z	3	2	2	3–6	3	
Corner radius [mm]	0	0	0	0	0	
Standard	DIN 327 D	DIN 844 A DIN 844 B	P STANDARD	DIN 844 B	DIN 845 DIN 844 B	
Shank	DIN 1835 B	DIN 1835 A DIN 1835 B	DIN 1835 E	DIN 1835 B	DIN 1835 B	
Page	C 172	C 173	C 174	C 175	C 176	
						
P Steel				●●		
M Stainless steel	●●			●		
K Cast iron						
N NF metals		●●	●●	●●	●●	
S Materials with difficult cutting properties						
H Hard materials						
O Other						

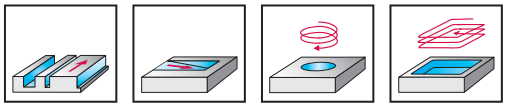


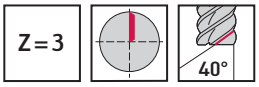
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	P300611 P302201 P302211 P302621 P310611 ... Protostar® HSS	**P312021 P3120217 P312028 P3120287 P4110217 Protostar® HSS**	**P312001 P3120017 P312011 P3120117 Protostar® HSS**	**P3120537 P3120937 Protostar® HSS**	**P3120387 P3128417 Protostar® HSS**	**P3120717 P3121017 P312111 Protostar® HSS**
	1–50	5–40	6–50	6–32	6–32	6–40
	2–8	3–6	4–6	4–6	3–6	4–6
	0	0	0	0	0	0
	DIN 327 DIN 844 A DIN 844 B P STANDARD P STANDARD S	DIN 844 B DIN 327 H	DIN 844 B	DIN 844 B	P STANDARD S DIN 844 B	DIN 844 B P STANDARD XL
	DIN 1835 A DIN 1835 B	DIN 1835 B	DIN 1835 B	DIN 1835 B	DIN 1835 B	DIN 1835 B
	C 177	C 189	C 192	C 194	C 195	C 196
						
	●●	●●	●●	●●	●●	●●
	●	●				
	●	●	●	●	●	●
	●●	●●	●●	●	●	●●

HSS-E-PM shoulder/slot milling cutters
P4117027
Protostar® HSS



– Type Inox V 40

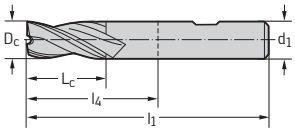




ACN	P	M	K	N	S	H	O
		●●					

DIN 327 D

Shank DIN 1835 B



Designation ACN	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P4117027-2	2	4	48	12	6	3
P4117027-3	3	5	49	13	6	3
P4117027-4	4	7	51	15	6	3
P4117027-5	5	8	52	16	6	3
P4117027-6	6	8	52	16	6	3
P4117027-7	7	10	60	20	10	3
P4117027-8	8	11	61	21	10	3
P4117027-10	10	13	63	23	10	3
P4117027-12	12	16	73	28	12	3
P4117027-14	14	16	73	28	12	3
P4117027-15	15	16	73	28	12	3
P4117027-16	16	19	79	31	16	3
P4117027-18	18	19	79	31	16	3
P4117027-20	20	22	88	38	20	3

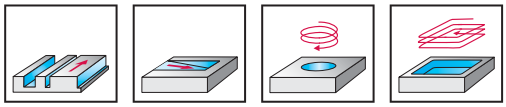
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

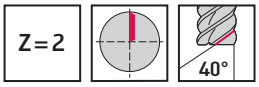
XIII D 1 C 244 C 263

HSS-E Co8 shoulder/slot milling cutters
P602612 / P612612
Protostar® HSS



– Type AI 40

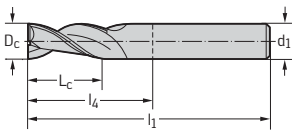


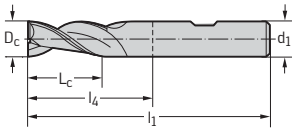


	P	M	K	N	S	H	O
Uncoated				●●			

DIN 844 A

	Designation Uncoated	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
Shank DIN 1835 A	P602612-6	6	24	68	32	6	2
	P602612-8	8	38	88	48	10	2
	P602612-10	10	45	95	55	10	2
	P602612-12	12	53	110	65	12	2
	P602612-14	14	53	110	65	12	2
	P602612-16	16	63	123	75	16	2
	P602612-18	18	63	123	75	16	2
	P602612-20	20	75	141	91	20	2
Shank DIN 1835 B	P612612-6	6	24	68	32	6	2
	P612612-7	7	30	80	40	10	2
	P612612-8	8	38	88	48	10	2
	P612612-9	9	38	88	48	10	2
	P612612-10	10	45	95	55	10	2
	P612612-12	12	53	110	65	12	2
	P612612-14	14	53	110	65	12	2
	P612612-16	16	63	123	75	16	2





Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

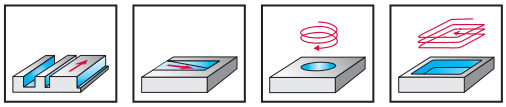
WALTER SELECT
●● Primary application
● Other application

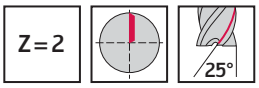
XIII D 1 C 245 C 263

HSS-E Co8 shoulder/slot milling cutters
P632612
Protostar® HSS



– Type AI 25 long

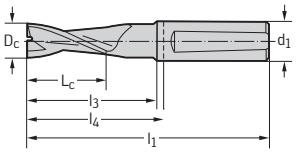




	P	M	K	N	S	H	O
Uncoated				●●			

P STANDARD

Shank DIN 1835 E



Designation Uncoated	D_c k10 mm	L_c mm	l_3 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P632612-16	16	50	57	100	58	16	2
P632612-20	20	50	55	100	56	20	2
P632612-25	25	50	59	120	64	25	2

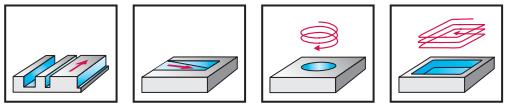
Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

XIII D 1 C 245 C 263

HSS-E-PM shoulder/slot milling cutters
P312301 / P3123017 / P3123117
Protostar® HSS



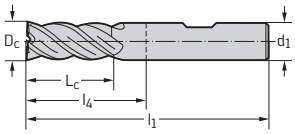
– Type N 45



	P	M	K	N	S	H	O
ACN	●●	●		●			
Uncoated	●			●●			

DIN 844 B

Shank DIN 1835 B

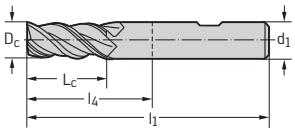


Designation ACN	Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	P312301-3	3	8	52	16	6	3
	P312301-4	4	11	55	19	6	3
P3123017-5	P312301-5	5	13	57	21	6	3
P3123017-6	P312301-6	6	13	57	21	6	3
P3123017-8	P312301-8	8	19	69	29	10	4
P3123017-10	P312301-10	10	22	72	32	10	4
P3123017-12	P312301-12	12	26	83	38	12	4
P3123017-14	P312301-14	14	26	83	38	12	4
P3123017-16	P312301-16	16	32	92	44	16	4
P3123017-20	P312301-20	20	38	104	54	20	4
P3123017-22	P312301-22	22	38	104	54	20	5
P3123017-25	P312301-25	25	45	121	65	25	5
P3123017-30	P312301-30	30	45	121	65	25	6

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3123117-6		6	24	68	32	6	3
P3123117-8		8	38	88	48	10	4
P3123117-10		10	45	95	55	10	4
P3123117-12		12	53	110	65	12	4
P3123117-14		14	53	110	65	12	4
P3123117-16		16	63	123	75	16	4
P3123117-18		18	63	123	75	16	4
P3123117-20		20	75	141	91	20	4

Slot milling $a_p \leq 0.5 \times D_c$
Shoulder milling $a_e \leq 0.3 \times D_c$

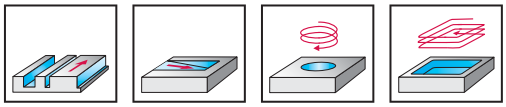
WALTER SELECT
●● Primary application
● Other application

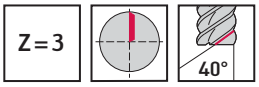
XIII D 1 C 245 C 263

HSS-E-PM shoulder/slot milling cutters
P312401 / P312411
Protostar® HSS



– Type W 40

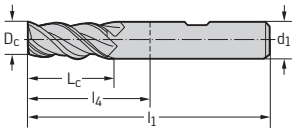




	P	M	K	N	S	H	O
Uncoated				●●			

DIN 845

Shank DIN 1835 B

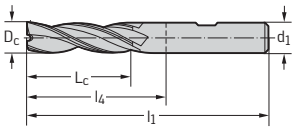


Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P312401-2	2	7	51	15	6	3
P312401-2.5	2,5	8	52	16	6	3
P312401-3	3	8	52	16	6	3
P312401-3.5	3,5	10	54	18	6	3
P312401-4	4	11	55	19	6	3
P312401-4.5	4,5	11	55	19	6	3
P312401-5	5	13	57	21	6	3
P312401-5.5	5,5	13	57	21	6	3
P312401-6	6	13	57	21	6	3
P312401-6.5	6,5	16	66	26	10	3
P312401-7	7	16	66	26	10	3
P312401-8	8	19	69	29	10	3
P312401-9	9	19	69	29	10	3
P312401-10	10	22	72	32	10	3
P312401-12	12	26	83	38	12	3
P312401-14	14	26	83	38	12	3
P312401-16	16	32	92	44	16	3
P312401-18	18	32	92	44	16	3
P312401-20	20	38	104	54	20	3
P312401-22	22	38	104	54	20	3
P312401-25	25	45	121	65	25	3

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 844 B

Shank DIN 1835 B



Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P312411-2	2	10	54	18	6	3
P312411-2.5	2,5	12	56	20	6	3
P312411-3	3	12	56	20	6	3
P312411-3.5	3,5	15	59	23	6	3
P312411-4	4	19	63	27	6	3
P312411-4.5	4,5	19	63	27	6	3
P312411-5	5	24	68	32	6	3
P312411-5.5	5,5	24	68	32	6	3
P312411-6	6	24	68	32	6	3
P312411-7	7	30	80	40	10	3
P312411-8	8	38	88	48	10	3
P312411-9	9	38	88	48	10	3
P312411-10	10	45	95	55	10	3
P312411-12	12	53	110	65	12	3
P312411-16	16	63	123	75	16	3
P312411-18	18	63	123	75	16	3
P312411-20	20	75	141	91	20	3
P312411-25	25	90	166	110	25	3

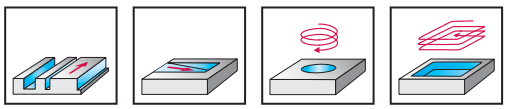
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

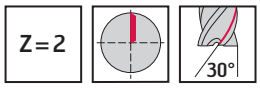
XIII D 1 C 246 C 263

HSS-E-PM shoulder/slot milling cutters
P300611
Protostar® HSS



– Type 30

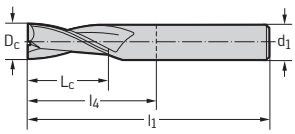




	P	M	K	N	S	H	O
Uncoated	●			●●			

DIN 327

Shank DIN 1835 A



Designation Uncoated	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P300611-1.8	1,8	4	48	12	6	2
P300611-2	2	4	48	12	6	2
P300611-2.5	2,5	5	49	13	6	2
P300611-2.8	2,8	5	49	13	6	2
P300611-3	3	5	49	13	6	2
P300611-3.5	3,5	6	50	14	6	2
P300611-3.8	3,8	7	51	15	6	2
P300611-4	4	7	51	15	6	2
P300611-4.5	4,5	7	51	15	6	2
P300611-4.8	4,8	8	52	16	6	2
P300611-5	5	8	52	16	6	2
P300611-5.5	5,5	8	52	16	6	2
P300611-5.75	5,75	8	52	16	6	2
P300611-6	6	8	52	16	6	2
P300611-6.5	6,5	10	60	20	10	2
P300611-7	7	10	60	20	10	2
P300611-7.5	7,5	10	60	20	10	2
P300611-7.75	7,75	11	61	21	10	2
P300611-8	8	11	61	21	10	2
P300611-8.5	8,5	11	61	21	10	2
P300611-9	9	11	61	21	10	2
P300611-9.5	9,5	11	61	21	10	2
P300611-10	10	13	63	23	10	2
P300611-10.5	10,5	13	70	25	12	2
P300611-11	11	13	70	25	12	2
P300611-12	12	16	73	28	12	2
P300611-12.5	12,5	16	73	28	12	2
P300611-13	13	16	73	28	12	2
P300611-14	14	16	73	28	12	2
P300611-15	15	16	73	28	12	2
P300611-16	16	19	79	31	16	2
P300611-17	17	19	79	31	16	2
P300611-18	18	19	79	31	16	2
P300611-19	19	19	79	31	16	2
P300611-20	20	22	88	38	20	2
P300611-22	22	22	88	38	20	2

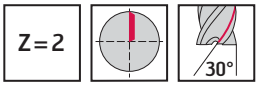
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

WALTER SELECT
●● Primary application
● Other application

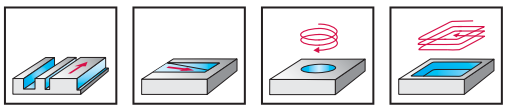
XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P3106117 / P310611
Protostar® HSS





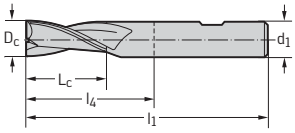
– Type 30



	P	M	K	N	S	H	O
ACN	●●	●	●				
Uncoated	●			●●			

DIN 327

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3106117-1	P310611-1	1	2,5	48	12	6	2
P3106117-1.5	P310611-1.5	1,5	3	48	12	6	2
P3106117-2	P310611-2	2	4	48	12	6	2
P3106117-2.5	P310611-2.5	2,5	5	49	13	6	2
P3106117-3	P310611-3	3	5	49	13	6	2
P3106117-3.5	P310611-3.5	3,5	6	50	14	6	2
P3106117-4	P310611-4	4	7	51	15	6	2
P3106117-4.5	P310611-4.5	4,5	7	51	15	6	2
P3106117-5	P310611-5	5	8	52	16	6	2
P3106117-5.5	P310611-5.5	5,5	8	52	16	6	2
P3106117-6	P310611-6	6	8	52	16	6	2
P3106117-6.5	P310611-6.5	6,5	10	60	20	10	2
P3106117-7	P310611-7	7	10	60	20	10	2
	P310611-7.5	7,5	10	60	20	10	2
P3106117-8	P310611-8	8	11	61	21	10	2
	P310611-8.5	8,5	11	61	21	10	2
P3106117-9	P310611-9	9	11	61	21	10	2
	P310611-9.5	9,5	11	61	21	10	2
P3106117-10	P310611-10	10	13	63	23	10	2
	P310611-10.5	10,5	13	70	25	12	2
P3106117-11	P310611-11	11	13	70	25	12	2
P3106117-12	P310611-12	12	16	73	28	12	2
	P310611-12.5	12,5	16	73	28	12	2
P3106117-13	P310611-13	13	16	73	28	12	2
P3106117-14	P310611-14	14	16	73	28	12	2
P3106117-15	P310611-15	15	16	73	28	12	2
P3106117-16	P310611-16	16	19	79	31	16	2
	P310611-17	17	19	79	31	16	2
P3106117-18	P310611-18	18	19	79	31	16	2
	P310611-19	19	19	79	31	16	2
P3106117-20	P310611-20	20	22	88	38	20	2
P3106117-22	P310611-22	22	22	88	38	20	2
	P310611-24	24	26	102	46	25	2
	P310611-25	25	26	102	46	25	2
	P310611-26	26	26	102	46	25	2
	P310611-28	28	26	102	46	25	2
	P310611-30	30	26	102	46	25	2
	P310611-36	36	32	112	52	32	2
	P310611-40	40	38	130	60	40	2

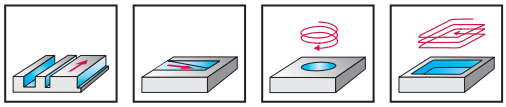
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P3116127 / P311612
Protostar® HSS



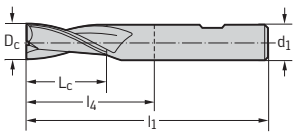
– Type 30



	P	M	K	N	S	H	O
ACN	●●	●	●				
Uncoated	●			●●			

DIN 844 A

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3116127-2	P311612-2	2	7	51	15	6	2
P3116127-2.5		2,5	8	52	16	6	2
P3116127-3	P311612-3	3	8	52	16	6	2
P3116127-3.5		3,5	10	54	18	6	2
P3116127-4	P311612-4	4	11	55	19	6	2
P3116127-4.5		4,5	11	55	19	6	2
P3116127-5	P311612-5	5	13	57	21	6	2
P3116127-5.5		5,5	13	57	21	6	2
P3116127-6	P311612-6	6	13	57	21	6	2
P3116127-7	P311612-7	7	16	66	26	10	2
P3116127-8	P311612-8	8	19	69	29	10	2
P3116127-9	P311612-9	9	19	69	29	10	2
P3116127-10	P311612-10	10	22	72	32	10	2
P3116127-11	P311612-11	11	22	79	34	12	2
P3116127-12	P311612-12	12	26	83	38	12	2
P3116127-13	P311612-13	13	26	83	38	12	2
P3116127-14	P311612-14	14	26	83	38	12	2
P3116127-15	P311612-15	15	26	83	38	12	2
P3116127-16	P311612-16	16	32	92	44	16	2
P3116127-18	P311612-18	18	32	92	44	16	2
P3116127-20	P311612-20	20	38	104	54	20	2
	P311612-22	22	38	104	54	20	2
	P311612-25	25	45	121	65	25	2
	P311612-30	30	45	121	65	25	2

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

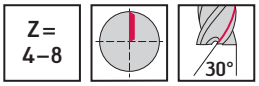
WALTER SELECT
●● Primary application
● Other application

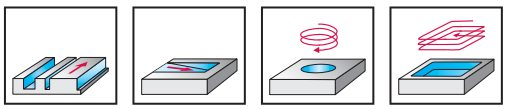
XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P312201 / P3122017
Protostar® HSS



– Type N 30

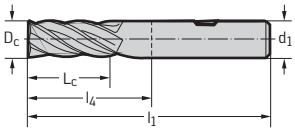




	P	M	K	N	S	H	O
ACN	●●	●		●			
Uncoated	●			●●			

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	P312201-1	1	4	51	15	6	4
	P312201-1.5	1,5	5	51	15	6	4
P3122017-2	P312201-2	2	7	51	15	6	4
	P312201-2.5	2,5	8	52	16	6	4
P3122017-3	P312201-3	3	8	52	16	6	4
	P312201-3.5	3,5	10	54	18	6	4
P3122017-4	P312201-4	4	11	55	19	6	4
	P312201-4.5	4,5	11	55	19	6	4
P3122017-5	P312201-5	5	13	57	21	6	4
	P312201-5.5	5,5	13	57	21	6	4
P3122017-6	P312201-6	6	13	57	21	6	4
	P312201-6.5	6,5	16	66	26	10	4
P3122017-7	P312201-7	7	16	66	26	10	4
	P312201-7.5	7,5	16	66	26	10	4
P3122017-8	P312201-8	8	19	69	29	10	4
	P312201-8.5	8,5	19	69	29	10	4
P3122017-9	P312201-9	9	19	69	29	10	4
	P312201-9.5	9,5	19	69	29	10	4
P3122017-10	P312201-10	10	22	72	32	10	4
P3122017-11	P312201-11	11	22	79	34	12	4
P3122017-12	P312201-12	12	26	83	38	12	4
P3122017-13	P312201-13	13	26	83	38	12	4
P3122017-14	P312201-14	14	26	83	38	12	4
P3122017-15	P312201-15	15	26	83	38	12	4
P3122017-16	P312201-16	16	32	92	44	16	4
P3122017-18	P312201-18	18	32	92	44	16	4
P3122017-20	P312201-20	20	38	104	54	20	4
P3122017-22	P312201-22	22	38	104	54	20	5
P3122017-25	P312201-25	25	45	121	65	25	5
P3122017-28	P312201-28	28	45	121	65	25	6
P3122017-30	P312201-30	30	45	121	65	25	6
P3122017-32	P312201-32	32	53	133	73	32	6
	P312201-36	36	53	133	73	32	6
	P312201-40	40	63	155	85	40	6
	P312201-50	50	75	177	117	50	8

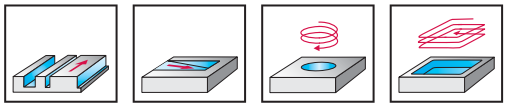
Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

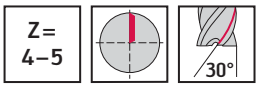
XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P302201
Protostar® HSS



– Type N 30

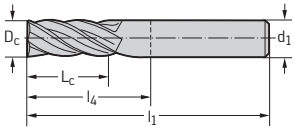




	P	M	K	N	S	H	O
Uncoated	●			●●			

DIN 844 A

Shank DIN 1835 A



Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P302201-2	2	7	51	15	6	4
P302201-3	3	8	52	16	6	4
P302201-4	4	11	55	19	6	4
P302201-5	5	13	57	21	6	4
P302201-6	6	13	57	21	6	4
P302201-7	7	16	66	26	10	4
P302201-8	8	19	69	29	10	4
P302201-9	9	19	69	29	10	4
P302201-10	10	22	72	32	10	4
P302201-12	12	26	83	38	12	4
P302201-14	14	26	83	38	12	4
P302201-16	16	32	92	44	16	4
P302201-18	18	32	92	44	16	4
P302201-20	20	38	104	54	20	4
P302201-22	22	38	104	54	20	5
P302201-25	25	45	121	65	25	5

Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

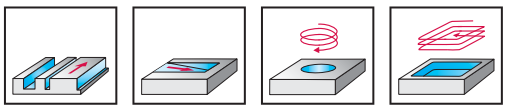
WALTER SELECT
●● Primary application
● Other application

XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P312211 / P3122117
Protostar® HSS



– Type N 30 long

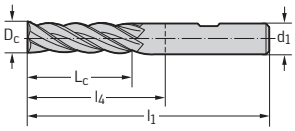




	P	M	K	N	S	H	O
ACN	●●	●		●			
Uncoated	●			●●			

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	P312211-2	2	10	56	18	6	4
	P312211-2.5	2,5	12	56	20	6	4
P3122117-3	P312211-3	3	12	56	20	6	4
	P312211-3.5	3,5	15	59	23	6	4
P3122117-4	P312211-4	4	19	63	27	6	4
	P312211-4.5	4,5	19	63	27	6	4
P3122117-5	P312211-5	5	24	68	32	6	4
	P312211-5.5	5,5	24	68	32	6	4
P3122117-6	P312211-6	6	24	68	32	6	4
	P312211-6.5	6,5	30	80	40	10	4
P3122117-7	P312211-7	7	30	80	40	10	4
P3122117-8	P312211-8	8	38	88	48	10	4
P3122117-9	P312211-9	9	38	88	48	10	4
P3122117-10	P312211-10	10	45	95	55	10	4
	P312211-11	11	45	102	57	12	4
P3122117-12	P312211-12	12	53	110	65	12	4
	P312211-13	13	53	110	65	12	4
P3122117-14	P312211-14	14	53	110	65	12	4
P3122117-15	P312211-15	15	53	110	65	12	4
P3122117-16	P312211-16	16	63	123	75	16	4
P3122117-18	P312211-18	18	63	123	75	16	4
P3122117-20	P312211-20	20	75	141	91	20	4
	P312211-22	22	75	141	91	20	5
P3122117-25	P312211-25	25	90	166	110	25	5
	P312211-28	28	90	166	110	25	6
	P312211-30	30	90	166	110	25	6
	P312211-32	32	106	186	126	32	6
	P312211-36	36	106	186	126	32	6
	P312211-40	40	125	217	147	40	6
	P312211-50	50	150	252	192	50	8

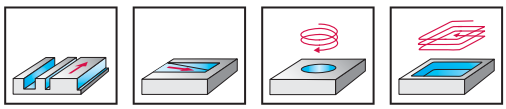
Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

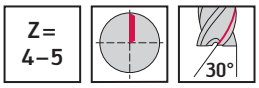
XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P302211
Protostar® HSS



– Type N 30 long

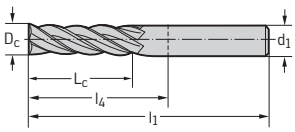




	P	M	K	N	S	H	O
Uncoated	●			●●			

DIN 844 A

Shank DIN 1835 A



Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P302211-2	2	10	54	18	6	4
P302211-3	3	12	56	20	6	4
P302211-4	4	19	63	27	6	4
P302211-5	5	24	68	32	6	4
P302211-6	6	24	68	32	6	4
P302211-7	7	30	80	40	10	4
P302211-8	8	38	88	48	10	4
P302211-9	9	38	88	48	10	4
P302211-10	10	45	95	55	10	4
P302211-11	11	45	102	57	12	4
P302211-12	12	53	110	65	12	4
P302211-13	13	53	110	65	12	4
P302211-14	14	53	110	65	12	4
P302211-15	15	53	110	65	12	4
P302211-16	16	63	123	75	16	4
P302211-18	18	63	123	75	16	4
P302211-20	20	75	141	91	20	4
P302211-22	22	75	141	91	20	5
P302211-25	25	90	166	110	25	5

Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

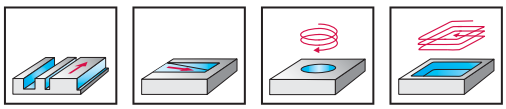
WALTER SELECT
●● Primary application
● Other application

XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P312221 / P3122317
Protostar® HSS



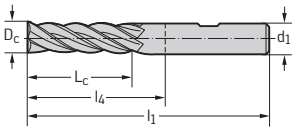
– Type N 30 long



	P	M	K	N	S	H	O
Uncoated	●			●●			
ACN	●●	●		●			

P STANDARD

Shank DIN 1835 B

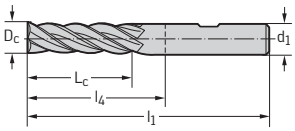


Designation ACN	Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	P312221-16X80	16	80	137	89	16	4
	P312221-16X100	16	100	157	109	16	4
	P312221-18X100	18	100	157	109	16	4
	P312221-20X100	20	100	165	109	25	4
	P312221-20X125	20	125	190	134	25	4
	P312221-25X125	25	125	192	136	25	5
	P312221-25X140	25	140	207	151	25	5
	P312221-25X160	25	160	227	171	25	5
	P312221-32X140	32	140	214	154	32	6
	P312221-32X160	32	160	234	174	32	6
	P312221-32X180	32	180	254	194	32	6

Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

P STANDARD

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k10 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3122317-10		10	34	84	44	10	4
P3122317-12		12	40	97	52	12	4
P3122317-14		14	40	97	52	12	4
P3122317-16		16	45	105	57	16	4
P3122317-18		18	45	105	57	16	4
P3122317-20		20	55	121	71	20	4
P3122317-22		22	63	129	79	20	5
P3122317-25		25	68	144	88	25	5

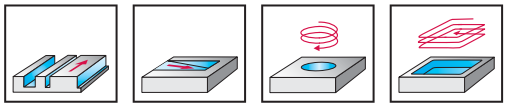
Slot milling $a_p \leq 0.3 \times D_c$
Shoulder milling $a_e \leq 0.1 \times D_c$

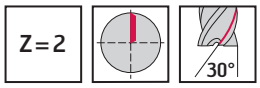
XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P302621
Protostar® HSS



– Long reach
– Type 30 long

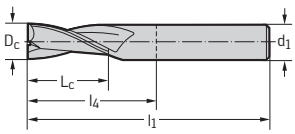




	P	M	K	N	S	H	O
Uncoated	●			●●			

P STANDARD

Shank DIN 1835 A



Designation Uncoated	D_c js14 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P302621-6	6	13	180	144	6	2
P302621-8	8	19	180	144	8	2
P302621-10	10	22	200	160	10	2
P302621-12	12	26	200	155	12	2
P302621-16	16	32	200	152	16	2

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

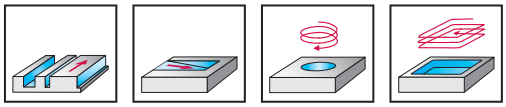
WALTER SELECT
●● Primary application
● Other application

XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P311712 / P3117127
Protostar® HSS



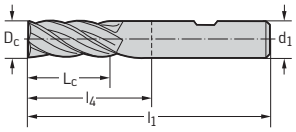
– Type 30



	P	M	K	N	S	H	O
ACN	●●	●		●			
Uncoated	●			●●			

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	P311712-1.5	1,5	5	51	15	6	3
P3117127-2	P311712-2	2	7	51	15	6	3
	P311712-2.5	2,5	8	52	16	6	3
P3117127-3	P311712-3	3	8	52	16	6	3
	P311712-3.5	3,5	10	54	18	6	3
P3117127-4	P311712-4	4	11	55	19	6	3
	P311712-4.5	4,5	11	55	19	6	3
P3117127-5	P311712-5	5	13	57	21	6	3
	P311712-5.5	5,5	13	57	21	6	3
P3117127-6	P311712-6	6	13	57	21	6	3
	P311712-6.5	6,5	16	66	26	10	3
	P311712-7	7	16	66	26	10	3
	P311712-7.5	7,5	16	66	26	10	3
P3117127-8	P311712-8	8	19	69	29	10	3
	P311712-8.5	8,5	19	69	29	10	3
	P311712-9	9	19	69	29	10	3
	P311712-9.5	9,5	19	69	29	10	3
P3117127-10	P311712-10	10	22	72	32	10	3
	P311712-11	11	22	79	34	12	3
P3117127-12	P311712-12	12	26	83	38	12	3
	P311712-13	13	26	83	38	12	3
P3117127-14	P311712-14	14	26	83	38	12	3
	P311712-15	15	26	83	38	12	3
P3117127-16	P311712-16	16	32	92	44	16	3
	P311712-17	17	32	92	44	16	3
P3117127-18	P311712-18	18	32	92	44	16	3
	P311712-19	19	32	92	44	16	3
P3117127-20	P311712-20	20	38	104	54	20	3
	P311712-22	22	38	104	54	20	3
	P311712-25	25	45	121	65	25	3
	P311712-28	28	45	121	65	25	3
	P311712-30	30	45	121	65	25	3
	P311712-32	32	53	133	73	32	3

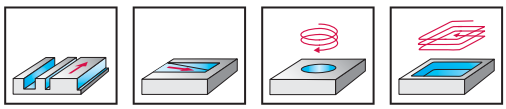
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

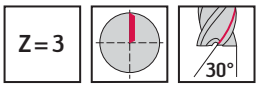
XIII D 1 C 247 C 263

HSS-E Co8 shoulder/slot milling cutters
P311722
Protostar® HSS



– Type 30 long

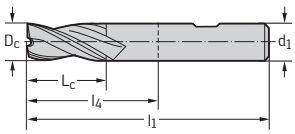




	P	M	K	N	S	H	O
Uncoated	●			●●			

DIN 844 B

Shank DIN 1835 B



Designation Uncoated	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P311722-3	3	12	56	20	6	3
P311722-4	4	19	63	27	6	3
P311722-5	5	24	68	32	6	3
P311722-6	6	24	68	32	6	3
P311722-8	8	38	88	48	10	3
P311722-10	10	45	95	55	10	3
P311722-12	12	53	110	65	12	3
P311722-14	14	53	110	65	12	3
P311722-15	15	53	110	65	12	3
P311722-16	16	63	123	75	16	3
P311722-18	18	63	123	75	16	3
P311722-20	20	75	141	91	20	3

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

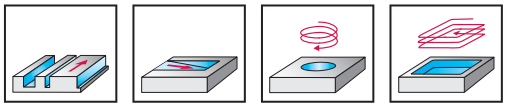
WALTER SELECT
●● Primary application
● Other application

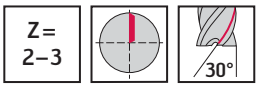
XIII D 1 C 247 C 263

HSS-E Co8 shoulder/slot milling cutters
P312673 / P312771
Protostar® HSS



– Long reach
– Type 30

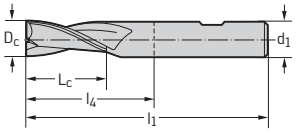




	P	M	K	N	S	H	O
Uncoated	●			●●			

P STANDARD

Shank DIN 1835 B

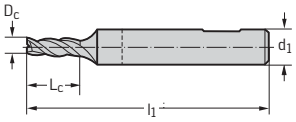


Designation Uncoated	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P312673-4	4	11	63	27	6	2
P312673-5	5	13	68	32	6	2
P312673-6	6	13	68	32	6	2
P312673-7	7	16	80	40	10	2
P312673-8	8	19	88	48	10	2
P312673-9	9	19	88	48	10	2
P312673-10	10	22	95	55	10	2
P312673-11	11	22	110	65	12	2
P312673-12	12	26	110	65	12	2
P312673-13	13	26	110	65	12	2
P312673-14	14	26	110	65	12	2
P312673-15	15	26	110	65	12	2
P312673-16	16	32	123	75	16	2
P312673-17	17	32	123	75	16	2
P312673-18	18	32	123	75	16	2
P312673-19	19	32	123	75	16	2
P312673-20	20	38	141	91	20	2
P312673-25	25	45	166	110	25	2
P312673-30	30	45	166	110	25	2

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

P STANDARD S

Shank DIN 1835 B



Designation Uncoated	D_c e8 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P312771-1	1	2	40	11	6	3
P312771-1.5	1,5	2,5	40	11	6	3
P312771-2	2	3	40	10	6	3
P312771-2.5	2,5	4	40	11	6	3
P312771-3	3	4,5	40	11	6	3
P312771-4	4	6	40	11	6	3
P312771-5	5	7,5	40	11	6	3
P312771-6	6	9	40	9	6	3

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P312021 / P3120217
Protostar® HSS

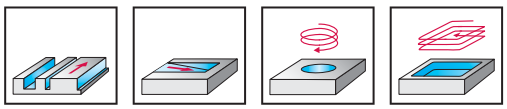


Z= 4–6



35°

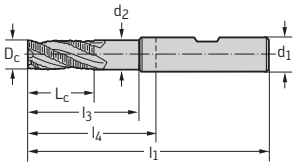
– Type HRA Kordel F 35



	P	M	K	N	S	H	O
ACN	●●		●	●			
Uncoated				●●			

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	P312021-5	5	13	13		57	21	6	4
P3120217-6	P312021-6	6	13	13		57	21	6	4
P3120217-8	P312021-8	8	19	19		69	29	10	4
P3120217-10	P312021-10	10	22	32	9,5	72	32	10	4
P3120217-12	P312021-12	12	26	38	11,5	83	38	12	4
P3120217-14	P312021-14	14	26	38	11,5	83	38	12	4
P3120217-16	P312021-16	16	32	44	15,5	92	44	16	4
P3120217-18	P312021-18	18	32	44	15,5	92	44	16	4
P3120217-20	P312021-20	20	38	54	19,5	104	54	20	4
P3120217-22	P312021-22	22	38	54	19,5	104	54	20	4
P3120217-25	P312021-25	25	45	65	24,5	121	65	25	6
P3120217-30	P312021-30	30	45	65	24,5	121	65	25	6
P3120217-32	P312021-32	32	53	73	31,5	133	73	32	6
	P312021-36	36	53	73	31,5	133	73	32	6
	P312021-40	40	63	85	39,5	155	85	40	6

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

WALTER SELECT

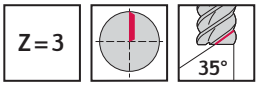
●● Primary application

● Other application

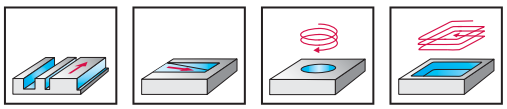
XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P3120287 / P312028
Protostar® HSS





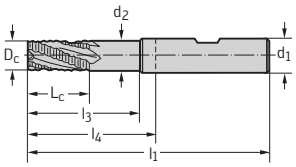
– Type HRA Kordel F 35



	P	M	K	N	S	H	O
ACN	●●		●	●			
Uncoated				●●			

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3120287-6		6	13	13		57	21	6	3
P3120287-7		7	16	16		66	26	10	3
P3120287-8		8	19	19		69	29	10	3
P3120287-9		9	19	19		69	29	10	3
P3120287-10	P312028-10	10	22	32	9,5	72	32	10	3
P3120287-11		11	22	22		79	34	12	3
P3120287-12		12	26	38	11,5	83	38	12	3
P3120287-15		15	26	38	11,5	83	38	12	3
P3120287-16		16	32	44	15,5	92	44	16	3
P3120287-20		20	38	54	19,5	104	54	20	3

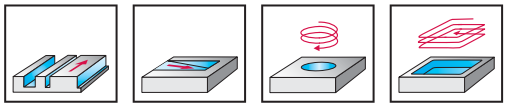
Profile, with radial clearance
Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

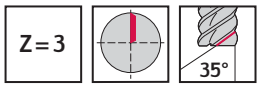
XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P4110217
Protostar® HSS



– Type HRA Kordel F 35

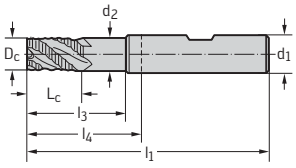




ACN	P	M	K	N	S	H	O
	●●	●	●	●			

DIN 327 H

Shank DIN 1835 B



Designation ACN	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P4110217-8	8	11	11		61	21	10	3
P4110217-10	10	13	25	9,5	63	23	10	3
P4110217-12	12	16	28	11,5	73	28	12	3
P4110217-14	14	16	31	13,5	73	28	12	3
P4110217-16	16	19	31	15,5	79	31	16	3
P4110217-20	20	22	38	19,5	88	38	20	3
P4110217-22	22	22	37	19,5	88	38	20	3
P4110217-25	25	26	45	24,5	102	46	25	3
P4110217-28	28	26	45	24,5	102	46	25	3
P4110217-30	30	26	45	24,5	102	46	25	3

Fine roughing teeth
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

WALTER SELECT
●● Primary application
● Other application

XIII D 1 C 247 C 263

HSS-E-PM shoulder/slot milling cutters
P3120017 / P312001
Protostar® HSS

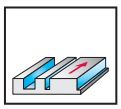


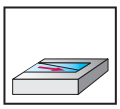
– Type NRA Kordel G 35

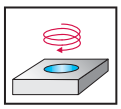
Z= 4–6

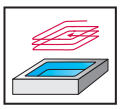


35°





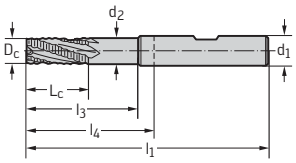




	P	M	K	N	S	H	O
ACN	●●		●	●			
Uncoated				●●			

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3120017-6	P312001-6	6	13	13		57	21	6	4
P3120017-7	P312001-7	7	16	16		66	26	10	4
P3120017-8	P312001-8	8	19	19		69	29	10	4
P3120017-9	P312001-9	9	19	19		69	29	10	4
P3120017-10	P312001-10	10	22	22		72	32	10	4
P3120017-11	P312001-11	11	22	22		79	34	12	4
P3120017-12	P312001-12	12	26	26		83	38	12	4
	P312001-13	13	26	38	11,5	83	38	12	4
P3120017-14	P312001-14	14	26	38	11,5	83	38	12	4
P3120017-15	P312001-15	15	26	38	11,5	83	38	12	4
P3120017-16	P312001-16	16	32	44	15,5	92	44	16	4
P3120017-18	P312001-18	18	32	44	15,5	92	44	16	4
P3120017-20	P312001-20	20	38	54	19,5	104	54	20	4
P3120017-22	P312001-22	22	38	54	19,5	104	54	20	4
P3120017-25	P312001-25	25	45	65	24,5	121	65	25	6
	P312001-28	28	45	65	24,5	121	65	25	6
P3120017-30	P312001-30	30	45	65	24,5	121	65	25	6
	P312001-32	32	53	73	31,5	133	73	32	6

Profile, with radial clearance
Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

XIII D 1 C 248 C 263

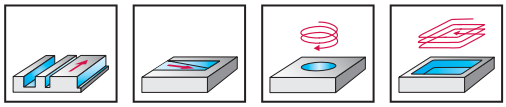
HSS-E-PM shoulder/slot milling cutters
P3120117 / P312011
Protostar® HSS



– Type NRA Kordel G 35

Z= 4–6

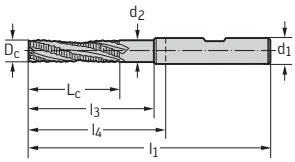
35°



	P	M	K	N	S	H	O
ACN	●●		●	●			
Uncoated				●●			

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3120117-6	P312011-6	6	24	24		68	32	6	4
P3120117-8	P312011-8	8	38	38		88	48	10	4
P3120117-10	P312011-10	10	45	55	9,5	95	55	10	4
P3120117-12	P312011-12	12	53	65	11,5	110	65	12	4
	P312011-14	14	53	65	11,5	110	65	12	4
P3120117-16	P312011-16	16	63	75	15,5	123	75	16	4
P3120117-18	P312011-18	18	63	75	15,5	123	75	16	4
P3120117-20	P312011-20	20	75	91	19,5	141	91	20	4
	P312011-22	22	75	91	19,5	141	91	20	4
P3120117-25	P312011-25	25	90	110	24,5	166	110	25	5
	P312011-30	30	90	110	24,5	166	110	25	5
	P312011-32	32	106	126	31,5	186	126	32	6
	P312011-40	40	125	147	39,5	217	147	40	6
	P312011-50	50	150	192	49,5	252	192	50	6

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

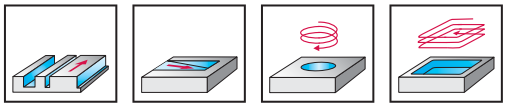
WALTER SELECT
●● Primary application
● Other application

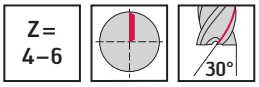
XIII D 1 C 248 C 263

HSS-E-PM shoulder/slot milling cutters
P3120937 / P3120537
Protostar® HSS



– Type HNR Kordel F 30

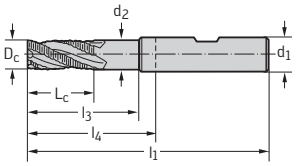




	P	M	K	N	S	H	O
ACN	●●		●	●			

DIN 844 B

Shank DIN 1835 B

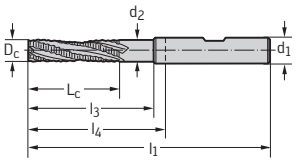


Designation ACN	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3120937-6	6	13	13		57	21	6	4
P3120937-8	8	19	19		69	29	10	4
P3120937-10	10	22	22		72	32	10	4
P3120937-12	12	26	26		83	38	12	4
P3120937-14	14	26	26		83	38	12	4
P3120937-16	16	32	42	15,5	92	44	16	4
P3120937-18	18	32	42	15,5	92	44	16	4
P3120937-20	20	38	52	19,5	104	54	20	4
P3120937-22	22	38	52	19,5	104	54	20	4
P3120937-25	25	45	63	24,5	121	65	25	5
P3120937-30	30	45	63	24,5	121	65	25	5
P3120937-32	32	53	71	31,5	133	73	32	6

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 844 B

Shank DIN 1835 B



Designation ACN	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3120537-6	6	24	24		68	32	6	4
P3120537-8	8	38	38		88	48	10	4
P3120537-10	10	45	45		95	55	10	4
P3120537-12	12	53	53		110	65	12	4
P3120537-14	14	53	53		110	65	12	4
P3120537-16	16	63	73	15,5	123	75	16	4
P3120537-18	18	63	73	15,5	123	75	16	4
P3120537-20	20	75	89	19,5	141	91	20	4
P3120537-25	25	90	108	24,5	166	110	25	5
P3120537-32	32	106	124	31,5	186	126	32	6

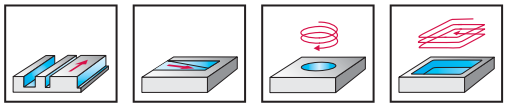
Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

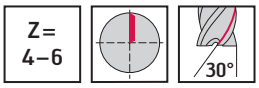
XIII D 1 C 249 C 263

HSS-E-PM shoulder/slot milling cutters
P3128417 / P3120387
Protostar® HSS



– Type HR Kordel F 30

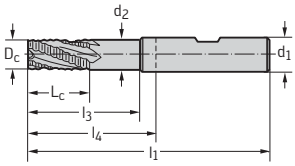




	P	M	K	N	S	H	O
ACN	●●		●	●			

P STANDARD S

Shank DIN 1835 B

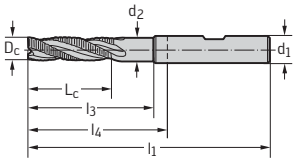


Designation ACN	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3128417-6	6	8	8		52	16	6	4
P3128417-8	8	11	11		61	21	10	4
P3128417-10	10	13	25	9,5	63	31	10	4
P3128417-12	12	16	28	11,5	73	28	12	4
P3128417-14	14	16	31	13,5	79	33	16	4
P3128417-16	16	19	31	15,5	79	31	16	4
P3128417-18	18	19	38	17,5	88	40	20	4
P3128417-20	20	22	38	19,5	88	38	20	4
P3128417-25	25	26	46	24,5	102	46	25	5
P3128417-30	30	26	48	29,5	108	50	32	5
P3128417-32	32	32	52	31,5	112	52	32	6

Fine roughing teeth
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 844 B

Shank DIN 1835 B



Designation ACN	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3120387-6	6	24	24		68	32	6	3
P3120387-8	8	38	38		88	48	10	3
P3120387-10	10	45	55	9,5	95	55	10	3
P3120387-12	12	53	57	11,5	110	65	12	3
P3120387-16	16	63	75	15,5	123	75	16	3
P3120387-20	20	75	91	19,5	141	91	20	3

Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

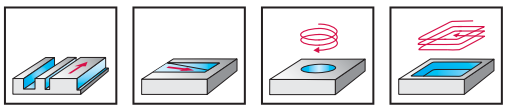
WALTER SELECT
●● Primary application
● Other application

XIII D 1 C 249 C 263

HSS-E Co8 shoulder/slot milling cutters
P312111 / P3121017
Protostar® HSS



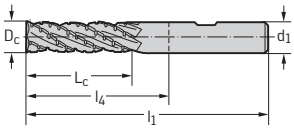
– Type NF RAPAX G 30



	P	M	K	N	S	H	O
Uncoated				●●			
ACN	●●		●	●			

DIN 844 B

Shank DIN 1835 B

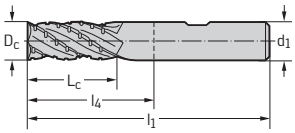


Designation ACN	Designation Uncoated	D_c k12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	P312111-10	10	45	95	55	10	4
	P312111-12	12	53	110	65	12	4
	P312111-14	14	53	110	65	12	4
	P312111-16	16	63	123	75	16	4
	P312111-20	20	75	141	91	20	4
	P312111-22	22	75	141	91	20	4
	P312111-25	25	90	166	110	25	5
	P312111-28	28	90	166	110	25	5
	P312111-30	30	90	166	110	25	5
	P312111-32	32	106	186	126	32	6
	P312111-40	40	125	217	147	40	6

Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

DIN 844 B

Shank DIN 1835 B



Designation ACN	Designation Uncoated	D_c k12 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3121017-6		6	13	57	21	6	4
P3121017-8		8	19	69	29	10	4
P3121017-10		10	22	72	32	10	4
P3121017-12		12	26	83	38	12	4
P3121017-14		14	26	83	38	12	4
P3121017-16		16	32	92	44	16	4
P3121017-18		18	32	92	44	16	4
P3121017-20		20	38	104	54	20	4
P3121017-22		22	38	104	54	20	4
P3121017-25		25	45	121	65	25	5
P3121017-30		30	45	121	65	25	5

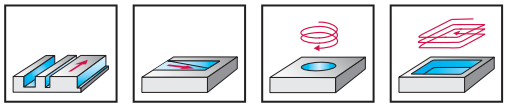
Slot milling $a_p \leq 1.5 \times D_c$
Shoulder milling $a_e \leq 0.6 \times D_c$

XIII D 1 C 249 C 263

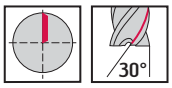
HSS-E-PM shoulder/slot milling cutters
P3120717
Protostar® HSS



– Type NR Kordel G 30



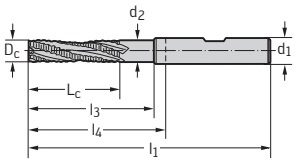
Z= 4–5



	P	M	K	N	S	H	O
ACN	●●		●	●			

P STANDARD XL

Shank DIN 1835 B



Designation ACN	D_c k12 mm	L_c mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3120717-6	6	19	19		63	27	6	4
P3120717-8	8	29	29		79	43	10	4
P3120717-10	10	34	45	9,5	84	44	10	4
P3120717-12	12	40	52	11,5	97	52	12	4
P3120717-14	14	43	52	11,5	100	55	12	4
P3120717-16	16	45	57	15,5	105	57	16	4
P3120717-18	18	45	57	15,5	105	57	16	4
P3120717-20	20	55	71	19,5	121	71	20	4
P3120717-22	22	63	71	19,5	129	79	20	4
P3120717-25	25	68	91	24,5	144	88	25	5
P3120717-30	30	71	91	24,5	147	91	25	5

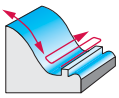
Slot milling $a_p \leq 1.0 \times D_c$
Shoulder milling $a_e \leq 0.5 \times D_c$

WALTER SELECT
●● Primary application
● Other application

XIII D 1 C 249 C 263



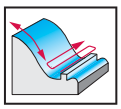
Walter Select HSS milling tools
Copy milling cutters

Machining	
WALTER SELECT ●● Primary application ● Other application	
Helix angle	**30°**
Designation	**P316601 P3166017 P8112017 Protostar® HSS**
Dia. range [mm]	2–20
Z	2–4
Corner radius [mm]	1–10
Standard	DIN 327 / DIN 1889 BB
Shank	DIN 1835 B
Page	C 200
	
P Steel	●●
M Stainless steel	●●
K Cast iron	●
N NF metals	●●
S Materials with difficult cutting properties	●●
H Hard materials	
O Other	

HSS-E Co8 ball-nose end mills
P3166017 / P316601
Protostar® HSS



– Type 30



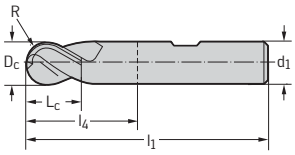
Z=2



	P	M	K	N	S	H	O
ACN	●●	●●	●	●	●●		
Uncoated	●	●	●	●●	●		

DIN 327

Shank DIN 1835 B



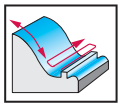
Designation ACN	Designation Uncoated	D_c e8 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P3166017-2	P316601-2	2	1	4	48	12	6	2
P3166017-3	P316601-3	3	1,5	5	49	13	6	2
P3166017-4	P316601-4	4	2	7	51	15	6	2
P3166017-5	P316601-5	5	2,5	8	52	16	6	2
P3166017-6	P316601-6	6	3	8	52	16	6	2
P3166017-8	P316601-8	8	4	11	61	21	10	2
P3166017-10	P316601-10	10	5	13	63	23	10	2
P3166017-11		11	5,5	13	70	25	12	2
P3166017-12	P316601-12	12	6	16	73	28	12	2
P3166017-13	P316601-13	13	6,5	16	73	28	12	2
P3166017-14	P316601-14	14	7	16	73	28	12	2
P3166017-15	P316601-15	15	7,5	16	73	28	12	2
P3166017-16	P316601-16	16	8	19	79	31	16	2
P3166017-18	P316601-18	18	9	19	79	31	16	2
P3166017-20	P316601-20	20	10	22	88	38	20	2

XIII D 1 C 250 C 263

HSS-E Co8 ball-nose end mills
P8112017
Protostar® HSS



– Type 30



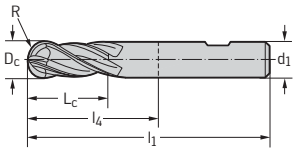
Z = 4



	P	M	K	N	S	H	O
ACN	●●		●	●			

DIN 1889 BB

Shank DIN 1835 B



Designation ACN	D_c k12 mm	R mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P8112017-6	6	3	13	57	21	6	4
P8112017-8	8	4	19	69	29	10	4
P8112017-10	10	5	22	72	32	10	4
P8112017-12	12	6	26	83	38	12	4
P8112017-16	16	8	32	92	44	16	4
P8112017-20	20	10	38	104	54	20	4

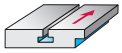
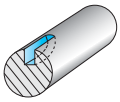
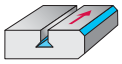
WALTER SELECT

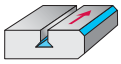
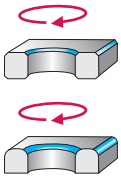
●● Primary application

● Other application

XIII D 1 C 250 C 263

Walter Select HSS milling tools
Profiling cutters

Machining WALTER SELECT ●● Primary application ● Other application						
Helix angle	**12°**			**10°**	**0°**	
Designation	**P3148016 Protostar® HSS**	**P314801 Protostar® HSS**	**P314101 Protostar® HSS**	**P313231 Protostar® HSS**	**P315801 Protostar® HSS**	
Dia. range [mm]	11–32	11–50	16–50	4,5–45,5	12–32	
Z	6–8	6–10	6–10	6–14	10–12	
Shank	DIN 1835 B	DIN 1835 B	DIN 1835 B	DIN 1835 B	DIN 1835 B	
Page	C 204	C 204	C 205	C 206	C 207	
						
P Steel	●●		●●		●	
M Stainless steel		●	●			
K Cast iron						
N NF metals	●	●●	●●	●●	●●	
S Materials with difficult cutting properties						
H Hard materials						
O Other						

				
	0°	0°		
	P315821 Protostar® HSS	**P315831 Protostar® HSS**	**P315851 Protostar® HSS**	**P316881 Protostar® HSS**
	12–32	12–32	12–32	10–48
	10–12	10–12	10–12	4–5
	DIN 1835 B	DIN 1835 B	DIN 1835 B	DIN 1835 B
	C 207	C 208	C 208	C 209
				
	●	●	●	●●
				●
				●
	●●	●●	●●	●
				●

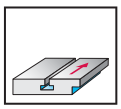
HSS-E Co8 T-slot milling cutters
P314801 / P3148016
Protostar® HSS



– Type N 12

Z= 6–10

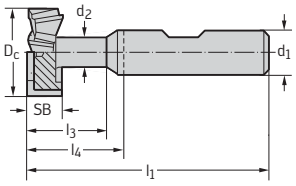
12°



	P	M	K	N	S	H	O
TICN	●●			●			
Uncoated		●		●●			

DIN 851 AB

Shank DIN 1835 B



Designation TICN	Designation Uncoated	D_c mm	SB d11 mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
	P314801-11X3.5	11	3,5	10,5	4	53,5	13,5	10	6
P3148016-11	P314801-11	11	4	10,5	4	53,5	13,5	10	6
P3148016-12.5	P314801-12.5	12,5	6	13	5	57	17	10	6
P3148016-16	P314801-16	16	8	18	7	62	22	10	6
P3148016-18	P314801-18	18	8	21	8	70	25	12	6
	P314801-21	21	9	25	10	74	29	12	8
P3148016-22	P314801-22	22	10	26	10	74	29	12	8
P3148016-25	P314801-25	25	11	28	12	82	34	16	8
P3148016-28	P314801-28	28	12	34	13	85	37	16	8
P3148016-32	P314801-32	32	14	36	15	90	42	16	8
	P314801-36	36	16	43	17	108	52	25	8
	P314801-40	40	18	45	19	108	52	25	8
	P314801-50	50	22	56	25	124	64	32	10

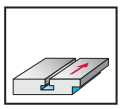
Cross-toothed

XIII D 1 C 252 C 263

HSS-E Co8 T-slot milling cutters
P314101
Protostar® HSS



– Type Kordel F 12



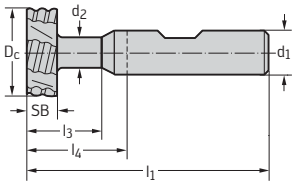
Z= 6–10



	P	M	K	N	S	H	O
Uncoated	●●	●		●●			

DIN 851 AB

Shank DIN 1835 B



Designation Uncoated	D_c mm	SB d11 mm	l_3 mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P314101-16	16	8	18	7	62	22	10	6
P314101-18	18	8	21	8	70	25	12	6
P314101-21	21	9	25	10	74	29	12	6
P314101-25	25	11	28	12	82	34	16	8
P314101-32	32	14	36	15	90	42	16	8
P314101-40	40	18	45	19	108	52	25	8
P314101-50	50	22	56	25	124	64	32	10

Fine roughing teeth
Cross-toothed

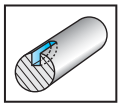
WALTER SELECT
●● Primary application
● Other application

XIII D 1 C 252 C 263

HSS-E Co slot milling cutters
P313231
Protostar® HSS



– Type N 10



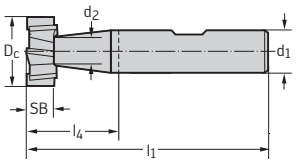
Z= 6–14



	P	M	K	N	S	H	O
Uncoated				●●			

DIN 851 AB

Shank DIN 1835 B



Designation Uncoated	D_c h12 mm	SB mm	d_2 mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P313231-4.5X1	4,5	1	1,8	50	14	6	6
P313231-7.5X1.5	7,5	2	2,8	50	14	6	6
P313231-7.5X2	7,5	2	3,2	50	14	6	6
P313231-10.5X2	10,5	2	4	50	14	6	8
P313231-10.5X2.5	10,5	3	4	50	14	6	8
P313231-10.5X3	10,5	3	4,2	50	14	6	8
P313231-13.5X2	13,5	2	4,6	56	16	10	8
P313231-13.5X3	13,5	3	4,6	56	16	10	8
P313231-13.5X4	13,5	4	4,6	56	16	10	8
P313231-16.5X2.5	16,5	3	4,6	56	16	10	8
P313231-16.5X4	16,5	4	4,6	56	16	10	8
P313231-16.5X5	16,5	5	5	56	16	10	8
P313231-19.5X3	19,5	3	5,6	63	23	10	10
P313231-19.5X4	19,5	4	5,6	63	23	10	10
P313231-19.5X5	19,5	5	6	63	23	10	10
P313231-19.5X6	19,5	6	6,5	63	23	10	10
P313231-22.5X4	22,5	4	6	63	23	10	10
P313231-22.5X5	22,5	5	6	63	23	10	10
P313231-22.5X6	22,5	6	6,5	63	23	10	10
P313231-22.5X8	22,5	8	6,5	63	23	10	10
P313231-25.5X5	25,5	5	7,5	63	23	10	10
P313231-25.5X6	25,5	6	7,5	63	23	10	10
P313231-25.5X7	25,5	7	7,5	63	23	10	10
P313231-25.5X8	25,5	8	7,5	63	23	10	10
P313231-28.5X5	28,5	5	8,5	63	23	10	12
P313231-28.5X6	28,5	6	8,5	63	23	10	12
P313231-28.5X8	28,5	8	8,5	63	23	10	12
P313231-28.5X10	28,5	10	9,3	71	26	12	12
P313231-32.5X5	32,5	5	8,5	71	26	12	12
P313231-32.5X6	32,5	6	8,5	71	26	12	12
P313231-32.5X7	32,5	7	8,5	71	26	12	12
P313231-32.5X8	32,5	8	8,5	71	26	12	12
P313231-32.5X10	32,5	10	9,3	71	26	12	12
P313231-35.5X6	35,5	6	11,8	71	26	12	12
P313231-35.5X8	35,5	8	11,8	71	26	12	12
P313231-35.5X10	35,5	10	11,8	71	26	12	12
P313231-38.5X8	38,5	8	11,8	71	26	12	14
P313231-38.5X10	38,5	10	11,8	71	26	12	14
P313231-45.5X10	45,5	10	11,8	71	26	12	14

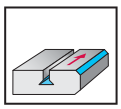
For woodruff keys
Cross-toothed

XIII D 1 C 253 C 263

HSS-E Co angle milling cutters
P315801 / P315821
Protostar® HSS



– Type 45°



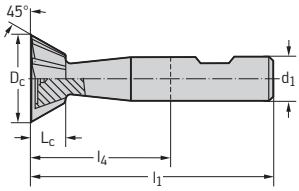
Z= 10–12

0°

	P	M	K	N	S	H	O
Uncoated	●			●●			

DIN 1833 C

Shank DIN 1835 B

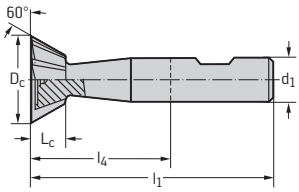


Designation Uncoated	D_c js16 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P315801-12-45	12	3,5	54	14	10	10
P315801-16-45	16	4	60	15	12	10
P315801-20-45	20	5	63	18	12	10
P315801-25-45	25	6,3	67	22	12	10
P315801-32-45	32	8	71	23	16	12

Radial and axial cutting
Shoulder milling $a_e \leq 0.3 \times D_c$

DIN 1833 C

Shank DIN 1835 B



Designation Uncoated	D_c js16 mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P315821-12-60	12	5	54	14	10	10
P315821-16-60	16	6,3	60	15	12	10
P315821-20-60	20	8	63	18	12	10
P315821-25-60	25	10	67	22	12	10
P315821-32-60	32	12,5	71	23	16	12

Radial and axial cutting
Shoulder milling $a_e \leq 0.3 \times D_c$

WALTER SELECT

●● Primary application

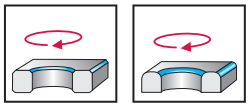
● Other application

XIII D 1 C 253 C 263

HSS-E Co angle milling cutters
P315831 / P315851
Protostar® HSS



– Type 45°



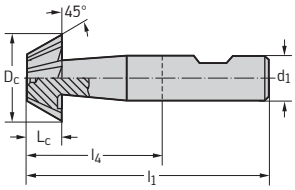
Z = 10–12

0°

	P	M	K	N	S	H	O
Uncoated	●			●●			

DIN 1833 D

Shank DIN 1835 B

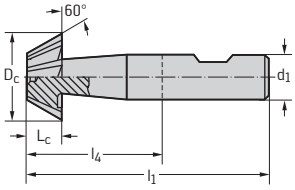


Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P315831-12-45	12	3,5	54	14	10	10
P315831-16-45	16	4	60	15	12	10
P315831-20-45	20	5	63	18	12	10
P315831-25-45	25	6,3	67	22	12	10
P315831-32-45	32	8	71	23	16	12

Radial cutting only
Shoulder milling $a_e \leq 0.3 \times D_c$

DIN 1833 D

Shank DIN 1835 B



Designation Uncoated	D_c mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z
P315851-12-60	6,2	5	54	14	10	10
P315851-16-60	8,7	6,3	60	15	12	10
P315851-20-60	10,8	8	63	18	12	10
P315851-25-60	13,5	10	67	22	12	10
P315851-32-60	17,6	12,5	71	23	16	12

Radial cutting only
Shoulder milling $a_e \leq 0.3 \times D_c$

XIII D 1 C 253 C 263

HSS-E Co quarter-round profiling cutters
P316881
Protostar® HSS



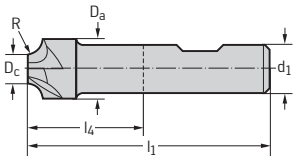
Z= 4–5

0°

	P	M	K	N	S	H	O
Uncoated	●●	●	●	●	●		

DIN 6518 B

Shank DIN 1835 B



Designation Uncoated	R mm	D_c mm	D_a mm	L_c mm	l_1 mm	l_4 mm	d_1 mm	Z
P316881-1	1	8	10	1	60	20	10	4
P316881-1.5	1,5	7	10	1,5	60	20	10	4
P316881-2	2	6	10	2	60	20	10	4
P316881-2.5	2,5	5	10	2,5	60	20	10	4
P316881-3	3	6	12	3	60	15	12	4
P316881-4	4	7	15	4	60	15	12	4
P316881-5	5	8	18	5	70	22	16	4
P316881-6	6	9	21	6	70	22	16	4
P316881-7	7	10	24	7	70	22	16	4
P316881-8	8	8	24	8	70	22	16	4
P316881-9	9	10	28	9	85	35	20	4
P316881-10	10	8	28	10	85	35	20	4
P316881-12	12	11	35	12	100	50	20	4
P316881-12.5	12,5	10	35	12,5	100	50	20	4
P316881-14	14	14	42	14	100	44	25	4
P316881-15	15	18	48	15	105	49	25	5

With radial and axial relief

WALTER SELECT

●● Primary application

● Other application

XIII D 1 C 253 C 263

Brazed milling tools product range overview
Shoulder milling cutters

Machining						
Designation	**F1678**	**F1682**	**F1676**	**F1675**	**F4722**	**F4722**
Dia. range [mm]	25–40	40–63	63	50–100	20–40	6–20
Z	4–6	6	6	6–8	4	2
Shank [mm]	DIN 1835 B	Modular NCT adaptor	Steep taper	Cylindrical bore	ScrewFit	Parallel shank
Page	C 216	C 216	C 217	C 217	C 219	C 219
						

Machining	
Designation	**F4723**
Dia. range [mm]	50–80
Z	5–6
Shank [mm]	Cylindrical bore
Page	C 221
	

Designation key – PCD milling cutters

Example:

F47	2	2	.	Z	16	.	16	.	Z02	.	20	.	D
1	2	3		4	5		6		7		8		9

1	2	3	4
Tool range	**Insert corner**	**Machining method**	**Adaptor**
F47 PCD milling cutter, brazed	**1** Corner radius	**1** Routing cutters	**Z** Parallel shank
	2 Chamfer	**2** Shoulder milling cutters	**H** HSK
	3 Wiper cutting edge	**3** Face milling cutters	**T** ScrewFit
	4 Cutting edge shape for sealing surfaces	**4** Radius milling cutters	**B** Bore
	5 According to Walter standard	**5** Torus cutters	
		6 Porcupine milling cutters	

5	6	7	8	9
Adaptor size	**Cutting diameter**	**Number of teeth**	**Cutting length**	**Cutting tool material**
	06 6 mm			**D** WCD10
	16 16 mm			

Walter Select – Brazed cutters

Step by step to the right tool

STEP 1

Determine the **material** to be machined from page C 671 onwards:

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

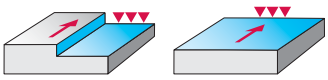
STEP 2

Select the **machining conditions**:

Machine stability, clamping system and workpiece		
very good	good	moderate
		

STEP 3

Select your **machining method** based on the main categories and subcategories and then go to the relevant Walter Select product range overview (see table, e.g. page C 214).

Machining method

Shoulder milling – No facet – With facet
Page C 214

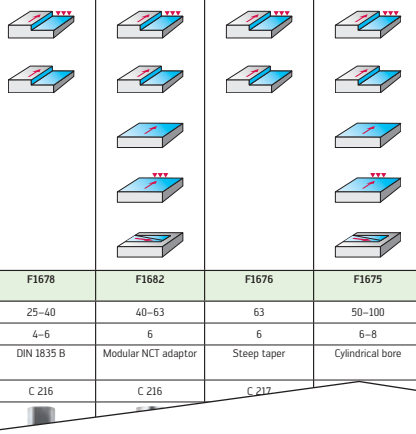
STEP 4

Select the appropriate tool for your **machining conditions** and then go to the ordering page.

Walter Select brazed milling tools
Shoulder milling cutters

Machining

WALTER SELECT
●● Primary application
● Other application

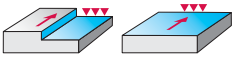


Designation	F1678	F1682	F1676	F1675	F4722
Dia. range [mm]	25–40	40–63	63	50–100	20–40
Z	4–6	6	6	6–8	4
Shank	DIN 1835 B	Modular NCT adaptor	Steep taper	Cylindrical bore	ScrewFit
Page	C 216	C 216	C 217		C 219

STEP 5

Based on the **material group** to be machined, look for the appropriate **cutting speed** by referring to **a_e to D_c from page** C 254 **onwards** and also the **VT feed group** (e.g. A).

Cutting data for end milling cutters with PCD/brazed cutting edges



Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group ¹	Product family: Brazed helical milling cutters F1675, F1678, F1676, F1682 — Ø 20–100 mm, Z = 4–8, WP40 — Starting values for cutting speed v_c [m/min] a_e / D_c 1/2	1/4	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	200	325	375	J
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	140	225	265	J
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	120	200	230	J
		C > 0.55%	Annealed	190	640	P4	140	225	265	J
		C > 0.55%	Heat-treated	300	1010	P5	110	180	215	J
		Free cutting steel (short-chipping)	Annealed	220	750	P6	130	220	280	J
	Low-alloyed steel	Annealed		175	590	P7	155	250	290	L
		Heat-treated		285	960	P8	120	190	225	L
		Heat-treated		380	1280	P9	100	170	195	L
		Heat-treated		430	1480	P10	90	160	170	L
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	115	190	220	L
		Hardened and tempered		300	1010	P12	100	160	180	L

STEP 6

Based on the feed group, determine the correct **feed value (page C 256 a_e to D_c)** for your **machining conditions**.

J **Non-alloyed steel, malleable cast iron, ductile cast iron and CGI**

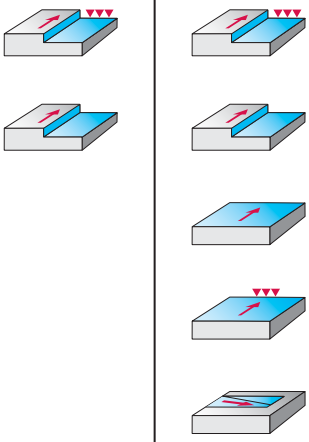
	Feed per tooth f_z [mm]								
a_e [mm]*	Ø 16 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm	Ø 10
1,0	0,12	0,12	0,12	0,12	0,13				
2,0	0,12	0,12	0,12	0,12	0,12	0,20			
3,0	0,11	0,12	0,12	0,12	0,12	0,19	0,20		
4,0	0,10	0,11	0,12	0,12	0,12	0,18	0,19	0,20	
5,0	0,10	0,10	0,11	0,12	0,12	0,18	0,18	0,19	0
6,0	0,10	0,10	0,10	0,11	0,12	0,17	0,18	0,18	0,
8,0	0,10	0,10	0,10	0,10	0,11	0,17	0,17	0,18	0,
10,0	0,10	0,10	0,10	0,10	0,10	0,17	0,17	0,17	0,
12,0	0,10	0,10	0,10	0,10	0,10	0,16	0,17	0,17	0,
16,0	0,10	0,10	0,10	0,10	0,10	0,15	0,16	0,17	0,
20,0		0,10	0,10	0,10	0,10	0,15	0,15	0,16	0,
25,0			0,10	0,10	0,10	0,15	0,15	0,15	0,
32,0				0,10	0,10	0,15	0,15	0,15	0,
40,0					0,10	0,15	0,15	0,15	0,
50,0						0,15	0,15	0,15	0,
63,0							0,15	0,15	0,
80,0								0,15	0,
100,0									0

* Radial feed in mm

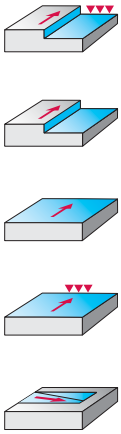
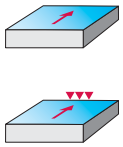
Walter Select brazed milling tools
Shoulder milling cutters

Machining

WALTER SELECT
●● Primary application
● Other application



Designation	F1678	F1682	F1676	F1675	F4722	
Dia. range [mm]	25–40	40–63	63	50–100	20–40	
Z	4–6	6	6	6–8	4	
Shank	DIN 1835 B	Modular NCT adaptor	Steep taper	Cylindrical bore	ScrewFit	
Page	C 216	C 216	C 217	C 217	C 219	
						
P Steel	●●	●●	●●	●●		
M Stainless steel						
K Cast iron	●●	●●		●●		
N NF metals					●●	
S Materials with difficult cutting properties						
H Hard materials						
O Other					●	

		
	F4722	**F4723**
	6–20	50–80
	2	5–6
	Parallel shank	Cylindrical bore
	C 219	C 221
		
	●●	●●
	●	●

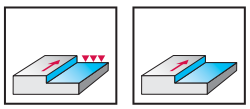
Brazed helical shoulder milling cutters
F1678 / F1682



Z= 3–6



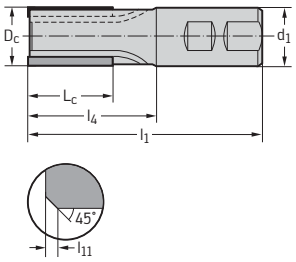
– Brazed cutting edges



	P	M	K	N	S	H	O
WKM			●●				
WP40	●●						

Tool

Shank DIN 1835 B

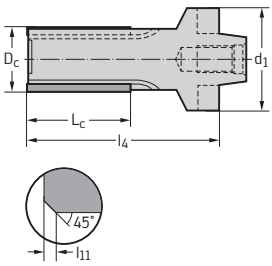


Designation	$D_{c\ js16}$ mm	l_{11} mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	kg	WKM	WP40
F1678.W.020.Z03.40.K	20	0,5	40	105	54	20	3	0,3	●	
F1678.W.020.Z03.40.P	20	0,5	40	105	54	20	3	0,2		●
F1678.W.025.Z04.50.K	25	0,5	50	125	68	25	4	0,4	●	
F1678.W.025.Z04.50.P	25	0,5	50	125	68	25	4	0,4		●
F1678.W.032.Z04.50.K	32	0,5	50	130	69	32	4	0,7	●	
F1678.W.032.Z04.50.P	32	0,5	50	130	69	32	4	0,7		●
F1678.W.040.Z06.63.K	40	0,8	63	145	84	40	6	1,0	●	
F1678.W.040.Z06.63.P	40	0,8	63	145	84	40	6	1,0		●

Ordering example for the WKM grade: F1678.W.020.Z03.40.K

Tool

Modular NCT adaptor



Designation	$D_{c\ js16}$ mm	l_{11} mm	L_c mm	l_4 mm	d_1 mm	Z	kg	WKM	WP40
F1682.N6.032.Z04.50.K	32	0,5	50	110	NCT 63	4	1,0	●	
F1682.N6.032.Z04.50.P	32	0,5	50	110	NCT 63	4	1,1		●
F1682.N6.040.Z06.63.K	40	0,8	63	120	NCT 63	6	1,3	●	
F1682.N6.040.Z06.63.P	40	0,8	63	120	NCT 63	6	1,3		●
F1682.N8.050.Z06.80.K	50	0,8	80	135	NCT 80	6	2,5	●	
F1682.N8.050.Z06.80.P	50	0,8	80	135	NCT 80	6	2,5		●
F1682.N8.063.Z06.100.K	63	0,8	100	150	NCT 80	6	3,3	●	
F1682.N8.063.Z06.100.P	63	0,8	100	150	NCT 80	6	3,4		●

Ordering example for the WKM grade: F1682.N6.032.Z04.50.K

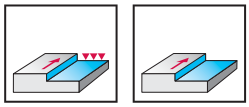
XIII D 1 C 254 C 264

Brazed helical shoulder milling cutters
F1676 / F1675



Z= 6–8

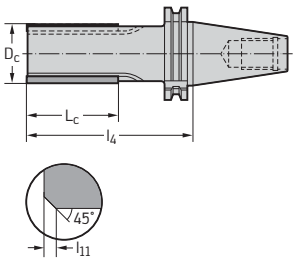
– Brazed cutting edges



	P	M	K	N	S	H	O
WKM			●●				
WP40	●●						

Tool

SK DIN 69871 + 2080

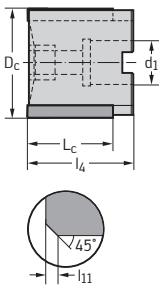


Designation	$D_{c\ js16}$ mm	l_{11} mm	L_c mm	l_4 mm	d_1 mm	Z	kg	WKM	WP40
F1676.S5.050.Z06.80.K	50	0,8	80	135	SK50	6	4,0	☹	
F1676.S5.050.Z06.80.P	50	0,8	80	135	SK50	6	3,8		☹
F1676.S5.063.Z06.100.K	63	0,8	100	155	SK50	6	5,1	☹	
F1676.S5.063.Z06.100.P	63	0,8	100	155	SK50	6	5,1		☹

Ordering example for the WKM grade: F1676.S5.050.Z06.80.K

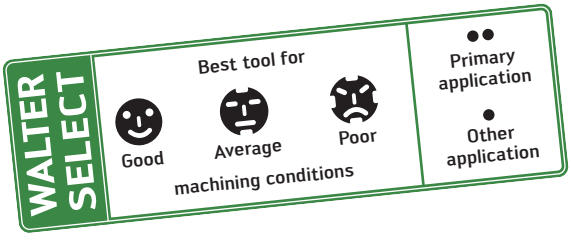
Tool

Cylindrical bore
DIN 138 transverse keyway



Designation	$D_{c\ js16}$ mm	l_{11} mm	L_c mm	l_4 mm	d_1 mm	Z	kg	WKM	WP40
F1675.B.050.Z06.40.K	50	0,8	40	50	22	6	0,5	☹	
F1675.B.050.Z06.40.P	50	0,8	40	50	22	6	0,5		☹
F1675.B.063.Z06.50.K	63	0,8	50	63	27	6	1	☹	
F1675.B.063.Z06.50.P	63	0,8	50	63	27	6	1,0		☹
F1675.B.080.Z08.50.K	80	1	50	63	32	8	1,5	☹	
F1675.B.080.Z08.50.P	80	1	50	63	32	8	1,5		☹
F1675.B.100.Z08.63.K	100	1	63	80	40	8	3,0	☹	
F1675.B.100.Z08.63.P	100	1	63	80	40	8	3,0		☹

Ordering example for the WKM grade: F1675.B.050.Z06.40.K



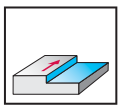
XIII D 1 C 254 C 264

Brazed porcupine shoulder milling cutters
F1616 / F1375



– Brazed cutting edges

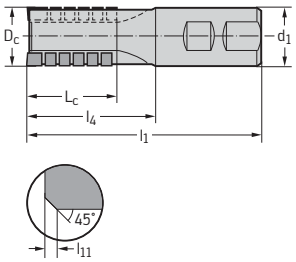
Z= 2–4



	P	M	K	N	S	H	O
WKM			●●				

Tool

Shank DIN 1835 B

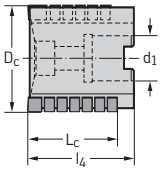


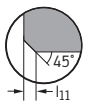
Designation	$D_{c\ js16}$ mm	l_{11} mm	L_c mm	l_1 mm	l_4 mm	d_1 h6 mm	Z	kg	WKM
F1616.W.020.Z02.40.K	20	0,5	40	105	54	20	2	0,2	●●
F1616.W.025.Z02.50.K	25	0,5	50	125	68	25	2	0,4	●●
F1616.W.028.Z02.50.K	28	0,5	50	125	68	25	2	0,6	●●
F1616.W.032.Z02.50.K	32	0,5	50	130	69	32	2	0,7	●●
F1616.W.040.Z02.63.K	40	0,8	63	145	84	40	2	0,9	●●

Ordering example for the WKM grade: F1616.W.020.Z02.40.K

Tool

Cylindrical bore
DIN 138 transverse keyway





Designation	$D_{c\ js16}$ mm	l_{11} mm	L_c mm	l_4 mm	d_1 mm	Z	kg	WKM
F1375.B.050.Z03.40.K	50	0,8	40	50	22	3	0,4	●●
F1375.B.063.Z03.50.K	63	0,8	50	63	27	3	0,8	●●
F1375.B.080.Z04.50.K	80	1	50	63	32	4	1,4	●●

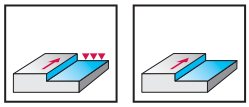
Ordering example for the WKM grade: F1375.B.050.Z03.40.K

XIII D 1 C 255 C 264

PCD shoulder milling cutters
F4722



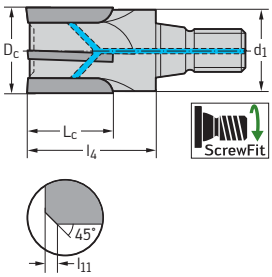
Z= 2–4



	P	M	K	N	S	H	O
WCD10				●●			●

Tool

ScrewFit

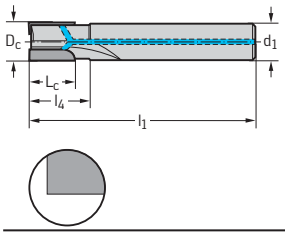


Designation	D_c mm	l_{11} mm	L_c mm	l_1 mm	l_4 mm	d_1 mm	Z	kg	WCD10
F4722.T18.020.Z04.20.D	20	0,2	20	51	30	T18	4	0,1	●●
F4722.T22.025.Z04.20.D	25	0,2	20	58	35	T22	4	0,1	●●
F4722.T28.032.Z04.20.D	32	0,2	20	69	40	T28	4	0,4	●●
F4722.T36.040.Z04.20.D	40	0,2	20	75	40	T36	4	0,4	●●

Pre-balanced to G6.3 where n = 16,000 rpm
Ordering example for the WCD10 grade: F4722.T18.020.Z04.20.D

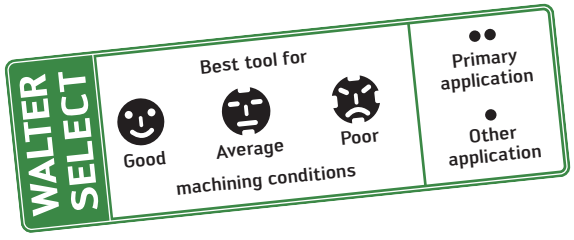
Tool

Parallel shank



Designation	D_c mm	l_{11} mm	L_c mm	l_1 mm	l_4 mm	d_1 mm	Z	kg	WCD10
F4722.Z06.006.Z02.08.D	6	0	8	50	13	6	2	0,0	●●
F4722.Z08.008.Z02.10.D	8	0	10	70	15	6	2	0,1	●●
F4722.Z10.010.Z02.12.D	10	0	12	80	17	10	2	0,1	●●
F4722.Z12.012.Z02.16.D	12	0	16	80	21	12	2	0,1	●●
F4722.Z16.016.Z02.20.D	16	0	20	90	25	16	2	0,2	●●
F4722.Z20.020.Z02.20.D	20	0	20	100	25	20	2	0,4	●●

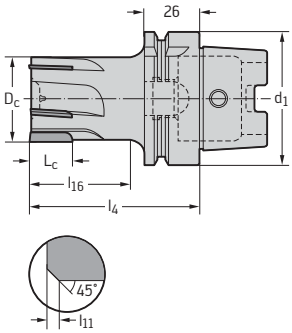
Ordering example for the WCD10 grade: F4722.Z06.006.Z02.08.D



XIII
D 1
C 255
C 264

Tool

	Designation	D_c mm	l_{11} mm	L_c mm	l_1 mm	l_4 mm	d_1 mm	Z	kg	WCD10
HSK DIN 69893/1-A	F4722.H63A.025.Z04.20.D	25	0,2	20	142	110	63	4	1,1	●
	F4722.H63A.032.Z04.20.D	32	0,2	20	142	110	63	4	0,8	●
	F4722.H63A.040.Z05.20.D	40	0,2	20	112	80	63	5	1,2	●



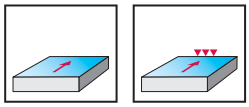
Pre-balanced to G6.3 where n = 16,000 rpm
Ordering example for the WCD10 grade: F4722.H63A.025.Z04.20.D

XIII D 1 C 255 C 264

PCD face/shoulder milling cutters
F4723



– κ = 75° to L_c = 1.1 mm

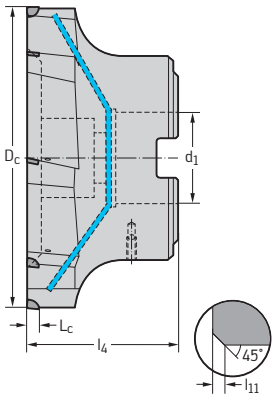


Z= 5–8

	P	M	K	N	S	H	O
WCD10				●●			●

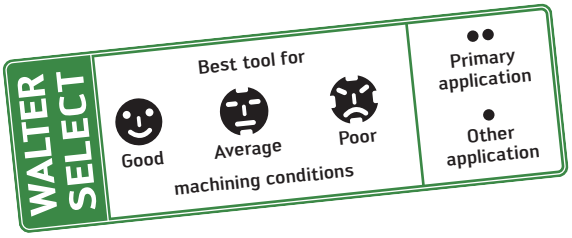
Tool

Cylindrical bore
DIN 138 transverse keyway



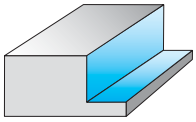
Designation	D_c mm	l_{11} mm	L_c mm	l_4 mm	d_1 mm	Z	kg	WCD10
F4723.B22.050.Z05.05.D	50	0,1	1,1	40	22	5	0,6	●●
F4723.B22.063.Z05.05.D	63	0,1	1,1	40	22	5	0,5	●●
F4723.B27.080.Z06.05.D	80	0,1	1,1	50	27	6	1,0	●●
F4723.B32.100.Z08.05.D	100	0,1	1,1	50	32	8	1,5	●●
F4723.B40.125.Z08.05.D	125	0,1	1,1	63	40	8	3,0	●●

Pre-balanced to G6.3 where n = 16,000 rpm
Ordering example for the WCD10 grade: F4723.B22.050.Z05.05.D
Bodies and assembly parts are included in the scope of delivery.



XIII D 1 C 255 C 264

Cutting data for solid carbide shoulder milling



Product family		λ
H7073417		45°

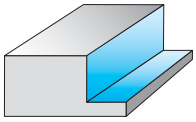
Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 25 mm Z = 4–5 ACN Starting values for cutting speed v_c [m/min] a_e / D_c 1/2	1/4	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1				
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2				
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3				
		C > 0.55%	Annealed	190	640	P4				
		C > 0.55%	Heat-treated	300	1010	P5				
		Free cutting steel (short-chipping)	Annealed	220	750	P6				
	Low-alloyed steel	Annealed		175	590	P7				
		Heat-treated		285	960	P8				
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11				
		Hardened and tempered		300	1010	P12				
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14				
		Martensitic, heat-treated		330	1110	P15				
M	Stainless steel	Austenitic, quench hardened		200	680	M1				
		Austenitic, precipitation hardened (PH)		300	1010	M2				
		Austenitic/ferritic, duplex		230	780	M3				
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1			73	B
			Hardened	280	940	S2			44	B
		Ni or Co base	Annealed	250	840	S3			73	B
			Hardened	350	1180	S4			44	B
			Cast	320	1080	S5			44	B
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7			110	B
		β alloys		410	1400	S8			57	B
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Product family		λ	Product family		λ	Product family		λ
	H8082228	H8083128	50°	H3178128		30°	H3021138 H3023138	H3E21138 H3E23138	50°
	Ø 3–25 mm			Ø 5–16 mm			Ø 3–25 mm		
	Z = 4–8			Z = 6–16			Z = 4–8		
	TAX			TAX			TAX		
	Starting values for cutting speed v_c [m/min] a_e / D_c			Starting values for cutting speed v_c [m/min] a_e / D_c			Starting values for cutting speed v_c [m/min] a_e / D_c		
	1/2	1/4	1/10 VT	1/2	1/4	1/10 VT	1/2	1/4	1/10 VT
								162	197 A
								222	270 A
								190	231 A
								190	231 A
								134	163 A
								190	231 A
								190	231 A
								118	143 A
								111	135 A
								94	114 A
								190	231 A
								134	163 A
								111	135 A
								81	99 A
								54	65 A
								113	137 B
								56	68 B
								76	92 B
								62	75 B
								37	45 B
								62	75 B
								37	45 B
								37	45 B
								66	80 B
								65	79 B
								34	42 B
								86	104 B
								86	104 B
			182 B			182 B			
			77 B			77 B			
			162 B			162 B			

Cutting data for solid carbide shoulder milling



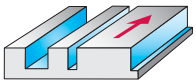
Product family		λ
MC129		60°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 6–20 mm, Z = 6, WJ30TF: Starting values for cutting speed v_c [m/min] at a_e / D_c 1/2	1/4	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1		191	232	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2		261	317	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3		222	270	A
		C > 0.55%	Annealed	190	640	P4		222	270	A
		C > 0.55%	Heat-treated	300	1010	P5		157	191	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6		222	270	A
	Low-alloyed steel	Annealed		175	590	P7		222	270	A
		Heat-treated		285	960	P8		138	168	A
		Heat-treated		380	1280	P9		129	157	A
		Heat-treated		430	1480	P10		109	133	A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11		222	270	A
		Hardened and tempered		300	1010	P12		157	191	A
		Hardened and tempered		380	1280	P13		129	157	A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14		95	116	A
		Martensitic, heat-treated		330	1110	P15		63	76	A
M	Stainless steel	Austenitic, quench hardened		200	680	M1		113	137	B
		Austenitic, precipitation hardened (PH)		300	1010	M2		56	68	B
		Austenitic/ferritic, duplex		230	780	M3		76	92	B
K	Malleable cast iron	Ferritic		200	400	K1		219	266	A
		Pearlitic		260	700	K2		171	207	A
	Grey cast iron	Low tensile strength		180	200	K3		219	266	A
		High tensile strength/austenitic		245	350	K4		184	223	A
	Cast iron with spheroidal graphite	Ferritic		155	400	K5		219	266	A
		Pearlitic		265	700	K6		171	207	A
	GGV (CGI)			230	400	K7		146	178	A
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1		62	75	B
			Hardened	280	940	S2		37	45	B
		Ni or Co base	Annealed	250	840	S3		62	75	B
			Hardened	350	1180	S4		37	45	B
			Cast	320	1080	S5		37	45	B
	Titanium alloys	Pure titanium		200	680	S6		66	80	B
		α and β alloys, hardened		375	1260	S7		65	79	B
		β alloys		410	1400	S8		34	42	B
	Tungsten alloys			300	1010	S9		86	104	B
	Molybdenum alloys			300	1010	S10		86	104	B
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

	Product family		λ	Product family		λ	Product family		λ
	MC122 Advance		45°	MC111 Advance	MC112 Advance	30°	H3058917	H404491 H4044918	30°
	Ø 2–25 mm			Ø 2–25 mm			Ø 0,4–25 mm		
	Z = 4–8			Z = 4			Z = 2–6		
	WJ30TF			WJ30TF			TAX / uncoated		
	Starting values for cutting speed v_c [m/min]			Starting values for cutting speed v_c [m/min]			Starting values for cutting speed v_c [m/min]		
	a_e / D_c			a_e / D_c			a_e / D_c		
	1/2	1/4	1/10	VT	1/2	1/4	1/10	VT	1/2	1/4	1/10	VT
	162	191	232	A	174	204	248	A	161	189	230	A
	222	261	317	A	237	279	339	A	220	259	314	A
	189	222	270	A	202	238	289	A	188	221	269	A
	189	222	270	A	202	238	289	A	188	221	269	A
	134	157	191	A	143	168	204	A	133	156	190	A
	189	222	270	A	202	238	289	A	188	221	269	A
	189	222	270	A	202	238	289	A	188	221	269	A
	117	138	168	A	125	148	179	A	117	137	167	A
	110	129	157	A	118	139	168	A	110	129	157	A
	93	109	133	A	100	117	142	A	93	109	133	A
	189	222	270	A	202	238	289	A	188	221	269	A
	134	157	191	A	143	168	204	A	133	156	190	A
	110	129	157	A	118	139	168	A	110	129	157	A
	81	95	116	A	87	102	124	A	80	95	115	A
	53	63	76	A	57	67	82	A	53	62	76	A
	96	113	137	B	103	121	147	B	112	131	160	B
	47	56	68	B	51	60	72	B	55	65	79	B
	64	76	92	B	69	81	99	B	75	88	107	B
	186	219	266	A	199	234	285	A				
	145	171	207	A	155	183	222	A				
	186	219	266	A	199	234	285	A				
	156	184	223	A	167	197	239	A				
	186	219	266	A	199	234	285	A				
	145	171	207	A	155	183	222	A				
	124	146	178	A	133	157	190	A				
					1930	1720	1120	C	503	503	503	C
					1840	1720	1120	C	503	503	503	C
					771	907	1100	C	502	503	503	C
					771	907	1100	C	502	503	503	C
					257	302	367	C	240	282	343	C
								C				
					555	652	793	C	402	428	466	C
					555	652	793	C	402	428	466	C
					555	652	793	C	402	428	466	C
					74	87	106	C	62	73	88	C
	52	62	75	B	56	66	80	B				
	32	37	45	B	34	40	49	B				
	52	62	75	B	56	66	80	B				
	32	37	45	B	34	40	49	B				
	32	37	45	B	34	40	49	B				
	56	66	80	B	60	70	85	B				
	55	65	79	B	59	70	85	B				
	29	34	42	B	31	37	45	B				
	73	86	104	B	78	92	112	B				
	73	86	104	B	78	92	112	B				

Cutting data for solid carbide shoulder/slot milling



Product family		λ
MC341 Supreme		50°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 6–20 mm, Z = 4, WK40TZ — Starting values for cutting speed v_c [m/min], a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	201	265	365	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	316	403	575	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	316	403	575	A
		C > 0.55%	Annealed	190	640	P4	270	344	491	A
		C > 0.55%	Heat-treated	300	1010	P5	191	243	348	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	270	344	491	A
	Low-alloyed steel	Annealed		175	590	P7	270	344	491	A
		Heat-treated		285	960	P8	191	243	348	A
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	270	344	491	A
		Hardened and tempered		300	1010	P12	191	243	348	A
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	80	102	146	A
		Martensitic, heat-treated		330	1110	P15	66	99	120	A
M	Stainless steel	Austenitic, quench hardened		200	680	M1	87	112	160	B
		Austenitic, precipitation hardened (PH)		300	1010	M2	54	69	99	B
		Austenitic/ferritic, duplex		230	780	M3	73	94	135	B
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

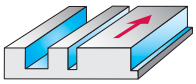
[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Product family		λ	Product family		λ	Product family		λ	Product family		λ
H4033217 H4036217	H4133217	45°	H4034217 H4038217 H4134217	H4138217 H4E34217 H4E38217	50°	H4135217	H4137217	35°	H2034217 H2038217	H2134217 H2138217	35°/38°
									H2EC34217 H2EC38217	H2EC94717	50°
Ø 2–20 mm			Ø 3–20 mm			Ø 6–25 mm			Ø 6–25 mm		
Z = 3			Z = 4			Z = 5			Z = 4–5		
TAZ			TAZ			TAZ			TAA		

Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c			
1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT
170	211	302	A	178	222	317	A	170	211	302	A				
234	290	415	A	245	304	435	A	234	290	415	A				
199	248	354	A	209	260	371	A	199	248	354	A				
199	248	354	A	209	260	371	A	199	248	354	A				
141	175	250	A	148	184	263	A	141	175	250	A				
199	248	354	A	209	260	371	A	199	248	354	A				
199	248	354	A	209	260	371	A	199	248	354	A				
124	154	220	A	130	161	230	A	124	154	220	A				
			A				A				A				
199	248	354	A	209	260	371	A	199	248	354	A				
141	175	250	A	148	184	263	A	141	175	250	A				
68	85	121	A	72	89	127	A	68	85	121	A				
56	70	99	A	59	73	104	A	58	70	99	A				
74	92	131	B	78	96	138	B	74	92	131	B	111	138	197	B
46	57	82	B	48	60	86	B	46	57	82	B	55	68	97	B
63	78	111	B	66	82	117	B	63	78	111	B	75	93	132	B
												51	63	90	B
												31	38	54	B
												51	63	90	B
												31	38	54	B

Cutting data for solid carbide shoulder/slot milling



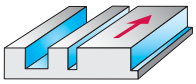
Product family		λ
MC251 Advance		35°/38°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 3–20 mm, Z = 4, WK40RC: Starting values for cutting speed v_c [m/min], a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1				
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2				
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3				
		C > 0.55%	Annealed	190	640	P4				
		C > 0.55%	Heat-treated	300	1010	P5				
		Free cutting steel (short-chipping)	Annealed	220	750	P6				
	Low-alloyed steel	Annealed		175	590	P7				
		Heat-treated		285	960	P8				
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11				
		Hardened and tempered		300	1010	P12				
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14				
		Martensitic, heat-treated		330	1110	P15				
M	Stainless steel	Austenitic, quench hardened		200	680	M1	58	73	104	B
		Austenitic, precipitation hardened (PH)		300	1010	M2	37	46	65	B
		Austenitic/ferritic, duplex		230	780	M3	50	62	88	B
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	38	47	67	B
			Hardened	280	940	S2	24	29	42	B
		Ni or Co base	Annealed	250	840	S3	38	47	67	B
			Hardened	350	1180	S4	24	29	42	B
			Cast	320	1080	S5	24	29	42	B
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

	Product family		λ	Product family		λ	Product family		λ	Product family		λ
	H602311 H6023114 H602411 H602511	H602551 H6E2211 H6E2511	45°	H901411	H901451	30°	H602641 H602681	H602881 H6028818	25°	MB266 Supreme		30°
	Ø 1–25 mm			Ø 2–12 mm			Ø 2–20 mm			Ø 12–25 mm		
	Z = 2–3			Z = 1–2			Z = 2			Z = 3		
	CRN / uncoated			Uncoated			TAX / uncoated			WJ30UU		
	Starting values for cutting speed v_c [m/min]			Starting values for cutting speed v_c [m/min]			Starting values for cutting speed v_c [m/min]			Starting values for cutting speed v_c [m/min]		
	a_e / D_c			a_e / D_c			a_e / D_c			a_e / D_c		
	1/1	1/2	1/10	1/1	1/2	1/10	1/1	1/2	1/10	1/1	1/4	1/10

Cutting data for solid carbide shoulder/slot milling



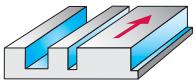
Product family		λ
MB265 Supreme		30°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 16–25 mm, Z = 3, WJ30CA / WJ30UU: Starting values for cutting speed v_c [m/min], a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1				
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2				
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3				
		C > 0.55%	Annealed	190	640	P4				
		C > 0.55%	Heat-treated	300	1010	P5				
		Free cutting steel (short-chipping)	Annealed	220	750	P6				
	Low-alloyed steel	Annealed		175	590	P7				
		Heat-treated		285	960	P8				
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11				
		Hardened and tempered		300	1010	P12				
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14				
		Martensitic, heat-treated		330	1110	P15				
M	Stainless steel	Austenitic, quench hardened		200	680	M1				
		Austenitic, precipitation hardened (PH)		300	1010	M2				
		Austenitic/ferritic, duplex		230	780	M3				
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1	2310	2970	1890	C
		Hardenable, hardened		100	340	N2	2310	2970	1890	C
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	616	792	1130	C
		≤ 12% Si, hardenable, hardened		90	310	N4	616	792	1130	C
		> 12% Si, not hardenable		130	450	N5	269	347	495	C
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

	Product family		λ	Product family		λ	Product family		λ	Product family		λ
	H608411 H608771	H608871 H618911	40°	H7073717		40°	H3183017		30°	H3070118 H3070318 H3071118	H3071318 H3170318 H3171318	50°
	Ø 6–25 mm			Ø 12–20 mm			Ø 8–16 mm			Ø 2–20 mm		
	Z = 3			Z = 4			Z = 4			Z = 3–4		
	Uncoated			ACN			ACN			TAX		
	Starting values for cutting speed v_c [m/min] a_e / D_c			Starting values for cutting speed v_c [m/min] a_e / D_c			Starting values for cutting speed v_c [m/min] a_e / D_c			Starting values for cutting speed v_c [m/min] a_e / D_c		
	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT
																	87	108	155	A
																	73	91	130	A
																	87	108	155	A
	1380	1720	1640	C																
	1380	1720	1640	C																
	345	429	613	C																
	345	429	613	C																
	138	172	245	C																
					45	56	80	B	42	52	75	B								
					27	34	49	B	26	32	45	B								
					45	56	80	B	42	52	75	B								
					27	34	49	B	26	32	45	B								
					27	34	49	B	26	32	45	B								
					67	85	121	B	64	79	113	B								
					35	44	63	B	33	41	59	B								
																	57	70	101	B
																	30	37	53	B
																			53	B
																	51	64	91	B

Cutting data for solid carbide shoulder/slot milling



Product family		λ
H3094728		50°

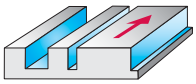
Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 4–20 mm, Z = 4, TAX — Starting values for cutting speed v_c [m/min], a_e / D_c 1/1	1/4	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1				
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2				
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3				
		C > 0.55%	Annealed	190	640	P4				
		C > 0.55%	Heat-treated	300	1010	P5				
		Free cutting steel (short-chipping)	Annealed	220	750	P6				
	Low-alloyed steel	Annealed		175	590	P7				
		Heat-treated		285	960	P8				
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11				
		Hardened and tempered		300	1010	P12				
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14				
		Martensitic, heat-treated		330	1110	P15				
M	Stainless steel	Austenitic, quench hardened		200	680	M1				
		Austenitic, precipitation hardened (PH)		300	1010	M2				
		Austenitic/ferritic, duplex		230	780	M3				
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		39	57	E
		Hardened and tempered		55 HRC	–	H2		21	30	E
		Hardened and tempered		60 HRC	–	H3			30	E
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		36	51	E
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

Product family		λ	Product family		λ	Product family		λ	Product family		λ
H4044928 H8005728 H8005828	H8005928 H8015728 H8015828	30°	H3027419 H4044919	H8095919	30°	MC326 Supreme MC726 Supreme	H3E20317 H3E21317	50°	H1E92718		10°
									H3094718 H3E93718	H3E94718	50°
Ø 0,4–20 mm			Ø 0,4–16 mm			Ø 2–25 mm			Ø 4–25 mm		
Z = 2–4			Z = 2–4			Z = 3–5			Z = 2–5		
TAX			DIA			WK40TF / TAX			TAX		

Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c			
1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/4	1/10	VT
								150	185	264	A		105	127	D
								206	253	363	A		143	174	D
								175	216	310	A		122	149	D
								175	216	310	A		122	149	D
								124	153	219	A		87	105	D
								175	216	310	A		122	149	D
								175	216	310	A		122	149	D
								109	135	192	A		76	92	D
								102	127	181	A		72	87	D
								87	107	153	A		61	74	D
								175	216	310	A		122	149	D
								124	153	219	A		87	105	D
								102	127	181	A		72	87	D
								60	74	106	A		52	64	D
								49	61	87	A			42	D
								71	87	125	B		73	88	D
								44	55	78	B			44	D
								61	75	107	B		49	59	D
								164	203	290	A		141	172	D
								129	159	226	A		110	134	D
								164	203	290	A		141	172	D
								138	170	243	A		118	144	D
								164	203	290	A		141	172	D
								129	159	226	A		110	134	D
								110	136	194	A		94	115	D
								46	57	81	B		40	48	D
								29	35	50	B		24	29	D
								46	57	81	B		40	48	D
								29	35	50	B		24	29	D
								29	35	50	B		24	29	D
								49	61	87	B				
								49	61	87	B		42	51	D
								26	32	46	B		22	27	D
								65	80	114	B		55	67	D
								65	80	114	B		55	67	D
121	170	224	B												
	59	94	B												
	59	94	B												
	130	199	B												
				622	750	1100	C								

Cutting data for solid carbide shoulder/slot milling



Product family		λ
MC321 Advance MC322 Advance MC324 Advance	H3E29148	45°

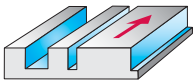
Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 1–25 mm Z = 3–5 WJ30TF / TAX Starting values for cutting speed v_c [m/min] a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	140	174	248	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	191	237	339	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	163	202	289	A
		C > 0.55%	Annealed	190	640	P4	163	202	289	A
		C > 0.55%	Heat-treated	300	1010	P5	115	143	204	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	163	202	289	A
	Low-alloyed steel	Annealed		175	590	P7	163	202	289	A
		Heat-treated		285	960	P8	101	125	179	A
		Heat-treated		380	1280	P9	95	118	168	A
		Heat-treated		430	1480	P10	80	100	142	A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	163	202	289	A
		Hardened and tempered		300	1010	P12	115	143	204	A
		Hardened and tempered		380	1280	P13	95	118	168	A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	70	87	124	A
		Martensitic, heat-treated		330	1110	P15	46	57	82	A
M	Stainless steel	Austenitic, quench hardened		200	680	M1	83	103	147	B
		Austenitic, precipitation hardened (PH)		300	1010	M2	41	51	72	B
		Austenitic/ferritic, duplex		230	780	M3	56	69	99	B
K	Malleable cast iron	Ferritic		200	400	K1	160	199	285	A
		Pearlitic		260	700	K2	125	155	222	A
	Grey cast iron	Low tensile strength		180	200	K3	160	199	285	A
		High tensile strength/austenitic		245	350	K4	135	167	239	A
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	160	199	285	A
		Pearlitic		265	700	K6	125	155	222	A
	GGV (CGI)			230	400	K7	107	133	190	A
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	45	56	80	B
			Hardened	280	940	S2	27	34	49	B
		Ni or Co base	Annealed	250	840	S3	45	56	80	B
			Hardened	350	1180	S4	27	34	49	B
			Cast	320	1080	S5	27	34	49	B
	Titanium alloys	Pure titanium		200	680	S6	48	60	85	B
		α and β alloys, hardened		375	1260	S7	48	59	85	B
		β alloys		410	1400	S8	25	31	45	B
	Tungsten alloys			300	1010	S9	63	78	112	B
	Molybdenum alloys			300	1010	S10	63	78	112	B
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

Product family		λ	Product family		λ	Product family		λ	Product family		λ
H1E2018		10°	MC716 Advance		30°	MC232 Perform		35°	H3185378	H3E85378	45°
MC213 Advance MC216 Advance		30°							H3186378		
Ø 0,6–20 mm			Ø 1,8–20 mm			Ø 2–20 mm			Ø 12–25 mm		
Z = 2–4			Z = 2–3			Z = 2–4			Z = 5–8		
WJ30TF / TAX			WJ30TF			WJ30ED			TAX		

Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c			
1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT
123	180	219	A	145	180	257	A	89	111	158	A	123	153	218	A
175	247	300	A	198	246	352	A	122	151	216	A	169	210	300	A
149	210	256	A	169	210	300	A	104	130	185	A	144	179	256	A
149	210	256	A	169	210	300	A	104	130	185	A	144	179	256	A
105	149	181	A	119	148	212	A	74	92	131	A	102	127	181	A
149	210	256	A	169	210	300	A	104	130	185	A	144	179	256	A
149	210	256	A	169	210	300	A	104	130	185	A	144	179	256	A
92	130	158	A	105	130	186	A	65	81	115	A	90	111	159	A
87	122	149	A	98	122	175	A	61	76	108	A	84	105	150	A
73	103	126	A	83	103	147	A	52	64	92	A	71	88	126	A
149	210	256	A	169	210	300	A	104	130	185	A	144	179	256	A
107	149	181	A	119	148	212	A	77	92	131	A	102	127	181	A
89	122	149	A	98	122	175	A	63	76	108	A	84	105	150	A
64	90	110	A	73	90	129	A	44	55	79	A	49	61	88	A
43	59	72	A	48	59	85	A	31		52	A	41	50	72	A
76	107	130	B	86	106	152	B	62	77	110	B	58	73	104	B
38	53	64	B	42	53	75	B	32	40	55	B	37	46	65	B
51	72	87	B	58	72	102	B	42	52	75	B	50	62	88	B
142	207	252	A	166	207	295	A	120	149	213	A	135	168	240	A
114	161	196	A	130	161	230	A	94	117	167	A	106	131	188	A
142	207	252	A	166	207	295	A	120	149	213	A	135	168	240	A
123	174	211	A	139	173	248	A	101	125	179	A	113	141	201	A
142	207	252	A	166	207	295	A	120	149	213	A	135	168	240	A
114	161	196	A	130	161	230	A	94	117	167	A	106	131	188	A
98	138	168	A	111	138	197	A	80	100	142	A	91	112	161	A
41	58	71	B	47	58	83	B								
25	35	43	B	28	35	50	B								
41	58	71	B	47	58	83	B								
26	35	43	B	28	35	50	B								
26	35	43	B	28	35	50	B								
43	62	76	B	50	62	89	B								
42	61	75	B	49	61	88	B								
23	32	39	B	26	32	46	B								
58	81	99	B	65	81	116	B								
58	81	99	B	65	81	116	B								

Cutting data for solid carbide shoulder/slot milling



Product family		λ
H3182378 H3183378	H3E82378	40°

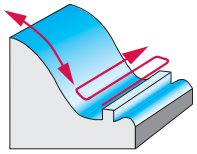
Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 5–25 mm Z = 4 TAX Starting values for cutting speed v_c [m/min] a_e / D_c			
							1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	123	153	218	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	169	210	300	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	144	179	256	A
		C > 0.55%	Annealed	190	640	P4	144	179	256	A
		C > 0.55%	Heat-treated	300	1010	P5	102	127	181	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	144	179	256	A
	Low-alloyed steel	Annealed		175	590	P7	144	179	256	A
		Heat-treated		285	960	P8	90	111	159	A
		Heat-treated		380	1280	P9	84	105	150	A
		Heat-treated		430	1480	P10	71	88	126	A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	144	179	256	A
		Hardened and tempered		300	1010	P12	102	127	181	A
		Hardened and tempered		380	1280	P13	84	105	150	A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	49	61	88	A
		Martensitic, heat-treated		330	1110	P15	41	50	72	A
M	Stainless steel	Austenitic, quench hardened		200	680	M1	58	73	104	B
		Austenitic, precipitation hardened (PH)		300	1010	M2	37	46	65	B
		Austenitic/ferritic, duplex		230	780	M3	50	62	88	B
K	Malleable cast iron	Ferritic		200	400	K1	135	168	240	A
		Pearlitic		260	700	K2	106	131	188	A
	Grey cast iron	Low tensile strength		180	200	K3	135	168	240	A
		High tensile strength/austenitic		245	350	K4	113	141	201	A
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	135	168	240	A
		Pearlitic		265	700	K6	106	131	188	A
	GGV (CGI)			230	400	K7	91	112	161	A
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Product family		λ	Product family		λ	Product family		λ
H3187278		30°	H4189278	H4189378	40°	H3180278	H4180378	30°
Ø 6–25 mm			Ø 5–25 mm			Ø 6–25 mm		
Z = 3			Z = 4			Z = 4		
TAX			TAX			TAX		
Starting values for cutting speed v_c [m/min]								
a_e / D_c								
1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT
136	169	242	A	123	153	218	A	123	153	218	A
188	233	333	A	169	210	300	A	169	210	300	A
160	199	284	A	144	179	256	A	144	179	256	A
160	199	284	A	144	179	256	A	144	179	256	A
113	141	201	A	102	127	181	A	102	127	181	A
160	199	284	A	144	179	256	A	144	179	256	A
160	199	284	A	144	179	256	A	144	179	256	A
100	124	177	A	90	111	159	A	90	111	159	A
94	116	166	A	84	105	150	A	84	105	150	A
79	98	140	A	71	88	126	A	71	88	126	A
160	199	284	A	144	179	256	A	144	179	256	A
113	141	201	A	102	127	181	A	102	127	181	A
94	116	166	A	84	105	150	A	84	105	150	A
55	68	97	A	49	61	88	A	49	61	88	A
45	56	80	A	41	50	72	A	41	50	72	A
65	80	115	B	58	73	104	B	58	73	104	B
41	51	72	B	37	46	65	B	37	46	65	B
55	69	98	B	50	62	88	B	50	62	88	B
150	187	267	A					135	168	240	A
117	146	208	A					106	131	188	A
150	187	267	A					135	168	240	A
126	156	223	A					113	141	201	A
150	187	267	A					135	168	240	A
117	146	208	A					106	131	188	A
100	125	178	A					91	112	161	A
579	720	1030	C					522	649	927	C
579	720	1030	C					522	649	927	C
417	518	740	C					376	467	667	C
417	518	740	C					376	467	667	C
56	70	99	C					51	63	90	C

Cutting data for solid carbide profile copy milling



Product family		λ
H1E0111		10°
H602111		30°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 2–16 mm; Z = 2; Uncoated; Starting values for cutting speed v_c [m/min] a_e / D_c 1/5	1/20	1/50	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1				
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2				
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3				
		C > 0.55%	Annealed	190	640	P4				
		C > 0.55%	Heat-treated	300	1010	P5				
		Free cutting steel (short-chipping)	Annealed	220	750	P6				
	Low-alloyed steel	Annealed		175	590	P7				
		Heat-treated		285	960	P8				
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11				
		Hardened and tempered		300	1010	P12				
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14				
		Martensitic, heat-treated		330	1110	P15				
M	Stainless steel	Austenitic, quench hardened		200	680	M1				
		Austenitic, precipitation hardened (PH)		300	1010	M2				
		Austenitic/ferritic, duplex		230	780	M3				
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1	1770	1790	1790	C
		Hardenable, hardened		100	340	N2	1790	1790	1790	C
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	440	590	710	C
		≤ 12% Si, hardenable, hardened		90	310	N4	440	590	710	C
		> 12% Si, not hardenable		130	450	N5	180	240	280	C
	Magnesium-based alloys			70	250	N6	440	590	710	C
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	270	350	430	C
		Brass, bronze, red brass		90	310	N8	270	350	430	C
		Cu-alloys, short-chipping		110	380	N9	270	350	430	C
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

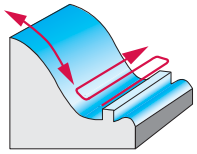
[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Product family		λ	Product family		λ	Product family		λ	Product family		λ
H404691	H4046918	30°	H4046928 H8004028 H8004128 H8004728	H8006428 H80016428 H8074128 H8014028 H8014128	30°	H4046988	H8004788	30°	H4046919 H8001119 H8001919	H8006419 H8016419	30°
Ø 0,3–3 mm			Ø 0,3–16 mm			Ø 1–12 mm			Ø 0,3–12 mm		
Z = 2			Z = 2–4			Z = 2			Z = 2–4		
TAX / uncoated			TAX			TAS			DIA		

Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c			
1/5	1/20	1/50	VT	1/5	1/20	1/50	VT	1/5	1/20	1/50	VT	1/5	1/20	1/50	VT
260	340	410	A												
250	330	400	A												
230	280	340	A												
230	280	340	A												
160	200	240	A												
230	280	340	A												
230	280	340	A												
160	200	240	A												
130	170	200	A												
110	140	170	A												
230	280	340	A												
160	200	240	A												
110	140	170	A												
80	100	120	A												
60	70	90	A												
1450	1450	1450	C												
1450	1450	1450	C												
770	1030	1230	C												
770	1030	1230	C												
270	360	430	C												
880	1180	1420	C												
550	740	890	C												
550	740	890	C												
550	740	890	C												
90	100	130	C												
				120	140	170	B	160	220	260	B				
				130	140	170	B	160	220	260	B				
				80	80	100	B	160	220	260	B				
				130	140	170	B								
												500	700	800	C

Cutting data for solid carbide profile copy milling

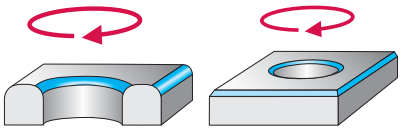


Product family		λ
H1E01118		10°
MC413 Advance	MC416 Advance	30°
H8E01118	H8E11118	40°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 1–25 mm, Z = 2–4, WJ30TF / TAX: Starting values for cutting speed v_c [m/min], a_e / D_c 1/5	1/20	1/50	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	230	310	370	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	220	300	360	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	190	260	310	A
		C > 0.55%	Annealed	190	640	P4	190	260	310	A
		C > 0.55%	Heat-treated	300	1010	P5	150	180	220	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	190	260	310	A
	Low-alloyed steel	Annealed		175	590	P7	190	260	310	A
		Heat-treated		285	960	P8	150	180	220	A
		Heat-treated		380	1280	P9	120	150	180	A
		Heat-treated		430	1480	P10	100	130	150	A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	190	260	310	A
		Hardened and tempered		300	1010	P12	150	180	220	A
		Hardened and tempered		380	1280	P13	100	130	150	A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	70	90	100	A
		Martensitic, heat-treated		330	1110	P15	50	60	80	A
M	Stainless steel	Austenitic, quench hardened		200	680	M1	80	110	130	B
		Austenitic, precipitation hardened (PH)		300	1010	M2	50	60	80	B
		Austenitic/ferritic, duplex		230	780	M3	70	90	100	B
K	Malleable cast iron	Ferritic		200	400	K1	180	240	290	A
		Pearlitic		260	700	K2	150	190	220	A
	Grey cast iron	Low tensile strength		180	200	K3	180	240	290	A
		High tensile strength/austenitic		245	350	K4	150	200	240	A
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	180	240	290	A
		Pearlitic		265	700	K6	150	190	220	A
	GGV (CGI)			230	400	K7	130	160	190	A
N	Wrought aluminium alloys	Not hardenable		30	–	N1	1740	1740	1740	C
		Hardenable, hardened		100	340	N2	1740	1740	1740	C
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	690	920	1100	C
		≤ 12% Si, hardenable, hardened		90	310	N4	690	920	1100	C
		> 12% Si, not hardenable		130	450	N5	240	320	390	C
	Magnesium-based alloys			70	250	N6	800	1060	1280	C
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	500	660	800	C
		Brass, bronze, red brass		90	310	N8	500	660	800	C
		Cu-alloys, short-chipping		110	380	N9	500	660	800	C
		High-tensile, Ampco		300	1010	N10	80	90	110	C
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	60	90	110	B
			Hardened	280	940	S2	40	50	70	B
		Ni or Co base	Annealed	250	840	S3	60	90	110	B
			Hardened	350	1180	S4	40	50	70	B
			Cast	320	1080	S5	40	50	70	B
	Titanium alloys	Pure titanium		200	680	S6	210	300	380	B
		α and β alloys, hardened		375	1260	S7	60	100	130	B
		β alloys		410	1400	S8	60	100	130	B
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

Cutting data for solid carbide profile milling



Product family		λ
MC500 Advance	H3E58118	0°
MC501 Advance	H3E58318	
MC502 Advance	H3E58518	
H1E58018	H1E58318	10°
H1E58118	H1E58518	

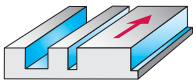
Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	60° / 90° / 120° / 150°			
							Z = 2–6			
							WJ30TF / TAX			
							Starting values for cutting speed v_c [m/min] a_e / D_c			
							1/3	1/10	1/20	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	220	320	380	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	220	320	380	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	180	260	320	A
		C > 0.55%	Annealed	190	640	P4	180	260	30	A
		C > 0.55%	Heat-treated	300	1010	P5	130	180	230	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	180	260	320	A
	Low-alloyed steel	Annealed		175	590	P7	180	260	320	A
		Heat-treated		285	960	P8	130	180	230	A
		Heat-treated		380	1280	P9	110	150	170	A
		Heat-treated		430	1480	P10	90	130	160	A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	180	260	320	A
		Hardened and tempered		300	1010	P12	130	180	230	A
		Hardened and tempered		380	1280	P13	90	130	160	A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	60	90	110	A
		Martensitic, heat-treated		330	1110	P15	50	70	80	A
M	Stainless steel	Austenitic, quench hardened		200	680	M1	80	110	130	B
		Austenitic, precipitation hardened (PH)		300	1010	M2	50	70	80	B
		Austenitic/ferritic, duplex		230	780	M3	60	90	110	B
K	Malleable cast iron	Ferritic		200	400	K1	170	240	300	A
		Pearlitic		260	700	K2	130	190	230	A
	Grey cast iron	Low tensile strength		180	200	K3	170	240	300	A
		High tensile strength/austenitic		245	350	K4	170	240	300	A
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	170	240	300	A
		Pearlitic		265	700	K6	130	190	230	A
	GGV (CGI)			230	400	K7	110	160	200	A
N	Wrought aluminium alloys	Not hardenable		30	–	N1	1600	2300	2900	C
		Hardenable, hardened		100	340	N2	1600	2300	2900	C
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	260	370	450	C
		≤ 12% Si, hardenable, hardened		90	310	N4	260	370	450	C
		> 12% Si, not hardenable		130	450	N5	170	240	300	C
	Magnesium-based alloys			70	250	N6	750	1100	1300	C
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	480	680	840	C
		Brass, bronze, red brass		90	310	N8	480	680	840	C
		Cu-alloys, short-chipping		110	380	N9	480	680	840	C
		High-tensile, Ampco		300	1010	N10	70	100	120	C
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	60	90	110	B
			Hardened	280	940	S2	40	50	70	B
		Ni or Co base	Annealed	250	840	S3	60	90	110	B
			Hardened	350	1180	S4	40	50	70	B
			Cast	320	1080	S5	40	50	70	B
	Titanium alloys	Pure titanium		200	680	S6	200	290	370	B
		α and β alloys, hardened		375	1260	S7	60	90	120	B
		β alloys		410	1400	S8	60	90	120	B
	Tungsten alloys			300	1010	S9	70	100	120	B
	Molybdenum alloys			300	1010	S10	70	100	120	B
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Product family		λ	Product family		λ
	MC503 Advance	H3E68118	0°	MC504 Advance		0°
	R 0,5–8 mm			Ø 6–12 mm		
	Z = 3–4			Z = 4–6		
	WJ30TF / TAX			WJ30TF		
	Starting values for cutting speed v_c [m/min] a_e / D_c			Starting values for cutting speed v_c [m/min] a_e / D_c		
	1/1	1/2	1/10	VT	1/3	1/10	1/20	VT
	310			A	220	320	380	A
	310			A	220	320	380	A
	260			A	180	260	320	A
	260			A	180	260	30	A
	190			A	130	180	230	A
	260			A	180	260	320	A
	260			A	180	260	320	A
	190			A	130	180	230	A
	150			A	110	150	170	A
	130			A	90	130	160	A
	260			A	180	260	320	A
	190			A	130	180	230	A
	130			A	90	130	160	A
	90			A	60	90	110	A
	70			A	50	70	80	A
	100			B	80	110	130	B
	70			B	50	70	80	B
	90			B	60	90	110	B
	240			A	170	240	300	A
	190			A	130	190	230	A
	240			A	170	240	300	A
	200			A	170	240	300	A
	240			A	170	240	300	A
	190			A	130	190	230	A
	120			A	110	160	200	A
	2300			C	1600	2300	2900	C
	2300			C	1600	2300	2900	C
	370			C	260	370	450	C
	370			C	260	370	450	C
	240			C	170	240	300	C
	1100			C	750	1100	1300	C
	680			C	480	680	840	C
	680			C	480	680	840	C
	680			C	480	680	840	C
	100			C	70	100	120	C
	90			B	60	90	110	B
	50			B	40	50	70	B
	90			B	60	90	110	B
	50			B	40	50	70	B
	50			B	40	50	70	B
	280			B	200	290	370	B
	80			B	60	90	120	B
	80			B	60	90	120	B
	100			B	70	100	120	B
	100			B	70	100	120	B

Cutting data for HSS shoulder/slot milling



Product family		λ
P4117027		40°

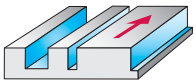
Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 2–20 mm Z = 3 ACN Starting values for cutting speed v_c [m/min] a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1				
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2				
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3				
		C > 0.55%	Annealed	190	640	P4				
		C > 0.55%	Heat-treated	300	1010	P5				
		Free cutting steel (short-chipping)	Annealed	220	750	P6				
	Low-alloyed steel	Annealed		175	590	P7				
		Heat-treated		285	960	P8				
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11				
		Hardened and tempered		300	1010	P12				
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14				
		Martensitic, heat-treated		330	1110	P15				
M	Stainless steel	Austenitic, quench hardened		200	680	M1	20	25	36	B
		Austenitic, precipitation hardened (PH)		300	1010	M2	9	11	16	B
		Austenitic/ferritic, duplex		230	780	M3	14	17	24	B
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Product family		λ	Product family		λ	Product family		λ
	P602612	P612612	40°	P632612		25°	P312301 P3123017	P3123117	45°
	Ø 6–20 mm			Ø 16–25 mm			Ø 3–30 mm		
	Z = 2			Z = 2			Z = 3–6		
	Uncoated			Uncoated			ACN /uncoated		
	Starting values for cutting speed v_c [m/min] a_e / D_c								
	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT
									39	48	69	A
									55	69	98	A
									24	30	43	A
									24	30	43	A
									21	26	37	A
									24	30	43	A
									24	30	43	A
									18	23	32	A
									17	22	31	A
									14	17	25	A
									24	30	43	A
									21	26	37	A
									17	22	31	A
									16	20	28	A
									10	12	17	A
									19	23	33	B
									8	10	15	B
									12	15	22	B
	130	162	231	C	130	162	231	C	145	180	258	C
	130	162	231	C	130	162	231	C	145	180	258	C
	39	49	69	C	39	49	69	C	87	108	155	C
	39	49	69	C	39	49	69	C	87	108	155	C
	26	32	46	C	26	32	46	C	58	72	103	C
	30	30		C	30	30		C				C
	40			C	40			C	116	144	206	C
	40			C	40			C	116	144	206	C
	50			C	50			C	116	144	206	C
									14	17	24	C

Cutting data for HSS shoulder/slot milling



							Product family		λ
							P312401	P312411	40°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 2–25 mm Z = 3 Uncoated Starting values for cutting speed v_c [m/min] a_e/D_c			
							1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1				
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2				
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3				
		C > 0.55%	Annealed	190	640	P4				
		C > 0.55%	Heat-treated	300	1010	P5				
		Free cutting steel (short-chipping)	Annealed	220	750	P6				
	Low-alloyed steel	Annealed		175	590	P7				
		Heat-treated		285	960	P8				
		Heat-treated		380	1280	P9				
		Heat-treated		430	1480	P10				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11				
		Hardened and tempered		300	1010	P12				
		Hardened and tempered		380	1280	P13				
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14				
		Martensitic, heat-treated		330	1110	P15				
M	Stainless steel	Austenitic, quench hardened		200	680	M1				
		Austenitic, precipitation hardened (PH)		300	1010	M2				
		Austenitic/ferritic, duplex		230	780	M3				
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1	130	162	231	C
		Hardenable, hardened		100	340	N2	130	162	231	C
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	39	49	69	C
		≤ 12% Si, hardenable, hardened		90	310	N4	39	49	69	C
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	43	54	77	C
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

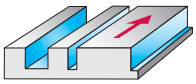
[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Product family		λ	Product family		λ	Product family		λ
P300611	P312201		P311712	P312673		P312021	P3120287	
P302201	P3122017		P3117127	P312771	30°	P3120217	P4110217	35°
P302211	P312211		P311722			P312028		
P302621	P3122117	30°						
P310611	P312221							
P3106117	P3122317							
P3116127								
Ø 1–50 mm			Ø 1–40 mm			Ø 5–40 mm		
Z = 2–8			Z = 2–3			Z = 3–6		
ACN / uncoated			ACN / uncoated			ACN / uncoated		

Starting values for cutting speed v_c [m/min] a_e/D_c				Starting values for cutting speed v_c [m/min] a_e/D_c				Starting values for cutting speed v_c [m/min] a_e/D_c			
1/1	1/2	1/10	VT	1/1	1/2	1/10	VT	1/1	1/2	1/10	VT
14	20	24	A	42	54	77	A	42	52	74	A
19	28	34	A	59	76	109	A	60	74	106	A
14	20	24	A	26	33	48	A	26	33	46	A
14	20	24	A	26	33	48	A	26	33	46	A
12	16	20	A	22	29	41	A	22	28	40	A
14	20	24	A	26	33	48	A	26	33	46	A
14	20	24	A	26	33	48	A	26	33	46	A
10	14	17	A	20	25	36	A	20	24	35	A
			A	19	24	34	A	19	23	33	A
			A	15	19	27	A	15	19	27	A
14	20	24	A	26	33	48	A	26	33	46	A
12	16	20	A	22	29	41	A	22	28	40	A
			A	19	24	34	A	19	23	33	A
6	9	11	A	17	22	31	A	17	21	30	A
6		9	A	11	14	19	A	11	13	19	A
7	10	13	B	20	26	37	B	20	25	36	B
5		9	B	9	12	16	B	9	11	16	B
6	8	10	B	13	17	25	B	14	17	24	B
9	14	17	A	23	30	42	A	23	29	41	A
6	9	11	A	16	21	30	A	16	20	29	A
11	16	20	A	31	40	57	A	31	39	56	A
9	13	15	A	26	33	48	A	26	33	46	A
9	14	17	A	23	30	42	A	23	29	41	A
6	9	11	A	16	21	30	A	16	20	29	A
7	10	12	A	21	27	38	A	21	26	37	A
130	190	231	C	156	201	287	C				
130	190	231	C	156	201	287	C				
39	57	69	C	94	120	172	C	94	117	167	C
39	57	69	C	94	120	172	C	94	117	167	C
26	38	46	C	62	80	115	C	63	78	111	C
43	64	77	C	125	161	229	C	126	156	223	C
45	64	77	C	125	161	229	C	126	156	223	C
43	64	77	C	125	161	229	C	126	156	223	C
6	9	12	C	15	19	27	C	15	19	26	C

Cutting data for HSS shoulder/slot milling



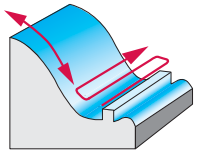
Product family		λ
P312001 P3120017	P312011 P3120117	35°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 6–50 mm Z = 4–6 ACN / uncoated Starting values for cutting speed v_c [m/min] a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	39	48	69	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	55	69	98	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	24	30	43	A
		C > 0.55%	Annealed	190	640	P4	24	30	43	A
		C > 0.55%	Heat-treated	300	1010	P5				A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	24	30	43	A
	Low-alloyed steel	Annealed		175	590	P7	24	30	43	A
		Heat-treated		285	960	P8	20	30	40	A
		Heat-treated		380	1280	P9				A
		Heat-treated		430	1480	P10				A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	24	30	43	A
		Hardened and tempered		300	1010	P12	20	20	30	A
		Hardened and tempered		380	1280	P13				A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	10	10	20	A
		Martensitic, heat-treated		330	1110	P15	10	10	10	A
M	Stainless steel	Austenitic, quench hardened		200	680	M1				
		Austenitic, precipitation hardened (PH)		300	1010	M2				
		Austenitic/ferritic, duplex		230	780	M3				
K	Malleable cast iron	Ferritic		200	400	K1	20	30	40	A
		Pearlitic		260	700	K2	20	20	30	A
	Grey cast iron	Low tensile strength		180	200	K3	20	30	50	A
		High tensile strength/austenitic		245	350	K4	20	30	40	A
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	20	30	40	A
		Pearlitic		265	700	K6	20	20	30	A
	GGV (CGI)			230	400	K7	20	20	30	A
N	Wrought aluminium alloys	Not hardenable		30	–	N1	110	140	180	
		Hardenable, hardened		100	340	N2	110	140	180	
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	60	80	110	C
		≤ 12% Si, hardenable, hardened		90	310	N4	60	80	60	C
		> 12% Si, not hardenable		130	450	N5	30	40	110	C
	Magnesium-based alloys			70	250	N6	60	80	130	
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	70	90	130	C
		Brass, bronze, red brass		90	310	N8	70	90	130	C
		Cu-alloys, short-chipping		110	380	N9	70	90	130	C
		High-tensile, Ampco		300	1010	N10	10	20	20	C
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

	Product family		λ	Product family		λ	Product family		λ
	P3120537	P3120937	30°	P3120387	P3128417	30°	P3120717 P3121017	P312111	30°
	Ø 6–32 mm			Ø 6–32 mm			Ø 6–40 mm		
	Z = 4–6			Z = 3–6			Z = 4–6		
	ACN			ACN			ACN /uncoated		
	Starting values for cutting speed v_c [m/min] a_e / D_c			Starting values for cutting speed v_c [m/min] a_e / D_c			Starting values for cutting speed v_c [m/min] a_e / D_c		
	1/1	1/2	1/10 VT	1/1	1/2	1/10 VT	1/1	1/2	1/10 VT
	39	48	69 A	35	43	62 A	39	48	69 A
	55	69	98 A	50	62	88 A	55	69	98 A
	24	30	43 A	22	27	39 A	24	30	43 A
	24	30	43 A	22	27	39 A	24	30	43 A
	21	26	37 A	19	23	33 A			A
	24	30	43 A	22	27	39 A	24	30	43 A
	24	30	43 A	22	27	39 A	24	30	43 A
	18	23	32 A	16	20	29 A	20	30	40 A
	17	22	31 A	16	19	28 A			A
	14	17	25 A	12	15	22 A			A
	24	30	43 A	22	27	39 A	24	30	43 A
	21	26	37 A	19		33 A	20	20	30 A
	17	22	31 A	16		28 A			A
	16	20	28 A	15	18	25 A	10	10	20 A
	10	12	17 A	9		16 A	10	10	10 A
	21	27	38 A	19	24	34 A	20	30	40 A
	15	19	27 A	14	17	24 A	20	20	30 A
	29	36	52 A	26	32	46 A	20	30	50 A
	24	30	43 A	22	27	39 A	20	30	40 A
	21	27	38 A	19	24	34 A	20	30	40 A
	15	19	27 A	14	17	24 A	20	20	30 A
	19	24	34 A	17	22	31 A	20	20	30 A
							110	140	180 C
							110	140	180 C
	87	108	155 C	78	97	139 C	60	80	110 C
	87	108	155 C	78	97	139 C	60	80	60 C
	58	72	103 C	52	65	93 C	30	40	110 C
							60	80	130 C
	116	144	206 C	104	130	185 C	70	90	130 C
	116	144	206 C	108	130	185 C	70	90	130 C
	116	144	206 C	104	130	185 C	70	90	130 C
	14	17	24 C	12	15	22 C	10	20	20 C

Cutting data for HSS profile copy milling

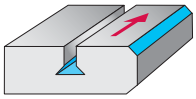


Product family		λ
P316601 P3166017	P8112017	30°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 2–20 mm Z = 2–4 ACN / uncoated Starting values for cutting speed v_c [m/min] a_e / D_c 1/5	1/20	1/50	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	110	140	170	A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	110	140	170	A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	50	60	80	A
		C > 0.55%	Annealed	190	640	P4	50	60	80	A
		C > 0.55%	Heat-treated	300	1010	P5	40	50	60	A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	50	60	80	A
	Low-alloyed steel	Annealed		175	590	P7	50	60	80	A
		Heat-treated		285	960	P8	40	50	60	A
		Heat-treated		380	1280	P9	30	40	50	A
		Heat-treated		430	1480	P10	30	40	40	A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	50	60	80	A
		Hardened and tempered		300	1010	P12	40	50	60	A
		Hardened and tempered		380	1280	P13	30	40	40	A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	20	30	40	A
		Martensitic, heat-treated		330	1110	P15	20	20	30	A
M	Stainless steel	Austenitic, quench hardened		200	680	M1	40	50	60	B
		Austenitic, precipitation hardened (PH)		300	1010	M2	20	20	30	B
		Austenitic/ferritic, duplex		230	780	M3	20	30	40	B
K	Malleable cast iron	Ferritic		200	400	K1	50	60	80	A
		Pearlitic		260	700	K2	40	50	60	A
	Grey cast iron	Low tensile strength		180	200	K3	60	70	90	A
		High tensile strength/austenitic		245	350	K4	50	60	80	A
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	50	60	80	A
		Pearlitic		265	700	K6	40	50	60	A
	GGV (CGI)			230	400	K7	40	50	60	A
N	Wrought aluminium alloys	Not hardenable		30	–	N1	330	430	520	C
		Hardenable, hardened		100	340	N2	330	430	520	C
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	190	250	300	C
		≤ 12% Si, hardenable, hardened		90	310	N4	190	250	300	C
		> 12% Si, not hardenable		130	450	N5	110	150	180	C
	Magnesium-based alloys			70	250	N6	200	270	320	C
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	220	300	360	C
		Brass, bronze, red brass		90	310	N8	220	300	360	C
		Cu-alloys, short-chipping		110	380	N9	220	300	360	C
		High-tensile, Ampco		300	1010	N10	30	40	50	C
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	30	40	50	B
			Hardened	280	940	S2	20	20	30	B
		Ni or Co base	Annealed	250	840	S3	30	40	50	B
			Hardened	350	1180	S4	20	20	30	B
			Cast	320	1080	S5	20	20	30	B
	Titanium alloys	Pure titanium		200	680	S6	60	80	100	B
		α and β alloys, hardened		375	1260	S7	40	50	60	B
		β alloys		410	1400	S8	40	50	60	B
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

Cutting data for HSS profile milling



Product family		λ
P314101 P314801	P3148016	12°

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Ø 11–50 mm Z = 6–10 TiCN / uncoated Starting values for cutting speed v_c [m/min] a_e / D_c 1/1	1/2	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	30	40		A
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	30	40		A
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	20	30		A
		C > 0.55%	Annealed	190	640	P4	20	30		A
		C > 0.55%	Heat-treated	300	1010	P5	20	30		A
		Free cutting steel (short-chipping)	Annealed	220	750	P6	20	30		A
	Low-alloyed steel	Annealed		175	590	P7	20	30		A
		Heat-treated		285	960	P8	20	30		A
		Heat-treated		380	1280	P9	10	20		A
		Heat-treated		430	1480	P10	10	20		A
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	20	30		A
		Hardened and tempered		300	1010	P12	20	30		A
		Hardened and tempered		380	1280	P13	10	20		A
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	10	10		A
		Martensitic, heat-treated		330	1110	P15	10	10		A
M	Stainless steel	Austenitic, quench hardened		200	680	M1	10	20		B
		Austenitic, precipitation hardened (PH)		300	1010	M2	10	10		B
		Austenitic/ferritic, duplex		230	780	M3	10	10		B
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1	200	200		C
		Hardenable, hardened		100	340	N2	200	200		C
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	40	50		C
		≤ 12% Si, hardenable, hardened		90	310	N4	40	50		C
		> 12% Si, not hardenable		130	450	N5	30	40		C
	Magnesium-based alloys			70	250	N6	70	90		C
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	100	130		C
		Brass, bronze, red brass		90	310	N8	100	130		C
		Cu-alloys, short-chipping		110	380	N9	100	130		C
		High-tensile, Ampco		300	1010	N10	10	20		C
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

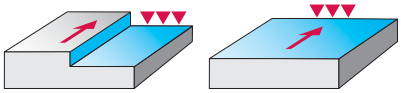
[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

Product family		λ	Product family		λ	Product family		λ
P313231		10°	P315801 P315821	P315831 P315851	0°	P316881		0°
Ø 4,5–45,5 mm			Ø 6,2–32 mm			Ø 8–18 mm		
Z = 6–14			Z = 10–12 [45°/60°]			R 1–15 mm		
Uncoated			Uncoated			Uncoated		

Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c				Starting values for cutting speed v_c [m/min] a_e / D_c			
1/1	1/2	1/10	VT	1/3	1/10	1/20	VT	1/1	1/2	1/10	VT
30	40		A	30	40	40	A	35			
30	40		A	30	40	40	A	35			
20	30		A	20	30	30	A	25			
20	30		A	20	30	30	A	25			
20	30		A	20	30	30	A	20			
20	30		A	20	30	30	A	25			
20	30		A	20	30	30	A	25			
20	30		A	20	30	30	A	20			
10	20		A	10	20	20	A	15			
10	20		A	10	20	20	A	13			
20	30		A	20	30	30	A	25			
20	30		A	20	30	30	A	20			
10	20		A	10	20	20	A	13			
10	10		A	10	10	20	A	10			
10	10		A	10	10	10	A	8			
10	20		B	10	20	20	B	15			
10	10		B	10	10	10	B	8			
10	10		B	10	10	20	B	10			
								25			
								15			
								25			
								15			
								25			
200	200		C	200	200	300	C	250			
200	200		C	200	200	300	C	250			
40	50		C	40	50	50	C	40			
40	50		C	40	50	50	C	40			
30	40		C	30	40	50	C	35			
70	90		C	70	90	90	C	70			
100	130		C	100	130	140	C	110			
100	130		C	100	130	140	C	110			
100	130		C	100	130	140	C	110			
10	20		C	10	20	20	C	15			
								13			
								7			
								13			
								7			
								7			
								35			
								20			
								20			
								7			
								7			

Cutting data for end milling cutters with PCD/brazed cutting edges



Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	Product family Brazed helical milling cutters F1675 F1678 F1676 F1682			
							Ø 20–100 mm			
							Z = 4–8			
							WP40			
							Starting values for cutting speed v_c [m/min] a_e / D_c			
							1/2	1/4	1/10	VT
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	200	325	375	J
		C > 0.25... ≤ 0.55%	Annealed	190	640	P2	140	225	265	J
		C > 0.25... ≤ 0.55%	Heat-treated	210	710	P3	120	200	230	J
		C > 0.55%	Annealed	190	640	P4	140	225	265	J
		C > 0.55%	Heat-treated	300	1010	P5	110	180	215	J
		Free cutting steel (short-chipping)	Annealed	220	750	P6	130	220	280	J
	Low-alloyed steel	Annealed		175	590	P7	155	250	290	L
		Heat-treated		285	960	P8	120	190	225	L
		Heat-treated		380	1280	P9	100	170	195	L
		Heat-treated		430	1480	P10	90	160	170	L
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	115	190	220	L
		Hardened and tempered		300	1010	P12	100	160	180	L
		Hardened and tempered		380	1280	P13	90	150	170	L
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	75	125	145	L
		Martensitic, heat-treated		330	1110	P15	70	115	135	L
M	Stainless steel	Austenitic, quench hardened		200	680	M1				
		Austenitic, precipitation hardened (PH)		300	1010	M2				
		Austenitic/ferritic, duplex		230	780	M3				
K	Malleable cast iron	Ferritic		200	400	K1				
		Pearlitic		260	700	K2				
	Grey cast iron	Low tensile strength		180	200	K3				
		High tensile strength/austenitic		245	350	K4				
	Cast iron with spheroidal graphite	Ferritic		155	400	K5				
		Pearlitic		265	700	K6				
	GGV (CGI)			230	400	K7				
N	Wrought aluminium alloys	Not hardenable		30	–	N1				
		Hardenable, hardened		100	340	N2				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3				
		≤ 12% Si, hardenable, hardened		90	310	N4				
		> 12% Si, not hardenable		130	450	N5				
	Magnesium-based alloys			70	250	N6				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7				
		Brass, bronze, red brass		90	310	N8				
		Cu-alloys, short-chipping		110	380	N9				
		High-tensile, Ampco		300	1010	N10				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1				
			Hardened	280	940	S2				
		Ni or Co base	Annealed	250	840	S3				
			Hardened	350	1180	S4				
			Cast	320	1080	S5				
	Titanium alloys	Pure titanium		200	680	S6				
		α and β alloys, hardened		375	1260	S7				
		β alloys		410	1400	S8				
	Tungsten alloys			300	1010	S9				
	Molybdenum alloys			300	1010	S10				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1				
		Hardened and tempered		55 HRC	–	H2				
		Hardened and tempered		60 HRC	–	H3				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4				
O	Thermoplastics	Without abrasive fillers				O1				
	Thermosetting plastics	Without abrasive fillers				O2				
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6				

[1] The classification of the machining groups can be found from page C 671 onwards.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Product family Brazed porcupine milling cutters				Product family PCD milling cutters			
	F1675 F1682		F1678		F4722		F4723	
	Ø 20–100 mm				Ø 6–80 mm			
	Z = 4–8				Z = 2–6			
	WKM				WCD10			
	Starting values for cutting speed v_c [m/min]				Starting values for cutting speed v_c [m/min]			
	a_e / D_c				a_e / D_c			
	1/2	1/4	1/10	VT	1/1 1/2	1/4	1/10	VT
	180	275	320	J				
	135	215	250	J				
	150	250	290	K				
	125	205	240	K				
	180	280	320	J				
	130	205	240	J				
	110	180	210	J				
					3000	4000	4000	G
					2000	2000	2000	G
					1500	1500	1500	H
					1000	1000	1000	H
					500	500	500	H
					600	800	800	I
					500	600	600	I
					600	800	800	I

Feed determination

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

A Material groups ISO P, ISO K and titanium alloys

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 0,3 mm	Ø 0,5 mm	Ø 1 mm	Ø 2 mm	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm
0,01	0,02	0,02	0,03	0,06	0,09	0,12	0,15	0,15	0,20	
0,05	0,01	0,01	0,02	0,04	0,07	0,10	0,12	0,15	0,20	
0,1	0,01	0,01	0,02	0,03	0,05	0,08	0,10	0,15	0,20	0,20
0,2	0,01	0,01	0,01	0,03	0,04	0,06	0,08	0,15	0,18	0,20
0,5		0,01	0,01	0,02	0,03	0,05	0,07	0,12	0,15	0,15
1			0,01	0,02	0,03	0,04	0,06	0,09	0,12	0,12
2				0,02	0,03	0,03	0,05	0,08	0,11	0,12
3					0,02	0,02	0,04	0,07	0,10	0,12
5						0,02	0,04	0,07	0,10	0,12
6							0,03	0,06	0,08	0,10
8								0,05	0,07	0,09
10									0,06	0,08
12										0,07
14										
16										
18										
20										
25										
32										
40										
50										
63										
80										
100										
160										
200										

A Material groups ISO P, ISO K and titanium alloys (continued)

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 14 mm	Ø 16 mm	Ø 18 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm
0,01										
0,05										
0,1	0,20	0,20								
0,2	0,20	0,20	0,20	0,25						
0,5	0,15	0,15	0,20	0,25	0,25					
1	0,12	0,12	0,15	0,20	0,25	0,25	0,30	0,30	0,30	0,40
2	0,12	0,12	0,15	0,20	0,20	0,25	0,25	0,25	0,30	0,30
3	0,12	0,12	0,14	0,18	0,20	0,20	0,25	0,25	0,25	0,30
5	0,12	0,12	0,12	0,15	0,20	0,20	0,20	0,25	0,25	0,25
6	0,10	0,12	0,12	0,15	0,20	0,20	0,20	0,20	0,25	0,25
8	0,10	0,12	0,12	0,15	0,20	0,20	0,20	0,20	0,20	0,25
10	0,10	0,12	0,12	0,14	0,16	0,20	0,20	0,20	0,20	0,20
12	0,09	0,11	0,12	0,14	0,16	0,16	0,20	0,20	0,20	0,20
14	0,08	0,10	0,12	0,13	0,15	0,16	0,16	0,20	0,20	0,20
16		0,09	0,10	0,12	0,15	0,15	0,16	0,16	0,20	0,20
18			0,10	0,11	0,13	0,15	0,15	0,16	0,16	0,20
20				0,10	0,12	0,13	0,15	0,15	0,16	0,16
25					0,10	0,12	0,13	0,15	0,15	0,16
32						0,10	0,12	0,13	0,15	0,15
40							0,10	0,12	0,13	0,15
50								0,10	0,12	0,13
63									0,10	0,12
80										0,10
100										
160										
200										

* Radial feed in mm

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

B Material groups ISO M, ISO H, heat-resistant alloys, tungsten alloys and molybdenum alloys

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 0,3 mm	Ø 0,5 mm	Ø 1 mm	Ø 2 mm	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm
0,01	0,02	0,02	0,02	0,05	0,07	0,10	0,12	0,12	0,16	
0,05	0,01	0,01	0,02	0,03	0,06	0,08	0,10	0,12	0,16	
0,1	0,01	0,01	0,02	0,03	0,04	0,06	0,08	0,12	0,16	0,16
0,2	0,01	0,01	0,01	0,02	0,03	0,05	0,06	0,12	0,14	0,16
0,5		0,01	0,01	0,02	0,02	0,04	0,06	0,10	0,12	0,12
1			0,01	0,02	0,02	0,03	0,05	0,07	0,10	0,10
2				0,02	0,02	0,02	0,04	0,06	0,09	0,10
3					0,02	0,02	0,04	0,06	0,08	0,10
5						0,02	0,03	0,06	0,08	0,10
6							0,02	0,05	0,06	0,08
8								0,04	0,06	0,07
10									0,05	0,06
12										0,06
14										
16										
18										
20										
25										
32										
40										
50										
63										
80										
100										
160										
200										

B Material groups ISO M, ISO H, heat-resistant alloys, tungsten alloys and molybdenum alloys (continued)

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 14 mm	Ø 16 mm	Ø 18 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm
0,01										
0,05										
0,1	0,16	0,16								
0,2	0,16	0,16	0,16	0,20						
0,5	0,12	0,12	0,16	0,20	0,20					
1	0,10	0,10	0,12	0,16	0,20	0,20	0,24	0,24	0,24	0,32
2	0,10	0,10	0,12	0,16	0,16	0,20	0,20	0,20	0,24	0,24
3	0,10	0,10	0,11	0,14	0,16	0,16	0,20	0,20	0,20	0,24
5	0,10	0,10	0,10	0,12	0,16	0,16	0,16	0,20	0,20	0,20
6	0,08	0,10	0,10	0,12	0,16	0,16	0,16	0,16	0,20	0,20
8	0,08	0,10	0,10	0,12	0,16	0,16	0,16	0,16	0,16	0,20
10	0,08	0,10	0,10	0,11	0,13	0,16	0,16	0,16	0,16	0,16
12	0,07	0,09	0,10	0,11	0,13	0,13	0,16	0,16	0,16	0,16
14	0,06	0,08	0,10	0,10	0,12	0,13	0,13	0,16	0,16	0,16
16		0,07	0,08	0,10	0,12	0,12	0,13	0,13	0,16	0,16
18			0,08	0,09	0,10	0,12	0,12	0,13	0,13	0,16
20				0,08	0,10	0,10	0,12	0,12	0,13	0,13
25					0,08	0,10	0,10	0,12	0,12	0,13
32						0,08	0,10	0,10	0,12	0,12
40							0,08	0,10	0,10	0,12
50								0,08	0,10	0,10
63									0,08	0,10
80										0,08
100										
160										
200										

* Radial feed in mm

Feed determination

(continued)

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

C Material groups ISO N and ISO O

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 0,3 mm	Ø 0,5 mm	Ø 1 mm	Ø 2 mm	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm
0,01	0,04	0,04	0,07	0,13	0,20	0,26	0,33	0,33	0,44	
0,05	0,03	0,03	0,06	0,09	0,15	0,22	0,26	0,33	0,44	
0,1	0,02	0,03	0,04	0,08	0,11	0,18	0,22	0,33	0,44	0,44
0,2	0,02	0,02	0,03	0,07	0,09	0,13	0,18	0,33	0,40	0,44
0,5		0,02	0,03	0,06	0,07	0,11	0,15	0,26	0,33	0,33
1			0,02	0,06	0,07	0,09	0,13	0,20	0,26	0,26
2				0,04	0,07	0,07	0,11	0,18	0,24	0,26
3					0,04	0,06	0,10	0,17	0,23	0,26
5						0,04	0,09	0,15	0,22	0,26
6							0,07	0,13	0,18	0,22
8								0,11	0,15	0,20
10									0,13	0,18
12										0,15
14										
16										
18										
20										
25										
32										
40										
50										
63										
80										
100										
160										
200										

C Material groups ISO N and ISO O (continued)

	Feed per tooth f_z [mm]									
a_e [mm]*	Ø 14 mm	Ø 16 mm	Ø 18 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm
0,01										
0,05										
0,1	0,44	0,44								
0,2	0,44	0,44	0,44	0,50						
0,5	0,33	0,33	0,44	0,50	0,50					
1	0,26	0,26	0,33	0,44	0,50	0,50	0,50	0,50	0,50	0,50
2	0,26	0,26	0,33	0,44	0,44	0,50	0,50	0,50	0,50	0,50
3	0,26	0,26	0,30	0,39	0,44	0,44	0,50	0,50	0,50	0,50
5	0,26	0,26	0,26	0,33	0,44	0,44	0,44	0,50	0,50	0,50
6	0,22	0,26	0,26	0,33	0,44	0,44	0,44	0,44	0,50	0,50
8	0,22	0,26	0,26	0,33	0,44	0,44	0,44	0,44	0,44	0,55
10	0,22	0,26	0,26	0,31	0,35	0,44	0,44	0,44	0,44	0,44
12	0,20	0,24	0,26	0,31	0,35	0,35	0,44	0,44	0,44	0,44
14	0,18	0,22	0,26	0,29	0,33	0,35	0,35	0,44	0,44	0,44
16		0,20	0,22	0,26	0,33	0,33	0,35	0,35	0,44	0,44
18			0,22	0,24	0,29	0,33	0,33	0,35	0,35	0,44
20				0,22	0,26	0,29	0,33	0,33	0,35	0,35
25					0,22	0,26	0,29	0,33	0,33	0,35
32						0,22	0,26	0,29	0,33	0,33
40							0,22	0,26	0,29	0,33
50								0,22	0,26	0,29
63									0,22	0,26
80										0,22
100										
160										
200										

* Radial feed in mm

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

D Protostar® Flash ISO P, M, K, N, S, O

	Feed per tooth f_z [mm]										
a_e [mm]*	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 14 mm	Ø 16 mm	Ø 18 mm	Ø 20 mm	Ø 25 mm
0,8	0,07	0,10									
1,5	0,07	0,10	0,16	0,25							
3	0,07	0,10	0,16	0,25	0,30						
5		0,10	0,16	0,25	0,30	0,35					
6			0,16	0,25	0,30	0,35	0,40	0,50	0,60		
8				0,25	0,30	0,35	0,40	0,50	0,60	0,70	0,70
10					0,30	0,35	0,40	0,50	0,60	0,70	0,70
12							0,40	0,50	0,60	0,70	0,70
14							0,40	0,50	0,60	0,70	0,70
16								0,50	0,60	0,70	0,70
18									0,60	0,70	0,70
20										0,70	0,70
25											0,70

E Protostar® Flash ISO H

	Feed per tooth f_z [mm]										
a_e [mm]*	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 14 mm	Ø 16 mm	Ø 18 mm	Ø 20 mm	Ø 25 mm
0,8	0,06	0,08									
1,5	0,06	0,08	0,13	0,20							
3	0,06	0,08	0,13	0,20	0,24						
5		0,08	0,13	0,20	0,24	0,28					
6			0,13	0,20	0,24	0,28	0,32	0,40	0,48		
8				0,20	0,24	0,28	0,32	0,40	0,48	0,56	0,56
10					0,24	0,28	0,32	0,40	0,48	0,56	0,56
12							0,32	0,40	0,48	0,56	0,56
14							0,32	0,40	0,48	0,56	0,56
16								0,40	0,48	0,56	0,56
18									0,48	0,56	0,56
20										0,56	0,56
25											0,56

F MC341 Supreme + Proto·max™ ST

	Feed per tooth f_z [mm]												
a_e [mm]*	Ø 1 mm	Ø 2 mm	Ø 3 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 14 mm	Ø 16 mm	Ø 18 mm	Ø 20 mm	Ø 25 mm
0,01	0,04	0,08	0,11	0,14	0,18	0,18	0,24						
0,05	0,03	0,05	0,09	0,12	0,14	0,18	0,24						
0,1	0,02	0,04	0,06	0,10	0,12	0,18	0,24	0,24	0,24	0,24			
0,2	0,02	0,04	0,05	0,07	0,10	0,18	0,22	0,24	0,24	0,24	0,24	0,3	
0,5	0,01	0,03	0,04	0,06	0,08	0,14	0,18	0,18	0,18	0,18	0,24	0,3	0,30
1	0,01	0,03	0,04	0,05	0,07	0,11	0,14	0,14	0,14	0,14	0,18	0,24	0,30
2		0,02	0,04	0,04	0,06	0,10	0,13	0,14	0,14	0,14	0,18	0,24	0,24
3			0,02	0,03	0,05	0,09	0,13	0,14	0,14	0,14	0,16	0,21	0,24
5				0,02	0,05	0,08	0,12	0,14	0,14	0,14	0,14	0,18	0,24
6					0,04	0,07	0,10	0,12	0,12	0,14	0,14	0,18	0,24
8						0,06	0,08	0,11	0,12	0,14	0,14	0,18	0,24
10							0,07	0,10	0,12	0,14	0,14	0,17	0,19
12								0,08	0,11	0,13	0,14	0,17	0,19
14									0,10	0,12	0,14	0,16	0,18
16										0,11	0,12	0,14	0,18
18											0,12	0,13	0,16
20												0,12	0,14
25													0,12

* Radial feed in mm

Feed determination for brazed tools

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

G Wrought aluminium alloys

	Feed per tooth f_z [mm]													
a_e/D_c	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 16 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm	Ø 100 mm	Ø 125 mm
1/50	0,08	0,07	0,09	0,09	0,12	0,12	0,12	0,15	0,15					
1/20	0,07	0,06	0,08	0,08	0,10	0,10	0,10	0,13	0,13					
1/10	0,06	0,06	0,07	0,07	0,10	0,07	0,10	0,12	0,12	0,12	0,12	0,12	0,12	0,12
1/5	0,06	0,06	0,07	0,07	0,09	0,09	0,09	0,11	0,11	0,11	0,11	0,11	0,11	0,11
1/2	0,05	0,05	0,06	0,06	0,08	0,08	0,08	0,10	0,10	0,10	0,10	0,10	0,10	0,10
1/1	0,05	0,05	0,06	0,06	0,08	0,08	0,08	0,10	0,10	0,10	0,10	0,10	0,10	0,10

H Magnesium-based alloys/copper and copper alloys

	Feed per tooth f_z [mm]													
a_e/D_c	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 16 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm	Ø 100 mm	Ø 125 mm
1/50	0,04	0,04	0,06	0,06	0,09	0,09	0,09	0,11	0,11					
1/20	0,04	0,04	0,05	0,05	0,08	0,08	0,08	0,10	0,10					
1/10	0,04	0,04	0,05	0,05	0,07	0,07	0,07	0,09	0,09	0,09	0,09	0,09	0,09	0,09
1/5	0,03	0,03	0,04	0,04	0,07	0,07	0,07	0,08	0,08	0,08	0,08	0,08	0,08	0,08
1/2	0,03	0,03	0,04	0,04	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,07	0,07	0,07
1/1	0,03	0,03	0,04	0,04	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,07	0,07	0,07

I Thermoplasts, thermosetting plastics, plastic, graphite

	Feed per tooth f_z [mm]													
a_e/D_c	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 16 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm	Ø 100 mm	Ø 125 mm
1/50	0,05	0,05	0,07	0,07	0,10	0,10	0,10	0,13	0,13					
1/20	0,05	0,05	0,06	0,06	0,09	0,09	0,09	0,11	0,11					
1/10	0,04	0,04	0,06	0,06	0,08	0,08	0,08	0,10	0,10	0,10	0,10	0,10	0,10	0,10
1/5	0,04	0,04	0,05	0,05	0,08	0,08	0,08	0,09	0,09	0,09	0,09	0,09	0,09	0,09
1/2	0,03	0,03	0,05	0,05	0,07	0,07	0,07	0,08	0,08	0,08	0,08	0,08	0,08	0,08
1/1	0,03	0,03	0,05	0,05	0,07	0,07	0,07	0,08	0,08	0,08	0,08	0,08	0,08	0,08

J Non-alloyed steel, malleable cast iron, ductile cast iron and CGI

	Feed per tooth f_z [mm]								
a_e [mm]*	Ø 16 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm	Ø 100 mm
1,0	0,12	0,12	0,12	0,12	0,13				
2,0	0,12	0,12	0,12	0,12	0,12	0,20			
3,0	0,11	0,12	0,12	0,12	0,12	0,19	0,20		
4,0	0,10	0,11	0,12	0,12	0,12	0,18	0,19	0,20	
5,0	0,10	0,10	0,11	0,12	0,12	0,18	0,18	0,19	0,20
6,0	0,10	0,10	0,10	0,11	0,12	0,17	0,18	0,18	0,19
8,0	0,10	0,10	0,10	0,10	0,11	0,17	0,17	0,18	0,18
10,0	0,10	0,10	0,10	0,10	0,10	0,17	0,17	0,17	0,18
12,0	0,10	0,10	0,10	0,10	0,10	0,16	0,17	0,17	0,17
16,0	0,10	0,10	0,10	0,10	0,10	0,15	0,16	0,17	0,17
20,0		0,10	0,10	0,10	0,10	0,15	0,15	0,16	0,17
25,0			0,10	0,10	0,10	0,15	0,15	0,15	0,16
32,0				0,10	0,10	0,15	0,15	0,15	0,15
40,0					0,10	0,15	0,15	0,15	0,15
50,0						0,15	0,15	0,15	0,15
63,0							0,15	0,15	0,15
80,0								0,15	0,15
100,0									0,15

* Radial feed in mm

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

K Grey cast iron

	Feed per tooth f_z [mm]								
a_e [mm]*	Ø 16 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm	Ø 100 mm
1,0	0,13	0,13	0,13	0,14	0,15				
2,0	0,13	0,13	0,13	0,13	0,14	0,26			
3,0	0,13	0,13	0,13	0,13	0,13	0,25	0,26		
4,0	0,12	0,13	0,13	0,13	0,13	0,24	0,25	0,26	
5,0	0,12	0,12	0,13	0,13	0,13	0,24	0,24	0,25	0,26
6,0	0,12	0,12	0,12	0,13	0,13	0,23	0,24	0,24	0,25
8,0	0,12	0,12	0,12	0,12	0,13	0,22	0,23	0,24	0,24
10,0	0,12	0,12	0,12	0,12	0,12	0,22	0,22	0,23	0,24
12,0	0,12	0,12	0,12	0,12	0,12	0,21	0,22	0,22	0,23
16,0	0,12	0,12	0,12	0,12	0,12	0,20	0,21	0,22	0,22
20,0		0,12	0,12	0,12	0,12	0,20	0,20	0,21	0,22
25,0			0,12	0,12	0,12	0,20	0,20	0,20	0,21
32,0				0,12	0,12	0,20	0,20	0,20	0,20
40,0					0,12	0,20	0,20	0,20	0,20
50,0						0,20	0,20	0,20	0,20
63,0							0,20	0,20	0,20
80,0								0,20	0,20
100,0									0,20

L Low-alloy steel, high-alloy steel and high-alloy tool steel

	Feed per tooth f_z [mm]								
a_e [mm]*	Ø 16 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm	Ø 100 mm
1,0	0,09	0,09	0,09	0,1	0,10				
2,0	0,09	0,09	0,09	0,09	0,10	0,17			
3,0	0,09	0,09	0,09	0,09	0,09	0,16	0,17		
4,0	0,08	0,09	0,09	0,09	0,09	0,15	0,16	0,17	
5,0	0,08	0,08	0,09	0,09	0,09	0,14	0,15	0,16	0,17
6,0	0,08	0,08	0,08	0,09	0,09	0,14	0,14	0,15	0,16
8,0	0,08	0,08	0,08	0,08	0,09	0,14	0,14	0,14	0,15
10,0	0,08	0,08	0,08	0,08	0,08	0,13	0,14	0,14	0,14
12,0	0,08	0,08	0,08	0,08	0,08	0,13	0,13	0,14	0,14
16,0	0,08	0,08	0,08	0,08	0,08	0,13	0,13	0,13	0,14
20,0		0,08	0,08	0,08	0,08	0,13	0,13	0,13	0,13
25,0			0,08	0,08	0,08	0,12	0,13	0,13	0,13
32,0				0,08	0,08	0,12	0,12	0,13	0,13
40,0					0,08	0,12	0,12	0,12	0,13
50,0						0,12	0,12	0,12	0,12
63,0							0,12	0,12	0,12
80,0								0,12	0,12
100,0									0,12

M Stainless steel (ISO P)

	Feed per tooth f_z [mm]								
a_e [mm]*	Ø 16 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm	Ø 80 mm	Ø 100 mm
1,0	0,07	0,07	0,07	0,08	0,08				
2,0	0,07	0,07	0,07	0,07	0,08	0,14			
3,0	0,07	0,07	0,07	0,07	0,07	0,13	0,14		
4,0	0,06	0,07	0,07	0,07	0,07	0,12	0,13	0,14	
5,0	0,06	0,06	0,07	0,07	0,07	0,12	0,12	0,13	0,14
6,0	0,06	0,06	0,06	0,07	0,07	0,12	0,12	0,12	0,13
8,0	0,06	0,06	0,06	0,06	0,07	0,12	0,12	0,12	0,12
10,0	0,06	0,06	0,06	0,06	0,06	0,11	0,12	0,12	0,12
12,0	0,06	0,06	0,06	0,06	0,06	0,11	0,11	0,12	0,12
16,0	0,06	0,06	0,06	0,06	0,06	0,11	0,11	0,11	0,12
20,0		0,06	0,06	0,06	0,06	0,11	0,11	0,11	0,11
25,0			0,06	0,06	0,06	0,10	0,11	0,11	0,11
32,0				0,06	0,06	0,10	0,10	0,11	0,11
40,0					0,06	0,10	0,10	0,10	0,11
50,0						0,10	0,10	0,10	0,10
63,0							0,10	0,10	0,10
80,0								0,10	0,10
100,0									0,10

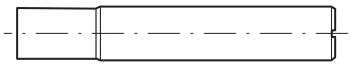
* Radial feed in mm

Cutting speed: Correction factors*

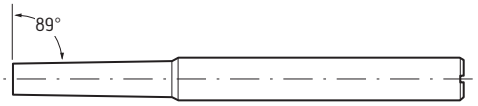
v_c correction factors – toolholder/steel

v_c correction factors		Type	Max. speed
AK610.Z16.E10.005	**v_c x 1**	A	40.000
AK610.Z12.E10.005	**v_c x 1**	A	40.000
AK610.Z10.E10.020	**v_c x 0,9**	A	30.000
AK610.Z16.E10.050	**v_c x 0,6**	B	12.000
AK610.Z16.E10.036	**v_c x 0,7**	C	15.000
AK610.Z12.E10.036	**v_c x 0,7**	C	15.000
AK610.Z16.E12.005	**v_c x 1**	A	40.000
AK610.Z12.E12.022	**v_c x 0,9**	A	30.000
AK610.Z16.E12.060	**v_c x 0,6**	B	10.000
AK610.Z16.E12.025	**v_c x 0,7**	C	15.000
AK610.Z20.E16.005	**v_c x 1**	A	40.000
AK610.Z16.E16.025	**v_c x 0,9**	A	30.000
AK610.Z20.E16.025	**v_c x 0,9**	A	30.000
AK610.Z20.E16.075	**v_c x 0,6**	B	10.000
AK610.Z25.E16.054	**v_c x 0,7**	C	15.000
AK610.Z25.E20.005	**v_c x 1**	A	30.000
AK610.Z20.E20.030	**v_c x 0,8**	A	20.000
AK610.Z32.E20.073	**v_c x 0,7**	C	20.000
AK610.Z32.E25.005	**v_c x 1**	A	30.000
AK610.Z25.E25.040	**v_c x 0,7**	A	15.000
AK610.Z32.E25.045	**v_c x 0,7**	C	20.000

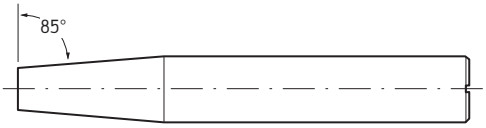
Type A



Type B



Type C



v_c correction factors – toolholder/solid carbide

v_c correction factors		Type	Max. speed
AK610.Z10.E10.050C	**v_c x 0,8**	A	20.000
AK610.Z16.E10.100C	**v_c x 0,7**	B	15.000
AK610.Z12.E12.048C	**v_c x 0,9**	A	30.000
AK610.Z16.E12.090C	**v_c x 0,7**	B	15.000
AK610.Z16.E16.080C	**v_c x 0,9**	A	30.000
AK610.Z20.E16.118C	**v_c x 0,6**	B	10.000
AK610.Z20.E20.038C	**v_c x 1**	A	30.000
AK610.Z20.E20.110C	**v_c x 0,9**	A	30.000
AK610.Z25.E25.120C	**v_c x 0,6**	A	10.000

*** Please note:**
With ConeFit tooling, the cutting speed should be adjusted based on the projection length and shank type.
Do not exceed the maximum speed. For cutting data, see page C 222 onwards.

Cutting tool materials, surface treatment and coatings

Cutting tool materials for HSS milling tools

For Walter Prototyp milling tools, three groups of high-speed steel are used.

HSS-E Co	High-speed steel with 5% Co for increased stress, particularly high thermal loads
HSS-E Co8	High-speed steel with 8% Co for maximum heat resistance, in accordance with American standard designation M42 (end milling cutters for general use, available in standard dimensions and with Morse taper shank, shell end mills)
HSS-E-PM	High-speed steel manufactured using powder metallurgy with an extremely high content of alloy elements **Advantages:** – High purity – Uniformity of the microstructure – High wear resistance – Heat resistance (end milling cutters and shell end mills for more demanding applications)

	Material no.	Short name	Old standard designation	AISI ASTM	AFNOR	B.S.	UNI	Alloy table C	Cr	W	Mo	V	Co
HSS-E Co	1.3243	S 6-5-2-5	EMo5 Co5	M35	6.5.2.5	–	HS 6-5-2-5	0,82	4,5	6,0	5,0	2,0	5,0
HSS-E Co8	1.3247	S 2-10-1-8	–	M42	–	BM42	HS 2-9-1-8	1,08	4,0	1,5	9,5	1,2	8,25
HSS-E-PM	Trade name ASP												

Grade description

Coated carbide

Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating process	Coating composition	Tool example
WK40TF	HC – P 40	●●								PVD	AlTiN	
	HC – M 40		●									
	HC – K 40			●								
	HC – S 40					●						
WJ30TF	HC – P 30	●●								PVD	AlTiN	
	HC – M 30		●									
	HC – K 30			●								
	HC – N 30				●							
	HC – S 30					●						
WJ30CA	HC – N 30				●●					PVD	CrN mod	
WK40RC	HC – M 40		●●							PVD	TiAlN	
	HC – S 40					●						
WK40TZ	HC – P 40	●●								PVD	AlTiN + ZrN	
	HC – M 40		●									
WJ30ED	HC – P 30	●●								PVD	AlCrN	
	HC – M 30		●									
	HC – K 30			●								

Uncoated carbide

Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating process	Coating composition	Tool example
WJ30UU	HW – N 30				●●					–	–	

HC = Coated carbide
HW = Uncoated carbide

●● Primary application
● Additional application

Cutting tool materials, surface treatment and coatings

Surface treatment and hard material coatings for increased performance

Surface coating has developed into a proven technological process for improving the performance of metal cutting tools. In contrast to surface treatment, the tool surface remains chemically unaltered and a thin layer is applied.

For Walter Prototyp high-speed steel (HSS) and solid carbide (SC) tools, the coating is produced using PVD processes, which work at process temperatures of below 600 °C. This ensures that there is no change to the base material.
Hard material layers have a higher hardness and wear resistance than the cutting tool material itself.

In addition…
- they help to improve the low-friction quality of the tool surface
- they separate the cutting tool material and the material that is to be cut from each other
- they act as a thermal insulation layer

This means that coated tools not only have a longer tool life, but they can also be used with higher cutting speeds and feed rates.

Surface treatment/coating	Method/coating	Properties	Colour	Tool example
Uncoated	No treatment	–	Uncoated	
TAX	TiAlN coating	– Universal coating for solid carbide milling tools	Black-violet	
TAZ	TiAlN/zirconium nitride coating	– High-performance layer specially developed for machining steel: Chemical resistance to emulsions and oils – Effective against built-up edges	Champagne	
CRN	Chromium nitride coating	– Very thin layer with high degree of toughness – Minimised coating roughness for excellent chip flow, especially with aluminium materials	Rainbow-coloured	
DIA	Diamond coating	– For machining graphite and AlSi alloys	Grey	
ACN	Aluminium chromium nitride coating	– High-performance coating with particularly low friction for titanium machining tools but also for HSS tools	Blue-violet	
TAA	TiAlN/TiAl coating	– High-performance coating for machining stainless steels – Effective against built-up edges – Wear-resistant – Provides a smooth surface	Silver-grey	

Type description

Roughing

Tool type	Application area	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Coating/grade
MB265 Supreme 	– Solid carbide high-performance roughing cutters with corner radius – Shank according to DIN 6535 HA with surface treatment – With internal coolant – Polished flutes				●●				30°	WJ30CA WJ30UU
Qmax HR 	– Solid carbide roughing cutters with HR Kordel profile – In accordance with DIN 6527 K and L – Shank in accordance with DIN 6535 HB – With and without internal coolant – For use in more unstable conditions	●●	●	●					30° / 40° / 45°	TAX
Qmax HNR 	– Solid carbide roughing cutters with HNR Kordel profile – In accordance with DIN 6527 K and L – Shank in accordance with DIN 6535 HB – Without internal coolant – For use in more stable conditions	●●	●●	●	●				30°	TAX
Ti NS 30 	– Solid carbide roughing cutters with chip breaker for reduced power requirement – Shank in accordance with DIN 6535 HB – Without internal coolant – Specially developed for titanium materials		●	●		●●			30°	ACN
Flash N50 	– Up to 55 HRC – Solid carbide milling cutters with special end-face geometry for HSC machining – Shank in accordance with DIN 6535 HA – Without internal coolant – Can be used universally	●●	●	●					50°	TAX
Flash H50 	– From 55 to 63 HRC – Solid carbide milling cutters with special end-face geometry for HSC machining – Shank in accordance with DIN 6535 HA – Without internal coolant – Specially developed for hardened materials						●●		50°	TAX

●● Primary application
● Additional application

Roughing and finishing

Tool type	Application area	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Coating/grade
MC341 Supreme 	Four-edge tools – Solid carbide high-performance milling cutters for machining slots with depths of up to 1.5 × D_C – Shank in accordance with DIN 6535 HA with special treatment to prevent it being pulled out – With neck – Specially designed for steel materials – For stainless materials as a secondary application	●●	●						50°	WK40TZ
Proto·max™ ST 	Three-edge tools – Solid carbide high-performance milling cutters for machining slots with depths of up to 2 × D_C – Shank in accordance with DIN 6535 HA with special treatment to prevent it being pulled out – With neck – Specially designed for steel materials – For stainless materials as a secondary application	●●	●						45°	TAZ
Proto·max™ ST 	Four-edge tools – Solid carbide high-performance milling cutters for machining slots with depths of up to 1.5 × D_C – Shank in accordance with DIN 6535 HA with special treatment to prevent it being pulled out – With neck – Specially designed for steel materials – For stainless materials as a secondary application	●●	●						50°	TAZ
Proto·max™ ST 	Five-edge tools – Solid carbide high-performance milling cutters – With and without corner radius (R = 0.5–4 mm) – Shank in accordance with DIN 6535 HB – Ideal for dynamic or trochoidal milling – Full slotting, helical plunging, pocket milling, ramping and contour milling	●●	●						35°	TAZ
Proto·max™ Inox 	Four-edge tools – Solid carbide high-performance milling cutters for machining slots with depths of up to 1 × D_C – Shank in accordance with DIN 6535 HA and HB – With and without corner radius – Specially developed for stainless steels – For materials from the ISO S group as a secondary application		●●			●			35° / 38°	TAA

●● Primary application
● Additional application

Type description

(continued)

Roughing and finishing

Tool type	Application area	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Coating/grade
MC251 Advance 	– Solid carbide milling cutters with geometry for stainless steels – With and without corner radius (R = 0.2–6 mm) – Shank in accordance with DIN 6535 HA – Pocket milling, ramping and contour milling		●●			●			35° / 38°	WK40RC
MC326 / MC726 Supreme 	– Up to 48 HRC – Solid carbide high-performance milling cutters with or without corner radius for slots up to $0.9 \times D_c$ – Shank in accordance with DIN 6535 HA and HB – Different core diameters for increased stability – Can be used universally	●●	●	●		●			50°	WK40TF
MC111 / MC112 Advance 	– Universal application – Shoulder milling cutters	●●	●	●	●	●			30°	WJ30TF
MC122 Advance 	– Universal application – Shoulder milling cutters	●●	●	●		●			45°	WJ30TF
MC213 / MC216 Advance 	– Universal application – Shoulder/slot milling cutters	●●	●	●		●			30°	WJ30TF
MC321 / MC322 / MC324 Advance 	– Universal application – Shoulder/slot milling cutters	●●	●	●		●			45°	WJ30TF
MC716 Advance 	– Universal application – Routing cutters	●●	●	●		●			30°	WJ30TF
MC232 Perform 	– Universal application – Shoulder/slot milling cutters	●●	●	●					35°	WJ30ED

●● Primary application
● Additional application

Roughing and finishing

Tool type	Application area	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Coating/grade
Ti 40 	– Solid carbide high-performance milling cutters – Shank in accordance with DIN 6535 HA with special treatment to prevent it being pulled out – With neck and internal coolant – Specially developed for titanium	●	●			●●			40°	ACN
HSC 30 graphite 	– Solid carbide high-performance milling cutters – Specially for graphite machining							●●	30°	DIA

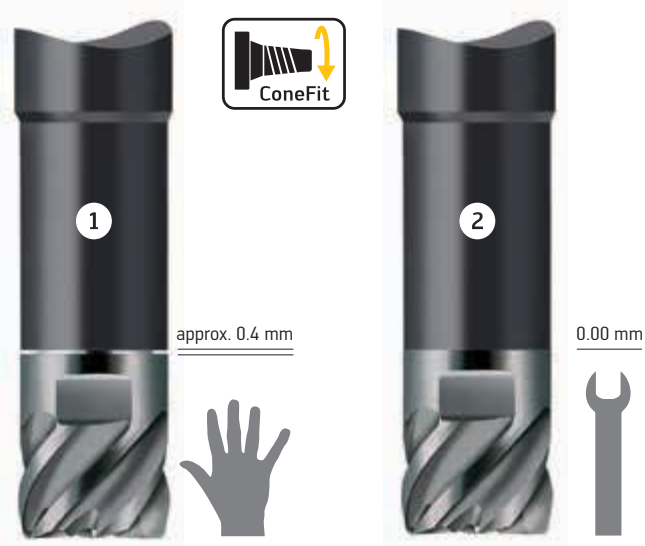
Finishing

Tool type	Application area	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Helix angle	Coating/grade
MC129 Advance 	– Universal application – Shoulder milling cutters	●●	●	●		●			60°	WJ30TF
N50 multipurpose cutters 	– Solid carbide high-performance milling cutters with 4–8 cutting edges – D_c = diameters of 6–20 mm – Shank in accordance with DIN 6535 HA	●●	●			●			50°	TAX
Ti 45 	– Solid carbide high-performance milling cutters – Shank in accordance with DIN 6535 HA – With neck – Specially developed for finishing titanium	●		●		●●			45°	ACN
MB266 Supreme 	– Solid carbide high-performance finishing face milling cutters with corner radius – Shank in accordance with DIN 6535 HA with special treatment to prevent it being pulled out – With internal coolant – Polished flutes				●●				30°	WJ30UU
Ultra H30 	– From 48 to 63 HRC – Solid carbide high-performance milling cutters with 6–16 cutting edges – Specially developed for hardened materials						●●		30° / 50°	TAX

●● Primary application
● Additional application

Assembly instructions

ConeFit



Safety information:
Please wear **safety gloves** during assembly with the tool holder, as the edges of the ConeFit milling cutter heads are sharp.

– Clean the interface and support face on the milling tool and tool holder
– Fit the ConeFit™ tool holder into its adaptor
– Screw the ConeFit milling tool by hand into the ConeFit tool holder until it is hand-tight (figure 1)
– Using a torque wrench, tighten the ConeFit milling tool to the specified torque (see table) to ensure a positive-locking connection
– Ensure that the gap is closed and that a support face exists (figure 2)

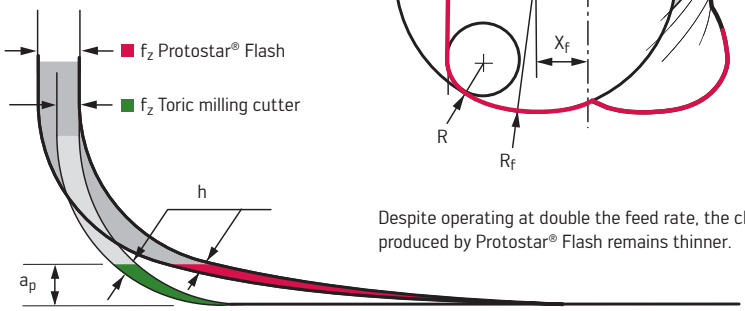
Torques for fitting the milling cutter heads

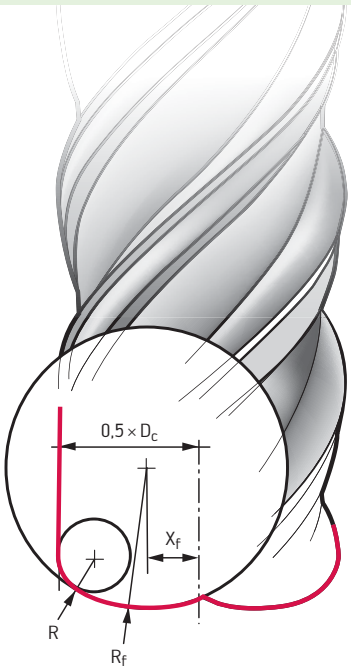
E	SW	Nm
10	8	12
12	10	15
16	12	30
20	16	50
25	20	65

High-feed geometry

Protostar® Flash high-performance milling cutter

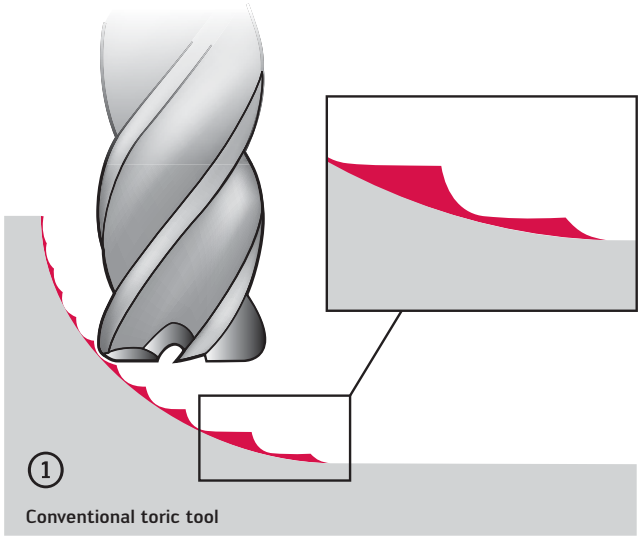
The chip thickness “h” is reduced thanks to the special end-face geometry. Extremely high feeds are possible. Forces are diverted axially towards the centre of the tool, which helps to stabilise the machining process.



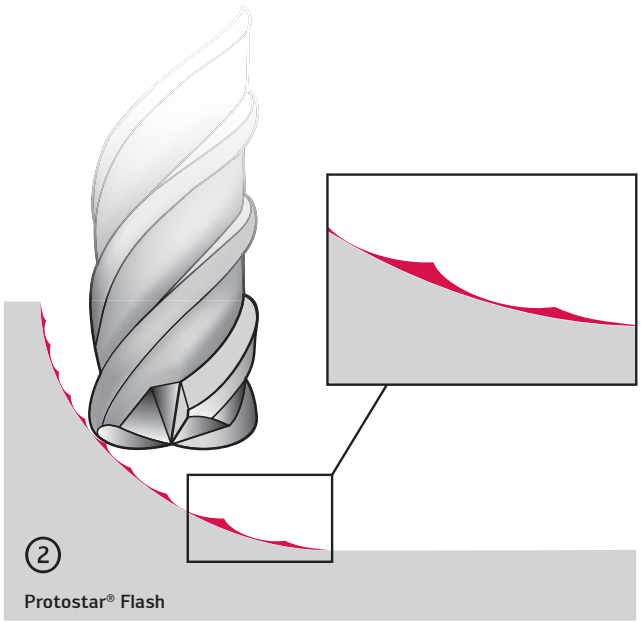


Despite operating at double the feed rate, the chip thickness (h) produced by Protostar® Flash remains thinner.

In comparison with conventional toric tools (figure 1), the special geometry of Protostar® Flash (figure 2) reduces the amount of residual material produced. This minimises the machining required on the residual material, which increases the tool life of the subsequent finishing tool.



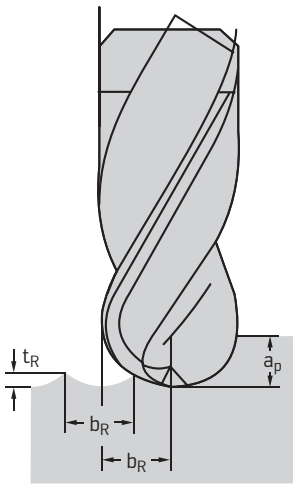
Conventional toric tool



Protostar® Flash

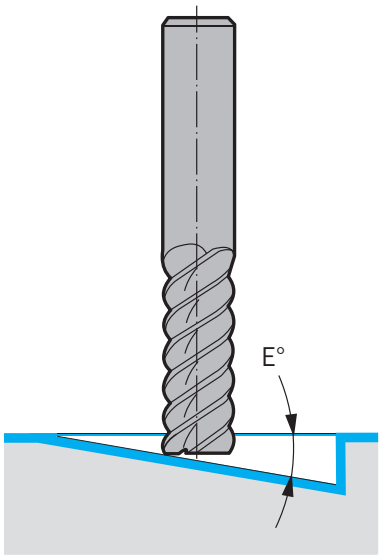
Recommended copying and finishing application

Tool diameter D_c (mm)	Row width (b_R) for groove depth t_R = 5 µm	Row width (b_R) for groove depth t_R = 2 µm
0,3	0,08	0,04
0,4	0,09	0,05
0,5	0,10	0,06
0,6	0,11	0,07
0,8	0,12	0,08
1,0	0,14	0,09
1,5	0,17	0,11
2,0	0,20	0,12
2,5	0,22	0,14
3,0	0,25	0,16
4,0	0,28	0,18
5,0	0,31	0,20
6,0	0,34	0,22
8,0	0,40	0,25
10,0	0,45	0,28
12,0	0,49	0,31
16,0	0,56	0,36
20,0	0,63	0,40
25,0	0,71	0,45
32,0	0,80	0,50



Maximum feed angle with solid carbide and HSS milling cutters E [°]

Material groups	Materials	Number of teeth					
		2	3	4	5	6–8	8
P	Steel	10*	8*	5	5	4	3
M	Stainless steel	5	5	5	5	4	3
K	Cast iron	10	10	8	6	5	3
N	NF metals	15	15	15	10	10	5
S	Materials with difficult cutting properties	5	5	5	5	4	3
H	Hard materials	2	2	1,5	1,5	1,5	1
O	Other	15	15	15	10	10	5



* with R_m > 1100 N/mm², reduce the plunging angle by 25%

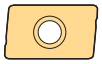
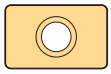
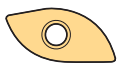
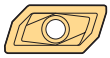


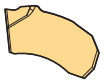
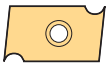
		Page
Indexable inserts for milling	Product range overview	C 276
	Designation key	C 278
	Walter Select – Milling tools with indexable inserts	C 282
	Positive indexable inserts	C 284
	Negative indexable inserts	C 312
	Indexable inserts for tangential installation	C 325
Indexable insert milling cutters	Product range overview	C 336
	System overviews	C 340
	Designation key	C 348
	Walter Select – Face milling	C 350
	Face milling cutters	C 356
	Walter Select – Shoulder milling	C 428
	Shoulder milling cutters	C 432
	Walter Select – Slot milling	C 484
	Slot milling cutters	C 486
	Walter Select – Copy milling	C 534
	Copy milling cutters	C 536
	Walter Select – Profile milling	C 559
	Profiling cutters	C 560
	Walter Select – Circular interpolation milling	C 566

		Page
Technical information	Cutting data	C 568
	Feed determination	C 586
	Cutting tool material application charts	C 612
	Geometry overview – Milling indexable inserts	C 614
	Setting and assembly instructions	C 625
	Tightening torques	C 635
	Information on high-speed applications	C 621
	Roughing/finishing combinations	C 636
	Application information	C 638
Assembly parts and accessories	Milling tool cartridges	C 656
	Clamping screws for indexable inserts	C 657
	Screwdriver	C 659
	Drive collars and retaining washers	C 661
	Steep taper pull studs	C 662
	Transfer units for HSK	C 663
	Miscellaneous	C 664

Indexable inserts for milling – product range overview



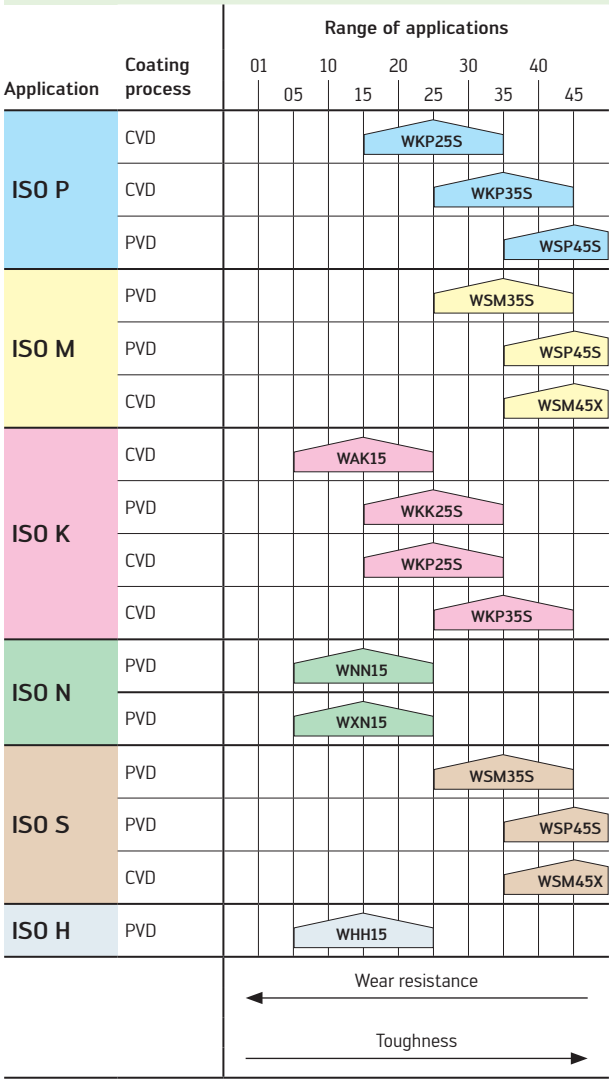
Insert shape		Description	Page
	A	Positive rhombic for **Xtra·tec®**	C 284
	C	Tangential rhombic	C 325
	L	Positive rhombic	C 288
		Negative rhombic for **Xtra·tec®**	C 312
		Tangential rhombic	C 325
		Tangential rhombic for **Xtra·tec®**	C 326
		Tangential rhombic for **Walter BLAXX**	C 328
	M	Positive rhombic	C 290
	O	Positive octagonal for **Xtra·tec®**	C 291
		Finishing inserts	C 310
	R	Positive round	C 296
	S	Positive square	C 299
		Negative square for **Xtra·tec®**	C 314
		F2254 tangential square	C 332
	T	Positive triangular	C 306
		Negative triangular	C 319
	X	Negative heptagonal for **Xtra·tec®**	C 319
		Negative heptagon for **Walter BLAXX**	C 320
	X	Tangential for **Walter BLAXX**	C 330
	X	Positive form inserts for copy milling cutters	C 307
	Z	Positive rhombic	C 308

Insert shape		Description	Page
	SX . .	Indexable inserts for **Walter BLAXX** slitting cutters	C 332
	P 20200	Positive rhombic	C 330
	P 23 . .	Wendelnovex® inserts	C 313
	P 236 . .	Negative triangular for **Xtra·tec®** high-feed milling cutters	C 313
	P 263 . .	Positive triangular for high-feed milling cutters	C 294
		for copy milling cutters	C 293
	P 32 . .	Indexable inserts for profile milling cutters	C 295
	P 44 . .	Tangential rhombic	C 331
		Finishing inserts	C 309
			C 322
			C 333

Cutting tool materials for milling – product range overview

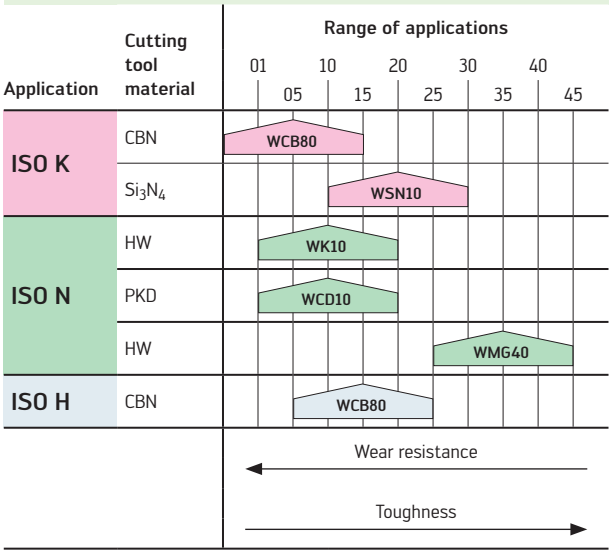
Cutting tool materials: Coated carbide

Cutting tool material applications



Cutting tool materials: Uncoated carbide, ceramic, CBN and PCD

Cutting tool material applications



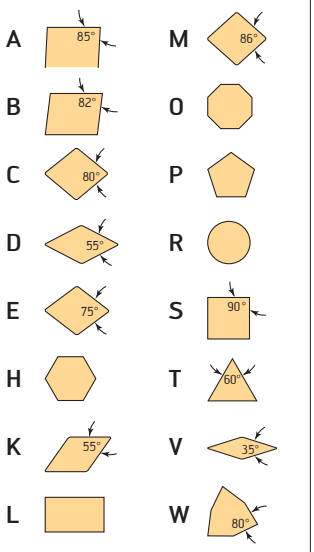
Si_3N_4 = Silicon nitride ceramic
HW = Uncoated carbide
CBN = Cubic boron nitride
PCD = Polycrystalline diamond

Designation key in accordance with ISO 1832 for indexable inserts for milling

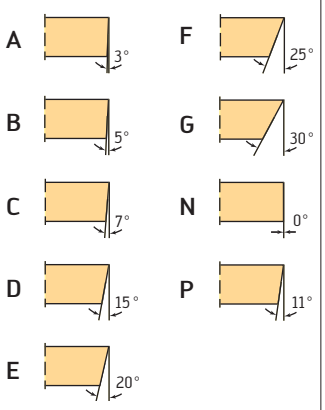
Example:

A	D	G	T	12	04	PE		R	–	F56
1	2	3	4	5	6	7	8	9		12

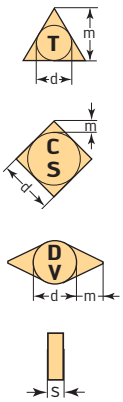
1 Insert shape



2 Clearance angle



3 Tolerances



Permissible deviation in mm for

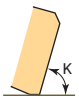
	d	m	s
A	± 0,025	± 0,005	± 0,025
C	± 0,025	± 0,013	± 0,025
E	± 0,025	± 0,025	± 0,025
F	± 0,013	± 0,005	± 0,025
G	± 0,025	± 0,025	± 0,130
H	± 0,013	± 0,013	± 0,025
J[1]	± 0,05–0,15[2]	± 0,005	± 0,025
K[1]	± 0,05–0,15[2]	± 0,013	± 0,025
L[1]	± 0,05–0,15[2]	± 0,025	± 0,025
M	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,130
N	± 0,05–0,15[2]	± 0,08–0,20[2]	± 0,025
U	± 0,08–0,25[2]	± 0,13–0,38[2]	± 0,130

[1] Inserts with ground planar cutting edges
[2] Depending on the insert size (see ISO standard 1832)

7 Corner radius

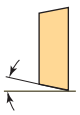


01	r = 0,1
02	r = 0,2
04	r = 0,4
08	r = 0,8
12	r = 1,2
16	r = 1,6
24	r = 2,4



Lead angle

A	45°
D	60°
E	75°
F	85°
P	90°
Z	Other lead angles



Clearance angle of planar cutting edge

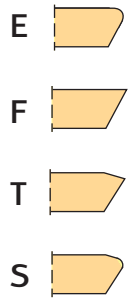
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	Other clearance angles



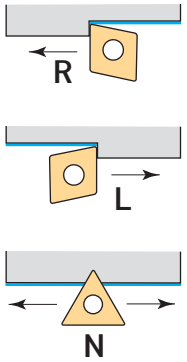
00
for diameters converted from imperial units to mm

M0
for diameters in metric units

8 Edge formation



9 Cutting direction



C 2

4 Machining and fastening features

A

B
α = 70–90°

C
α = 70–90°

F

G

H
α = 70–90°

J
α = 70–90°

M

N

Q
β = 40–60°

R

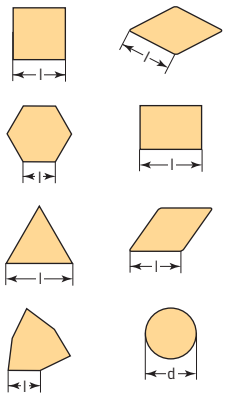
T
β = 40–60°

U
β = 40–60°

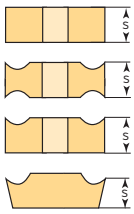
W
β = 40–60°

X Drawing or precise description of the indexable insert is required

5 Cutting edge length



6 Insert thickness



01	s = 1,59
T1	s = 1,98
02	s = 2,38
T2	s = 2,78
03	s = 3,18
T3	s = 3,97
04	s = 4,76
05	s = 5,56
06	s = 6,35
07	s = 7,94
09	s = 9,52

10 Chamfer width



010 = 0,10 mm
020 = 0,20 mm
025 = 0,25 mm
070 = 0,70 mm
150 = 1,50 mm
200 = 2,00 mm

11 Chamfer angle



15 = 15°
20 = 20°

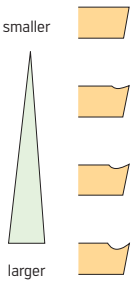
12 Manufacturer specifications/geometry index

Example

F	5	6	
1	2	3	4

1. Chip breaker groove

smaller



larger

A = 0°
B = 6°
D = 10°
E = 15°
F = 16°
G = 20°
K = 25°
L = 28°

2. Cutting edge

heavily ground down



sharp

2
5
6
7
8

3. Flank face design

1 including vibration damped
5
6
7
8

Flank face design

4. Additional information

T Tangential installation

Designation key for coated carbides – Milling

Example:

W	K	P	35	S
Walter	1	2	3	4

1

1. Primary application

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials

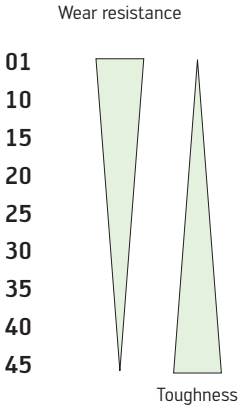
2

2. Primary application

P	Steel
M	Stainless steel
K	Cast iron
N	NF metals
S	Materials with difficult cutting properties
H	Hard materials

3

ISO application range



4

Generation

S	Tiger·tec® Silver
X	

Walter Select for indexable inserts for milling

Step by step to the right indexable insert

STEP 1

Determine the **material** to be machined from page C 671 onwards.

Note the **machining group** that corresponds to your material, e.g.: P10.

Code letters	Machining groups	Groups of the materials to be machined	
P	**P1–P15**	**Steel**	All types of steel and steel casting, with the exception of steel with an austenitic structure
M	**M1–M3**	**Stainless steel**	Austenitic stainless steel, austenitic-ferritic steel and steel casting
K	**K1–K7**	**Cast iron**	Grey cast iron, cast iron with spheroidal graphite, malleable cast iron, cast iron with vermicular graphite
N	**N1–N10**	**NF metals**	Aluminium and other non-ferrous metals, non-ferrous materials
S	**S1–S10**	**Materials with difficult cutting properties**	Heat-resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys
H	**H1–H4**	**Hard materials**	Hardened steel, hardened cast iron materials, chilled cast iron
O	**O1–O6**	**Other**	Plastics, glass and carbon fibre reinforced plastics, graphite

STEP 2

Select the **machining conditions:**

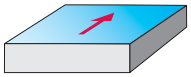
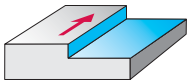
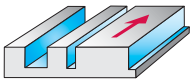
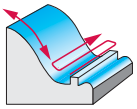
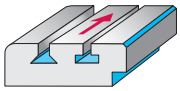
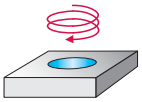
Type of cutting action	Machine stability, clamping system and workpiece		
	very good	good	moderate
Short projection length			
Long projection length			

C 2

STEP 3

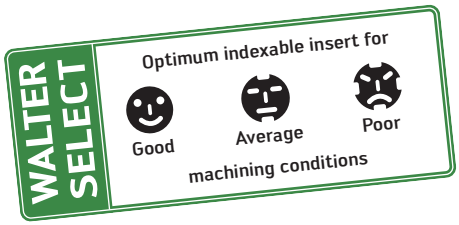
Select your **tool** according to your application and individual requirements.
Then select your milling cutter from the corresponding tool page.

Machining method

 **Face milling** See page C 350	 **Shoulder milling** See page C 428	 **Slot milling** See page C 484
 **Copy milling** See page C 534	 **Profile milling** See page C 559	 **Circular interpolation milling** See page C 566

STEP 4

Determine your optimum **indexable insert grade and geometry** on the appropriate tool page.
In so doing, please take into consideration the machining conditions (step 2) and the material to be machined.
For a detailed geometry description for milling tools, see page C 614.



Indexable inserts

Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10
SNGX1205ANN-F27		1,5	●	●●						●●	●●		
SNGX1205ANN-F57		1,5	●	●●	●●	●●	●●		●●	●●	●●		
SNGX1205ANN-F67		1,5	●	●●	●●	●●	●●	●		●●	●●		
SNHX1205ANN-K88		1,5										●	●
SNMX1205ANN-F27		1,5	●	●●						●●	●●		
SNMX1205ANN-F57		1,5	●	●●					●●	●●	●●		
SNMX1205ANN-F67		1,5	●	●●				●		●●	●●		
SNGX120512-F57	1,2		●	●●	●●	●●	●●			●●	●●		●
SNMX120512-D27	1,2		●	●●					●●	●●	●●		
SNMX120512-F27	1,2		●	●●						●●	●●		
SNMX120520-D27	2		●	●●					●●	●●	●●		
SNMX120520-F57	2		●	●●	●●		●●		●●	●●	●●		
XNGX1205ANN-F67		4,7						●					

STEP 5

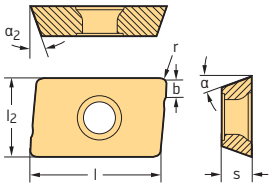
Select the **cutting data** from page C 568 onwards.

Cutting data for roughing
Face/shoulder milling

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters		Brinell hardness HB	Tensile strength R_m N/mm²	Machining group 1	Cutting material grades: HC WKP35S	HC WKP25S	HC WAK15
						Starting values for cutting speed v_c [m/min]: a_e / D_c* 1/1	1/2	1/5	a_e / D_c* 1/1	1/2	1/5	a_e / D_c* 1/1	1/2	1/5
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●	250	300		290	320			
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●	220	260		260	330			
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●	215	250		255	320			
		C > 0.55%	Annealed	190	640	P4	●	●●	220	260		260	330			
		C > 0.55%	Heat-treated	300	1010	P5	●	●●	160	180		220	260			
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	210	240		250	315			
	Low-alloyed steel	Annealed		175	590	P7	●	●●	220	270		260	320			
		Heat-treated		285	960	P8	●	●●	170	190		210	250			
		Heat-treated		380	1280	P9	●	●●	130	150		170	190			
		Heat-treated		430	1480	P10	●	●●	110	130		150	170			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	130	160		140	170			
		Hardened and tempered		300	1010	P12	●	●●	80	90		110	130			
		Hardened and tempered		380	1280	P13	●	●●	70	80		90	110			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●	140	160						
		Martensitic, heat-treated		330	1110	P15	●	●●	90	110						
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●								
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●								
		Austenitic/ferritic, duplex		230	780	M3	●●	●								
	Malleable cast iron	Ferritic		200	400	K1	●	●●	160	190		180	210		210	230

Positive rhombic
ADGT / ADHT / ADKT
Tiger·tec® Silver



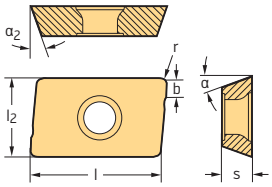
C 2

Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	α_2	r mm	b mm	P HC				M HC				K HC				N HC	N HW	S HC			
											WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM35S	WSM35	WSP45S	WSP45
	ADGT0803PER-D51	G	2	6,75	9,52	3,35	15°	20°	0,4	1,2	●	●	●				●				●	●					●	
	ADGT1204PER-D51	G	2	8,4	13,6	4,76	15°	20°	0,8	1,2	●	●	●				●				●	●					●	
	ADGT1606PER-D51	G	2	10,8	17,5	6,15	15°	20°	0,8	1,6	●	●	●				●				●	●					●	
	ADGT1807PER-D51	G	2	14,5	19	7	15°	17°	1,2	1,8	●	●	●				●				●	●					●	
	ADGT0803PER-D56	G	2	6,75	9,52	3,35	15°	20°	0,4	1,2			●				●										●	
	ADGT1204PER-D56	G	2	8,4	13,6	4,76	15°	20°	0,8	1,2	●	●	●				●			●	●	●					●	
	ADGT1606PER-D56	G	2	10,8	17,5	6,15	15°	20°	0,8	1,6	●	●	●				●			●	●	●					●	
	ADGT1807PER-D56	G	2	14,5	19	7	15°	17°	1,2	1,8	●	●	●				●				●	●					●	
	ADGT10T3PER-D67	G	2	7,25	11,3	3,8	15°	15°	0,8	1,2		●	●		●		●					●				●		●	
	ADGT10T316R-D67	G	2	7,25	11,3	3,8	15°	15°	1,6	1,2			●			●	●									●	●	
	ADGT10T325R-D67	G	2	7,25	11,3	3,8	15°	15°	2,5	1				●		●		●								●		●
	ADGT10T330R-D67	G	2	7,25	11,3	3,8	15°	15°	3	0,8			●			●	●									●	●	
	ADGT10T332R-D67	G	2	7,25	11,3	3,8	15°	15°	3,2	0,8				●		●		●								●		●
	ADGT1204PER-D67	G	2	8,4	13,6	4,76	15°	20°	0,8	1,2		●	●		●		●					●				●		●	
	ADGT120416R-D67	G	2	8,4	13,6	4,76	15°	20°	1,6	1			●			●	●									●	●	
	ADGT120430R-D67	G	2	8,4	13,6	4,76	15°	20°	3	0,8				●		●		●								●		●
	ADGT1606PER-D67	G	2	10,8	17,5	6,15	15°	20°	0,8	1,6		●	●		●		●					●				●		●	
	ADGT160616R-D67	G	2	10,8	17,5	6,15	15°	20°	1,6	1			●			●	●									●	●	
	ADGT160630R-D67	G	2	10,8	17,5	6,15	15°	20°	3	0,8			●			●	●									●	●	
	ADGT0803PER-F56	G	2	6,75	9,52	3,35	15°	20°	0,4	1,2			●		●		●									●		●
	ADGT080308R-F56	G	2	6,75	9,52	3,35	15°	20°	0,8	1,2			●			●	●									●	●	
	ADGT120404R-F56	G	2	8,4	13,6	4,76	15°	20°	0,4	1,2			●			●	●									●	●	
	ADGT1204PER-F56	G	2	8,4	13,6	4,76	15°	20°	0,8	1,2			●		●		●									●		●
	ADGT120430R-F56	G	2	8,4	13,6	4,76	15°	20°	3	0,8			●				●											●
	ADGT120440R-F56	G	2	8,4	13,6	4,76	15°	20°	4	0,4			●				●											●
	ADGT1606PER-F56	G	2	10,8	17,5	6,15	15°	20°	0,8	1,6			●		●		●									●		●
	ADGT160612R-F56	G	2	10,8	17,5	6,15	15°	20°	1,2	1,6			●			●	●									●	●	
	ADGT160616R-F56	G	2	10,8	17,5	6,15	15°	20°	1,6	1,4			●				●											●
	ADGT160620R-F56	G	2	10,8	17,5	6,15	15°	20°	2	1,4			●				●											●
	ADGT160632R-F56	G	2	10,8	17,5	6,15	15°	20°	3,2	1,2			●				●											●
	ADGT160640R-F56	G	2	10,8	17,5	6,15	15°	20°	4	1			●				●											●
	ADGT160650R-F56	G	2	10,8	17,5	6,15	15°	20°	5	0,4			●			●	●									●	●	
	ADGT10T3PER-G77	G	2	7,25	11,3	3,8	15°	15°	0,8	1,2			●			●	●									●	●	
	ADGT1204PER-G77	G	2	8,4	13,6	4,76	15°	20°	0,8	1,2			●			●	●									●	●	
	ADGT1606PER-G77	G	2	10,8	17,5	6,15	15°	20°	0,8	1,2			●			●	●									●	●	

HC = Coated carbide
HW = Uncoated carbide

Positive rhombic
ADGT / ADHT / ADKT
Tiger·tec® Silver



Indexable inserts

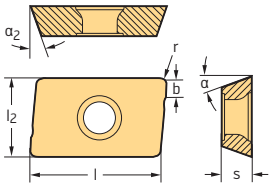
	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	α_2	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	ADHT0803PER-G88	H	2	6,75	9,52	3,35	15°	20°	0,4	1,2													☺	☺				
	ADHT0803PEL-G88	H	2	6,75	9,52	3,35	15°	20°	0,4	1,2													☺					
	ADHT10T3PER-G88	H	2	7,25	11,3	3,8	15°	15°	0,8	1,2													☺	☺				
	ADHT1204PER-G88	H	2	8,4	13,6	4,76	15°	20°	0,8	1,2													☺	☺				
	ADHT1204PEL-G88	H	2	8,4	13,6	4,76	15°	20°	0,8	1,2													☺	☺				
	ADHT120416R-G88	H	2	8,4	13,6	4,76	15°	20°	1,6	1													☺	☺				
	ADHT120416L-G88	H	2	8,4	13,6	4,76	15°	20°	1,6	1													☺					
	ADHT120425R-G88	H	2	8,4	13,6	4,76	15°	20°	2,5	0,8														☺				
	ADHT120425L-G88	H	2	8,4	13,6	4,76	15°	20°	2,5	0,8													☺					
	ADHT120430R-G88	H	2	8,4	13,6	4,76	15°	20°	3	0,8													☺	☺				
	ADHT120430L-G88	H	2	8,4	13,6	4,76	15°	20°	3	0,8													☺					
	ADHT120440R-G88	H	2	8,4	13,6	4,76	15°	20°	4	0,4														☺				
	ADHT120440L-G88	H	2	8,4	13,6	4,76	15°	20°	4	0,4													☺					
	ADHT1606PER-G88	H	2	10,8	17,5	6,15	15°	20°	0,8	1,6													☺	☺				
	ADHT1606PEL-G88	H	2	10,8	17,5	6,15	15°	20°	0,8	1,6													☺					
	ADHT160616R-G88	H	2	10,8	17,5	6,15	15°	20°	1,6	1,4													☺	☺				
	ADHT160616L-G88	H	2	10,8	17,5	6,15	15°	20°	1,6	1,4													☺					
	ADHT160625R-G88	H	2	10,8	17,5	6,15	15°	20°	2,5	1,2														☺				
	ADHT160625L-G88	H	2	10,8	17,5	6,15	15°	20°	2,5	1,2													☺					
	ADHT160630R-G88	H	2	10,8	17,5	6,15	15°	20°	3	1,2														☺				
	ADHT160640R-G88	H	2	10,8	17,5	6,15	15°	20°	4	1														☺				
	ADHT160640L-G88	H	2	10,8	17,5	6,15	15°	20°	4	1													☺					
	ADKT0803PER-F56	K	2	6,75	9,52	3,35	15°	20°	0,4	1,2	☺	😐	☹				☹		☺		😐	☹					☹	
	ADKT0803PEL-F56	K	2	6,75	9,52	3,35	15°	20°	0,4	1,2		😐	☹				☹					☹					☹	
	ADKT10T3PER-F56	K	2	7,25	11,3	3,8	15°	15°	0,8	1,2	☺	😐	☹		😐		☹		☺		😐	☹			😐		☹	
	ADKT1204PER-F56	K	2	8,4	13,6	4,76	15°	20°	0,8	1,2	☺	😐	☹				☹		☺		😐	☹					☹	
	ADKT1204PEL-F56	K	2	8,4	13,6	4,76	15°	20°	0,8	1,2		😐	☹				☹					☹					☹	
	ADKT1606PER-F56	K	2	10,8	17,5	6,15	15°	20°	0,8	1,6	☺	😐	☹				☹		☺		😐	☹					☹	
	ADKT1606PEL-F56	K	2	10,8	17,5	6,15	15°	20°	0,8	1,6		😐	☹				☹					☹					☹	

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
☺ Good
😐 Average
☹ Poor
machining conditions

Positive rhombic
ADMT

Tiger·tec® Silver



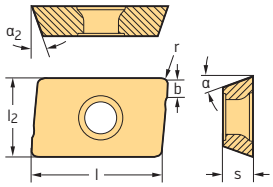
C 2

Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	α_2	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADMT080304R-D56	M	2	6,75	9,52	3,35	15°	20°	0,4	1,2	●	●	●					●		●	●	●	●				●	
	ADMT120408R-D56	M	2	8,4	13,6	4,76	15°	20°	0,8	1,2	●	●	●					●		●	●	●	●				●	
	ADMT160608R-D56	M	2	10,8	17,5	6,15	15°	20°	0,8	1,6	●	●	●					●		●	●	●	●				●	
	ADMT180712R-D56	M	2	14,5	19	7	15°	17°	1,2	1,8	●	●	●					●			●	●	●				●	

HC = Coated carbide

Positive rhombic
ADMT
Tiger·tec® Silver



Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	α_2	r mm	b mm	P HC				M HC					K HC					S HC				
											WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSM45X	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM35	WSM45X	WSP45S	WSP45
	ADMT080302R-F56	M	2	6,75	9,52	3,35	15°	20°	0,2	1,2		☺	☺		☺			☺					☺	☺			☺		
	ADMT080304R-F56	M	2	6,75	9,52	3,35	15°	20°	0,4	1,2	☺	☺	☺		☺	☺		☺		☺	☺	☺	☺	☺	☺		☺		
	ADMT080304L-F56	M	2	6,75	9,52	3,35	15°	20°	0,4	1,2		☺	☺					☺					☺				☺		
	ADMT080308R-F56	M	2	6,75	9,52	3,35	15°	20°	0,8	1,2		☺	☺	☹	☺	☺		☺	☹				☺	☺	☺		☺	☹
	ADMT080308L-F56	M	2	6,75	9,52	3,35	15°	20°	0,8	1,2		☺	☺					☺					☺				☺		
	ADMT080312R-F56	M	2	6,75	9,52	3,35	15°	20°	1,2	1		☺	☺		☺			☺					☺	☺			☺		
	ADMT080316R-F56	M	2	6,75	9,52	3,35	15°	20°	1,6	1		☺	☺		☺			☺					☺	☺			☺		
	ADMT080320R-F56	M	2	6,75	9,52	3,35	15°	20°	2	1		☺	☺		☺	☺		☺					☺	☺	☺		☺		
	ADMT10T304R-F56	M	2	7,25	11,3	3,8	15°	15°	0,4	1,2		☺	☺		☺			☺					☺	☺			☺		
	ADMT10T308R-F56	M	2	7,25	11,3	3,8	15°	15°	0,8	1,2	☺	☺	☺		☺		☹	☺		☺	☺	☺	☺	☺		☹	☺		
	ADMT10T312R-F56	M	2	7,25	11,3	3,8	15°	15°	1,2	1,2		☺	☺		☺			☺					☺	☺			☺		
	ADMT10T316R-F56	M	2	7,25	11,3	3,8	15°	15°	1,6	1,2		☺	☺		☺		☹	☺					☺	☺		☹	☺		
	ADMT10T320R-F56	M	2	7,25	11,3	3,8	15°	15°	2	1		☺	☺		☺			☺					☺	☺			☺		
	ADMT10T325R-F56	M	2	7,25	11,3	3,8	15°	15°	2,5	1		☺	☺		☺			☺					☺	☺			☺		
	ADMT10T330R-F56	M	2	7,25	11,3	3,8	15°	15°	3	0,8		☺	☺		☺			☺					☺	☺			☺		
	ADMT10T332R-F56	M	2	7,25	11,3	3,8	15°	15°	3,2	0,8		☺	☺		☺			☺					☺	☺			☺		
	ADMT120404R-F56	M	2	8,4	13,6	4,76	15°	20°	0,4	1,2		☺	☺		☺	☺	☹	☺					☺	☺	☺	☹	☺		
	ADMT120408R-F56	M	2	8,4	13,6	4,76	15°	20°	0,8	1,2	☺	☺	☺	☹	☺	☺	☹	☺	☹	☺	☺	☺	☺	☺	☺	☹	☺	☹	☹
	ADMT120408L-F56	M	2	8,4	13,6	4,76	15°	20°	0,8	1,2		☺	☺						☺					☺				☺		
	ADMT120412R-F56	M	2	8,4	13,6	4,76	15°	20°	1,2	1,2		☺	☺		☺		☹	☺	☹					☺	☺		☹	☺		
	ADMT120416R-F56	M	2	8,4	13,6	4,76	15°	20°	1,6	1		☺	☺	☹	☺	☺	☹	☺	☹	☹				☺	☺	☺	☹	☺	☹	☹
	ADMT120416L-F56	M	2	8,4	13,6	4,76	15°	20°	1,6	1		☺		☹						☹				☺						☹
	ADMT120420R-F56	M	2	8,4	13,6	4,76	15°	20°	2	1		☺	☺		☺	☺	☹	☺	☹					☺	☺	☺	☹	☺		
	ADMT120425R-F56	M	2	8,4	13,6	4,76	15°	20°	2,5	0,8		☺		☹	☺					☹				☺	☺					☹
	ADMT120425L-F56	M	2	8,4	13,6	4,76	15°	20°	2,5	0,8		☺		☹						☹				☺						☹
	ADMT120430R-F56	M	2	8,4	13,6	4,76	15°	20°	3	0,8		☺	☺		☺	☺	☹	☺	☹					☺	☺	☺	☹	☺		
	ADMT120430L-F56	M	2	8,4	13,6	4,76	15°	20°	3	0,8		☺		☹						☹				☺						☹
	ADMT120432R-F56	M	2	8,4	13,6	4,76	15°	20°	3,2	0,8		☺	☺		☺		☹	☺	☹					☺	☺		☹	☺		
	ADMT120440R-F56	M	2	8,4	13,6	4,76	15°	20°	4	0,4		☺	☺	☹	☺	☺	☹	☺	☹	☹				☺	☺	☺	☹	☺	☹	☹
	ADMT120440L-F56	M	2	8,4	13,6	4,76	15°	20°	4	0,4		☺		☹						☹				☺						☹
	ADMT160608R-F56	M	2	10,8	17,5	6,15	15°	20°	0,8	1,6	☺	☺	☺	☹	☺	☺	☹	☺	☹	☺	☺	☺	☺	☺	☺	☹	☺	☹	☹
	ADMT160608L-F56	M	2	10,8	17,5	6,15	15°	20°	0,8	1,6		☺	☺						☺					☺				☺		
	ADMT160612R-F56	M	2	10,8	17,5	6,15	15°	20°	1,2	1,6		☺	☺		☺		☹	☺	☹					☺	☺		☹	☺		
	ADMT160616R-F56	M	2	10,8	17,5	6,15	15°	20°	1,6	1,4		☺	☺	☹	☺	☺	☹	☺	☹	☹				☺	☺	☺	☹	☺	☹	☹
	ADMT160616L-F56	M	2	10,8	17,5	6,15	15°	20°	1,6	1,4		☺		☹						☹				☺						☹
	ADMT160620R-F56	M	2	10,8	17,5	6,15	15°	20°	2	1,4		☺	☺	☹	☺	☺	☹	☺	☹					☺	☺	☺	☹	☺		
	ADMT160625R-F56	M	2	10,8	17,5	6,15	15°	20°	2,5	1,2		☺	☺		☺			☺						☺	☺			☺		
	ADMT160625L-F56	M	2	10,8	17,5	6,15	15°	20°	2,5	1,2		☺		☹						☹				☺						☹

HC = Coated carbide

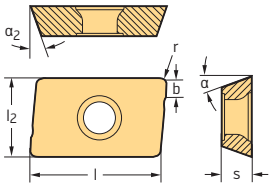
WALTER SELECT

Optimum indexable insert for

☺ Good ; 😐 Average ; ☹ Poor

machining conditions

Positive rhombic
ADMT
Tiger·tec® Silver

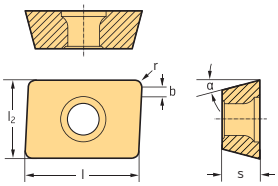


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	α_2	r mm	b mm	P HC				M HC					K HC				S HC				
											WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSM45X	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM35	WSM45X	WSP45S	WSP45
	ADMT160630R-F56	M	2	10,8	17,5	6,15	15°	20°	3	1,2		●	●		●		●	●					●	●		●	●	
	ADMT160630L-F56	M	2	10,8	17,5	6,15	15°	20°	3	1,2		●	●					●					●				●	
	ADMT160632R-F56	M	2	10,8	17,5	6,15	15°	20°	3,2	1,2		●	●		●		●	●					●	●		●	●	
	ADMT160640R-F56	M	2	10,8	17,5	6,15	15°	20°	4	1		●	●	●	●	●	●	●	●				●	●	●	●	●	●
	ADMT160640L-F56	M	2	10,8	17,5	6,15	15°	20°	4	1		●	●					●					●				●	
	ADMT160650R-F56	M	2	10,8	17,5	6,15	15°	20°	5			●	●		●		●	●					●	●		●	●	
	ADMT160660R-F56	M	2	10,8	17,5	6,15	15°	20°	6			●	●	●	●	●	●	●	●				●	●	●	●	●	●
	ADMT180712R-F56	M	2	14,5	19	7	15°	17°	1,2	1,8	●	●	●					●			●	●	●				●	
	ADMT080304R-G56	M	2	6,75	9,52	3,35	15°	20°	0,4	1,2		●		●	●				●				●	●				●
	ADMT10T308R-G56	M	2	7,25	11,3	3,8	15°	15°	0,8	1,2		●		●	●				●				●	●				●
	ADMT120408R-G56	M	2	8,4	13,6	4,76	15°	20°	0,8	1,2		●	●		●			●					●	●			●	
	ADMT160608R-G56	M	2	10,8	17,5	6,15	15°	20°	0,8	1,6		●	●		●			●					●	●			●	

HC = Coated carbide

Positive rhombic
LDMW / LDMT
Tiger·tec® Silver



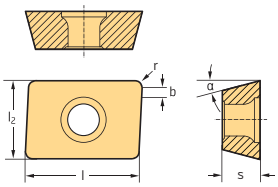
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	r mm	b mm	P HC			M HC		K HC				S HC	
										WKP25S	WKP35S	WSP45S	WSM35S	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSP45S
	LDMW08T204R-A57	M	2	6,1	8,88	2,58	15°	0,4	0,8	●	●						●	●		
	LDMW14T308R-A57	M	2	9,68	14,1	4,08	15°	0,8	1,2	●	●						●	●		
	LDMW170408R-A57	M	2	11,78	17,24	4,92	15°	0,8	1,6	●	●						●	●		
	LDMT08T204R-D51	M	2	6,1	8,88	2,58	15°	0,4	0,8	●	●	●		●			●	●		●
	LDMT14T308R-D51	M	2	9,68	14,1	4,08	15°	0,8	1,2	●	●						●	●		
	LDMT170408R-D51	M	2	11,78	17,24	4,92	15°	0,8	1,6	●	●	●		●			●	●		●
	LDMT14T308R-D51	M	2					0,8	1,2			●		●						●
	LDMT08T204R-D57	M	2	6,1	8,88	2,58	15°	0,4	0,8	●	●	●	●	●		●	●	●	●	●
	LDMT14T308R-D57	M	2	9,68	14,1	4,08	15°	0,8	1,2	●	●	●	●	●		●	●	●	●	●
	LDMT170408R-D57	M	2	11,78	17,24	4,92	15°	0,8	1,6	●	●	●	●	●		●	●	●	●	●

HC = Coated carbide

C 2

Positive rhombic
LDMW / LDMT
Tiger·tec® Silver

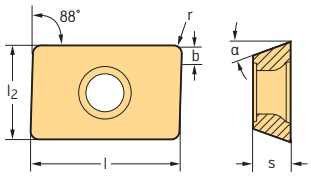


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	LDMT08T204R-F57	M	2	6,1	8,88	2,58	15°	0,4	0,8	☺	😐	☹	😐	☹	☺		😐	☹	😐	☹
	LDMT14T308R-F57	M	2	9,68	14,1	4,08	15°	0,8	1,2	☺	😐	☹	😐	☹	☺		😐	☹	😐	☹
	LDMT170408R-F57	M	2	11,78	17,24	4,92	15°	0,8	1,6	☺	😐	☹	😐	☹	☺		😐	☹	😐	☹

HC = Coated carbide

Positive rhombic
LPGW / LPGT / LPMW / LPMT
Tiger·tec® Silver



Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LPGW070304R-A57	G	2	6,35	7,94	3,18	11°	0,4	1,2	😐	☹							☺		😐	☹				
	LPGW15T308R-A57	G	2	9,52	15	3,97	11°	0,8	1,4	😐	☹							☺		😐	☹				
	LPGW150412R-A57	G	2	12,7	15,88	4,76	11°	1,2	1,6	😐	☹							☺		😐	☹				
	LPGT070304R-F55	G	2	6,35	7,94	3,18	11°	0,4	1,2		😐		☹		😐		☹				☹		😐		☹
	LPGT15T308R-F55	G	2	9,52	15	3,97	11°	0,8	1,4		😐		☹		😐		☹				☹		😐		☹
	LPGT150412R-F55	G	2	12,7	15,88	4,76	11°	1,2	1,6		😐		☹		😐		☹	☺			☹		😐		☹
	LPGT1506PPR-F57	G	2	12,7	15,88	6,35	11°	1,2	1,6		😐	☹			😐	☹					☹		😐	☹	
	LPMW070304TR-A27	M	2	6,35	7,94	3,18	11°	0,4		😐	☹									😐	☹				
	LPMW15T308TR-A27	M	2	9,52	15	3,97	11°	0,8		😐	☹									😐	☹				
	LPMW150412TR-A27	M	2	12,7	15,88	4,76	11°	1,2		😐	☹									😐	☹				
	LPMW150612TR-A27	M	2	12,7	15,88	6,35	11°	1,2			☹										☹				
	LPMT070304R-D51	M	2	6,35	7,94	3,18	11°	0,4	1,2	☺	😐		☹		😐		☹			😐	☹		😐		☹
	LPMT15T308R-D51	M	2	9,52	15	3,97	11°	0,8	1,4	☺	😐		☹		😐		☹			😐	☹		😐		☹
	LPMT150412R-D51	M	2	12,7	15,88	4,76	11°	1,2	1,6	☺	😐		☹		😐		☹			😐	☹		😐		☹
	LPMT150612R-D51	M	2	12,7	15,88	6,35	11°	1,2			😐	☹			😐	☹					☹		😐	☹	

HC = Coated carbide

WALTER SELECT

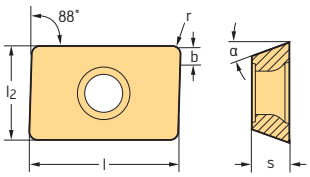
Optimum indexable insert for

☺ Good ; 😐 Average ; ☹ Poor

machining conditions

C 2

Positive rhombic
LPGW / LPGT / LPMW / LPMT
Tiger·tec® Silver

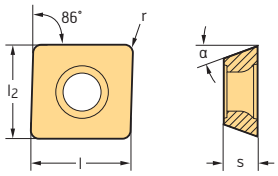


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LPMT150612R-D57	M	2	12,7	15,88	6,35	11°	1,2		☺	☺		☹				☹	☺		☺	☺				☹

HC = Coated carbide

Positive rhombic
MPHX / MPHW / MPHT / MPMX / MPMT
Tiger·tec® Silver

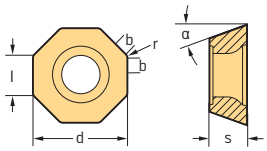


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	MPHX060304-A57	H	2	6,35	6,35	3,18	11°	0,4	☺	☹							☺		☺	☹					
	MPHX080305-A57	H	2	8,3	8,3	3,18	11°	0,5	☺	☹							☺		☺	☹					
	MPHW120408-A57	H	2	12,7	12,7	4,76	11°	0,8	☺	☹							☺		☺	☹					
	MPHX060304-G88	H	2	6,35	6,35	3,18	11°	0,4													☺				
	MPHX080305-G88	H	2	8,3	8,3	3,18	11°	0,5													☺				
	MPHT120408-G88	H	2	12,7	12,7	4,76	11°	0,8													☺				
	MPMX060304-F57	M	2	6,35	6,35	3,18	11°	0,4		☺		☹		☺		☹				☹			☺		☹
	MPMX080305-F57	M	2	8,3	8,3	3,18	11°	0,5		☺		☹		☺		☹	☺			☹			☺		☹
	MPMT120408-F57	M	2	12,7	12,7	4,76	11°	0,8		☺		☹		☺		☹				☹			☺		☹

HC = Coated carbide

Positive octagonal
ODHW / ODHT / ODMT / ODMW
Tiger·tec® Silver



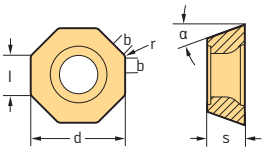
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	d mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S
	ODHW050408-A57	H	8	5,26	12,7	4,76	15°	0,8			☹									☹							
	ODHW060512-A57	H	8	6,58	15,88	5,56	15°	1,2			☹									☹							
	ODHW050412-A57	H	8	5,26	12,7	4,76	15°	1,2													☺						
	ODHW060516-A57	H	8	6,58	15,88	5,56	15°	1,6													☺						
	ODHT050408-F57	H	8	5,26	12,7	4,76	15°	0,8			☹	☹				☹				☹							☹
	ODHT060512-F57	H	8	6,58	15,88	5,56	15°	1,2			☹	☹				☹				☹							☹
	ODHT050408-G88	H	8	5,26	12,7	4,76	15°	0,8														☺					
	ODHW0504ZZN-A57	H	8	5,26	12,7	4,76	15°	0,8	1,2	😐	☹						☺		😐	☹							
	ODHW0605ZZN-A57	H	8	6,58	15,88	5,56	15°	0,8	1,6	😐	☹						☺		😐	☹							
	ODHT0504ZZN-F57	H	8	5,26	12,7	4,76	15°	0,8	1,2		☹	☹	😐			☹				☹				😐			☹
	ODHT0605ZZN-F57	H	8	6,58	15,88	5,56	15°	0,8	1,6		☹	☹	😐			☹				☹				😐			☹
	ODHT0605ZZN-G88	H	8	6,58	15,88	5,56	15°	0,8	1,6													☺	☺				
	ODHT0504ZZN-G88	H	8	5,26	12,7	4,76	15°	0,8	1,2													☺	☺				
	ODMT050408-D57	M	8	5,26	12,7	4,76	15°	0,8			☹	☹		😐		☹		😐		☹					😐		☹
	ODMT060512-D57	M	8	6,58	15,88	5,56	15°	1,2			☹	☹		😐		☹		😐		☹					😐		☹
	ODMT0504ZZN-D57	M	8	5,26	12,7	4,76	15°	0,8	1,2	☺	☹	☹	😐		☹	☹		😐	😐	☹				😐		☹	☹
	ODMT0605ZZN-D57	M	8	6,58	15,88	5,56	15°	0,8	1,6	☺	☹	☹	😐		☹	☹		😐	😐	☹				😐		☹	☹

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
Good ☺ Average 😐 Poor ☹
machining conditions

Positive octagonal
ODHW / ODHT / ODMT / ODMW
Tiger·tec® Silver

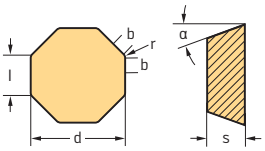


Indexable inserts

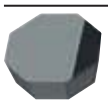
	Designation	Tolerance class	Number of cutting edges	l mm	d mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S
	ODMW050408T-A27	M	8	5,26	12,7	4,76	15°	0,8		●	●							●	●	●							
	ODMW060508T-A27	M	8	6,58	15,88	5,56	15°	0,8		●	●							●	●	●							
	ODMW050408-A57	M	8	5,26	12,7	4,76	15°	0,8		●	●						●	●	●	●							
	ODMW060508-A57	M	8	6,58	15,88	5,56	15°	0,8		●	●						●	●	●	●							

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide

Positive octagonal
OPHN
Tiger·tec® Silver

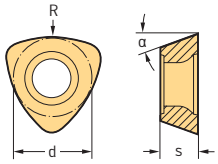


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	d mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K BH WCB80	K CN WSN10	S HC WSM35S	S HC WSP45S
	OPHN0504ZZN-A27	H	2	5	12,7	4,76	11°	0,4	1,2										●			
	OPHN050412-A57	H	8	5	12,7	4,76	11°	1,2												●		
	OPHN0504ZZN-A57	H	8	5	12,7	4,76	11°	0,4	1,2						●		●			●		

HC = Coated carbide
BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4

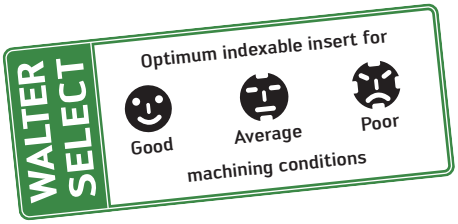
Positive triangular
P26315 / P26325
Tiger·tec® Silver



Indexable inserts

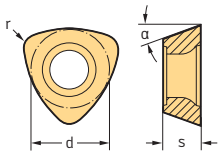
	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	R mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	S HC WSP45
	P26315R10	M	3	6,75	2,78	14°	10,0	☺	☹	☹			☹				☺	☹		☹	
	P26315R12	M	3	8,5	3,18	14°	12,5	☺	☹	☹			☹				☺	☹		☹	
	P26315R15	M	3	10,5	3,97	14°	15,0	☺	☹	☹			☹				☺	☹		☹	
	P26315R16	M	3	10,5	3,97	14°	16,0	☺	☹	☹			☹				☺	☹		☹	
	P26315R20	M	3	12,5	4,76	11°	20,0	☺	☹	☹			☹				☺	☹		☹	
	P26315R25	M	3	12,7	4,76	11°	25,0	☺	☹	☹			☹				☺	☹		☹	
	P26315R31	M	3	12,7	4,76	11°	31,5	☺	☹	☹			☹				☺	☹		☹	
	P26325R25	M	3	13	5,56	14°	25,0	☺	☹		☹			☹			☺	☹			☹
	P26325R31	M	3	13,52	5,59	14°	31,5	☺	☹		☹			☹			☺	☹			☹

HC = Coated carbide



Positive triangular
P26335 / P26337 / P26339

Tiger·tec® Silver



C 2

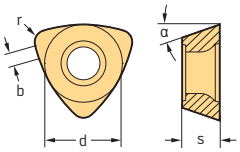
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	S HC WSP45
	P26335R10	M	3	6,75	3,18	14°	0,8	●	○	○		●	○				●	○	●	○	
	P26335R14	M	3	9,52	3,97	14°	1,2	●	○	○	○	●	○	○			●	○	●	○	○
	P26335R25	M	3	13	5,56	14°	2	●	○	○		●	○				●	○	●	○	
	P26337R10	M	3	6,75	3,18	14°	0,8	●	○	○			○				●	○		○	
	P26337R14	M	3	9,52	3,97	14°	1,2	●	○	○			○				●	○		○	
	P26337R25	M	3	13	5,56	14°	2	●	○	○			○				●	○		○	
	P26339R10	M	3	6,75	3,18	14°	0,8	●	○	○		●	○				●	○	●	○	
	P26339R14	M	3	9,52	3,97	14°	1,2	●	○	○		●	○				●	○	●	○	
	P26339R25	M	3	13	5,56	14°	2	●	○	○		●	○				●	○	●	○	

HC = Coated carbide

Positive triangular
P26379

Tiger·tec® Silver



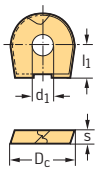
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	P26379-R10	M	3	6,75	3,18	14°	0,8	0,9		○	○		○				○		○
	P26379-R14	M	3	9,52	3,97	14°	1,2	1		○	○		○				○		○
	P26379-R25	M	3	13	5,56	14°	2	1,1		○	○		○				○		○

HC = Coated carbide

Profile milling inserts
P3204 / P3201

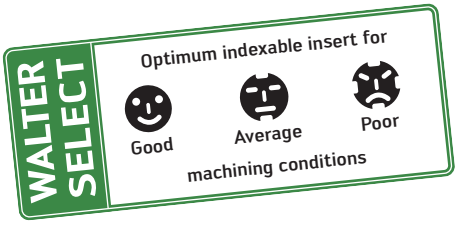
Tiger·tec®



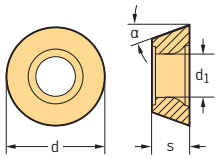
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	$D_c^{-0,03}$ mm	s mm	l_1 mm	d_1 mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP46	M HC WSM35S	M HC WSM36	M HC WSP45S	M HC WSP46	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM36	S HC WSP45S	S HC WSP46	H HC WHH15
	P3204-D08	H	2	8	2	4	3				☹		😐		☹						😐		☹	🙂
	P3204-D10	H	2	10	2,5	5	4				☹		😐		☹						😐		☹	🙂
	P3204-D12	H	2	12	2,5	6	5				☹		😐		☹						😐		☹	🙂
	P3204-D16	H	2	16	3	6	5				☹		😐		☹						😐		☹	🙂
	P3204-D20	H	2	20	3	6	5				☹		😐		☹						😐		☹	🙂
	P3204-D25	H	2	25	4	9	6				☹		😐		☹						😐		☹	🙂
	P3204-D30	H	2	30	5	10	8				☹		😐		☹						😐		☹	🙂
	P3204-D32	H	2	32	5	10	8				☹		😐		☹						😐		☹	🙂
	P3201-D08	H	2	8	2	4	3																	🙂
	P3201-D10	H	2	10	2,5	5	4																	🙂
	P3201-D12	H	2	12	2,5	6	5																	🙂
	P3201-D16	H	2	16	3	6	5																	🙂
	P3201-D20	H	2	20	3	6	5																	🙂
	P3201-D25	H	2	25	4	9	6																	🙂
	P3201-D30	H	2	30	5	10	8																	🙂
	P3201-D32	H	2	32	5	10	8																	🙂

HC = Coated carbide



Positive round
ROGX / ROHX / ROMX
Tiger·tec® Silver



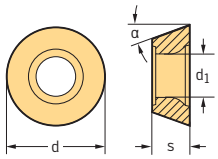
C 2

Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	d_1 mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ROGX10T3M0-G77	G	4	10	3,97	11°	4,4				●		●			●						●			●
	ROGX1204M0-G77	G	4	12	4,76	11°	4,4			●			●		●							●		●		
	ROGX1605M0-G77	G	6	16	5,56	15°	5,5				●		●			●						●				●
	ROHX10T3M0T-A27	H	4	10	3,97	11°	4,4		●											●						
	ROHX1204M0T-A27	H	4	12	4,76	11°	4,4		●											●						
	ROHX1605M0T-A27	H	6	16	5,56	15°	5,5		●											●						
	ROHX2006M0T-A27	H	8	20	6,35	15°	6,5		●											●						
	ROHX0803M0-D57	H	4	8	3,18	11°	3,4		●	●		●			●					●	●			●		
	ROHX10T3M0-D57	H	4	10	3,97	11°	4,4		●	●		●	●		●					●	●	●		●		
	ROHX1204M0-D57	H	4	12	4,76	11°	4,4		●	●		●			●					●	●			●		
	ROHX1605M0-D57	H	6	16	5,56	15°	5,5		●	●		●			●					●	●			●		
	ROHX2006M0-D57	H	8	20	6,35	15°	6,5		●	●		●			●					●	●			●		
	ROHX0803M0-D67	H	4	8	3,18	11°	3,4			●			●		●							●		●		
	ROHX10T3M0-D67	H	4	10	3,97	11°	4,4			●			●		●							●		●		
	ROHX1204M0-D67	H	4	12	4,76	11°	4,4		●	●			●		●					●		●		●		
	ROHX1605M0-D67	H	6	16	5,56	15°	5,5			●			●		●							●		●		
	ROHX10T3M0-F67	H	4	10	3,97	11°	4,4		●	●			●		●					●		●		●		
	ROHX1204M0-F67	H	4	12	4,76	11°	4,4		●	●			●		●					●		●		●		
	ROMX0803M0-D57	M	4	8	3,18	11°	3,4		●	●		●			●					●	●			●		
	ROMX10T3M0-D57	M	4	10	3,97	11°	4,4		●	●		●		●	●					●	●		●	●		
	ROMX1204M0-D57	M	4	12	4,76	11°	4,4		●	●		●		●	●					●	●		●	●		
	ROMX1605M0-D57	M	6	16	5,56	15°	5,5		●	●		●			●					●	●			●		
	ROMX2006M0-D57	M	8	20	6,35	15°	6,5		●	●		●			●					●	●			●		
	ROMX10T3M0-F67	M	4	10	3,97	11°	4,4			●				●	●								●	●		
	ROMX1204M0-F67	M	4	12	4,76	11°	4,4			●				●	●								●	●		

HC = Coated carbide

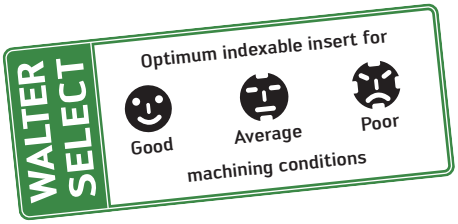
Positive round
RDGT / RDHW / RDMW / RDMT
Tiger·tec® Silver



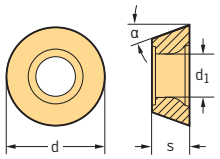
Indexable inserts

	Designation	Tolerance class	d mm	s mm	α	d_1 mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HF WMG40
	RDGT0803M0-G85	G	8	3,18	15°	3,4															☺
	RDGT10T3M0-G85	G	10	3,97	15°	4,4															☺
	RDGT1204M0-G85	G	12	4,76	15°	4,4															☺
	RDGT1605M0-G85	G	16	5,56	15°	5,5															☺
	RDGT2006M0-G85	G	20	6,35	15°	6,5															☺
	RDGT0803M0-G88	G	8	3,18	15°	3,4										☺	☺				
	RDGT10T3M0-G88	G	10	3,97	15°	4,4										☺	☺				
	RDGT1204M0-G88	G	12	4,76	15°	4,4										☺	☺				
	RDGT1605M0-G88	G	16	5,56	15°	5,5										☺	☺				
	RDGT2006M0-G88	G	20	6,35	15°	6,5										☺	☺				
	RDHW0803M0T-A27	H	8	3,18	15°	3,4	😐	☹						😐	☹						
	RDHW10T3M0T-A27	H	10	3,97	15°	4,4	😐	☹						😐	☹						
	RDHW1204M0T-A27	H	12	4,76	15°	4,4	😐	☹						😐	☹						
	RDHW1605M0T-A27	H	16	5,56	15°	5,5	😐	☹						😐	☹						
	RDHW2006M0T-A27	H	20	6,35	15°	6,5	😐	☹						😐	☹						
	RDHW0803M0-A57	H	8	3,18	15°	3,4						☺								☺	
	RDHW10T3M0-A57	H	10	3,97	15°	4,4						☺								☺	
	RDHW1204M0-A57	H	12	4,76	15°	4,4						☺								☺	
	RDHW1605M0-A57	H	16	5,56	15°	5,5						☺								☺	
	RDHW2006M0-A57	H	20	6,35	15°	6,5						☺								☺	
	RDMW0803M0T-A27	M	8	3,18	15°	3,4	😐	☹						😐	☹						
	RDMW10T3M0T-A27	M	10	3,97	15°	4,4	😐	☹						😐	☹						
	RDMW1204M0T-A27	M	12	4,76	15°	4,4	😐	☹						😐	☹						
	RDMW1605M0T-A27	M	16	5,56	15°	5,5	😐	☹						😐	☹						
	RDMW2006M0T-A27	M	20	6,35	15°	6,5	😐	☹						😐	☹						
	RDMT0803M0-D57	M	8	3,18	15°	3,4	☺	😐	☹	😐	☹			😐	☹			😐	☹		
	RDMT10T3M0-D57	M	10	3,97	15°	4,4	☺	😐	☹	😐	☹			😐	☹			😐	☹		
	RDMT1204M0-D57	M	12	4,76	15°	4,4	☺	😐	☹	😐	☹			😐	☹			😐	☹		
	RDMT1605M0-D57	M	16	5,56	15°	5,5	☺	😐	☹	😐	☹			😐	☹			😐	☹		
	RDMT2006M0-D57	M	20	6,35	15°	6,5	☺	😐	☹	😐	☹			😐	☹			😐	☹		

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide



Positive round
RDGX / RDHX / RDMX
Tiger·tec® Silver

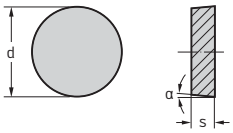


Indexable inserts

	Designation	Tolerance class	d mm	s mm	α	d_1 mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	H HC WHH15	O HF WMG40
	RDGX07T1M0-G85	G	7	1,98	15°	2,8													☺
	RDGX1003M0-G85	G	10	3,18	15°	4,4													☺
	RDGX12T3M0-G85	G	12	3,97	15°	4,4													☺
	RDHX1003M0T-A27	H	10	3,18	15°	4,4	☹	☹						☹	☹				
	RDHX12T3M0T-A27	H	12	3,97	15°	4,4	☹	☹						☹	☹				
	RDHX1604M0T-A27	H	16	4,76	15°	5,5	☹	☹						☹	☹				
	RDHX2006M0T-A27	H	20	6,35	15°	5,5		☹							☹				
	RDHX0501M0-A57	H	5	1,59	15°	2,2												☺	
	RDHX07T1M0-A57	H	7	1,98	15°	2,8												☺	
	RDHX0702M0-A57	H	7	1,59	15°	2,8												☺	
	RDHX1003M0-A57	H	10	3,18	15°	4,4												☺	
	RDHX12T3M0-A57	H	12	3,97	15°	4,4												☺	
	RDHX1604M0-A57	H	16	4,76	15°	5,5												☺	
	RDMX1003M0T-A27	M	10	3,18	15°	4,4	☹	☹						☹	☹				
	RDMX12T3M0T-A27	M	12	3,97	15°	4,4	☹	☹						☹	☹				
	RDMX1604M0T-A27	M	16	4,76	15°	5,5	☹	☹						☹	☹				

HC = Coated carbide
HF = Uncoated fine-grained carbide

Ceramic – Positive round
RPGN



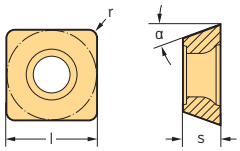
Indexable inserts

	Designation	d mm	α	s mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	CN WIS10
	RPGN090300T01020	9,53	11°	3,18												☻
	RPGN120400T01020	12,7	11°	4,76												☻

See the ISO 1832 designation key for dimensions

HC = Coated carbide
CN = Silicon nitride Si_3N_4

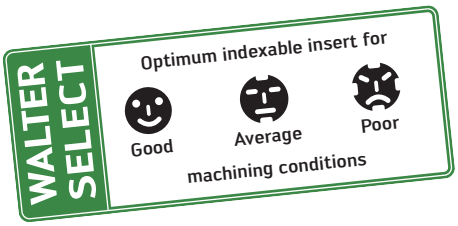
Positive square
SDMW / SDMT
Tiger·tec® Silver



Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM45X	S HC WSP45S
	SDMW06T204-A57	M	4	6,35	2,78	15°	0,4	😐	😣							😐	😣			
	SDMW09T308-A57	M	4	9,52	3,97	15°	0,8	😐	😣							😐	😣			
	SDMW120408-A57	M	4	12,7	4,76	15°	0,8	😐	😣							😐	😣			
	SDMT06T204-D51	M	4	6,35	2,78	15°	0,4	☻	😣	😣			😣			😐	😣			😣
	SDMT09T308-D51	M	4	9,52	3,97	15°	0,8	☻	😣	😣			😣			😐	😣			😣
	SDMT120408-D51	M	4	12,7	4,76	15°	0,8	☻	😣	😣			😣			😐	😣			😣
	SDMT06T204-D57	M	4	6,35	2,78	15°	0,4	☻	😐	😣	😐		😣		😐	😐	😣	😐		😣
	SDMT09T308-D57	M	4	9,52	3,97	15°	0,8	☻	😐	😣	😐		😣		😐	😐	😣	😐		😣
	SDMT120408-D57	M	4	12,7	4,76	15°	0,8	☻	😐	😣	😐		😣		😐	😐	😣	😐		😣
	SDMT06T204-F57	M	4	6,35	2,78	15°	0,4	☻	😐	😣	😐	😣	😣	☻		😐	😣	😐	😣	😣
	SDMT06T212-F57	M	4	6,35	2,78	15°	1,2		😐	😣	😐	😣	😣				😣	😐	😣	😣
	SDMT09T308-F57	M	4	9,52	3,97	15°	0,8	☻	😐	😣	😐	😣	😣	☻		😐	😣	😐	😣	😣
	SDMT09T320-F57	M	4	9,52	3,97	15°	2		😐	😣	😐	😣	😣				😣	😐	😣	😣
	SDMT120408-F57	M	4	12,7	4,76	15°	0,8	☻	😐	😣	😐	😣	😣	☻		😐	😣	😐	😣	😣
	SDMT120425-F57	M	4	12,7	4,76	15°	2,5		😐	😣	😐	😣	😣				😣	😐	😣	😣

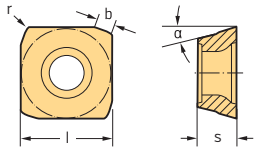
HC = Coated carbide



C 2

Positive square
SDMT

Tiger·tec® Silver



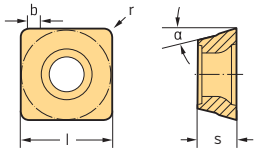
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	SDMT06T2ZDR-D57	M	4	6,4	2,78	15°	0,4	1,2		●	●		●				●		●
	SDMT09T3ZDR-D57	M	4	9,5	3,97	15°	0,8	1,2		●	●		●				●		●
	SDMT1204ZDR-D57	M	4	12,7	4,76	15°	0,8	1,8		●	●		●				●		●

HC = Coated carbide

Positive square
SDGT

Tiger·tec® Silver

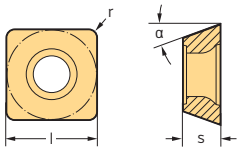


Indexable inserts

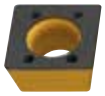
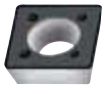
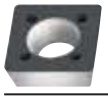
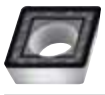
	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	SDGT06T2PDR-D57	G	4	6,4	2,78	15°	0,4	1,2	●	●	●	●	●			●	●	●	●
	SDGT09T3PDR-D57	G	4	9,5	3,97	15°	0,8	1,2	●	●	●	●	●			●	●	●	●
	SDGT1204PDR-D57	G	4	12,7	4,76	15°	0,8	1,6	●	●	●	●	●			●	●	●	●

HC = Coated carbide

Positive square
SPGT / SPHW / SPHT / SPMW / SPMT
Tiger·tec® Silver

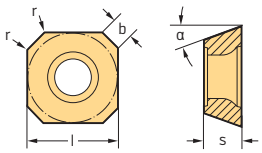


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	SPGT120606-F57	G	4	12,7	6,35	11°	0,6		●	●		●		●					●				●		●	
	SPHW120416-A57	H	4	12,7	4,76	11°	1,6													●						
	SPHW120412-A57	H	4	12,7	4,76	11°	1,2													●						
	SPHW120606-A57	H	4	12,7	6,35	11°	0,6									●										
	SPHT060304-G88	H	4	6,35	3,18	11°	0,4														●	●				
	SPHT09T308-G88	H	4	9,52	3,97	11°	0,8														●	●				
	SPHT120408-G88	H	4	12,7	4,76	11°	0,8														●	●				
	SPMW060304T-A27	M	4	6,35	3,18	11°	0,4	●	●									●	●							
	SPMW09T308T-A27	M	4	9,52	3,97	11°	0,8	●	●									●	●							
	SPMW120408T-A27	M	4	12,7	4,76	11°	0,8	●	●									●	●							
	SPMW120606T-A27	M	4	12,7	6,35	11°	0,6		●										●							
	SPMW060304-A57	M	4	6,35	3,18	11°	0,4	●	●							●		●	●							
	SPMW09T308-A57	M	4	9,52	3,97	11°	0,8	●	●							●		●	●							
	SPMW120408-A57	M	4	12,7	4,76	11°	0,8	●	●							●		●	●							
	SPMT060304-D51	M	4	6,35	3,18	11°	0,4	●	●		●		●		●			●	●					●		●
	SPMT09T308-D51	M	4	9,52	3,97	11°	0,8	●	●		●		●		●			●	●					●		●
	SPMT120408-D51	M	4	12,7	4,76	11°	0,8	●	●		●		●		●			●	●					●		●
	SPMT120606-D51	M	4	12,7	6,35	11°	0,6		●	●			●	●					●					●	●	
	SPMT120606-D57	M	4	12,7	6,35	11°	0,6	●	●	●				●		●		●	●						●	
	SPMT060304-F55	M	4	6,35	3,18	11°	0,4		●		●		●		●	●			●					●		●
	SPMT09T308-F55	M	4	9,52	3,97	11°	0,8		●		●		●		●	●			●					●		●
	SPMT120408-F55	M	4	12,7	4,76	11°	0,8		●		●		●		●	●			●					●		●
	SDHW09T312-A57	H	4	9,52	3,97	15°	1,2													●						

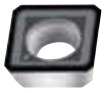
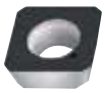
HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide

Positive square
SPGT / SPKT / SPMW / SPMT / SDGT
Tiger·tec® Silver



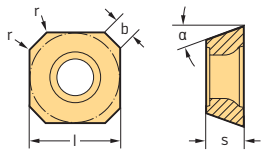
C 2

Indexable inserts

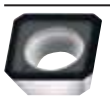
	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	SPGT1204AEN-K88	G	4	12,7	4,76	11°		1,5													☺	☺				
	SPKT1204AZN	K	4	12,7	4,76	11°		1,4		☹		☹		😐		☹	☺			☹				😐		☹
	SPKT1504AZN	K	4	15,9	4,76	11°		1,7		☹										☹						
	SPMW1204AETN-A27	M	4	12,7	4,76	11°	0,5	1,4	😐	☹									😐	☹						
	SPMW1204AEN-A57	M	4	12,7	4,76	11°	0,5	1,4	😐	☹							☺		😐	☹						
	SPMT1204AEN	M	4	12,7	4,76	11°	0,5	1,4	☺	☹		☹		😐		☹	☺		😐	☹				😐		☹
	SDGT09T3AEN-F57	G	4	9,5	3,97	15°	0,3	1,2		😐		☹		😐		☹				☹				😐		☹
	SDGT09T3AEN-G88	G	4	9,5	3,97	15°	0,3	1,2													☺	☺				
	SDHW09T3AEN-A57	H	4	9,5	3,97	15°	0,3	1,2	😐	☹							☺		😐	☹						
	SDMW09T3AETN-A27	M	4	9,5	3,97	15°	0,5	1,2	😐	☹									😐	☹						
	SDMW09T3AEN-A57	M	4	9,5	3,97	15°	0,5	1,2	😐	☹							☺		😐	☹						

HC = Coated carbide
HW = Uncoated carbide

Positive square
SPGT / SPKT / SPMW / SPMT / SDGT
Tiger·tec® Silver



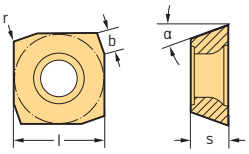
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	SDMT09T3AEN-D57	M	4	9,5	3,97	15°	0,5	1,2		☺		☹		☺		☹				☹				☺		☹
	SEHW1204AFN	H	4	12,7	4,76	20°	0,8	2		☹							☺			☹						
	SEHW1504AFN	H	4	15,9	4,76	20°	0,8	2,1		☹										☹						
	SEHT1204AFN	H	4	12,7	4,76	20°	0,8	2		☹		☹		☺		☹				☹		☺		☺		☹
	SEHT1204AFN-K88	H	4	12,7	4,76	20°	0,8	1,8														☺				

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
☺ Good ☻ Average ☹ Poor
machining conditions

Positive square
SPJW / SPGT
Tiger·tec® Silver



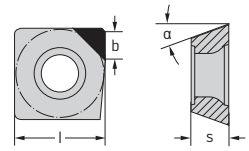
C 2

Indexable inserts

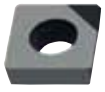
	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	SPJW1204EDR	J	4	12,7	4,76	11°		1,4		⊗							☻			⊗				
	SPJW1504EDR	J	4	15,9	4,76	11°		1,5		⊗										⊗				
	SPGT1204EDR-F55	G	4	12,7	4,76	11°	0,5	1,3	☻	☻		⊗		☻		⊗	☻		☻	⊗		☻		⊗

HC = Coated carbide

Positive square
SPHW



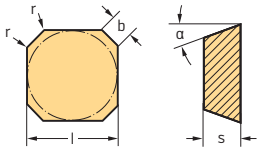
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N DP WCD10	S HC WSM35S	S HC WSP45S
	SPHW1204EDR-A88	H	1	12,7	4,76	11°	1,5										☻		
	SPHW1204PDR-A88	H	1	12,7	4,76	11°	1,5										☻		

HC = Coated carbide
DP = Polycrystalline diamond

C 2

Positive square
SEKN / SEKR / SEMR
Tiger·tec® Silver

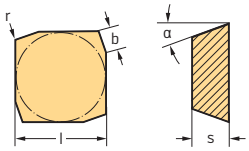


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	SEKN1203AFN	K	4	12,7	3,18	20°	0,63	1,9		☒							☒		
	SEKN1504AFN	K	4	15,9	4,76	20°	0,35	2		☒							☒		
	SEKR1203AFTN	K	4	12,7	3,18	20°	0,43	1,9		☒							☒		
	SEKR1204AFN	K	4	12,7	4,76	20°	0,34	1,9		☒							☒		
	SEMR1203AFTN	M	4	12,7	3,18	20°	0,5	1,9		☒							☒		

HC = Coated carbide

Positive square
SPFN / SPFR / SPKN / SPMN
Tiger·tec® Silver



Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	SPFN1204EDN	F	4	12,7	4,76	11°	0,5	1,7		☒				☺			☒		
	SPFN1204ZPN	F	4	12,7	4,76	11°	0,8	1,7		☒							☒		
	SPFR1204EDR	F	4	12,7	4,76	11°	0,5	2		☒				☺			☒		
	SPFR1204ZPR	F	4	12,7	4,76	11°	0,8	1,7		☒				☺			☒		
	SPFR1204ZPN	F	4	12,7	4,76	11°	0,8	1,7		☒							☒		

HC = Coated carbide

WALTER SELECT

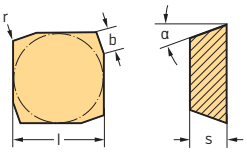
Optimum indexable insert for

Good ☺ Average 😐 Poor ☹

machining conditions

C 2

Positive square
SPFN / SPFR / SPKN / SPMN
Tiger·tec® Silver

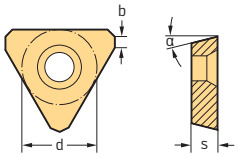


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	SPKN1203EDR	K	4	12,7	3,18	11°		1,4		✖							✖		
	SPKN1204EDR	K	4	12,7	4,76	11°		1,4		✖				☻			✖		
	SPKN1504EDR	K	4	15,9	4,76	11°		1,5		✖							✖		
	SPMN1203EDR	M	4	12,7	3,18	11°	0,2	1,4		✖							✖		

HC = Coated carbide

Positive triangular
TPAW / TPJW
Tiger·tec® Silver

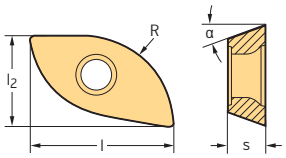


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	TPAW1604PPN	A	3	9,52	4,76	11°	1,2		✖							✖		
	TPAW2204PPN	A	3	12,7	4,76	11°	1,2		✖							✖		
	TPJW1604PPN	J	3	9,52	4,76	11°	1,2		✖				☻			✖		
	TPJW2204PPN	J	3	12,7	4,76	11°	1,2		✖				☻			✖		

HC = Coated carbide

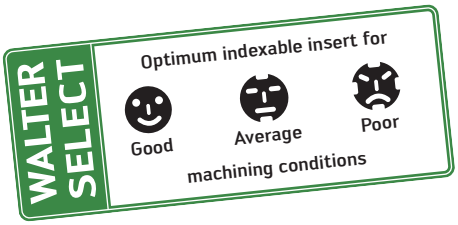
Positive form inserts
XDGT / XDMT
Tiger·tec® Silver



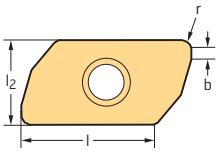
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	R mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	S HC WSP45
	XDGT1303080R-D57	G	2	8,5	13,12	3	15°	8		☺	☹			☹					☹		☹	
	XDGT16T3100R-D57	G	2	9	15,93	3,74	15°	10		☺	☹			☹					☹		☹	
	XDGT2004125R-D57	G	2	11,3	19,94	4,68	15°	12,5		☺	☹			☹					☹		☹	
	XDGT2405150R-D57	G	2	13,5	23,94	5,62	15°	15		☺	☹			☹					☹		☹	
	XDGT2506160R-D57	G	2	14,4	25,54	6	15°	16		☺	☹			☹					☹		☹	
	XDGT3207200R-D57	G	2	18	31,95	7,5	15°	20		☺	☹			☹					☹		☹	
	XDGT4009250R-D57	G	2	22,5	39,95	9,39	15°	25		☺	☹			☹					☹		☹	
	XDMT1303080R-F55	M	2	8,5	13,12	3	15°	8	☺	☺	☹		☺	☹				☺	☹	☺	☹	
	XDMT16T3100R-F55	M	2	9	15,93	3,74	15°	10	☺	☺	☹		☺	☹				☺	☹	☺	☹	
	XDMT2004125R-F55	M	2	11,3	19,94	4,68	15°	12,5	☺	☺	☹		☺	☹				☺	☹	☺	☹	
	XDMT2405150R-F55	M	2	13,5	23,94	5,62	15°	15	☺	☺		☹	☺		☹			☺	☹	☺		☹
	XDMT2506160R-F55	M	2	14,4	25,54	6	15°	16	☺	☺		☹	☺		☹			☺	☹	☺		☹
	XDMT3207200R-F55	M	2	18	31,95	7,5	15°	20	☺	☺	☹		☺	☹				☺	☹	☺	☹	
	XDMT4009250R-F55	M	2	22,5	39,95	9,39	15°	25	☺	☺	☹		☺	☹				☺	☹	☺	☹	

HC = Coated carbide



Positive rhombic
ZDGT



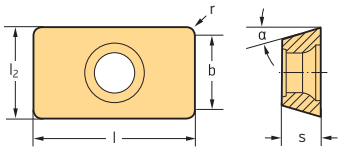
C 2

Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HC WNN15	N HW WK10	S HC WSM35S	S HC WSP45S	O HF WMG40
	ZDGT150404R-K85	G	2	10,5	16,2	4,76	15°	0,4	1,2										☺	☺	☺			☺
	ZDGT150408R-K85	G	2	10,5	16,2	4,76	15°	0,8	1,2										☺	☺	☺			☺
	ZDGT150412R-K85	G	2	10,5	16,2	4,76	15°	1,2	1,2										☺	☺	☺			☺
	ZDGT150416R-K85	G	2	10,5	16,2	4,76	15°	1,6	1,2										☺	☺	☺			☺
	ZDGT150420R-K85	G	2	10,5	16,2	4,76	15°	2	1,2										☺	☺	☺			☺
	ZDGT150425R-K85	G	2	10,5	16,2	4,76	15°	2,5	1,2										☺	☺	☺			☺
	ZDGT150430R-K85	G	2	10,5	16,2	4,76	15°	3	1,2										☺	☺	☺			☺
	ZDGT150440R-K85	G	2	10,5	16,2	4,76	15°	4	1,2										☺	☺	☺			☺
	ZDGT200508R-K85	G	2	14	21,2	5,56	15°	0,8	1,2											☺	☺			☺
	ZDGT200512R-K85	G	2	14	21,2	5,56	15°	1,2	1,2											☺	☺			☺
	ZDGT200516R-K85	G	2	14	21,2	5,56	15°	1,6	1,2											☺	☺			☺
	ZDGT200520R-K85	G	2	14	21,2	5,56	15°	2	1,2											☺	☺			☺
	ZDGT200530R-K85	G	2	14	21,2	5,56	15°	3	1,2											☺	☺			☺
	ZDGT200540R-K85	G	2	14	21,2	5,56	15°	4	1,2											☺	☺			☺
	ZDGT200550R-K85	G	2	14	21,2	5,56	15°	5	1,2											☺	☺			☺
	ZDGT200560R-K85	G	2	14	21,2	5,56	15°	6	1,2											☺	☺			☺
	ZDGT200564R-K85	G	2	14	21,2	5,56	15°	6,4	1,2											☺	☺			☺

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide

Finishing inserts
ADGX
Tiger·tec®

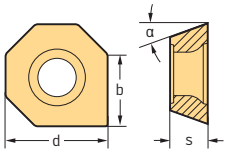


Indexable inserts

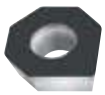
	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	α	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	ADGX10T3PER-F56	G	2	7,25	11,3	3,97	15°	0,8	5						☺						☺	☺
	ADGX1606PER-F56	G	2	10,8	17,5	6,15	15°	0,8	8						☺						☺	☺

HC = Coated carbide

Finishing inserts
ODHX
Tiger·tec® Silver

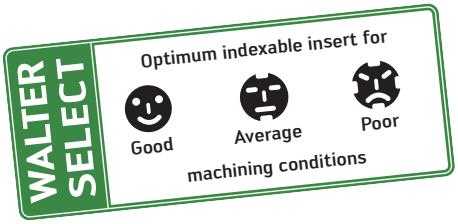


Indexable inserts

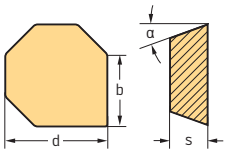
	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	ODHX0504ZZR-A57	H	1	12,7	4,76	15°	7,2		😠				☺			😠			☺	☺
	ODHX0605ZZR-A57	H	1	15,88	5,56	15°	9,4		😠				☺			😠			☺	☺
	ODHX0605ZZN-A57	H	8	15,88	5,56	15°	6						☺						☺	☺
	ODHX0605ZZN-A88	H	8	15,88	5,56	15°	6						☺						☺	☺

* ZZN for κ = 43° only

HC = Coated carbide

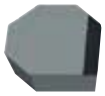
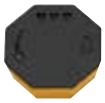
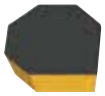
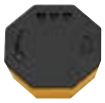


Finishing inserts
OPHX
Tiger·tec®



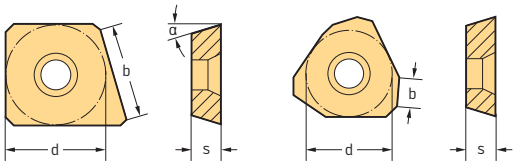
C 2

Indexable inserts

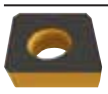
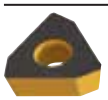
	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K BH WCB80	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	OPHX0504ZZR-A27	H	1	12,7	4,76	11°	7,8										☻				
	OPHX0504ZZN-A57	H	8	12,7	4,76	11°	5						☻							☻	
	OPHX0504ZZR-A57	H	1	12,7	4,76	11°	7,8						☻							☻	
	OPHX0504ZZN-A88	H	8	12,7	4,76	11°	5						☻							☻	☻

HC = Coated carbide
BH = CBN with high CBN content

Finishing inserts
P2901 / P2903 / P2905 / SPHX
Tiger·tec®

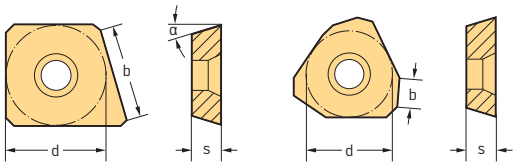


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HW WK10	N DP WCD10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	P2901-1R	H	1	12,7	4,76	11°	11						☻				☻				☻	☻
	P2903-2R	A	3	9,52	4,76	11°	3,5						☻				☻				☻	☻

HC = Coated carbide
HW = Uncoated carbide
DP = Polycrystalline diamond

Finishing inserts
P2901 / P2903 / P2905 / SPHX
Tiger·tec®



Indexable inserts

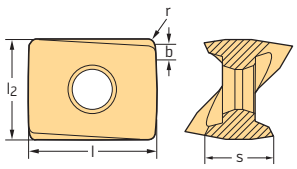
	Designation	Tolerance class	Number of cutting edges	d mm	s mm	α	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HW WK10	N DP WCD10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	P2905-1	F	4	12,7	4,76	11°	10						☺				☺				☺	☺
	SPHX1204PDR-A88	H	1	12,7	4,76	11°	3,5											☺				

HC = Coated carbide
HW = Uncoated carbide
DP = Polycrystalline diamond

WALTER SELECT
Optimum indexable insert for
Good
Average
Poor
machining conditions

Negative rhombic
LNGX

Tiger·tec® Silver



C 2

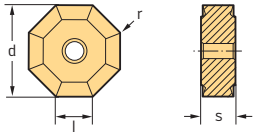
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45
	LNGX130708R-L55	G	4	11	13,6	7,74	0,8	1,2	●	●	●		●	●		●	●	●	●			●	●	
	LNGX130712R-L55	G	4	11	13,6	7,74	1,2	1	●	●	●			●				●	●				●	
	LNGX130716R-L55	G	4	11	13,6	7,74	1,6	0,9	●	●	●			●				●	●				●	
	LNGX130720R-L55	G	4	11	13,6	7,74	2	0,7	●	●	●	●		●	●			●	●				●	●
	LNGX130725R-L55	G	4	11	13,6	7,74	2,5	0,6	●	●		●			●			●	●					●
	LNGX130730R-L55	G	4	11	13,6	7,74	3	0,7	●	●		●			●			●	●					●
	LNGX130708R-L88	G	4	11	13,6	7,74	0,8	1,2												●	●			
	LNGX130720R-L88	G	4	11	13,6	7,74	2	0,7												●				
	LNGX130730R-L88	G	4	11	13,6	7,74	3	0,7												●				

HC = Coated carbide
HW = Uncoated carbide

Negative octagonal
ONHF

Tiger·tec® Silver

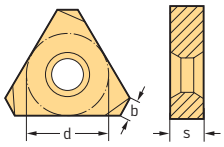


Indexable inserts

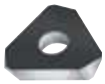
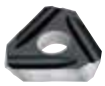
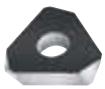
	Designation	Tolerance class	Number of cutting edges	d mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15
	ONHF050408-F67	H	16	12,7	12,7	4,76	0,8						●		●						●

HC = Coated carbide
HW = Uncoated carbide

Wendelnovex® inserts
P2352 / P23522 / P2372
Tiger·tec® Silver

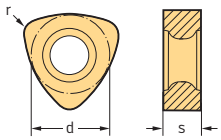


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	P2352-1R	A	6	15	4,5	1,1		☹				☺			☹				
	P2352-2R	A	6	18	4,5	1,1		☹							☹				
	P23522-1R	A	6	15	4,5	1,1		☹							☹				
	P2372-1R	A	6	15	4,5	1,1		☹							☹				

HC = Coated carbide
HW = Uncoated carbide

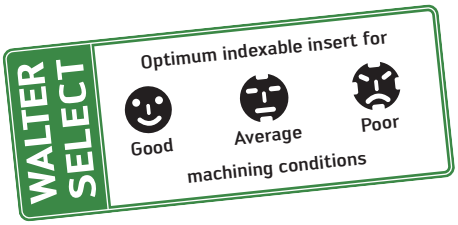
Negative triangular
P23696
Tiger·tec® Silver



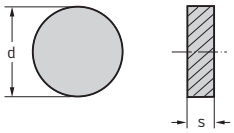
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	P23696-1.0	M	6	9,52	5	1,2	☺	☹	☹	😐	☹			😐	☹			😐	☹
	P23696-2.0	M	6	13,5	7	1,6	☺	☹	☹	😐	☹			😐	☹			😐	☹

HC = Coated carbide
HW = Uncoated carbide



Ceramic – Negative round
RNGN



C 2

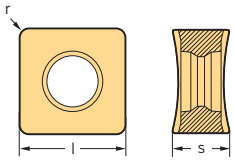
Indexable inserts

	Designation	d mm	s mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S CN WIS10	S CR WWS20
	RNGN120700E	12,7	7,94														☺	☹
	RNGN250700E	25,4	7,94															☹
	RNGN120700T01020	12,7	7,94														☺	☹
	RNGN150700T01020	15,875	7,94															☹
	RNGN190700T01020	19,05	7,94															☹

See the ISO 1832 designation key for dimensions

CN = Silicon nitride Si_3N_4
CR = Reinforced ceramic

Negative square
SNGX / SNMX
Tiger·tec® Silver

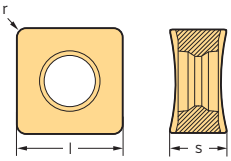


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	SNGX120512-F57	G	8	12,7	6,4	1,2	☺	☹	☹	☺	☹			☹	☹			☺	☹
	SNMX120512-D27	M	8	12,7	6,4	1,2	☺	☹					☹	☹	☹				
	SNMX120520-D27	M	8	12,7	6,4	2	☺	☹					☹	☹	☹				
	SNMX160620-D27	M	8	16	7,8	2	☺	☹					☹	☹	☹				
	SNMX160640-D27	M	8	16	7,8	4	☺	☹						☹	☹				
	SNMX120512-F27	M	8	12,7	6,4	1,2	☺	☹						☹	☹				
	SNMX160620-F27	M	8	16	7,8	2	☺	☹						☹	☹				

HC = Coated carbide
HW = Uncoated carbide

Negative square
SNGX / SNMX
Tiger·tec® Silver

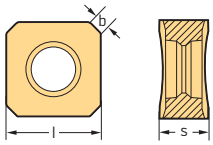


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	SNMX120512-F57	M	8	12,7	6,4	1,2	☺	😐	☹		☹		😐	😐	☹				☹
	SNMX120520-F57	M	8	12,7	6,4	2	☺	😐	☹		☹		😐	😐	☹				☹
	SNMX160620-F57	M	8	16	7,8	2	☺	😐	☹		☹		😐	😐	☹				☹
	SNMX160640-F57	M	8	16	7,8	4	☺	😐	☹	😐	☹			😐	☹			😐	☹
	SNMX120512-F67	M	8	12,7	6,4	1,2	☺	😐	☹		☹	☺		😐	☹				☹

HC = Coated carbide
HW = Uncoated carbide

Negative square
SNGX / SNHX / SNMX
Tiger·tec® Silver



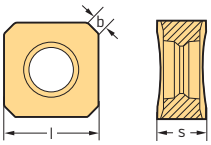
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45
	SNGX1606ANN-D27	G	8	16	7,7	1,8		😐									☹						
	SNGX1205ANN-F27	G	8	12,7	6,4	1,5	☺	😐								😐	☹						
	SNGX1205ANN-F57	G	8	12,7	6,4	1,5	☺	😐	☹		😐	☹			😐	😐	☹			😐	☹		
	SNGX1606ANN-F57	G	8	16	7,7	1,8		😐	☹			☹					☹				☹		

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
Good
Average
Poor
machining conditions

Negative square
SNGX / SNHX / SNMX
Tiger·tec® Silver



C 2

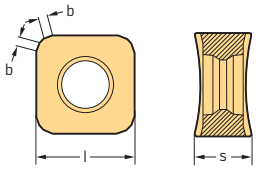
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45
	SNGX1205ANN-F67	G	8	12,7	6,4	1,5	●	●	●		●	●		●		●	●			●	●	
	SNGX1606ANN-F67	G	8	16	7,7	1,8																
	SNHX1205ANN-K88	H	8	12,7	6,4	1,5												●	●			
	SNMX1205ANN-F27	M	8	12,7	6,4	1,5	●	●								●	●					
	SNMX1205ANN-F57	M	8	12,7	6,4	1,5	●	●							●	●	●					
	SNMX1205ANN-F67	M	8	12,7	6,4	1,5	●	●						●		●	●					

HC = Coated carbide
HW = Uncoated carbide

C 2

Negative square
SNGX
Tiger·tec® Silver

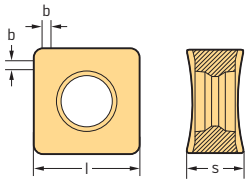


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45
	SNGX1205ENN-F27	G	8	12,7	6,4	1,2	☺	😐								😐	☹					
	SNGX1205ENN-F57	G	8	12,7	6,4	1,2	☺	😐	☹		😐	☹			😐	😐	☹			😐	☹	
	SNGX1205ENN-F67	G	8	12,7	6,4	1,2	☺	😐		☹	😐		☹	☺		😐	☹			😐		☹

HC = Coated carbide
HW = Uncoated carbide

Negative square
SNGX
Tiger·tec® Silver



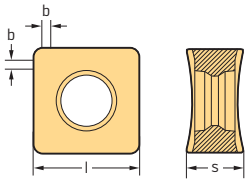
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	SNGX1205ZNN-F27	G	8	12,7	6,4	1,2	☺	😐						😐	☹				
	SNGX1205ZNN-F57	G	8	12,7	6,4	1,2	☺	😐	☹	😐	☹		😐	😐	☹			😐	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
Good ☺ Average 😐 Poor ☹
machining conditions

Negative square
SNGX
Tiger·tec® Silver



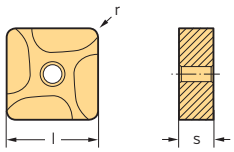
C2

Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	SNGX1205ZNN-F67	G	8	12,7	6,4	1,2	●	●	●	●	●	●		●	●			●	●

HC = Coated carbide
HW = Uncoated carbide

Negative square
SNEF
Tiger·tec® Silver



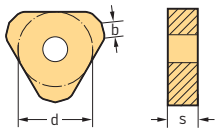
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	SNEF120408R-B67	E	8	12,7	4,76	0,8	2,1	●	●					●	●	●				
	SNEF120408R-D67	E	8	12,7	4,76	0,8	2,1	●	●				●		●	●				

HC = Coated carbide
HW = Uncoated carbide

C 2

Negative triangular
TNEF
Tiger·tec® Silver

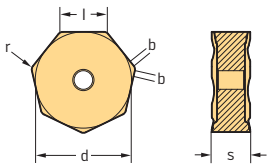


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	TNEF1204AN-D57	E	6	12,7	4,76	1,8	😊	😐				😊	😐	😐	☹				

HC = Coated carbide
HW = Uncoated carbide

Negative heptagonal
XNHF
Tiger·tec® Silver



Indexable inserts

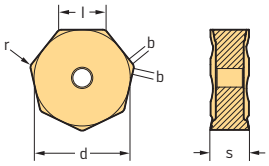
	Designation	Tolerance class	Number of cutting edges	d mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	XNHF070508-D27	H	14	14,5	7	5,8	0,8							😐	😐	☹				
	XNHF090612-D27	H	14	19,05	9	6,35	1,2							😐	😐	☹				
	XNHF070508-D57	H	14	14,5	7	5,8	0,8							😐	😐	☹				
	XNHF090612-D57	H	14	19,05	9	6,35	1,2							😐	😐	☹				
	XNHF070508-D67	H	14	14,5	7	5,8	0,8						😊		😐	☹				
	XNHF090612-D67	H	14	19,05	9	6,35	1,2						😊		😐	☹				

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Optimum indexable insert for
Good
Average
Poor
machining conditions

Negative heptagonal
XNHF

Tiger·tec® Silver



C 2

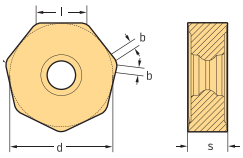
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	XNHF0705ANN-D27	H	14	14,5	7	5,8	0,8	1,1							☹	☹	☹				
	XNHF0906ANN-D27	H	14	19,05	9	6,35	0,8	1,4							☹	☹	☹				
	XNHF0705ANN-D57	H	14	14,5	7	5,8	0,8	1,1							☹	☹	☹				
	XNHF0906ANN-D57	H	14	19,05	9	6,35	0,8	1,4							☹	☹	☹				
	XNHF0705ANN-D67	H	14	14,5	7	5,8	0,8	1,1						☺		☹	☹				
	XNHF0906ANN-D67	H	14	19,05	9	6,35	0,8	1,4						☺		☹	☹				

HC = Coated carbide
HW = Uncoated carbide

Negative heptagonal
XNGU / XNMU

Tiger·tec® Silver

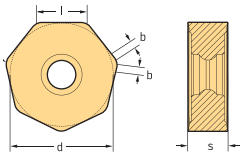


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	XNGU0705ANN-F57	G	14	14,5	6,98	4,6	0,8	1,1	☺	☹	☹	☹	☹			☹	☹				
	XNGU0705ANN-F67	G	14	14,5	6,98	4,6	0,8	1,1	☺	☹	☹	☹	☹			☹	☹				
	XNMU0705ANN-F27	M	14	14,5	6,98	4,6	0,8	1,1	☹	☹					☹	☹	☹				

HC = Coated carbide
HW = Uncoated carbide

Negative heptagonal
XNGU / XNMU
Tiger·tec® Silver

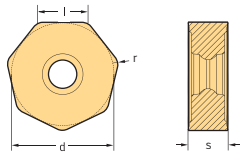


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	XNMU0705ANN-F57	M	14	14,5	6,98	4,6	0,8	1,1		☺	☹		☹				☹				
	XNMU0705ANN-F57	M	28	14,5	6,98	4,6	0,8	1,1	☺							☺					
	XNMU0705ANN-F67	M	14	14,5	6,98	4,6	0,8	1,1	☺	☺						☺	☹				

HC = Coated carbide
HW = Uncoated carbide

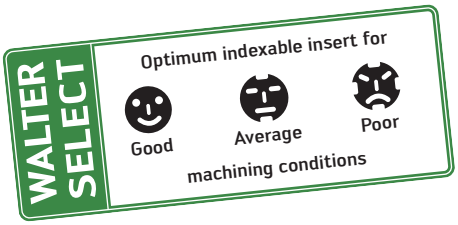
Negative heptagonal
XNMU
Tiger·tec® Silver



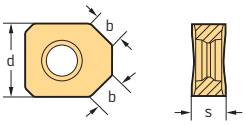
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	XNMU070508-F57	M	14	14,5	6,98	4,6	0,8	☺	☺	☹		☹			☺	☹				

HC = Coated carbide
HW = Uncoated carbide

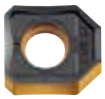


Finishing inserts
XNGX
Tiger·tec®



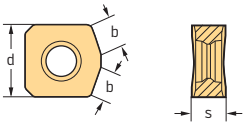
C 2

Indexable inserts

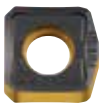
	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	XNGX1205ANN-F67	G	2	12,7	6,02	4,7						☻								☻	☻

HC = Coated carbide
HW = Uncoated carbide

Finishing inserts
XNGX
Tiger·tec®

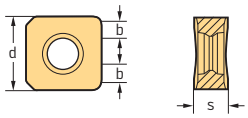


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	XNGX1205ENN-F67	G	2	12,7	6,08	4,5						☻								☻	☻

HC = Coated carbide
HW = Uncoated carbide

Finishing inserts
XNGX
Tiger·tec®

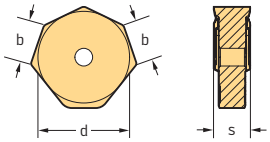


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	XNGX1205ZNN-F67	G	2	12,7	6,47	4						☻								☻	☻

HC = Coated carbide
HW = Uncoated carbide

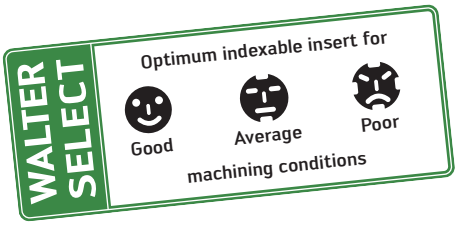
Finishing inserts
XNHX
Tiger·tec®



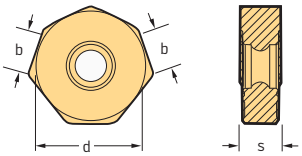
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15
	XNHX0705ANN-D67	H	2	14,5	4,2	5,8						☻									☻

HC = Coated carbide
HW = Uncoated carbide



Finishing inserts
XNGX
Tiger·tec®



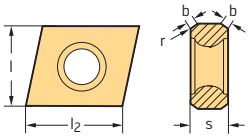
C 2

Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	XNGX0705ANN-F67	G	2	14,5	4,6	5,7						☻								☻	☻

HC = Coated carbide
HW = Uncoated carbide

Tangential rhombic
CNHQ / CNHU / CNMQ / CNMU
Tiger·tec® Silver



C 2

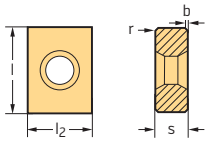
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	CNHQ0805PPN-A57T	H	2	9	8	5	0,8	1,2		●										●						
	CNHQ1206PPN-A57T	H	2	13	12	6,5	0,8	1,5		●										●						
	CNHU0805PPN-D57T	H	2	9	8	5	0,8	1,2		◐		●				●				●						●
	CNHU1206PPN-D57T	H	2	13	12	6,5	0,8	1,5		◐		●				●				●						●
	CNMQ080508T-A27T	M	2	9	8	5	0,8			●										●						
	CNMQ120608T-A27T	M	2	13	12	6,5	0,8			●										●						
	CNMQ160812T-A27T	M	2	15	16	8	1,2			●										●						
	CNMQ080508-A57T	M	2	9	8	5	0,8			●							◑			●						
	CNMQ120608-A57T	M	2	13	12	6,5	0,8			●										●						
	CNMQ160812-A57T	M	2	15	16	8	1,2			●										●						
	CNMU080508-D57T	M	2	9	8	5	0,8			◐		●		◑		●				●				◑		●
	CNMU120608-D57T	M	2	13	12	6,5	0,8			◐		●				●				●						●
	CNMU160812-D57T	M	2	15	16	8	1,2			◐		●				●				●						●

Note: l_2 = Width of cut

HC = Coated carbide
HW = Uncoated carbide

Tangential rhombic
LNKU
Tiger·tec® Silver



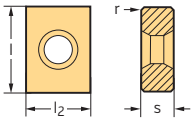
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	LNKU2010DPTR-F27T	K	4	15	20	10,5	0,6	1,2	◑							◑					
	LNKU2010DPR-F57T	K	4	15	20	10,5	0,6	1,2	◐	◑						◑	●				
	LNKU3010DPR-F57T	K	4	15	30	10,5	0,6	1,2	◐	◑						◑	●				

HC = Coated carbide
HW = Uncoated carbide

Tangential rhombic
LNMU

Tiger·tec® Silver



C 2

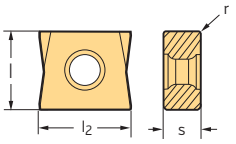
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	LNMU150812T-F27T	M	4	14	15	8	1,2	☺	☹						☺	☹				
	LNMU201012T-F27T	M	4	16	20	8	1,2	☺	☹						☺	☹				
	LNMU150812-F57T	M	4	14	15	8	1,2	☻	☺				☻		☺	☹				
	LNMU201012-F57T	M	4	16	20	8	1,2	☻	☺				☻		☺	☹				

HC = Coated carbide
HW = Uncoated carbide

Tangential rhombic
LNHU / LNMU

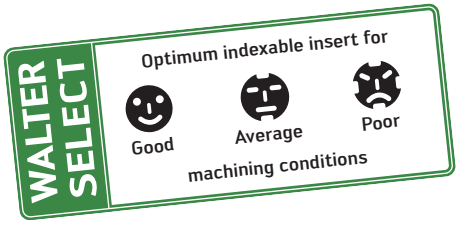
Tiger·tec® Silver



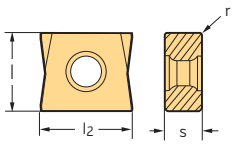
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LNHU080304-B57T	H	4	9	8	3,5	0,4		☹								☻		☹						
	LNHU080404-B57T	H	4	9,4	8	4,5	0,4		☹								☻		☹						
	LNHU100508-B57T	H	4	12,3	10	5,5	0,8		☹								☻		☹						
	LNHU120608-B57T	H	4	13,9	12	6,5	0,8		☹								☻		☹						
	LNHU160812-B57T	H	4	16,9	16	8	1,2		☹										☹						
	LNHU080304-F57T	H	4	9	8	3,5	0,4	☺	☺		☹		☺		☹			☺	☹				☺		☹
	LNHU080404-F57T	H	4	9,4	8	4,5	0,4	☺	☺		☹		☺		☹			☺	☹				☺		☹
	LNHU100508-F57T	H	4	12,3	10	5,5	0,8	☺	☺		☹		☺		☹			☺	☹				☺		☹
	LNHU120608-F57T	H	4	13,9	12	6,5	0,8	☺	☺		☹		☺		☹			☺	☹				☺		☹
	LNHU160812-F57T	H	4	16,9	16	8	1,2	☺	☺		☹		☺		☹			☺	☹				☺		☹

HC = Coated carbide
HW = Uncoated carbide



Tangential rhombic
LNHU / LNMU
Tiger·tec® Silver

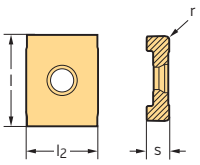


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LNMU080304-B57T	M	4	9	8	3,5	0,4		✖								☻		✖						
	LNMU080404-B57T	M	4	9,4	8	4,5	0,4		✖								☻		✖						
	LNMU100508-B57T	M	4	12,3	10	5,5	0,8		✖								☻		✖						
	LNMU120608-B57T	M	4	13,9	12	6,5	0,8		✖								☻		✖						
	LNMU160812-B57T	M	4	16,9	16	8	1,2		✖										✖						
	LNMU080304-F57T	M	4	9	8	3,5	0,4	☻	☻		✖		☻		✖			☻	✖				☻		✖
	LNMU080404-F57T	M	4	9,4	8	4,5	0,4	☻	☻		✖		☻		✖			☻	✖				☻		✖
	LNMU100508-F57T	M	4	12,3	10	5,5	0,8	☻	☻		✖		☻		✖			☻	✖				☻		✖
	LNMU120608-F57T	M	4	13,9	12	6,5	0,8	☻	☻		✖		☻		✖			☻	✖				☻		✖
	LNMU160812-F57T	M	4	16,9	16	8	1,2	☻	☻		✖		☻		✖			☻	✖				☻		✖

HC = Coated carbide
HW = Uncoated carbide

Tangential rhombic
LNHX / LNMX
Tiger·tec® Silver

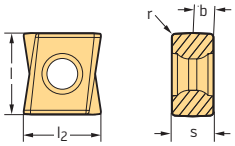


Indexable inserts

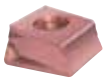
	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LNHX070204-D57T	H	4	7	9	2,4	0,4		☻								☻		✖						
	LNHX070204-F57T	H	4	7	9	2,4	0,4	☻	☻		✖		☻		✖			☻	✖				☻		✖
	LNMX070204-D57T	M	4	7	9	2,4	0,4		☻								☻		✖						
	LNMX070204-F57T	M	4	7	9	2,4	0,4	☻	☻		✖		☻		✖			☻	✖				☻		✖

HC = Coated carbide
HW = Uncoated carbide

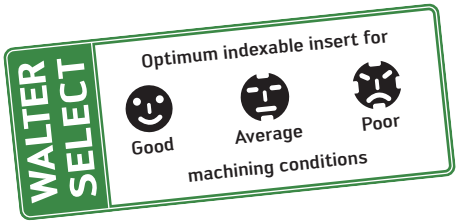
Tangential rhombic
LNHU
Tiger·tec® Silver



Indexable inserts

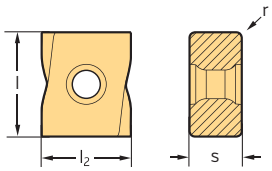
	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	LNHU090404R-L55T	H	4	8,5	9	4,5	0,4	1,5	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹
	LNHU090408R-L55T	H	4	8,5	9	4,5	0,8	1,1	☺	😐	☹	😐	☹		😐	😐	☹			😐	☹
	LNHU090412R-L55T	H	4	8,5	9	4,5	1,2	0,8		😐	☹	😐	☹				☹			😐	☹
	LNHU090416R-L55T	H	4	8,5	9	4,5	1,6			😐	☹	😐	☹				☹			😐	☹
	LNHU090420R-L55T	H	4	8,5	9	4,5	2			😐	☹	😐	☹				☹			😐	☹
	LNHU130608R-L55T	H	4	12	13	6,8	0,8	2,2	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹
	LNHU130612R-L55T	H	4	12	13	6,8	1,2	1,9		😐	☹	😐	☹				☹			😐	☹
	LNHU130616R-L55T	H	4	12	13	6,8	1,6	1,5		😐	☹	😐	☹				☹			😐	☹
	LNHU130620R-L55T	H	4	12	13	6,8	2	1,2		😐	☹	😐	☹				☹			😐	☹
	LNHU130625R-L55T	H	4	12	13	6,8	2,5	0,7		😐	☹	😐	☹				☹			😐	☹
	LNHU130630R-L55T	H	4	12	13	6,8	3			😐	☹	😐	☹				☹			😐	☹
	LNHU130632R-L55T	H	4	12	13	6,8	3,2			😐	☹	😐	☹				☹			😐	☹
	LNHU160708R-L55T	H	4	15,5	16	7,2	0,8	2,3	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹
	LNHU160712R-L55T	H	4	15,5	16	7,2	1,2	1,9		😐	☹	😐	☹				☹			😐	☹
	LNHU160716R-L55T	H	4	15,5	16	7,2	1,6	1,6		😐	☹	😐	☹				☹			😐	☹
	LNHU160720R-L55T	H	4	15,5	16	7,2	2	1,2		😐	☹	😐	☹				☹			😐	☹
	LNHU160725R-L55T	H	4	15,5	16	7,2	2,5	0,8		😐	☹	😐	☹				☹			😐	☹
	LNHU090404R-L65T	H	4	8,5	9	4,5	0,4	1,5			☹		☹								☹
	LNHU130608R-L65T	H	4	12	13	6,8	0,8	2,2			☹		☹								☹
	LNHU160708R-L65T	H	4	15,5	16	7,2	0,8	2,3			☹		☹								☹
	LNHU090404R-L85T	H	4	8,5	9	4,5	0,4	1,5										☺	☺		
	LNHU130608R-L85T	H	4	12	13	6,8	0,8	2,2										☺	☺		
	LNHU160708R-L85T	H	4	15,5	16	7,2	0,8	2,3										☺	☺		

HC = Coated carbide
HW = Uncoated carbide



Tangential rhombic
LNMX

Tiger·tec® Silver



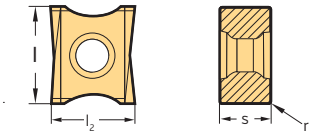
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	LNMX201012R-F27T	M	4	17,05	20	10	1,2	●	●					●	●	●				
	LNMX201012R-F57T	M	4	17,05	20	10	1,2	●	●	●		●		●	●	●				●

HC = Coated carbide
HW = Uncoated carbide

Tangential rhombic
LNHX

Tiger·tec® Silver



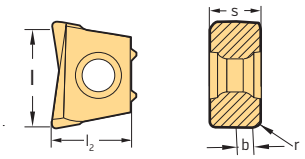
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM45X	S HC WSP45S
	LNHX120604R-L65T	H	4	11	12,7	6,8	0,4														●	●

HC = Coated carbide
HW = Uncoated carbide

Tangential rhombic
XNHX

Tiger·tec® Silver



C 2

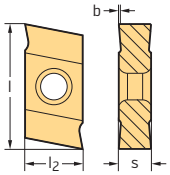
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	b mm	P HC			M HC			K HC				N HC	N HW	S HC		
									WKP25S	WKP35S	WSP45S	WSM35S	WSM45X	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM35S	WSM45X	WSP45S
	XNHX130608R-L65T	H	2	10,5	14	6,8	0,8	2														●	●
	XNHX130612R-L65T	H	2	10,5	14	6,8	1,2	2														●	●
	XNHX130616R-L65T	H	2	10,5	14	6,8	1,6	2														●	●
	XNHX130620R-L65T	H	2	10,5	14	6,8	2	2														●	●
	XNHX130624R-L65T	H	2	10,5	14	6,8	2,4	2														●	●
	XNHX130630R-L65T	H	2	10,5	14	6,8	3	1,4														●	●
	XNHX130632R-L65T	H	2	10,5	14	6,8	3,2	1,3														●	●
	XNHX130640R-L65T	H	2	10,5	14	6,8	4	0,5														●	●

HC = Coated carbide
HW = Uncoated carbide

Positive rhombic
P20200

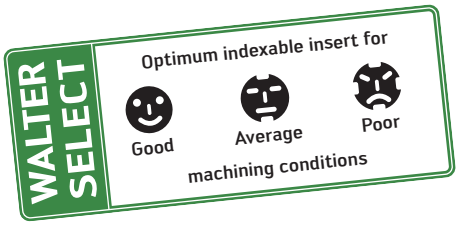
Tiger·tec® Silver



Indexable inserts

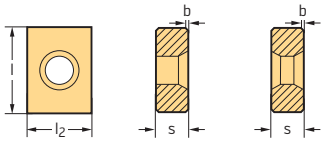
	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	b mm	P HC			M HC		K HC				N HC	N HW	S HC	
								WKP25S	WKP35S	WSP45S	WSM35S	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM35S	WSP45S
	P20200-1.1	H	2	5,5	9	2,35	0,1		●							●				
	P20200-1.2	H	2	5,5	9	2,35	0,15		●							●				
	P20200-1.3	H	2	5,5	9	2,35	0,15		●							●				
	P20200-1.4	H	2	5,5	9	2,35	0,15		●							●				
	P20200-1.5	H	2	5,5	9	2,35	0,15		●							●				
	P20200-2.1	H	2	7	12	3,4	0,15		●							●				
	P20200-2.2	H	2	7	12	3,4	0,15		●							●				
	P20200-2.3	H	2	7	12	3,4	0,15		●							●				
	P20200-3.1	H	2	9,52	18,5	5,4	0,15		●							●				
	P20200-3.2	H	2	9,52	18,5	5,4	0,15		●							●				
	P20200-3.3	H	2	9,52	18,5	5,4	0,15		●							●				

HC = Coated carbide
HW = Uncoated carbide



Tangential rhombic
P4406 / P44462

Tiger·tec® Silver



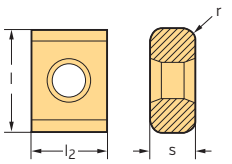
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	P4406-1	H	2	9,52	12,7	3,5	0,5		●				●			●				
	P4406-2	H	2	9,52	12,7	4	0,5		●				●			●				
	P4406-3	H	4	9,52	12,7	4,75	0,4		●				●			●				
	P4406-4	H	4	9,52	12,7	5,5	0,4		●				●			●				
	P4406-5	H	4	9,52	12,7	6,35	0,4		●				●			●				
	P44462-1	H	2	9,52	12,7	3,5	0,5		●							●				
	P44462-3	H	4	9,52	12,7	4,75	0,4		●							●				

HC = Coated carbide
HW = Uncoated carbide

Tangential rhombic
P44280 / P44290

Tiger·tec® Silver

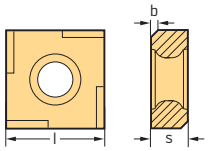


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM35	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S
	P44280-1R08-D57	H	8	9,52	12,7	5,5	0,8				●	●								●	●	
	P44280-1R10-D57	H	8	9,52	12,7	5,5	1					●									●	
	P44280-1R125-D57	H	8	9,52	12,7	5,5	1,25					●									●	
	P44280-1R15-D57	H	8	9,52	12,7	5,5	1,5					●									●	
	P44280-1R20-D57	H	8	9,52	12,7	5,5	2				●									●		
	P44280-2R25-D57	H	8	9,52	12,7	6,35	2,5					●									●	
	P44280-2R30-D57	H	8	9,52	12,7	6,35	3					●									●	
	P44280-2R40-D57	H	4	9,52	12,7	6,35	4				●	●								●	●	
	P44290-1R08-D57	M	8	9,52	12,7	5,5	0,8					●									●	
	P44290-1R10-D57	M	8	9,52	12,7	5,5	1					●									●	
	P44290-1R125-D57	M	8	9,52	12,7	5,5	1,25					●									●	
	P44290-1R20-D57	M	8	9,52	12,7	5,5	2					●									●	
	P44290-2R25-D57	M	8	9,52	12,7	6,35	2,5					●									●	
	P44290-2R30-D57	M	8	9,52	12,7	6,35	3					●									●	
	P44290-2R40-D57	M	4	9,52	12,7	6,35	4					●									●	

HC = Coated carbide
HW = Uncoated carbide

Negative square
SNHQ
Tiger·tec® Silver



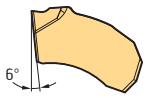
C 2

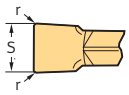
Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l mm	s mm	b mm	P HC			M HC		K HC				N HC	HW	S HC	
							WKP25S	WKP35S	WSP45S	WSM35S	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM35S	WSP45S
	SNHQ1205ZZR-A57T	H	8	12	5	0,8						☺		😐	☹				

HC = Coated carbide
HW = Uncoated carbide

Slotting and parting off
SX cutting inserts
Tiger·tec® Silver



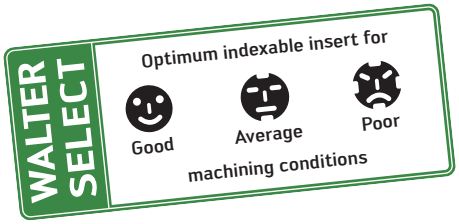


Cutting inserts

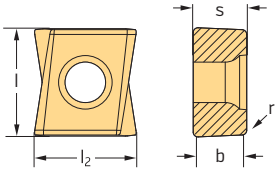
	Designation	s mm	r mm	S_{Tol} mm	P HC				M HC					K HC					N HC	HW	S HC				
					WKP23S	WKP25S	WKP35S	WSP45S	WSM23S	WSM33S	WSM35S	WSM43S	WSP45S	WAK15	WKP23S	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM23S	WSM33S	WSM35S	WSM43S	WSP45S
	SX-1E150N01-CE4	1,5	0,15	±0,05						😐		☹										😐		☹	
	SX-2E200N02-CE4	2	0,2	±0,05	☺				☺	😐		☹			😐						☺	😐		☹	
	SX-3E300N02-CE4	3	0,2	±0,05	☺				☺	😐		☹			😐						☺	😐		☹	
	SX-4E400N02-CE4	4	0,2	±0,05	☺				☺	😐		☹			😐						☺	😐		☹	
	SX-1E150N01-CF6	1,5	0,15	±0,05						😐		☹										😐		☹	
	SX-2E200N02-CF6	2	0,2	±0,05						😐		☹										😐		☹	
	SX-3E300N02-CF6	3	0,2	±0,05						😐		☹										😐		☹	
	SX-1E150N01-SF5	1,5	0,15	±0,05						😐		☹										😐		☹	
	SX-2E200N02-SF5	2	0,2	±0,05						😐		☹										😐		☹	
	SX-3E300N02-SF5	3	0,2	±0,05						😐		☹										😐		☹	
	SX-4E400N02-SF5	4	0,2	±0,05						😐		☹										😐		☹	
	SX-5E500N04-SF5	5	0,4	±0,05						😐		☹										😐		☹	

l_{Tol} = Repeat accuracy when changing indexable inserts
Radius tolerance r_{Tol} = ±0.05 mm

HC = Coated carbide
HW = Uncoated carbide



Finishing inserts
LNHX
Tiger·tec®

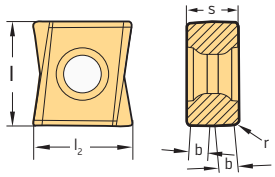


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	LNHX0904PDR-L55T	H	2	8,5	9	4,5	0,4	3,5						☻								☻	☻
	LNHX1306PDR-L55T	H	2	12	13	6,8	0,6	5						☻								☻	☻

HC = Coated carbide
HW = Uncoated carbide

Finishing inserts
LNHX
Tiger·tec®

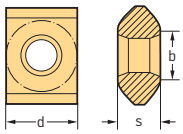


Indexable inserts

	Designation	Tolerance class	Number of cutting edges	l_2 mm	l mm	s mm	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	LNHX130608R-L55T	H	4	12	13	6,8	0,8	2,2						☻								☻	☻

HC = Coated carbide
HW = Uncoated carbide

Finishing inserts
P45420
Tiger·tec®



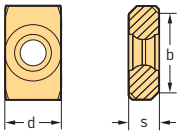
C 2

Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	P45420-G67	H	4	9,52	4,76	7						☺								☺	☺

HC = Coated carbide
HW = Uncoated carbide

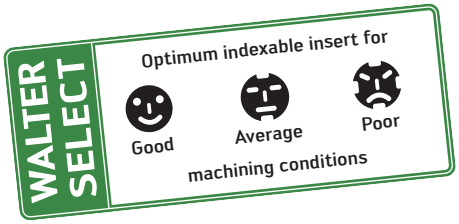
Finishing inserts
P45424
Tiger·tec®



Indexable inserts

	Designation	Tolerance class	Number of cutting edges	d mm	s mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15
	P45424-1-G67	G	4	12	5	8						☺								☺
	P45424-2-G67	G	4	20	6,5	15						☺								☺

HC = Coated carbide
HW = Uncoated carbide





Walter Green

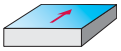
Indexable insert milling cutters product range overview

Face milling cutters

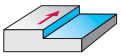
Machining						
κ	15°			21°		42°
Designation	F2010	F2330	M4002	F2010	F4030 Xtra·tec®	M2025 / M2026
Dia. range [mm]	70–305	10–71	8–102	71–306	13–82	80–250
Page	C 356	C 392	C 424	C 358	C 394	C 418
						

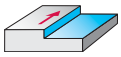
Machining						
κ	43°			45°		
Designation	F2010	F2146	F4080 Xtra·tec®	F2010	F2233	F4033 Xtra·tec®
Dia. range [mm]	80–315	80–250	24–160	80–315	20–160	40–200
Page	C 360	C 376	C 414	C 362	C 378	C 396
						

Machining						
κ	45°		60°		75°	
Designation	F4045 Xtra·tec®	M3024 Walter BLAXX	F2260	M3016 Walter BLAXX	F2010	F2235
Dia. range [mm]	63–200	40–160	100–315	125–315	80–315	40–80
Page	C 400	C 422	C 390	C 420	C 368	C 382
						

Machining						
κ		**75° / 90°**	**88°**		**89°**	**90°**
Designation	**F4047 Xtra·tec®**	**F4050**	**F2010**	**F4048 Xtra·tec®**	**F2254**	**F2250**
Dia. range [mm]	50–160	80–200	80–315	40–160	50–160	63–200
Page	C 404	C 408	C 372	C 406	C 388	C 384
						

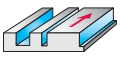
Shoulder milling cutters

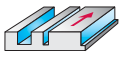
Machining						
κ	**90°**					
Designation	**F2010**	**F2338F**	**F4038 / F4138 F4238 Xtra·tec®**	**F4041 Xtra·tec®**	**F4042 / F4042R Xtra·tec®**	**F5038 / F5138 Walter BLAXX**
Dia. range [mm]	80–315	63–100	20–125	40–160	10–160	25–80
Page	C 432	C 468	C 470	C 444	C 446	C 480
						

Machining			
κ	**90°**		
Designation	**F5041 / F5141 F5241 Walter BLAXX**	**M2131**	**M4132**
Dia. range [mm]	25–160	25–80	16–125
Page	C 458	C 464	C 466
			

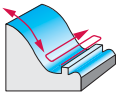
Indexable insert milling cutters product range overview

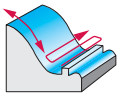
Slot milling cutters

Machining						
κ	90°					
Designation	**F2238 / F2238CE**	**F2252**	**F4053 / F4153 F4253 Xtra·tec®**	**F5055 Walter BLAXX**	**M3255 Walter BLAXX**	**M4256 / M4257 M4258**
Dia. range [mm]	20–125	80–315	80–315	63–250	50–80	20–100
Page	C 488	C 500	C 524	C 530	C 496	C 498
						

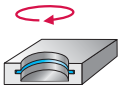
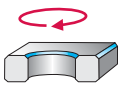
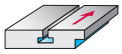
Machining	
κ	
Designation	**M4792**
Dia. range [mm]	18–40
Page	C 486
	

Copy milling cutter

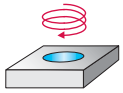
Machining						
κ						
Designation	**F2010**	**F2139**	**F2231**	**F2234**	**F2239**	**F2334 / F2334R**
Dia. range [mm]	83–318	8–32	10–40	12–160	20–63	25–160
Page	C 536	C 538	C 540	C 542	C 552	C 546
						

Machining		
κ		
Designation	**F2339**	**F2239B**
Dia. range [mm]	16–50	20–40
Page	C 554	C 552
		

Profiling cutters

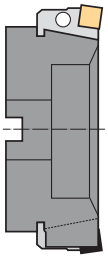
Machining			
κ	**90°**	45°	**90°**
Designation	**F2036**	**M4574**	**M4575**
Dia. range [mm]	16–63	12–40	21–50
Page	C 560	C 562	C 564
			

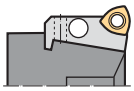
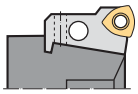
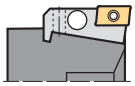
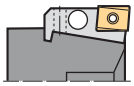
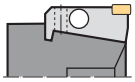
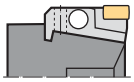
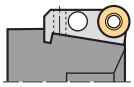
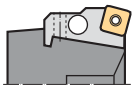
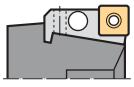
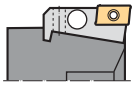
Circular interpolation cutters

Machining						
κ	**15°**		**43°**	**90°**		
Designation	**F2330**	**M4002**	**F4080 Xtra·tec®**	**F4042 Xtra·tec®**	**M2131**	**F2234 / F2334 / F2334R**
Dia. range [mm]	10–71	8–102	24–160	10–160	25–80	8–140
Page	C 392	C 424	C 414	C 446	C 464	C 542
						

F2010 adjustable face milling cutter system overview

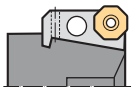
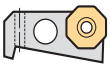
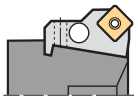
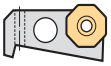
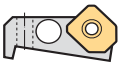
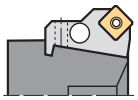
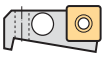
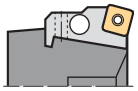
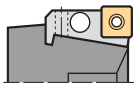
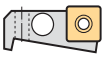
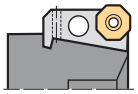
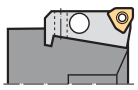
F2010

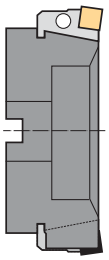


Cartridge design	D_c [mm]	Max. depth of cut [mm]	Indexable inserts	As supplement to tool
 κ = 0–15° F2010 . . . **R729M** Page C 356	70–305	2,0	 P2633 . -R25	**F2330** D_a = 52–85 mm Page C 392
 κ = 0–15° F2010 . . . **R750M** Page C 358	70,2–305,6	2,0	 P23696-2.0	**F4030** D_a = 42–100 mm Page C 394
 κ = 90° F2010 . . . **R718M** Page C 434	80–315	11,7	 AD . . 1204 . .	**F4042 . . . 11** D_c = 22–80 mm Page C 450
 κ = 90° F2010 . . . **R722M** Page C 438	80–315	13,0	 LNGX1307 . .	**F4041** D_c = 40–160 mm Page C 444
 κ = 90° F2010 . . . **R751M** Page C 440	80–315	8,0	 LNHU0904 . .  Finishing insert: LNHX0904PDR-L55T	**F5041** D_c = 25–63 mm Page C 458
 κ = 90° F2010 . . . **R752M** Page C 442	80–315	12,0	 LNHU1306 . .  Finishing inserts: LNHX1306PDR-L55T LNHX130608R-L55T	**F5141** D_c = 40–125 mm Page C 460
 F2010 . . . **R723M** Page C 536	74–309	8,0	 RO . X1605 .	**F2334 . . . 08** D_a = 52–141 mm Page C 546
 κ = 75° F2010 . . . **R727M** Page C 370	80–315	8,0	 SN . . 1205ENN SN . X120512 SN . X120520  Finishing insert: XNGX1205ENN	**F4047** D_c = 40–200 mm Page C 404
 κ = 88° F2010 . . . **R728M** Page C 372	80–315	10,0	 SN . . 1205ZNN SN . X120512 SN . X120520  Finishing insert: XNGX1205ZNN	**F4048** D_c = 40–200 mm Page C 406
 κ = 90° F2010 . . . **R719M** Page C 436	80–315	15,0	 AD . . 1606 . .  Finishing insert: ADGX1606PER	**F4042 . . . 15** D_c = 25–160 mm Page C 452

C 2

F2010

Cartridge design	D_c [mm]	Max. depth of cut [mm]	Indexable inserts	Finishing cartridges for roughing/finishing combination*	As supplement to tool
 κ = 43° F2010 . . . **R592M** Page C 360	80–315	4,0	 OD . . 0605 . .  ODHX0605ZZR finishing insert is installed in FR592M cartridge	 Cartridge: FR681M Indexable insert: ODHX0605ZZN	**F4080** D_c = 40–160 mm Page C 416
 κ = 45° F2010 . . . **R720M** Page C 366	80–315	6,5	 SN . X1205ANN SN . X120512 SN . X120520	 Cartridge: FR720M Indexable insert: SN . X 1205 . .  Cartridge: FR730M Indexable insert: XNGX1205ANN	**F4033** D_c = 40–200 mm Page C 396
 κ = 45° F2010 . . . **R495M** Page C 364	80–315	7,0	 SP . . 1204AE . .	 Cartridge: FR448M Indexable insert: P2905–1	**F2233 . . . 07** D_c = 25–160 mm Page C 380
 κ = 75° F2010 . . . **R441M** Page C 368	80–315	10,0	 SP . . 1204E . . .  P2901–1 finishing insert is installed in FR441M cartridge		**F2235** D_c = 32–100 mm Page C 382
 κ = 89°45' F2010 . . . **R445M** Page C 432	80–315	11,0	 SP . . 120408 . .	 Cartridge: FR448M Indexable insert: P2905–1	
 κ = 45° F2010 . . . **R681M** Page C 362	80–315	0,5–2,0 (4,0)	 ODHX0605ZZN		
 κ = 90° F2010 . . . **R500M** Page C 374	80–315	0,5–1,0 (9,0)	 P2903–2R		

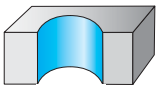


* When using this finishing method, one or several roughing cartridges must be replaced with a finishing cartridge.

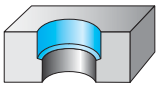
ScrewFit for drilling and circular interpolation milling system overview

ScrewFit

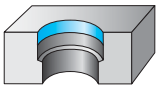
C 2



Solid drilling/ circular interpolation milling



Counterboring



Precision boring

AK530
Page D 101

AK531
Page D 103

AK540
Page D 104

AK541
Page D 107

AK580
Page D 108

B4011
Page B 200
Xtra·tec®

F2330
Page C 392

F4042
Page C 446
Xtra·tec®

F4080
Page C 414
Xtra·tec®

M2131
Page C 464

M4002
Page C 424

AK300.T
Page D 109

For solid carbide and HSS drills, see page B 248

B322 .
Page B 526
Walter Boring^{MEDIUM}

F4042
Page C 446
Xtra·tec®

M2131
Page C 464

B4030*
Page B 554
Walter Precision^{MEDIUM}

B3230*
Page B 550

B4030*
Page B 542
Walter Precision^{MINI}

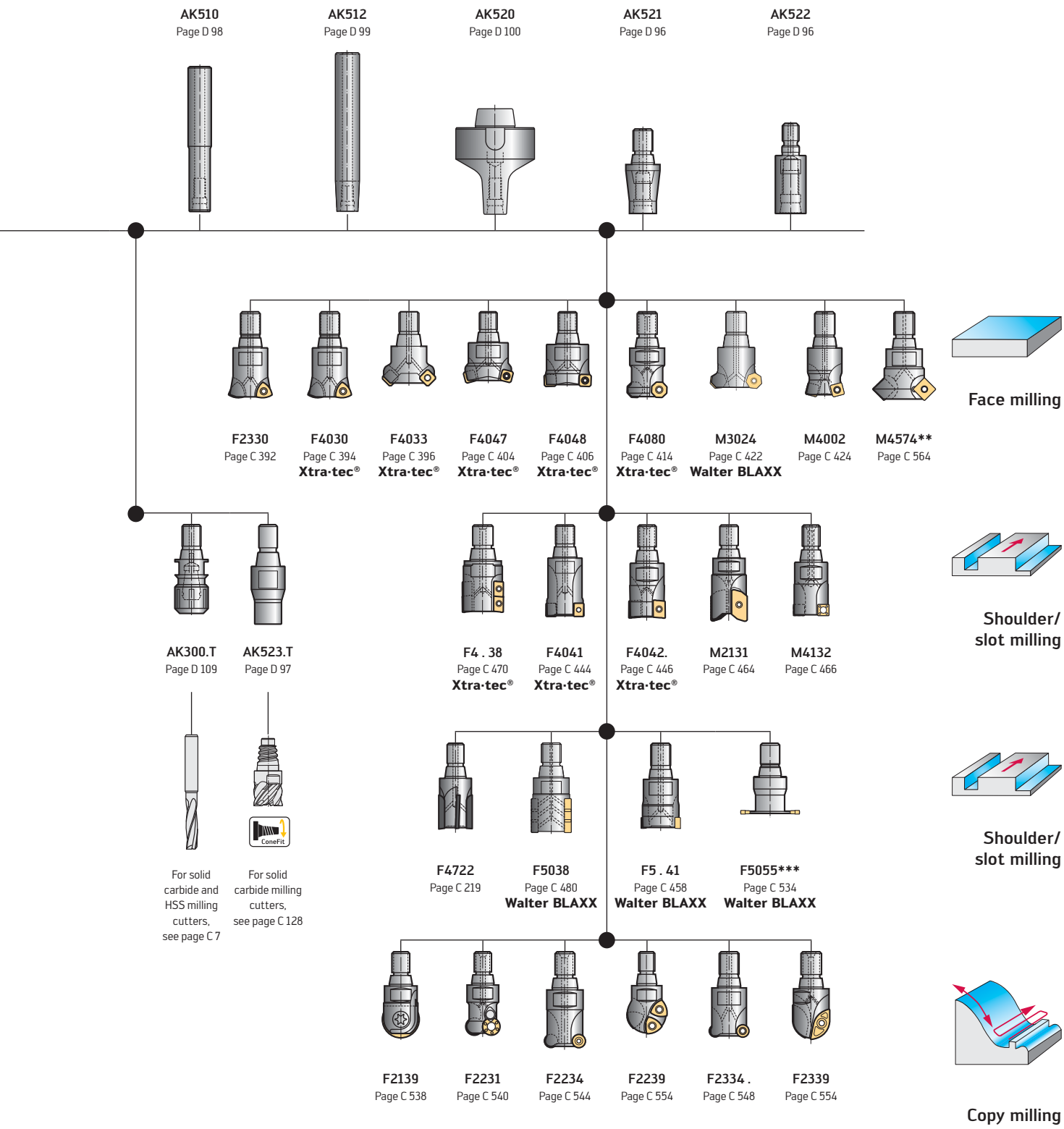
B4035*
Page B 562
Walter Precision^{DIGITAL}

* Only in combination with AK53 . CO and AK54 . CO.
For cutting orientation for ScrewFit precision boring tools, see page B 650.

ScrewFit for milling system overview

ScrewFit

C 2

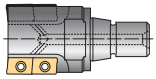
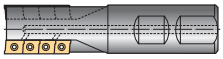
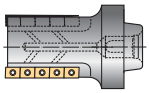
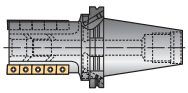
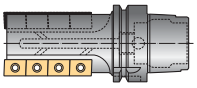
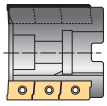
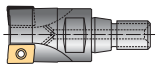
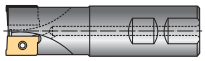
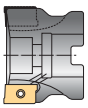
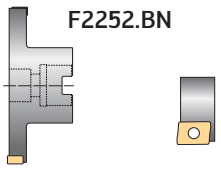
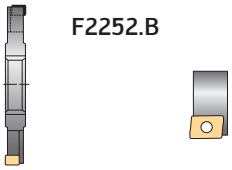
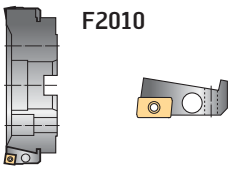


** for chamfering 45°
*** for slot milling and slitting

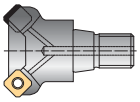
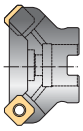
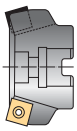
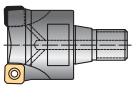
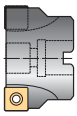
Overview of AD . . system inserts

AD . .



suitable for cutter type	AD . . 0803 . .	AD . . 10T3 . .	AD . . 1204 . .	AD . . 1606 . .	AD . . 1807 . .
	**F4038.T** Page C 470		**F4138.T** Page C 472	**F4238.T** Page C 476	
	**F4038.W** Page C 470		**F4138.W** Page C 472		
			**F4138.N** Page C 472	**F4238.N** Page C 476	**F4338.N** Page C 478
			**F4138.S** Page C 472	**F4238.S** Page C 476	**F4338.S** Page C 478
			**F4138.H** Page C 474	**F4238.H** Page C 476	**F4338.H** Page C 478
			**F4138.B** Page C 474	**F4238.B** Page C 476	**F4338.B** Page C 478
	**F4042.T** Page C 446	**F4042R.T** Page C 448	**F4042.T** Page C 450	**F4042.T** Page C 452	
	**F4042.W** Page C 446	**F4042R.W** Page C 448	**F4042.W** Page C 450	**F4042.W** Page C 452	
	**F4042.Z** Page C 446	**F4042R.Z** Page C 448	**F4042.Z** Page C 450	**F4042.Z** Page C 452	
	**F4042.B** Page C 446	**F4042R.B** Page C 448	**F4042.B** Page C 450	**F4042.B** Page C 454	**F4042.B** Page C 456
F2252.BN 	**FR/L724** Page C 508		**FR/L725** Page C 510	**FR/L726** Page C 514	
F2252.B 	**FR/L724** Page C 508		**FR/L725** Page C 510	**FR/L726** Page C 514	
F2010 			**FR718M** Page C 434	**FR719M** Page C 436	

Overview of SN . X system inserts

	suitable for cutter type	SN . X 120512 . . 120520 . .	SN . X 160620 . . 160640 . .	SN . X 1205ANN . .	SN . X 1606ANN . .	SN . X 1205ENN . .	SN . X 1205ZNN . .
SN . X 	 κ = 45°	**F4033.T** Page C 396		**F4033.T** Page C 396			
	 κ = 45°	**F4033.B** Page C 396	**F4033.B** Page C 398	**F4033.B** Page C 396	**F4033.B** Page C 398		
	 κ = 75°	**F4047.B** Page C 404				**F4047.B** Page C 404	
	 κ = 88°	**F4048.T** Page C 406					**F4048.T** Page C 406
	 κ = 88°	**F4048.B** Page C 406					**F4048.B** Page C 406
	F2010  κ = 45°	**FR720M** Page C 366		**FR720M** Page C 366			
	  κ = 75°	**FR727M** Page C 370				**FR727M** Page C 370	
	 κ = 88°	**FR728M** Page C 372					**FR728M** Page C 372

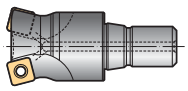
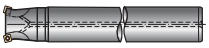
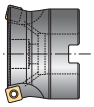
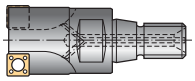
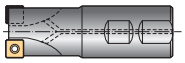
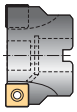
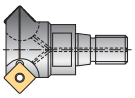
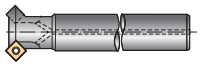
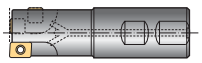
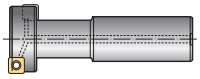
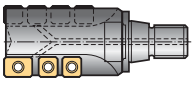
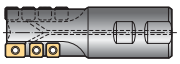
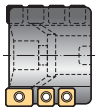
Overview of SD . ./LD . . system inserts

SD . .

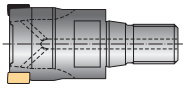
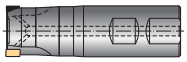
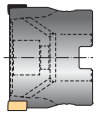
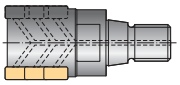
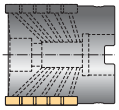
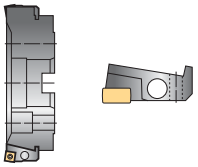


LD . .



suitable for cutter type		SD . . 06T2	SD . . 09T3	SD . . 1204	LDM . 08T204	LDM . 14T308	LDM . 170408
	κ = 15°	M4002 . . . T Page C 424	M4002 . . . T Page C 424				
	κ = 15°	M4002 . . . A Page C 424					
	κ = 15°	M4002 . . . B Page C 426	M4002 . . . B Page C 426	M4002 . . . B Page C 426			
	κ = 90°	M4132 . . . T Page C 466	M4132 . . . T Page C 466				
	κ = 90°	M4132 . . . W Page C 466	M4132 . . . W Page C 466				
	κ = 90°		M4132 . . . B Page C 466	M4132 . . . B Page C 466			
	κ = 45°	M4574 . . . T Page C 562	M4574 . . . T Page C 562	M4574 . . . T Page C 562			
	κ = 45°	M4574 . . . Z Page C 562	M4574 . . . Z Page C 562	M4574 . . . Z Page C 562			
	κ = 90°	M4792 . . . W Page C 486	M4792 . . . W Page C 486	M4792 . . . W Page C 486	M4792 . . . W Page C 486	M4792 . . . W Page C 486	M4792 . . . W Page C 486
	κ = 90°	M4575 . . . W Page C 564	M4575 . . . W Page C 564	M4575 . . . W Page C 564			
	κ = 90°	M4256 . . . T Page C 498	M4257 . . . T Page C 498		M4256 . . . T Page C 498	M4257 . . . T Page C 498	
	κ = 90°	M4256 . . . W Page C 498	M4257 . . . W Page C 498		M4256 . . . W Page C 498	M4257 . . . W Page C 498	
	κ = 90°		M4257 . . . B Page C 498	M4258 . . . B Page C 498		M4257 . . . B Page C 498	M4258 . . . B Page C 498

Overview of LNHU system inserts

	suitable for cutter type		LNHU 0904 . .	LNHU 1306 . .	LNHU 1607 . .
LNHU . . 		κ = 90°	F5041.T Page C 458	F5141.T Page C 460	
		κ = 90°	F5041.W Page C 458	F5141.W Page C 460	
		κ = 90°	F5041.Z Page C 458	F5141.Z Page C 460	
		κ = 90°	F5041.B Page C 458	F5141.B Page C 460	F5241.B Page C 462
		κ = 90°	F5038.T Page C 480	F5138.T Page C 482	
		κ = 90°	F5038.W Page C 480	F5138.W Page C 482	
		κ = 90°	F5038.B Page C 480	F5138.B Page C 482	
F2010 		κ = 90°	FR751M Page C 440	FR752M Page C 442	

Designation key for Walter milling tools

Example:

F	4	0	42	.	T	45	.	050	.	Z05	.	15	
1	2	3	4		5	6		7		8		9	10

1 Tool range

F	Milling tools

2 Generation

3 Version or insert size

4 Tool type

10	Face milling cutters with cartridges
30	High-feed face milling cutters
33	Face milling cutters κ = 45°, screw-clamped
34	Round insert milling cutters
35	Face milling cutters κ = 75°
36	Circular slot milling cutters
38	Porcupine milling cutters
39	Copy milling cutters with ball shape
41	Shoulder milling cutters with four cutting edges per indexable insert
42	Shoulder milling cutters with two cutting edges per indexable insert
45	Heptagon milling cutters κ = 45°
46	Face milling cutters κ = 43°, wedge-clamped
47	Face milling cutters κ = 75°
48	Shoulder milling cutters κ = 88°
50	Face milling cutters for PCD indexable inserts
52	Slotting cutters with cartridges
53	Slotting cutters with tangential insert arrangement
54	Close pitch cutters for cast iron κ = 89°
55	Slitting cutters
60	Heavy-duty cutters κ = 60°
80	Octagon milling cutters κ = 43°

5 Interface

B	Bore
BN	Bore with hub
H	HSK
N	NCT
S	Steep taper
T	ScrewFit
W	Weldon shank
Z	Parallel shank

6 Interface size

7 Cutting diameter

8 Number of teeth

9 Maximum depth of cut or cutting width

10 Cutting direction and cartridge type

only for F2010/F2146/ F2250/F2252:

R	Right
L	Left
S	Cuts on three sides

Example:

M	4	1	32	–	063	–	B	22	–	07	–	09	–	
1	2	3	4	5	6		7	8		9		10		11

1	
Tool group	
M	Milling

2	
Generation	
2	
3	Walter BLAXX
4	M4000

3	
Tool type	
0	Face milling cutters
1	Shoulder milling cutters
2	Shoulder/slot/ porcupine milling cutters
5	Profiling cutters
7	Routing cutters

4	
Type	
02	High-feed face milling cutters, κ = 0–15°, radial, positive, four cutting edges per indexable insert
16	Heavy-duty cutters, κ = 60°, tangential, negative, four cutting edges per indexable insert
24	Heptagon face milling cutters, κ = 45°, radial, negative, 14 cutting edges per indexable insert, screw clamping
25	Octagon face milling cutters for finishing, κ = 42°, radial, negative, 16 cutting edges per indexable insert, finishing face milling cutters
26	Octagon face milling cutters for finishing, κ = 42°, radial, negative, 16 cutting edges per indexable insert
31	Ramping milling cutters, κ = 90°, radial, positive, two cutting edges per indexable insert
32	Shoulder milling cutters, κ = 90°, radial, positive, four cutting edges per indexable insert
55	Porcupine milling cutters, κ = 90°, tangential, negative, two or four cutting edges per indexable insert
56	Porcupine milling cutters, κ = 90°, radial, positive, two or four cutting edges per indexable insert
57	Porcupine milling cutters, κ = 90°, radial, positive, two or four cutting edges per indexable insert
58	Porcupine milling cutters, κ = 90°, radial, positive, two or four cutting edges per indexable insert
74	Chamfer milling cutters, κ = 45°, radial, positive, four cutting edges per indexable insert
75	T-slot milling cutters, κ = 90°, radial, positive, four cutting edges per indexable insert
92	Routing cutters, κ = 90°, radial, positive, two or four cutting edges per indexable insert

5	
1. Delimiters	
–	Metric
.	Inches

6
Cutting diameter

7	
Adaptor type	
A	Parallel shank
B	Bore
T	ScrewFit
W	Weldon shank
H	HSK

8
Adaptor size

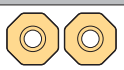
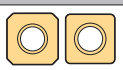
9
Number of teeth

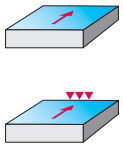
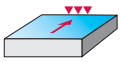
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Depth of cut

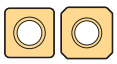
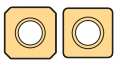
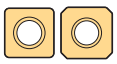
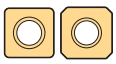
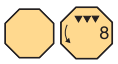
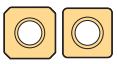
11	
Version acc. to length or manufacturer-specific adaptors	
S	Short version
L	Long version
D	Dörries Scharmann machines

Walter Select – Indexable insert milling cutters
Face milling cutters

WALTER SELECT
●● Primary application
● Other application

Machining						
Lead angle κ	**15°**	**21°**	**43°**	**45°**	**45°**	
Designation	**F2010**	**F2010**	**F2010**	**F2010**	**F2010**	
Dia. range [mm]	70–305	71–306	80–315	80–315	80–315	
Adaption Range	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	
Page	C 356	C 358	C 360	C 362	C 364	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●●	●●	●●	●	●●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals			●●		●●	
S Materials with difficult cutting properties	●●	●●	●●		●●	
H Hard materials			●		●	
O Other			●		●	
Indexable inserts						
Type	P2633 . R25 P26379-R25	P23696-2 . 0	OD .. 0605 .. ODHX0605ZZR	ODHX0605ZZN	SP .. 1204 ..	
Number of cutting edges	3	6	8 / 1	8	4	
Max. depth of cut [mm]	2	2	4	2	7	

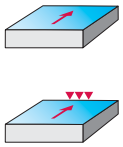



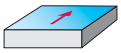

	45°	75°		88°	90°	43°	45°
	F2010	**F2010**	**F2010**	**F2010**	**F2010**	**F2146**	**F2233**
	80–315	80–315	80–315	80–315	80–315	80–250	20–100
	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	Parallel shank Cylindrical bore
	C 366	C 368	C 370	C 372	C 374	C 376	C 378
							
	●●	●●	●●	●●	●●		●●
	●●	●●	●●	●●	●		●●
	●●	●●	●●	●●	●●	●●	●●
	●●	●●					●●
	●●	●●	●●	●●			●●
	●	●	●	●	●	●	●
	●	●					●
							
	SN . X1205 ..	SP .. 1204 .. P2901-1R	SN . X1205 .. XNGX1205ENN	SN . X1205 .. XNGX1205ZNN	P2903-2R	OPHN0504ZZN OPHX0504ZZN	SD .. 09T3 ..
	8 / 2	4 / 1	8 / 2	8 / 2	3	8	4
	6,5	10	8	10	9	3	5

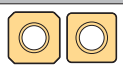
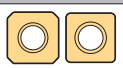
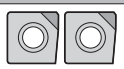
Walter Select – Indexable insert milling cutters
Face milling cutters

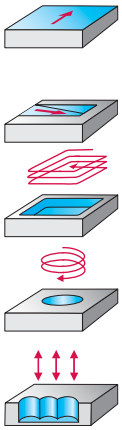
Machining

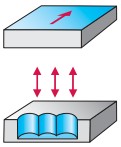
WALTER SELECT
●● Primary application
● Other application

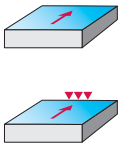


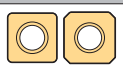


Lead angle κ	45°	75°	90°	89°	60°	
Designation	**F2233**	**F2235**	**F2250**	**F2254**	**F2260**	
Dia. range [mm]	32–160	40–80	63–200	50–160	100–315	
Adaption range	DIN 1835 B Cylindrical bore	DIN 1835 B Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	
Page	C 380	C 382	C 384	C 388	C 390	
						
P Steel	●●	●●			●	
M Stainless steel	●●	●●				
K Cast iron	●●	●●		●●	●●	
N NF metals	●●	●●	●●			
S Materials with difficult cutting properties	●●	●●				
H Hard materials	●	●			●	
O Other	●	●				
Indexable inserts						
Type	SP .. 1204 ..	SP .. 1204 .. P2901-1R	SPH . 1204 . DR	SNHQ1205ZZR	LNMU150812 LNMU201012	
Number of cutting edges	4	4 / 1	1	8	4	
Max. depth of cut [mm]	7	10	3	7	11 / 15	





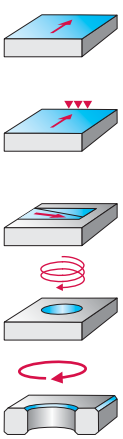


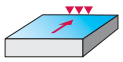
	15°	21°	45°		75°	88°	75° / 90°
	F2330	F4030	F4033	F4045	F4047	F4048	F4050
	10–71	13–82	40–200	63–200	50–160	40–160	80–200
	ScrewFit Parallel shank Cylindrical bore	ScrewFit Parallel shank Cylindrical bore	ScrewFit Cylindrical bore	Cylindrical bore	Cylindrical bore	ScrewFit Cylindrical bore	Cylindrical bore
	C 392	C 394	C 396	C 400	C 404	C 406	C 408
							
	●●	●●	●●		●●	●●	
	●●	●●	●●		●●	●●	
	●●	●●	●●	●●	●●	●●	
			●●				●●
	●●	●●	●●		●●	●●	
			●	●	●	●	
			●				
							
	P2633 . R10 P26379-R10 P2633 . R14 P26379-R14 ...	P23696-1 . 0 P23696-2 . 0	SN . X1205 .. XNGX1205ANN SN . X1606 ..	XNHF0705 .. XNHX0705ANN XNHF0906 ..	SN . X1205 .. XNGX1205ENN	SN . X1205 .. XNGX1205ZNN	
	3	6	8 / 2	14 / 2	8 / 2	8 / 2	
	1 / 1,5 / 2	1 / 2	6,5 / 9	4 / 6	8	10	1,1 / 4

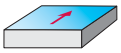
Walter Select – Indexable insert milling cutters
Face milling cutters

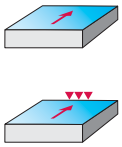
Machining

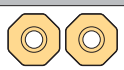
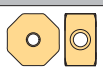
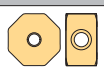
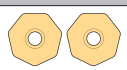
WALTER SELECT
●● Primary application
● Other application

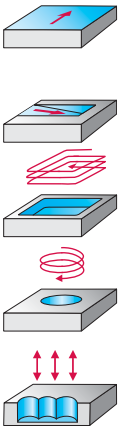
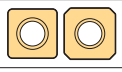








Lead angle κ	43°	42°		60°	45°	
Designation	**F4080**	**M2025**	**M2026**	**M3016**	**M3024**	
Dia. range [mm]	24–160	80–160	200–250	125–315	40–160	
Adaption range	ScrewFit DIN 1835 B Parallel shank Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	ScrewFit DIN 1835 B Cylindrical bore	
Page	C 414	C 418	C 418	C 420	C 422	
						
P Steel	●●			●●	●●	
M Stainless steel	●●			●	●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals	●●					
S Materials with difficult cutting properties	●●			●		
H Hard materials	●	●	●	●		
O Other	●					
Indexable inserts						
Type	OD .. 0504 .. ODHX0504ZZR OD .. 0605 .. ODHX0605ZZR	ONHF050408 P45424-1-G67	ONHF050408 P45424-2-G67	LNMX201012R	XN . U0705 .. XNGX0705ANN	
Number of cutting edges	8/1	16/4	16/4	4	14/2	
Max. depth of cut [mm]	3 / 4	3	3	16	4	

	
	15°
	M4002
	8–102
	ScrewFit Parallel shank Cylindrical bore
	C 424
	
	●●
	●●
	●●
	●●
	●
	
	SDM . 06T2 .. SDM . 09T3 .. SDM . 1204 ..
	4
	1 / 1,5 / 2

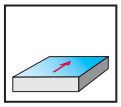
Face milling cutters
F2010
P2633 . R25 / P26379-R25

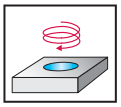




C 2

– f_z up to 3.5 mm
– Three cutting edges per indexable insert, adjustable runout







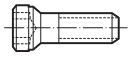


	P	M	K	N	S	H	O
F2010	●●	●●	●●		●●		

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.02.R729M	70	87	27	50	2	6	1,2	6	P2633 . R25 P26379-R25
Cylindrical bore DIN 138 transverse keyway	F2010.B.100.Z07.02.R729M	90	107	32	50	2	7	1,8	7	P2633 . R25 P26379-R25
	F2010.B.125.Z08.02.R729M	115	132	40	63	2	8	3,5	8	
Cylindrical bore DIN 138 transverse keyway	F2010.B.160.Z10.02.R729M	150	167	40/40 B	63	2	10	5,5	10	
	F2010.B.200.Z12.02.R729M	190	207	60/50 B	63	2	12	8,2	12	P2633 . R25 P26379-R25
	F2010.B.250.Z12.02.R729M	240	257	60/50 B	63	2	12	14,6	12	
	F2010.B.250.Z16.02.R729M	240	257	60/50 B	63	2	16	14,5	16	
Cylindrical bore DIN 138 transverse keyway	F2010.B.315.Z14.02.R729M	305	322	60/50-60 BB	80	2	14	26,3	14	P2633 . R25 P26379-R25
	F2010.B.315.Z18.02.R729M	305	322	60/50-60 BB	80	2	18	26,2	18	

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	70–305
	Cartridge for tool body	FR729M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm
	Adjusting pin	FS303 (Torx 20)

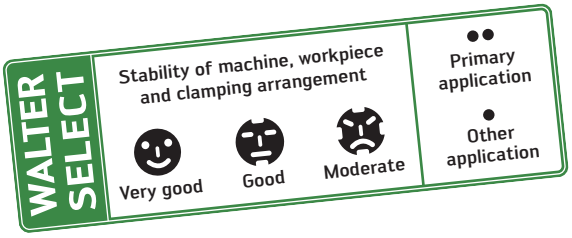
Accessories

	D_c [mm]	70–305
	Screwdriver for indexable insert	FS228 (Torx 20)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	P26335R25	2		☺	☹	☹	😐	☹			😐	☹	😐	☹
	P26337R25	2		☺	☹	☹		☹			😐	☹		☹
	P26339R25	2		☺	☹	☹	😐	☹			😐	☹	😐	☹
	P26379-R25	2	1,1		☹	☹		☹				☹		☹

HC = Coated carbide



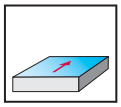
C 294 D 1 C 568 C 592 C 627 C 621

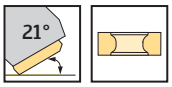
Face milling cutters
F2010
P23696-2 . 0



C 2

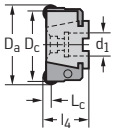
– f_z up to 3.5 mm
– Six cutting edges per indexable insert, adjustable runout

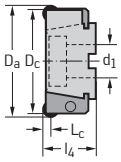


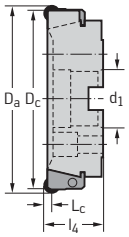


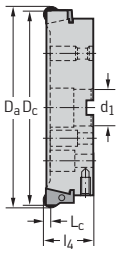
	P	M	K	N	S	H	O
F2010	●●	●●	●●		●●		

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.02.R750M	71	90	27	50	2	6	1,2	6	P23696-2 . 0
	F2010.B.100.Z07.02.R750M	90	110	32	50	2	7	1,9	7	P23696-2 . 0
	F2010.B.125.Z08.02.R750M	115	135	40	63	2	8	3,6	8	
	F2010.B.160.Z10.02.R750M	150	170	40/40 B	63	2	10	5,6	10	P23696-2 . 0
	F2010.B.200.Z12.02.R750M	191	210	60/50 B	63	2	12	8,3	12	
	F2010.B.250.Z12.02.R750M	241	260	60/50 B	63	2	12	14,8	12	
	F2010.B.250.Z16.02.R750M	241	260	60/50 B	63	2	16	14,6	16	
	F2010.B.315.Z14.02.R750M	306	325	60/50-60 BB	80	2	14	26,3	14	P23696-2 . 0
	F2010.B.315.Z18.02.R750M	306	325	60/50-60 BB	80	2	18	26,2	18	



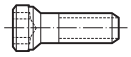






Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	71–306
	Cartridge for tool body	FR750M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1031 (Torx 20) 5,0 Nm
	Adjusting pin	FS303 (Torx 20)

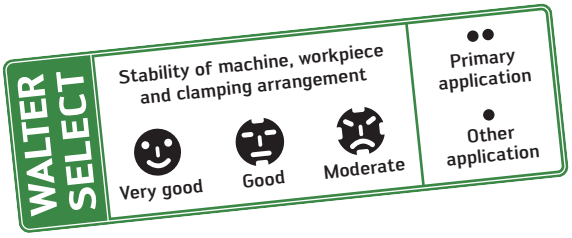
Accessories

	D_c [mm]	71–306
	Screwdriver for indexable insert	FS228 (Torx 20)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	P23696-2.0	1,6	☺	☹	☹	☺	☹			☺	☹			☺	☹

HC = Coated carbide
HW = Uncoated carbide



C 313 D 1 C 568 C 593 C 627 C 621

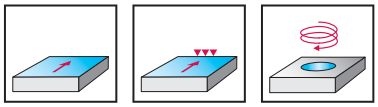
Face milling cutters
F2010

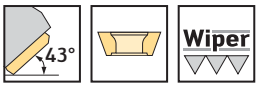
OD .. 0605 ..



C 2

– Adjustable runout
– Eight cutting edges per indexable insert





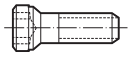
	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.04.R592M	80	90	27	50	4	6	1,2	6	OD .. 0605 ..
	F2010.B.100.Z07.04.R592M	100	110	32	50	4	7	1,8	7	OD .. 0605 ..
	F2010.B.125.Z08.04.R592M	125	135	40	63	4	8	3,5	8	
	F2010.B.160.Z10.04.R592M	160	170	40/40 B	63	4	10	5,5	10	OD .. 0605 ..
	F2010.B.200.Z12.04.R592M	200	210	60/50 B	63	4	12	8,2	12	
	F2010.B.250.Z12.04.R592M	250	260	60/50 B	63	4	12	14,7	12	
	F2010.B.250.Z16.04.R592M	250	260	60/50 B	63	4	16	14,6	16	
Cylindrical bore DIN 138 transverse keyway	F2010.B.315.Z14.04.R592M	315	325	60/50-60 BB	80	4	14	26,3	14	OD .. 0605 ..
	F2010.B.315.Z18.04.R592M	315	325	60/50-60 BB	80	4	18	26,2	18	

Bodies and assembly parts are included in the scope of delivery.

C 2

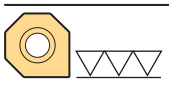
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR592M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

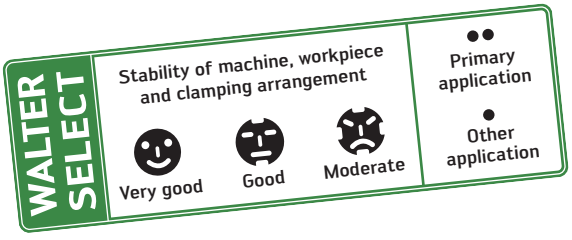
	D_c [mm]	80–315
	Cartridge: ODHX0605ZZN... finishing insert	FR681M
	Screwdriver for indexable insert	FS228 (Torx 20)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	H HC WHH15	O HC WXM15
	ODHX0605ZZR-A57		9,4		☹						☺			☹								☺	☺
	ODHT060512-F57	1,2			☹	☹				☹				☹							☹		
	ODHW060512-A57	1,2			☹									☹									
	ODHW060516-A57	1,6													☺								
	ODMT060512-D57	1,2			☹	☹		😐		☹		😐		☹					😐		☹		
	ODMW060508-A57	0,8		😐	☹						☺	😐	😐	☹									
	ODMW060508T-A27	0,8		😐	☹							😐	😐	☹									
	ODHT0605ZZN-F57	0,8	1,6		☹	☹	😐			☹				☹				😐			☹		
	ODHT0605ZZN-G88	0,8	1,6													☺	☺						
	ODHW0605ZZN-A57	0,8	1,6	😐	☹						☺		😐	☹									
	ODMT0605ZZN-D57	0,8	1,6	☺	☹	☹	😐		☹	☹		😐	😐	☹				😐		☹	☹		

ODHX0605ZZR-A57 wiper insert only in combination with ODH.0605ZZN . .

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide



C 291 D 1 C 568 C 586 C 627 C 621

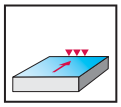
Face milling cutters
F2010

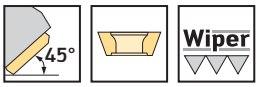
ODHX0605ZZN



C 2

– Adjustable runout
– Eight cutting edges per indexable insert



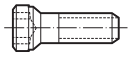


	P	M	K	N	S	H	O
F2010	●●	●	●●				

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.02.R681M	80	90	27	50	2	6	1,2	6	ODHX0605ZZN
Cylindrical bore DIN 138 transverse keyway	F2010.B.100.Z07.02.R681M	100	110	32	50	2	7	1,8	7	ODHX0605ZZN
	F2010.B.125.Z08.02.R681M	125	135	40	63	2	8	3,5	8	
Cylindrical bore DIN 138 transverse keyway	F2010.B.160.Z10.02.R681M	160	170	40/40 B	63	2	10	5,5	10	ODHX0605ZZN
	F2010.B.200.Z12.02.R681M	200	210	60/50 B	63	2	12	8,2	12	
	F2010.B.250.Z16.02.R681M	250	260	60/50 B	63	2	16	14,6	16	
Cylindrical bore DIN 138 transverse keyway	F2010.B.315.Z18.02.R681M	315	325	60/50-60 BB	80	2	18	26,2	18	ODHX0605ZZN

Bodies and assembly parts are included in the scope of delivery.

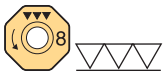
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR681M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

	D_c [mm]	80–315
	Screwdriver for indexable insert	FS228 (Torx 20)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	ODHX0605ZZN-A57	6						☻						☻	☻
	ODHX0605ZZN-A88	6						☻						☻	☻

HC = Coated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good · Good · Moderate

●● Primary application

● Other application

C 309 · D 1 · C 568 · C 586 · C 627 · C 621

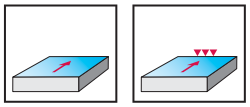
Face milling cutters
F2010

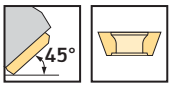
SP .. 1204 ..



C 2

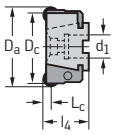
– Adjustable runout
– Four cutting edges per indexable insert

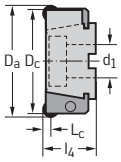


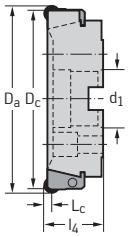


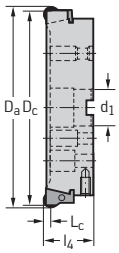
	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.07.R495M	80	94	27	50	7	6	1,2	6	SP .. 1204 ..
	F2010.B.100.Z07.07.R495M	100	114	32	50	7	7	1,8	7	SP .. 1204 ..
	F2010.B.125.Z08.07.R495M	125	139	40	63	7	8	3,5	8	
	F2010.B.160.Z10.07.R495M	160	174	40/40 B	63	7	10	5,5	10	SP .. 1204 ..
	F2010.B.200.Z12.07.R495M	200	214	60/50 B	63	7	12	8,3	12	
	F2010.B.250.Z12.07.R495M	250	264	60/50 B	63	7	12	14,7	12	
	F2010.B.250.Z16.07.R495M	250	264	60/50 B	63	7	16	14,6	16	
	F2010.B.315.Z14.07.R495M	315	329	60/50-60 BB	80	7	14	26,3	14	SP .. 1204 ..
	F2010.B.315.Z18.07.R495M	315	329	60/50-60 BB	80	7	18	26,2	18	





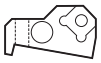
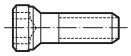




Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR495M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS243 (Torx 20) 5,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

	D_c [mm]	80–315
	Cartridge: P2905-1 finishing insert	FR448M
	Screwdriver for indexable insert	FS228 (Torx 20)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S WSP45S	S HC WSP45
	SPGT1204AEN-K88		1,5														☺	☺				
	SPKT1204AZN		1,4		😠		😠		😐		😠	☺			😠					😐		😠
	SPMT1204AEN	0,5	1,4	☺	😠		😠		😐		😠	☺		😐	😠					😐		😠
	SPMW1204AEN-A57	0,5	1,4	😐	😠							☺		😐	😠							
	SPMW1204AETN-A27	0,5	1,4	😐	😠									😐	😠							
	SPHW120416-A57	1,6														☺						

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

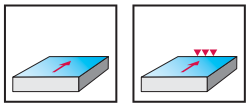
C 302 | D 1 | C 568 | C 587 | C 627 | C 621

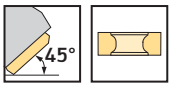
Face milling cutters
F2010
SN . X1205 ..



C 2

– Adjustable runout
– Eight cutting edges per indexable insert



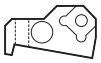
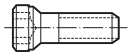


	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.06.R720M	80	94	27	50	6,5	6	1,2	6	SN . X1205 ..
	F2010.B.100.Z07.06.R720M	100	114	32	50	6,5	7	1,9	7	SN . X1205 ..
	F2010.B.125.Z08.06.R720M	125	139	40	63	6,5	8	3,6	8	
	F2010.B.160.Z10.06.R720M	160	174	40/40 B	63	6,5	10	5,6	10	SN . X1205 ..
	F2010.B.200.Z12.06.R720M	200	214	60/50 B	63	6,5	12	8,3	12	
	F2010.B.250.Z12.06.R720M	250	264	60/50 B	63	6,5	12	14,8	12	
	F2010.B.250.Z16.06.R720M	250	264	60/50 B	63	6,5	16	14,6	16	
	F2010.B.315.Z14.06.R720M	315	329	60/50-60 BB	80	6,5	14	26,3	14	SN . X1205 ..
	F2010.B.315.Z18.06.R720M	315	329	60/50-60 BB	80	6,5	18	26,2	18	

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR720M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1459 (Torx 15IP) 4,0 Nm
	Adjusting pin	FS303 (Torx 20)

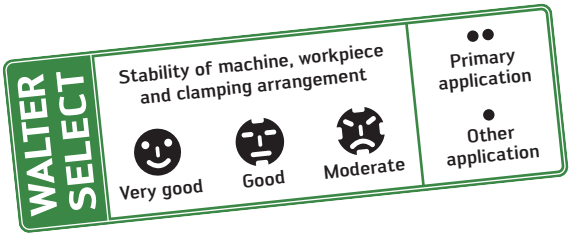
Accessories

	D_c [mm]	80–315
	Cartridge: XNGX1205ANN-F67 finishing insert	FR730M
	Screwdriver for indexable insert	FS1485 (Torx 15IP)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC			M HC		K HC				N HC	N HW	S HC	
				WKP25S	WKP35S	WSP45S	WSM35S	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM35S	WSP45S
	SNGX1205ANN-F27		1,5	●●	●						●	○				
	SNGX1205ANN-F57		1,5	●●	●	○	●●	○		●	●	○			●●	○
	SNGX1205ANN-F67		1,5	●●	●	○	●●	○	●●		●	○			●●	○
	SNHX1205ANN-K88		1,5										●●	●●		
	SNMX1205ANN-F27		1,5	●●	●						●	○				
	SNMX1205ANN-F57		1,5	●●	●					●	●	○				
	SNMX1205ANN-F67		1,5	●●	●				●●		●	○				
	SNGX120512-F57	1,2		●●	●	○	●●	○			●	○			●●	○
	SNMX120512-D27	1,2		●●	●					●	●	○				
	SNMX120512-F27	1,2		●●	●						●	○				
	SNMX120520-D27	2		●●	●					●	●	○				
	SNMX120520-F57	2		●●	●	○		○		●	●	○				○

HC = Coated carbide
HW = Uncoated carbide



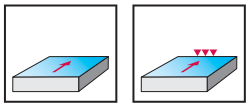
C 314 D 1 C 568 C 587 C 627 C 621

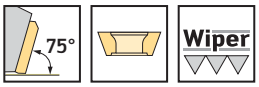
Face milling cutters
F2010
SP .. 1204 ..



C 2

– Adjustable runout
– Four cutting edges per indexable insert



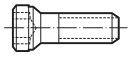


	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.10.R441M	80	86	27	50	10	6	1,2	6	SP .. 1204 .. P2901-1R
	F2010.B.100.Z07.10.R441M	100	106	32	50	10	7	1,8	7	SP .. 1204 .. P2901-1R
	F2010.B.125.Z08.10.R441M	125	131	40	63	10	8	3,5	8	
	F2010.B.160.Z10.10.R441M	160	166	40/40 B	63	10	10	5,5	10	SP .. 1204 .. P2901-1R
	F2010.B.200.Z12.10.R441M	200	206	60/50 B	63	10	12	8,2	12	
	F2010.B.250.Z12.10.R441M	250	256	60/50 B	63	10	12	14,6	12	
	F2010.B.250.Z16.10.R441M	250	256	60/50 B	63	10	16	14,5	16	
	F2010.B.315.Z14.10.R441M	315	321	60/50-60 BB	80	10	14	26,2	14	SP .. 1204 .. P2901-1R
	F2010.B.315.Z18.10.R441M	315	321	60/50-60 BB	80	10	18	26,0	18	

Bodies and assembly parts are included in the scope of delivery.

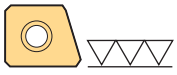
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR441M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS243 (Torx 20) 5,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

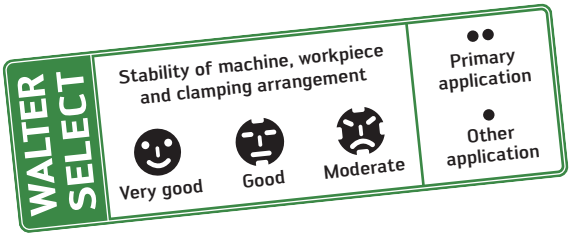
	D_c [mm]	80–315
	Cartridge: P2905-1 finishing insert	FR448M
	Screwdriver for indexable insert	FS228 (Torx 20)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45	H HC WHH15	O HC WXM15
	P2901-1R		11									☺						☺					☺	☺
	SPGT1204EDR-F55	0,5	1,3	☺	☺		☹		☺		☹	☺		☺	☹					☺		☹			
	SPJW1204EDR		1,4		☹							☺			☹										
	SPHT120408-G88	0,8															☺	☺						
	SPHW120416-A57	1,6														☺								
	SPMT120408-D51	0,8		☺	☺		☹		☺		☹			☺	☹					☺		☹			
	SPMT120408-F55	0,8			☺		☹		☺		☹	☺			☹					☺		☹			
	SPMW120408-A57	0,8		☺	☹							☺		☺	☹										
	SPMW120408T-A27	0,8		☺	☹									☺	☹										

P2901-1R wiper insert only in combination with SP..1204EDR . .

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide



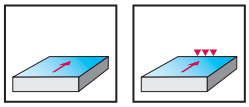
C 301 D 1 C 568 C 589 C 627 C 621

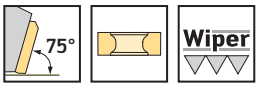
Face milling cutters
F2010
SN . X1205 ..



C 2

– Adjustable runout
– Eight cutting edges per indexable insert





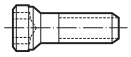
	P	M	K	N	S	H	O
F2010	●●	●●	●●		●●	●	

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.08.R727M	80	86	27	50	8	6	1,1	6	SN . X1205 .. XNGX1205ENN
Cylindrical bore DIN 138 transverse keyway	F2010.B.100.Z07.08.R727M	100	106	32	50	8	7	1,8	7	SN . X1205 .. XNGX1205ENN
	F2010.B.125.Z08.08.R727M	125	131	40	63	8	8	3,5	8	
Cylindrical bore DIN 138 transverse keyway	F2010.B.160.Z10.08.R727M	160	166	40/40 B	63	8	10	5,5	10	SN . X1205 .. XNGX1205ENN
	F2010.B.200.Z12.08.R727M	200	206	60/50 B	63	8	12	8,2	12	
	F2010.B.250.Z12.08.R727M	250	256	60/50 B	63	8	12	14,6	12	
	F2010.B.250.Z16.08.R727M	250	256	60/50 B	63	8	16	14,5	16	
Cylindrical bore DIN 138 transverse keyway	F2010.B.315.Z14.08.R727M	315	321	60/50-60 BB	80	8	14	26,3	14	SN . X1205 .. XNGX1205ENN
	F2010.B.315.Z18.08.R727M	315	321	60/50-60 BB	80	8	18	26,2	18	

Bodies and assembly parts are included in the scope of delivery.

C 2

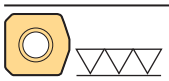
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR727M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1459 (Torx 15IP) 4,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

	D_c [mm]	80–315
	Screwdriver for indexable insert	FS1485 (Torx 15IP)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45	H HC WHH15	O HC WXM15
	SNGX1205ENN-F27		1,2	☺	😐								☹	☹							
	SNGX1205ENN-F57		1,2	☺	😐	☹		😐	☹			😐	😐	☹			😐	☹			
	SNGX1205ENN-F67		1,2	☺	😐		☹	😐		☹	☺		😐	☹			😐		☹		
	SNGX120512-F57	1,2		☺	😐	☹		😐	☹				😐	☹			😐	☹			
	SNMX120512-D27	1,2		☺	😐							😐	😐	☹							
	SNMX120512-F27	1,2		☺	😐								😐	☹							
	SNMX120520-D27	2		☺	😐							😐	😐	☹							
	SNMX120520-F57	2		☺	😐	☹			☹			😐	😐	☹				☹			
	XNGX1205ENN-F67		4,5								☺									☺	☺

XNGX1205ENN-F67 wiper insert only in combination with SNGX1205ENN . .

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

C 314 | D 1 | C 568 | C 589 | C 627 | C 621

Face milling cutters
F2010

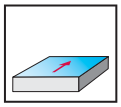
SN . X1205 ..

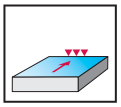


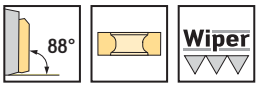


C 2

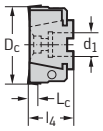
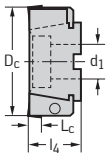
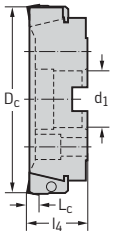
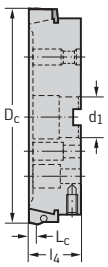
– Adjustable runout
– Eight cutting edges per indexable insert





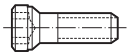


	P	M	K	N	S	H	O
F2010	●●	●●	●●		●●	●	

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.10.R728M	80	81	27	50	10	6	1,2	6	SN . X1205 .. XNGX1205ZNN
										
Cylindrical bore DIN 138 transverse keyway	F2010.B.100.Z07.10.R728M	100	101	32	50	10	7	1,8	7	SN . X1205 .. XNGX1205ZNN
	F2010.B.125.Z08.10.R728M	125	126	40	63	10	8	3,5	8	
										
Cylindrical bore DIN 138 transverse keyway	F2010.B.160.Z10.10.R728M	160	161	40/40 B	63	10	10	5,5	10	
	F2010.B.200.Z12.10.R728M	200	201	60/50 B	63	10	12	8,2	12	SN . X1205 .. XNGX1205ZNN
	F2010.B.250.Z12.10.R728M	250	251	60/50 B	63	10	12	14,6	12	
	F2010.B.250.Z16.10.R728M	250	251	60/50 B	63	10	16	14,5	16	
										
Cylindrical bore DIN 138 transverse keyway	F2010.B.315.Z14.10.R728M	315	316	60/50-60 BB	80	10	14	26,3	14	SN . X1205 .. XNGX1205ZNN
	F2010.B.315.Z18.10.R728M	315	316	60/50-60 BB	80	10	18	26,2	18	
										

Bodies and assembly parts are included in the scope of delivery.

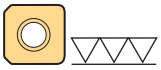
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR728M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1459 (Torx 15IP) 4,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

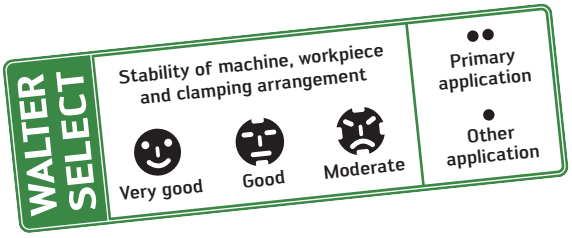
	D_c [mm]	80–315
	Screwdriver for indexable insert	FS1485 (Torx 15IP)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	SNGX1205ZNN-F27		1,2	☺	😐						😐	☹						
	SNGX1205ZNN-F57		1,2	☺	😐	☹	😐	☹		😐	😐	☹			😐	☹		
	SNGX1205ZNN-F67		1,2	☺	😐	☹	😐	☹	☺		😐	☹			😐	☹		
	SNGX120512-F57	1,2		☺	😐	☹	😐	☹			😐	☹			😐	☹		
	SNMX120512-D27	1,2		☺	😐					😐	😐	☹						
	SNMX120512-F27	1,2		☺	😐						😐	☹						
	SNMX120520-D27	2		☺	😐					😐	😐	☹						
	SNMX120520-F57	2		☺	😐	☹		☹		😐	😐	☹				☹		
	XNGX1205ZNN-F67		4						☺								☺	☺

XNGX1205ZNN-F67 wiper insert only in combination with SNGX1205ZNN . .

HC = Coated carbide
HW = Uncoated carbide



C 314 D 1 C 568 C 589 C 627 C 621

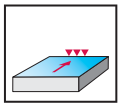
Face milling cutters
F2010

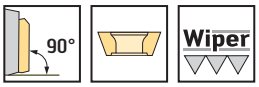
P2903-2R



C 2

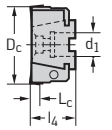
– Adjustable runout
– Three cutting edges per indexable insert

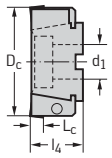


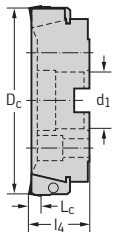


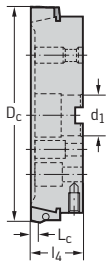
	P	M	K	N	S	H	O
F2010	●●	●	●●			●	

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.09.R500M	80	27	50	9	6	1,07	6	P2903-2R
	F2010.B.100.Z07.09.R500M	100	32	50	9	7	1,65	7	P2903-2R
	F2010.B.125.Z08.09.R500M	125	40	63	9	8	3,31	8	
	F2010.B.160.Z10.09.R500M	160	40/40 B	63	9	10	5,27	10	P2903-2R
	F2010.B.200.Z12.09.R500M	200	60/50 B	63	9	12	7,87	12	
	F2010.B.250.Z12.09.R500M	250	60/50 B	63	9	12	14,59	12	
	F2010.B.250.Z16.09.R500M	250	60/50 B	63	9	16	14,40	16	
	F2010.B.315.Z14.09.R500M	315	60/50-60 BB	80	9	14	26,1	14	P2903-2R
	F2010.B.315.Z18.09.R500M	315	60/50-60 BB	80	9	18	25,97	18	



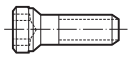






Bodies and assembly parts are included in the scope of delivery.

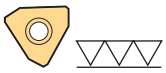
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR500M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS244 (Torx 15) 3,0 Nm
	Adjusting pin	FS303 (Torx 20)

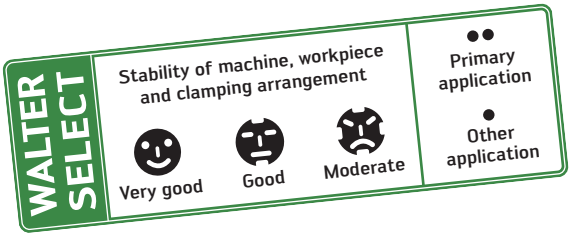
Accessories

	D_c [mm]	80–315
	Screwdriver for indexable insert	FS229 (Torx 15)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	P2903-2R	3,5						☺				☺			☺	☺

HC = Coated carbide
HW = Uncoated carbide



C 310 D 1 C 568 C 627 C 621

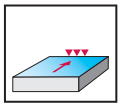
Octagon face milling cutters for finishing
F2146

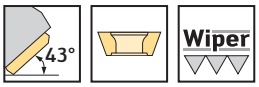
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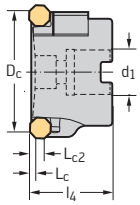
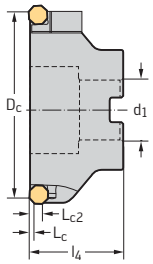
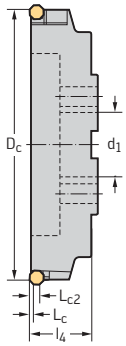
C 2

– Adjustable finishing inserts
– Eight cutting edges per indexable insert





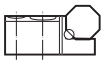
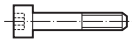
	P	M	K	N	S	H	O
F2146			●●			●	

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	L_{c2} mm	Z*	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2146.B27.080.Z10.R683	80	27	50	3	8	10	1,3	2 8	OPHN0504ZZN OPHX0504ZZN
										
Cylindrical bore DIN 138 transverse keyway	F2146.B32.100.Z12.R683	100	32	50	3	8	12	2,1	2 10	OPHN0504ZZN OPHX0504ZZN
	F2146.B40.125.Z15.R683	125	40	63	3	8	15	3,9	3 12	
										
Cylindrical bore DIN 138 transverse keyway	F2146.B40.160.Z22.R683	160	40/40 B	63	3	8	22	6,2	4 18	
	F2146.B60.200.Z28.R683	200	60/50 B	63	3	8	28	9,5	4 24	OPHN0504ZZN OPHX0504ZZN
	F2146.B60.250.Z36.R683	250	60/50 B	63	3	8	36	15,0	6 30	
										

Outer diameter $D_a = D_c + 10$ mm
* Z = 8 + 2 (8 roughing inserts + 2 axially adjustable finishing inserts with finishing cartridge)
Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	D_c [mm]	80–250
	Finishing Cartridge K = 45° (for OPHX, etc.)	FR683
	Eccentric pin for cartridge	FS1130 (SW 3)
	Clamping wedge for indexable insert	FK281
	Clamping wedge for adjustable indexable insert	FR600
	Tension spring	FS1099
	Clamping screw for cartridge Tightening torque	FS1149 (SW 4) 5,0 Nm
	Clamping screw for clamping wedge	FS746 (Torx 15IP)

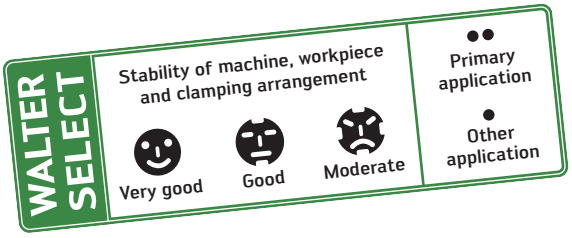
Accessories

	D_c [mm]	80–250
	Torque T-handle for interchangeable blade Tightening torque	FS2041 4,5–14 Nm
	Interchangeable blade for clamping wedge	FS2047 (Torx 15IP)
	Key for eccentric pin	FS227 (SW 3)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K BH WCB80	K CN WSN10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	OPHN0504ZZN-A27	0,4	1,2										☻					
	OPHN0504ZZN-A57	0,4	1,2						☻		☻			☻				
	OPHX0504ZZN-A57		5						☻								☻	
	OPHX0504ZZN-A88		5						☻								☻	☻

HC = Coated carbide
BH = CBN with high CBN content
CN = Silicon nitride Si_3N_4



C 292 D 1 C 568 C 587 C 625 C 621

Face milling cutters
F2233

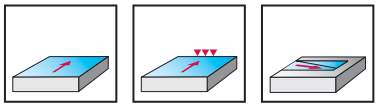
SD .. 09T3 ..

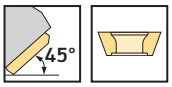




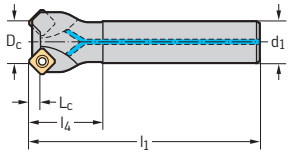
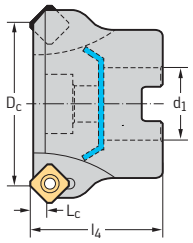
C 2

– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
F2233	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Parallel shank 	F2233.Z20.020.Z02.05	20	20	35	110	5	2	0,3	2	SD .. 09T3 ..
	F2233.Z20.025.Z03.05	25	20	35	110	5	3	0,3	3	
Cylindrical bore DIN 138 transverse keyway 	F2233.B.032.Z04.05	32	16	40		5	4	0,2	4	SD .. 09T3 ..
	F2233.B.032.Z05.05	32	16	40		5	5	0,2	5	
	F2233.B.040.Z04.05	40	16	40		5	4	0,3	4	
	F2233.B.040.Z06.05	40	16	40		5	6	0,3	6	
	F2233.B.050.Z05.05	50	22	40		5	5	0,4	5	
	F2233.B.050.Z08.05	50	22	40		5	8	0,4	8	
	F2233.B.063.Z05.05	63	22	40		5	5	0,6	5	
	F2233.B.063.Z06.05	63	22	40		5	6	0,6	6	
	F2233.B.063.Z10.05	63	22	40		5	10	0,6	10	
	F2233.B.080.Z07.05	80	27	50		5	7	1,2	7	
	F2233.B.080.Z12.05	80	27	50		5	12	1,2	12	
	F2233.B.100.Z14.05	100	32	50		5	14	2,0	14	

Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	D_c [mm]	20–100
	Clamping screw for indexable insert Tightening torque	FS359 (Torx 15) 2,5 Nm

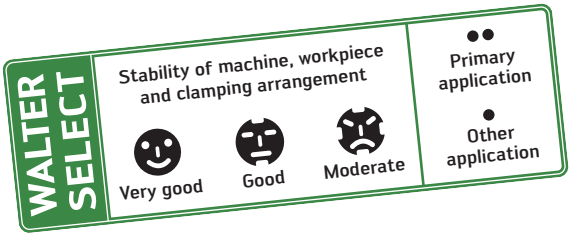
Accessories

	D_c [mm]	20–100
	Screwdriver for indexable insert	FS229 (Torx 15)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	SDGT09T3AEN-F57	0,3	1,2		●●		●		●●		●				●					●●		●
	SDGT09T3AEN-G88	0,3	1,2														●●	●●				
	SDHW09T3AEN-A57	0,3	1,2	●●	●●							●●		●●	●●							
	SDMW09T3AEN-A57	0,5	1,2	●●	●●							●●		●●	●●							
	SDMW09T3AETN-A27	0,5	1,2	●●	●●									●●	●●							
	SDHW09T312-A57	1,2														●						

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide



C 302 D 1 C 568 C 587 C 621

Face milling cutters
F2233

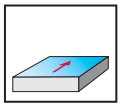
SP .. 1204 ..

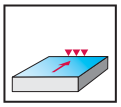




C 2

– Four cutting edges per indexable insert









	P	M	K	N	S	H	O
F2233	●●	●●	●●	●●	●●	●	●

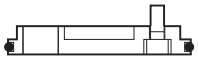
Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Shank DIN 1835 B	F2233.W.032.Z03.07	32	32	44	105	7	3	0,6	3	SP .. 1204 ..
	F2233.W.040.Z04.07	40	32	44	105	7	4	0,7	4	
Cylindrical bore DIN 138 transverse keyway	F2233.B.050.Z04.07	50	22	40		7	4	0,4	4	SP .. 1204 ..
	F2233.B.063.Z05.07	63	22	40		7	5	0,6	5	
	F2233.B.080.Z06.07	80	27	50		7	6	1,3	6	
	F2233.B.100.Z07.07	100	32	50		7	7	2,0	7	
	F2233.B.125.Z08.07	125	40	63		7	8	3,7	8	
Cylindrical bore DIN 138 transverse keyway	F2233.B.160.Z09.07	160	40/40 B	63		7	9	5,5	9	SP .. 1204 ..

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	32–160
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm

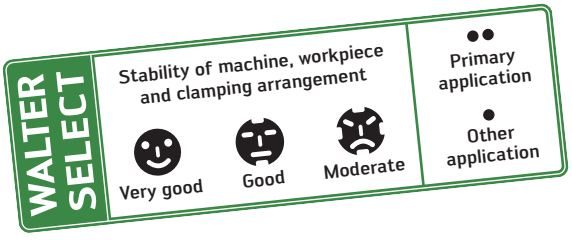
Accessories

	D_c [mm]	32–125	160
	Screwdriver for indexable insert	FS228 (Torx 20)	FS228 (Torx 20)
	Sealing disc (gasket + screws)		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	SPGT1204AEN-K88		1,5														☺	☺				
	SPKT1204AZN		1,4		☹		☹		☹		☹	☺			☹					☹		☹
	SPMT1204AEN	0,5	1,4	☺	☹		☹		☹		☹	☺		☹	☹					☹		☹
	SPMW1204AEN-A57	0,5	1,4	😐	☹							☺		😐	☹							
	SPMW1204AETN-A27	0,5	1,4	😐	☹									😐	☹							
	SPHW120416-A57	1,6														☺						

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide



C 302 D 1 C 568 C 587 C 621

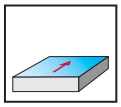
Face milling cutters
F2235

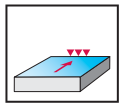
SP .. 1204 ..

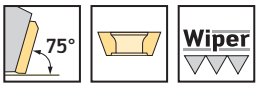


C 2

– Four cutting edges per indexable insert

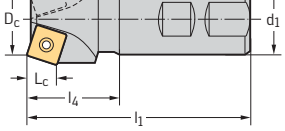


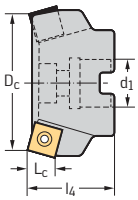




	P	M	K	N	S	H	O
F2235	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Shank DIN 1835 B	F2235.W.040.Z03.10	40	32	49	110	10	3	0,7	3	SP .. 1204 .. P2901-1R
Cylindrical bore DIN 138 transverse keyway	F2235.B.050.Z04.10	50	22	40		10	4	0,4	4	SP .. 1204 .. P2901-1R
	F2235.B.063.Z05.10	63	22	40		10	5	0,6	5	
	F2235.B.080.Z06.10	80	27	50		10	6	1,3	6	





Bodies and assembly parts are included in the scope of delivery.

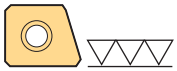
Assembly parts

	D_c [mm]	40–80
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm

Accessories

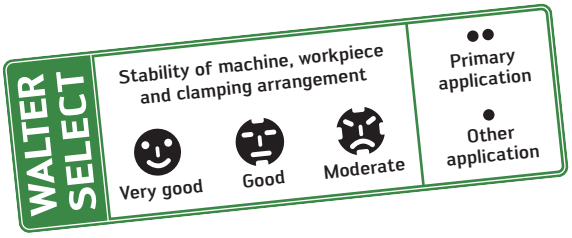
	D_c [mm]	40–80
	Screwdriver for indexable insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P				M				K					N		S				H	O
				HC				HC				HC				CN	HC	HW	HC				HC	HC
				WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WSN10	WXN15	WK10	WSM35S	WSM35	WSP45S	WSP45	WHH15	WXM15
	P2901-1R		11									☺						☺					☺	☺
	SPGT1204EDR-F55	0,5	1,3	☺	😐		😠		😐		😠	☺		😐	😠					😐		😠		
	SPJW1204EDR		1,4		😠							☺			😠									
	SPHT120408-G88	0,8															☺	☺						
	SPHW120416-A57	1,6														☺								
	SPMT120408-D51	0,8		☺	😐		😠		😐		😠			😐	😠					😐		😠		
	SPMT120408-F55	0,8			😐		😠		😐		😠	☺			😠					😐		😠		
	SPMW120408-A57	0,8		😐	😠							☺		😐	😠									
	SPMW120408T-A27	0,8		😐	😠									😐	😠									

P2901-1R wiper insert only in combination with SP..1204EDR . .

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide



C 304 D 1 C 568 C 589 C 621

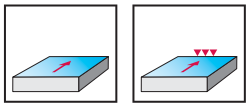
Face milling cutters for light alloys
F2250

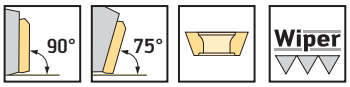
SPH . 1204 . DR



C 2

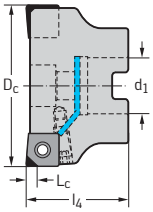
– Adjustable runout
– One cutting edge per indexable insert





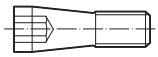
	P	M	K	N	S	H	O
F2250				●●			

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2250.B22.063.Z05.03	63	22	40	3	5	0,4	5	
	F2250.B27.080.Z06.03	80	27	50	3	6	0,8	6	SPH . 1204 . DR
	F2250.B32.100.Z07.03	100	32	50	3	7	1,3	7	



Pre-balanced tools
D_c 80–100 mm, steel basic body; D_c 125–200 mm, aluminium basic body
* Approach angle κ = 75° (EDR)/κ = 90° (PDR)
Bodies and assembly parts are included in the scope of delivery.

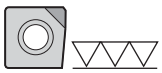
Assembly parts

	D_c [mm]	63–100
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm
	Countersunk screw	FS1148 (SW 2,5)
	Balancing screw	FS1145 (SW 2,5)

Accessories

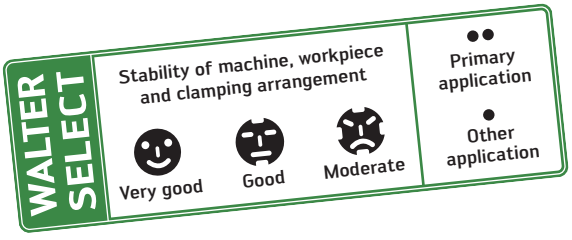
	D_c [mm]	63–100
	Screwdriver for indexable insert	FS228 (Torx 20)
	ISO 2936 Allen key: Countersunk/balancing screw	ISO2936-2,5 (SW 2,5)

Indexable inserts

	Designation	$a_{p\ max}$ mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N DP WCD10	S HC WSM35S	S HC WSP45S
	SPHW1204EDR-A88	3	1,5										☺		
	SPHW1204PDR-A88	4	1,5										☺		
	SPHX1204PDR-A88	0,5	3,5										☺		

SPHX1204PDR-A88 wiper insert only in combination with SPHW1204PDR-A88 . .

HC = Coated carbide
DP = Polycrystalline diamond



C 304 D 1 C 568 C 590 C 628 C 621

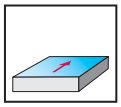
Face milling cutters for light alloys
F2250

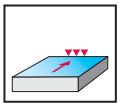
SPH . 1204 . DR

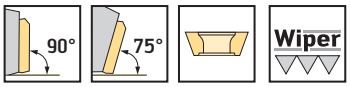


C 2

– Adjustable runout
– One cutting edge per indexable insert







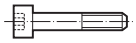
	P	M	K	N	S	H	O
F2250				●●			

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2250.B.080.Z06.03.R594	80	27	63	3	6	1,1	6	SPH . 1204 . DR
	F2250.B.100.Z07.03.R594	100	32	63	3	7	1,8	7	
Cylindrical bore DIN 138 transverse keyway	F2250.B.125.Z08.03.R594	125	40	63	3	8	1,2	8	SPH . 1204 . DR
Cylindrical bore DIN 138 transverse keyway	F2250.B.160.Z10.03.R594	160	40/40 B	63	3	10	1,9	10	SPH . 1204 . DR
Cylindrical bore DIN 138 transverse keyway	F2250.B.200.Z12.03.R594	200	60/50 B	63	3	12	4,1	12	SPH . 1204 . DR

Pre-balanced tools
D_c 80–100 mm, steel basic body; D_c 125–200 mm, aluminium basic body
* Approach angle κ = 75° (EDR)/κ = 90° (PDR)
Bodies and assembly parts are included in the scope of delivery.

C 2

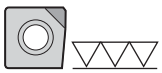
Assembly parts

	D_c [mm]	80–100	125–200
	Cartridge for tool body	FR594	FR594
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm	FS1030 (Torx 20) 5,0 Nm
	Clamping screw for cartridge	FS1146 (SW 5)	FS1147 (SW 5)
	Conical spring washer	FS1100	FS1100
	Balancing screw	FS1145 (SW 2,5)	FS1145 (SW 2,5)
	Eccentric pin for cartridge	FS1131 (SW 2,5)	FS1131 (SW 2,5)

Accessories

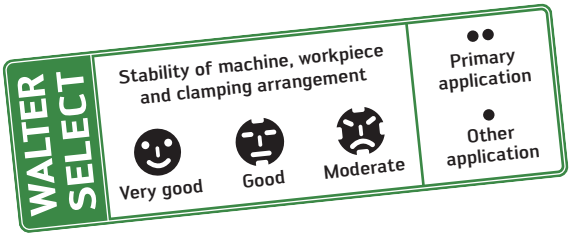
	D_c [mm]	80–200
	Cartridge: SPHX1204PDR-A88 finishing insert	FR595
	Screwdriver for indexable insert	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-5 (SW 5)
	ISO 2936 Allen key for balancing screw	ISO2936-2,5 (SW 2,5)

Indexable inserts

	Designation	$a_{p\ max}$ mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N DP WCD10	S HC WSM35S	S HC WSP45S
	SPHW1204EDR-A88	3	1,5										☺		
	SPHW1204PDR-A88	4	1,5										☺		
	SPHX1204PDR-A88	0,5	3,5										☺		

SPHX1204PDR-A88 wiper insert only in combination with SPHW1204PDR-A88 . .

HC = Coated carbide
DP = Polycrystalline diamond



C 304 D 1 C 568 C 590 C 628 C 621

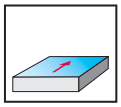
Face and shoulder milling cutters
F2254

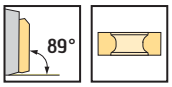
SNHQ1205ZZR



C 2

– Runout adjustable from D_c = 100 mm
– Eight cutting edges per indexable insert, tangential arrangement





	P	M	K	N	S	H	O
F2254			●●				

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2254.B.050.Z09.07	50	22	40	7	9	0,4	9	SNHQ1205ZZR
	F2254.B.063.Z12.07	63	22	40	7	12	0,7	12	
	F2254.B.080.Z15.07	80	27	50	7	15	1,2	15	
Cylindrical bore DIN 138 transverse keyway	F2254.B.100.Z19.07	100	32	50	7	19	2	19	SNHQ1205ZZR
	F2254.B.125.Z23.07	125	40	63	7	23	3,5	23	
Cylindrical bore DIN 138 transverse keyway	F2254.B.160.Z30.07	160	40/40 B	63	7	30	4,3	30	SNHQ1205ZZR

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	50–80	100–160
	Clamping screw for indexable insert Tightening torque	FS1007 (Torx 15) 3,0 Nm	FS1007 (Torx 15) 3,0 Nm
	Clamping screw for setting wedge		FS1160 (SW 3)
	Setting wedge		FK324

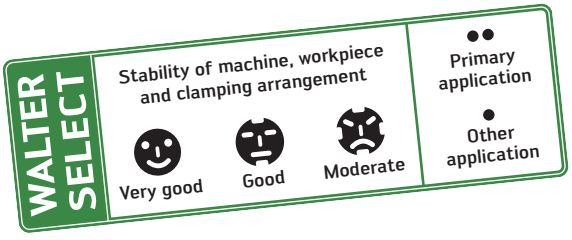
Accessories

	D_c [mm]	50–80	100–160
	Screwdriver for indexable insert	FS229 (Torx 15)	FS229 (Torx 15)
	Key for setting wedge		FS227 (SW 3)

Indexable inserts

	Designation	b mm	P HC			M HC		K HC				N HC	N HW	S HC	
			WKP25S	WKP35S	WSP45S	WSM35S	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM35S	WSP45S
	SNHQ1205ZZR-A57T	0,8 × 45°						☺		☹	☹				

HC = Coated carbide
HW = Uncoated carbide



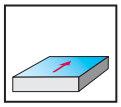
C 332 D 1 C 568 C 590 C 630 C 621

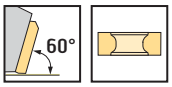
Face milling cutters – Heavy Duty
F2260



C 2

– Tangential indexable insert arrangement
– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
F2260	●		●●			●	

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2260.B.100.Z06.11	100	113	32	50	11	6	2,2	6	LNMU150812
	F2260.B.125.Z08.11	125	138	40	63	11	8	3,5	8	
	F2260.B.125.Z06.15	125	143	40	63	15	6	4	6	LNMU201012
Cylindrical bore DIN 138 transverse keyway	F2260.B.160.Z10.11	160	173	40/40 B	63	11	10	5,4	10	LNMU150812
	F2260.B.160.Z08.15	160	178	40/40 B	63	15	8	5,9	8	LNMU201012
	F2260.B.200.Z12.11	200	213	60/50 B	63	11	12	10,8	12	LNMU150812
	F2260.B.200.Z10.15	200	218	60/50 B	63	15	10	10,8	10	LNMU201012
	F2260.B.250.Z14.11	250	263	60/50 B	63	11	14	15,6	14	LNMU150812
	F2260.B.250.Z12.15	250	268	60/50 B	63	15	12	16,6	12	LNMU201012
Cylindrical bore DIN 138 transverse keyway	F2260.B.315.Z16.11	315	328	60/50-60 BB	80	11	16	31	16	LNMU150812
	F2260.B.315.Z14.15	315	333	60/50-60 BB	80	15	14	33,8	14	LNMU201012

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c mm	100-315
	Clamping screw for indexable insert Tightening torque	FS1009 (Torx 20) 5,0 Nm

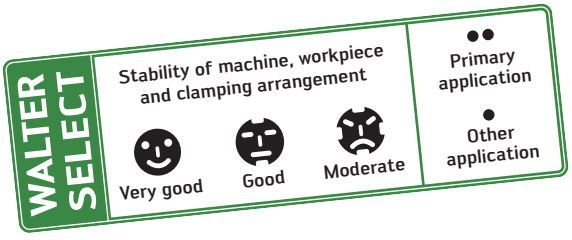
Accessories

	D_c mm	100-315
	Screwdriver for indexable insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	P HC			M HC		K HC				N HC	N HW	S HC	
			WKP25S	WKP35S	WSP45S	WSM35S	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM35S	WSP45S
	LNMU150812-F57T	1,2	●●	●				●		●●	●				
	LNMU150812T-F27T	1,2	●	○						●●	○				
	LNMU201012-F57T	1,2	●	●				●		●●	○				
	LNMU201012T-F27T	1,2	●	○						●●	○				

HC = Coated carbide
HW = Uncoated carbide



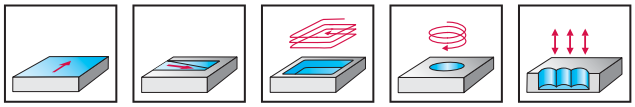
C 326 D 1 C 568 C 589 C 621

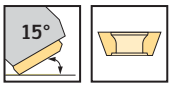
High-feed face milling cutters
F2330



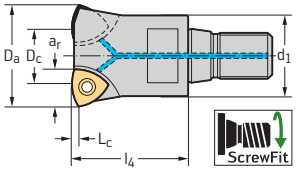
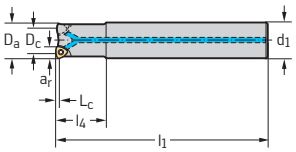
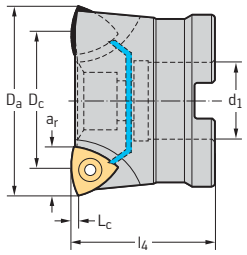
C 2

– f_z up to 3.5 mm
– Three cutting edges per indexable insert





	P	M	K	N	S	H	O
F2330	●●	●●	●●		●●		

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	a_r mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F2330.T18.020.Z02.01	10	20	T18	30		1	7	2	0,1	2	P2633 . R10 P26379-R10
	F2330.T22.025.Z03.01	15	25	T22	35		1	7	3	0,1	3	
	F2330.T28.032.Z03.01,5	18	32	T28	40		1,5	10	3	0,2	3	
	F2330.T28.035.Z03.01,5	21	35	T28	40		1,5	10	3	0,2	3	P2633 . R14 P26379-R14
	F2330.T36.040.Z03.01,5	26	40	T36	40		1,5	10	3	0,4	3	
	F2330.T36.042.Z03.01,5	28	42	T36	40		1,5	10	3	0,4	3	
Parallel shank	F2330.Z20.020.Z02.01	10	20	20	30	200	1	7	2	0,5	2	P2633 . R10 P26379-R10
	F2330.Z25.025.Z03.01	15	25	25	35	200	1	7	3	0,8	3	
	F2330.Z32.032.Z03.01,5	18	32	32	40	250	1,5	10	3	1,5	3	P2633 . R14 P26379-R14
Cylindrical bore DIN 138 transverse keyway	F2330.B22.050.Z04.01,5	30	50	22	40		1,5	10	4	0,4	4	P2633 . R14 P26379-R14
	F2330.B.052.Z03.02*	32	52	22	40		2	15	3	0,4	3	P2633 . R25 P26379-R25
	F2330.B.052.Z05.01,5	38	52	22	40		1,5	10	5	0,4	5	P2633 . R14 P26379-R14
	F2330.B22.063.Z04.02	43	63	22	50		2	15	4	0,6	4	P2633 . R25 P26379-R25
	F2330.B.066.Z04.02*	46	66	27	50		2	15	4	0,7	4	
	F2330.B22.063.Z05.01,5	49	63	22	50		1,5	10	5	0,7	5	P2633 . R14 P26379-R14
	F2330.B.066.Z06.01,5	52	66	27	50		1,5	10	6	0,8	6	
	F2330.B27.080.Z05.02	60	80	27	50		2	15	5	1,0	5	P2633 . R25 P26379-R25
	F2330.B.085.Z05.02*	65	85	27	50		2	15	5	1,0	5	
	F2330.B27.080.Z06.01,5	66	80	27	50		1,5	10	6	1,0	6	P2633 . R14 P26379-R14
	F2330.B.085.Z07.01,5	71	85	27	50		1,5	10	7	1,1	7	

Actual cutting diameter with D_a 52 = 51.3 mm, D_a 66 = 65.3, D_a 85 = 84.3 mm
* D_a measured via master insert P26325-R25 with R 0.8 mm
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	P2633 . R10 P26379-R10	P2633 . R14 P26379-R14	P2633 . R25 P26379-R25
	Clamping screw for indexable insert Tightening torque	FS923 (Torx 8) 1,2 Nm	FS359 (Torx 15) 2,5 Nm	FS1030 (Torx 20) 5,0 Nm

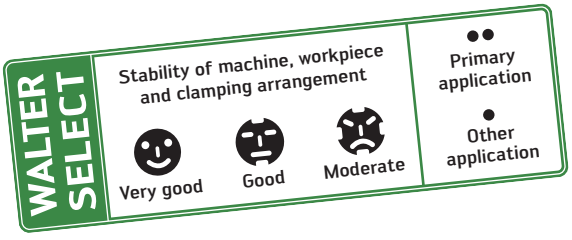
Accessories

	Type	P2633 . R10 P26379-R10	P2633 . R14 P26379-R14	P2633 . R25 P26379-R25
	Screwdriver for indexable insert	FS230 (Torx 8)	FS229 (Torx 15)	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC				M HC			K HC				S HC		
				WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSP45S	WSP45
	P26335R10	0,8		☺	☹	☹		😐	☹				😐	☹	😐	☹	
	P26337R10	0,8		☺	☹	☹			☹				😐	☹		☹	
	P26339R10	0,8		☺	☹	☹		😐	☹				😐	☹	😐	☹	
	P26379-R10	0,8	0,9		☹	☹			☹					☹		☹	
	P26335R14	1,2		☺	☹	☹	☹	😐	☹	☹			😐	☹	😐	☹	☹
	P26337R14	1,2		☺	☹	☹			☹				😐	☹		☹	
	P26339R14	1,2		☺	☹	☹		😐	☹				😐	☹	😐	☹	
	P26379-R14	1,2	1		☹	☹			☹					☹		☹	
	P26335R25	2		☺	☹	☹		😐	☹				😐	☹	😐	☹	
	P26337R25	2		☺	☹	☹			☹				😐	☹		☹	
	P26339R25	2		☺	☹	☹		😐	☹				😐	☹	😐	☹	
	P26379-R25	2	1,1		☹	☹			☹					☹		☹	

HC = Coated carbide



C 294 D 1 C 568 C 592 C 621 C 635

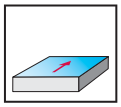
High-feed face milling cutters
F4030

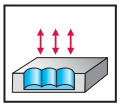
Xtra·tec®





– f_z up to 3.5 mm
– Six cutting edges per indexable insert









	P	M	K	N	S	H	O
F4030	●●	●●	●●		●●		

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	a_r mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F4030.T22.025.Z02.01	13,4	25	T22	35		1	6	2	0,1	2	
	F4030.T28.032.Z03.01	20,4	32	T28	40		1	7	3	0,2	3	P23696-1 . 0
	F4030.T28.035.Z03.01	23,4	35	T28	40		1	7	3	0,2	3	
	F4030.T36.042.Z02.02	24	42	T36	40		2	9,5	2	0,3	2	P23696-2 . 0
	F4030.T36.040.Z03.01	28,4	40	T36	40		1	7	3	0,3	3	
	F4030.T36.040.Z04.01	28,4	40	T36	40		1	7	4	0,3	4	P23696-1 . 0
	F4030.T36.042.Z03.01	28,4	42	T36	40		1	7	3	0,4	3	
	F4030.T45.050.Z03.02	32	50	T45	45		2	10	3	0,5	3	
	F4030.T45.050.Z04.02	32	50	T45	45		2	10	4	0,5	4	P23696-2 . 0
	F4030.T45.052.Z03.02	34	52	T45	45		2	10	3	0,5	3	
Parallel shank	F4030.Z25.025.Z02.01	13,4	25	25	35	200	1	6	2	0,7	2	P23696-1 . 0
	F4030.Z32.032.Z03.01	20,4	32	32	40	250	1	7	3	1,4	3	
Cylindrical bore DIN 138 transverse keyway	F4030.B22.050.Z04.01	38,4	52	22	40		1	7	4	0,6	4	
	F4030.B22.050.Z05.01	38,4	52	22	40		1	7	5	0,3	5	P23696-1 . 0
	F4030.B22.052.Z04.01	40,4	52	22	40		1	7	4	0,4	4	
	F4030.B22.063.Z04.02	45	63	22	50		2	10	4	0,7	4	
	F4030.B22.063.Z05.02	45	63	22	50		2	10	5	0,7	5	P23696-2 . 0
	F4030.B27.066.Z04.02	48	66	27	50		2	10	4	0,7	4	
	F4030.B22.063.Z05.01	51,4	63	22	50		1	7	5	0,7	5	P23696-1 . 0
	F4030.B22.063.Z06.01	51,4	63	22	50		1	7	6	0,7	6	
	F4030.B27.080.Z05.02	62	80	27	50		2	10	5	1,3	5	
	F4030.B27.080.Z06.02	62	80	27	50		2	10	6	1,1	6	
	F4030.B27.085.Z05.02	67	85	27	50		2	10	5	1,2	5	P23696-2 . 0
	F4030.B32.100.Z06.02	82	100	32	50		2	10	6	1,6	6	
	F4030.B32.100.Z07.02	82	100	32	50		2	10	7	1,6	7	

Pre-balanced tools
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	P23696-1 . 0	P23696-2 . 0
	Clamping screw for indexable insert Tightening torque	FS2081 (Torx 15IP) 4,0 Nm	FS1495 (Torx 20IP) 5,0 Nm

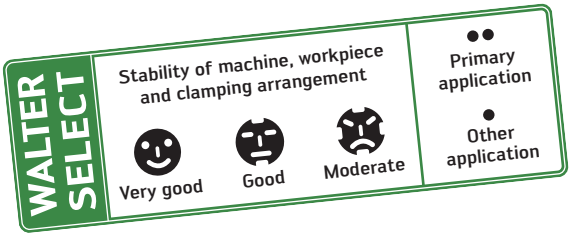
Accessories

	Type	P23696-1 . 0	P23696-2 . 0
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	P23696-1.0	1,2	●●	●	●	●●	●			●●	●			●●	●
	P23696-2.0	1,6	●●	●	●	●●	●			●●	●			●●	●

HC = Coated carbide
HW = Uncoated carbide



C 313 D 1 C 568 C 593 C 621 C 635

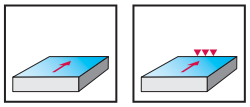
Face milling cutters
F4033

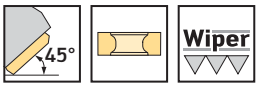
SN . X1205 ..
Xtra·tec®



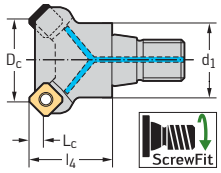
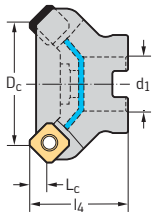
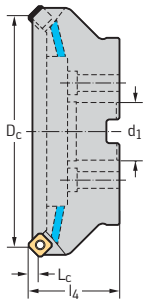
C 2

– Eight cutting edges per indexable insert





	P	M	K	N	S	H	O
F4033	●●	●●	●●	●●	●●	●	●

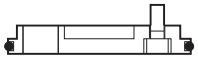
Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F4033.T36.040.Z03.06	40	T36	40	6,5	3	0,4	3	
	F4033.T36.040.Z04.06	40	T36	40	6,5	4	0,4	4	SN . X1205 .. XNGX1205ANN
	F4033.T45.050.Z04.06	50	T45	45	6,5	4	0,6	4	
	F4033.T45.050.Z06.06	50	T45	45	6,5	6	0,6	6	
Cylindrical bore DIN 138 transverse keyway	F4033.B22.050.Z04.06	50	22	40	6,5	4	0,6	4	
	F4033.B22.050.Z06.06	50	22	40	6,5	6	0,6	6	
	F4033.B22.063.Z06.06	63	22	40	6,5	6	0,8	6	
	F4033.B22.063.Z08.06	63	22	40	6,5	8	0,8	8	
	F4033.B27.063.Z06.06	63	27	50	6,5	6	1,0	6	
	F4033.B27.063.Z08.06	63	27	50	6,5	8	1,0	8	
	F4033.B27.080.Z05.06	80	27	50	6,5	5	1,6	5	
	F4033.B27.080.Z07.06	80	27	50	6,5	7	1,5	7	SN . X1205 .. XNGX1205ANN
	F4033.B27.080.Z10.06	80	27	50	6,5	10	1,5	10	
	F4033.B32.100.Z06.06	100	32	50	6,5	6	2,9	6	
	F4033.B32.100.Z08.06	100	32	50	6,5	8	2,7	8	
	F4033.B32.100.Z12.06	100	32	50	6,5	12	2,7	12	
	F4033.B40.125.Z07.06	125	40	63	6,5	7	4,0	7	
	F4033.B40.125.Z10.06	125	40	63	6,5	10	3,9	10	
	F4033.B40.125.Z16.06	125	40	63	6,5	16	3,9	16	
Cylindrical bore DIN 138 transverse keyway	F4033.B40.160.Z20.06	160	40/40 B	63	6,5	20	5,7	20	SN . X1205 .. XNGX1205ANN
	F4033.B40.160.Z12.06	160	40/40 B	63	6,5	12	6,3	12	

Bodies and assembly parts are included in the scope of delivery.

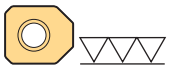
Assembly parts

	D_c [mm]	40-160
	Clamping screw for indexable insert Tightening torque	FS1459 (Torx 15IP) 4,0 Nm

Accessories

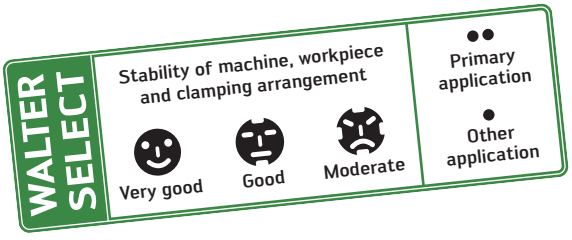
	D_c [mm]	40-125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Sealing disc (gasket + screws)		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	SNGX1205ANN-F27		1,5	☺	😐						😐	☹						
	SNGX1205ANN-F57		1,5	☺	😐	☹	😐	☹		😐	😐	☹			😐	☹		
	SNGX1205ANN-F67		1,5	☺	😐	☹	😐	☹	☺		😐	☹			😐	☹		
	SNHX1205ANN-K88		1,5										☺	☺				
	SNMX1205ANN-F27		1,5	☺	😐						😐	☹						
	SNMX1205ANN-F57		1,5	☺	😐					😐	😐	☹						
	SNMX1205ANN-F67		1,5	☺	😐				☺		😐	☹						
	SNGX120512-F57	1,2		☺	😐	☹	😐	☹			😐	☹			😐	☹		
	SNMX120512-D27	1,2		☺	😐					😐	😐	☹						
	SNMX120512-F27	1,2		☺	😐						😐	☹						
	SNMX120520-D27	2		☺	😐					😐	😐	☹						
	SNMX120520-F57	2		☺	😐	☹		☹		😐	😐	☹				☹		
	XNGX1205ANN-F67		4,7						☺								☺	☺

XNGX1205ANN-F67 wiper insert only in combination with SNGX1205ANN . .

HC = Coated carbide
HW = Uncoated carbide



C 314 D 1 C 568 C 587 C 621 C 635

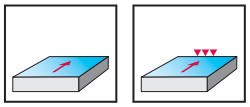
Face milling cutters
F4033

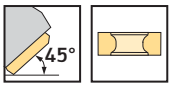
SN . X1606 ..
Xtra·tec®



C 2

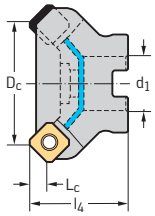
– Eight cutting edges per indexable insert

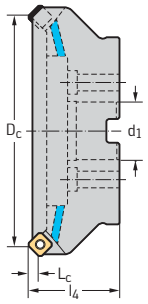




	P	M	K	N	S	H	O
F4033	●●	●●	●●		●●	●	

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F4033.B22.050.Z04.09	50	22	50	9	4	0,8	4	SN . X1606 ..
	F4033.B22.063.Z05.09	63	22	50	9	5	1,1	5	
	F4033.B27.080.Z06.09	80	27	63	9	6	1,9	6	
	F4033.B32.100.Z07.09	100	32	63	9	7	2,7	7	
	F4033.B40.125.Z08.09	125	40	63	9	8	4,6	8	
Cylindrical bore DIN 138 transverse keyway	F4033.B40.160.Z09.09	160	40/40 B	63	9	9	6,4	9	SN . X1606 ..
	F4033.B60.200.Z10.09*	200	60/50 B	63	9	10	8,9	10	



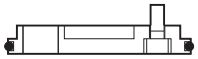


Bodies and assembly parts are included in the scope of delivery.
* Without internal coolant supply

Assembly parts

	D_c [mm]	50–200
	Clamping screw for indexable insert Tightening torque	FS1495 (Torx 20IP) 5,0 Nm

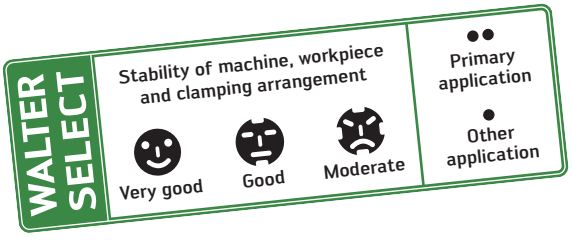
Accessories

	D_c [mm]	50–125	160	200
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Sealing disc (gasket + screws)		FS936 COMPLETE SET	
	Gasket		O-R 96X4	

Indexable inserts

	Designation	b mm	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45
	SNGX1606ANN-D27	1,8			●●									●					
	SNGX1606ANN-F57	1,8			●	●			●					●				●	
	SNGX1606ANN-F67	1,8																	
	SNMX160620-D27		2	●	●							●	●	●					
	SNMX160620-F27		2	●	●								●	●					
	SNMX160620-F57		2	●	●	●			●			●	●	●				●	
	SNMX160640-D27		4	●	●								●	●					
	SNMX160640-F57		4	●	●	●		●●	●				●	●			●●	●	

HC = Coated carbide
HW = Uncoated carbide



C 314 D 1 C 568 C 587 C 621

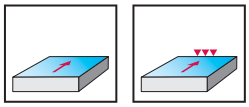
Heptagon face milling cutters
F4045

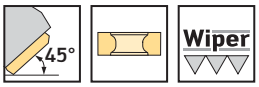
XNHF0705 ..
Xtra·tec®



C 2

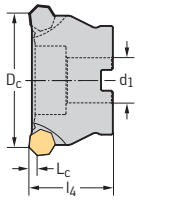
– 14 cutting edges per indexable insert

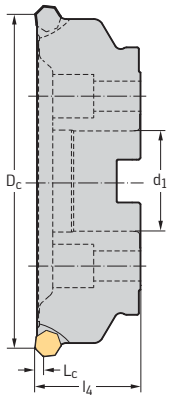




	P	M	K	N	S	H	O
F4045			●●			●	

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F4045.B27.063.Z06.04	63	27	50	4	6	1,0	6	XNHF0705 .. XNHX0705ANN
	F4045.B27.063.Z09.04	63	27	50	4	9	0,9	9	
	F4045.B27.080.Z08.04	80	27	50	4	8	1,5	8	
	F4045.B27.080.Z11.04	80	27	50	4	11	1,5	11	
	F4045.B32.100.Z10.04	100	32	50	4	10	2,1	10	
	F4045.B32.100.Z14.04	100	32	50	4	14	2,7	14	
	F4045.B40.125.Z12.04	125	40	63	4	12	4,1	12	
	F4045.B40.125.Z18.04	125	40	63	4	18	3,2	18	
Cylindrical bore DIN 138 transverse keyway	F4045.B40.160.Z16.04	160	40/40 B	63	4	16	8	16	XNHF0705 .. XNHX0705ANN
	F4045.B40.160.Z22.04	160	40/40 B	63	4	22	5,7	22	
	F4045.B60.200.Z20.04	200	60/50 B	63	4	20	9,3	20	
	F4045.B60.200.Z28.04	200	60/50 B	63	4	28	9,5	28	

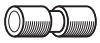




Bodies and assembly parts are included in the scope of delivery.

C 2

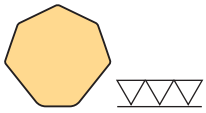
Assembly parts

	D_c [mm]	63–200
	Clamping wedge	FK374
	Clamping screw for clamping wedge Tightening torque	FS2134 (Torx 15IP) 6,0 Nm

Accessories

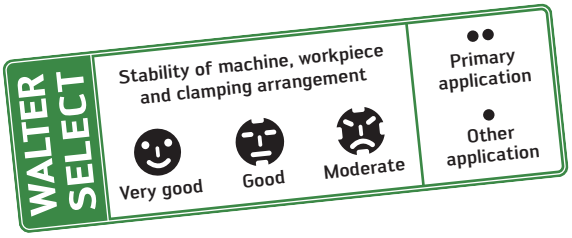
	D_c [mm]	63–200
	Torque T-handle Tightening torque	FS2041 4,5–14 Nm
	Interchangeable blade for clamping wedge	FS2047 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15
	XNHF070508-D27	0,8								☹	☹	☹					
	XNHF070508-D57	0,8								☹	☹	☹					
	XNHF070508-D67	0,8							☺		☹	☹					
	XNHF0705ANN-D27	0,8	1,1							☹	☹	☹					
	XNHF0705ANN-D57	0,8	1,1							☹	☹	☹					
	XNHF0705ANN-D67	0,8	1,1						☺		☹	☹					
	XNHX0705ANN-D67		5,8						☺								☺

XNHX0705ANN-D67 wiper insert only in combination with XNHF070508 . .

HC = Coated carbide
HW = Uncoated carbide



C 319 D 1 C 568 C 588 C 621

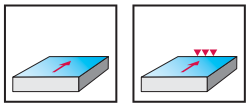
Heptagon face milling cutters
F4045

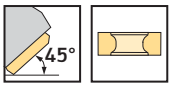
XNHF0906 ..
Xtra·tec®



C 2

– 14 cutting edges per indexable insert





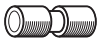
	P	M	K	N	S	H	O
F4045			●●			●	

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F4045.B27.080.Z06.06	80	27	50	6	6	1,2	6	XNHF0906 ..
	F4045.B27.080.Z09.06	80	27	50	6	9	1,5	9	
	F4045.B32.100.Z08.06	100	32	50	6	8	2,9	8	
	F4045.B32.100.Z12.06	100	32	50	6	12	2,0	12	
	F4045.B40.125.Z10.06	125	40	63	6	10	4,5	10	
	F4045.B40.125.Z16.06	125	40	63	6	16	4,0	16	
Cylindrical bore DIN 138 transverse keyway	F4045.B40.160.Z12.06	160	40/40 B	63	6	12	6,1	12	XNHF0906 ..
	F4045.B40.160.Z20.06	160	40/40 B	63	6	20	6,3	20	
	F4045.B60.200.Z16.06	200	60/50 B	63	6	16	9,3	16	
	F4045.B60.200.Z26.06	200	60/50 B	63	6	26	10,9	26	

Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	D_c [mm]	80–200
	Clamping wedge	FK375
	Clamping screw for clamping wedge Tightening torque	FS2157 (Torx 25IP) 6,0 Nm

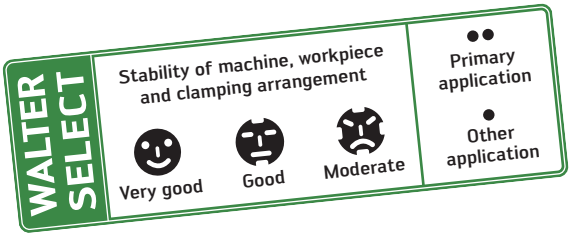
Accessories

	D_c [mm]	80–200
	Torque T-handle Tightening torque	FS2041 4,5–14 Nm
	Interchangeable blade for clamping wedge	FS2049 (Torx 25IP)
	Screwdriver	FS1487 (Torx 25IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	XNHF090612-D27	1,2								●●	●●	●				
	XNHF090612-D57	1,2								●●	●●	●				
	XNHF090612-D67	1,2							☻		●●	●				
	XNHF0906ANN-D27	0,8	1,4							●●	●●	●				
	XNHF0906ANN-D57	0,8	1,4							●●	●●	●				
	XNHF0906ANN-D67	0,8	1,4						☻		●●	●				

HC = Coated carbide
HW = Uncoated carbide



C 319 D 1 C 568 C 588 C 621

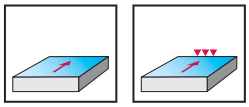
Face milling cutters
F4047

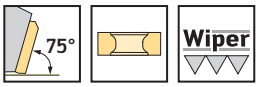
SN . X1205 ..
Xtra·tec®



C 2

– Eight cutting edges per indexable insert





	P	M	K	N	S	H	O
F4047	●●	●●	●●		●●	●	

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F4047.B22.050.Z03.08	50	22	40	8	3	0,4	3	SN . X1205 .. XNGX1205ENN
	F4047.B22.050.Z04.08	50	22	40	8	4	0,5	4	
	F4047.B22.063.Z06.08	63	22	40	8	6	0,7	6	
	F4047.B22.063.Z07.08	63	22	40	8	7	0,7	7	
	F4047.B27.063.Z06.08	63	27	50	8	6	0,9	6	
	F4047.B27.063.Z07.08	63	27	50	8	7	0,9	7	
	F4047.B27.080.Z07.08	80	27	50	8	7	1,2	7	
	F4047.B27.080.Z09.08	80	27	50	8	9	1,2	9	
	F4047.B32.100.Z08.08	100	32	50	8	8	2,5	8	
	F4047.B32.100.Z11.08	100	32	50	8	11	2,6	11	
	F4047.B40.125.Z10.08	125	40	63	8	10	3,8	10	
	F4047.B40.125.Z14.08	125	40	63	8	14	3,8	14	
Cylindrical bore DIN 138 transverse keyway	F4047.B40.160.Z12.08	160	40/40 B	63	8	12	5,8	12	SN . X1205 .. XNGX1205ENN
	F4047.B40.160.Z18.08	160	40/40 B	63	8	18	5,9	18	

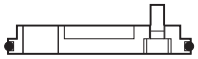
Bodies and assembly parts are included in the scope of delivery.

C 2

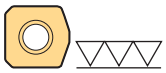
Assembly parts

	D_c [mm]	50–160
	Clamping screw for indexable insert Tightening torque	FS1459 (Torx 15IP) 4,0 Nm

Accessories

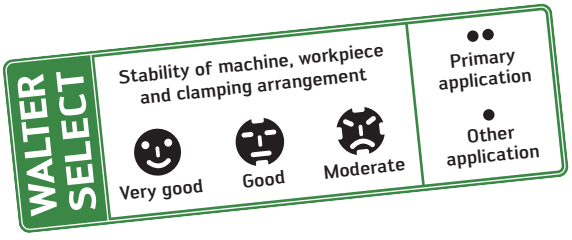
	D_c [mm]	50–125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Sealing disc set, complete		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45	H HC WHH15	O HC WXM15
	SNGX1205ENN-F27		1,2	☺	😐								😐	☹							
	SNGX1205ENN-F57		1,2	☺	😐	☹		😐	☹			😐	😐	☹			😐	☹			
	SNGX1205ENN-F67		1,2	☺	😐		☹	😐		☹	☺		😐	☹			😐		☹		
	SNGX120512-F57	1,2		☺	😐	☹		😐	☹				😐	☹			😐	☹			
	SNMX120512-D27	1,2		☺	😐							😐	😐	☹							
	SNMX120512-F27	1,2		☺	😐								😐	☹							
	SNMX120520-D27	2		☺	😐							😐	😐	☹							
	SNMX120520-F57	2		☺	😐	☹			☹			😐	😐	☹				☹			
	XNGX1205ENN-F67		4,5								☺									☺	☺

XNGX1205ENN-F67 wiper insert only in combination with SNGX1205ENN . .

HC = Coated carbide
HW = Uncoated carbide



C 314 D 1 C 568 C 589 C 621

Face milling cutters
F4048

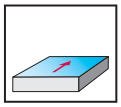
SN . X1205 ..
Xtra·tec®

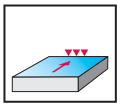




C 2

– Eight cutting edges per indexable insert



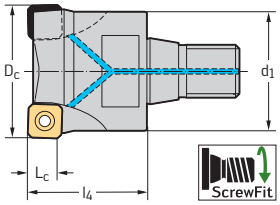
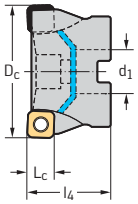
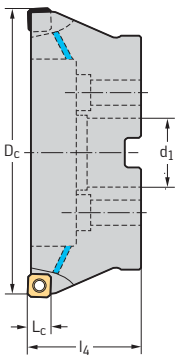








	P	M	K	N	S	H	O
F4048	●●	●●	●●		●●	●	

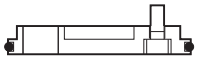
Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F4048.T36.040.Z03.10	40	T36	40	10	3	0,3	3	SN . X1205 .. XNGX1205ZNN
	F4048.T45.050.Z04.10	50	T45	45	10	4	0,5	4	
Cylindrical bore DIN 138 transverse keyway	F4048.B22.050.Z04.10	50	22	40	10	4	0,4	4	SN . X1205 .. XNGX1205ZNN
	F4048.B22.063.Z07.10	63	22	40	10	7	0,7	7	
	F4048.B22.063.Z06.10	63	22	40	10	6	0,7	6	
	F4048.B27.063.Z07.10	63	27	50	10	7	0,8	7	
	F4048.B27.063.Z06.10	63	27	50	10	6	0,8	6	
	F4048.B27.080.Z09.10	80	27	50	10	9	1,1	9	
	F4048.B27.080.Z05.10	80	27	50	10	5	1,2	5	
	F4048.B27.080.Z07.10	80	27	50	10	7	1,1	7	
	F4048.B32.100.Z11.10	100	32	50	10	11	2,6	11	
	F4048.B32.100.Z08.10	100	32	50	10	8	2,3	8	
	F4048.B40.125.Z14.10	125	40	63	10	14	3,7	14	
	F4048.B40.125.Z10.10	125	40	63	10	10	3,6	10	
Cylindrical bore DIN 138 transverse keyway	F4048.B40.160.Z18.10	160	40/40 B	63	10	18	5,7	18	SN . X1205 .. XNGX1205ZNN
	F4048.B40.160.Z12.10	160	40/40 B	63	10	12	5,6	12	

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	40–160
	Clamping screw for indexable insert Tightening torque	FS1459 (Torx 15IP) 4,0 Nm

Accessories

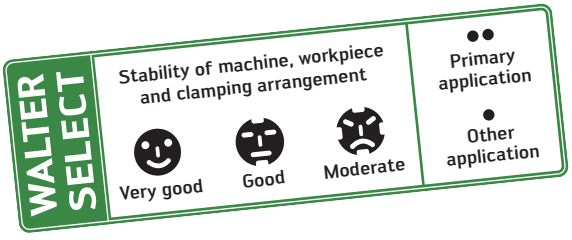
	D_c [mm]	40–125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Gasket		O-R 96X4
	Sealing disc (gasket + screws)		FS936 COMPLETE SET
	Sealing disc set, complete		FS936 COMPLETE SET

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	SNGX1205ZNN-F27		1,2	●●	●●						●●	●●						
	SNGX1205ZNN-F57		1,2	●●	●●	●●	●●	●●		●●	●●	●●			●●	●●		
	SNGX1205ZNN-F67		1,2	●●	●●	●●	●●	●●	●		●●	●●			●●	●●		
	SNGX120512-F57	1,2		●●	●●	●●	●●	●●			●●	●●			●●	●●		
	SNMX120512-D27	1,2		●●	●●					●●	●●	●●						
	SNMX120512-F27	1,2		●●	●●						●●	●●						
	SNMX120520-D27	2		●●	●●					●●	●●	●●						
	SNMX120520-F57	2		●●	●●	●●		●●		●●	●●	●●				●●		
	XNGX1205ZNN-F67		4						●								●	●

XNGX1205ZNN-F67 wiper insert only in combination with SNGX1205ZNN . .

HC = Coated carbide
HW = Uncoated carbide



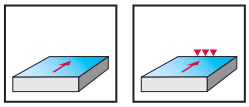
C 314 D 1 C 568 C 589 C 621 C 635

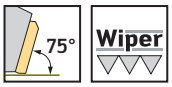
PCD face milling cutters
F4050



C 2

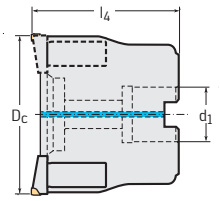
– Adjustable runout
– One brazed PCD cutting edge per cartridge

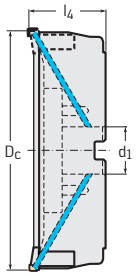




	P	M	K	N	S	H	O
F4050				●●			

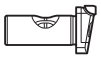
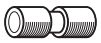
Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of cartridges	Type
Cylindrical bore DIN 138 transverse keyway	F4050.B27.080.Z06.R734	79,4	27	73	1,1	6	0,9	6	FR734
	F4050.B32.100.Z12.R734	99,4	32	63	1,1	12	1,4	12	
	F4050.B40.125.Z18.R734	124,4	40	63	1,1	18	2,0	18	
Cylindrical bore DIN 138 transverse keyway	F4050.B40.160.Z24.R734	159,4	40/40 B	63	1,1	24	3,7	24	FR734
	F4050.B40.200.Z28.R734	199,4	40/40 B	63	1,1	28	5,4	28	



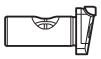
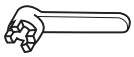


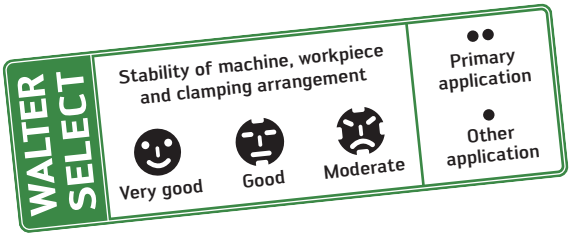
Pre-balanced tools
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	79,4	99,4	124,4	159,4–199,4
	Cartridge κ = 75°	FR734 WCD10	FR734 WCD10	FR734 WCD10	FR734 WCD10
	Adjusting key	FK376	FK376	FK376	FK376
	Compound screw for adjusting key	FS746 (Torx 15IP)	FS746 (Torx 15IP)	FS746 (Torx 15IP)	FS746 (Torx 15IP)
	Conical spring washer	FS2171	FS2171	FS2171	FS2171
	Clamping screw for cartridge	FS2170	FS2170	FS2170	FS2170
	Balancing screw	FS2169 (Torx 15)	FS2169 (Torx 15)	FS2169 (Torx 15)	FS2169 (Torx 15)
	Milling cutter fastening bolt with internal coolant	FS2160	FS2161	FS2162	

Accessories

	D_c [mm]	79,4	99,4	124,4	159,4–199,4
	Finishing cartridge only for κ = 75°	FR735 WCD10	FR735 WCD10	FR735 WCD10	FR735 WCD10
	Wrench for milling cutter fastening bolt	FS438	FS439	FS440	
	Screwdriver for compound screw	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Screwdriver for balancing screw	FS229 (Torx 15)	FS229 (Torx 15)	FS229 (Torx 15)	FS229 (Torx 15)
	Torque T-handle for cartridge Tightening torque	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm
	Interchangeable blade for cartridge	FS2051 (SW 4)	FS2051 (SW 4)	FS2051 (SW 4)	FS2051 (SW 4)
	Gasket				O-R 96X4
	Sealing disc set				FS2140 COMPLETE SET



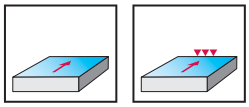


PCD face milling cutters
F4050



C 2

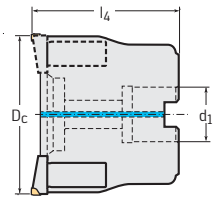
– Adjustable runout
– One brazed PCD cutting edge per cartridge

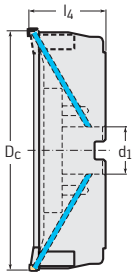




	P	M	K	N	S	H	O
F4050				●●			

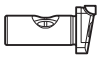
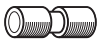
Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of cartridges	Type
Cylindrical bore DIN 138 transverse keyway	F4050.B27.080.Z06.R733	80	27	73	4	6	0,9	6	FR733
	F4050.B32.100.Z12.R733	100	32	63	4	12	1,4	12	
	F4050.B40.125.Z18.R733	125	40	63	4	18	2,0	18	
Cylindrical bore DIN 138 transverse keyway	F4050.B40.160.Z24.R733	160	40/40 B	63	4	24	3,7	24	FR733
	F4050.B40.200.Z28.R733	200	40/40 B	63	4	28	5,4	28	



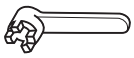


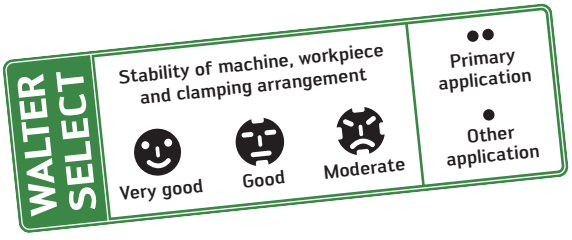
Pre-balanced tools
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	80	100	125	160–200
	Cartridge κ = 90°	FR733 WCD10	FR733 WCD10	FR733 WCD10	FR733 WCD10
	Adjusting key	FK376	FK376	FK376	FK376
	Compound screw for adjusting key	FS746 (Torx 15IP)	FS746 (Torx 15IP)	FS746 (Torx 15IP)	FS746 (Torx 15IP)
	Conical spring washer	FS2171	FS2171	FS2171	FS2171
	Clamping screw for cartridge	FS2170	FS2170	FS2170	FS2170
	Balancing screw	FS2169 (Torx 15)	FS2169 (Torx 15)	FS2169 (Torx 15)	FS2169 (Torx 15)
	Milling cutter fastening bolt with internal coolant	FS2160	FS2161	FS2162	

Accessories

	D_c [mm]	80	100	125	160–200
	Wrench for milling cutter fastening bolt	FS438	FS439	FS440	
	Screwdriver for compound screw	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Screwdriver for balancing screw	FS229 (Torx 15)	FS229 (Torx 15)	FS229 (Torx 15)	FS229 (Torx 15)
	Torque T-handle for cartridge Tightening torque	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm
	Interchangeable blade for cartridge	FS2051 (SW 4)	FS2051 (SW 4)	FS2051 (SW 4)	FS2051 (SW 4)
	Gasket				O-R 96X4
	Sealing disc set				FS2140 COMPLETE SET



D 1 C 568 C 633 C 621

PCD face milling cutters
F4050

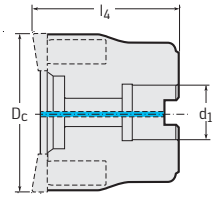


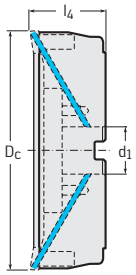
C 2

– Basic body for aluminium milling cutter F4050
– Without cartridges

	P	M	K	N	S	H	O
F4050				●●			

Tool	Designation	D_c mm	d_1 mm	l_4 mm	Z	kg	No. of cartridges
Cylindrical bore DIN 138 transverse keyway	F4050.B27.080.Z06.R001	77	27	65	6	1	6
	F4050.B32.100.Z12.R001	97	32	55	12	1	12
	F4050.B40.125.Z18.R001	122	40	55	18	2	18
Cylindrical bore DIN 138 transverse keyway	F4050.B40.160.Z24.R001	157	40/40 B	55	24	3	24
	F4050.B40.200.Z28.R001	197	40/40 B	55	28	5	28



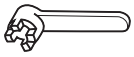


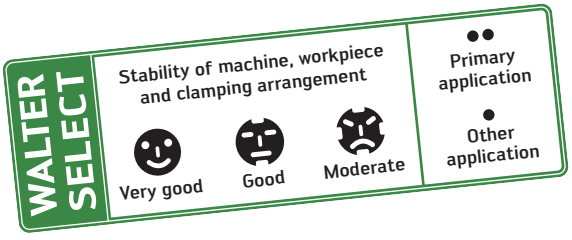
Pre-balanced tools
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	77	97	122	157–197
	Adjusting key	FK376	FK376	FK376	FK376
	Compound screw for adjusting key	FS746 (Torx 15IP)	FS746 (Torx 15IP)	FS746 (Torx 15IP)	FS746 (Torx 15IP)
	Conical spring washer	FS2171	FS2171	FS2171	FS2171
	Clamping screw for cartridge	FS2170	FS2170	FS2170	FS2170
	Balancing screw	FS2169 (Torx 15)	FS2169 (Torx 15)	FS2169 (Torx 15)	FS2169 (Torx 15)
	Milling cutter fastening bolt with internal coolant	FS2160	FS2161	FS2162	

Accessories

	D_c [mm]	77	97	122	157–197
	Wrench for milling cutter fastening bolt	FS438	FS439	FS440	
	Screwdriver for compound screw	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Screwdriver for balancing screw	FS229 (Torx 15)	FS229 (Torx 15)	FS229 (Torx 15)	FS229 (Torx 15)
	Torque T-handle for cartridge Tightening torque	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm
	Interchangeable blade for cartridge	FS2051 (SW 4)	FS2051 (SW 4)	FS2051 (SW 4)	FS2051 (SW 4)
	Gasket				O-R 96X4
	Sealing disc set				FS2140 COMPLETE SET





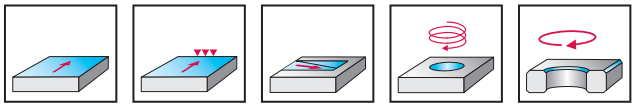
Octagon face milling cutters
F4080

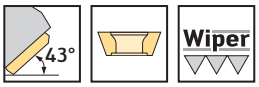
OD .. 0504 ..
Xtra·tec®



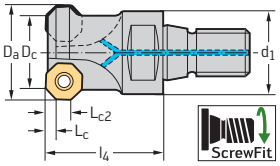
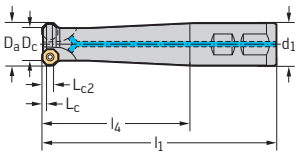
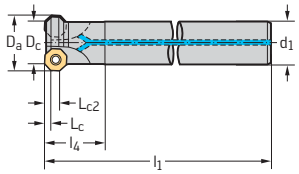
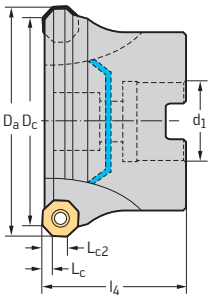
C 2

– Eight cutting edges per indexable insert





	P	M	K	N	S	H	O
F4080	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	L_{c2} mm	Z	kg	No. of index-able inserts	Type
ScrewFit 	F4080.T28.032.Z02.03	24	32	T28	40		3	8	2	0,2	2	OD .. 0504 .. ODHX0504ZZR
	F4080.T36.040.Z03.03	32	40	T36	40		3	8	3	0,3	3	
Shank DIN 1835 B 	F4080.W32.032.Z02.03	24	32	32	114	175	3	8	2	0,1	2	OD .. 0504 .. ODHX0504ZZR
	F4080.W32.040.Z03.03	32	40	32	114	175	3	8	3	0,9	3	
Parallel shank 	F4080.Z20.032.Z02.03	24	32	20	35	110	3	8	2	0,3	2	OD .. 0504 .. ODHX0504ZZR
	F4080.Z25.032.Z02.03	24	32	25	35	150	3	8	2	0,5	2	
	F4080.Z20.040.Z03.03	32	40	20	35	110	3	8	3	0,3	3	
	F4080.Z25.040.Z03.03	32	40	25	35	150	3	8	3	0,6	3	
Cylindrical bore DIN 138 transverse keyway 	F4080.B16.050.Z04.03	42	50	16	40		3	8	4	0,4	4	OD .. 0504 .. ODHX0504ZZR
	F4080.B22.052.Z04.03	44	52	22	45		3	8	4	0,5	4	
	F4080.B16.050DC.Z04.03	50	58	16	40		3	8	4	0,5	4	
	F4080.B22.063.Z05.03	55	63	22	40		3	8	5	0,6	5	
	F4080.B22.063.Z06.03	55	63	22	40		3	8	6	0,6	6	
	F4080.B27.066.Z05.03	58	66	27	50		3	8	5	0,1	5	
	F4080.B22.063DC.Z06.03	63	71	22	40		3	8	6	0,7	6	
	F4080.B27.080.Z06.03	72	80	27	50		3	8	6	1,1	6	
	F4080.B27.080.Z07.03	72	80	27	50		3	8	7	1,0	7	
	F4080.B27.080DC.Z07.03	80	88	27	50		3	8	7	1,3	7	
	F4080.B32.100.Z06.03	92	100	32	50		3	8	6	2,4	6	
	F4080.B32.100.Z08.03	92	100	32	50		3	8	8	2,5	8	
	F4080.B32.100DC.Z08.03	100	108	32	50		3	8	8	2,7	8	
	F4080.B40.125.Z07.03	117	125	40	63		3	8	7	3,7	7	
	F4080.B40.125.Z10.03	117	125	40	63		3	8	10	3,9	10	
	F4080.B40.125DC.Z10.03	125	133	40	63		3	8	10	4,1	10	

Balanced construction
Bodies and assembly parts are included in the scope of delivery.

C 2

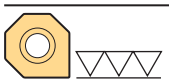
Assembly parts

	D_c [mm]	24–55	58–125
	Clamping screw for indexable insert Tightening torque	FS2119 (Torx 15IP) 3,0 Nm	FS2110 (Torx 15IP) 3,0 Nm

Accessories

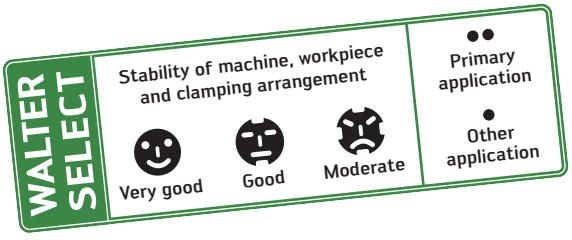
	D_c [mm]	24–125
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	H HC WHH15	O HC WXM15
	ODHX0504ZZR-A57		7,2		●●						●			●●								●	●
	ODHT050408-F57	0,8			●●	●●				●●				●●							●●		
	ODHT050408-G88	0,8														●							
	ODHW050408-A57	0,8			●●									●●									
	ODHW050412-A57	1,2													●								
	ODMT050408-D57	0,8			●●	●●		◐		●●		◐		●●					◐		●●		
	ODMW050408-A57	0,8		◐	●●						●	◐	◐	●●									
	ODMW050408T-A27	0,8		◐	●●							◐	◐	●●									
	ODHT0504ZZN-F57	0,8	1,2		●●	●●	◐			●●				●●				◐			●●		
	ODHT0504ZZN-G88	0,8	1,2													●	●						
	ODHW0504ZZN-A57	0,8	1,2	◐	●●						●		◐	●●									
	ODMT0504ZZN-D57	0,8	1,2	●	●●	●●	◐		●●	●●		◐	◐	●●				◐		●●	●●		

ODHX0504ZZR-A57 wiper insert only in combination with ODH.0504ZZN . .

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide



C 291 D 1 C 568 C 586 C 621 C 635

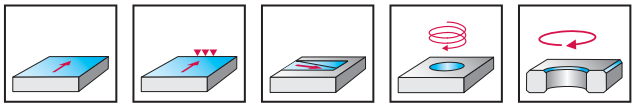
Octagon face milling cutters
F4080

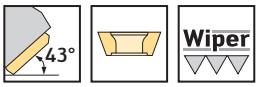
OD .. 0605 ..
Xtra·tec®



C 2

– Eight cutting edges per indexable insert





	P	M	K	N	S	H	O
F4080	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	L_{c2} mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F4080.B16.050.Z03.04	40	50	16	40	4	10	3	0,4	3	
	F4080.B22.052.Z03.04	42	52	22	45	4	10	3	0,5	3	
	F4080.B16.050DC.Z03.04	50	60	16	40	4	10	3	0,5	3	
	F4080.B22.063.Z04.04	53	63	22	40	4	10	4	0,6	4	
	F4080.B22.063.Z05.04	53	63	22	40	4	10	5	0,6	5	
	F4080.B27.066.Z05.04	56	66	27	50	4	10	5	0,7	5	
	F4080.B22.063DC.Z05.04	63	73	22	40	4	10	5	0,7	5	
	F4080.B27.080.Z05.04	70	80	27	50	4	10	5	1,0	5	OD .. 0605 .. ODHX0605ZZR
	F4080.B27.080.Z06.04	70	80	27	50	4	10	6	1,1	6	
	F4080.B27.080DC.Z06.04	80	90	27	50	4	10	6	1,2	6	
	F4080.B32.100.Z05.04	90	100	32	50	4	10	5	2,3	5	
	F4080.B32.100.Z07.04	90	100	32	50	4	10	7	2,4	7	
	F4080.B32.100DC.Z07.04	100	110	32	50	4	10	7	2,6	7	
	F4080.B40.125.Z06.04	115	125	40	63	4	10	6	3,6	6	
	F4080.B40.125.Z08.04	115	125	40	63	4	10	8	3,8	8	
	F4080.B40.125DC.Z08.04	125	135	40	63	4	10	8	4,1	8	
Cylindrical bore DIN 138 transverse keyway	F4080.B40.160.Z07.04	150	160	40/40 B	63	4	10	7	4,8	7	
	F4080.B40.160.Z09.04	150	160	40/40 B	63	4	10	9	5,1	9	OD .. 0605 .. ODHX0605ZZR
	F4080.B40.160DC.Z09.04	160	170	40/40 B	63	4	10	9	5,6	9	

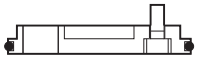
Balanced construction
Bodies and assembly parts are included in the scope of delivery.

C 2

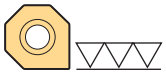
Assembly parts

	D_c [mm]	40–160
	Clamping screw for indexable insert Tightening torque	FS1495 (Torx 20IP) 5,0 Nm

Accessories

	D_c [mm]	40–125	150–160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2015 (Torx 20IP)	FS2015 (Torx 20IP)
	Screwdriver	FS1486 (Torx 20IP)	FS1486 (Torx 20IP)
	Sealing disc (gasket + screws)		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	H HC WHH15	O HC WXM15
	ODHX0605ZZR-A57		9,4		●						○			●								○	○
	ODHT060512-F57	1,2			●	●				●				●							●		
	ODHW060512-A57	1,2			●									●									
	ODHW060516-A57	1,6													○								
	ODMT060512-D57	1,2			●	●		◐		●		◐		●					◐		●		
	ODMW060508-A57	0,8		◐	●						○	◐	◐	●									
	ODMW060508T-A27	0,8		◐	●							◐	◐	●									
	ODHT0605ZZN-F57	0,8	1,6		●	●	◐			●				●				◐			●		
	ODHT0605ZZN-G88	0,8	1,6												○	○							
	ODHW0605ZZN-A57	0,8	1,6	◐	●						○		◐	●									
	ODMT0605ZZN-D57	0,8	1,6	○	●	●	◐		●	●		◐	◐	●				◐		●	●		

ODHX0605ZZR-A57 wiper insert only in combination with ODH.0605ZZN . .

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

C 291 | D 1 | C 568 | C 586 | C 621

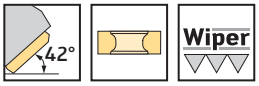
Octagon face milling cutters for finishing
M2025 / M2026

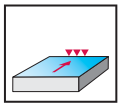
ONHF050408



C 2

– 16 cutting edges per indexable insert





	P	M	K	N	S	H	O
M2025			●●			●	
M2026			●●			●	

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z*	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	M2025-080-B27-12-03	80	88	27	50	3	12	1,5	9 3	ONHF050408 P45424-1-G67
Cylindrical bore DIN 138 transverse keyway	M2025-100-B32-15-03	100	108	32	50	3	15	2,0	12 3	
	M2025-125-B40-18-03	125	133	40	63	3	18	4,2	15 3	ONHF050408 P45424-1-G67
	M2025-160-B40-21-03	160	168	40	63	3	21	6,0	18 3	
Cylindrical bore DIN 138 transverse keyway	M2026-200-B60-27-03	200	208	60/50 B	63	3	27	9,3	24 3	ONHF050408 P45424-2-G67
	M2026-250-B60-33-03	250	258	60/50 B	63	3	33	15,2	30 3	

* Example: Z = 9 + 3 (9 roughing inserts + 3 wiper cutting edges)
Bodies and assembly parts are included in the scope of delivery.

C 2

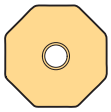
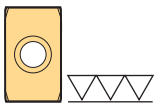
Assembly parts

	Type	ONHF050408 P45424-1-G67	ONHF050408 P45424-2-G67
	Clamping wedge	FK379	FK379
	Clamping screw for clamping wedge Tightening torque	K24-111 (Torx 15IP) 6,5 Nm	K24-111 (Torx 15IP) 6,5 Nm
	Clamping screw for indexable insert Tightening torque	FS1458 (Torx 15IP) 2,5 Nm	FS1495 (Torx 20IP) 5,0 Nm

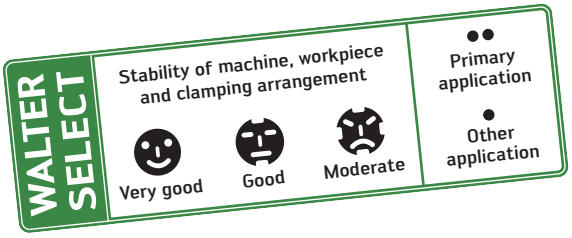
Accessories

	Type	ONHF050408 P45424-1-G67	ONHF050408 P45424-2-G67
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade for indexable insert screw	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)
	Torque T-handle Tightening torque	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm
	Interchangeable blade for clamping wedge	FS2047 (Torx 15IP)	FS2047 (Torx 15IP)
	Screwdriver for clamping screw	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)
	Screwdriver for clamping wedge	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15
	ONHF050408-F67	0,8							☺		☹						☺
	P45424-1-G67		8						☺								☺
	P45424-2-G67		15						☺								☺

HC = Coated carbide
HW = Uncoated carbide



C 312 D 1 C 568 C 586 C 621

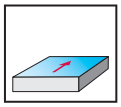
Face milling cutters – Heavy Duty
M3016

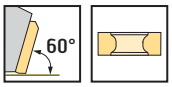
LNMX201012R
Walter BLAXX



C 2

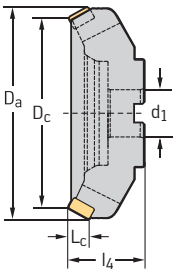
– Tangential indexable insert arrangement
– Four cutting edges per indexable insert

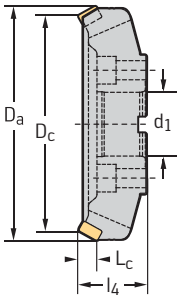


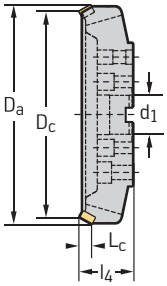


	P	M	K	N	S	H	O
M3016	●●	●	●●			●	

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	M3016-125-B40-06-16	125	144	40	63	16	6	5,2	6	LNMX201012R
	M3016-160-B40-07-16	160	179	40	63	16	7	4	7	
Cylindrical bore DIN 138 transverse keyway	M3016-200-B60-09-16	200	219	60/50-60 BB	63	16	9	11,4	9	LNMX201012R
	M3016-250-B60-11-16	250	269	60/50-60 BB	63	16	11	20	11	
Cylindrical bore DIN 138 transverse keyway	M3016-315-B60-13-16	315	334	60/50-60 BB	80	16	13	30,9	13	LNMX201012R







Bodies and assembly parts are included in the scope of delivery.

C 2

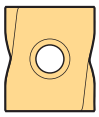
Assembly parts

	D_c [mm]	125–315
	Clamping screw for indexable insert Tightening torque	FS2090 (Torx 20IP) 6,4 Nm
	Clamping screw for finishing cartridge Tightening torque	FS2081 (Torx 15IP) 4,0 Nm
	Insert Shim	FR753

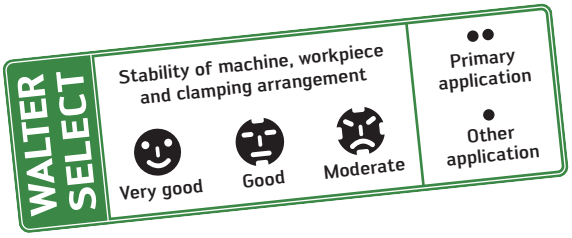
Accessories

	D_c [mm]	125–315
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade for insert shim	FS2014 (Torx 15IP)
	Torque T-handle Tightening torque	FS2041 4,5–14 Nm
	Interchangeable blade for indexable insert	FS2048 (Torx 20IP)
	Screwdriver for indexable insert	FS1486 (Torx 20IP)
	Screwdriver for insert shim	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	LNMX201012R-F27T	1,2	●●	●					●●	●●	●				
	LNMX201012R-F57T	1,2	●●	●●	●		●		●●	●●	●				●

HC = Coated carbide
HW = Uncoated carbide



C 329 D 1 C 568 C 589 C 621

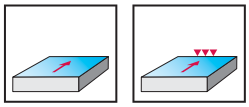
Heptagon face milling cutters
M3024

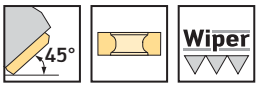
XN . U0705 ..
Walter BLAXX



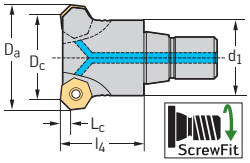
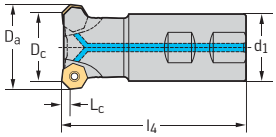
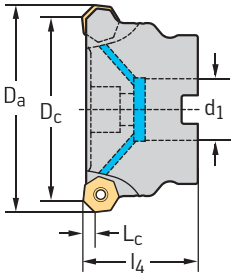
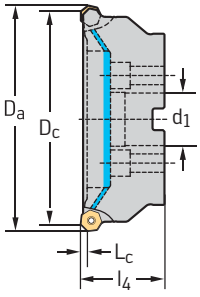
C 2

– 14 cutting edges per indexable insert





	P	M	K	N	S	H	O
M3024	●●	●	●●				

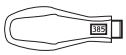
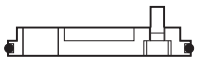
Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	M3024-040-T36-03-04	40	50	T36	40		4	3	0,5	3	XN . U0705 .. XNGX0705ANN
Shank DIN 1835 B 	M3024-040-W40-03-04	40	50	40	40	110	4	3	1,0	3	XN . U0705 .. XNGX0705ANN
Cylindrical bore DIN 138 transverse keyway 	M3024-040-B16-03-04	40	50	16	40		4	3	0,5	3	XN . U0705 .. XNGX0705ANN
	M3024-050-B22-04-04	50	60	22	40		4	4	0,5	4	
	M3024-050-B22-05-04	50	60	22	40		4	5	0,5	5	
	M3024-063-B22-05-04	63	73	22	40		4	5	0,8	5	
	M3024-063-B22-06-04	63	73	22	40		4	6	0,8	6	
	M3024-080-B27-06-04	80	90	27	50		4	6	1,5	6	
	M3024-080-B27-07-04	80	90	27	50		4	7	1,5	7	
	M3024-100-B32-07-04	100	110	32	50		4	7	2,7	7	
	M3024-100-B32-08-04	100	110	32	50		4	8	2,7	8	
	M3024-125-B40-08-04	125	135	40	63		4	8	4,3	8	
	M3024-125-B40-10-04	125	135	40	63		4	10	4,3	10	
Cylindrical bore DIN 138 transverse keyway 	M3024-160-B40-09-04	160	170	40/40 B	63		4	9	6,5	9	XN . U0705 .. XNGX0705ANN
	M3024-160-B40-12-04	160	170	40/40 B	63		4	12	6,5	12	

Bodies and assembly parts are included in the scope of delivery.

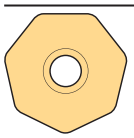
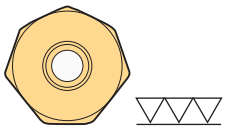
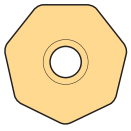
Assembly parts

	D_c [mm]	40–160
	Shim for indexable insert	AP800-XN0705 H81
	Clamping screw for shim	FS2068 (SW 3,5)
	Clamping screw for indexable insert Tightening torque	FS2279 (Torx 15IP) 3,0 Nm

Accessories

	D_c [mm]	40–125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Key for screw for shim	ISO2936-3,5 (SW 3,5)	ISO2936-3,5 (SW 3,5)
	Sealing disc set, complete		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	XNGU0705ANN-F57	0,8	1,1	☺	😐	☹	😐	☹			😐	☹						
	XNGU0705ANN-F67	0,8	1,1	☺	😐	☹	😐	☹			😐	☹						
	XNGX0705ANN-F67		5,7						☺								☺	☺
	XNMU070508-F57	0,8		☺	😐	☹		☹			😐	☹						
	XNMU0705ANN-F27	0,8	1,1	😐	☹					😐	😐	☹						
	XNMU0705ANN-F57	0,8	1,1	☺	😐	☹		☹			😐	☹						
	XNMU0705ANN-F67	0,8	1,1	☺	😐						😐	☹						

XNGX0705ANN-F67 wiper insert only in combination with XNGU0705ANN . .

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT
Stability of machine, workpiece and clamping arrangement
Very good ☺ Good 😐 Moderate ☹
●● Primary application
● Other application

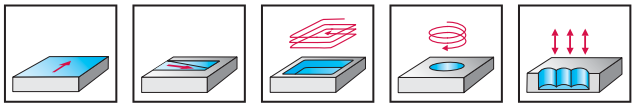
C 320 D 1 C 568 C 588 C 621 C 635

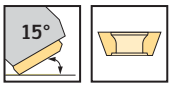
High-feed face milling cutters
M4002



C 2

– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
M4002	●●	●●	●●		●●	●	

Tool	Designation	D_c mm	D_a * mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	a_r mm	Z	kg	No. of indexable inserts	Type
ScrewFit	M4002-020-T18-02-01	8	20	T18	30		1	5,7	2	0,1	2	SDM . 06T2 ..
	M4002-025-T22-02-01,5	8	25	T22	40		1,5	8,4	2	0,1	2	SDM . 09T3 ..
	M4002-025-T22-03-01	13	25	T22	35		1	5,7	3	0,1	3	SDM . 06T2 ..
	M4002-032-T28-03-01,5	15	32	T28	40		1,5	8,4	3	0,2	3	SDM . 09T3 ..
	M4002-032-T28-04-01	20	32	T28	40		1	5,7	4	0,2	4	SDM . 06T2 ..
	M4002-035-T28-03-01,5	18	35	T28	40		1,5	8,4	3	0,2	3	SDM . 09T3 ..
	M4002-035-T28-03-01	23	35	T28	40		1	5,7	3	0,2	3	SDM . 06T2 ..
	M4002-035-T28-04-01	23	35	T28	40		1	5,7	4	0,2	4	
	M4002-040-T36-04-01,5	23	40	T36	40		1,5	8,4	4	0,3	4	SDM . 09T3 ..
	M4002-040-T36-05-01	28	40	T36	40		1	5,7	5	0,4	5	SDM . 06T2 ..
	M4002-042-T36-03-01,5	25	42	T36	40		1,5	8,4	3	0,3	3	SDM . 09T3 ..
	M4002-042-T36-04-01	30	42	T36	40		1	5,7	4	0,4	4	SDM . 06T2 ..
	M4002-042-T36-05-01	30	42	T36	40		1	5,7	5	0,4	5	
Parallel shank	M4002-020-A20-02-01	8	20	20	30	200	1	5,7	2	0,5	2	SDM . 06T2 ..
	M4002-025-A25-03-01	13	25	25	35	200	1	5,7	3	0,8	3	
	M4002-032-A32-04-01	20	32	40	40	250	1	5,7	4	1,5	4	

* Measured using SDM.06T204, SDM.09T308, SDM.120408
Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	Type	SDM . 06T2 ..	SDM . 09T3 ..
	Clamping screw for indexable insert Tightening torque	FS2084 (Torx 7IP) 0,9 Nm	FS2266 (Torx 10IP) 2,0 Nm

Accessories

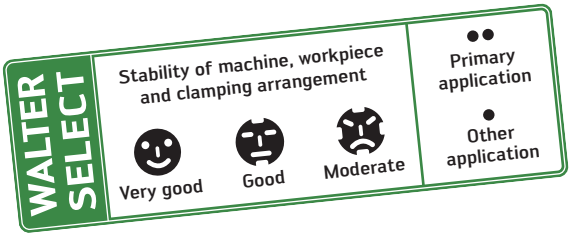
	Type	SDM . 06T2 ..	SDM . 09T3 ..
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque		FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2268 (Torx 10IP)
	Screwdriver	FS2088 (Torx 7IP)	FS2267 (Torx 10IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM45X	S HC WSP45S
	SDMT06T2ZDR-D57	0,4	1,2		●●	●●			●●				●●			●●
	SDMT09T3ZDR-D57	0,8	1,2		●●	●●			●●				●●			●●
	SDMT06T204-D57	0,4		●	●●	●●	●●		●●		●●	●●	●●	●●		●●
	SDMT06T204-F57	0,4		●	●●	●●	●●	●●	●●	●		●●	●●	●●	●●	●●
	SDMT06T212-F57	1,2			●●	●●	●●	●●	●●				●●	●●	●●	●●
	SDMW06T204-A57	0,4		●●	●●							●●	●●			
	SDMT09T308-D57	0,8		●	●●	●●	●●		●●		●●	●●	●●	●●		●●
	SDMT09T308-F57	0,8		●	●●	●●	●●	●●	●●	●		●●	●●	●●	●●	●●
	SDMT09T320-F57	2			●●	●●	●●	●●	●●				●●	●●	●●	●●
	SDMW09T308-A57	0,8		●●	●●							●●	●●			

For SD..120425 indexable inserts, the circumference of the body must be reworked.
$R_{(body)} = r_{(indexable\ insert)}$

HC = Coated carbide



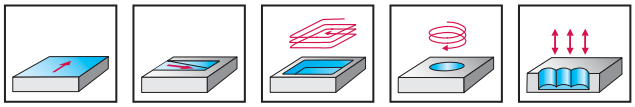
C 299 D 1 C 568 C 593 C 621 C 635

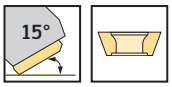
High-feed face milling cutters
M4002



C 2

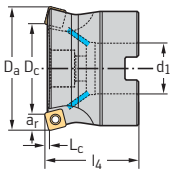
– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
M4002	●●	●●	●●		●●	●	

Tool	Designation	D_c mm	D_a * mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	a_r mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	M4002-040-B16-05-01	28	40	16	40		1	5,7	5	0,2	5	SDM . 06T2 ..
	M4002-042-B16-04-01,5	25	42	16	40		1,5	8,4	4	0,2	4	SDM . 09T3 ..
	M4002-042-B16-04-01	30	42	16	40		1	5,7	4	0,2	4	SDM . 06T2 ..
	M4002-042-B16-05-01	30	42	16	40		1	5,7	5	0,2	5	
	M4002-050-B22-04-02	27	50	22	40		2	11,4	4	0,3	4	SDM . 1204 ..
	M4002-050-B22-05-01,5	33	50	22	40		1,5	8,4	5	0,3	5	SDM . 09T3 ..
	M4002-050-B22-07-01	38	50	22	40		1	5,7	7	0,4	7	SDM . 06T2 ..
	M4002-052-B22-03-02	29	52	22	40		2	11,4	3	0,3	3	SDM . 1204 ..
	M4002-052-B22-04-02	29	52	22	40		2	11,4	4	0,3	4	
	M4002-052-B22-04-01,5	35	52	22	40		1,5	8,4	4	0,4	4	SDM . 09T3 ..
	M4002-052-B22-05-01,5	35	52	22	40		1,5	8,4	5	0,4	5	
	M4002-052-B22-06-01	40	52	22	40		1	5,7	6	0,4	6	SDM . 06T2 ..
	M4002-052-B22-07-01	40	52	22	40		1	5,7	7	0,4	7	
	M4002-063-B22-05-02	40	63	22	50		2	11,4	5	0,6	5	SDM . 1204 ..
	M4002-063-B22-06-01,5	46	63	22	50		1,5	8,4	6	0,8	6	SDM . 09T3 ..
	M4002-063-B22-08-01	51	63	22	50		1	5,7	8	0,6	8	SDM . 06T2 ..
	M4002-066-B27-04-02	43	66	27	50		2	11,4	4	0,8	4	SDM . 1204 ..
	M4002-066-B27-05-02	43	66	27	50		2	11,4	5	0,8	5	
	M4002-066-B27-05-01,5	49	66	27	50		1,5	8,4	5	0,8	5	SDM . 09T3 ..
	M4002-066-B27-06-01,5	49	66	27	50		1,5	8,4	6	0,8	6	
	M4002-066-B27-07-01	54	66	27	50		1	5,7	7	0,8	7	SDM . 06T2 ..
	M4002-066-B27-08-01	54	66	27	40		1	5,7	8	0,8	8	
	M4002-080-B27-06-02	57	80	27	50		2	11,4	6	1,3	6	SDM . 1204 ..
	M4002-085-B27-05-02	62	85	27	50		2	11,4	5	1,5	5	
	M4002-085-B27-06-02	62	85	27	50		2	11,4	6	1,4	6	
	M4002-100-B32-07-02	77	100	32	60		2	11,4	7	2,6	7	
	M4002-125-B40-08-02	102	125	40	60		2	11,4	8	3,0	8	



* Measured using SDM.06T204, SDM.09T308, SDM.120408
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	SDM . 06T2 ..	SDM . 09T3 ..	SDM . 1204 ..
	Clamping screw for indexable insert Tightening torque	FS2084 (Torx 7IP) 0,9 Nm	FS2266 (Torx 10IP) 2,0 Nm	FS1453 (Torx 15IP) 3,5 Nm

Accessories

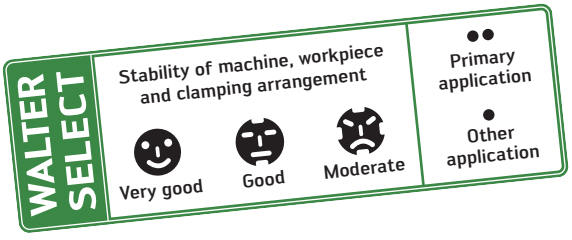
	Type	SDM . 06T2 ..	SDM . 09T3 ..	SDM . 1204 ..
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque		FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2268 (Torx 10IP)	FS2014 (Torx 15IP)
	Screwdriver	FS2088 (Torx 7IP)	FS2267 (Torx 10IP)	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM45X	S HC WSP45S
	SDMT06T2ZDR-D57	0,4	1,2		●●	●●			●●				●●			●●
	SDMT09T3ZDR-D57	0,8	1,2		●●	●●			●●				●●			●●
	SDMT1204ZDR-D57	0,8	1,8		●●	●●			●●				●●			●●
	SDMT06T204-D57	0,4		●	●●	●●	●●		●●		●●	●●	●●	●●		●●
	SDMT06T204-F57	0,4		●	●●	●●	●●	●●	●●	●		●●	●●	●●	●●	●●
	SDMT06T212-F57	1,2			●●	●●	●●	●●	●●				●●	●●	●●	●●
	SDMW06T204-A57	0,4		●●	●●							●●	●●			
	SDMT09T308-D57	0,8		●	●●	●●	●●		●●		●●	●●	●●	●●		●●
	SDMT09T308-F57	0,8		●	●●	●●	●●	●●	●●	●		●●	●●	●●	●●	●●
	SDMT09T320-F57	2			●●	●●	●●	●●	●●				●●	●●	●●	●●
	SDMW09T308-A57	0,8		●●	●●							●●	●●			
	SDMT120408-D57	0,8		●	●●	●●	●●		●●		●●	●●	●●	●●		●●
	SDMT120408-F57	0,8		●	●●	●●	●●	●●	●●	●		●●	●●	●●	●●	●●
	SDMT120425-F57	2,5			●●	●●	●●	●●	●●				●●	●●	●●	●●
	SDMW120408-A57	0,8		●●	●●							●●	●●			

For SD..120425 indexable inserts, the circumference of the body must be reworked.
$R_{(body)} = r_{(indexable\ insert)}$

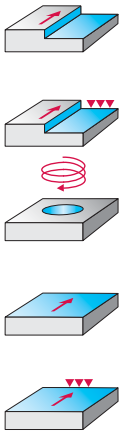
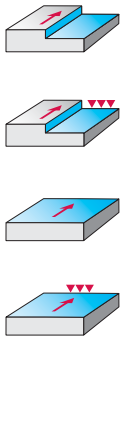
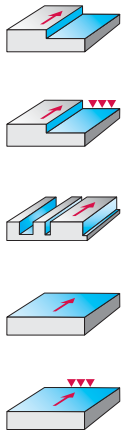
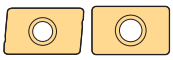
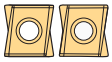
HC = Coated carbide

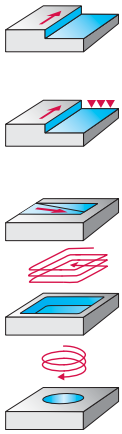
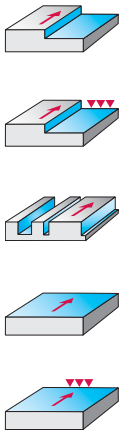
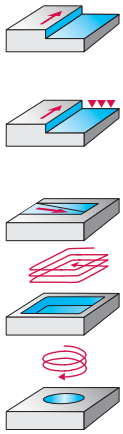
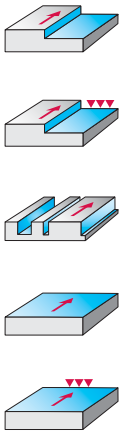


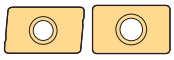
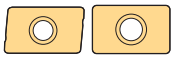
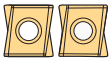
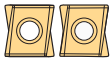
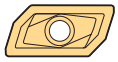
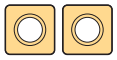
C 299 D 1 C 568 C 593 C 621 C 635

C 2

Walter Select – Indexable insert milling cutters
Shoulder milling cutters

Machining					
WALTER SELECT ●● Primary application ● Other application					
Lead angle κ	**90°**	**90°**	**90°**	**90°**	
Designation	**F2010**	**F2010**	**F2010**	**F2010**	**F4041**
Dia. range [mm]	80–315	80–315	80–315	80–315	40–160
Adaption range	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	ScrewFit DIN 1835 B Cylindrical bore
Page	C 432	C 434	C 438	C 440	C 444
					
P Steel	●●	●●	●●	●●	●●
M Stainless steel	●●	●●	●●	●●	●●
K Cast iron	●●	●●	●●	●●	●●
N NF metals	●●	●●	●●	●●	●●
S Materials with difficult cutting properties	●●	●●	●●	●●	●●
H Hard materials	●	●	●	●	●
O Other	●	●	●	●	●
Indexable inserts					
Type	SP .. 1204 ..	AD . T1204 .. R AD .. 1606 .. R	LNGX1307 .. R	LNH . 0904 .. R LNH . 1306 .. R	LNGX1307 .. R
Number of cutting edges	4	2	4	4 / 2	4
Max. depth of cut [mm]	11	12 / 15	13		13

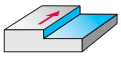





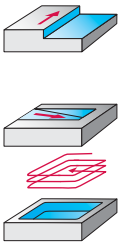
	90°		90°			90°	90°
	F4042	**F4042R**	**F5041**	**F5141**	**F5241**	**M2131**	**M4132**
	10–160	16–63	25–63	40–160	50–160	25–80	16–125
	ScrewFit DIN 1835 B Parallel shank Cylindrical bore	ScrewFit DIN 1835 B Parallel shank Cylindrical bore	ScrewFit DIN 1835 B Parallel shank Cylindrical bore	ScrewFit DIN 1835 B Parallel shank Cylindrical bore	Cylindrical bore	ScrewFit Parallel shank Similar to HSK-A DIN 69893 Cylindrical bore	ScrewFit DIN 1835 B Cylindrical bore
	C 446	C 448	C 458	C 460	C 462	C 464	C 466
							
	●●	●●	●●	●●	●●		●●
	●●	●●	●●	●●	●●		●●
	●●	●●	●●	●●	●●		●●
	●●	●●	●●	●●	●●	●●	
	●●	●●	●●	●●	●●		●●
	●	●	●	●	●		●
	●	●	●	●	●	●	
							
	AD . T0803 .. R AD . T1204 .. R AD .. 1606 .. R AD . T1807 .. R	AD .. 10T3 .. R	LNH . 0904 .. R	LNH . 1306 .. R	LNHU1607 .. R	ZDGT1504 .. R ZDGT2005 .. R	SD .. 06T2 .. SD .. 09T3 .. SD .. 1204 ..
	2	2	4 / 2	4 / 2	4	2	4
	8 / 12 / 15 / 17	10	8	12	15	15 / 20	8 / 6 / 12

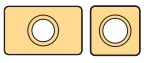
Walter Select – Indexable insert milling cutters
Shoulder milling cutters

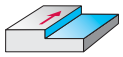
Machining

WALTER SELECT
●● Primary application
● Other application





Lead angle κ	90°	90°				
Designation	**F2338F**	**F4038**	**F4138**	**F4238**	**F4338**	
Dia. range [mm]	63–100	20–32	32–80	40–85	63–125	
Adaption range	Modular NCT adaptor Cylindrical bore	ScrewFit DIN 1835 B	ScrewFit DIN 1835 B Modular NCT adaptor Cylindrical bore	ScrewFit Modular NCT adaptor Cylindrical bore	Modular NCT adaptor Cylindrical bore	
Page	C 468	C 470	C 472	C 476	C 478	
						
P Steel	●●	●●	●●	●●	●●	
M Stainless steel	●	●●	●●	●●	●●	
K Cast iron	●●	●●	●●	●●	●●	
N NF metals		●●	●●	●●		
S Materials with difficult cutting properties	●	●●	●●	●●	●●	
H Hard materials						
O Other		●	●	●		
Indexable inserts						
Type	LP .. 1506 .. SP .. 120606	AD . T0803 .. R	AD . T1204 .. R	AD . T1606 .. R	AD . T1807 .. R	
Number of cutting edges	2 / 4	2	2	2	2	
Max. depth of cut [mm]	81 / 103 / 48 / 59 / 70	15 / 22 / 30 / 37	33 / 54 / 43 / 65 / 76	43 / 29 / 85 / 99 / 112 / 57 / 71	94 / 109 / 124 / 31 / 47 / 63 / 78	



	90°	
	F5038	**F5138**
	25–40	40–80
	ScrewFit DIN 1835 B Cylindrical bore	ScrewFit DIN 1835 B Cylindrical bore
	C 480	C 482
		
	●●	●●
	●●	●●
	●●	●●
	●●	●●
	●●	●●
	●	●
		
	LNHU0904 .. R	LNHU1306 .. R
	4	4
	24 / 32 / 40 / 48	34 / 23 / 45 / 56

Shoulder milling cutters
F2010

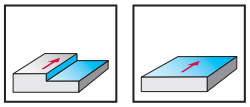
SP .. 1204 ..

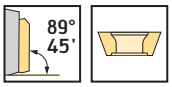




C 2

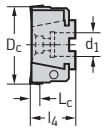
– Adjustable runout
– Four cutting edges per indexable insert

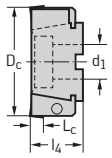


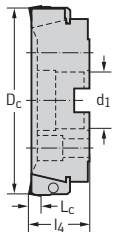


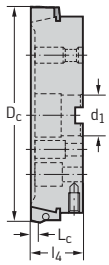
	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.11.R445M	80	27	50	11	6	1,14	6	SP .. 1204 ..
	F2010.B.100.Z07.11.R445M	100	32	50	11	7	1,73	7	SP .. 1204 ..
	F2010.B.125.Z08.11.R445M	125	40	63	11	8	3,42	8	
	F2010.B.160.Z10.11.R445M	160	40/40 B	63	11	10	5,41	10	SP .. 1204 ..
	F2010.B.200.Z12.11.R445M	200	60/50 B	63	11	12	8,10	12	
	F2010.B.250.Z12.11.R445M	250	60/50 B	63	11	12	14,57	12	
	F2010.B.250.Z16.11.R445M	250	60/50 B	63	11	16	14,38	16	
	F2010.B.315.Z14.11.R445M	315	60/50-60 BB	80	11	14	26,08	14	SP .. 1204 ..
	F2010.B.315.Z18.11.R445M	315	60/50-60 BB	80	11	18	25,94	18	



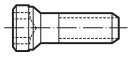






Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR445M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS243 (Torx 20) 5,0 Nm
	Adjusting pin	FS303 (Torx 20)

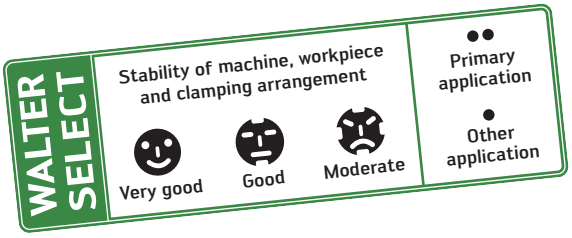
Accessories

	D_c [mm]	80–315
	Cartridge: P2905-1 finishing insert	FR448M
	Screwdriver for indexable insert	FS228 (Torx 20)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	K CN WSN10	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	SPHT120408-G88	0,8														☺	☺				
	SPHW120416-A57	1,6													☺						
	SPMT120408-D51	0,8	☺	😐		☹		😐		☹			😐	☹					😐		☹
	SPMT120408-F55	0,8		😐		☹		😐		☹	☺			☹					😐		☹
	SPMW120408-A57	0,8	😐	☹							☺		😐	☹							
	SPMW120408T-A27	0,8	😐	☹									😐	☹							

HC = Coated carbide
CN = Silicon nitride Si_3N_4
HW = Uncoated carbide



C 301 | D 1 | C 568 | C 590 | C 627 | C 621

Shoulder milling cutter
F2010

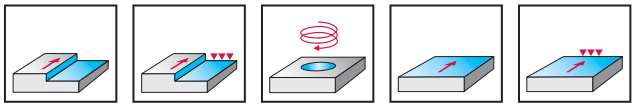
AD . T1204 .. R

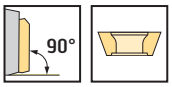




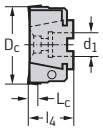
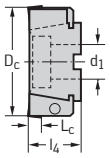
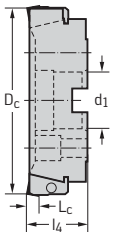
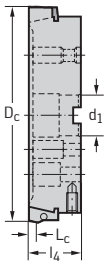
C 2

– Adjustable runout
– Two cutting edges per indexable insert





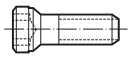
	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.11.R718M	80	27	50	11,7	6	1,2	6	AD . T1204 .. R
									
Cylindrical bore DIN 138 transverse keyway	F2010.B.100.Z07.11.R718M	100	32	50	11,7	7	1,7	7	AD . T1204 .. R
	F2010.B.125.Z08.11.R718M	125	40	63	11,7	8	3,4	8	
									
Cylindrical bore DIN 138 transverse keyway	F2010.B.160.Z10.11.R718M	160	40/40 B	63	11,7	10	5,4	10	AD . T1204 .. R
	F2010.B.200.Z12.11.R718M	200	60/50 B	63	11,7	12	8,1	12	
	F2010.B.250.Z12.11.R718M	250	60/50 B	63	11,7	12	14,6	12	
	F2010.B.250.Z16.11.R718M	250	60/50 B	63	11,7	16	14,4	16	
									
Cylindrical bore DIN 138 transverse keyway	F2010.B.315.Z14.11.R718M	315	60/50-60 BB	80	11,7	14	26,3	14	AD . T1204 .. R
	F2010.B.315.Z18.11.R718M	315	60/50-60 BB	80	11,7	18	26,2	18	
									

Bodies and assembly parts are included in the scope of delivery.

C 2

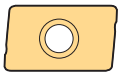
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR718M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

	D_c [mm]	80–315
	Screwdriver for indexable insert	FS1484 (Torx 9IP)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADGT120404R-F56	0,4	1,2			●			○		●									○		●	
	ADGT120416R-D67	1,6	1			●			○		●									○		●	
	ADGT120430R-D67	3	0,8				●		○			●								○			●
	ADGT120430R-F56	3	0,8			●					●											●	
	ADGT120440R-F56	4	0,4			●					●											●	
	ADGT1204PER-D51	0,8	1,2	◐	◐	●					●				◐	●						●	
	ADGT1204PER-D56	0,8	1,2	◐	◐	●					●			◐	◐	●						●	
	ADGT1204PER-D67	0,8	1,2		◐	●		◐			●					●			◐			●	
	ADGT1204PER-F56	0,8	1,2			●		◐			●								◐			●	
	ADGT1204PER-G77	0,8	1,2			◐			◐		◐									◐		◐	
	ADHT120416R-G88	1,6	1														◐	◐					
	ADHT120425R-G88	2,5	0,8															◐					
	ADHT120430R-G88	3	0,8														◐	◐					
	ADHT120440R-G88	4	0,4															◐					
	ADHT1204PER-G88	0,8	1,2														◐	◐					
	ADKT1204PER-F56	0,8	1,2	◐	◐	●					●		◐		◐	●						●	
	ADMT120404R-F56	0,4	1,2		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120408R-D56	0,8	1,2	◐	◐	●					●		◐	◐	◐	●						●	
	ADMT120408R-F56	0,8	1,2	◐	◐	●	●	◐	◐	●	●	●	◐	◐	◐	●			◐	◐	●	●	●
	ADMT120408R-G56	0,8	1,2		◐	◐		◐			◐					◐			◐			◐	
	ADMT120412R-F56	1,2	1,2		◐	●		◐		●	●					●			◐		●	●	
	ADMT120416R-F56	1,6	1		◐	●	●	◐	◐	●	●	●				●			◐	◐	●	●	●
	ADMT120420R-F56	2	1		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120425R-F56	2,5	0,8		◐		●	◐				●				●			◐				●
	ADMT120430R-F56	3	0,8		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120432R-F56	3,2	0,8		◐	●		◐		●	●					●			◐		●	●	
	ADMT120440R-F56	4	0,4		◐	●	●	◐	◐	●	●	●				●			◐	◐	●	●	●

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm

HC = Coated carbide
HW = Uncoated carbide

C 284 D 1 C 568 C 591 C 627 C 621

Shoulder milling cutter
F2010

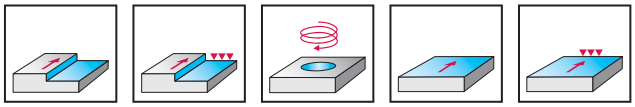
AD .. 1606 .. R

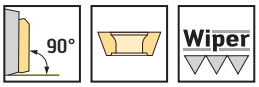




C 2

– Adjustable runout
– Two cutting edges per indexable insert





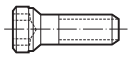
	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.15.R719M	80	27	50	15	6	1,2	6	AD .. 1606 .. R
	F2010.B.100.Z07.15.R719M	100	32	50	15	7	1,8	7	AD .. 1606 .. R
	F2010.B.125.Z08.15.R719M	125	40	63	15	8	3,5	8	
	F2010.B.160.Z10.15.R719M	160	40/40 B	63	15	10	5,5	10	AD .. 1606 .. R
	F2010.B.200.Z12.15.R719M	200	60/50 B	63	15	12	8,2	12	
	F2010.B.250.Z12.15.R719M	250	60/50 B	63	15	12	14,7	12	
	F2010.B.250.Z16.15.R719M	250	60/50 B	63	15	16	14,6	16	
	F2010.B.315.Z14.15.R719M	315	60/50-60 BB	80	15	14	26,3	14	AD .. 1606 .. R
	F2010.B.315.Z18.15.R719M	315	60/50-60 BB	80	15	18	26,2	18	

Bodies and assembly parts are included in the scope of delivery.

C 2

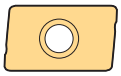
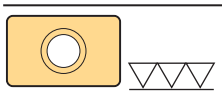
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR719M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1453 (Torx 15IP) 3,5 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

	D_c [mm]	80–315
	Screwdriver for indexable insert	FS1485 (Torx 15IP)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45	H HC WHH15	O HC WXM15
	ADGT1606PER-D51	0,8	1,6	●	●	●					●				●	●						●			
	ADGT1606PER-D56	0,8	1,6	●	●	●					●			●	●	●						●			
	ADGT1606PER-F56	0,8	1,6			●		●			●								●			●			
	ADHT160616R-G88	1,6	1,4														●	●							
	ADHT160625R-G88	2,5	1,2															●							
	ADHT160630R-G88	3	1,2															●							
	ADHT160640R-G88	4	1															●							
	ADHT1606PER-G88	0,8	1,6														●	●							
	ADKT1606PER-F56	0,8	1,6	●	●	●					●		●		●	●						●			
	ADMT160608R-D56	0,8	1,6	●	●	●					●		●	●	●	●						●			
	ADMT160608R-F56	0,8	1,6	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●		
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	ADMT160625R-F56	2,5	1,2		●	●		●			●					●			●			●				
	ADMT160630R-F56	3	1,2		●	●		●		●	●					●			●		●	●				
	ADMT160632R-F56	3,2	1,2		●	●		●		●	●					●			●		●	●				
	ADMT160640R-F56	4	1		●	●	●	●	●	●	●	●				●			●	●	●	●	●		
	ADMT160650R-F56	5			●	●		●		●	●					●			●		●	●				
	ADMT160660R-F56	6			●	●	●	●	●	●	●	●				●			●	●	●	●	●		
	ADGX1606PER-F56	0,8	8										●											●	●

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm
ADGX1606PER-F56 wiper insert only in combination with ADGT1606PER-F56, ADGT1606PER-D67 or ADGT1606PER-G77

HC = Coated carbide
HW = Uncoated carbide

C 284 D 1 C 568 C 591 C 627 C 621

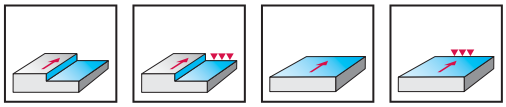
Shoulder milling cutter
F2010
LNGX1307 .. R

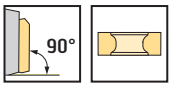




C 2

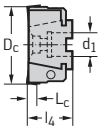
– Adjustable runout
– Four cutting edges per indexable insert

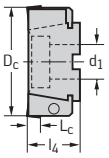


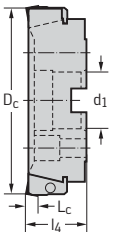


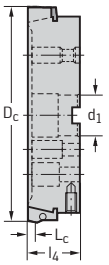
	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.13.R722M	80	27	50	13	6	1,2	6	LNGX1307 .. R
	F2010.B.100.Z07.13.R722M	100	32	50	13	7	1,8	7	LNGX1307 .. R
	F2010.B.125.Z08.13.R722M	125	40	63	13	8	3,5	8	
	F2010.B.160.Z10.13.R722M	160	40/40 B	63	13	10	5,5	10	LNGX1307 .. R
	F2010.B.200.Z12.13.R722M	200	60/50 B	63	13	12	8,2	12	
	F2010.B.250.Z12.13.R722M	250	60/50 B	63	13	12	14,6	12	
	F2010.B.250.Z16.13.R722M	250	60/50 B	63	13	16	14,5	16	
	F2010.B.315.Z14.13.R722M	315	60/50-60 BB	80	13	14	26,3	14	LNGX1307 .. R
	F2010.B.315.Z18.13.R722M	315	60/50-60 BB	80	13	18	26,2	18	



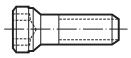






Bodies and assembly parts are included in the scope of delivery.

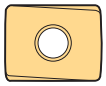
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR722M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1458 (Torx 15IP) 2,5 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

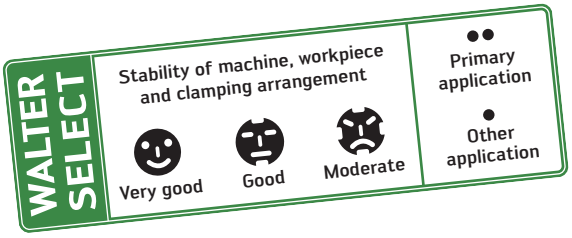
	D_c [mm]	80–315
	Screwdriver for indexable insert	FS1485 (Torx 15IP)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45
	LNGX130708R-L55	0,8	1,2	●●	●●	●		●●	●		●●	●●	●●	●●			●●	●	
	LNGX130708R-L88	0,8	1,2												●●	●●			
	LNGX130712R-L55	1,2	1	●●	●●	●			●				●●	●●				●	
	LNGX130716R-L55	1,6	0,9	●●	●●	●			●				●●	●●				●	
	LNGX130720R-L55	2	0,7	●●	●●	●	●		●	●			●●	●●				●	●
	LNGX130720R-L88	2	0,7												●●				
	LNGX130725R-L55	2,5	0,6	●●	●●		●			●			●●	●●					●
	LNGX130730R-L55	3	0,7	●●	●●		●			●			●●	●●					●
	LNGX130730R-L88	3	0,7												●●				

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)}$

HC = Coated carbide
HW = Uncoated carbide



C 312 D 1 C 568 C 590 C 627 C 621

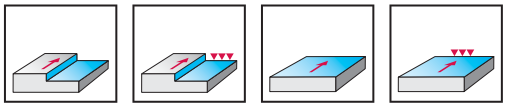
Shoulder milling cutter
F2010

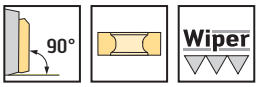
LNH . 0904 .. R



C 2

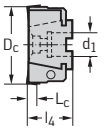
– Adjustable runout
– Four cutting edges per indexable insert, tangential arrangement

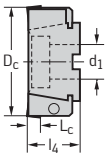


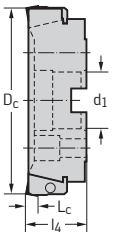


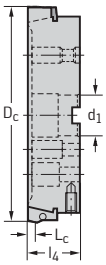
	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.08.R751M	80	27	50	8	6	1,2	6	LNH . 0904 .. R
	F2010.B.100.Z07.08.R751M	100	32	50	8	7	1,8	7	LNH . 0904 .. R
	F2010.B.125.Z08.08.R751M	125	40	63	8	8	3,5	8	
	F2010.B.160.Z10.08.R751M	160	40/40 B	63	8	10	5,5	10	LNH . 0904 .. R
	F2010.B.200.Z12.08.R751M	200	60/50 B	63	8	12	8,2	12	
	F2010.B.250.Z12.08.R751M	250	60/50 B	63	8	12	14,6	12	
	F2010.B.250.Z16.08.R751M	250	60/50 B	63	8	16	14,5	16	
	F2010.B.315.Z14.08.R751M	315	60/50-60 BB	80	8	14	26,3	14	LNH . 0904 .. R
	F2010.B.315.Z18.08.R751M	315	60/50-60 BB	80	8	18	26,2	18	





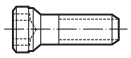




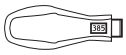
Bodies and assembly parts are included in the scope of delivery.

C 2

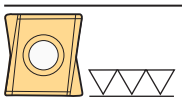
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR751M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

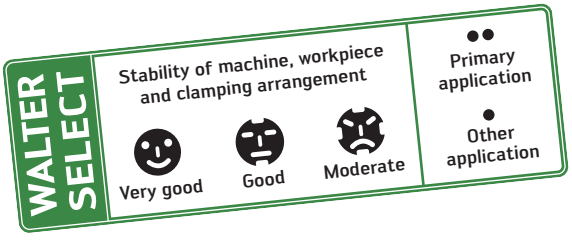
	D_c [mm]	80–315
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2013 (Torx 9IP)
	Screwdriver for indexable insert	FS1484 (Torx 9IP)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	LNHU090404R-L55T	0,4	1,5	●●	●	○	●	○	●●	●	●	●			●	○		
	LNHU090404R-L65T	0,4	1,5			○		○								○		
	LNHU090404R-L85T	0,4	1,5										●●	●●				
	LNHU090408R-L55T	0,8	1,1	●●	●	○	●	○		●	●	○			●	○		
	LNHU090412R-L55T	1,2	0,8		●	○	●	○				○			●	○		
	LNHU090416R-L55T	1,6			●	○	●	○				○			●	○		
	LNHU090420R-L55T	2			●	○	●	○				○			●	○		
	LNHX0904PDR-L55T	0,4	3,5						●●								●●	●●

LNHX0904PDR-L55T wiper insert only in combination with LNHU090404R-L55T . .

HC = Coated carbide
HW = Uncoated carbide



C 328 D 1 C 568 C 591 C 627 C 621

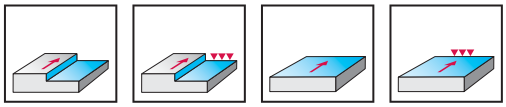
Shoulder milling cutter
F2010

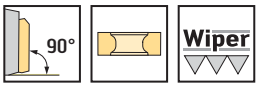
LNH . 1306 .. R



C 2

– Adjustable runout
– Four cutting edges per indexable insert, tangential arrangement





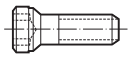
	P	M	K	N	S	H	O
F2010	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.12.R752M	80	27	50	12	6	1,2	6	LNH . 1306 .. R
	F2010.B.100.Z07.12.R752M	100	32	50	12	7	1,8	7	LNH . 1306 .. R
	F2010.B.125.Z08.12.R752M	125	40	63	12	8	3,5	8	
	F2010.B.160.Z10.12.R752M	160	40/40 B	63	12	10	5,5	10	LNH . 1306 .. R
	F2010.B.200.Z12.12.R752M	200	60/50 B	63	12	12	8,2	12	
	F2010.B.250.Z12.12.R752M	250	60/50 B	63	12	12	14,6	12	
	F2010.B.250.Z16.12.R752M	250	60/50 B	63	12	16	14,5	16	
	F2010.B.315.Z14.12.R752M	315	60/50-60 BB	80	12	14	26,3	14	LNH . 1306 .. R
	F2010.B.315.Z18.12.R752M	315	60/50-60 BB	80	12	18	26,2	18	

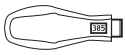
Bodies and assembly parts are included in the scope of delivery.

C 2

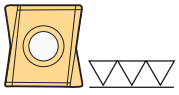
Assembly parts

	D_c [mm]	80–315
	Cartridge for tool body	FR752M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS2081 (Torx 15IP) 4,0 Nm
	Adjusting pin	FS303 (Torx 20)

Accessories

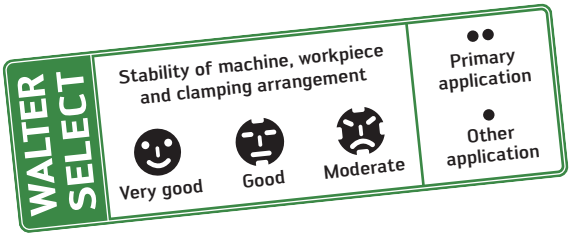
	D_c [mm]	80–315
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)
	Screwdriver for indexable insert	FS1485 (Torx 15IP)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	LNHU130608R-L55T	0,8	2,2	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹		
	LNHU130608R-L65T	0,8	2,2			☹		☹								☹		
	LNHU130608R-L85T	0,8	2,2										☺	☺				
	LNHU130612R-L55T	1,2	1,9		😐	☹	😐	☹				☹			😐	☹		
	LNHU130616R-L55T	1,6	1,5		😐	☹	😐	☹				☹			😐	☹		
	LNHU130620R-L55T	2	1,2		😐	☹	😐	☹				☹			😐	☹		
	LNHU130625R-L55T	2,5	0,7		😐	☹	😐	☹				☹			😐	☹		
	LNHU130630R-L55T	3			😐	☹	😐	☹				☹			😐	☹		
	LNHU130632R-L55T	3,2			😐	☹	😐	☹				☹			😐	☹		
	LNHX130608R-L55T	0,8	2,2						☺								☺	☺
	LNHX1306PDR-L55T	0,6	5						☺								☺	☺

LNHX130608R-L55T wiper insert only in combination with LNHU130608R-L55T . .
LNHX1306PDR-L55T wiper insert only in combination with LNHU130608R-L55T . .

HC = Coated carbide
HW = Uncoated carbide



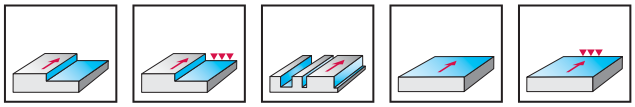
C 328 D 1 C 568 C 591 C 627 C 621

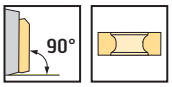
Shoulder milling cutters
F4041

LNGX1307 .. R
Xtra·tec®



– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
F4041	●●	●●	●●	●●	●●	●	●

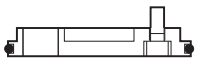
Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F4041.T36.040.Z03.13	40	T36	40	13		3	0,33	3	
	F4041.T45.050.Z03.13	50	T45	40	13		3	0,48	3	LNGX1307 .. R
	F4041.T45.050.Z04.13	50	T45	40	13		4	0,49	4	
Shank DIN 1835 B	F4041.W32.040.Z03.13	40	32	49	13	110	3	0,68	3	LNGX1307 .. R
Cylindrical bore DIN 138 transverse keyway	F4041.B16.040.Z03.13	40	16	40	13		3	0,39	3	
	F4041.B22.050.Z03.13	50	22	40	13		3	0,50	3	
	F4041.B22.050.Z04.13	50	22	40	13		4	0,50	4	
	F4041.B22.063.Z04.13	63	22	40	13		4	0,76	4	
	F4041.B27.063.Z04.13	63	27	50	13		4	0,71	4	
	F4041.B22.063.Z06.13	63	22	40	13		6	0,75	6	
	F4041.B27.063.Z06.13	63	27	50	13		6	0,89	6	LNGX1307 .. R
	F4041.B27.080.Z05.13	80	27	50	13		5	1,22	5	
	F4041.B27.080.Z07.13	80	27	50	13		7	1,26	7	
	F4041.B32.100.Z05.13	100	32	50	13		5	2,66	5	
	F4041.B32.100.Z08.13	100	32	50	13		8	2,64	8	
	F4041.B40.125.Z07.13	125	40	63	13		7	4,17	7	
	F4041.B40.125.Z10.13	125	40	63	13		10	4,23	10	
Cylindrical bore DIN 138 transverse keyway	F4041.B40.160.Z08.13	160	40/40 B	63	13		8	5,08	8	LNGX1307 .. R
	F4041.B40.160.Z12.13	160	40/40 B	63	13		12	5,16	12	

Bodies and assembly parts are included in the scope of delivery.

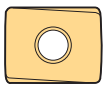
Assembly parts

	D_c [mm]	40–160
	Clamping screw for indexable insert Tightening torque	FS1458 (Torx 15IP) 2,5 Nm

Accessories

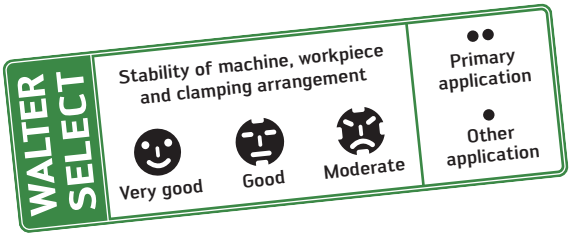
	D_c [mm]	40–125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Sealing disc (gasket + screws)		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	S HC WSP45
	LNGX130708R-L55	0,8	1,2	☻	☻	☹		☻	☹		☻	☻	☻	☹			☻	☹	
	LNGX130708R-L88	0,8	1,2												☻	☻			
	LNGX130712R-L55	1,2	1	☻	☻	☹			☹				☻	☹				☹	
	LNGX130716R-L55	1,6	0,9	☻	☻	☹			☹				☻	☹				☹	
	LNGX130720R-L55	2	0,7	☻	☻	☹	☹		☹	☹			☻	☹				☹	☹
	LNGX130720R-L88	2	0,7												☻				
	LNGX130725R-L55	2,5	0,6	☻	☻		☹			☹			☻	☹					☹
	LNGX130730R-L55	3	0,7	☻	☻		☹			☹			☻	☹					☹
	LNGX130730R-L88	3	0,7												☻				

If the corner radius is r = 1.2 mm or above, the corner area of the body must be reworked.
$R_{(body)} = r_{(indexable\ insert)}$

HC = Coated carbide
HW = Uncoated carbide



C 312 D 1 C 568 C 590 C 621 C 635

Shoulder milling cutters
F4042

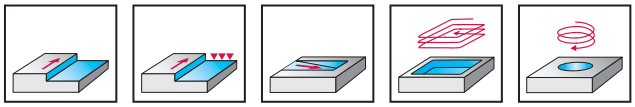
AD . T0803 .. R
Xtra·tec®

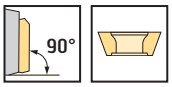




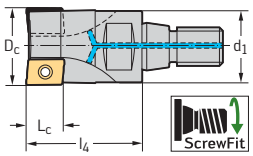
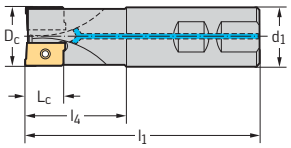
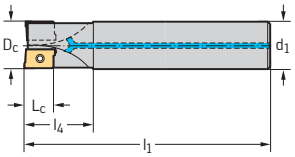
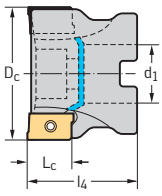
C 2

– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4042	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	F4042.T09.010.Z01.08	10	T09	20	8		1	0,02	1	AD . T0803 .. R
	F4042.T09.012.Z01.08	12	T09	20	8		1	0,02	1	
	F4042.T14.016.Z02.08	16	T14	25	8		2	0,04	2	
	F4042.T14.018.Z02.08	18	T14	25	8		2	0,04	2	
	F4042.T18.020.Z02.08	20	T18	30	8		2	0,07	2	
	F4042.T18.020.Z03.08	20	T18	30	8		3	0,06	3	
	F4042.T18.022.Z03.08	22	T18	30	8		3	0,07	3	
	F4042.T22.025.Z03.08	25	T22	35	8		3	0,11	3	
	F4042.T22.025.Z04.08	25	T22	35	8		4	0,11	4	
	F4042.T28.032.Z04.08	32	T28	40	8		4	0,20	4	
	F4042.T28.032.Z05.08	32	T28	40	8		5	0,20	5	
	F4042.T36.040.Z06.08	40	T36	40	8		6	0,37	6	
Shank DIN 1835 B 	F4042.W16.010.Z01.08	10	16	31	8	80	1	0,10	1	AD . T0803 .. R
	F4042.W16.012.Z01.08	12	16	31	8	80	1	0,10	1	
	F4042.W16.016.Z02.08	16	16	41	8	90	2	0,12	2	
	F4042.W20.020.Z02.08	20	20	39	8	90	2	0,19	2	
	F4042.W20.020.Z03.08	20	20	39	8	90	3	0,19	3	
	F4042.W25.025.Z03.08	25	25	43	8	100	3	0,34	3	
	F4042.W25.025.Z04.08	25	25	43	8	100	4	0,33	4	
	F4042.W32.032.Z04.08	32	32	49	8	110	4	0,58	4	
	F4042.W32.032.Z05.08	32	32	49	8	110	5	0,57	5	
	F4042.W32.040.Z04.08	40	32	49	8	110	4	0,71	4	
	F4042.W32.040.Z06.08	40	32	49	8	110	6	0,71	6	
Parallel shank 	F4042.Z16.010.Z01.08	10	16	31	8	160	1	0,22	1	AD . T0803 .. R
	F4042.Z16.012.Z01.08	12	16	31	8	160	1	0,23	1	
	F4042.Z16.016.Z02.08	16	16	41	8	180	2	0,27	2	
	F4042.Z16.018.Z02.08	18	16	41	8	180	2	0,27	2	
	F4042.Z20.020.Z02.08	20	20	39	8	200	2	0,46	2	
	F4042.Z20.020.Z03.08	20	20	39	8	200	3	0,45	3	
	F4042.Z20.022.Z03.08	22	20	39	8	200	3	0,46	3	
	F4042.Z25.025.Z03.08	25	25	43	8	200	3	0,72	3	
	F4042.Z25.025.Z04.08	25	25	43	8	200	4	0,73	4	
Cylindrical bore DIN 138 transverse keyway 	F4042.B16.040.Z04.08	40	16	40	8		4	0,40	4	AD . T0803 .. R
	F4042.B16.040.Z06.08	40	16	40	8		6	0,44	6	
	F4042.B22.050.Z05.08	50	22	40	8		5	0,53	5	
	F4042.B22.050.Z07.08	50	22	40	8		7	0,54	7	

Balanced construction
Bodies and assembly parts are included in the scope of delivery.

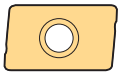
Assembly parts

	D_c [mm]	10–12	16–40
	Clamping screw for indexable insert Tightening torque	FS1455 (Torx 8IP) 1,2 Nm	FS1454 (Torx 8IP) 1,2 Nm

Accessories

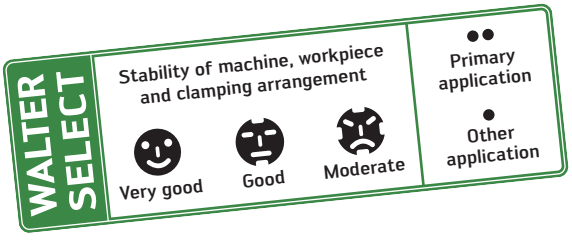
	D_c [mm]	10–40
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2012 (Torx 8IP)
	Screwdriver	FS1483 (Torx 8IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	ADGT0803PER-D51	0,4	1,2	☺	☹	☒				☒				☹	☒					☒	
	ADGT0803PER-D56	0,4	1,2			☒				☒										☒	
	ADGT0803PER-F56	0,4	1,2			☒		☹		☒								☹		☒	
	ADHT0803PER-G88	0,4	1,2													☺	☺				
	ADKT0803PER-F56	0,4	1,2	☺	☹	☒				☒		☺		☹	☒					☒	
	ADMT080302R-F56	0,2	1,2		☹	☒		☹		☒					☒			☹		☒	
	ADMT080304R-D56	0,4	1,2	☺	☹	☒				☒		☺	☹	☹	☒					☒	
	ADMT080304R-F56	0,4	1,2	☺	☹	☒		☹	☹	☒		☺	☹	☹	☒			☹	☹	☒	
	ADMT080304R-G56	0,4	1,2		☺		☹	☹			☹				☹			☹			☹
	ADMT080308R-F56	0,8	1,2		☹	☒	☒	☹	☹	☒	☒				☒			☹	☹	☒	☒
	ADMT080312R-F56	1,2	1		☹	☒		☹		☒					☒			☹		☒	
	ADMT080316R-F56	1,6	1		☹	☒		☹		☒					☒			☹		☒	
	ADMT080320R-F56	2	1		☹	☒		☹	☹	☒					☒			☹	☹	☒	
	ADGT080308R-F56	0,8	1,2			☒			☹	☒									☹	☒	

If the corner radius is r = 1.6 mm or above, the corner area of the body must be reworked.
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm

HC = Coated carbide
HW = Uncoated carbide



C 284 D 1 C 568 C 591 C 621 C 635

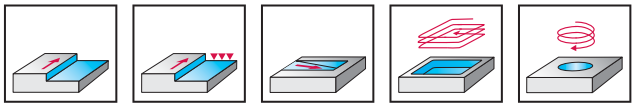
Shoulder milling cutters
F4042R

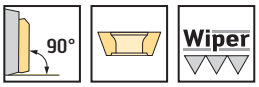
AD .. 10T3 .. R
Xtra·tec®



C 2

– Reinforced design
– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4042R	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F4042R.T14.016.Z02.10	16	T14	25	10		2	0,04	2	
	F4042R.T18.020.Z02.10	20	T18	30	10		2	0,07	2	
	F4042R.T18.020.Z03.10	20	T18	30	10		3	0,06	3	
	F4042R.T22.025.Z03.10	25	T22	35	10		3	0,12	3	AD .. 10T3 .. R
	F4042R.T22.025.Z04.10	25	T22	35	10		4	0,12	4	
	F4042R.T28.032.Z04.10	32	T28	35	10		4	0,18	4	
	F4042R.T28.032.Z05.10	32	T28	35	10		5	0,19	5	
Shank DIN 1835 B	F4042R.W16.016.Z02.10	16	16	26	10	85	2	0,12	2	
	F4042R.W20.020.Z02.10	20	20	30	10	90	2	0,2	2	
	F4042R.W20.020.Z03.10	20	20	30	10	90	3	0,20	3	
	F4042R.W25.025.Z02.10	25	25	30	10	100	2	0,35	2	
	F4042R.W25.025.Z03.10	25	25	30	10	100	3	0,34	3	AD .. 10T3 .. R
	F4042R.W25.025.Z04.10	25	25	30	10	100	4	0,34	4	
	F4042R.W32.032.Z03.10	32	32	30	10	110	3	0,62	3	
	F4042R.W32.032.Z04.10	32	32	30	10	110	4	0,62	4	
	F4042R.W32.032.Z05.10	32	32	30	10	110	5	0,62	5	
Parallel shank	F4042R.Z16.016.Z02.10	16	16	26	10	180	2	0,27	2	
	F4042R.Z20.020.Z02.10	20	20	30	10	200	2	0,46	2	
	F4042R.Z20.020.Z03.10	20	20	30	10	200	3	0,46	3	
	F4042R.Z25.025.Z02.10	25	25	32	10	200	2	0,73	2	AD .. 10T3 .. R
	F4042R.Z25.025.Z03.10	25	25	32	10	200	3	0,72	3	
	F4042R.Z32.032.Z03.10	32	32	40	10	200	3	1,18	3	
	F4042R.Z32.032.Z04.10	32	32	40	10	200	4	1,18	4	
Cylindrical bore DIN 138 transverse keyway	F4042R.B16.040.Z04.10	40	16	40	10		4	0,23	4	
	F4042R.B16.040.Z05.10	40	16	40	10		5	0,02	5	
	F4042R.B16.040.Z06.10	40	16	40	10		6	0,25	6	
	F4042R.B22.050.Z05.10	50	22	40	10		5	0,38	5	
	F4042R.B22.050.Z06.10	50	22	40	10		6	0,04	6	AD .. 10T3 .. R
	F4042R.B22.050.Z07.10	50	22	40	10		7	0,04	7	
	F4042R.B22.063.Z06.10	63	22	40	10		6	0,65	6	
	F4042R.B22.063.Z07.10	63	22	40	10		7	0,07	7	
	F4042R.B22.063.Z09.10	63	22	40	10		9	0,68	9	

Balanced construction
Bodies and assembly parts are included in the scope of delivery.

C 2

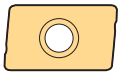
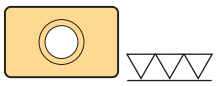
Assembly parts

	D_c [mm]	16–63
	Clamping screw for indexable insert Tightening torque	FS1454 (Torx 8IP) 1,2 Nm

Accessories

	D_c [mm]	16–63
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2012 (Torx 8IP)
	Screwdriver	FS1483 (Torx 8IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45	H HC WHH15	O HC WXM15
	ADGT10T3PER-D67	0,8	1,2		☺	☹		☺			☹					☹			☺			☹			
	ADGT10T3PER-G77	0,8	1,2			☺			☺		☺									☺			☺			
	ADHT10T3PER-G88	0,8	1,2														☺	☺								
	ADKT10T3PER-F56	0,8	1,2	☺	☺	☹		☺			☹		☺		☺	☹			☺			☹			
	ADMT10T304R-F56	0,4	1,2		☺	☹		☺			☹					☹			☺			☹			
	ADMT10T308R-F56	0,8	1,2	☺	☺	☹		☺		☹	☹		☺	☺	☺	☹			☺		☹	☹			
	ADMT10T308R-G56	0,8	1,2		☺		☺	☺				☺				☺			☺				☺		
	ADMT10T312R-F56	1,2	1,2		☺	☹		☺			☹					☹			☺			☹			
	ADGX10T3PER-F56	0,8	5										☺											☺	☺

If the corner radius is r = 1.6 mm or above, the corner area of the body must be reworked.
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm
ADGX10T3PER-F56 wiper insert only in combination with ADGT10T3PER-D67 or ADGT10T3PER-G77

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

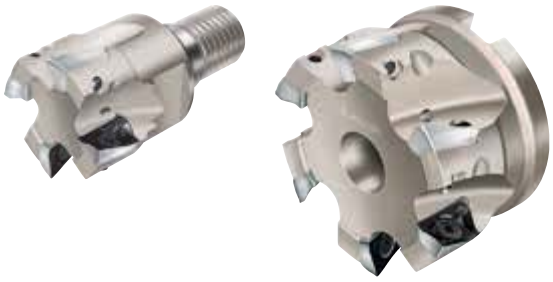
Primary application

Other application

C 284 | D 1 | C 568 | C 591 | C 621 | C 635

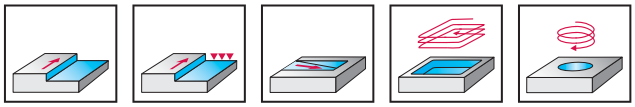
Shoulder milling cutter
F4042

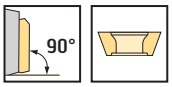
AD . T1204 .. R
Xtra·tec®



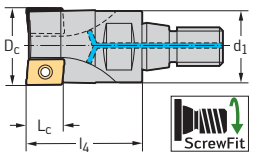
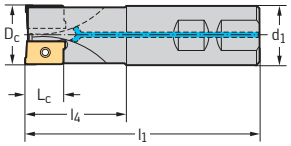
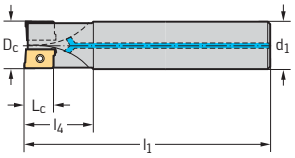
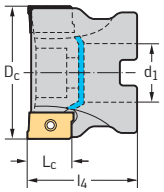
C 2

– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4042	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	F4042.T18.022.Z02.11	22	T18	30	11,7		2	0,07	2	
	F4042.T22.025.Z03.11	25	T22	35	11,7		3	0,11	3	
	F4042.T28.032.Z03.11	32	T28	40	11,7		3	0,20	3	
	F4042.T28.032.Z04.11	32	T28	40	11,7		4	0,21	4	
	F4042.T36.040.Z03.11	40	T36	40	11,7		3	0,36	3	AD . T1204 .. R
	F4042.T36.040.Z04.11	40	T36	40	11,7		4	0,35	4	
	F4042.T36.040.Z05.11	40	T36	40	11,7		5	0,36	5	
	F4042.T45.050.Z04.11	50	T45	40	11,7		4	0,51	4	
	F4042.T45.050.Z06.11	50	T45	40	11,7		6	0,53	6	
Shank DIN 1835 B 	F4042.W25.025.Z02.11	25	25	43	11,7	100	2	0,34	2	
	F4042.W25.025.Z03.11	25	25	43	11,7	100	3	0,33	3	
	F4042.W32.032.Z02.11	32	32	49	11,7	110	2	0,59	2	
	F4042.W32.032.Z03.11	32	32	49	11,7	110	3	0,07	3	
	F4042.W32.032.Z04.11	32	32	49	11,7	110	4	0,57	4	AD . T1204 .. R
	F4042.W40.040.Z03.11	40	40	49	11,7	120	3	1,05	3	
	F4042.W40.040.Z04.11	40	40	49	11,7	120	4	1,04	4	
	F4042.W32.040.Z05.11	40	32	49	11,7	110	5	0,7	5	
Parallel shank 	F4042.Z20.022.Z02.11	22	20	38	11,7	200	2	0,46	2	
	F4042.Z25.025.Z02.11	25	25	38	11,7	200	2	0,74	2	
	F4042.Z25.025.Z03.11	25	25	38	11,7	200	3	0,73	3	
	F4042.Z32.032.Z03.11	32	32	39	11,7	250	3	1,47	3	AD . T1204 .. R
	F4042.Z32.032.Z04.11	32	32	39	11,7	250	4	1,46	4	
	F4042.Z40.040.Z04.11	40	40	44	11,7	250	4	2,33	4	
	F4042.Z32.040.Z05.11	40	32	44	11,7	250	5	1,6	5	
Cylindrical bore DIN 138 transverse keyway 	F4042.B16.040.Z03.11	40	16	40	11,7		3	0,20	3	
	F4042.B16.040.Z04.11	40	16	40	11,7		4	0,40	4	
	F4042.B16.040.Z05.11	40	16	40	11,7		5	0,40	5	
	F4042.B22.050.Z03.11	50	22	40	11,7		3	0,53	3	
	F4042.B22.050.Z04.11	50	22	40	11,7		4	0,54	4	
	F4042.B22.050.Z06.11	50	22	40	11,7		6	0,53	6	
	F4042.B22.063.Z04.11	63	22	40	11,7		4	0,82	4	
	F4042.B27.063.Z04.11	63	27	50	11,7		4	0,93	4	AD . T1204 .. R
	F4042.B22.063.Z05.11	63	22	40	11,7		5	0,78	5	
	F4042.B27.063.Z05.11	63	27	50	11,7		5	0,74	5	
	F4042.B22.063.Z07.11	63	22	40	11,7		7	0,79	7	
	F4042.B27.063.Z07.11	63	27	50	11,7		7	0,75	7	
	F4042.B27.080.Z05.11	80	27	50	11,7		5	1,31	5	
	F4042.B27.080.Z06.11	80	27	50	11,7		6	1,12	6	
	F4042.B27.080.Z08.11	80	27	50	11,7		8	1,31	8	

Balanced construction
Bodies and assembly parts are included in the scope of delivery.

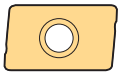
Assembly parts

	D_c [mm]	22–25	32–80
	Clamping screw for indexable insert Tightening torque	FS1456 (Torx 9IP) 2,0 Nm	FS1457 (Torx 9IP) 2,0 Nm

Accessories

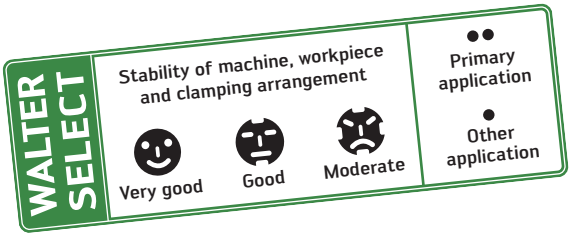
	D_c [mm]	22–80
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2013 (Torx 9IP)
	Screwdriver	FS1484 (Torx 9IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADGT120416R-D67	1,6	1			●			○		○									○		○	
	ADGT120430R-D67	3	0,8				●		○			●								○			●
	ADGT120430R-F56	3	0,8			●					○											○	
	ADGT120440R-F56	4	0,4			●					○											○	
	ADGT1204PER-D51	0,8	1,2	○	○	●					○				○	●						○	
	ADGT1204PER-D56	0,8	1,2	○	○	●					○			○	○	●						○	
	ADGT1204PER-D67	0,8	1,2		○	●		○			○					●			○			○	
	ADGT1204PER-F56	0,8	1,2			●		○			○								○			○	
	ADGT1204PER-G77	0,8	1,2			○			○		○									○		○	
	ADHT120416R-G88	1,6	1														○	○					
	ADHT120425R-G88	2,5	0,8															○					
	ADHT120430R-G88	3	0,8														○	○					
	ADHT120440R-G88	4	0,4															○					
	ADHT1204PER-G88	0,8	1,2														○	○					
	ADKT1204PER-F56	0,8	1,2	○	○	●					○		○		○	●						○	
	ADMT120408R-D56	0,8	1,2	○	○	●					○		○	○	○	●						○	
	ADMT120408R-F56	0,8	1,2	○	○	●	●	○	○	●	○	●	○	○	○	●			○	○	●	○	●
	ADMT120408R-G56	0,8	1,2		○	○		○			○					○			○			○	
	ADMT120412R-F56	1,2	1,2		○	●		○		●	○					●			○		●	○	
	ADMT120416R-F56	1,6	1		○	●	●	○	○	●	○	●				●			○	○	●	○	●
	ADMT120420R-F56	2	1		○	●		○	○	●	○					●			○	○	●	○	
	ADMT120425R-F56	2,5	0,8		○		●	○				●				●			○				●
	ADMT120430R-F56	3	0,8		○	●		○	○	●	○					●			○	○	●	○	
	ADMT120432R-F56	3,2	0,8		○	●		○		●	○					●			○		●	○	
	ADMT120440R-F56	4	0,4		○	●	●	○	○	●	○	●				●			○	○	●	○	●

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm

HC = Coated carbide
HW = Uncoated carbide



C 284 D 1 C 568 C 591 C 621 C 635

Shoulder milling cutter
F4042

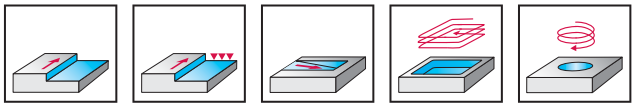
AD .. 1606 .. R
Xtra·tec®

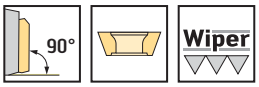




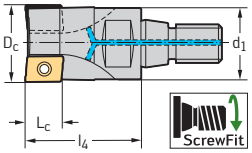
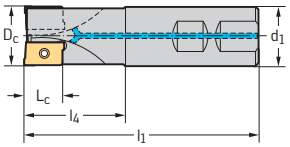
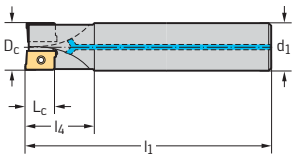
C 2

– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4042	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	F4042.T28.032.Z03.15	32	T28	40	15		3	0,18	3	AD .. 1606 .. R
	F4042.T28.036.Z03.15	36	T28	40	15		3	0,23	3	
	F4042.T36.040.Z03.15	40	T36	40	15		3	0,32	3	
	F4042.T36.040.Z04.15	40	T36	40	15		4	0,32	4	
	F4042.T36.044.Z03.15	44	T36	40	15		3	0,36	3	
	F4042.T45.050.Z03.15	50	T45	40	15		3	0,48	3	
	F4042.T45.050.Z05.15	50	T45	40	15		5	0,48	5	
Shank DIN 1835 B 	F4042.W25.025.Z02.15	25	25	43	15	100	2	0,32	2	AD .. 1606 .. R
	F4042.W32.032.Z03.15	32	32	49	15	110	3	0,57	3	
Parallel shank 	F4042.Z25.025.Z02.15	25	25	38	15	200	2	0,69	2	AD .. 1606 .. R
	F4042.Z32.032.Z03.15	32	32	38	15	250	3	1,46	3	

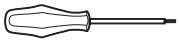
Balanced construction
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

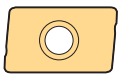
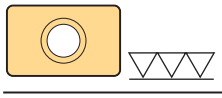
	D_c [mm]	25	32–50
	Clamping screw for indexable insert Tightening torque	FS2080 (Torx 15IP) 2,5 Nm	FS1453 (Torx 15IP) 3,5 Nm

C 2

Accessories

	D_c [mm]	25–50
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45	H HC WHH15	O HC WXM15
	ADGT160616R-D67	1,6	1			●			○		●											●			
	ADGT160616R-F56	1,6	1,4			●					●											●			
	ADGT160620R-F56	2	1,4			●					●											●			
	ADGT160630R-D67	3	0,8			●			○		●								○			●			
	ADGT160632R-F56	3,2	1,2			●					●											●			
	ADGT160640R-F56	4	1			●					●											●			
	ADGT1606PER-D51	0,8	1,6	◐	○	●					●				○	●						●			
	ADGT1606PER-D56	0,8	1,6	◐	○	●					●			○	○	●						●			
	ADGT1606PER-D67	0,8	1,6		○	●		○			●					●			○			●			
	ADGT1606PER-F56	0,8	1,6			●		○			●								○			●			
	ADGT1606PER-G77	0,8	1,2			○			◐		○									◐		○			
	ADHT160616R-G88	1,6	1,4														◐	◐							
	ADHT160625R-G88	2,5	1,2															◐							
	ADHT160630R-G88	3	1,2															◐							
	ADHT160640R-G88	4	1															◐							
	ADHT1606PER-G88	0,8	1,6														◐	◐							
	ADKT1606PER-F56	0,8	1,6	◐	○	●					●		◐		○	●						●			
	ADMT160608R-D56	0,8	1,6	◐	○	●					●		◐	○	○	●						●			
	ADMT160608R-F56	0,8	1,6	◐	○	●	●	○	○	●	●	●	◐	○	○	●			○	○	●	●	●		
	ADMT160608R-G56	0,8	1,6		◐	○		○			○					○			○			○			
	ADMT160612R-F56	1,2	1,6		○	●		○		●	●					●			○		●	●			
	ADMT160616R-F56	1,6	1,4		○	●	●	○		●	●	●				●			○		●	●	●		
	ADMT160620R-F56	2	1,4		○	●		○	○	●	●					●			○	○	●	●			
	ADMT160625R-F56	2,5	1,2		○	●		○			●					●			○			●			
	ADMT160630R-F56	3	1,2		○	●		○		●	●					●			○		●	●			
	ADMT160632R-F56	3,2	1,2		○	●		○		●	●					●			○		●	●			
	ADMT160640R-F56	4	1		○	●	●	○	○	●	●	●				●			○	○	●	●	●		
	ADMT160650R-F56	5			○	●		○		●	●					●			○		●	●			
	ADMT160660R-F56	6			○	●	●	○	○	●	●	●				●			○	○	●	●	●		
	ADGT160612R-F56	1,2	1,6			●			○		●									○		●			
	ADGT160650R-F56	5	0,4			●			○		●									○		●			
	ADGX1606PER-F56	0,8	8										◐											◐	◐

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm
ADGX1606PER-F56 wiper insert only in combination with ADGT1606PER-F56, ADGT1606PER-D67 or ADGT1606PER-G77

HC = Coated carbide
HW = Uncoated carbide

C 284 D 1 C 568 C 591 C 621 C 635

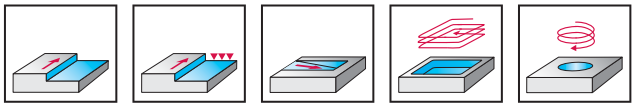
Shoulder milling cutters
F4042

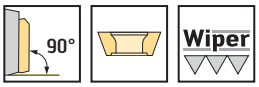
AD .. 1606 .. R
Xtra·tec®



C 2

– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4042	●●	●●	●●	●●	●●	●	●

Tool

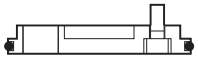
Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway									
F4042.B16.040.Z03.15	40	16	40	15		3	0,39	3	
F4042.B16.040.Z04.15	40	16	40	15		4	0,38	4	
F4042.B16.044.Z03.15	44	16	40	15		3	0,26	3	
F4042.B22.050.Z03.15	50	22	40	15		3	0,50	3	
F4042.B22.050.Z05.15	50	22	40	15		5	0,50	5	
F4042.B22.054.Z03.15	54	22	40	15		3	0,40	3	
F4042.B22.063.Z04.15	63	22	40	15		4	0,75	4	
F4042.B27.063.Z04.15	63	27	50	15		4	0,70	4	
F4042.B22.063.Z06.15	63	22	40	15		6	0,78	6	
F4042.B27.063.Z06.15	63	27	50	15		6	0,89	6	AD .. 1606 .. R
F4042.B27.066.Z04.15	66	27	50	15		4	0,80	4	
F4042.B27.080.Z05.15	80	27	50	15		5	1,04	5	
F4042.B27.080.Z07.15	80	27	50	15		7	1,24	7	
F4042.B27.084.Z05.15	84	27	50	15		5	1,19	5	
F4042.B32.100.Z05.15	100	32	50	15		5	2,39	5	
F4042.B32.100.Z08.15	100	32	50	15		8	2,51	8	
F4042.B40.125.Z07.15	125	40	63	15		7	3,93	7	
F4042.B40.125.Z10.15	125	40	63	15		10	4,25	10	
Cylindrical bore DIN 138 transverse keyway									
F4042.B40.160.Z08.15	160	40/40 B	63	15		8	4,84	8	AD .. 1606 .. R
F4042.B40.160.Z12.15	160	40/40 B	63	15		12	5,02	12	

Balanced construction
Bodies and assembly parts are included in the scope of delivery.

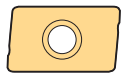
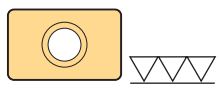
Assembly parts

D_c [mm]	40–160
Clamping screw for indexable insert	FS1453 (Torx 15IP)
Tightening torque	3,5 Nm

Accessories

	D_c [mm]	40–125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Sealing disc (gasket + screws)		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45	H HC WHH15	O HC WXM15
	ADGT160616R-D67	1,6	1			●			●		●											●			
	ADGT160616R-F56	1,6	1,4			●					●											●			
	ADGT160620R-F56	2	1,4			●					●											●			
	ADGT160630R-D67	3	0,8			●			●		●											●			
	ADGT160632R-F56	3,2	1,2			●					●											●			
	ADGT160640R-F56	4	1			●					●											●			
	ADGT1606PER-D51	0,8	1,6	◐	◐	●					●				◐	●						●			
	ADGT1606PER-D56	0,8	1,6	◐	◐	●					●			◐	◐	●						●			
	ADGT1606PER-D67	0,8	1,6		◐	●		◐			●					●			◐			●			
	ADGT1606PER-F56	0,8	1,6			●		◐			●								◐			●			
	ADGT1606PER-G77	0,8	1,2			◐			◐		◐									◐		◐			
	ADHT160616R-G88	1,6	1,4														◐	◐							
	ADHT160625R-G88	2,5	1,2															◐							
	ADHT160630R-G88	3	1,2															◐							
	ADHT160640R-G88	4	1															◐							
	ADHT1606PER-G88	0,8	1,6														◐	◐							
	ADKT1606PER-F56	0,8	1,6	◐	◐	●					●		◐		◐	●						●			
	ADMT160608R-D56	0,8	1,6	◐	◐	●					●		◐	◐	◐	●						●			
	ADMT160608R-F56	0,8	1,6	◐	◐	●	●	◐	◐	●	●	●	◐	◐	◐	●			◐	◐	●	●	●		
	ADMT160608R-G56	0,8	1,6		◐	◐		◐			◐					●			◐			◐			
	ADMT160612R-F56	1,2	1,6		◐	●		◐		●	●					●			◐		●	●			
	ADMT160616R-F56	1,6	1,4		◐	●	●	◐		●	●	●				●			◐		●	●	●		
	ADMT160620R-F56	2	1,4		◐	●		◐	◐	●	●					●			◐	◐	●	●			
	ADMT160625R-F56	2,5	1,2		◐	●		◐			●					●			◐			●			
	ADMT160630R-F56	3	1,2		◐	●		◐		●	●					●			◐		●	●			
	ADMT160632R-F56	3,2	1,2		◐	●		◐		●	●					●			◐		●	●			
	ADMT160640R-F56	4	1		◐	●	●	◐	◐	●	●	●				●			◐	◐	●	●	●		
	ADMT160650R-F56	5			◐	●		◐		●	●					●			◐		●	●			
	ADMT160660R-F56	6			◐	●	●	◐	◐	●	●	●				●			◐	◐	●	●	●		
	ADGT160612R-F56	1,2	1,6			●			◐		●									◐		●			
	ADGT160650R-F56	5	0,4			●			◐		●									◐		●			
	ADGX1606PER-F56	0,8	8										◐											◐	◐

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)}$ - 1 mm
ADGX1606PER-F56 wiper insert only in combination with ADGT1606PER-F56, ADGT1606PER-D67 or ADGT1606PER-G77

HC = Coated carbide
HW = Uncoated carbide

C 284 D 1 C 568 C 591 C 621 C 635

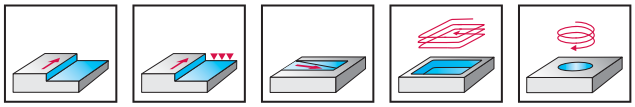
Shoulder milling cutters
F4042

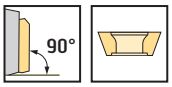
AD . T1807 .. R
Xtra·tec®



C 2

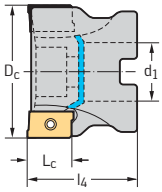
– Two cutting edges per indexable insert

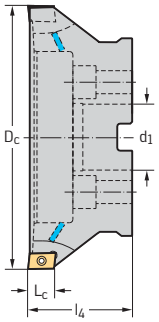




	P	M	K	N	S	H	O
F4042	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F4042.B27.063.Z05.16	63	27	50	16,7	5	0,62	5	
	F4042.B27.080.Z05.16	80	27	50	16,7	5	0,09	5	
	F4042.B27.080.Z06.16	80	27	50	16,7	6	1,14	6	AD . T1807 .. R
	F4042.B32.100.Z07.16	100	32	50	16,7	7	2,55	7	
	F4042.B40.125.Z08.16	125	40	63	16,7	8	4,04	8	
Cylindrical bore DIN 138 transverse keyway	F4042.B40.160.Z10.16	160	40/40 B	63	16,7	10	4,99	10	AD . T1807 .. R





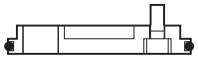
Balanced construction
Bodies and assembly parts are included in the scope of delivery.

C 2

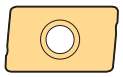
Assembly parts

	D_c [mm]	63–160
	Clamping screw for indexable insert Tightening torque	FS1495 (Torx 20IP) 5,0 Nm

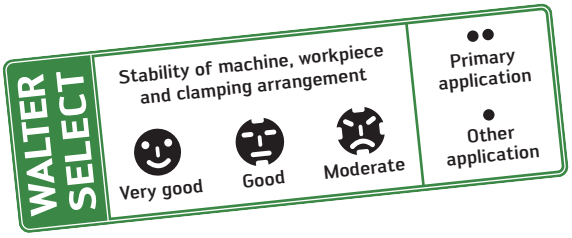
Accessories

	D_c [mm]	63–125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2015 (Torx 20IP)	FS2015 (Torx 20IP)
	Screwdriver	FS1486 (Torx 20IP)	FS1486 (Torx 20IP)
	Sealing disc (gasket + screws)		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	ADGT1807PER-D51	1,2	1,8	●	●	●		●			●	●		●
	ADGT1807PER-D56	1,2	1,8	●	●	●		●			●	●		●
	ADMT180712R-D56	1,2	1,8	●	●	●		●		●	●	●		●
	ADMT180712R-F56	1,2	1,8	●	●	●		●		●	●	●		●

HC = Coated carbide



C 284 D 1 C 568 C 591 C 621

Shoulder milling cutters
F5041

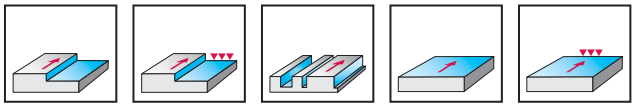
LNH . 0904 .. R
Walter BLAXX

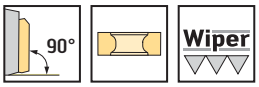




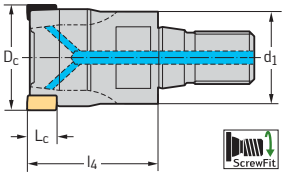
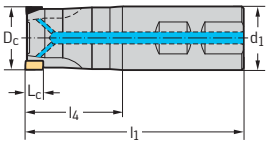
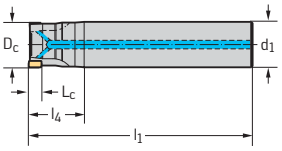
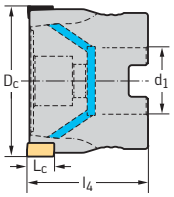
C 2

– Tangential indexable insert arrangement
– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
F5041	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	F5041.T22.025.Z03.08	25	T22	35	8		3	0,12	3	LNH . 0904 .. R
	F5041.T22.025.Z04.08	25	T22	35	8		4	0,12	4	
	F5041.T28.032.Z04.08	32	T28	40	8		4	0,22	4	
	F5041.T28.032.Z05.08	32	T28	40	8		5	0,22	5	
Shank DIN 1835 B 	F5041.W25.025.Z03.08	25	25	43	8	100	3	0,34	3	LNH . 0904 .. R
	F5041.W25.025.Z04.08	25	25	43	8	100	4	0,34	4	
	F5041.W32.032.Z04.08	32	32	49	8	110	4	0,61	4	
	F5041.W32.032.Z05.08	32	32	49	8	110	5	0,61	5	
	F5041.W32.040.Z04.08	40	32	49	8	110	4	0,70	4	
	F5041.W32.040.Z06.08	40	32	49	8	110	6	0,79	6	
Parallel shank 	F5041.Z25.025.Z03.08	25	25	38	8	200	3	0,79	3	LNH . 0904 .. R
	F5041.Z25.025.Z04.08	25	25	38	8	200	4	0,74	4	
	F5041.Z32.032.Z04.08	32	32	39	8	250	4	1,53	4	
	F5041.Z32.032.Z05.08	32	32	39	8	250	5	1,53	5	
Cylindrical bore DIN 138 transverse keyway 	F5041.B16.040.Z04.08	40	16	40	8		4	0,45	4	LNH . 0904 .. R
	F5041.B16.040.Z06.08	40	16	40	8		6	0,44	6	
	F5041.B22.050.Z05.08	50	22	40	8		5	0,57	5	
	F5041.B22.050.Z07.08	50	22	40	8		7	0,60	7	
	F5041.B22.063.Z07.08	63	22	40	8		7	0,84	7	
	F5041.B22.063.Z10.08	63	22	40	8		10	0,82	10	

Balanced construction
Bodies and assembly parts are included in the scope of delivery.

C 2

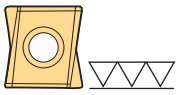
Assembly parts

	D_c [mm]	25–63
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm

Accessories

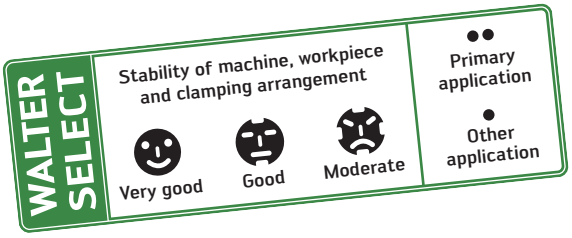
	D_c [mm]	25–63
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2013 (Torx 9IP)
	Screwdriver	FS1484 (Torx 9IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	LNHU090404R-L55T	0,4	1,5	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹		
	LNHU090404R-L65T	0,4	1,5			☹		☹								☹		
	LNHU090404R-L85T	0,4	1,5										☺	☺				
	LNHU090408R-L55T	0,8	1,1	☺	😐	☹	😐	☹		😐	😐	☹			😐	☹		
	LNHU090412R-L55T	1,2	0,8		😐	☹	😐	☹				☹			😐	☹		
	LNHU090416R-L55T	1,6			😐	☹	😐	☹				☹			😐	☹		
	LNHU090420R-L55T	2			😐	☹	😐	☹				☹			😐	☹		
	LNHX0904PDR-L55T	0,4	3,5						☺								☺	☺

LNHX0904PDR-L55T wiper insert only in combination with LNHU090404R-L55T . .

HC = Coated carbide
HW = Uncoated carbide



C 328 D 1 C 568 C 591 C 621 C 635

Shoulder milling cutters
F5141

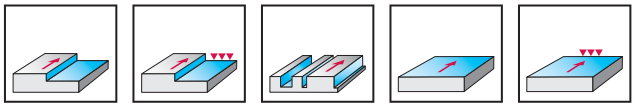
LNH . 1306 .. R
Walter BLAXX

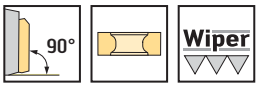




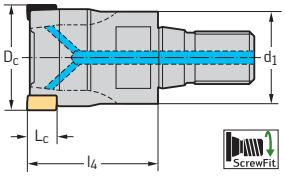
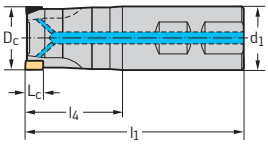
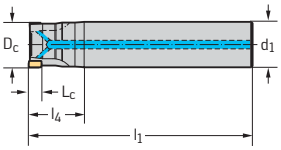
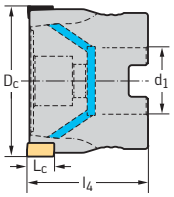
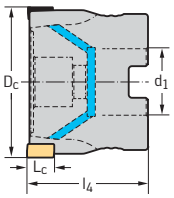
C 2

– Tangential indexable insert arrangement
– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
F5141	●●	●●	●●	●●	●●	●	●

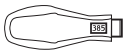
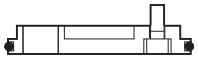
Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	F5141.T36.040.Z05.12	40	T36	40	12		5	0,36	5	LNH . 1306 .. R
	F5141.T45.050.Z06.12	50	T45	40	12		6	0,51	6	
Shank DIN 1835 B 	F5141.W32.040.Z03.12	40	32	49	12	110	3	0,69	3	LNH . 1306 .. R
	F5141.W32.040.Z05.12	40	32	49	12	110	5	0,74	5	
Parallel shank 	F5141.Z32.040.Z03.12	40	32	44	12	250	3	1,57	3	LNH . 1306 .. R
	F5141.Z32.040.Z05.12	40	32	44	12	250	5	1,57	5	
Cylindrical bore DIN 138 transverse keyway 	F5141.B16.040.Z04.12	40	16	40	12		4	0,41	4	LNH . 1306 .. R
	F5141.B16.040.Z05.12	40	16	40	12		5	0,42	5	
	F5141.B22.050.Z05.12	50	22	40	12		5	0,54	5	
	F5141.B22.050.Z06.12	50	22	40	12		6	0,42	6	
	F5141.B22.063.Z06.12	63	22	40	12		6	0,80	6	
	F5141.B22.063.Z08.12	63	22	40	12		8	0,79	8	
	F5141.B27.080.Z07.12	80	27	50	12		7	1,29	7	
	F5141.B27.080.Z10.12	80	27	50	12		10	1,27	10	
	F5141.B32.100.Z09.12	100	32	50	12		9	2,72	9	
	F5141.B32.100.Z13.12	100	32	50	12		13	2,68	13	
	F5141.B40.125.Z11.12	125	40	63	12		11	4,3	11	
	F5141.B40.125.Z16.12	125	40	63	12		16	4,35	16	
Cylindrical bore DIN 138 transverse keyway 	F5141.B40.160.Z13.12	160	40/40 B	63	12		13	5,38	13	LNH . 1306 .. R
	F5141.B40.160.Z18.12	160	40/40 B	63	12		18	5,40	18	

Balanced construction
Bodies and assembly parts are included in the scope of delivery.

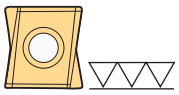
Assembly parts

	D_c [mm]	40–160
	Clamping screw for insert Tightening torque	FS2081 (Torx 15IP) 4,0 Nm

Accessories

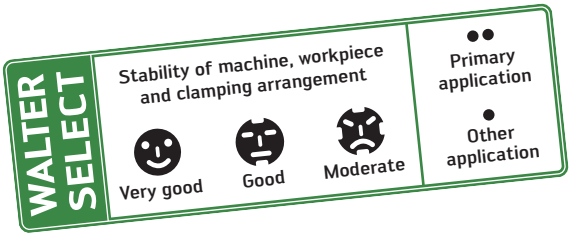
	D_c [mm]	40–125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	Sealing disc (gasket + screws)		FS936 COMPLETE SET
	Gasket		O-R 96X4

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HC WXM15
	LNHU130608R-L55T	0,8	2,2	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹		
	LNHU130608R-L65T	0,8	2,2			☹		☹								☹		
	LNHU130608R-L85T	0,8	2,2										☺	☺				
	LNHU130612R-L55T	1,2	1,9		😐	☹	😐	☹				☹			😐	☹		
	LNHU130616R-L55T	1,6	1,5		😐	☹	😐	☹				☹			😐	☹		
	LNHU130620R-L55T	2	1,2		😐	☹	😐	☹				☹			😐	☹		
	LNHU130625R-L55T	2,5	0,7		😐	☹	😐	☹				☹			😐	☹		
	LNHU130630R-L55T	3			😐	☹	😐	☹				☹			😐	☹		
	LNHU130632R-L55T	3,2			😐	☹	😐	☹				☹			😐	☹		
	LNHX130608R-L55T	0,8	2,2						☺								☺	☺
	LNHX1306PDR-L55T	0,6	5						☺								☺	☺

LNHX130608R-L55T wiper insert only in combination with LNHU130608R-L55T . .
LNHX1306PDR-L55T wiper insert only in combination with LNHU130608R-L55T . .

HC = Coated carbide
HW = Uncoated carbide



C 328 D 1 C 568 C 591 C 621 C 635

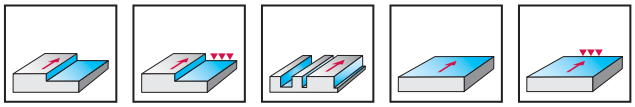
Shoulder milling cutters
F5241

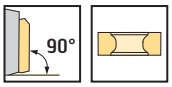
LNHU1607 .. R
Walter BLAXX



C 2

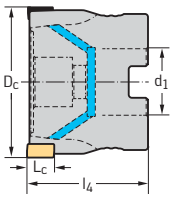
– Tangential indexable insert arrangement
– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
F5241	●●	●●	●●	●●	●●	●	●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F5241.B22.050.Z03.15	50	22	40	15	3	0,52	3	LNHU1607 .. R
	F5241.B22.050.Z05.15	50	22	40	15	5	0,52	5	
	F5241.B22.063.Z04.15	63	22	40	15	4	0,74	4	
	F5241.B22.063.Z06.15	63	22	40	15	6	0,76	6	
	F5241.B27.080.Z05.15	80	27	50	15	5	1,21	5	
	F5241.B27.080.Z07.15	80	27	50	15	7	1,27	7	
	F5241.B32.100.Z06.15	100	32	50	15	6	2,52	6	
	F5241.B32.100.Z08.15	100	32	50	15	8	2,61	8	
	F5241.B40.125.Z07.15	125	40	63	15	7	4,11	7	
	F5241.B40.125.Z10.15	125	40	63	15	10	4,21	10	
	F5241.B40.160.Z08.15	160	40/40 B	63	15	8	5,29	8	
	F5241.B40.160.Z12.15	160	40/40 B	63	15	12	5,4	12	



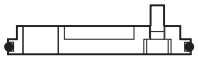
Balanced construction
Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	D_c [mm]	50	63–160
	Clamping screw for indexable insert Tightening torque	FS1495 (Torx 20IP) 5,0 Nm	FS2112 (Torx 20IP) 5,0 Nm

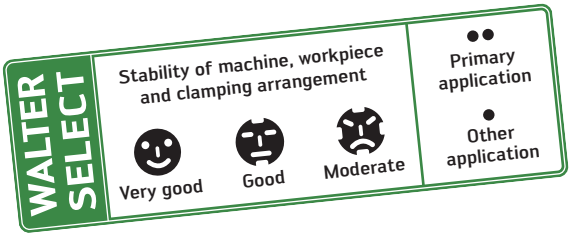
Accessories

	D_c [mm]	50–125	160
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2015 (Torx 20IP)	FS2015 (Torx 20IP)
	Screwdriver	FS1486 (Torx 20IP)	FS1486 (Torx 20IP)
	Gasket		O-R 96X4
	Sealing disc set, complete		FS936 COMPLETE SET

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	LNHU160708R-L55T	0,8	2,3	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹
	LNHU160708R-L65T	0,8	2,3			☹		☹								☹
	LNHU160708R-L85T	0,8	2,3										☺	☺		
	LNHU160712R-L55T	1,2	1,9		😐	☹	😐	☹				☹			😐	☹
	LNHU160716R-L55T	1,6	1,6		😐	☹	😐	☹				☹			😐	☹
	LNHU160720R-L55T	2	1,2		😐	☹	😐	☹				☹			😐	☹
	LNHU160725R-L55T	2,5	0,8		😐	☹	😐	☹				☹			😐	☹

HC = Coated carbide
HW = Uncoated carbide



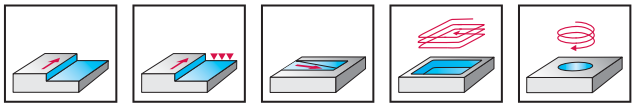
C 328 D 1 C 568 C 591 C 621

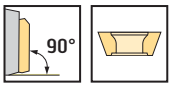
Ramping milling cutter
M2131



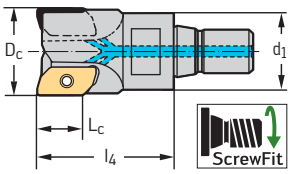
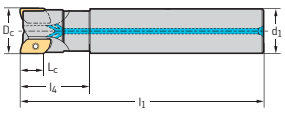
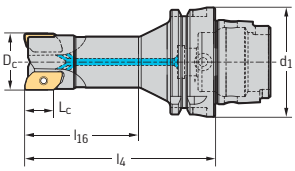
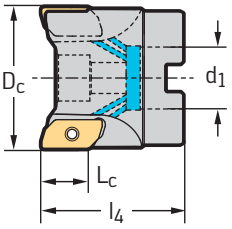
C 2

– For pocket machining
– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
M2131				●●			●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_{16} mm	l_1 mm	L_c mm	Z	kg	No. of index-able inserts	Type
ScrewFit 	M2131-025-T22-02-15	25	T22	45			15	2	0,1	2	ZDGT1504 .. R
	M2131-032-T28-02-15	32	T28	50			15	2	0,2	2	
	M2131-032-T28-02-20	32	T28	50			20	2	0,2	2	ZDGT2005 .. R
	M2131-032-T28-03-15	32	T28	50			15	3	0,2	3	ZDGT1504 .. R
	M2131-040-T36-02-20	40	T36	50			20	2	0,4	2	ZDGT2005 .. R
	M2131-040-T36-03-15	40	T36	50			15	3	0,4	3	ZDGT1504 .. R
Parallel shank 	M2131-025-A20-02-15-S	25	20	40		110	15	2	0,3	2	ZDGT1504 .. R
	M2131-025-A25-02-15-L	25	25	40		150	15	2	0,5	2	
	M2131-032-A20-02-15-S	32	20	40		110	15	2	0,3	2	
	M2131-032-A20-03-15-S	32	20	40		110	15	3	0,3	3	
	M2131-032-A25-02-15-L	32	25	40		175	15	2	0,6	2	
	M2131-032-A25-03-15-L	32	25	40		175	15	3	0,6	3	
	M2131-032-A25-02-20-L	32	25	40		175	20	2	0,6	2	ZDGT2005 .. R
	M2131-032-A32-02-15-L	32	32	50		175	15	2	1,0	2	ZDGT1504 .. R
	M2131-032-A32-02-20-L	32	32	50		175	20	2	0,9	2	ZDGT2005 .. R
	M2131-032-A32-03-15-L	32	32	50		175	15	3	1,0	3	ZDGT1504 .. R
	M2131-040-A32-02-20-L	40	32	50		175	20	2	1,0	2	ZDGT2005 .. R
	M2131-040-A32-03-15-L	40	32	50		175	15	3	1,1	3	ZDGT1504 .. R
HSK DIN 69893/1-A 	M2131-025-H63-02-15	25	HSK-A63	110	60		15	2	1,0	2	ZDGT1504 .. R
	M2131-032-H63-02-15	32	HSK-A63	110	65		15	2	1,1	2	
	M2131-040-H63-02-20	40	HSK-A63	110	65		20	2	1,3	2	ZDGT2005 .. R
	M2131-050-H63-04-15	50	HSK-A63	110	80		15	4	1,5	4	ZDGT1504 .. R
	M2131-050-H63-03-20	50	HSK-A63	110	80		20	3	1,4	3	ZDGT2005 .. R
	M2131-050-H80-04-15-D	50	HSK-A80/A63	110	80		15	4	1,9	4	ZDGT1504 .. R
	M2131-050-H80-03-20-D	50	HSK-A80/A63	110	80		20	3	1,9	3	ZDGT2005 .. R
	M2131-063-H63-04-20	63	HSK-A63	110	80		20	4	1,7	4	
	M2131-063-H63-05-15	63	HSK-A63	110	80		15	5	1,7	5	ZDGT1504 .. R
Cylindrical bore DIN 138 transverse keyway 	M2131-040-B16-03-15	40	16	50			15	3	0,3	3	ZDGT1504 .. R
	M2131-050-B22-03-20	50	22	60			20	3	0,5	3	ZDGT2005 .. R
	M2131-050-B22-04-15	50	22	50			15	4	0,4	4	ZDGT1504 .. R
	M2131-063-B22-04-20	63	22	50			20	4	0,5	4	ZDGT2005 .. R
	M2131-063-B22-05-15	63	22	50			15	5	0,6	5	ZDGT1504 .. R
	M2131-080-B27-05-15	80	27	60			15	5	1,4	5	

Pre-balanced tools
For information on high-speed applications, see “Technical information/Information on high-speed applications”
Tools with HSK have a residual imbalance of 3 gmm – with chip hole, without chip
M2131-...-D special interface for Dörries Scharmann (similar to HSK-A DIN 69893)
For HSK accessories, see “Assembly parts and accessories/Transfer units for HSK”
For tools with locating bores, use longer fastening bolts in accordance with ISO 4762, see “Assembly parts and accessories/Other”
Bodies and assembly parts are included in the scope of delivery.

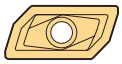
Assembly parts

	Type D_c [mm]	ZDGT1504 .. R 25–32	ZDGT1504 .. R 40–80	ZDGT2005 .. R 32	ZDGT2005 .. R 40–63
	Clamping screw for indexable insert Tightening torque	FS1222 (Torx 15IP) 3,5 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS2139 (Torx 20IP) 5,0 Nm	FS2281 (Torx 20IP) 5,0 Nm

Accessories

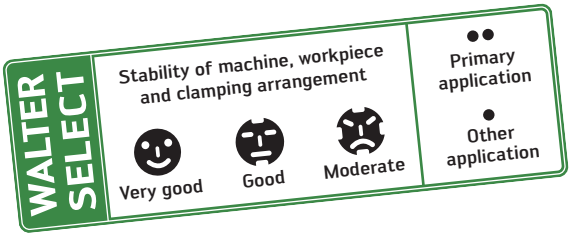
	Type	ZDGT1504 .. R	ZDGT2005 .. R
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)
	Screwdriver	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)

Indexable inserts

	Designation	r mm	b mm	P HC			M HC		K HC				N HC		N HW	S HC		O HF
				WKP25S	WKP35S	WSP45S	WSM35S	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WNN15	WK10	WSM35S	WSP45S	WMG40
	ZDGT150404R-K85	0,4	1,2										☺	☺	☺			☺
	ZDGT150408R-K85	0,8	1,2										☺	☺	☺			☺
	ZDGT150412R-K85	1,2	1,2										☺	☺	☺			☺
	ZDGT150416R-K85	1,6	1,2										☺	☺	☺			☺
	ZDGT150420R-K85	2	1,2										☺	☺	☺			☺
	ZDGT150425R-K85	2,5	1,2										☺	☺	☺			☺
	ZDGT150430R-K85	3	1,2										☺	☺	☺			☺
	ZDGT150440R-K85	4	1,2										☺	☺	☺			☺
	ZDGT200508R-K85	0,8	1,2											☺	☺			☺
	ZDGT200512R-K85	1,2	1,2											☺	☺			☺
	ZDGT200516R-K85	1,6	1,2											☺	☺			☺
	ZDGT200520R-K85	2	1,2											☺	☺			☺
	ZDGT200530R-K85	3	1,2											☺	☺			☺
	ZDGT200540R-K85	4	1,2											☺	☺			☺
	ZDGT200550R-K85	5	1,2											☺	☺			☺
	ZDGT200560R-K85	6	1,2											☺	☺			☺
	ZDGT200564R-K85	6,4	1,2											☺	☺			☺

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide



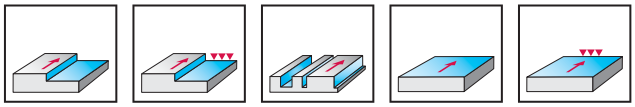
C 308 D 1 C 568 C 591 C 658 C 634

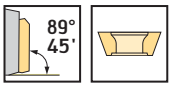
Shoulder milling cutters
M4132



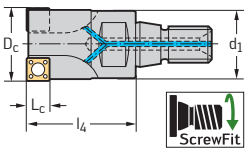
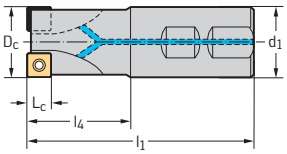
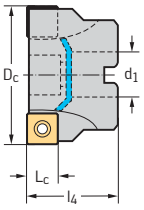
C 2

– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
M4132	●●	●●	●●		●●	●	

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	M4132-016-T14-02-06	16	T14	25	5,6		2	0,03	2	
	M4132-020-T18-02-06	20	T18	30	5,6		2	0,07	2	SD .. 06T2 ..
	M4132-020-T18-03-06	20	T18	30	5,6		3	0,07	3	
	M4132-025-T22-02-09	25	T22	35	8,4		2	0,12	2	SD .. 09T3 ..
	M4132-025-T22-03-06	25	T22	35	5,6		3	0,11	3	SD .. 06T2 ..
	M4132-025-T22-04-06	25	T22	35	5,6		4	0,13	4	
	M4132-032-T28-02-09	32	T28	40	8,4		2	0,22	2	
	M4132-032-T28-03-09	32	T28	40	8,4		3	0,21	3	
	M4132-040-T36-03-09	40	T36	40	8,4		3	0,23	3	
	M4132-040-T36-04-09	40	T36	40	8,4		4	0,36	4	SD .. 09T3 ..
	M4132-050-T45-04-09	50	T45	40	8,4		4	0,37	4	
	M4132-050-T45-06-09	50	T45	40	8,4		6	0,37	6	
Shank DIN 1835 B 	M4132-016-W16-02-06	16	16	31	5,6	80	2	0,12	2	
	M4132-020-W20-02-06	20	20	39	5,6	90	2	0,20	2	SD .. 06T2 ..
	M4132-020-W20-03-06	20	20	39	5,6	90	3	0,20	3	
	M4132-025-W25-02-09	25	25	43	8,4	100	2	0,35	2	SD .. 09T3 ..
	M4132-025-W25-03-06	25	25	43	5,6	100	3	0,35	3	SD .. 06T2 ..
	M4132-025-W25-04-06	25	25	43	5,6	100	4	0,33	4	
	M4132-032-W32-02-09	32	32	49	8,4	110	2	0,61	2	
	M4132-032-W32-03-09	32	32	49	8,4	110	3	0,49	3	
	M4132-040-W40-03-09	40	40	49	8,4	120	3	1,08	3	SD .. 09T3 ..
	M4132-040-W40-04-09	40	40	49	8,4	120	4	1,05	4	
Cylindrical bore DIN 138 transverse keyway 	M4132-040-B16-04-09	40	16	40	8,4		4	0,22	4	
	M4132-040-B16-05-09	40	16	40	8,4		5	0,22	5	SD .. 09T3 ..
	M4132-050-B22-04-09	50	22	40	8,4		4	0,35	4	
	M4132-050-B22-04-12	50	22	40	11,6		4	0,26	4	SD .. 1204 ..
	M4132-050-B22-05-12	50	22	40	11,6		5	0,32	5	
	M4132-050-B22-06-09	50	22	40	8,4		6	0,34	6	SD .. 09T3 ..
	M4132-063-B22-05-09	63	22	40	8,4		5	0,55	5	
	M4132-063-B22-05-12	63	22	40	11,6		5	0,52	5	SD .. 1204 ..
	M4132-063-B22-06-12	63	22	40	11,6		6	0,54	6	
	M4132-063-B22-07-09	63	22	40	8,4		7	0,57	7	SD .. 09T3 ..
	M4132-080-B27-06-09	80	27	50	8,4		6	1,14	6	
	M4132-080-B27-06-12	80	27	50	11,6		6	1,00	6	SD .. 1204 ..
	M4132-080-B27-08-09	80	27	50	8,4		8	1,17	8	SD .. 09T3 ..
	M4132-080-B27-08-12	80	27	50	11,6		8	1,12	8	
	M4132-100-B32-07-12	100	32	50	11,6		7	1,8	7	
	M4132-100-B32-09-12	100	32	50	11,6		9	1,83	9	SD .. 1204 ..
	M4132-125-B40-08-12	125	40	63	11,6		8	3,37	8	
	M4132-125-B40-10-12	125	40	63	11,6		10	3,43	10	

Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	Type	SD .. 06T2 ..	SD .. 09T3 ..	SD .. 1204 ..
	Clamping screw for indexable insert Tightening torque	FS2084 (Torx 7IP) 0,9 Nm	FS2266 (Torx 10IP) 2,0 Nm	FS1453 (Torx 15IP) 3,5 Nm

Accessories

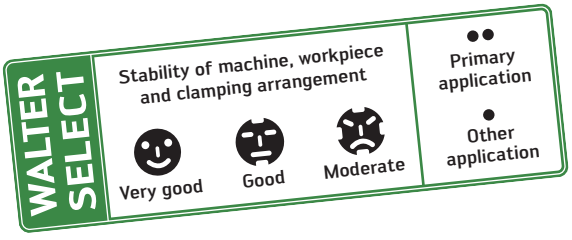
	Type	SD .. 06T2 ..	SD .. 09T3 ..	SD .. 1204 ..
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque		FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2268 (Torx 10IP)	FS2014 (Torx 15IP)
	Screwdriver	FS2088 (Torx 7IP)	FS2267 (Torx 10IP)	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM45X	S HC WSP45S
	SDGT06T2PDR-D57	0,4	1,2	●●	●	●●	●		●●			●	●●	●		●●
	SDGT09T3PDR-D57	0,8	1,2	●●	●	●●	●		●●			●	●●	●		●●
	SDGT1204PDR-D57	0,8	1,6	●●	●	●●	●		●●			●	●●	●		●●
	SDMT06T204-D51	0,4		●●	●●	●●			●●			●	●●			●●
	SDMT06T204-D57	0,4		●●	●	●●	●		●●		●	●	●●	●		●●
	SDMT06T204-F57	0,4		●●	●	●●	●	●●	●●	●●		●	●●	●	●●	●●
	SDMT06T212-F57	1,2			●	●●	●	●●	●●				●●	●	●●	●●
	SDMW06T204-A57	0,4		●	●●							●	●●			
	SDMT09T308-D51	0,8		●●	●●	●●			●●			●	●●			●●
	SDMT09T308-D57	0,8		●●	●	●●	●		●●		●	●	●●	●		●●
	SDMT09T308-F57	0,8		●●	●	●●	●	●●	●●	●●		●	●●	●	●●	●●
	SDMT09T320-F57	2			●	●●	●	●●	●●				●●	●	●●	●●
	SDMW09T308-A57	0,8		●	●●							●	●●			
	SDMT120408-D51	0,8		●●	●●	●●			●●			●	●●			●●
	SDMT120408-D57	0,8		●●	●	●●	●		●●		●	●	●●	●		●●
	SDMT120408-F57	0,8		●●	●	●●	●	●●	●●	●●		●	●●	●	●●	●●
	SDMT120425-F57	2,5			●	●●	●	●●	●●				●●	●	●●	●●
	SDMW120408-A57	0,8		●	●●							●	●●			

SD..06T2.. : If the corner radius is r > 0.4 mm, the corner area of the body must be reworked.
SD..09T3.. : If the corner radius is r > 0.8 mm, the corner area of the body must be reworked.
SD..1204.. : If the corner radius is r > 0.8 mm, the corner area of the body must be reworked.
$R_{(body)} = r_{(indexable\ insert)}$

HC = Coated carbide



C 299 D 1 C 568 C 591 C 621 C 635

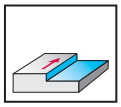
Porcupine milling cutters
F2338F

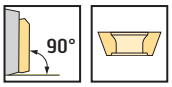
LP .. 1506 .. / SP .. 120606



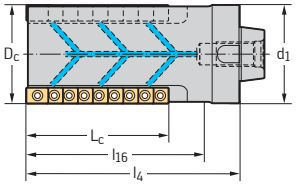
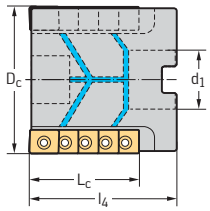
C 2

– Full effective design
– Two or four cutting edges per indexable insert





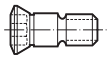
	P	M	K	N	S	H	O
F2338F	●●	●	●●		●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_{16} mm	L_c mm	Z	kg	No. of indexable inserts	Type
Modular NCT adaptor	F2338F.N8.063.Z03.81	63	NCT 80	135	106	81	3	2,7	3 18	LP .. 1506 .. SP .. 120606
	F2338F.N8.080.Z05.103	80	NCT 80	155	132	103	5	4,3	5 40	
Cylindrical bore DIN 138 transverse keyway	F2338F.B.063.Z03.48	63	27	70		48	3	0,9	3 9	
	F2338F.B.066.Z04.48	66	27	70		48	4	1	4 12	
	F2338F.B.080.Z04.59	80	32	80		59	4	1,7	4 16	LP .. 1506 .. SP .. 120606
	F2338F.B.080.Z05.70	80	32	95		70	5	2,1	5 25	
	F2338F.B.085.Z05.70	85	32	95		70	5	2,6	5 25	
	F2338F.B.100.Z06.81	100	40	105		81	6	4,0	6 36	

For tools with locating bores, use longer tightening screws in accordance with ISO 4762, see “Assembly parts and accessories/Other”
Bodies and assembly parts are included in the scope of delivery.

C 2

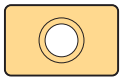
Assembly parts

	D_c [mm]	63–100
	Clamping screw for insert LP . . Tightening torque	FS1153 (Torx 20) 5 Nm
	Clamping screw for indexable insert SP . . Tightening torque	FS1031 (Torx 20) 5,0 Nm

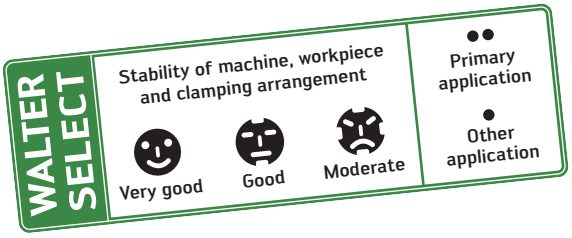
Accessories

	D_c [mm]	63–100
	Screwdriver for indexable insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LPGT1506PPR-F57	1,2	1,6		●●	●			●●	●					●●		●●	●	
	LPMT150612R-D51	1,2			●●	●			●●	●					●●		●●	●	
	LPMT150612R-D57	1,2		●	●●		●				●	●		●●	●●				●
	LPMW150612TR-A27	1,2			●										●				
	SPGT120606-F57	0,6			●	●		●●		●					●	●●		●	
	SPHW120606-A57	0,6										●							
	SPMT120606-D51	0,6			●●	●			●●	●					●		●●	●	
	SPMT120606-D57	0,6		●	●●	●				●		●		●●	●			●	
	SPMW120606T-A27	0,6			●										●				

HC = Coated carbide



C 289 D 1 C 570 C 594 C 658

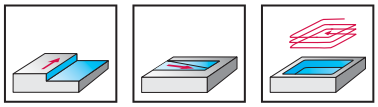
Porcupine milling cutters
F4038

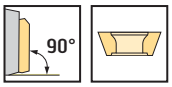
AD . T0803 .. R
Xtra·tec®



C 2

– Full effective design
– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4038	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F4038.T18.020.Z01.15	20	T18	30	15		1	0,06	3	
	F4038.T22.025.Z02.22	25	T22	40	22		2	0,12	6	AD . T0803 .. R
	F4038.T28.032.Z03.30	32	T28	50	30		3	0,22	12	
Shank DIN 1835 B	F4038.W20.020.Z01.30	20	20	45	30	96	1	0,19	5	
	F4038.W25.025.Z02.30	25	25	50	30	100	2	0,34	8	AD . T0803 .. R
	F4038.W32.032.Z03.30	32	32	50	30	105	3	0,59	12	
	F4038.W32.032.Z03.37	32	32	50	37	111	3	0,56	15	

Bodies and assembly parts are included in the scope of delivery.

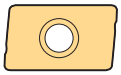
Assembly parts

	D_c [mm]	20–32
	Clamping screw for indexable insert Tightening torque	FS1454 (Torx 8IP) 1,2 Nm

Accessories

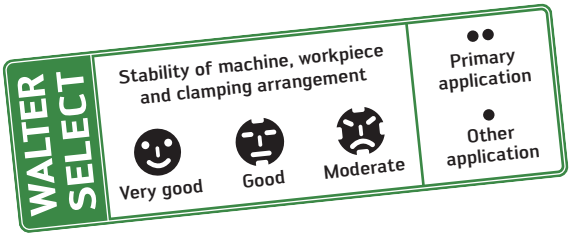
	D_c [mm]	20–32
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2012 (Torx 8IP)
	Screwdriver	FS1483 (Torx 8IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	ADGT0803PER-D51	0,4	1,2	☺	☹	☠				☠				☹	☠					☠	
	ADGT0803PER-D56	0,4	1,2			☠				☠										☠	
	ADGT0803PER-F56	0,4	1,2			☠		☹		☠								☹		☠	
	ADHT0803PER-G88	0,4	1,2													☺	☺				
	ADKT0803PER-F56	0,4	1,2	☺	☹	☠				☠		☺		☹	☠					☠	
	ADMT080302R-F56	0,2	1,2		☹	☠		☹		☠					☠			☹		☠	
	ADMT080304R-D56	0,4	1,2	☺	☹	☠				☠		☺	☹	☹	☠					☠	
	ADMT080304R-F56	0,4	1,2	☺	☹	☠		☹	☹	☠		☺	☹	☹	☠			☹	☹	☠	
	ADMT080304R-G56	0,4	1,2		☺		☹	☹			☹				☹			☹			☹
	ADMT080308R-F56	0,8	1,2		☹	☠	☠	☹	☹	☠	☠				☠			☹	☹	☠	☠
	ADMT080312R-F56	1,2	1		☹	☠		☹		☠					☠			☹		☠	
	ADMT080316R-F56	1,6	1		☹	☠		☹		☠					☠			☹		☠	
	ADMT080320R-F56	2	1		☹	☠		☹	☹	☠					☠			☹	☹	☠	
	ADGT080308R-F56	0,8	1,2			☠			☹	☠									☹	☠	

If the corner radius is r = 1.6 mm or above, the corner area of the body must be reworked.
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm
Indexable inserts with r > 0.4 mm can only be used as front inserts.

HC = Coated carbide
HW = Uncoated carbide



C 284 D 1 C 570 C 594 C 621 C 635

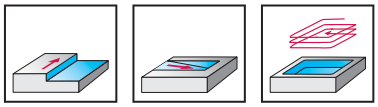
Porcupine milling cutters
F4138

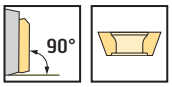
AD . T1204 .. R
Xtra·tec®



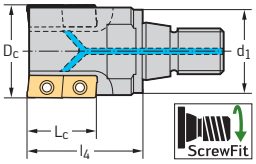
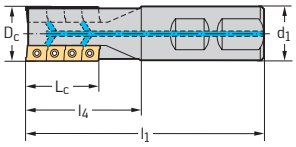
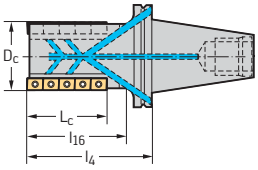
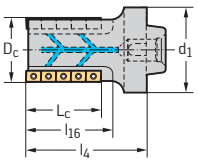
C 2

– Full effective design
– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4138	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_{16} mm	l_1 mm	L_c mm	Z	kg	No. of index-able inserts	Type
ScrewFit	F4138.T28.032.Z02.33	32	T28	50			33	2	0,2	6	AD . T1204 .. R
	F4138.T36.040.Z03.33	40	T36	55			33	3	0,4	9	
Shank DIN 1835 B	F4138.W32.032.Z02.43	32	32	64		125	43	2	0,6	8	AD . T1204 .. R
	F4138.W40.040.Z03.54	40	40	79		150	54	3	1,4	15	
SK DIN 69871 AD/B	F4138.S4.040.Z03.54	40	SK40	100	64		54	3	1,3	15	AD . T1204 .. R
	F4138.S5.040.Z03.65	40	SK50	120	75		65	3	3,5	18	
Modular NCT adaptor	F4138.N6.040.Z03.54	40	NCT 63	105	69		54	3	1,1	15	
	F4138.N8.050.Z04.65	50	NCT 80	116	80		65	4	1,8	24	AD . T1204 .. R
	F4138.N8.063.Z05.76	63	NCT 80	125	99		76	5	2,6	35	

For pull studs for steep tapers, see "D – Adaptors catalogue/General information"
Bodies and assembly parts are included in the scope of delivery.

C 2

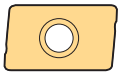
Assembly parts

	D_c [mm]	32–63
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm

Accessories

	D_c [mm]	32–63
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2013 (Torx 9IP)
	Screwdriver	FS1484 (Torx 9IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADGT120416R-D67	1,6	1			●			○		●									○		●	
	ADGT120430R-D67	3	0,8				●		○			●								○			●
	ADGT120430R-F56	3	0,8			●					●											●	
	ADGT120440R-F56	4	0,4			●					●											●	
	ADGT1204PER-D51	0,8	1,2	◐	◐	●					●				◐	●						●	
	ADGT1204PER-D56	0,8	1,2	◐	◐	●					●			◐	◐	●						●	
	ADGT1204PER-D67	0,8	1,2		◐	●		◐			●					●			◐			●	
	ADGT1204PER-F56	0,8	1,2			●		◐			●								◐			●	
	ADGT1204PER-G77	0,8	1,2			◐			◐		◐									◐		◐	
	ADHT120416R-G88	1,6	1														◐	◐					
	ADHT120425R-G88	2,5	0,8															◐					
	ADHT120430R-G88	3	0,8														◐	◐					
	ADHT120440R-G88	4	0,4															◐					
	ADHT1204PER-G88	0,8	1,2														◐	◐					
	ADKT1204PER-F56	0,8	1,2	◐	◐	●					●		◐		◐	●						●	
	ADMT120404R-F56	0,4	1,2		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120408R-D56	0,8	1,2	◐	◐	●					●		◐	◐	◐	●						●	
	ADMT120408R-F56	0,8	1,2	◐	◐	●	●	◐	◐	●	●	●	◐	◐	◐	●			◐	◐	●	●	●
	ADMT120408R-G56	0,8	1,2		◐	◐		◐			◐					◐			◐			◐	
	ADMT120412R-F56	1,2	1,2		◐	●		◐		●	●					●			◐		●	●	
	ADMT120416R-F56	1,6	1		◐	●	●	◐	◐	●	●	●				●			◐	◐	●	●	●
	ADMT120420R-F56	2	1		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120425R-F56	2,5	0,8		◐		●	◐				●				●			◐				●
	ADMT120430R-F56	3	0,8		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120432R-F56	3,2	0,8		◐	●		◐		●	●					●			◐		●	●	
	ADMT120440R-F56	4	0,4		◐	●	●	◐	◐	●	●	●				●			◐	◐	●	●	●
	ADGT120404R-F56	0,4	1,2			●			○		●									○		●	

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm
Indexable inserts with r > 0.8 mm can only be used as front inserts.

HC = Coated carbide
HW = Uncoated carbide

C 284 D 1 C 570 C 594 C 658 C 621

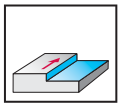
Porcupine milling cutters
F4138

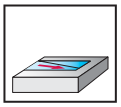
AD . T1204 .. R
Xtra·tec®

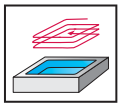




– Full effective design
– Two cutting edges per indexable insert



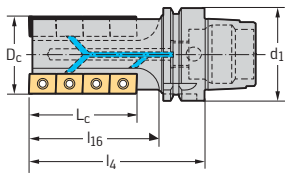
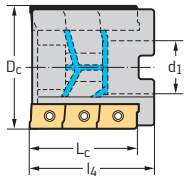








	P	M	K	N	S	H	O
F4138	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_{16} mm	l_1 mm	L_c mm	Z	kg	No. of index-able inserts	Type
HSK DIN 69893/1-A	F4138.H63A.040.Z03.54	40	HSK-A63	101	64		54	3	1,1	15	
	F4138.H63A.050.Z04.43	50	HSK-A63	90	53		43	4	1,3	16	AD . T1204 .. R
	F4138.H100A.050.Z04.43	50	HSK-A100	100	53		43	4	2,8	16	
Cylindrical bore DIN 138 transverse keyway	F4138.B16.040.Z03.33	40	16	55			33	3	0,3	9	
	F4138.B16.040.Z03.43	40	16	65			43	3	0,3	12	
	F4138.B22.050.Z04.43	50	22	65			43	4	0,6	16	
	F4138.B22.050.Z04.54	50	22	75			54	4	0,6	20	
	F4138.B27.063.Z05.43	63	27	70			43	5	1,0	20	AD . T1204 .. R
	F4138.B27.063.Z05.54	63	27	80			54	5	1,1	25	
	F4138.B32.080.Z06.54	80	32	85			54	6	2,1	30	
	F4138.B32.080.Z06.65	80	32	95			65	6	2,4	36	

For HSK accessories, see “Assembly parts and accessories/Transfer units for HSK”
For tools with locating bores, use longer tightening screws in accordance with ISO 4762, see “Assembly parts and accessories/Other”
Bodies and assembly parts are included in the scope of delivery.

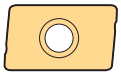
Assembly parts

	D_c [mm]	40–80
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm

Accessories

	D_c [mm]	40–80
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2013 (Torx 9IP)
	Screwdriver	FS1484 (Torx 9IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADGT120416R-D67	1,6	1			●			○		●									○		●	
	ADGT120430R-D67	3	0,8				●		○			●								○			●
	ADGT120430R-F56	3	0,8			●					●											●	
	ADGT120440R-F56	4	0,4			●					●											●	
	ADGT1204PER-D51	0,8	1,2	◐	◐	●					●				◐	●						●	
	ADGT1204PER-D56	0,8	1,2	◐	◐	●					●			◐	◐	●						●	
	ADGT1204PER-D67	0,8	1,2		◐	●		◐			●					●			◐			●	
	ADGT1204PER-F56	0,8	1,2			●		◐			●								◐			●	
	ADGT1204PER-G77	0,8	1,2			◐			◐		◐									◐		◐	
	ADHT120416R-G88	1,6	1														◐	◐					
	ADHT120425R-G88	2,5	0,8															◐					
	ADHT120430R-G88	3	0,8														◐	◐					
	ADHT120440R-G88	4	0,4															◐					
	ADHT1204PER-G88	0,8	1,2														◐	◐					
	ADKT1204PER-F56	0,8	1,2	◐	◐	●					●		◐		◐	●						●	
	ADMT120404R-F56	0,4	1,2		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120408R-D56	0,8	1,2	◐	◐	●					●		◐	◐	◐	●						●	
	ADMT120408R-F56	0,8	1,2	◐	◐	●	●	◐	◐	●	●	●	◐	◐	◐	●			◐	◐	●	●	●
	ADMT120408R-G56	0,8	1,2		◐	◐		◐			◐					◐			◐			◐	
	ADMT120412R-F56	1,2	1,2		◐	●		◐		●	●					●			◐		●	●	
	ADMT120416R-F56	1,6	1		◐	●	●	◐	◐	●	●	●				●			◐	◐	●	●	●
	ADMT120420R-F56	2	1		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120425R-F56	2,5	0,8		◐		●	◐				●				●			◐				●
	ADMT120430R-F56	3	0,8		◐	●		◐	◐	●	●					●			◐	◐	●	●	
	ADMT120432R-F56	3,2	0,8		◐	●		◐		●	●					●			◐		●	●	
	ADMT120440R-F56	4	0,4		◐	●	●	◐	◐	●	●	●				●			◐	◐	●	●	●
	ADGT120404R-F56	0,4	1,2			●			○		●									○		●	

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm
Indexable inserts with r > 0.8 mm can only be used as front inserts.

HC = Coated carbide
HW = Uncoated carbide

C 284 D 1 C 570 C 594 C 658 C 621

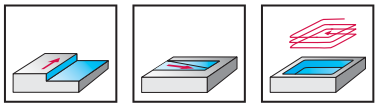
Porcupine milling cutters
F4238

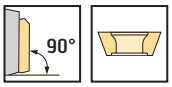
AD . T1606 .. R
Xtra·tec®



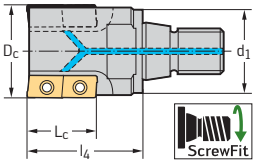
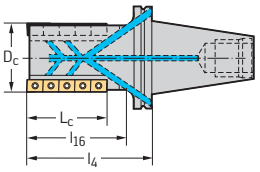
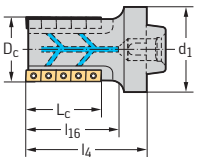
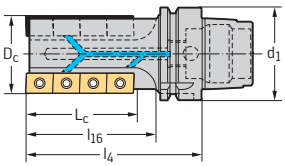
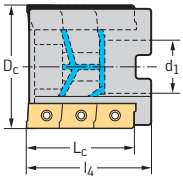
C 2

– Full effective design
– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4238	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_{16} mm	L_c mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	F4238.T36.040.Z03.29	40	T36	55		29	3	0,4	6	AD . T1606 .. R
	F4238.T45.050.Z03.43	50	T45	70		43	3	0,7	9	
SK DIN 69871 AD/B 	F4238.S4.040.Z03.29	40	SK40	75	54	29	3	1,2	6	AD . T1606 .. R
	F4238.S4.050.Z03.43	50	SK40	85	65	43	3	1,5	9	
	F4238.S5.050.Z03.85	50	SK50	140	106	85	3	3,9	18	
	F4238.S5.063.Z03.99	63	SK50	153	121	99	3	4,6	21	
	F4238.S5.080.Z04.112	80	SK50	163	138	112	4	6,2	32	
Modular NCT adaptor 	F4238.N6.040.Z03.57	40	NCT 63	108	80	57	3	1,1	12	AD . T1606 .. R
	F4238.N8.040.Z03.57	40	NCT 80	105	68	57	3	1,5	12	
	F4238.N8.050.Z03.71	50	NCT 80	122	93	71	3	2,1	15	
	F4238.N8.063.Z04.85	63	NCT 80	136	111	85	4	2,7	24	
	F4238.N8.080.Z05.99	80	NCT 80	150	130	99	5	4,4	35	
HSK DIN 69893/1-A 	F4238.H100A.063.Z03.71	63	HSK-A100	125	82	71	3	3,5	15	AD . T1606 .. R
	F4238.H100A.080.Z04.85	80	HSK-A100	140	96	85	4	4,8	24	
Cylindrical bore DIN 138 transverse keyway 	F4238.B22.050.Z03.43	50	22	60		43	3	0,5	9	ADGT160612R
	F4238.B27.063.Z04.57	63	27	85		57	4	1,1	16	
	F4238.B27.063.Z04.43	63	27	70		43	4	0,9	12	
	F4238.B27.066.Z04.57	66	27	85		57	4	1,4	16	
	F4238.B32.080.Z05.57	80	32	85		57	5	2	20	
	F4238.B32.080.Z05.71	80	32	100		71	5	2,4	25	
	F4238.B32.085.Z05.71	85	32	100		71	5	2,9	25	

For pull studs for steep tapers, see "D – Adaptors catalogue/General information"
For HSK accessories, see "Assembly parts and accessories/Transfer units for HSK"
For tools with locating bores, use longer fastening bolts in accordance with ISO 4762, see "Assembly parts and accessories/Other"
Bodies and assembly parts are included in the scope of delivery.

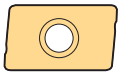
Assembly parts

	D_c [mm]	40–85
	Clamping screw for indexable insert Tightening torque	FS1453 (Torx 15IP) 3,5 Nm

Accessories

	D_c [mm]	40–85
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADGT160616R-D67	1,6	1			●			○		●									○		●	
	ADGT160616R-F56	1,6	1,4			●					●											●	
	ADGT160620R-F56	2	1,4			●					●											●	
	ADGT160630R-D67	3	0,8			●			○		●									○		●	
	ADGT160632R-F56	3,2	1,2			●					●											●	
	ADGT160640R-F56	4	1			●					●											●	
	ADGT1606PER-D51	0,8	1,6	◉	◉	●					●				◉	●						●	
	ADGT1606PER-D56	0,8	1,6	◉	◉	●					●			◉	◉	●						●	
	ADGT1606PER-D67	0,8	1,6		◉	●		◉			●					●			◉			●	
	ADGT1606PER-F56	0,8	1,6			●		◉			●								◉			●	
	ADGT1606PER-G77	0,8	1,2			◉			○		◉									○		◉	
	ADHT160616R-G88	1,6	1,4														○	○					
	ADHT160625R-G88	2,5	1,2															○					
	ADHT160630R-G88	3	1,2															○					
	ADHT160640R-G88	4	1															○					
	ADHT1606PER-G88	0,8	1,6														○	○					
	ADKT1606PER-F56	0,8	1,6	◉	◉	●					●		○		◉	●						●	
	ADMT160608R-D56	0,8	1,6	◉	◉	●					●		○	◉	◉	●						●	
	ADMT160608R-F56	0,8	1,6	◉	◉	●	●	◉	◉	●	●	●	○	◉	◉	●			◉	◉	●	●	●
	ADMT160608R-G56	0,8	1,6		○	◉		◉			◉					◉			◉			◉	
	ADMT160612R-F56	1,2	1,6		◉	●		◉		●	●					●			◉		●	●	
	ADMT160616R-F56	1,6	1,4		◉	●	●	◉		●	●	●				●			◉		●	●	●
	ADMT160620R-F56	2	1,4		◉	●		◉	◉	●	●					●			◉	◉	●	●	
	ADMT160625R-F56	2,5	1,2		◉	●		◉			●					●			◉			●	
	ADMT160630R-F56	3	1,2		◉	●		◉		●	●					●			◉		●	●	
	ADMT160632R-F56	3,2	1,2		◉	●		◉		●	●					●			◉		●	●	
	ADMT160640R-F56	4	1		◉	●	●	◉	◉	●	●	●				●			◉	◉	●	●	●
	ADMT160650R-F56	5			◉	●		◉		●	●					●			◉		●	●	
	ADMT160660R-F56	6			◉	●	●	◉	◉	●	●	●				●			◉	◉	●	●	●
	ADGT160612R-F56	1,2	1,6			●			○		●									○		●	
	ADGT160650R-F56	5	0,4			●			○		●									○		●	

If the corner radius r = 2.0 mm or above, the corner area of the body must be reworked:
$R_{(body)} = r_{(indexable\ insert)} - 1$ mm
Indexable inserts with r > 0.8 mm can only be used as front inserts.

HC = Coated carbide
HW = Uncoated carbide

C 284 D 1 C 570 C 595 C 658 C 621

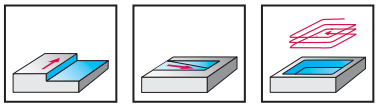
Porcupine milling cutters
F4338

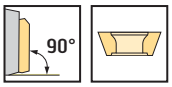
AD . T1807 .. R
Xtra·tec®



C 2

– Full effective design
– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F4338	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_{16} mm	L_c mm	Z	kg	No. of indexable inserts	Type
Modular NCT adaptor	F4338.N8.063.Z04.94	63	NCT 80	117	117	94	4	2,6	24	AD . T1807 .. R
	F4338.N8.080.Z05.109	80	NCT 80	140	124	109	5	4,8	35	
SK DIN 69871 AD/B	F4338.S5.063.Z04.109	63	SK50	125	125	109	4	4,5	28	AD . T1807 .. R
	F4338.S5.080.Z05.124	80	SK50	163	140	124	5	6,0	40	
HSK DIN 69893/1-A	F4338.H100A.063.Z04.109	63	HSK-A100	165	126	109	4	3,8	28	AD . T1807 .. R
	F4338.H100A.080.Z05.124	80	HSK-A100	180	140	124	5	5,5	40	
Cylindrical bore DIN 138 transverse keyway	F4338.B27.063.Z04.31	63	27	53		31	4	0,6	8	AD . T1807 .. R
	F4338.B27.063.Z04.47	63	27	69		47	4	0,8	12	
	F4338.B27.063.Z04.63	63	27	85		63	4	1,0	16	
	F4338.B32.080.Z05.31	80	32	53		31	5	1,2	10	
	F4338.B32.080.Z05.63	80	32	85		63	5	1,8	20	
	F4338.B32.080.Z05.78	80	32	100		78	5	2,0	25	
	F4338.B40.100.Z05.78	100	40	105		78	5	3,8	25	
	F4338.B40.125.Z06.94	125	40	120		94	6	8,1	36	

For pull studs for steep tapers, see "D – Adaptors catalogue/General information"
For HSK accessories, see "Assembly parts and accessories/Transfer units for HSK"
For tools with locating bores, use longer fastening bolts in accordance with ISO 4762, see "Assembly parts and accessories/Other"
Bodies and assembly parts are included in the scope of delivery.

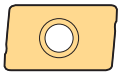
Assembly parts

	D_c [mm]	63–125
	Clamping screw for indexable insert Tightening torque	FS1495 (Torx 20IP) 5,0 Nm

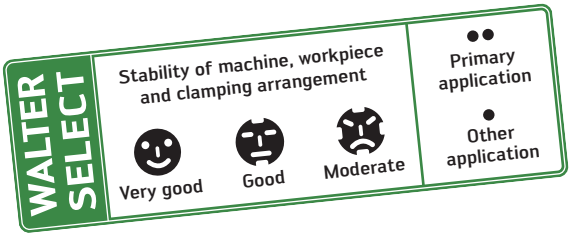
Accessories

	D_c [mm]	63–125
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2015 (Torx 20IP)
	Screwdriver	FS1486 (Torx 20IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S
	ADGT1807PER-D51	1,2	1,8	●	●	●		●●			●●	●●		●●
	ADGT1807PER-D56	1,2	1,8	●	●	●		●●			●●	●●		●●
	ADMT180712R-D56	1,2	1,8	●	●	●		●●		●●	●●	●●		●●
	ADMT180712R-F56	1,2	1,8	●	●	●		●●		●●	●●	●●		●●

HC = Coated carbide



C 284 D 1 C 570 C 595 C 658 C 621

Porcupine milling cutters
F5038

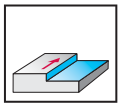
LNHU0904 .. R
Walter BLAXX

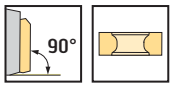




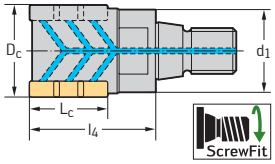
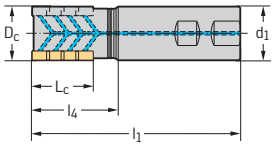
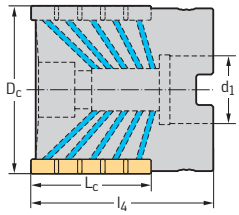
C 2

– Full effective design
– Four cutting edges per indexable insert, tangential arrangement





	P	M	K	N	S	H	O
F5038	●●	●●	●●	●●	●●		●

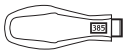
Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F5038.T22.025.Z02.24	25	T22	40	24		2	0,12	6	
	F5038.T28.032.Z02.24	32	T28	40	24		2	0,20	6	LNHU0904 .. R
	F5038.T28.032.Z02.32	32	T28	50	32		2	0,24	8	
Shank DIN 1835 B	F5038.W25.025.Z02.32	25	25	43	32	100	2	0,31	8	
	F5038.W32.032.Z02.32	32	32	44	32	105	2	0,54	8	
	F5038.W32.032.Z02.40	32	32	50	40	111	2	0,57	10	LNHU0904 .. R
	F5038.W40.040.Z03.40	40	40	54	40	125	3	1	15	
	F5038.W40.040.Z03.48	40	40	59	48	130	3	1,06	18	
Cylindrical bore DIN 138 transverse keyway	F5038.B16.040.Z03.32	40	16	55	32		3	0,33	12	LNHU0904 .. R
	F5038.B16.040.Z03.40	40	16	65	40		3	0,39	15	

For tools with locating bores, use longer fastening bolts in accordance with ISO 4762, see "Assembly parts and accessories/Other"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	25–40
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm

Accessories

	D_c [mm]	25	32–40
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2013 (Torx 9IP)	FS2013 (Torx 9IP)
	Screwdriver	FS1484 (Torx 9IP)	FS1484 (Torx 9IP)
	Coolant nozzle		FS2250 (SW 1,5)

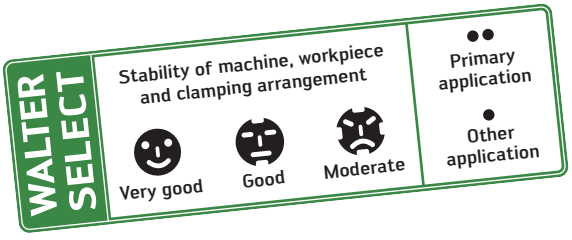
The FS2250 coolant nozzle must be secured to prevent it from coming loose

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	LNHU090404R-L55T	0,4	1,5	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹
	LNHU090404R-L65T	0,4	1,5			☹		☹								☹
	LNHU090404R-L85T	0,4	1,5										☺	☺		
	LNHU090408R-L55T	0,8	1,1	☺	😐	☹	😐	☹		😐	😐	☹			😐	☹
	LNHU090412R-L55T	1,2	0,8		😐	☹	😐	☹				☹			😐	☹
	LNHU090416R-L55T	1,6			😐	☹	😐	☹				☹			😐	☹
	LNHU090420R-L55T	2			😐	☹	😐	☹				☹			😐	☹

Indexable inserts with r > 0.4 mm can only be used as front inserts.

HC = Coated carbide
HW = Uncoated carbide



C 328 D 1 C 570 C 595 C 658 C 621

Porcupine milling cutters
F5138

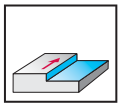
LNHU1306 .. R
Walter BLAXX

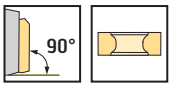




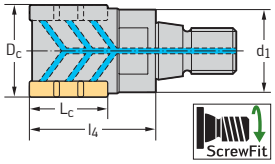
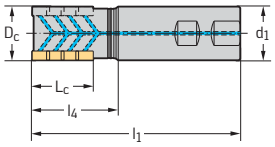
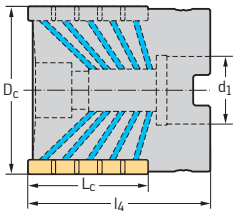
C 2

– Full effective design
– Four cutting edges per indexable insert, tangential arrangement





	P	M	K	N	S	H	O
F5138	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	F5138.T36.040.Z02.23	40	T36	45	23		2	0,38	4	LNHU1306 .. R
	F5138.T36.040.Z02.34	40	T36	55	34		2	0,43	6	
Shank DIN 1835 B 	F5138.W40.040.Z02.34	40	40	54	34	120	2	1	6	LNHU1306 .. R
	F5138.W40.040.Z02.45	40	40	64	45	135	2	1,08	8	
Cylindrical bore DIN 138 transverse keyway 	F5138.B16.040.Z02.34	40	16	55	34		2	0,03	6	LNHU1306 .. R
	F5138.B16.040.Z02.45	40	16	65	45		2	0,34	8	
	F5138.B22.050.Z03.34	50	22	55	34		3	0,50	9	
	F5138.B22.050.Z03.45	50	22	65	45		3	0,57	12	
	F5138.B27.063.Z04.45	63	27	70	45		4	1,06	16	
	F5138.B27.063.Z04.56	63	27	80	56		4	1,19	20	
	F5138.B32.080.Z05.56	80	32	85	56		5	2,23	25	

For tools with locating bores, use longer fastening bolts in accordance with ISO 4762, see "Assembly parts and accessories/Other"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	40–80
	Clamping screw for indexable insert Tightening torque	FS2081 (Torx 15IP) 4,0 Nm

Accessories

	D_c [mm]	40–80
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)
	Coolant nozzle	FS2250 (SW 1,5)

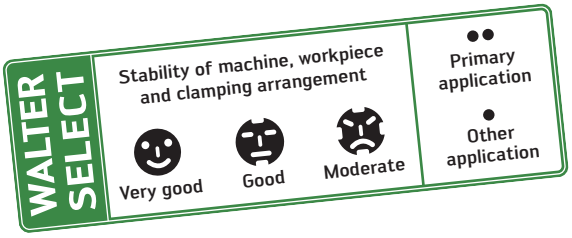
The FS2250 coolant nozzle must be secured to prevent it from coming loose

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S
	LNHU130608R-L55T	0,8	2,2	☺	😐	☹	😐	☹	☺	😐	😐	☹			😐	☹
	LNHU130608R-L65T	0,8	2,2			☹		☹								☹
	LNHU130608R-L85T	0,8	2,2										☺	☺		
	LNHU130612R-L55T	1,2	1,9		😐	☹	😐	☹				☹			😐	☹
	LNHU130616R-L55T	1,6	1,5		😐	☹	😐	☹				☹			😐	☹
	LNHU130620R-L55T	2	1,2		😐	☹	😐	☹				☹			😐	☹
	LNHU130625R-L55T	2,5	0,7		😐	☹	😐	☹				☹			😐	☹
	LNHU130630R-L55T	3			😐	☹	😐	☹				☹			😐	☹
	LNHU130632R-L55T	3,2			😐	☹	😐	☹				☹			😐	☹

Indexable inserts with r > 0.8 mm can only be used as front inserts.

HC = Coated carbide
HW = Uncoated carbide

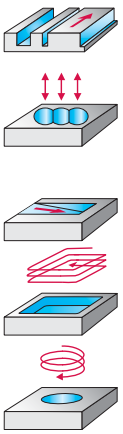


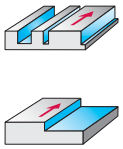
C 328 D 1 C 570 C 595 C 658 C 621

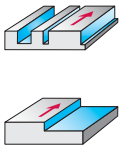
Walter Select – Indexable insert milling cutters
Slot milling cutters

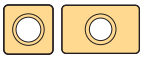
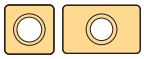
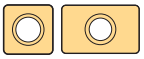
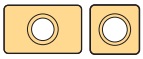
Machining

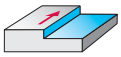
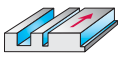
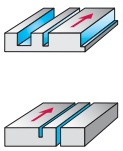
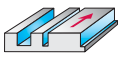
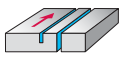
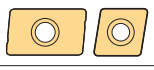
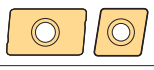
WALTER SELECT
●● Primary application
● Other application







Lead angle κ	90°	90°		90°		
Designation	**M4792**	**F2238**	**F2238CE / F2238C**	**M3255**	**M4256 / M4257 M4258**	
Dia. range [mm]	18–40	20–125	50–80	50–80	20–100	
Adaption Range	DIN 1835 B	DIN 1835 B Modular NCT adaptor Cylindrical bore	Modular NCT adaptor	Cylindrical bore	ScrewFit DIN 1835 B Cylindrical bore	
Page	C 486	C 488	C 490	C 496	C 498	
						
P Steel	●●	●●	●●		●●	
M Stainless steel	●●	●●	●●		●●	
K Cast iron	●●	●●	●●		●●	
N NF metals						
S Materials with difficult cutting properties	●●	●●	●●	●●	●●	
H Hard materials						
O Other						
Indexable inserts						
Type	SDM . 06T204 LDM . 08T204R SDM . 09T308 LDM . 14T308R ...	SPM . 060304 LP .. 070304 .. SPM . 09T308 LP .. 15T308	SPM . 120408 LP .. 150412 ..	XNHX1306 .. R LNHX120604R	LDM . 08T204R SDM . 06T204 LDM . 14T308R SDM . 09T308 ...	
Number of cutting edges	4 / 2	4 / 2	4 / 2	2 / 4	2 / 4	
Max. depth of cut [mm]/max. width of cut [mm]	8 / 13 / 21 / 27	22 / 27 / 37 / 50 / 42 / 67 / 77 / 87	97 / 117 / 56 / 77 / 87 / 107	58 / 46	27 / 37 / 54 / 67 / 77	

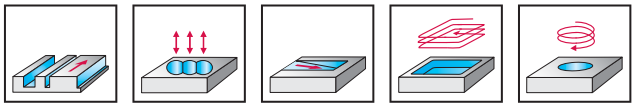
						
	90°		90°	90°		90°
	F2252	F2252	F4053	F4153	F4253	F5055
	80–315	80–315	80–160	80–200	100–315	63–250
	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore	Cylindrical bore ScrewFit
	C 500	C 508	C 524	C 526	C 528	C 530
						
	●●	●●	●●	●●	●●	●●
	●●	●●	●●	●●	●●	●
	●●	●●	●●	●●	●●	●●
	●●	●●				
	●●	●●	●●	●●	●●	●
	●	●				
						
	AD . T0803 .. R AD . T0803 .. L AD . T1204 .. R AD . T1204 .. L ...	AD . T0803 .. R AD . T0803 .. L AD . T1204 .. R AD . T1204 .. L ...	LN . X070204	LN . U080304 LN . U080404 LN . U100508	LN . U080404 LN . U100508 LN . U120608 LN . U160812	SX-1 SX-2 SX-3 SX-4
	2	2	4	4	4	1
	6 / 8 / 11,7 / 12 / 15	9 / 10 / 12 / 14 / 16 / 19 / 22 / 23,5 / 25	4	6 / 8 / 10	12 / 14 / 16 / 20 / 25	1,5 / 2 / 3 / 4

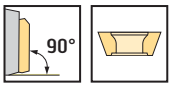
Routing cutters
M4792



C 2

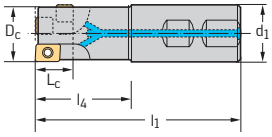
– Two or four cutting edges per indexable insert





	P	M	K	N	S	H	O
M4792	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Shank DIN 1835 B	M4792-018-W16-01-08	18	16	31	80	8,3	1	0,1	1 1	SDM . 06T204 LDM . 08T204R
	M4792-020-W20-01-13	20	20	34	85	13,3	1	0,2	2 1	
	M4792-025-W25-01-13	25	25	43	100	13,3	1	0,3	1 1	SDM . 09T308 LDM . 14T308R
	M4792-030-W32-01-20	30	32	54	115	20,8	1	0,6	2 1	
	M4792-032-W32-01-20	32	32	54	115	20,8	1	0,6	2 1	
	M4792-040-W32-01-26	40	32	69	130	26,9	1	0,8	2 1	SDM . 120408 LDM . 170408R



Bodies and assembly parts are included in the scope of delivery.

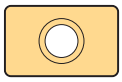
Assembly parts

	Type	SDM . 06T204 LDM . 08T204R	SDM . 09T308 LDM . 14T308R	SDM . 120408 LDM . 170408R
	Clamping screw for indexable insert Tightening torque	FS2084 (Torx 7IP) 0,9 Nm	FS2266 (Torx 10IP) 2,0 Nm	FS1453 (Torx 15IP) 3,5 Nm

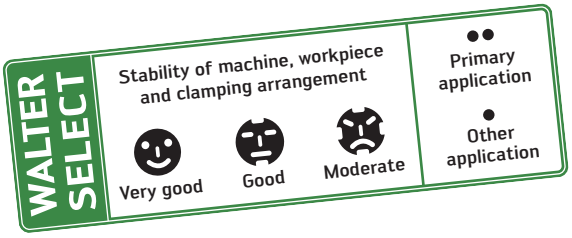
Accessories

	Type	SDM . 06T204 LDM . 08T204R	SDM . 09T308 LDM . 14T308R	SDM . 120408 LDM . 170408R
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque		FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2268 (Torx 10IP)	FS2014 (Torx 15IP)
	Screwdriver	FS2088 (Torx 7IP)	FS2267 (Torx 10IP)	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC			M HC			K HC				S HC		
				WKP25S	WKP35S	WSP45S	WSM35S	WSM45X	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM45X	WSP45S
	LDMT08T204R-D51	0,4	0,8	☺	😐	☹			☹			😐	😐			☹
	LDMT08T204R-D57	0,4	0,8	☺	😐	☹	😐		☹		😐	😐	😐	😐		☹
	LDMT08T204R-F57	0,4	0,8	☺	😐	☹	😐		☹	☺		😐	😐	😐		☹
	LDMW08T204R-A57	0,4	0,8	😐	☹							😐	☹			
	LDMT14T308R-D51	0,8	1,2	☺	😐	☹			☹			😐	☹			☹
	LDMT14T308R-D57	0,8	1,2	☺	😐	☹	😐		☹		😐	😐	☹	😐		☹
	LDMT14T308R-F57	0,8	1,2	☺	😐	☹	😐		☹	☺		😐	☹	😐		☹
	LDMW14T308R-A57	0,8	1,2	😐	☹							😐	☹			
	LDMT170408R-D51	0,8	1,6	☺	😐	☹			☹			😐	☹			☹
	LDMT170408R-D57	0,8	1,6	☺	😐	☹	😐		☹		😐	😐	☹	😐		☹
	LDMT170408R-F57	0,8	1,6	☺	😐	☹	😐		☹	☺		😐	☹	😐		☹
	LDMW170408R-A57	0,8	1,6	😐	☹							😐	☹			
	SDMT06T204-D51	0,4		☺	☹	☹			☹			😐	☹			☹
	SDMT06T204-D57	0,4		☺	😐	☹	😐		☹		😐	😐	☹	😐		☹
	SDMT06T204-F57	0,4		☺	😐	☹	😐	☹	☹	☺		😐	☹	😐	☹	☹
	SDMW06T204-A57	0,4		😐	☹							😐	☹			
	SDMT09T308-D51	0,8		☺	☹	☹			☹			😐	☹			☹
	SDMT09T308-D57	0,8		☺	😐	☹	😐		☹		😐	😐	☹	😐		☹
	SDMT09T308-F57	0,8		☺	😐	☹	😐	☹	☹	☺		😐	☹	😐	☹	☹
	SDMW09T308-A57	0,8		😐	☹							😐	☹			
	SDMT120408-D51	0,8		☺	☹	☹			☹			😐	☹			☹
	SDMT120408-D57	0,8		☺	😐	☹	😐		☹		😐	😐	☹	😐		☹
	SDMT120408-F57	0,8		☺	😐	☹	😐	☹	☹	☺		😐	☹	😐	☹	☹
	SDMW120408-A57	0,8		😐	☹							😐	☹			

HC = Coated carbide



C 288 D 1 C 572 C 596 C 621

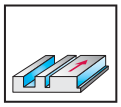
Porcupine milling cutters
F2238

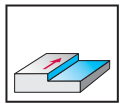




C 2

– Half effective design
– Two or four cutting edges per indexable insert









	P	M	K	N	S	H	O
F2238	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_1 mm	l_{16} mm	L_c mm	Z	kg	No. of index-able inserts	Type
Shank DIN 1835 B	F2238.W.020.Z01.22	20	20	34	85		22	1	0,2	4 1	
	F2238.W.025.Z02.27	25	25	43	100		27	2	0,3	10 2	SPM . 060304 LP .. 070304 ..
	F2238.W.032.Z02.37	32	32	54	115		37	2	0,6	14 2	
	F2238.W.040.Z02.50	40	40	69	140		50	2	1,1	12 2	SPM . 09T308 LP .. 15T308 ..
SK DIN 69871 + 2080	F2238.S4.040.Z02.50	40	SK40	95		75	50	2	1,2	12 2	SPM . 09T308 LP .. 15T308 ..
Modular NCT adaptor	F2238.N6.032.Z02.42	32	NCT 63	100		63	42	2	1,0	16 2	SPM . 060304 LP .. 070304 ..
	F2238.N6.040.Z02.50	40	NCT 63	105		73	50	2	1,1	12 2	SPM . 09T308 LP .. 15T308 ..
Cylindrical bore DIN 138 transverse keyway	F2238.B.050.Z02.42*	50	22	53			42	2	0,5	10 2	
	F2238.B.063.Z03.50*	63	27	54			50	3	0,7	18 3	SPM . 09T308 LP .. 15T308 ..
	F2238.B.065.Z03.50*	65	27	54			50	3	0,8	18 3	
	F2238.B.080.Z03.67*	80	32	80			67	3	1,6	18 3	
	F2238.B.082.Z03.67*	82	32	80			67	3	1,8	18 3	SPM . 120408 LP .. 150412 ..
	F2238.B.100.Z04.77*	100	40	90			77	4	3,2	28 4	
	F2238.B.125.Z05.87*	125	50	100			87	5	5,9	40 5	

For pull studs for steep tapers, see "D – Adaptors catalogue/General information"
When used in DIN 2080 adaptors: Remove one of the drive pins.
For tools with locating bores, use longer fastening bolts in accordance with ISO 4762, see "Assembly parts and accessories/Other"
Bodies and assembly parts are included in the scope of delivery.
* Without internal coolant supply

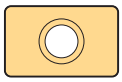
Assembly parts

	Type	SPM . 060304 LP .. 070304 ..	SPM . 09T308 LP .. 15T308 ..	SPM . 120408 LP .. 150412 ..
	Clamping screw for indexable insert Tightening torque	FS925 (Torx 8) 0,8 Nm	FS359 (Torx 15) 2,5 Nm	FS1030 (Torx 20) 5,0 Nm

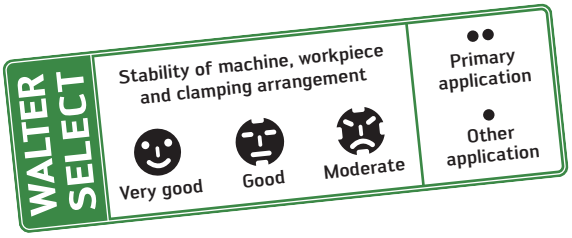
Accessories

	Type	SPM . 060304 LP .. 070304 ..	SPM . 09T308 LP .. 15T308 ..	SPM . 120408 LP .. 150412 ..
	Screwdriver for indexable insert	FS230 (Torx 8)	FS229 (Torx 15)	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC				M HC				K HC				S HC			
				WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM35	WSP45S	WSP45
	LPGT070304R-F55	0,4	1,2		●		●●		●		●●				●●		●		●●
	LPGW070304R-A57	0,4	1,2	●	●●							●		●	●●				
	LPMT070304R-D51	0,4	1,2	●	●		●●		●		●●			●	●●		●		●●
	LPMW070304TR-A27	0,4		●	●●									●	●●				
	LPGT15T308R-F55	0,8	1,4		●		●●		●		●●				●●		●		●●
	LPGW15T308R-A57	0,8	1,4	●	●●							●		●	●●				
	LPMT15T308R-D51	0,8	1,4	●	●		●●		●		●●			●	●●		●		●●
	LPMW15T308TR-A27	0,8		●	●●									●	●●				
	LPGT150412R-F55	1,2	1,6		●		●●		●		●●	●			●●		●		●●
	LPGW150412R-A57	1,2	1,6	●	●●							●		●	●●				
	LPMT150412R-D51	1,2	1,6	●	●		●●		●		●●			●	●●		●		●●
	LPMW150412TR-A27	1,2		●	●●									●	●●				
	SPMT060304-D51	0,4		●	●		●●		●		●●			●	●●		●		●●
	SPMT060304-F55	0,4			●		●●		●		●●	●			●●		●		●●
	SPMW060304-A57	0,4		●	●●							●		●	●●				
	SPMW060304T-A27	0,4		●	●●									●	●●				
	SPMT09T308-D51	0,8		●	●		●●		●		●●			●	●●		●		●●
	SPMT09T308-F55	0,8			●		●●		●		●●	●			●●		●		●●
	SPMW09T308-A57	0,8		●	●●							●		●	●●				
	SPMW09T308T-A27	0,8		●	●●									●	●●				
	SPMT120408-D51	0,8		●	●		●●		●		●●			●	●●		●		●●
	SPMT120408-F55	0,8			●		●●		●		●●	●			●●		●		●●
	SPMW120408-A57	0,8		●	●●							●		●	●●				
	SPMW120408T-A27	0,8		●	●●									●	●●				

HC = Coated carbide



C 289 D 1 C 572 C 596 C 658

Porcupine milling cutters with front piece F2238CE

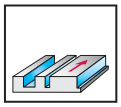
SPM . 120408 / LP . . 150412

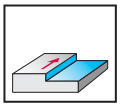




C 2

– Half effective design with front piece
– Two or four cutting edges per indexable insert

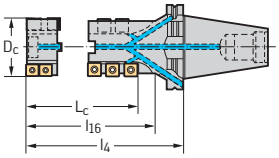
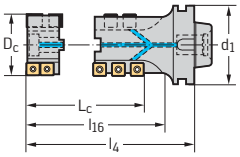






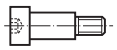


	P	M	K	N	S	H	O
F2238CE	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_{16} mm	L_c mm	Z	kg	No. of indexable inserts	Type
SK DIN 69871 + 2080 	F2238CE.S5.050.Z02.056	50	SK50	120	84	56	2	3,7	10 2	SPM . 120408 LP .. 150412 ..
	F2238CE.S5.063.Z02.077	63	SK50	135	102	77	2	4,3	14 2	
	F2238CE.S5.063.Z02.087	63	SK50	145	112	87	2	4,5	16 2	
	F2238CE.S5.063.Z02.097	63	SK50	155	122	97	2	4,6	18 2	
	F2238CE.S5.080.Z03.097	80	SK50	150	130	97	3	6,9	27 3	
	F2238CE.S5.080.Z03.107	80	SK50	160	140	107	3	7,1	30 3	
	F2238CE.S5.080.Z03.117	80	SK50	170	150	117	3	7,2	33 3	
Modular NCT adaptor 	F2238CE.N8.050.Z02.056	50	NCT 80	115	81	56	2	2,0	10 2	SPM . 120408 LP .. 150412 ..
	F2238CE.N8.050.Z02.077	50	NCT 80	135	101	77	2	2,2	14 2	
	F2238CE.N8.063.Z02.077	63	NCT 80	125	95	77	2	2,5	14 2	
	F2238CE.N8.063.Z02.087	63	NCT 80	135	105	87	2	2,6	16 2	
	F2238CE.N8.063.Z02.097	63	NCT 80	145	115	97	2	2,7	18 2	
	F2238CE.N8.080.Z03.097	80	NCT 80	145	126	97	3	4,0	27 3	
	F2238CE.N8.080.Z03.107	80	NCT 80	155	136	107	3	4,2	30 3	
	F2238CE.N8.080.Z03.117	80	NCT 80	165	146	117	3	4,3	33 3	

Order tool pull studs that are suitable for the required DIN standard.
When used in DIN 2080 adaptors: Remove one of the drive pins.
For pull studs for steep tapers, see "D – Adaptors catalogue/General information"
Bodies and assembly parts are included in the scope of delivery.

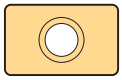
Assembly parts

	D_c mm $L_c$mm	50 56	50 77	63 77	63 87	63 97	80 97	80 107	80 117
	Clamping screw for indexable insert	FS1030 (Torx 20)	FS1030 (Torx 20)	FS1030 (Torx 20)	FS1030 (Torx 20)	FS1030 (Torx 20)	FS1030 (Torx 20)	FS1030 (Torx 20)	FS1030 (Torx 20)
	Tightening torque	5,0 Nm	5,0 Nm	5,0 Nm	5,0 Nm	5,0 Nm	5,0 Nm	5,0 Nm	5,0 Nm
	Clamping screw for front piece	FS370 (SW10)	FS370 (SW10)						
	Tightening torque	40,0 Nm	40,0 Nm						
	Clamping screw for front piece			FS371 (SW10)	FS372 (SW10)		FS373 (SW12)	FS374 (SW2)	
	Tightening torque			120,0 Nm	120,0 Nm		120,0 Nm	120,0 Nm	
	Clamping screw for front piece					FS1032 (SW8)			FS1033 (SW8)
	Tightening torque					120,0 Nm			120,0 Nm
	Front piece	F2238CE.C. 050.Z02.024	F2238CE.C. 050.Z02.034	F2238CE.C. 063.Z02.024	F2238CE.C. 063.Z02.034	F2238CE.C. 063.Z02.0244	F2238CE.C. 080.Z03.024	F2238CE.C. 080.Z03.034	F2238CE.C. 080.Z03.044

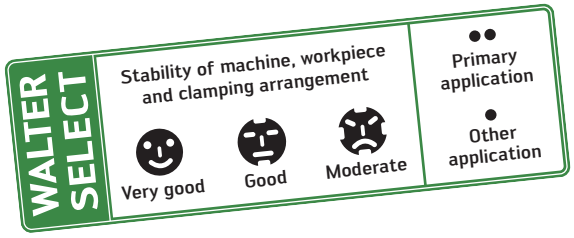
Accessories

	D_c mm $L_c$mm	50 56	50 77	63 77	63 87	63 97	80 97	80 107	80 117
	Screwdriver	FS228 (Torx 20)	FS228 (Torx 20)	FS228 (Torx 20)	FS228 (Torx 20)	FS228 (Torx 20)	FS228 (Torx 20)	FS228 (Torx 20)	FS228 (Torx 20)
	Socket wrench					FS1043 (SW8)			FS1043 (SW8)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LPGT150412R-F55	1,2	1,6		●●		○		●●		○	●			○		●●		○
	LPGW150412R-A57	1,2	1,6	●●	○							●		●●	○				
	LPMT150412R-D51	1,2	1,6	●	●●		○		●●		○			●●	○		●●		○
	LPMW150412TR-A27	1,2		●●	○									●●	○				
	SPMT120408-D51	0,8		●	●●		○		●●		○			●●	○		●●		○
	SPMT120408-F55	0,8			●●		○		●●		○	●			○		●●		○
	SPMW120408-A57	0,8		●●	○							●		●●	○				
	SPMW120408T-A27	0,8		●●	○									●●	○				

HC = Coated carbide



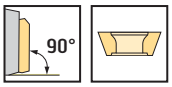
C 289 D 1 C 572 C 597 C 658 C 632

Porcupine milling cutter basic bodies F2238CK



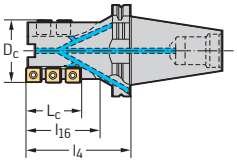
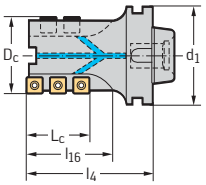


C 2



– Basic body for porcupine milling cutters
– Four cutting edges per indexable insert

	P	M	K	N	S	H	O
F2238CK	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_{16} mm	L_c mm	Z	kg	No. of indexable inserts	Type
SK DIN 69871 + 2080 	F2238CK.S5.050.Z02.032	50	SK50	96	60	32	2	3,5	6	SPM . 120408
	F2238CK.S5.063.Z02.053	63	SK50	111	78	53	2	4,0	10	
	F2238CK.S5.080.Z03.073	80	SK50	126	105	73	3	5,2	21	
Modular NCT adaptor 	F2238CK.N8.050.Z02.032	50	NCT 80	91	56	32	2	1,7	6	SPM . 120408
	F2238CK.N8.050.Z02.053	50	NCT 80	111	77	53	2	1,7	10	
	F2238CK.N8.063.Z02.053	63	NCT 80	101	71	53	2	2,1	10	
	F2238CK.N8.080.Z03.073	80	NCT 80	121	98	73	3	2,3	21	

For pull studs for steep tapers, see “D – Adaptors catalogue/General information”
When used in DIN 2080 adaptors: Remove one of the drive pins!
Order tool pull studs that are suitable for the required DIN standard.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	50–80
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm

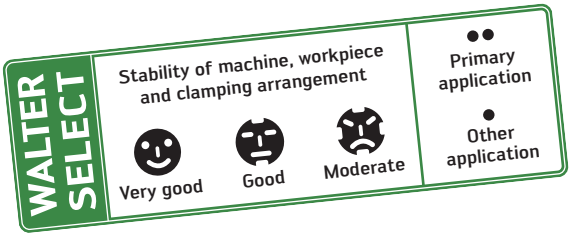
Accessories

	D_c [mm]	50–80
	Screwdriver for indexable insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	SPMT120408-D51	0,8	●●	●●		○		●●		○			●●	○		●●		○
	SPMT120408-F55	0,8		●●		○		●●		○	●●			○		●●		○
	SPMW120408-A57	0,8	●●	○							●●		●●	○				
	SPMW120408T-A27	0,8	●●	○									●●	○				

HC = Coated carbide

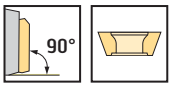


C 301 D 1 C 572 C 597 C 658 C 632

Porcupine milling cutter front piece
F2238CE.C



C 2



– Half effective design with front piece
– Two or four cutting edges per indexable insert

	P	M	K	N	S	H	O
F2238CE.C	●●	●●	●●		●●		

Tool	Designation	D_c mm	L_c mm	Z	kg	No. of indexable inserts	Type
	F2238CE.C.050.Z02.024	50	24	2	0,2	4 2	SPM . 120408 LP .. 150412 ..
	F2238CE.C.063.Z02.044	63	44	2	0,6	8 2	
	F2238CE.C.063.Z02.024	63	24	2	0,3	4 2	
	F2238CE.C.063.Z02.034	63	34	2	0,4	6 2	
	F2238CE.C.080.Z03.044	80	44	3	1,0	13 3	
	F2238CE.C.080.Z03.024	80	24	3	0,5	7 3	
	F2238CE.C.080.Z03.034	80	34	3	0,7	9 3	

Bodies and assembly parts are included in the scope of delivery.

C 2

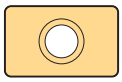
Assembly parts

	D_c [mm]	50–80
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm

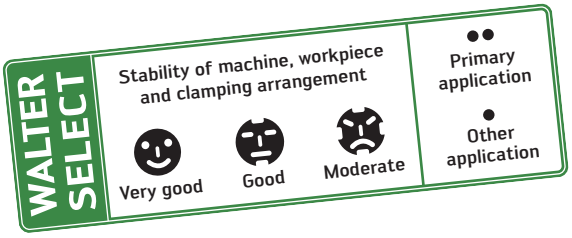
Accessories

	D_c [mm]	50–80
	Screwdriver for indexable insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LPGT150412R-F55	1,2	1,6		☺		☹		☺		☹	☺			☹		☺		☹
	LPGW150412R-A57	1,2	1,6	☺	☹							☺		☺	☹				
	LPMT150412R-D51	1,2	1,6	☺	☺		☹		☺		☹			☺	☹		☺		☹
	LPMW150412TR-A27	1,2		☺	☹									☺	☹				
	SPMT120408-D51	0,8		☺	☺		☹		☺		☹			☺	☹		☺		☹
	SPMT120408-F55	0,8			☺		☹		☺		☹	☺			☹		☺		☹
	SPMW120408-A57	0,8		☺	☹							☺		☺	☹				
	SPMW120408T-A27	0,8		☺	☹									☺	☹				

HC = Coated carbide



C 289 D 1 C 572 C 597 C 621 C 632

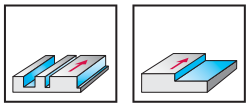
Porcupine milling cutters
M3255

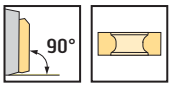
XNHX1306 .. R / LNHX120604R
Walter BLAXX



C 2

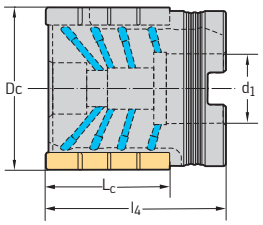
– Full effective design
– Two or four cutting edges per indexable insert, tangential arrangement





	P	M	K	N	S	H	O
M3255					●●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	M3255-050-B22-04-46	50	22	65	46	4	0,5	4 12	XNHX1306 .. R LNHX120604R
	M3255-050-B22-05-46	50	22	65	46	5	0,5	5 15	
	M3255-063-B27-05-46	63	27	70	46	5	1,0	5 15	
	M3255-063-B27-06-46	63	27	70	46	6	1,0	6 18	
	M3255-080-B32-05-58	80	32	85	58	5	2,0	5 25	
	M3255-080-B32-06-58	80	32	85	58	6	2,0	6 24	



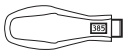
For tools with locating bores, use longer fastening bolts in accordance with ISO 4762, see "Assembly parts and accessories/Other"
The FS2250 coolant nozzle must be secured to prevent it from coming loose.
Bodies and assembly parts are included in the scope of delivery.

C 2

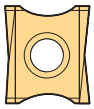
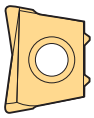
Assembly parts

	D_c [mm]	50–80
	Clamping screw for indexable insert Tightening torque	FS2081 (Torx 15IP) 4,0 Nm
	Coolant nozzle	FS2250 (SW 1,5)

Accessories

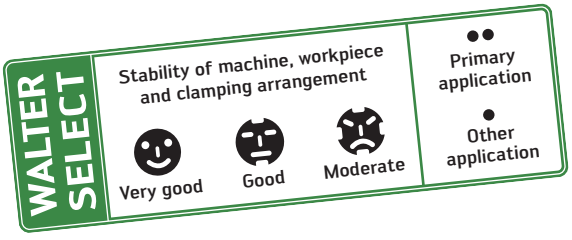
	D_c [mm]	50–80
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2014 (Torx 15IP)
	Screwdriver	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSM45X	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM45X	S HC WSP45S
	LNHX120604R-L65T	0,4															●●	●●
	XNHX130608R-L65T	0,8	2														●●	●●
	XNHX130612R-L65T	1,2	2														●●	●●
	XNHX130616R-L65T	1,6	2														●●	●●
	XNHX130620R-L65T	2	2														●●	●●
	XNHX130624R-L65T	2,4	2														●●	●●
	XNHX130630R-L65T	3	1,4														●●	●●
	XNHX130632R-L65T	3,2	1,3														●●	●●
	XNHX130640R-L65T	4	0,5														●●	●●

XNHX1306 indexable inserts . . can only be used as front inserts.

HC = Coated carbide
HW = Uncoated carbide

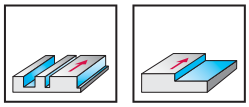


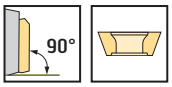
C 329 D 1 C 570 C 595 C 658 C 621

Porcupine milling cutters
M4256 / M4257 / M4258

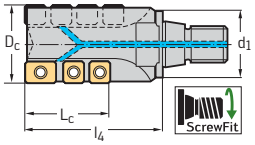
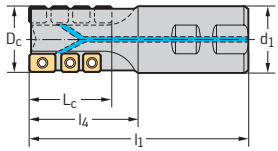
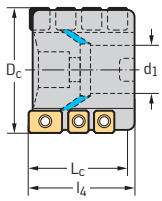


– Half effective design
– Two or four cutting edges per indexable insert





	P	M	K	N	S	H	O
M4256	●●	●●	●●		●●		
M4257	●●	●●	●●		●●		
M4258	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	M4256-020-T18-01-27	20	T18	40		27	1	0,1	1 5	
	M4256-025-T22-02-27	25	T22	40		27	2	0,1	2 10	LDM . 08T204R SDM . 06T204
	M4256-032-T28-02-37	32	T28	50		37	2	0,2	2 14	
	M4257-040-T36-02-54	40	T36	69		54	2	0,5	2 14	LDM . 14T308R SDM . 09T308
Shank DIN 1835 B 	M4256-020-W20-01-27	20	20	35	86	27	1	0,2	1 5	
	M4256-025-W25-02-27	25	25	40	97	27	2	0,3	2 10	LDM . 08T204R SDM . 06T204
	M4256-032-W32-02-37	32	32	50	111	37	2	0,6	2 14	
	M4257-040-W40-02-54	40	40	69	140	54	2	1,1	2 14	LDM . 14T308R SDM . 09T308
Cylindrical bore DIN 138 transverse keyway 	M4257-050-B22-02-47	50	22	56		47	2	0,4	2 12	LDM . 14T308R SDM . 09T308
	M4257-063-B27-03-54	63	27	69		54	3	0,9	3 21	
	M4258-080-B32-03-67	80	32	80		67	3	1,4	3 18	LDM . 170408R SDM . 120408
	M4258-100-B40-04-77	100	40	80		77	4	2,4	4 28	

For tools with locating bores, use longer fastening bolts in accordance with ISO 4762, see "Assembly parts and accessories/Other"
Bodies and assembly parts are included in the scope of delivery.

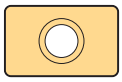
Assembly parts

	Type	LDM . 08T204R SDM . 06T204	LDM . 14T308R SDM . 09T308	LDM . 170408R SDM . 120408
	Clamping screw for indexable insert Tightening torque	FS2084 (Torx 7IP) 0,9 Nm	FS2266 (Torx 10IP) 2,0 Nm	FS1453 (Torx 15IP) 3,5 Nm

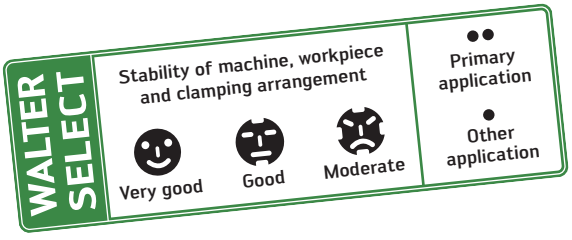
Accessories

	Type	LDM . 08T204R SDM . 06T204	LDM . 14T308R SDM . 09T308	LDM . 170408R SDM . 120408
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque		FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2268 (Torx 10IP)	FS2014 (Torx 15IP)
	Screwdriver	FS2088 (Torx 7IP)	FS2267 (Torx 10IP)	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	b mm	P HC			M HC			K HC				S HC		
				WKP25S	WKP35S	WSP45S	WSM35S	WSM45X	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM45X	WSP45S
	LDMT08T204R-D51	0,4	0,8	●●	●	●●			●●			●	●			●●
	LDMT08T204R-D57	0,4	0,8	●●	●	●●	●		●●		●	●	●	●		●●
	LDMT08T204R-F57	0,4	0,8	●●	●	●●	●		●●	●●		●	●	●		●●
	LDMW08T204R-A57	0,4	0,8	●	●●							●	●			
	LDMT14T308R-D51	0,8	1,2	●●	●	●●			●●			●	●			●●
	LDMT14T308R-D57	0,8	1,2	●●	●	●●	●		●●		●	●	●	●		●●
	LDMT14T308R-F57	0,8	1,2	●●	●	●●	●		●●	●●		●	●	●		●●
	LDMW14T308R-A57	0,8	1,2	●	●●							●	●			
	LDMT170408R-D51	0,8	1,6	●●	●	●●			●●			●	●			●●
	LDMT170408R-D57	0,8	1,6	●●	●	●●	●		●●		●	●	●	●		●●
	LDMT170408R-F57	0,8	1,6	●●	●	●●	●		●●	●●		●	●	●		●●
	LDMW170408R-A57	0,8	1,6	●	●●							●	●			
	SDMT06T204-D51	0,4		●●	●	●●			●●			●	●			●●
	SDMT06T204-D57	0,4		●●	●	●●	●		●●		●	●	●	●		●●
	SDMT06T204-F57	0,4		●●	●	●●	●	●	●●	●●		●	●	●	●	●●
	SDMW06T204-A57	0,4		●	●●							●	●			
	SDMT09T308-D51	0,8		●●	●	●●			●●			●	●			●●
	SDMT09T308-D57	0,8		●●	●	●●	●		●●		●	●	●	●		●●
	SDMT09T308-F57	0,8		●●	●	●●	●	●	●●	●●		●	●	●	●	●●
	SDMW09T308-A57	0,8		●	●●							●	●			
	SDMT120408-D51	0,8		●●	●	●●			●●			●	●			●●
	SDMT120408-D57	0,8		●●	●	●●	●		●●		●	●	●	●		●●
	SDMT120408-F57	0,8		●●	●	●●	●	●	●●	●●		●	●	●	●	●●
	SDMW120408-A57	0,8		●	●●							●	●			

HC = Coated carbide



C 288 D 1 C 572 C 597 C 658 C 621

Side and Face Cutters for shoulder milling
F2252



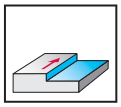


C 2

– Helically toothed, half side and face LH or RH
– Two cutting edges per indexable insert

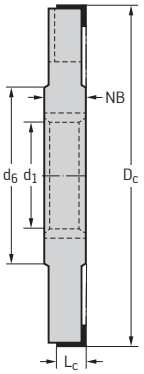


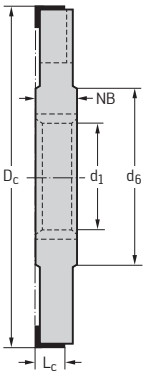




	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	L_c mm	NB mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.100.Z08.08.R724	100	32	50	8	12	8	0,5	8	
	F2252.B.125.Z10.08.R724	125	40	65	8	12	10	0,7	10	AD . T0803 .. R
	F2252.B.160.Z12.08.R724	160	40	65	8	12	12	1,4	12	
Cylindrical Bore DIN 138 longitudinal keyway	F2252.B.100.Z08.08.L724	100	32	50	8	12	8	0,5	8	
	F2252.B.125.Z10.08.L724	125	40	65	8	12	10	0,7	10	AD . T0803 .. L
	F2252.B.160.Z12.08.L724	160	40	65	8	12	12	1,4	12	





Depending on the cutting diameter and insert size, the profile on the component will vary.
Adjustable
Bodies and assembly parts are included in the scope of delivery.

C 2

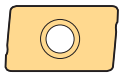
Assembly parts

	Type	AD . T0803 .. L	AD . T0803 .. R
	Cartridge for tool body, left	FL724	
	Cartridge for tool body, right		FR724
	Clamping wedge	FK360	FK360
	Clamping sleeve	FS1167	FS1167
	Eccentric bolt	FS1170	FS1170
	Spring washer	FS1220	FS1220
	Clamping screw for clamping wedge	FS239 (SW 3)	FS239 (SW 3)
	Clamping screw for indexable insert Tightening torque	FS1454 (Torx 8IP) 1,2 Nm	FS1454 (Torx 8IP) 1,2 Nm

Accessories

	Type	AD . T0803 .. L	AD . T0803 .. R
	Screwdriver for indexable insert	FS1483 (Torx 8IP)	FS1483 (Torx 8IP)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-3 (SW 3)	ISO2936-3 (SW 3)
	Cartridge: Left, P2905-. finishing insert	FL695 (P2905-0)	
	Cartridge: Right, P2905-. finishing insert		FR695 (P2905-0)
	Clamping screw for finishing insert Tightening torque	FS246 (Torx 8) 1,5 Nm	FS246 (Torx 8) 1,5 Nm
	Screwdriver for finishing insert	FS230 (Torx 8)	FS230 (Torx 8)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	ADHT0803PEL-G88	0,4	1,2													☺					
	ADHT0803PER-G88	0,4	1,2													☺	☺				
	ADKT0803PEL-F56	0,4	1,2		☻	☹				☹					☹					☹	
	ADKT0803PER-F56	0,4	1,2	☺	☻	☹				☹		☺		☻	☹					☹	
	ADMT080304L-F56	0,4	1,2		☻	☹				☹					☹					☹	
	ADMT080304R-F56	0,4	1,2	☺	☻	☹		●	●	☹		☺	●	●	☹			●	●	☹	
	ADMT080308L-F56	0,8	1,2		☻	☹				☹					☹					☹	
	ADMT080308R-F56	0,8	1,2		☻	☹	☹	●	●	☹	☹				☹			●	●	☹	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good ☻ Good ☹ Moderate

●● Primary application

● Other application

C 284 D 1 C 576 C 598 C 626 C 621

Side and Face Cutters for shoulder milling
F2252



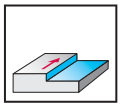


C 2

– Helically toothed, half side and face LH or RH
– Two cutting edges per indexable insert

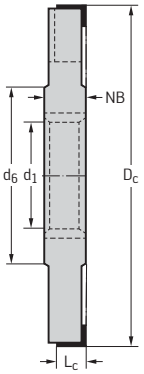


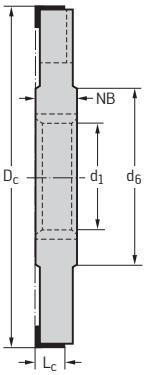




	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	L_c mm	NB mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.125.Z08.11.R725	125	40	65	11,7	19	8	1	8	AD . T1204 .. R
	F2252.B.160.Z10.11.R725	160	40	65	11,7	19	10	2,0	10	
	F2252.B.200.Z12.11.R725	200	50	75	11,7	19	12	3,3	12	
	F2252.B.315.Z20.11.R725	315	60	90	11,7	19	20	8,9	20	
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.125.Z08.11.L725	125	40	65	11,7	19	8	1	8	AD . T1204 .. L
	F2252.B.160.Z10.11.L725	160	40	65	11,7	19	10	2	10	
	F2252.B.200.Z12.11.L725	200	50	75	11,7	19	12	3,3	12	
	F2252.B.250.Z16.11.L725	250	60	90	11,7	19	16	5,3	16	
	F2252.B.315.Z20.11.L725	315	60	90	11,7	19	20	8,9	20	





Depending on the cutting diameter and insert size, the profile on the component will vary.
Adjustable
Bodies and assembly parts are included in the scope of delivery.

C 2

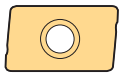
Assembly parts

	Type	AD . T1204 .. L	AD . T1204 .. R
	Cartridge for tool body, left	FL725	
	Cartridge for tool body, right		FR725
	Clamping wedge	FK359	FK359
	Clamping sleeve	FS1168	FS1168
	Eccentric bolt	FS1171	FS1171
	Spring washer	FS1221	FS1221
	Clamping screw for clamping wedge	FS1162 (SW 4)	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm	FS1457 (Torx 9IP) 2,0 Nm

Accessories

	Type	AD . T1204 .. L	AD . T1204 .. R
	Screwdriver for indexable insert	FS1484 (Torx 9IP)	FS1484 (Torx 9IP)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)
	Cartridge: Left, P2905-. finishing insert	FL696 (P2905-1)	
	Cartridge: Right, P2905-. finishing insert		FR696 (P2905-1)
	Clamping screw for finishing insert Tightening torque	FS260 (Torx 20) 5,0 Nm	FS260 (Torx 20) 5,0 Nm
	Screwdriver for finishing insert	FS228 (Torx 20)	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADHT1204PEL-G88	0,8	1,2														☺	☺					
	ADHT1204PER-G88	0,8	1,2														☺	☺					
	ADKT1204PEL-F56	0,8	1,2		😐	☹					☹					☹						☹	
	ADKT1204PER-F56	0,8	1,2	☺	😐	☹					☹		☺		😐	☹						☹	
	ADMT120408L-F56	0,8	1,2		😐	☹					☹					☹						☹	
	ADMT120408R-F56	0,8	1,2	☺	😐	☹	☹	😐	😐	☹	☹	☹	☺	😐	😐	☹			😐	😐	☹	☹	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good 😐 Good ☹ Moderate

●● Primary application

● Other application

C 284 | D 1 | C 576 | C 598 | C 626 | C 621

Side and Face Cutters for shoulder milling
F2252



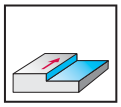


C 2

– Helically toothed, half side and face LH or RH
– Two cutting edges per indexable insert

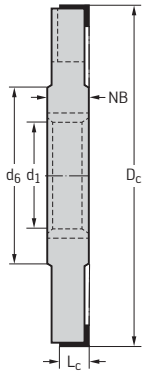


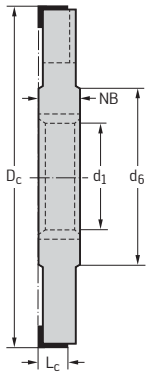




	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	L_c mm	NB mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.125.Z08.15.R726	125	40	65	15	19	8	1	8	AD . T1606 .. R
	F2252.B.160.Z10.15.R726	160	40	65	15	19	10	2	10	
	F2252.B.250.Z16.15.R726	250	60	90	15	19	16	5,3	16	
	F2252.B.315.Z20.15.R726	315	60	90	15	19	20	8,9	20	
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.125.Z08.15.L726	125	40	65	15	19	8	1	8	AD . T1606 .. L
	F2252.B.160.Z10.15.L726	160	40	65	15	19	10	2	10	
	F2252.B.200.Z12.15.L726	200	50	75	15	19	12	3,3	12	
	F2252.B.250.Z16.15.L726	250	60	90	15	19	16	5,3	16	
	F2252.B.315.Z20.15.L726	315	60	90	15	19	20	8,9	20	





Depending on the cutting diameter and insert size, the profile on the component will vary.
Adjustable
Bodies and assembly parts are included in the scope of delivery.

C 2

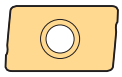
Assembly parts

	Type	AD . T1606 .. L	AD . T1606 .. R
	Cartridge for tool body, left	FL726	
	Cartridge for tool body, right		FR726
	Clamping wedge	FK359	FK359
	Clamping sleeve	FS1168	FS1168
	Eccentric bolt	FS1171	FS1171
	Spring washer	FS1221	FS1221
	Clamping screw for clamping wedge	FS1162 (SW 4)	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS1453 (Torx 15IP) 3,5 Nm	FS1453 (Torx 15IP) 3,5 Nm

Accessories

	Type	AD . T1606 .. L	AD . T1606 .. R
	Screwdriver for indexable insert	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)
	Cartridge: Left, P2905-. finishing insert	FL696 (P2905-1)	
	Cartridge: Right, P2905-. finishing insert		FR696 (P2905-1)
	Clamping screw for finishing insert Tightening torque	FS260 (Torx 20) 5,0 Nm	FS260 (Torx 20) 5,0 Nm
	Screwdriver for finishing insert	FS228 (Torx 20)	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADHT1606PEL-G88	0,8	1,6														☺						
	ADHT1606PER-G88	0,8	1,6														☺	☺					
	ADKT1606PEL-F56	0,8	1,6		😐	☹					☹					☹						☹	
	ADKT1606PER-F56	0,8	1,6	☺	😐	☹					☹		☺		😐	☹						☹	
	ADMT160608L-F56	0,8	1,6		😐	☹					☹					☹						☹	
	ADMT160608R-F56	0,8	1,6	☺	😐	☹	☹	😐	😐	☹	☹	☹	☺	😐	😐	☹			😐	😐	☹	☹	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good 😐 Good ☹ Moderate

●● Primary application

● Other application

C 284 | D 1 | C 576 | C 598 | C 626 | C 621

Side and Face Cutters for shoulder milling
F2252



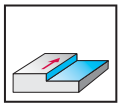


C 2

– Helically toothed, half side and face LH or RH
– Two cutting edges per indexable insert

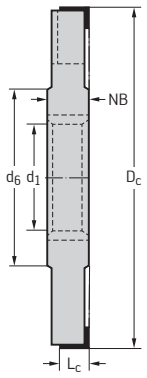


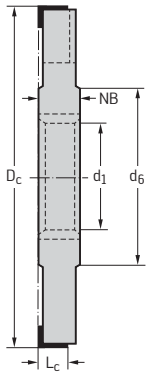




	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	L_c mm	NB mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.080.Z06.06.R684	80	22	37	6	8	6	0,2	6	
	F2252.B.100.Z08.06.R684	100	32	50	6	8	8	0,4	8	MP . X060304
	F2252.B.125.Z10.06.R684	125	40	65	6	8	10	0,6	10	
	F2252.B.100.Z08.08.R685	100	32	50	8	12	8	0,4	8	
	F2252.B.125.Z10.08.R685	125	40	65	8	12	10	0,7	10	MP . X080305
	F2252.B.160.Z12.08.R685	160	40	65	8	12	12	1,4	12	
	F2252.B.125.Z08.12.R686	125	40	65	12	19	8	1	8	
	F2252.B.160.Z10.12.R686	160	40	65	12	19	10	2	10	
	F2252.B.200.Z12.12.R686	200	50	75	12	19	12	3,3	12	MP .. 120408
	F2252.B.250.Z16.12.R686	250	60	90	12	19	16	5,3	16	
	F2252.B.315.Z20.12.R686	315	60	90	12	19	20	8,9	20	
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.080.Z06.06.L684	80	22	37	6	8	6	0,2	6	
	F2252.B.100.Z08.06.L684	100	32	50	6	8	8	0,4	8	MP . X060304
	F2252.B.125.Z10.06.L684	125	40	65	6	8	10	0,6	10	
	F2252.B.100.Z08.08.L685	100	32	50	8	12	8	0,5	8	
	F2252.B.125.Z10.08.L685	125	40	65	8	12	10	0,7	10	MP . X080305
	F2252.B.160.Z12.08.L685	160	40	65	8	12	12	1,3	12	
	F2252.B.125.Z08.12.L686	125	40	65	12	19	8	1	8	
	F2252.B.160.Z10.12.L686	160	40	65	12	19	10	2,0	10	
	F2252.B.200.Z12.12.L686	200	50	75	12	19	12	3,3	12	MP .. 120408
	F2252.B.250.Z16.12.L686	250	60	90	12	19	16	5,3	16	
	F2252.B.315.Z20.12.L686	315	60	90	12	19	20	8,9	20	





Adjustable
Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	Type	MP . X060304	MP . X080305	MP .. 120408
	Cartridge for tool body, left	FL684	FL685	FL686
	Cartridge for tool body, right	FR684	FR685	FR686
	Clamping wedge	FK358	FK360	FK359
	Clamping sleeve	FS1166	FS1167	FS1168
	Eccentric bolt	FS1169	FS1170	FS1171
	Spring washer	FS1220	FS1220	FS1221
	Clamping screw for clamping wedge	FS1161 (SW 2,5)	FS239 (SW 3)	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS923 (Torx 8) 1,2 Nm	FS1005 (Torx 8) 1,0 Nm	FS1029 (Torx 20) 5,0 Nm

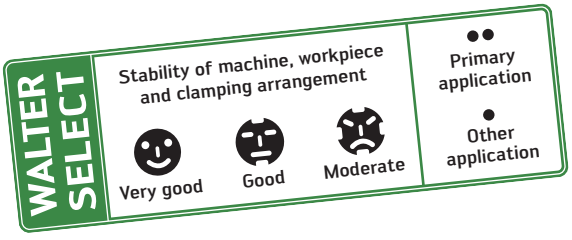
Accessories

	Type	MP . X060304	MP . X080305	MP .. 120408
	Screwdriver for finishing insert	FS230 (Torx 8)	FS230 (Torx 8)	FS228 (Torx 20)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)
	Cartridge: Left, P2905-. finishing insert		FL695 (P2905-0)	FL696 (P2905-1)
	Cartridge: Right, P2905-. finishing insert		FR695 (P2905-0)	FR696 (P2905-1)
	Clamping screw for finishing insert Tightening torque		FS246 (Torx 8) 1,5 Nm	FS260 (Torx 20) 5,0 Nm

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	MPHX060304-A57	0,4	●●	●							●		●●	●					
	MPHX060304-G88	0,4													●				
	MPHX080305-A57	0,5	●●	●							●		●●	●					
	MPHX080305-G88	0,5													●				
	MPMX060304-F57	0,4		●●		●		●●		●				●			●●		●
	MPMX080305-F57	0,5		●●		●		●●		●	●			●			●●		●
	MPHT120408-G88	0,8													●				
	MPHW120408-A57	0,8	●●	●							●		●●	●					
	MPMT120408-F57	0,8		●●		●		●●		●				●			●●		●

HC = Coated carbide



C 290 D 1 C 576 C 598 C 626 C 621

Side and Face Cutters for slot milling
F2252

AD . T0803 .. R/L

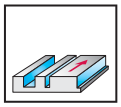




– Cross-toothed, full side and face, cuts on three sides
– Two cutting edges per indexable insert







	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB_{min} mm	SB_{max} mm	NB mm	a_e mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.100.Z04.12.S724	100	32	50	12	12	14	12		4	0,5	4 4	AD . T0803 .. R AD . T0803 .. L
	F2252.B.100.Z04.14.S724	100	32	50	14	14	16	14		4	0,6	4 4	
	F2252.B.125.Z05.12.S724	125	40	65	12	12	14	12		5	0,7	5 5	
	F2252.B.125.Z05.14.S724	125	40	65	14	14	16	14		5	0,8	5 5	
	F2252.B.160.Z06.12.S724	160	40	65	12	12	14	12		6	1,4	6 6	
	F2252.B.160.Z06.14.S724	160	40	65	14	14	16	14		6	1,6	6 6	
Cylindrical bore DIN 138 transverse keyway	F2252.BN.100.Z04.12.S724	100	27	48	50	12	14		24	4	0,9	4 4	AD . T0803 .. R AD . T0803 .. L
	F2252.BN.100.Z04.14.S724	100	27	48	50	14	16		24	4	1	4 4	
	F2252.BN.125.Z05.12.S724	125	32	60	50	12	14		30	5	1,1	5 5	
	F2252.BN.125.Z05.14.S724	125	32	60	50	14	16		30	5	1,2	5 5	
	F2252.BN.160.Z06.12.S724	160	40	75	50	12	14		40	6	1,8	6 6	
	F2252.BN.160.Z06.14.S724	160	40	75	50	14	16		40	6	2	6 6	

Depending on the cutting diameter and insert size, the profile in the bottom of the groove will vary.
Adjustable cutting width
Bodies and assembly parts are included in the scope of delivery.

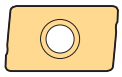
Assembly parts

	D_c [mm]	100–160
	Cartridge for tool body, right	FR724
	Cartridge for tool body, left	FL724
	Clamping wedge	FK360
	Clamping sleeve	FS1167
	Eccentric bolt	FS1170
	Spring washer	FS1220
	Clamping screw for clamping wedge	FS239 (SW 3)
	Clamping screw for indexable insert Tightening torque	FS1454 (Torx 8IP) 1,2 Nm

Accessories

	D_c [mm]	100–160
	Screwdriver for indexable insert	FS1483 (Torx 8IP)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-3 (SW 3)
	Cartridge: Right, P2905-. finishing insert	FR695 (P2905-0)
	Cartridge: Left, P2905-. finishing insert	FL695 (P2905-0)
	Clamping screw for finishing insert Tightening torque	FS246 (Torx 8) 1,5 Nm
	Screwdriver for finishing insert	FS230 (Torx 8)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	ADHT0803PEL-G88	0,4	1,2													☺					
	ADHT0803PER-G88	0,4	1,2													☺	☺				
	ADKT0803PEL-F56	0,4	1,2		☻	☹				☹					☹					☹	
	ADKT0803PER-F56	0,4	1,2	☺	☻	☹				☹		☺		☻	☹					☹	
	ADMT080304L-F56	0,4	1,2		☻	☹				☹					☹					☹	
	ADMT080304R-F56	0,4	1,2	☺	☻	☹		☻	☻	☹		☺	☻	☻	☹			☻	☻	☹	
	ADMT080308L-F56	0,8	1,2		☻	☹				☹					☹					☹	
	ADMT080308R-F56	0,8	1,2		☻	☹	☹	☻	☻	☹	☹				☹			☻	☻	☹	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good ☻ Good ☹ Moderate

●● Primary application

● Other application

C 284 D 1 C 576 C 598 C 626 C 621

Side and Face Cutters for slot milling
F2252

AD . T1204 .. R/L

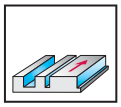




– Cross-toothed, Full side and face, cuts on three sides
– Two cutting edges per indexable insert

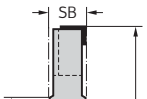


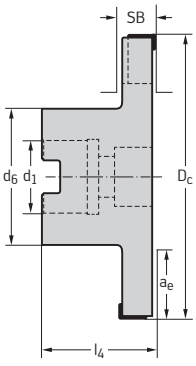




	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB_{min} mm	SB_{max} mm	NB mm	a_e mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.125.Z04.16.S725	125	40	65	16	16	19	16		4	0,9	4 4	AD . T1204 .. R AD . T1204 .. L
	F2252.B.125.Z04.19.S725	125	40	65	19	19	22	19		4	1	4 4	
	F2252.B.160.Z05.16.S725	160	40	65	16	16	19	16		5	1,6	5 5	
	F2252.B.160.Z05.19.S725	160	40	65	19	19	22	19		5	2	5 5	
	F2252.B.200.Z06.16.S725	200	50	75	16	16	19	16		6	2,7	6 6	
	F2252.B.200.Z06.19.S725	200	50	75	19	19	22	19		6	3,3	6 6	
	F2252.B.250.Z08.16.S725	250	60	90	16	16	19	16		8	4,4	8 8	
	F2252.B.250.Z08.19.S725	250	60	90	19	19	22	19		8	5,3	8 8	
	F2252.B.315.Z10.16.S725	315	60	90	16	16	19	16		10	7,3	10 10	
	F2252.B.315.Z10.19.S725	315	60	90	19	19	22	19		10	8,9	10 10	
Cylindrical bore DIN 138 transverse keyway	F2252.BN.125.Z04.16.S725	125	32	60	50	16	19		30	4	1,5	4 4	AD . T1204 .. R AD . T1204 .. L
	F2252.BN.125.Z04.19.S725	125	32	60	50	19	22		30	4	1,7	4 4	
	F2252.BN.160.Z05.16.S725	160	40	75	50	16	19		40	5	2,3	5 5	
	F2252.BN.160.Z05.19.S725	160	40	75	50	19	22		40	5	2,6	5 5	
	F2252.BN.200.Z06.16.S725	200	40	90	50	16	19		50	6	3,5	6 6	
	F2252.BN.200.Z06.19.S725	200	40	90	50	19	22		50	6	4,1	6 6	





Depending on the cutting diameter and insert size, the profile in the bottom of the groove will vary.
Adjustable cutting width
Bodies and assembly parts are included in the scope of delivery.

C 2

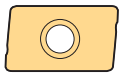
Assembly parts

	D_c [mm]	125–315
	Cartridge for tool body, right	FR725
	Cartridge for tool body, left	FL725
	Clamping wedge	FK359
	Clamping sleeve	FS1168
	Eccentric bolt	FS1171
	Spring washer	FS1221
	Clamping screw for clamping wedge	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm

Accessories

	D_c [mm]	125–315
	Screwdriver for indexable insert	FS1484 (Torx 9IP)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-4 (SW 4)
	Cartridge: Right, P2905-. finishing insert	FR696 (P2905-1)
	Cartridge: Left, P2905-. finishing insert	FL696 (P2905-1)
	Clamping screw for finishing insert Tightening torque	FS260 (Torx 20) 5,0 Nm
	Screwdriver for finishing insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADHT1204PEL-G88	0,8	1,2														☺	☺					
	ADHT1204PER-G88	0,8	1,2														☺	☺					
	ADKT1204PEL-F56	0,8	1,2		😐	☹					☹					☹						☹	
	ADKT1204PER-F56	0,8	1,2	☺	😐	☹					☹		☺		😐	☹						☹	
	ADMT120408L-F56	0,8	1,2		😐	☹					☹					☹						☹	
	ADMT120408R-F56	0,8	1,2	☺	😐	☹	☹	😐	😐	☹	☹	☹	☺	😐	😐	☹			😐	😐	☹	☹	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good
😐 Good
☹ Moderate

●● Primary application
● Other application

C 284 | D 1 | C 576 | C 598 | C 626 | C 621

Side and Face Cutters for slot milling
F2252

AD . T1204 .. R/L



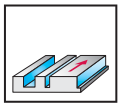


C 2

– Cross-toothed, full side and face, cuts on three sides
– Two cutting edges per indexable insert

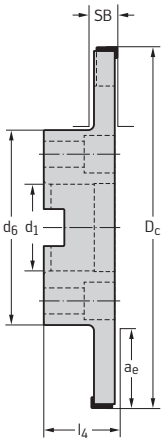






	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB_{min} mm	SB_{max} mm	NB mm	a_e mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2252.BN.250.Z08.16.S725	250	60/50 B	135	50	16	19		55	8	5,8	8 8	
	F2252.BN.250.Z08.19.S725	250	60/50 B	135	50	19	22		55	8	6,6	8 8	AD . T1204 .. R AD . T1204 .. L
	F2252.BN.315.Z10.16.S725	315	60/50 B	135	50	16	19		85	10	11,4	10 10	
	F2252.BN.315.Z10.19.S725	315	60/50 B	135	50	19	22		85	10	12,1	10 10	



Depending on the cutting diameter and insert size, the profile in the bottom of the groove will vary.
Adjustable cutting width
Bodies and assembly parts are included in the scope of delivery.

C 2

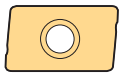
Assembly parts

	D_c [mm]	250–315
	Cartridge for tool body, right	FR725
	Cartridge for tool body, left	FL725
	Clamping wedge	FK359
	Clamping sleeve	FS1168
	Eccentric bolt	FS1171
	Spring washer	FS1221
	Clamping screw for clamping wedge	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS1457 (Torx 9IP) 2,0 Nm

Accessories

	D_c [mm]	250–315
	Screwdriver for indexable insert	FS1484 (Torx 9IP)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-4 (SW 4)
	Cartridge: Right, P2905-. finishing insert	FR696 (P2905-1)
	Cartridge: Left, P2905-. finishing insert	FL696 (P2905-1)
	Tightening torque of clamping screw for finishing insert	FS260 (Torx 20) 5,0 Nm
	Screwdriver for finishing insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADHT1204PEL-G88	0,8	1,2														☺	☺					
	ADHT1204PER-G88	0,8	1,2														☺	☺					
	ADKT1204PEL-F56	0,8	1,2		☹	☹					☹					☹						☹	
	ADKT1204PER-F56	0,8	1,2	☺	☹	☹					☹		☺		☹	☹						☹	
	ADMT120408L-F56	0,8	1,2		☹	☹					☹					☹						☹	
	ADMT120408R-F56	0,8	1,2	☺	☹	☹	☹	☹	☹	☹	☹	☹	☺	☹	☹	☹			☹	☹	☹	☹	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good ☹ Good ☹ Moderate

●● Primary application

● Other application

C 284 D 1 C 576 C 598 C 626 C 621

Side and Face Cutters for slot milling
F2252

AD . T1606 .. R/L



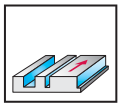


C 2

– Cross-toothed, full side and face, cuts on three sides
– Two cutting edges per indexable insert







	P	M	K	N	S	H	O
F2252	●●		●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB_{min} mm	SB_{max} mm	NB mm	a_e mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.125.Z04.22.S726	125	40	65	22	22	25	22		4	1,2	4 4	AD . T1606 .. R AD . T1606 .. L
	F2252.B.160.Z05.22.S726	160	40	65	22	22	25	22		5	2,3	5 5	
	F2252.B.200.Z06.22.S726	200	50	75	22	22	25	22		6	3,8	6 6	
	F2252.B.250.Z08.22.S726	250	60	90	22	22	25	22		8	6,2	8 8	
Cylindrical bore DIN 138 transverse keyway	F2252.BN.125.Z04.22.S726	125	32	60	50	22	25		30	4	1,9	4 4	AD . T1606 .. R AD . T1606 .. L
	F2252.BN.160.Z05.22.S726	160	40	75	50	22	25		40	5	3	5 5	
	F2252.BN.200.Z06.22.S726	200	40	90	50	22	25		50	6	4,6	6 6	

Depending on the cutting diameter and insert size, the profile in the bottom of the groove will vary.
Adjustable cutting width
Bodies and assembly parts are included in the scope of delivery.

C 2

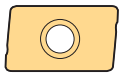
Assembly parts

	D_c [mm]	125–250
	Cartridge for tool body, right	FR726
	Cartridge for tool body, left	FL726
	Clamping wedge	FK359
	Clamping sleeve	FS1168
	Eccentric bolt	FS1171
	Spring washer	FS1221
	Clamping screw for clamping wedge	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS1453 (Torx 15IP) 3,5 Nm

Accessories

	D_c [mm]	125–250
	Screwdriver for indexable insert	FS1485 (Torx 15IP)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-4 (SW 4)
	Cartridge: Right, P2905-. finishing insert	FR696 (P2905-1)
	Cartridge: Left, P2905-. finishing insert	FL696 (P2905-1)
	Clamping screw for finishing insert Tightening torque	FS260 (Torx 20) 5,0 Nm
	Screwdriver for finishing insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADHT1606PEL-G88	0,8	1,6														☺						
	ADHT1606PER-G88	0,8	1,6														☺	☺					
	ADKT1606PEL-F56	0,8	1,6		😐	☹					☹					☹						☹	
	ADKT1606PER-F56	0,8	1,6	☺	😐	☹					☹		☺		😐	☹						☹	
	ADMT160608L-F56	0,8	1,6		😐	☹					☹					☹						☹	
	ADMT160608R-F56	0,8	1,6	☺	😐	☹	☹	😐	😐	☹	☹	☹	☺	😐	😐	☹			😐	😐	☹	☹	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good 😐 Good ☹ Moderate

●● Primary application

● Other application

C 284 | D 1 | C 576 | C 598 | C 626 | C 621

Side and Face Cutters for slot milling
F2252

AD . T1606 .. R/L



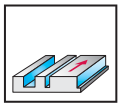


C 2

– Cross-toothed, full side and face, cuts on three sides
– Two cutting edges per indexable insert

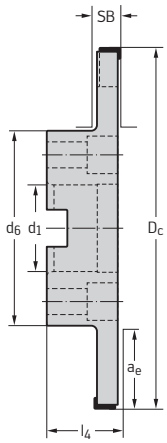






	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB_{min} mm	SB_{max} mm	NB mm	a_e mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2252.BN.250.Z08.22.S726	250	60/50 B	135	50	22	25		55	8	7,4	8 8	AD . T1606 .. R AD . T1606 .. L



Depending on the cutting diameter and insert size, the profile in the bottom of the groove will vary.
Adjustable cutting width
Bodies and assembly parts are included in the scope of delivery.

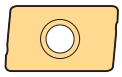
Assembly parts

	D_c [mm]	250
	Cartridge for tool body, right	FR726
	Cartridge for tool body, left	FL726
	Clamping wedge	FK359
	Clamping sleeve	FS1168
	Eccentric bolt	FS1171
	Spring washer	FS1221
	Clamping screw for clamping wedge	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS1453 (Torx 15IP) 3,5 Nm

Accessories

	D_c [mm]	250
	Screwdriver for indexable insert	FS1485 (Torx 15IP)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-4 (SW 4)
	Cartridge: Right, P2905-. finishing insert	FR696 (P2905-1)
	Cartridge: Left, P2905-. finishing insert	FL696 (P2905-1)
	Clamping screw for finishing insert Tightening torque	FS260 (Torx 20) 5,0 Nm
	Screwdriver for finishing insert	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	b mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ADHT1606PEL-G88	0,8	1,6														☺						
	ADHT1606PER-G88	0,8	1,6														☺	☺					
	ADKT1606PEL-F56	0,8	1,6		😐	☹					☹					☹						☹	
	ADKT1606PER-F56	0,8	1,6	☺	😐	☹					☹		☺		😐	☹						☹	
	ADMT160608L-F56	0,8	1,6		😐	☹					☹					☹						☹	
	ADMT160608R-F56	0,8	1,6	☺	😐	☹	☹	😐	😐	☹	☹	☹	☺	😐	😐	☹			😐	😐	☹	☹	☹

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good 😐 Good ☹ Moderate

●● Primary application

● Other application

C 284 | D 1 | C 576 | C 598 | C 626 | C 621

Side and face Cutters for slot milling
F2252



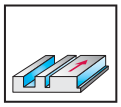


C 2

– Cross-toothed, full side and face, cuts on three sides
– Two cutting edges per indexable insert

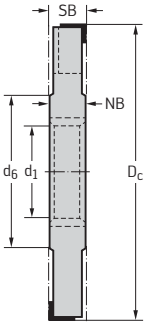






	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB_{min} mm	SB_{max} mm	NB mm	Z	kg	No. of index-able inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F2252.B.080.Z03.08.S684	80	22	37	8	8	9	8	3	0,2	6	
	F2252.B.080.Z03.09.S684	80	22	37	9	9	10	9	3	0,2	6	MP . X060304
	F2252.B.100.Z04.08.S684	100	32	50	8	8	9	8	4	0,4	8	
	F2252.B.100.Z04.09.S684	100	32	50	9	9	10	9	4	0,4	8	
	F2252.B.100.Z04.10.S685	100	32	50	10	10	12	10	4	0,4	8	
	F2252.B.100.Z04.12.S685	100	32	50	12	12	14	12	4	0,5	8	MP . X080305
	F2252.B.100.Z04.14.S685	100	32	50	14	14	16	14	4	0,6	8	
	F2252.B.125.Z05.08.S684	125	40	65	8	8	9	8	5	0,6	10	MP . X060304
	F2252.B.125.Z05.09.S684	125	40	65	9	9	10	9	5	0,7	10	
	F2252.B.125.Z05.10.S685	125	40	65	10	10	12	10	5	0,6	10	
	F2252.B.125.Z05.12.S685	125	40	65	12	12	14	12	5	0,7	10	MP . X080305
	F2252.B.125.Z05.14.S685	125	40	65	14	14	16	14	5	0,8	10	
	F2252.B.125.Z04.16.S686	125	40	65	16	16	19	16	4	0,9	8	
	F2252.B.125.Z04.19.S686	125	40	65	19	19	22	19	4	1,1	8	MP .. 120408
	F2252.B.125.Z04.22.S686	125	40	65	22	22	23,5	22	4	1,3	8	
	F2252.B.160.Z06.08.S684	160	40	65	8	8	9	8	6	1	12	MP . X060304
	F2252.B.160.Z06.09.S684	160	40	65	9	9	10	9	6	1,1	12	
	F2252.B.160.Z06.10.S685	160	40	65	10	10	12	10	6	1,2	12	
	F2252.B.160.Z06.12.S685	160	40	65	12	12	14	12	6	1,4	12	MP . X080305
	F2252.B.160.Z06.14.S685	160	40	65	14	14	16	14	6	1,6	12	
	F2252.B.160.Z05.16.S686	160	40	65	16	16	19	16	5	1,7	10	
	F2252.B.160.Z05.19.S686	160	40	65	19	19	22	19	5	2	10	
	F2252.B.160.Z05.22.S686	160	40	65	22	22	23,5	22	5	2,3	10	
	F2252.B.200.Z06.16.S686	200	50	75	16	16	19	16	6	2,8	12	MP .. 120408
	F2252.B.250.Z08.22.S686	250	60	90	22	22	23,5	22	8	6,2	16	
	F2252.B.315.Z10.16.S686	315	60	90	16	16	19	16	10	7,4	20	
	F2252.B.315.Z10.19.S686	315	60	90	19	19	22	19	10	8,9	20	



Adjustable cutting width
Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	Type	MP . X060304	MP . X080305	MP .. 120408
	Cartridge for tool body, right	FR684	FR685	FR686
	Cartridge for tool body, left	FL684	FL685	FL686
	Clamping wedge	FK358	FK360	FK359
	Clamping sleeve	FS1166	FS1167	FS1168
	Eccentric bolt	FS1169	FS1170	FS1171
	Spring washer	FS1220	FS1220	FS1221
	Clamping screw for clamping wedge	FS1161 (SW 2,5)	FS239 (SW 3)	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS923 (Torx 8) 1,2 Nm	FS1005 (Torx 8) 1,0 Nm	FS1029 (Torx 20) 5,0 Nm

Accessories

	Type	MP . X060304	MP . X080305	MP .. 120408
	Screwdriver for finishing insert	FS230 (Torx 8)	FS230 (Torx 8)	FS228 (Torx 20)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)
	Cartridge: Right, P2905-. finishing insert		FR695 (P2905-0)	FR696 (P2905-1)
	Cartridge: Left, P2905-. finishing insert		FL695 (P2905-0)	FL696 (P2905-1)
	Clamping screw for finishing insert Tightening torque		FS246 (Torx 8) 1,5 Nm	FS260 (Torx 20) 5,0 Nm

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	MPHX060304-A57	0,4	●●	●							●		●●	●					
	MPHX060304-G88	0,4													●				
	MPHX080305-A57	0,5	●●	●							●		●●	●					
	MPHX080305-G88	0,5													●				
	MPMX060304-F57	0,4		●●		●		●●		●				●			●●		●
	MPMX080305-F57	0,5		●●		●		●●		●	●			●			●●		●
	MPHT120408-G88	0,8													●				
	MPHW120408-A57	0,8	●●	●							●		●●	●					
	MPMT120408-F57	0,8		●●		●		●●		●				●			●●		●

HC = Coated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

C 290 | D 1 | C 576 | C 598 | C 626 | C 621

Side and face cutters for slot milling
F2252



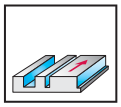


C 2

– Cross-toothed, full side and face, cuts on three sides
– Two cutting edges per indexable insert



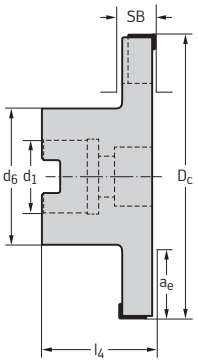




	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●		●

Tool

Cylindrical bore
DIN 138 transverse keyway



Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB_{min} mm	SB_{max} mm	a_e mm	Z	kg	No. of index-able inserts	Type
F2252.BN.080.Z03.08.S684	80	22	35	40	8	9	20	3	0,4	6	MP . X060304
F2252.BN.080.Z03.09.S684	80	22	35	40	9	10	20	3	0,5	6	
F2252.BN.100.Z04.08.S684	100	27	48	50	8	9	24	4	0,6	8	
F2252.BN.100.Z04.09.S684	100	27	48	50	9	10	24	4	0,7	8	
F2252.BN.100.Z04.10.S685	100	27	48	50	10	12	24	4	0,7	8	MP . X080305
F2252.BN.100.Z04.12.S685	100	27	48	50	12	14	24	4	0,8	8	
F2252.BN.125.Z05.08.S684	125	32	60	50	8	9	30	5	0,9	10	MP . X060304
F2252.BN.125.Z05.09.S684	125	32	60	50	9	10	30	5	1	10	
F2252.BN.125.Z05.10.S685	125	32	60	50	10	12	30	5	1	10	MP . X080305
F2252.BN.125.Z05.12.S685	125	32	60	50	12	14	30	5	1,1	10	
F2252.BN.125.Z05.14.S685	125	32	60	50	14	16	30	5	1,2	10	
F2252.BN.125.Z04.16.S686	125	32	60	50	16	19	30	4	1,5	8	MP .. 120408
F2252.BN.125.Z04.19.S686	125	32	60	50	19	22	30	4	1,7	8	
F2252.BN.125.Z04.22.S686	125	32	60	50	22	23,5	30	4	1,9	8	
F2252.BN.160.Z06.08.S684	160	40	75	50	8	9	40	6	1,3	12	MP . X060304
F2252.BN.160.Z06.09.S684	160	40	75	50	9	10	40	6	1,4	12	
F2252.BN.160.Z06.10.S685	160	40	75	50	10	12	40	6	1,6	12	MP . X080305
F2252.BN.160.Z06.12.S685	160	40	75	50	12	14	40	6	1,8	12	
F2252.BN.160.Z06.14.S685	160	40	75	50	14	16	40	6	2	12	
F2252.BN.160.Z05.16.S686	160	40	75	50	16	19	40	5	2,3	10	MP .. 120408
F2252.BN.160.Z05.19.S686	160	40	75	50	19	22	40	5	2,6	10	
F2252.BN.160.Z05.22.S686	160	40	75	50	22	23,5	40	5	3	10	
F2252.BN.200.Z06.16.S686	200	40	90	50	16	19	50	6	3,5	12	
F2252.BN.200.Z06.19.S686	200	40	90	50	19	22	50	6	4,1	12	
F2252.BN.200.Z06.22.S686	200	40	90	50	22	23,5	50	6	4,6	12	

Adjustable cutting width
Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	Type	MP . X060304	MP . X080305	MP .. 120408
	Cartridge for tool body, right	FR684	FR685	FR686
	Cartridge for tool body, left	FL684	FL685	FL686
	Clamping wedge	FK358	FK360	FK359
	Clamping sleeve	FS1166	FS1167	FS1168
	Eccentric bolt	FS1169	FS1170	FS1171
	Spring washer	FS1220	FS1220	FS1221
	Clamping screw for clamping wedge	FS1161 (SW 2,5)	FS239 (SW 3)	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS923 (Torx 8) 1,2 Nm	FS1005 (Torx 8) 1,0 Nm	FS1029 (Torx 20) 5,0 Nm

Accessories

	Type	MP . X060304	MP . X080305	MP .. 120408
	Screwdriver for finishing insert	FS230 (Torx 8)	FS230 (Torx 8)	FS228 (Torx 20)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)
	Cartridge: Right, P2905-. finishing insert		FR695 (P2905-0)	FR696 (P2905-1)
	Cartridge: Left, P2905-. finishing insert		FL695 (P2905-0)	FL696 (P2905-1)
	Clamping screw for finishing insert Tightening torque		FS246 (Torx 8) 1,5 Nm	FS260 (Torx 20) 5,0 Nm

Indexable inserts

	Designation	r mm	P HC				M HC				K HC				N HC	S HC			
			WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WSM35S	WSM35	WSP45S	WSP45
	MPHX060304-A57	0,4	●●	●●							●		●●	●●					
	MPHX060304-G88	0,4													●				
	MPHX080305-A57	0,5	●●	●●							●		●●	●●					
	MPHX080305-G88	0,5													●				
	MPMX060304-F57	0,4		●●		●●		●●		●●				●●			●●		●●
	MPMX080305-F57	0,5		●●		●●		●●		●●	●			●●			●●		●●
	MPHT120408-G88	0,8													●				
	MPHW120408-A57	0,8	●●	●●							●		●●	●●					
	MPMT120408-F57	0,8		●●		●●		●●		●●				●●			●●		●●

HC = Coated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

C 290 | D 1 | C 576 | C 598 | C 626 | C 621

Side and Face cutters for slot milling
F2252

MP .. 120408



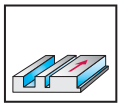


C 2

– Cross-toothed, full side and face, cuts on three sides
– Two cutting edges per indexable insert

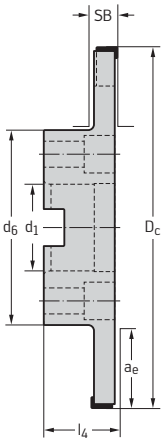






	P	M	K	N	S	H	O
F2252	●●	●●	●●	●●	●		●

Tool	Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB_{min} mm	SB_{max} mm	a_e mm	Z	kg	No. of index-able inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2252.BN.250.Z08.16.S686	250	60/50 B	135	50	16	19	55	8	5,8	16	
	F2252.BN.250.Z08.19.S686	250	60/50 B	135	50	19	22	55	8	6,6	16	
	F2252.BN.250.Z08.22.S686	250	60/50 B	135	50	22	23,5	55	8	7,4	16	MP .. 120408
	F2252.BN.315.Z10.16.S686	315	60/50 B	135	50	16	19	85	10	11,4	20	
	F2252.BN.315.Z10.19.S686	315	60/50 B	135	50	19	22	85	10	12,1	20	



Adjustable cutting width
Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	D_c [mm]	250–315
	Cartridge for tool body, right	FR686
	Cartridge for tool body, left	FL686
	Clamping wedge	FK359
	Clamping sleeve	FS1168
	Eccentric bolt	FS1171
	Spring washer	FS1221
	Clamping screw for clamping wedge	FS1162 (SW 4)
	Clamping screw for indexable insert Tightening torque	FS1029 (Torx 20) 5,0 Nm

Accessories

	D_c [mm]	250–315
	Screwdriver for finishing insert	FS228 (Torx 20)
	ISO 2936 Allen key: Wedge + eccentric bolt	ISO2936-4 (SW 4)
	Cartridge: Right, P2905-. finishing insert	FR696 (P2905-1)
	Cartridge: Left, P2905-. finishing insert	FL696 (P2905-1)
	Clamping screw for finishing insert Tightening torque	FS260 (Torx 20) 5,0 Nm

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	MPHT120408-G88	0,8													☺				
	MPHW120408-A57	0,8	☹	☹							☺		☹	☹					
	MPMT120408-F57	0,8		☹		☹		☹		☹				☹			☹		☹

HC = Coated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

C 290 | D 1 | C 576 | C 598 | C 626 | C 621

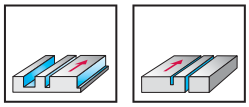
Side and Face cutters for slot milling
F4053

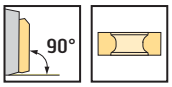
LN . X070204
Xtra·tec®



C 2

– Cross-toothed, full side and face, cuts on three sides
– 2 + 2 cutting edges per indexable insert, tangential arrangement





	P	M	K	N	S	H	O
F4053	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	d_6 mm	NB mm	SB mm	l_4 mm	a_e mm	Z	kg	No. of index-able inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F4053.B27.080.Z04.04	80	27	42	8	4		18	4	0,17	4	LN . X070204
	F4053.B32.100.Z05.04	100	32	50	8	4		24	5	0,26	5	
	F4053.B40.125.Z06.04	125	40	65	8	4		29	6	0,41	6	
	F4053.B40.160.Z08.04	160	40	65	8	4		46	8	0,71	8	
Cylindrical bore DIN 138 transverse keyway	F4053.BN22.080.Z04.04R	80	22	45		4	40	16	4	0,54	4	LN . X070204
	F4053.BN27.100.Z05.04R	100	27	48		4	50	24	5	0,71	5	
	F4053.BN32.125.Z06.04R	125	32	60		4	50	30	6	1,12	6	
	F4053.BN40.160.Z08.04R	160	40	75		4	50	40	8	1,58	8	

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	80–160
	Clamping screw for indexable insert Tightening torque	FS2076 (Torx 6IP) 0,6 Nm

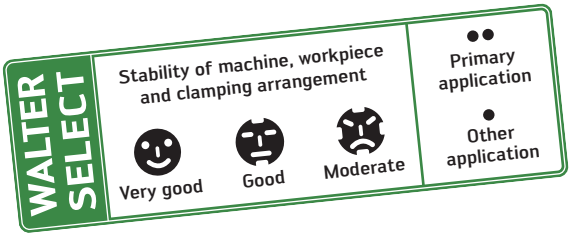
Accessories

	D_c [mm]	80–160
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm
	Interchangeable blade	FS2085 (Torx 6IP)
	Screwdriver	FS2086 (Torx 6IP)

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LNHX070204-D57T	0,4		●●								●●		●						
	LNHX070204-F57T	0,4	●	●●		●		●●		●			●●	●				●●		●
	LNMX070204-D57T	0,4		●●								●●		●						
	LNMX070204-F57T	0,4	●	●●		●		●●		●			●●	●				●●		●

HC = Coated carbide
HW = Uncoated carbide



C 327 D 1 C 576 C 598 C 621

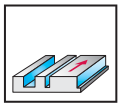
Side and Face cutters for slot milling
F4153

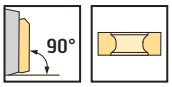
Xtra·tec®



C 2

– Cross-toothed, full side and face, cuts on three sides
– 2 + 2 cutting edges per indexable insert, tangential arrangement





	P	M	K	N	S	H	O
F4153	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	d_6 mm	SB mm	a_e mm	l_4 mm	NB mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F4153.B27.080.Z04.06	80	27	42	6	18		12	4	0,26	4	
	F4153.B32.100.Z05.06	100	32	50	6	24		12	5	0,36	5	
	F4153.B40.125.Z06.06	125	40	65	6	29		12	6	0,59	6	LN . U080304
	F4153.B40.160.Z08.06	160	40	65	6	46		12	8	1,02	8	
	F4153.B50.200.Z09.06	200	50	75	6	61		12	9	2,67	9	
	F4153.B27.080.Z04.08	80	27	42	8	18		12	4	0,27	4	
	F4153.B32.100.Z05.08	100	32	50	8	24		12	5	0,43	5	
	F4153.B40.125.Z06.08	125	40	65	8	29		12	6	0,70	6	LN . U080404
	F4153.B40.160.Z08.08	160	40	65	8	46		12	8	1,22	8	
	F4153.B50.200.Z09.08	200	50	75	8	61		12	9	3,11	9	
	F4153.B27.080.Z04.10	80	27	42	10	18		12	4	0,3	4	
	F4153.B32.100.Z05.10	100	32	50	10	24		12	5	0,45	5	
	F4153.B40.125.Z06.10	125	40	65	10	29		12	6	0,75	6	LN . U100508
	F4153.B40.160.Z07.10	160	40	65	10	46		12	7	1,32	7	
	F4153.B50.200.Z08.10	200	50	75	10	61		12	8	3,32	8	
Cylindrical bore DIN 138 transverse keyway	F4153.BN22.080.Z04.06R	80	22	45	6	16	40		4	0,55	4	
	F4153.BN27.100.Z05.06R	100	27	48	6	25	50		5	0,78	5	
	F4153.BN32.125.Z06.06R	125	32	60	6	30	50		6	1,23	6	LN . U080304
	F4153.BN40.160.Z08.06R	160	40	75	6	40	50		8	2	8	
	F4153.BN40.200.Z09.06R	200	40	90	6	50	50		9	3,83	9	
	F4153.BN22.080.Z04.08R	80	22	45	8	16	40		4	0,58	4	
	F4153.BN27.100.Z05.08R	100	27	48	8	25	50		5	0,09	5	
	F4153.BN32.125.Z06.08R	125	32	60	8	30	50		6	1,35	6	LN . U080404
	F4153.BN40.160.Z08.08R	160	40	75	8	40	50		8	1,98	8	
	F4153.BN40.200.Z09.08R	200	40	90	8	50	50		9	2,6	9	
	F4153.BN22.080.Z04.10R	80	22	45	10	16	40		4	0,58	4	
	F4153.BN27.100.Z05.10R	100	27	48	10	25	50		5	0,87	5	
	F4153.BN32.125.Z06.10R	125	32	60	10	30	50		6	1,41	6	LN . U100508
	F4153.BN40.160.Z07.10R	160	40	75	10	40	50		7	2,07	7	
	F4153.BN40.200.Z08.10R	200	40	90	10	50	50		8	4,44	8	

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	LN . U080304	LN . U080404	LN . U100508
	Clamping screw for indexable insert Tightening torque	FS2077 (Torx 9IP) 1,5 Nm	FS2078 (Torx 9IP) 1,5 Nm	FS2080 (Torx 15IP) 2,5 Nm

Accessories

	Type	LN . U080304/LN . U080404	LN . U100508
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)
	Screwdriver	FS1484 (Torx 9IP)	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LNHU080304-B57T	0,4		●●								●		●●						
	LNHU080304-F57T	0,4	☺	●		●●		●		●●			●	●●				●		●●
	LNMU080304-B57T	0,4		●●								●		●●						
	LNMU080304-F57T	0,4	☺	●		●●		●		●●			●	●●				●		●●
	LNHU080404-B57T	0,4		●●								●		●●						
	LNHU080404-F57T	0,4	☺	●		●●		●		●●			●	●●				●		●●
	LNMU080404-B57T	0,4		●●								●		●●						
	LNMU080404-F57T	0,4	☺	●		●●		●		●●			●	●●				●		●●
	LNHU100508-B57T	0,8		●●								●		●●						
	LNHU100508-F57T	0,8	☺	●		●●		●		●●			●	●●				●		●●
	LNMU100508-B57T	0,8		●●								●		●●						
	LNMU100508-F57T	0,8	☺	●		●●		●		●●			●	●●				●		●●

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

C 326 | D 1 | C 576 | C 599 | C 629 | C 621

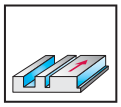
Side and Face cutters for slot milling
F4253

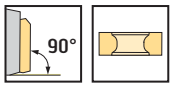
Xtra·tec®



C 2

– Cross-toothed, full side and face, cuts on three sides
– 2 + 2 cutting edges per indexable insert, adjustable runout





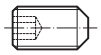
	P	M	K	N	S	H	O
F4253	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	d_6 mm	SB mm	a_e mm	l_4 mm	NB mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F4253.B32.100.Z05.12	100	32	50	12	24		12	5	0,57	5	
	F4253.B40.125.Z06.12	125	40	65	12	29		12	6	0,90	6	
	F4253.B40.160.Z07.12	160	40	65	12	46		12	7	1,33	7	
	F4253.B50.200.Z08.12	200	50	75	12	61		12	8	3,8	8	
	F4253.B32.100.Z05.14	100	32	50	14	24		14	5	0,66	5	LN . U080404
	F4253.B40.125.Z06.14	125	40	65	14	29		14	6	0,92	6	
	F4253.B40.160.Z07.14	160	40	65	14	46		14	7	1,59	7	
	F4253.B50.200.Z08.14	200	50	75	14	61		14	8	4,32	8	
	F4253.B40.125.Z05.16	125	40	65	16	29		16	5	1,12	5	
	F4253.B40.160.Z06.16	160	40	65	16	46		16	6	2,05	6	LN . U100508
	F4253.B50.200.Z07.16	200	50	75	16	61		16	7	4,4	7	
	F4253.B40.160.Z06.20	160	40	65	20	46		20	6	2,5	6	
	F4253.B50.200.Z07.20	200	50	75	20	61		20	7	5,17	7	LN . U120608
	F4253.B60.250.Z08.20	250	60	90	20	78		20	8	7,3	8	
	F4253.B40.160.Z06.25	160	40	65	25	46		25	6	2,77	6	
	F4253.B50.200.Z07.25	200	50	75	25	61		25	7	6,07	7	
	F4253.B60.250.Z08.25	250	60	90	25	78		25	8	8,82	8	LN . U160812
	F4253.B60.315.Z10.25	315	60	90	25	110		25	10	13,5	10	
Cylindrical bore DIN 138 transverse keyway	F4253.BN27.100.Z05.12R	100	27	48	12	24	50		5	1,00	5	
	F4253.BN32.125.Z06.12R	125	32	60	12	30	50		6	1,6	6	
	F4253.BN40.160.Z07.12R	160	40	75	12	40	50		7	2,36	7	
	F4253.BN40.200.Z08.12R	200	40	90	12	50	50		8	4,91	8	
	F4253.BN27.100.Z05.14R	100	27	48	14	24	50		5	1,07	5	LN . U080404
	F4253.BN32.125.Z06.14R	125	32	60	14	30	50		6	1,72	6	
	F4253.BN40.160.Z07.14R	160	40	75	14	40	50		7	2,57	7	
	F4253.BN40.200.Z08.14R	200	40	90	14	50	50		8	5,15	8	
	F4253.BN32.125.Z05.16R	125	32	60	16	30	50		5	1,76	5	
	F4253.BN40.160.Z06.16R	160	40	75	16	40	50		6	2,71	6	LN . U100508
	F4253.BN40.200.Z07.16R	200	40	90	16	50	50		7	5,44	7	
	F4253.BN40.160.Z06.20R	160	40	75	20	40	50		6	3,05	6	
	F4253.BN40.200.Z07.20R	200	40	90	20	50	50		7	5,92	7	LN . U120608
	F4253.BN60.250.Z08.20R	250	60	135	20	55	50		8	9,35	8	
	F4253.BN40.160.Z06.25R	160	40	75	25	40	50		6	3,42	6	
	F4253.BN40.200.Z07.25R	200	40	90	25	50	50		7	6,64	7	
	F4253.BN60.250.Z08.25R	250	60	90	25	55	50		8	10,37	8	LN . U160812
	F4253.BN60.315.Z10.25R	315	60	135	25	85	50		10	14,8	10	

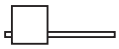
Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	Type	LN . U080404	LN . U100508	LN . U120608	LN . U160812
	Clamping screw for indexable insert Tightening torque	FS2079 (Torx 9IP) 2,0 Nm	FS1453 (Torx 15IP) 3,5 Nm	FS2081 (Torx 15IP) 4,0 Nm	FS2112 (Torx 20IP) 5,0 Nm
	Adjusting screw for runout	FS2082 (Torx 6IP)	FS2083 (Torx 7IP)	FS2083 (Torx 7IP)	FS2113 (Torx 9IP)

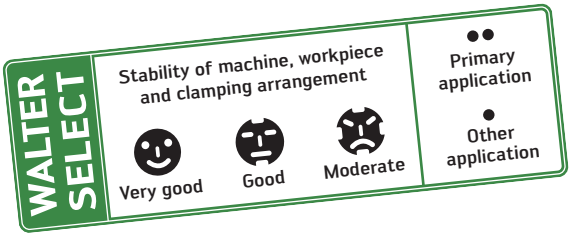
Accessories

	Type	LN . U080404	LN . U100508/LN . U120608	LN . U160812
	Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2013 (Torx 9IP)	FS2014 (Torx 15IP)	FS2015 (Torx 20IP)
	Screwdriver for indexable insert	FS1484 (Torx 9IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)
	Key for adjusting screw	FS2087 (Torx 6IP)	FS1490 (Torx 7IP)	FS1466 (Torx 9IP)

Indexable inserts

	Designation	r mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	LNHU080404-B57T	0,4		••								••		••						
	LNHU080404-F57T	0,4	•	••		•		••		•			••	••				••		•
	LNMU080404-B57T	0,4		••								••		••						
	LNMU080404-F57T	0,4	•	••		•		••		•			••	••				••		•
	LNHU100508-B57T	0,8		••								••		••						
	LNHU100508-F57T	0,8	•	••		•		••		•			••	••				••		•
	LNMU100508-B57T	0,8		••								••		••						
	LNMU100508-F57T	0,8	•	••		•		••		•			••	••				••		•
	LNHU120608-B57T	0,8		••								••		••						
	LNHU120608-F57T	0,8	•	••		•		••		•			••	••				••		•
	LNMU120608-B57T	0,8		••								••		••						
	LNMU120608-F57T	0,8	•	••		•		••		•			••	••				••		•
	LNHU160812-B57T	1,2		••										••						
	LNHU160812-F57T	1,2	•	••		•		••		•			••	••				••		•
	LNMU160812-B57T	1,2		••										••						
	LNMU160812-F57T	1,2	•	••		•		••		•			••	••				••		•

HC = Coated carbide
HW = Uncoated carbide



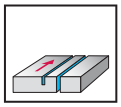
C 326 D 1 C 576 C 599 C 629 C 621

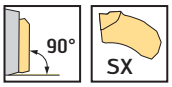
Slitting and slot milling cutters
F5055
Walter BLAXX



C 2

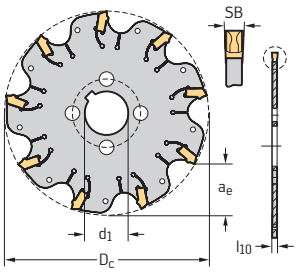
– One cutting edge per indexable insert





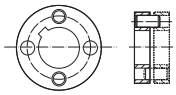
	P	M	K	N	S	H	O
F5055	●●	●	●●		●		

Tool	Designation	D_c mm	d_1 mm	SB mm	a_e mm	l_{10} mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 longitudinal keyway	F5055.B16.063.Z05.1,5	63	16	1,5	15	1,2	5	0,05	5	SX-1
	F5055.B16.063.Z05.2,0	63	16	2	15	1,6	5	0,04	5	SX-2
	F5055.B16.063.Z04.3,0	63	16	3	15	2,4	4	0,06	4	SX-3
	F5055.B16.063.Z04.4,0	63	16	4	15	3,4	4	0,07	4	SX-4
	F5055.B16.080.Z07.1,5	80	16	1,5	20	1,2	7	0,06	7	SX-1
	F5055.B16.080.Z07.2,0	80	16	2	20	1,6	7	0,07	7	SX-2
	F5055.B16.080.Z06.3,0	80	16	3	20	2,4	6	0,09	6	SX-3
	F5055.B16.080.Z06.4,0	80	16	4	20	3,4	6	0,12	6	SX-4
	F5055.B22.100.Z09.1,5	100	22	1,5	25	1,2	9	0,10	9	SX-1
	F5055.B22.100.Z09.2,0	100	22	2	25	1,6	9	0,11	9	SX-2
	F5055.B22.100.Z09.3,0	100	22	3	25	2,4	9	0,14	9	SX-3
	F5055.B22.100.Z09.4,0	100	22	4	25	3,4	9	0,18	9	SX-4
	F5055.B32.125.Z11.1,5	125	32	1,5	33	1,2	11	0,15	11	SX-1
	F5055.B32.125.Z11.2,0	125	32	2	33	1,6	11	0,17	11	SX-2
	F5055.B32.125.Z11.3,0	125	32	3	33	2,4	11	0,23	11	SX-3
	F5055.B32.125.Z11.4,0	125	32	4	33	3,4	11	0,29	11	SX-4
	F5055.B40.160.Z14.2,0	160	40	2	38	1,6	14	0,29	14	SX-2
	F5055.B40.160.Z14.3,0	160	40	3	38	2,4	14	0,38	14	SX-3
	F5055.B40.160.Z14.4,0	160	40	4	38	3,4	14	0,5	14	SX-4
	F5055.B40.200.Z19.3,0	200	40	3	58	2,4	19	0,65	19	SX-3
	F5055.B40.200.Z19.4,0	200	40	4	58	3,4	19	0,85	19	SX-4
	F5055.B40.250.Z24.3,0	250	40	3	83	2,4	24	1,07	24	SX-3
	F5055.B40.250.Z24.4,0	250	40	4	83	3,4	24	1,39	24	SX-4



Values for a_e in combination with drive collar
For fitting the indexable insert, use the FS1494 or FS2249 mounting wrench

Accessories

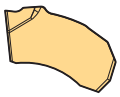
SB [mm] / D_c [mm]	1,5 63	1,5 80	1,5 100	1,5 125	2-4 63	2-4 80	2-4 100	2-4 125	2-4 160	3-4 200	3-4 250
 Drive collar	FS1345	FS1347	FS1348	FS1349	FS1346	FS1347	FS1348	FS1349	FS1350	FS1350	FS1350
 Mounting wrench	FS2249	FS2249	FS2249	FS2249	FS2249	FS1494	FS1494	FS1494	FS1494	FS1494	FS1494
 Clamping screw for retaining washer Tightening torque										FS966 (SW 5) 8,0 Nm	FS966 (SW 5) 8,0 Nm
Retaining washer instead of drive collar										FS1351	FS1352
 Key for clamping screw										ISO 2936-5 (SW 5)	ISO 2936-5 (SW 5)

Drive collars and retaining washers should always be ordered in pairs.

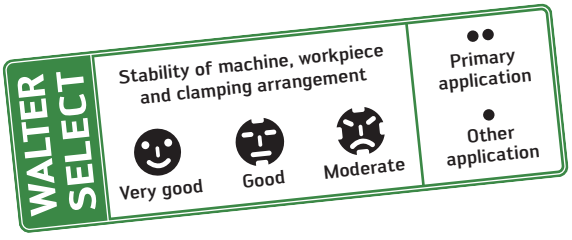
Clamping screws for retaining washers are included in the scope of delivery.

C 2

Cutting inserts

	Designation	s mm	r mm	P HC WKP23S	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM23S	M HC WSM33S	M HC WSM35S	M HC WSM43S	M HC WSP45S	K HC WAK15	K HC WKP23S	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM23S	S HC WSM33S	S HC WSM35S	S HC WSM43S	S HC WSP45S
	SX-2E200N02-CE4	2	0,2	●●				●●	●●		●●			●●						●●	●●		●●	
	SX-3E300N02-CE4	3	0,2	●●				●●	●●		●●			●●						●●	●●		●●	
	SX-1E150N01-CE4	1,5	0,15						●		●										●		●	
	SX-4E400N02-CE4	4	0,2	●●				●●	●●		●●			●●						●●	●●		●●	
	SX-2E200N02-CF6	2	0,2						●		●										●		●	
	SX-3E300N02-CF6	3	0,2						●		●										●		●	
	SX-1E150N01-CF6	1,5	0,15						●		●										●		●	
	SX-2E200N02-SF5	2	0,2						●		●										●		●	
	SX-3E300N02-SF5	3	0,2						●		●										●		●	
	SX-1E150N01-SF5	1,5	0,15						●		●										●		●	
	SX-4E400N02-SF5	4	0,2						●		●										●		●	

HC = Coated carbide
HW = Uncoated carbide



C 332 D 1 C 576 C 599 C 631 C 621

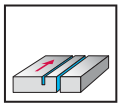
Slitting and slot milling cutters
F5055

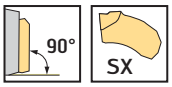
Walter BLAXX



C 2

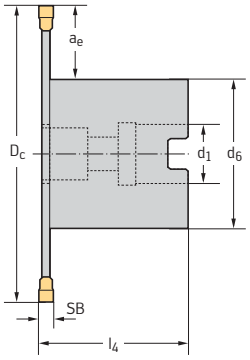
– One cutting edge per indexable insert





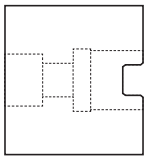
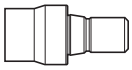
	P	M	K	N	S	H	O
F5055	●●	●	●●		●		

Tool	Designation	D_c mm	d_1 mm	d_6 mm	l_4 mm	SB mm	a_e mm	Z	kg	No. of indexable inserts	Type
ScrewFit	F5055.T36.063.Z04.3,0R	63	36		75	3	15	4	0,6	4	SX-3
	F5055.T45.080.Z06.3,0R	80	45		85	3	20	6	0,8	6	
	F5055.T36.063.Z04.4,0R	63	36		76	4	15	4	0,6	4	SX-4
	F5055.T45.080.Z06.4,0R	80	45		86	4	20	6	0,8	6	
Cylindrical bore DIN 138 longitudinal keyway	F5055.BN16.063.Z04.3,0R	63	16	35	40	3	15	4	0,03	4	SX-3
	F5055.BN16.080.Z06.3,0R	80	16	40	40	3	20	6	0,06	6	
	F5055.BN22.100.Z09.3,0R	100	22	48	40	3	25	9	0,10	9	
	F5055.BN32.125.Z11.3,0R	125	32	58	50	3	33	11	0,17	11	
	F5055.BN40.160.Z14.3,0R	160	40	80	63	3	38	14	0,29	14	
	F5055.BN16.063.Z04.4,0R	63	16	35	41	4	15	4	0,05	4	SX-4
	F5055.BN16.080.Z06.4,0R	80	16	40	41	4	20	6	0,09	6	
	F5055.BN22.100.Z09.4,0R	100	22	48	41	4	25	9	0,14	9	
	F5055.BN32.125.Z11.4,0R	125	32	58	51	4	33	11	0,24	11	
	F5055.BN40.160.Z14.4,0R	160	40	80	64	4	38	14	0,40	14	

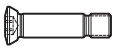
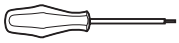


For fitting the indexable insert, use the FS1494 or FS2249 mounting wrench
Bodies and assembly parts are included in the scope of delivery.

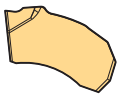
Assembly parts

	Type D_c [mm]	SX-3/SX-4 63	SX-3/SX-4 80	SX-3/SX-4 100	SX-3/SX-4 125	SX-3/SX-4 160
	Bore adaptor hub	AA704-B16-G16-040-A	AA704-B16-G16-040-B	AA704-B22-G22-040-B	AA704-B32-G32-050-B	AA704-B40-G40-063-B
	NCT ScrewFit adaptor	AA766-T36-G16-040	AA766-T45-G16-050			

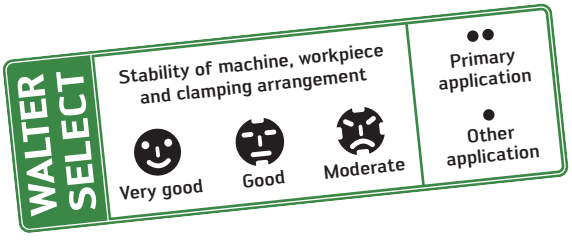
Accessories

	Type D_c [mm]	SX-3/SX-4 63	SX-3/SX-4 80–100	SX-3/SX-4 125	SX-3/SX-4 160
	Clamping screw for adaptor	FS938 (SW 6)	FS938 (SW 6)	FS938 (SW 6)	FS938 (SW 6)
	Clamping screw for milling cutter Tightening torque	FS2270 6,5 Nm	FS2270 6,5 Nm	FS2271 7,0 Nm	FS2272 8,0 Nm
	Mounting wrench for cutting insert	FS2249	FS1494	FS1494	FS1494
	Torque T-handle Tightening torque	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm	FS2041 4,5–14 Nm
	Screwdriver	FS1485 (Torx 15IP)	FS1485 (Torx 15IP)	FS1486 (Torx 20IP)	FS1175 (Torx 30)
	Adaptor clamping screw Allen key	ISO2936-6 (SW 6)	ISO2936-6 (SW 6)	ISO2936-6 (SW 6)	ISO2936-6 (SW 6)
	Interchangeable blade	FS2047 (Torx 15IP)	FS2047 (Torx 15IP)	FS2048 (Torx 20IP)	FS2046 (Torx 30)

Cutting inserts

	Designation	s mm	r mm	P HC WKP23S	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM23S	M HC WSM33S	M HC WSM35S	M HC WSM43S	M HC WSP45S	K HC WAK15	K HC WKP23S	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM23S	S HC WSM33S	S HC WSM35S	S HC WSM43S	S HC WSP45S
	SX-3E300N02-CE4	3	0,2	☺				☺	😐		☹			😐						☺	😐		☹	
	SX-4E400N02-CE4	4	0,2	☺				☺	😐		☹			😐						☺	😐		☹	
	SX-3E300N02-CF6	3	0,2						😐		☹										😐		☹	
	SX-3E300N02-SF5	3	0,2						😐		☹										😐		☹	
	SX-4E400N02-SF5	4	0,2						😐		☹										😐		☹	

HC = Coated carbide
HW = Uncoated carbide

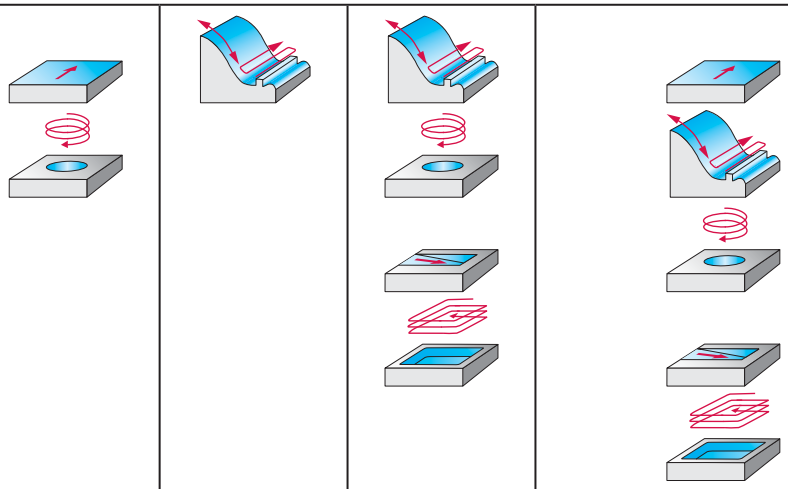


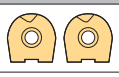
C 332 D 1 C 576 C 599 C 631 C 621

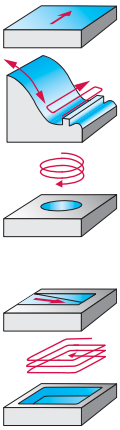
Walter Select – Indexable insert milling cutters
Copy milling cutters

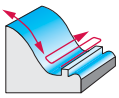
Machining

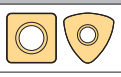
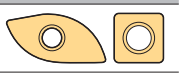
WALTER SELECT
●● Primary application
● Other application



Lead angle κ					
Designation	**F2010**	**F2139**	**F2231**	**F2234**	**F2334**
Dia. range [mm]	83–318	8–32	10–40	15–160	25–160
Adaption Range	Cylindrical Bore	ScrewFit DIN 1835 B Parallel shank	ScrewFit DIN 1835 B	ScrewFit DIN 1835 B Cylindrical Bore	ScrewFit DIN 1835 B Parallel shank Cylindrical Bore
Page	C 536	C 538	C 540	C 542	C 546
					
P Steel	●●	●●	●●	●●	●●
M Stainless steel	●●	●●	●●	●●	●●
K Cast iron	●●	●●	●●	●●	●●
N NF metals		●●	●●	●●	
S Materials with difficult cutting properties	●●	●●	●	●	●●
H Hard materials	●	●●	●●	●●	
O Other		●	●	●	
Indexable inserts					
Type	RO . X1605M0	P320 . -D08 P320 . -D10 P320 . -D12 P320 . -D16 ...	RDHX0501M0 RD .. 0803M0 RD .. 10T3M0 RD .. 1204M0 ...	RD . X07T1M0 RD .. 0803M0 RD . X1003M0 RD . X12T3M0 ...	RO . X0803M0 RO . X10T3M0 RO . X1204M0 RO . X1605M0 ...
Number of cutting edges	6	1	6 / 4	6 / 4	4 / 6 / 8
Max. depth of cut [mm]	8	4 / 5 / 6 / 8 / 10 / 12,5 / 15 / 16	3 / 4 / 5 / 6 / 8 / 10	4 / 5 / 6 / 8 / 10	4 / 5 / 6 / 8 / 10





	F2334R	F2239	F2239	F2339
	25–63	20–63	20–40	16–50
	ScrewFit Parallel shank Cylindrical Bore	ScrewFit DIN 1835 B Modular NCT adaptor	ScrewFit	ScrewFit DIN 1835 B Parallel shank
	C 550	C 552	C 552	C 554
				
	●●	●●	●●	●●
	●●	●	●	●●
	●●	●●	●●	●●
	●●	●	●	●
				●
				
	RO . X10T3M0 RO . X1204M0	SP .. 060304 P26315R10 P26315R12 SP .. 09T308 ...	P26315R10 P26315R12 P26315R15 P26315R16 ...	XD . T1303080R XD . T16T3100R XD . T2004125R XD . T2405150R ...
	4	4 / 3	3	2 / 4
	5 / 6	23–84	15 / 20 / 24 / 26 / 32	15–57

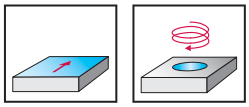
Copy milling cutters with round inserts
F2010

RO . X1605M0



C 2

– Adjustable
– Six cutting edges per indexable insert, with indexing surfaces

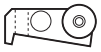
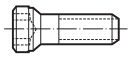


	P	M	K	N	S	H	O
F2010	●●	●●	●●		●●	●	

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	L_c mm	Z	kg	No. of index-able inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2010.B.080.Z06.08.R723M	67	83	27	52	8	6	1,2	6	RO . X1605M0
Cylindrical bore DIN 138 transverse keyway	F2010.B.100.Z07.08.R723M	87	103	32	52	8	7	1,2	7	RO . X1605M0
	F2010.B.125.Z08.08.R723M	112	128	40	65	8	8	3,5	8	
Cylindrical bore DIN 138 transverse keyway	F2010.B.160.Z10.08.R723M	147	163	40/40 B	65	8	10	5,5	10	RO . X1605M0
	F2010.B.200.Z12.08.R723M	187	203	60/50 B	65	8	12	8,2	12	
	F2010.B.250.Z12.08.R723M	237	253	60/50 B	65	8	12	14,7	12	
	F2010.B.250.Z16.08.R723M	237	253	60/50 B	65	8	16	14,5	16	
Cylindrical bore DIN 138 transverse keyway	F2010.B.315.Z14.08.R723M	302	318	60/50-60 BB	82	8	14	26,3	14	RO . X1605M0
	F2010.B.315.Z18.08.R723M	302	318	60/50-60 BB	82	8	18	26,2	18	

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	67–302
	Cartridge for tool body	FR723M
	Clamping screw for cartridge Tightening torque	FS247 (SW 4) 8,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1030 (Torx 20) 5,0 Nm
	Adjusting pin	FS303 (Torx 20)

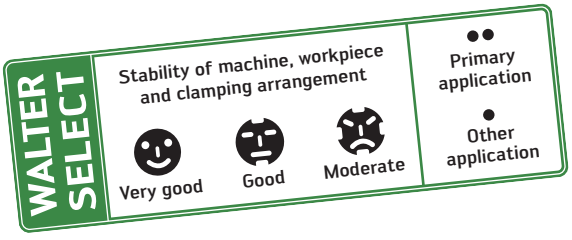
Accessories

	D_c [mm]	67–302
	Screwdriver for indexable insert	FS228 (Torx 20)
	Screwdriver for adjusting pin	FS228 (Torx 20)
	ISO 2936 Allen key for cartridge	ISO2936-4 (SW 4)

Indexable inserts

	Designation	d mm	P HC				M HC				K HC				S HC			
			WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM35	WSP45S	WSP45
	ROGX1605M0-G77	16				●		●		●						●		●
	ROHX1605M0-D57	16		●●	●●		●		●●					●●	●		●●	
	ROHX1605M0-D67	16			●●			●	●●							●	●●	
	ROHX1605M0T-A27	16		●●										●●				
	ROMX1605M0-D57	16		●●	●●		●		●●					●●	●		●●	

HC = Coated carbide



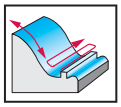
C 296 D 1 C 568 C 601 C 627 C 621

Profile milling cutters
F2139



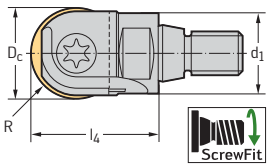
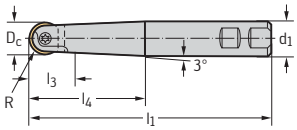
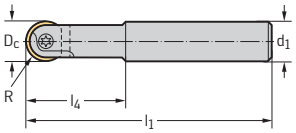
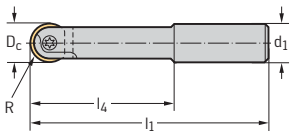
C 2

– For HSC machining
– One cutting edge per indexable insert



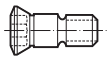


	P	M	K	N	S	H	O
F2139	●●	●●	●●	●●	●●	●●	●

Tool	Designation	D_c mm	R mm	d_1 mm	l_3 mm	l_4 mm	l_1 mm	Z	kg	No. of indexable inserts	Type
ScrewFit 	F2139.T09.008.Z02.04	8	4	9,7		20		2	0,02	1	P320 . -D08
	F2139.T09.010.Z02.05	10	5	9,7		25		2	0,02	1	P320 . -D10
	F2139.T09.012.Z02.06	12	6	9,7		25		2	0,02	1	P320 . -D12
	F2139.T14.012.Z02.06	12	6	14,5		25		2	0,03	1	
	F2139.T14.016.Z02.08	16	8	14,5		25		2	0,04	1	P320 . -D16
	F2139.T18.020.Z02.10	20	10	18,5		30		2	0,06	1	P320 . -D20
	F2139.T22.025.Z02.12	25	12,5	22		35		2	0,11	1	P320 . -D25
	F2139.T28.030.Z02.15	30	15	28		40		2	0,19	1	P320 . -D30
	F2139.T28.032.Z02.16	32	16	28		40		2	0,19	1	P320 . -D32
Shank DIN 1835 B 	F2139.5.12.140.08	8	4	12	11	50	140	2	0,13	1	P320 . -D08
	F2139.5.12.150.10	10	5	12	15	35	150	2	0,13	1	P320 . -D10
	F2139.5.16.160.12	12	6	16	20	58,5	160	2	0,22	1	P320 . -D12
	F2139.5.20.175.16	16	8	20	26	65	175	2	0,38	1	P320 . -D16
	F2139.5.25.190.20	20	10	25	18	76	190	2	0,64	1	P320 . -D20
	F2139.5.32.210.25	25	12,5	32	31	98	210	2	1,12	1	P320 . -D25
	F2139.5.40.240.30	30	15	40	25	121	240	2	1,93	1	P320 . -D30
	F2139.5.40.240.32	32	16	40	44	121	240	2	1,98	1	P320 . -D32
Parallel shank 	F2139.5.10.110.08	8	4	10		25	110	2	0,07	1	P320 . -D08
	F2139.5.12.130.10	10	5	12		30	130	2	0,11	1	P320 . -D10
	F2139.5.12.130.12	12	6	12		32	130	2	0,12	1	P320 . -D12
	F2139.5.16.140.16	16	8	16		36	140	2	0,21	1	P320 . -D16
	F2139.5.20.160.20	20	10	20		45	160	2	0,37	1	P320 . -D20
	F2139.5.25.160.25	25	12,5	25		45	160	2	0,56	1	P320 . -D25
	F2139.5.32.175.30	30	15	32		56	175	2	0,97	1	P320 . -D30
	F2139.5.32.175.32	32	16	32		56	175	2	0,98	1	P320 . -D32
Parallel shank 	F2139.5.08.070.08-CS	8	4	8		25	70	2	0,05	1	P320 . -D08
	F2139.5.08.100.08-CS	8	4	8		55	100	2	0,07	1	
	F2139.5.10.080.10-CS	10	5	10		30	80	2	0,08	1	P320 . -D10
	F2139.5.10.120.10-CS	10	5	10		70	120	2	0,12	1	
	F2139.5.12.090.12-CS	12	6	12		32	90	2	0,13	1	P320 . -D12
	F2139.5.12.145.12-CS	12	6	12		87	145	2	0,21	1	
	F2139.5.16.110.16-CS	16	8	16		43	110	2	0,27	1	P320 . -D16
	F2139.5.16.195.16-CS	16	8	16		128	195	2	0,45	1	
	F2139.5.20.130.20-CS	20	10	20		47	130	2	0,49	1	P320 . -D20
	F2139.5.20.240.20-CS	20	10	20		157	240	2	0,92	1	

F2139 . . -CS with solid carbide shank
Advantages: Higher rigidity, lower deflection, neutralises vibration
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	8	10	12	16	20	25	30–32
	Clamping screw for indexable insert Tightening torque	FS397 (Torx 8) 1,0 Nm	FS390 (Torx 15) 4,0 Nm	FS391 (Torx 20) 5,0 Nm	FS392 (Torx 20) 5,0 Nm	FS393 (Torx 20) 5,0 Nm	FS394 (Torx 20) 5,0 Nm	FS395 (Torx 30) 6,0 Nm

Accessories

	D_c [mm]	8	10	12–25	30–32
	Screwdriver for indexable insert	FS230 (Torx 8)	FS229 (Torx 15)	FS228 (Torx 20)	FS396 (Torx 30)

Indexable inserts

	Designation	$D_c^{-0,03}$ mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP46	M HC WSM35S	M HC WSM36	M HC WSP45S	M HC WSP46	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM36	S HC WSP45S	S HC WSP46	H HC WHH15
	P3201-D08	8																	☺
	P3201-D10	10																	☺
	P3201-D12	12																	☺
	P3201-D16	16																	☺
	P3201-D20	20																	☺
	P3201-D25	25																	☺
	P3201-D30	30																	☺
	P3201-D32	32																	☺
	P3204-D08	8				😐		☺		😐						☺		😐	☺
	P3204-D10	10				😐		☺		😐						☺		😐	☺
	P3204-D12	12				😐		☺		😐						☺		😐	☺
	P3204-D16	16				😐		☺		😐						☺		😐	☺
	P3204-D20	20				😐		☺		😐						☺		😐	☺
	P3204-D25	25				😐		☺		😐						☺		😐	☺
	P3204-D30	30				😐		☺		😐						☺		😐	☺
	P3204-D32	32				😐		☺		😐						☺		😐	☺

HC = Coated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good 😐 Good ☹ Moderate

●● Primary application

● Other application

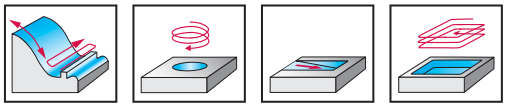
C 295 | D 1 | C 582 | C 605 | C 621 | C 635

Copy milling cutter with round inserts
F2231



C 2

– With anti-twist protection and indexing



	P	M	K	N	S	H	O
F2231	●●	●●	●●	●●	●	●●	●

Tool	Designation	R mm	D_a mm	d_1 mm	l_4 mm	L_c mm	l_3 mm	l_1 mm	Z	kg	No. of index-able inserts	Type
ScrewFit	F2231.T09.010.Z02.02,5	2,5	10	T09	20	2,5			2	0,0	2	RDHX0501M0
	F2231.T14.016.Z02.04	4	16	T14	25	4			2	0,0	2	RD .. 0803M0
	F2231.T18.020.Z02.05	5	20	T18	30	5			2	0,1	2	RD .. 10T3M0
	F2231.T22.024.Z02.06	6	24	T22	35	6			2	0,1	2	RD .. 1204M0
	F2231.T28.032.Z02.08	8	32	T28	40	8			2	0,2	2	RD .. 1605M0
	F2231.T36.040.Z02.10	10	40	T36	45	10			2	0,3	2	RD .. 2006M0
Shank DIN 1835 B	F2231.W.016.Z02.04.L	4	16	16	51	4	35	100	2	0,1	2	RD .. 0803M0
	F2231.W.016.Z02.04.XL	4	16	16	81	4	31	130	2	0,2	2	
	F2231.W.020.Z02.05.L	5	20	20	59	5	39	110	2	0,2	2	RD .. 10T3M0
	F2231.W.020.Z02.05.XL	5	20	20	99	5	40	150	2	0,3	2	
	F2231.W.024.Z02.06.L	6	24	25	73	6	48	130	2	0,4	2	RD .. 1204M0
	F2231.W.024.Z02.06.XL	6	24	25	118	6	47	175	2	0,5	2	
	F2231.W.032.Z02.08.L	8	32	32	99	8	63	160	2	0,8	2	RD .. 1605M0
	F2231.W.032.Z02.08.XL	8	32	32	159	8	59	220	2	1,1	2	
	F2231.W.040.Z02.10.L	10	40	40	119	10	79	190	2	1,5	2	RD .. 2006M0

Bodies and assembly parts are included in the scope of delivery.

C 2

Assembly parts

	D_a [mm]	10	16	20	24	32	40
	Clamping screw for clamp Tightening torque				FS359 (Torx 15) 2,5 Nm	FS1030 (Torx 20) 5,0 Nm	FS1031 (Torx 20) 5,0 Nm
	Clamping screw for indexable insert Tightening torque	FS1358 (Torx 6) 0,4 Nm	FS1005 (Torx 8) 1,0 Nm	FS920 (Torx 15) 2,5 Nm	FS359 (Torx 15) 2,5 Nm	FS1030 (Torx 20) 5,0 Nm	FS1010 (Torx 20) 5,0 Nm
	Clamp				FS1035	FS1022	FS1022

Accessories

	D_a [mm]	10	16	20–24	32–40
	Screwdriver for indexable insert	FS1063 (Torx 6)	FS230 (Torx 8)	FS229 (Torx 15)	FS228 (Torx 20)

Indexable inserts

	Designation	d mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HF WMG40
	RDHX0501M0-A57	5														●	
	RDGT0803M0-G85	8															●
	RDGT0803M0-G88	8										●	●				
	RDHW0803M0-A57	8						●								●	
	RDHW0803M0T-A27	8	●	●						●	●						
	RDMT0803M0-D57	8	●	●	●	●	●			●	●			●	●		
	RDMW0803M0T-A27	8	●	●						●	●						
	RDGT10T3M0-G85	10															●
	RDGT10T3M0-G88	10										●	●				
	RDHW10T3M0-A57	10						●								●	
	RDHW10T3M0T-A27	10	●	●						●	●						
	RDMT10T3M0-D57	10	●	●	●	●	●			●	●			●	●		
	RDMW10T3M0T-A27	10	●	●						●	●						
	RDGT1204M0-G85	12															●
	RDGT1204M0-G88	12										●	●				
	RDHW1204M0-A57	12						●								●	
	RDHW1204M0T-A27	12	●	●						●	●						
	RDMT1204M0-D57	12	●	●	●	●	●			●	●			●	●		
	RDMW1204M0T-A27	12	●	●						●	●						
	RDGT1605M0-G85	16															●
	RDGT1605M0-G88	16										●	●				
	RDHW1605M0-A57	16						●								●	
	RDHW1605M0T-A27	16	●	●						●	●						
	RDMT1605M0-D57	16	●	●	●	●	●			●	●			●	●		
	RDMW1605M0T-A27	16	●	●						●	●						
	RDGT2006M0-G85	20															●
	RDGT2006M0-G88	20										●	●				
	RDHW2006M0-A57	20						●								●	
	RDHW2006M0T-A27	20	●	●						●	●						
	RDHX2006M0T-A27	20		●							●						
	RDMT2006M0-D57	20	●	●	●	●	●			●	●			●	●		
	RDMW2006M0T-A27	20	●	●						●	●						

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide

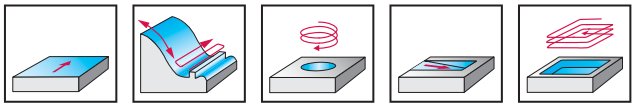
C 297 D 1 C 578 C 600 C 621 C 635

Copy milling cutters with round inserts F2234

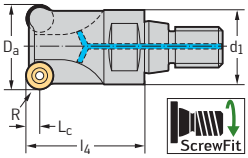
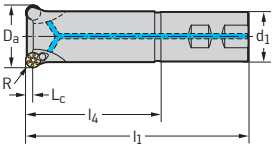


C 2

– With anti-twist protection and indexing



	P	M	K	N	S	H	O
F2234	●●	●●	●●	●●	●	●●	●

Tool	Designation	R mm	D_a mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of index-able inserts	Type
ScrewFit 	F2234.T14.015.Z03.03,5	3,5	15	T14	25	3,5		3	0,0	3	
	F2234.T18.020.Z04.03,5	3,5	20	T18	30	3,5		4	0,1	4	RD . X07T1M0
	F2234.T22.025.Z05.03,5	3,5	25	T22	35	3,5		5	0,1	5	
	F2234.T22.025.Z03.04	4	25	T22	35	4		3	0,1	3	RD .. 0803M0
	F2234.T22.025.Z03.05	5	25	T22	35	5		3	0,1	3	
	F2234.T28.030.Z04.05	5	30	T28	40	5		4	0,2	4	
	F2234.T28.030.Z03.05	5	30	T28	40	5		3	0,2	3	
	F2234.T28.032.Z04.05	5	32	T28	40	5		4	0,2	4	RD . X1003M0
	F2234.T28.032.Z03.05	5	32	T28	40	5		3	0,2	3	
	F2234.T28.035.Z05.05	5	35	T28	40	5		5	0,2	5	
	F2234.T36.042.Z05.06	6	42	T36	40	6		5	0,4	5	RD . X12T3M0
Shank DIN 1835 B 	F2234.W.025.Z03.04	4	25	25	93	4	150	3	0,4	3	RD .. 0803M0
	F2234.W.032.Z03.05	5	32	32	114	5	175	3	0,9	3	RD . X1003M0
	F2234.W.040.Z04.06	6	40	40	149	6	220	4	1,7	4	RD .. 1204M0

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_a [mm]	RD . X07T1M0 15–25	RD .. 0803M0 25	RD . X1003M0 25–35	RD . X1003M0 32	RD . X12T3M0 42	RD .. 1204M0 40
	Clamping screw for indexable insert Tightening torque	FS924 (Torx 8) 0,8 Nm	FS1005 (Torx 8) 1,0 Nm	FS920 (Torx 15) 2,5 Nm	FS359 (Torx 15) 2,5 Nm	FS920 (Torx 15) 2,5 Nm	FS359 (Torx 15) 2,5 Nm
	Clamp						FS1035
	Clamping screw for clamp Tightening torque						FS359 (Torx 15) 2,5 Nm

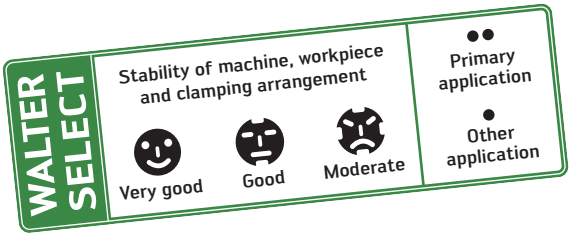
Accessories

	Type	RD . X07T1M0/RD .. 0803M0	RD . X1003M0/RD .. 1204M0/RD . X12T3M0
	Screwdriver for indexable insert	FS230 (Torx 8)	FS229 (Torx 15)

Indexable inserts

	Designation	d mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HF WMG40
	RDGX07T1M0-G85	7															☺
	RDHX07T1M0-A57	7														☺	
	RDGT0803M0-G85	8															☺
	RDGT0803M0-G88	8										☺	☺				
	RDGX1003M0-G85	10															☺
	RDHW0803M0-A57	8						☺								☺	
	RDHW0803M0T-A27	8	☺	☺						☺	☺						
	RDHX1003M0-A57	10														☺	
	RDHX1003M0T-A27	10	☺	☺						☺	☺						
	RDMT0803M0-D57	8	☺	☺	☺	☺	☺			☺	☺			☺	☺		
	RDMW0803M0T-A27	8	☺	☺						☺	☺						
	RDMX1003M0T-A27	10	☺	☺						☺	☺						
	RDGX12T3M0-G85	12															☺
	RDHX12T3M0-A57	12														☺	
	RDHX12T3M0T-A27	12	☺	☺						☺	☺						
	RDMX12T3M0T-A27	12	☺	☺						☺	☺						
	RDGT1204M0-G85	12															☺
	RDGT1204M0-G88	12										☺	☺				
	RDHW1204M0-A57	12						☺								☺	
	RDHW1204M0T-A27	12	☺	☺						☺	☺						
	RDMT1204M0-D57	12	☺	☺	☺	☺	☺			☺	☺			☺	☺		
	RDMW1204M0T-A27	12	☺	☺						☺	☺						

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide



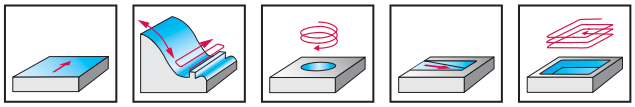
C 297 D 1 C 578 C 601 C 621 C 635

Copy milling cutters with round inserts
F2234



C 2

– With anti-twist protection and indexing





	P	M	K	N	S	H	O
F2234	●●	●●	●●	●●	●	●●	●

Tool	Designation	R mm	D_a mm	d_1 mm	d_6 mm	l_4 mm	L_c mm	Z	kg	No. of index-able inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2234.B.040.Z04.06	6	40	16	31	45	6	4	0,2	4	RD .. 1204M0
	F2234.B.050.Z05.06	6	50	22	41	50	6	5	0,4	5	
	F2234.B.050.Z04.08	8	50	22	33	50	8	4	0,3	4	RD .. 1605M0
	F2234.B.052.Z06.05	5	52	22	42	50	5	6	0,4	6	RD .. 10T3M0
	F2234.B.052.Z05.06	6	52	22	42	50	6	5	0,4	5	RD .. 1204M0
	F2234.B.052.Z04.08	8	52	22	42	50	8	4	0,4	4	RD .. 1605M0
	F2234.B.063.Z06.06	6	63	22	45	50	6	6	0,5	6	RD .. 1204M0
	F2234.B.063.Z05.08	8	63	22	45	50	8	5	0,5	5	RD .. 1605M0
	F2234.B.063.Z04.10	10	63	22	45	50	10	4	0,4	4	RD .. 2006M0
	F2234.B.066.Z05.08	8	66	22	50	50	8	5	0,5	5	RD .. 1605M0
	F2234.B.080.Z07.06	6	80	27	54	50	6	7	0,8	7	RD .. 1204M0
	F2234.B.080.Z06.08	8	80	27	54	50	8	6	0,7	6	RD .. 1605M0
	F2234.B.080.Z05.10	10	80	27	54	50	10	5	0,7	5	RD .. 2006M0
	F2234.B.100.Z08.06	6	100	32	80	50	6	8	1,5	8	RD .. 1204M0
	F2234.B.100.Z07.08	8	100	32	80	50	8	7	1,4	7	RD .. 1605M0
	F2234.B.100.Z06.10	10	100	32	80	50	10	6	1,4	6	RD .. 2006M0
	F2234.B.125.Z08.08	8	125	40	85	63	8	8	2,5	8	RD .. 1605M0
	F2234.B.125.Z07.10	10	125	40	85	63	10	7	2,5	7	RD .. 2006M0
Cylindrical drilled hole DIN 138 transverse keyway	F2234.B.160.Z08.10	10	160	40/40 B	130	63	10	8	4,8	8	RD .. 2006M0

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type D_a [mm]	RD .. 10T3M0 52	RD .. 1204M0 40–100	RD .. 1605M0 50–125	RD .. 2006M0 63–160
	Clamping screw for indexable insert Tightening torque	FS920 (Torx 15) 2,5 Nm	FS359 (Torx 15) 2,5 Nm	FS1030 (Torx 20) 5,0 Nm	FS1010 (Torx 20) 5,0 Nm
	Clamp		FS1035	FS1022	FS1022
	Clamping screw for clamp Tightening torque		FS359 (Torx 15) 2,5 Nm	FS1030 (Torx 20) 5,0 Nm	FS1030 (Torx 20) 5,0 Nm

Accessories

	Type	RD .. 10T3M0/RD .. 1204M0	RD .. 1605M0/RD .. 2006M0
	Screwdriver for indexable insert	FS229 (Torx 15)	FS228 (Torx 20)

Indexable inserts

	Designation	d mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	M HC WSM35S	M HC WSP45S	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSP45S	H HC WHH15	O HF WMG40
	RDGT10T3M0-G85	10															☺
	RDGT10T3M0-G88	10										☺	☺				
	RDHW10T3M0-A57	10						☺								☺	
	RDHW10T3M0T-A27	10	😐	😟						😐	😟						
	RDMT10T3M0-D57	10	☺	😐	😟	😐	😟			😐	😟			😐	😟		
	RDMW10T3M0T-A27	10	😐	😟						😐	😟						
	RDGT1204M0-G85	12															☺
	RDGT1204M0-G88	12										☺	☺				
	RDHW1204M0-A57	12						☺								☺	
	RDHW1204M0T-A27	12	😐	😟						😐	😟						
	RDMT1204M0-D57	12	☺	😐	😟	😐	😟			😐	😟			😐	😟		
	RDMW1204M0T-A27	12	😐	😟						😐	😟						
	RDGT1605M0-G85	16															☺
	RDGT1605M0-G88	16										☺	☺				
	RDHW1605M0-A57	16						☺								☺	
	RDHW1605M0T-A27	16	😐	😟						😐	😟						
	RDMT1605M0-D57	16	☺	😐	😟	😐	😟			😐	😟			😐	😟		
	RDMW1605M0T-A27	16	😐	😟						😐	😟						
	RDGT2006M0-G85	20															☺
	RDGT2006M0-G88	20										☺	☺				
	RDHW2006M0-A57	20						☺								☺	
	RDHW2006M0T-A27	20	😐	😟						😐	😟						
	RDHX2006M0T-A27	20		😟							😟						
	RDMT2006M0-D57	20	☺	😐	😟	😐	😟			😐	😟			😐	😟		
	RDMW2006M0T-A27	20	😐	😟						😐	😟						

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good 😐 Good ☹ Moderate

●● Primary application

● Other application

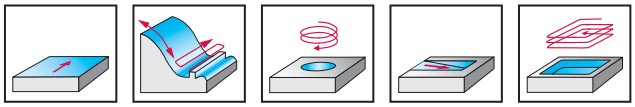
C 297 | D 1 | C 578 | C 601 | C 621

Copy milling cutters with round inserts
F2334



C 2

– With indexing surfaces
– Four cutting edges per indexable insert



	P	M	K	N	S	H	O
F2334	●●	●●	●●		●●		

Tool	Designation	R mm	D_a mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of index-able inserts	Type
ScrewFit	F2334.T22.025.Z03.04	4	25	T22	35	4		3	0,1	3	RO . X0803M0
	F2334.T28.032.Z05.04	4	32	T28	40	4		5	0,2	5	
	F2334.T28.032.Z03.05	5	32	T28	40	5		3	0,2	3	RO . X10T3M0
	F2334.T45.050.Z05.06	6	50	T45	40	6		5	0,5	5	RO . X1204M0
Shank DIN 1835 B	F2334.W25.025.Z03.04	4	25	25	35	4	92	3	0,3	3	RO . X0803M0
	F2334.W32.032.Z03.05	5	32	32	40	5	101	3	0,5	3	RO . X10T3M0
Parallel shank	F2334.Z25.025.Z03.04	4	25	25	60	4	117	3	0,4	3	RO . X0803M0

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	RO . X0803M0	RO . X10T3M0	RO . X1204M0
	Clamping screw for indexable insert Tightening torque	FS1013 (Torx 8) 1,0 Nm	FS359 (Torx 15) 2,5 Nm	FS378 (Torx 15) 3,0 Nm

Accessories

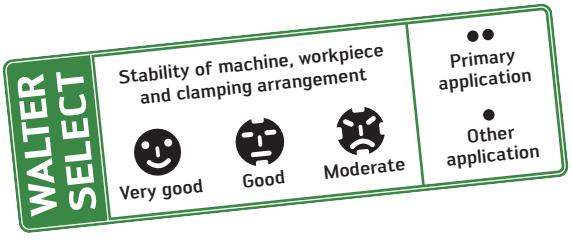
	Type	RO . X0803M0	RO . X10T3M0/RO . X1204M0
	Screwdriver for indexable insert	FS230 (Torx 8)	FS229 (Torx 15)

C 2

Indexable inserts

	Designation	d mm	P HC				M HC					K HC				S HC				
			WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSM45X	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM35	WSM45X	WSP45S	WSP45
	ROHX0803M0-D57	8		●●	●●		●●			●●					●●	●●			●●	
	ROHX0803M0-D67	8			●●			●●		●●							●●		●●	
	ROMX0803M0-D57	8		●●	●●		●●			●●					●●	●●			●●	
	ROGX10T3M0-G77	10				●●		●			●●						●			●●
	ROHX10T3M0-D57	10		●●	●●		●●	●●		●●					●●	●●	●●		●●	
	ROHX10T3M0-D67	10			●●			●●		●●							●●		●●	
	ROHX10T3M0-F67	10		●●	●●			●●		●●					●●		●●		●●	
	ROHX10T3M0T-A27	10		●●											●●					
	ROMX10T3M0-D57	10		●●	●●		●●		●●	●●					●●	●●		●●	●●	
	ROMX10T3M0-F67	10			●●				●●	●●								●●	●●	
	ROGX1204M0-G77	12			●●			●		●●							●		●●	
	ROHX1204M0-D57	12		●●	●●		●●			●●					●●	●●			●●	
	ROHX1204M0-D67	12		●●	●●			●●		●●					●●		●●		●●	
	ROHX1204M0-F67	12		●●	●●			●●		●●					●●		●●		●●	
	ROHX1204M0T-A27	12		●●											●●					
	ROMX1204M0-D57	12		●●	●●		●●		●●	●●					●●	●●		●●	●●	
	ROMX1204M0-F67	12			●●				●●	●●								●●	●●	

HC = Coated carbide



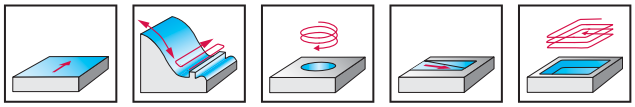
C 296 D 1 C 578 C 601 C 621 C 635

Copy milling cutter with round inserts
F2334



C 2

– With indexing surfaces
– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
F2334	●●	●●	●●		●●		

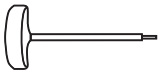
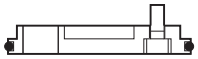
Tool	Designation	R mm	D_a mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of indexable inserts	Type
Cylindrical bore DIN 138 transverse keyway	F2334.B22.052.Z06.05	5	52	22	40	5		6	0,3	6	RO . X10T3M0
	F2334.B22.052.Z05.05	5	52	22	40	5		5	0,3	5	
	F2334.B22.052.Z04.08	8	52	22	40	8		4	0,3	4	RO . X1605M0
	F2334.B27.063.Z07.05	5	63	27	50	5		7	0,7	7	RO . X10T3M0
	F2334.B27.063.Z05.08	8	63	27	50	8		5	0,6	5	RO . X1605M0
	F2334.B27.063.Z05.10	10	63	27	50	10		5	0,5	5	RO . X2006M0
	F2334.B27.066.Z07.05	5	66	27	50	5		7	0,7	7	RO . X10T3M0
	F2334.B27.066.Z06.05	5	66	27	50	5		6	0,7	6	
	F2334.B27.066.Z07.06	6	66	27	50	6		7	0,7	7	RO . X1204M0
	F2334.B27.066.Z06.06	6	66	27	50	6		6	0,7	6	
	F2334.B27.066.Z05.08	8	66	27	50	8		5	0,6	5	RO . X1605M0
	F2334.B27.080.Z09.06	6	80	27	50	6		9	1,0	9	RO . X1204M0
	F2334.B27.080.Z07.06	6	80	27	50	6		7	1,0	7	
	F2334.B27.080.Z06.08	8	80	27	50	8		6	0,9	6	RO . X1605M0
	F2334.B27.080.Z05.08	8	80	27	50	8		5	1,0	5	
	F2334.B27.080.Z06.10	10	80	27	50	10		6	0,9	6	RO . X2006M0
	F2334.B27.080.Z05.10	10	80	27	50	10		5	0,8	5	
	F2334.B27.096.Z06.08	8	96	27	50	8		6	0	6	RO . X1605M0
	F2334.B32.100.Z06.08	8	100	32	50	8		6	1,7	6	
	F2334.B32.100.Z07.10	10	100	32	50	10		7	1,5	7	RO . X2006M0
	F2334.B32.116.Z07.08	8	116	32	50	8		7	2,2	7	RO . X1605M0
	F2334.B40.125.Z07.08	8	125	40	63	8		7	3,4	7	
	F2334.B40.125.Z08.10	10	125	40	63	10		8	3,2	8	RO . X2006M0
	F2334.B40.141.Z08.08	8	141	40	63	8		8	4,5	8	RO . X1605M0
Cylindrical bore DIN 138 transverse keyway	F2334.B40.160.Z10.10	10	160	40/40 B	63	10		10	4,3	10	RO . X2006M0

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	RO . X10T3M0	RO . X1204M0	RO . X1605M0	RO . X2006M0
	Clamping screw for indexable insert Tightening torque	FS359 (Torx 15) 2,5 Nm	FS378 (Torx 15) 3,0 Nm	FS1030 (Torx 20) 5,0 Nm	FS1036 (Torx 20) 5,0 Nm

Accessories

	Type D_a [mm]	RO . X10T3M0 52–66	RO . X1204M0 66–80	RO . X1605M0 52–141	RO . X2006M0 63–125	RO . X2006M0 160
	Screwdriver for indexable insert	FS229 (Torx 15)	FS229 (Torx 15)	FS228 (Torx 20)	FS228 (Torx 20)	FS228 (Torx 20)
	Handle key			FS1173 (Torx 20)	FS1173 (Torx 20)	FS1173 (Torx 20)
	Sealing disc; only D_a = 160 mm					FS936 COMPLETE SET
	Gasket a; only D_a = 160 mm					O-R 96X4

Indexable inserts

	Designation	d mm	P HC				M HC					K HC				S HC				
			WKP25S	WKP35S	WSP45S	WSP45	WSM35S	WSM35	WSM45X	WSP45S	WSP45	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM35	WSM45X	WSP45S	WSP45
	ROGX10T3M0-G77	10				●		○			●						○			●
	ROHX10T3M0-D57	10		●	◆		●	●		◆					◆	●	●		◆	
	ROHX10T3M0-D67	10			◆			●		◆							●		◆	
	ROHX10T3M0-F67	10		●	◆			●		◆					◆		●		◆	
	ROHX10T3M0T-A27	10		◆											◆					
	ROMX10T3M0-D57	10		●	◆		●		◆	◆					◆	●		◆	◆	
	ROMX10T3M0-F67	10			◆				◆	◆								◆	◆	
	ROGX1204M0-G77	12			●			○		●							○		●	
	ROHX1204M0-D57	12		●	◆		●			◆					◆	●			◆	
	ROHX1204M0-D67	12		●	◆			●		◆					◆		●		◆	
	ROHX1204M0-F67	12		●	◆			●		◆					◆		●		◆	
	ROHX1204M0T-A27	12		◆											◆					
	ROMX1204M0-D57	12		●	◆		●		◆	◆					◆	●		◆	◆	
	ROMX1204M0-F67	12			◆				◆	◆								◆	◆	
	ROGX1605M0-G77	16				●		○			●						○			●
	ROHX1605M0-D57	16		●	◆		●			◆					◆	●			◆	
	ROHX1605M0-D67	16			◆			●		◆							●		◆	
	ROHX1605M0T-A27	16		◆											◆					
	ROMX1605M0-D57	16		●	◆		●			◆					◆	●			◆	
	ROHX2006M0-D57	20		●	◆		●			◆					◆	●			◆	
	ROHX2006M0T-A27	20		◆											◆					
	ROMX2006M0-D57	20		●	◆		●			◆					◆	●			◆	

HC = Coated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

Very good | Good | Moderate

●● Primary application

● Other application

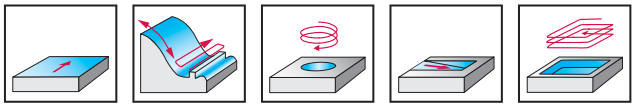
C 296 | D 1 | C 578 | C 601 | C 621 | C 635

Copy milling cutters with round inserts
F2334R



C 2

– Reinforced design
– Four cutting edges per indexable insert, with indexing surfaces





	P	M	K	N	S	H	O
F2334R	●●	●●	●●		●●		

Tool	Designation	R mm	D_a mm	d_1 mm	l_4 mm	L_c mm	l_1 mm	Z	kg	No. of index-able inserts	Type
ScrewFit	F2334R.T22.025.Z03.05	5	25	T22	35	5		3	0,1	3	RO . X10T3M0
	F2334R.T28.032.Z04.05	5	32	T28	40	5		4	0,2	4	
	F2334R.T36.040.Z04.06	6	40	T36	40	6		4	0,3	4	RO . X1204M0
Parallel shank	F2334R.Z32.032.Z04.05	5	32	32	70	5	131	4	0,7	4	RO . X10T3M0
Cylindrical bore DIN 138 transverse keyway	F2334R.B16.040.Z05.05	5	40	16	40	5		5	0,2	5	RO . X10T3M0
	F2334R.B16.040.Z06.05	5	40	16	40	5		6	0,2	6	
	F2334R.B16.040.Z05.06	6	40	16	40	6		5	0,2	5	RO . X1204M0
	F2334R.B16.040.Z04.06	6	40	16	40	6		4	0,2	4	
	F2334R.B22.050.Z05.06	6	50	22	40	6		5	0,3	5	
	F2334R.B22.050.Z06.06	6	50	22	40	6		6	0,4	6	
	F2334R.B22.052.Z05.06	6	52	22	40	6		5	0,4	5	
	F2334R.B22.052.Z06.06	6	52	22	40	6		6	0,4	6	
	F2334R.B22.063.Z07.06	6	63	22	40	6		7	0,6	7	

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

Type D_a [mm]	RO . X10T3M0 25–40	RO . X10T3M0 32–40	RO . X1204M0 40–63
 Clamping screw for indexable insert Tightening torque	FS2181 (Torx 15IP) 3,0 Nm	FS2119 (Torx 15IP) 3,0 Nm	FS1453 (Torx 15IP) 3,5 Nm

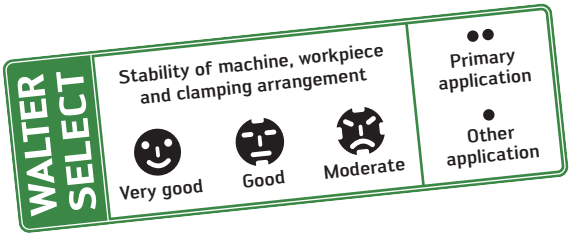
Accessories

Type	RO . X10T3M0/RO . X1204M0
 Screwdriver	FS1485 (Torx 15IP)
 Torque screwdriver, analogue Tightening torque	FS2003 1,5–5,0 Nm
 Interchangeable blade	FS2014 (Torx 15IP)

Indexable inserts

	Designation	d mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSM45X	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSM45X	S HC WSP45S	S HC WSP45
	ROGX10T3M0-G77	10				●●		●			●●						●			●●
	ROHX10T3M0-D57	10		●●	●●		●●	●●		●●					●●	●●	●●		●●	
	ROHX10T3M0-D67	10			●●			●●		●●							●●		●●	
	ROHX10T3M0-F67	10		●●	●●			●●		●●					●●		●●		●●	
	ROHX10T3M0T-A27	10		●											●					
	ROMX10T3M0-D57	10		●●	●●		●●		●●	●●					●●	●●		●●	●●	
	ROMX10T3M0-F67	10			●●				●●	●●								●●	●●	
	ROGX1204M0-G77	12			●●			●		●●							●		●●	
	ROHX1204M0-D57	12		●●	●●		●●			●●					●●	●●			●●	
	ROHX1204M0-D67	12		●●	●●			●●		●●					●●		●●		●●	
	ROHX1204M0-F67	12		●●	●●			●●		●●					●●		●●		●●	
	ROHX1204M0T-A27	12		●											●					
	ROMX1204M0-D57	12		●●	●●		●●		●●	●●					●●	●●		●●	●●	
	ROMX1204M0-F67	12			●●				●●	●●								●●	●●	

HC = Coated carbide



C 296 D 1 C 578 C 601 C 621 C 635

Copy milling cutters
F2239 / F2239B

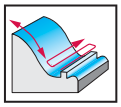




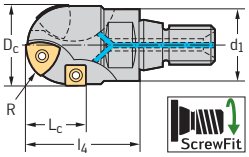
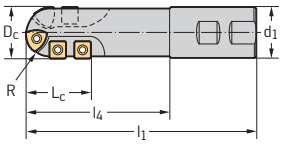
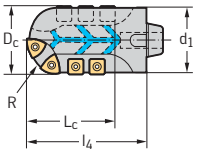
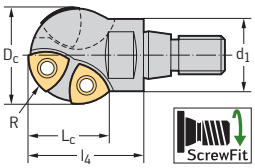
C 2

– With peripheral cutting edges
– Three or four cutting edges per indexable insert





	P	M	K	N	S	H	O
F2239	●●	●	●●		●		
F2239B	●●	●	●●		●		

Tool	Designation	D_c mm	R mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of index-able inserts	Type
ScrewFit 	F2239.T18.020.Z01.15	20	10	T18	30		15	1	0,1	1 2	SP .. 060304 P26315R10
	F2239.T22.025.Z01.18	25	12,5	T22	35		18	1	0,1	1 2	SP .. 060304 P26315R12
	F2239.T28.030.Z01.23	30	15	T28	40		23	1	0,2	1 2	SP .. 09T308 P26315R15
	F2239.T28.032.Z01.24	32	16	T28	40		24	1	0,2	1 2	SP .. 09T308 P26315R16
	F2239.T36.040.Z01.41	40	20	T36	65		41	1	0,4	2 2	SP .. 120408 P26315R20
	F2239.T45.050.Z01.46	50	25	T45	70		46	1	0,6	2 3	SP .. 120408 P26315R25
Shank DIN 1835 B 	F2239.W.020.Z01.25	20	10	20	59	110	25	1	0,2	3 2	SP .. 060304 P26315R10
	F2239.W.025.Z01.28	25	12,5	25	73	130	28	1	0,4	3 2	SP .. 060304 P26315R12
	F2239.W.032.Z01.38	32	16	32	99	160	38	1	0,8	3 2	SP .. 09T308 P26315R16
	F2239.W.040.Z01.51	40	20	40	119	190	51	1	1,5	3 2	SP .. 120408 P26315R20
Modular NCT adaptor 	F2239.N5.050.Z01.46	50	25	NCT 50	70		46	1	0,6	2 3	SP .. 120408 P26315R25
	F2239.N5.050.Z01.77	50	25	NCT 50	105		77	1	0,9	5 3	
	F2239.N6.063.Z01.53	63	31,5	NCT 63	80		53	1	1,2	2 3	SP .. 120408 P26315R31
	F2239.N6.063.Z01.84	63	31,5	NCT 63	115		84	1	1,8	5 3	
ScrewFit 	F2239B.T14.020.Z01.10	20	10	T14	25		15	1	0,0	3	P26315R10
	F2239B.T18.025.Z01.12	25	12,5	T18	30		20	1	0,1	3	P26315R12
	F2239B.T22.030.Z01.15	30	15	T22	40		24	1	0,1	3	P26315R15
	F2239B.T22.032.Z01.16	32	16	T22	40		26	1	0,1	3	P26315R16
	F2239B.T28.040.Z01.20	40	20	T28	45		32	1	0,2	3	P26315R20

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	D_c [mm]	20	25	30–32	40–63
	Clamping screw for indexable insert Tightening torque	FS1129 (Torx 8) 0,8 Nm	FS923 (Torx 8) 1,2 Nm	FS359 (Torx 15) 2,5 Nm	FS1030 (Torx 20) 5,0 Nm

Accessories

	D_c [mm]	20–25	30–32	40–63
	Screwdriver for indexable insert	FS230 (Torx 8)	FS229 (Torx 15)	FS228 (Torx 20)

Indexable inserts

	Designation	r mm	R mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	N HC WXN15	N HW WK10	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
	P26315R10		0,5	☺	😐	☹				☹				😐	☹					☹	
	P26315R12		0,6	☺	😐	☹				☹				😐	☹					☹	
	P26315R15		0,6	☺	😐	☹				☹				😐	☹					☹	
	P26315R16		0,6	☺	😐	☹				☹				😐	☹					☹	
	P26315R20		0,4	☺	😐	☹				☹				😐	☹					☹	
	P26315R25		1,2	☺	😐	☹				☹				😐	☹					☹	
	P26315R31		0,6	☺	😐	☹				☹				😐	☹					☹	
	SPHT060304-G88	0,4														☺	☺				
	SPMT060304-D51	0,4		☺	😐		☹		😐		☹			😐	☹				😐		☹
	SPMT060304-F55	0,4			😐		☹		😐		☹	☺			☹				😐		☹
	SPMW060304-A57	0,4		😐	☹							☺		😐	☹						
	SPMW060304T-A27	0,4		😐	☹									😐	☹						
	SPHT09T308-G88	0,8														☺	☺				
	SPMT09T308-D51	0,8		☺	😐		☹		😐		☹			😐	☹				😐		☹
	SPMT09T308-F55	0,8			😐		☹		😐		☹	☺			☹				😐		☹
	SPMW09T308-A57	0,8		😐	☹							☺		😐	☹						
	SPMW09T308T-A27	0,8		😐	☹									😐	☹						
	SPHT120408-G88	0,8														☺	☺				
	SPMT120408-D51	0,8		☺	😐		☹		😐		☹			😐	☹				😐		☹
	SPMT120408-F55	0,8			😐		☹		😐		☹	☺			☹				😐		☹
	SPMW120408-A57	0,8		😐	☹							☺		😐	☹						
	SPMW120408T-A27	0,8		😐	☹									😐	☹						

HC = Coated carbide
HW = Uncoated carbide

WALTER SELECT

Stability of machine, workpiece and clamping arrangement

☺ Very good 😐 Good ☹ Moderate

●● Primary application
● Other application

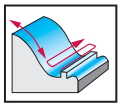
C 293 | D 1 | C 578 | C 602 | C 621 | C 635

Copy milling cutters
F2339



C 2

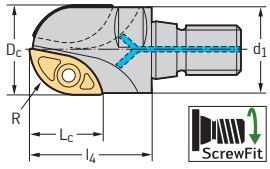
– With anti-twist protection
– Two cutting edges per indexable insert

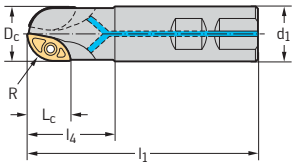




	P	M	K	N	S	H	O
F2339	●●	●●	●●		●	●	

Tool	Designation	D_c mm	R mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of index-able inserts	Type
ScrewFit	F2339.T14.016.Z02.11	16	8	T14	25		11	2	0,0	2	XD . T1303080R
	F2339.T18.020.Z02.15	20	10	T18	30		15	2	0,1	2	XD . T16T3100R
	F2339.T22.025.Z02.20	25	12,5	T22	35		20	2	0,1	2	XD . T2004125R
	F2339.T28.030.Z02.24	30	15	T28	40		24	2	0,2	2	XD . T2405150R
	F2339.T28.032.Z02.25	32	16	T28	40		25	2	0,2	2	XD . T2506160R
	F2339.T36.040.Z02.31	40	20	T36	50		31	2	0,3	2	XD . T3207200R
	F2339.T45.050.Z02.40	50	25	T45	60		40	2	0,5	2	XD . T4009250R
Shank DIN 1835 B	F2339.W16.016.Z02.11	16	8	16	25	74	11	2	0,2	2	XD . T1303080R
	F2339.W20.020.Z02.15	20	10	20	35	90	15	2	0,2	2	XD . T16T3100R
	F2339.W25.025.Z02.20	25	12,5	25	40	105	20	2	0,3	2	XD . T2004125R
	F2339.W32.030.Z02.24	30	15	32	50	125	24	2	0,6	2	XD . T2405150R
	F2339.W32.032.Z02.25	32	16	32	50	125	25	2	0,6	2	XD . T2506160R
	F2339.W40.040.Z02.31	40	20	40	65	150	31	2	1,2	2	XD . T3207200R



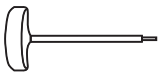


Bodies and assembly parts are included in the scope of delivery.

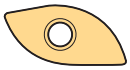
Assembly parts

	D_c [mm]	16	20	25	30–32	40	50
	Clamping screw for indexable insert Tightening torque	FS1454 (Torx 8IP) 1,2 Nm	FS1013 (Torx 8) 1,0 Nm	FS378 (Torx 15) 3,0 Nm	FS1165 (Torx 20) 6,0 Nm	FS1164 (Torx 25) 10,0 Nm	FS1152 (Torx 30) 10,0 Nm

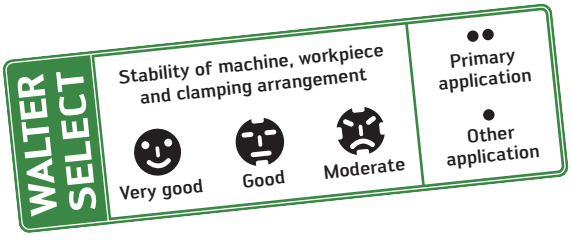
Accessories

	D_c [mm]	16	20	25	30–32	40	50
	Handle key				FS1173 (Torx 20)	FS1174 (Torx 25)	FS1175 (Torx 30)
	Screwdriver for indexable insert	FS1483 (Torx 8IP)	FS230 (Torx 8)	FS229 (Torx 15)			

Indexable inserts

	Designation	R mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSP45S	S HC WSP45
	XDGT1303080R-D57	8		●●	●			●					●		●●	
	XDMT1303080R-F55	8	●	●●	●		●●	●				●●	●	●●	●●	
	XDGT16T3100R-D57	10		●●	●			●					●		●●	
	XDMT16T3100R-F55	10	●	●●	●		●●	●				●●	●	●●	●●	
	XDGT2004125R-D57	12,5		●●	●			●					●		●●	
	XDMT2004125R-F55	12,5	●	●●	●		●●	●				●●	●	●●	●●	
	XDGT2405150R-D57	15		●●	●			●					●		●●	
	XDMT2405150R-F55	15	●	●●		●	●●		●			●●	●	●●		●
	XDGT2506160R-D57	16		●●	●			●					●		●●	
	XDMT2506160R-F55	16	●	●●		●	●●		●			●●	●	●●		●
	XDGT3207200R-D57	20		●●	●			●					●		●●	
	XDMT3207200R-F55	20	●	●●	●		●●	●				●●	●	●●	●●	
	XDGT4009250R-D57	25		●●	●			●					●		●●	
	XDMT4009250R-F55	25	●	●●	●		●●	●				●●	●	●●	●●	

HC = Coated carbide



C 307 D 1 C 578 C 603 C 621 C 635

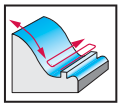
Copy milling cutters
F2339





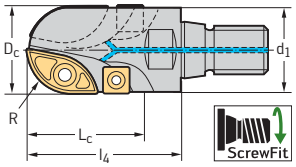
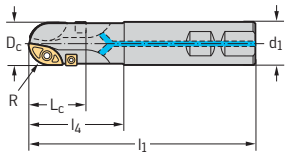
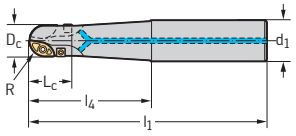
C 2

– With anti-twist protection
– Two or four cutting edges per indexable insert, with peripheral cutting edges





	P	M	K	N	S	H	O
F2339	●●	●●	●●		●	●	

Tool	Designation	D_c mm	R mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of index-able inserts	Type
ScrewFit 	F2339.T14.016.Z02.24	16	8	T14	40		24	2	0,1	2 2	XD . T1303080R SPM . 060304
	F2339.T18.020.Z02.28	20	10	T18	40		28	2	0,1	2 2	XD . T16T3100R SPM . 060304
	F2339.T22.025.Z02.32	25	12,5	T22	45		32	2	0,1	2 2	XD . T2004125R SPM . 060304
	F2339.T28.030.Z02.42	30	15	T28	60		42	2	0,2	2 2	XD . T2405150R SPM . 09T308
	F2339.T28.032.Z02.43	32	16	T28	60		43	2	0,2	2 2	XD . T2506160R SPM . 09T308
Shank DIN 1835 B 	F2339.W16.016.Z02.24	16	8	16	40	89	24	2	0,1	2 2	XD . T1303080R SPM . 060304
	F2339.W20.016.Z02.24	16	8	20	40	91	24	2	0,2	2 2	
	F2339.W20.020.Z02.28	20	10	20	50	110	28	2	0,2	2 2	XD . T16T3100R SPM . 060304
	F2339.W25.025.Z02.32	25	12,5	25	55	130	32	2	0,4	2 2	XD . T2004125R SPM . 060304
	F2339.W32.030.Z02.42	30	15	32	70	160	42	2	0,8	2 2	XD . T2405150R SPM . 09T308
	F2339.W32.032.Z02.43	40	16	32	70	160	43	2	0,8	2 2	XD . T2506160R SPM . 09T308
	F2339.W40.040.Z02.57	40	20	40	90	190	57	2	1,5	2 2	XD . T3207200R SPM . 120408
Parallel shank 	F2339.Z25.020.Z02.28	20	10	25	75	150	28	2	0,5	2 2	XD . T16T3100R SPM . 060304
	F2339.Z32.025.Z02.32	25	12,5	32	95	185	32	2	0,9	2 2	XD . T2004125R SPM . 060304
	F2339.Z40.030.Z02.42	30	15	40	120	220	42	2	1,2	2 2	XD . T2405150R SPM . 09T308
	F2339.Z40.032.Z02.43	32	16	40	120	220	43	2	1,6	2 2	XD . T2506160R SPM . 09T308

At full depth of cut L_c, a feed of Z = 1 should be expected.
For tools with a parallel shank, the max. projection length is 5 x D_c
Bodies and assembly parts are included in the scope of delivery.

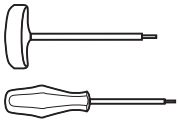
C 2

Assembly parts



D_c [mm]	16	20	25	30–32	40
Clamping screw for radius insert Tightening torque	FS1454 (Torx 8IP) 1,2 Nm	FS1013 (Torx 8) 1,0 Nm	FS378 (Torx 15) 3,0 Nm	FS1165 (Torx 20) 6,0 Nm	FS1164 (Torx 25) 10,0 Nm
Clamping screw for square insert Tightening torque	FS1454 (Torx 8IP) 1,2 Nm	FS923 (Torx 8) 1,2 Nm	FS923 (Torx 8) 1,2 Nm	FS359 (Torx 15) 2,5 Nm	FS1030 (Torx 20) 5,0 Nm

Accessories

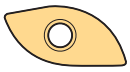


D_c [mm]	16	20	25	30–32	40
Handle key for radius insert				FS1173 (Torx 20)	FS1174 (Torx 25)
Screwdriver for square insert	FS1483 (Torx 8IP)	FS230 (Torx 8)	FS230 (Torx 8)	FS229 (Torx 15)	FS1173 (Torx 20)
Screwdriver for radius insert	FS1483 (Torx 8IP)	FS230 (Torx 8)	FS229 (Torx 15)		

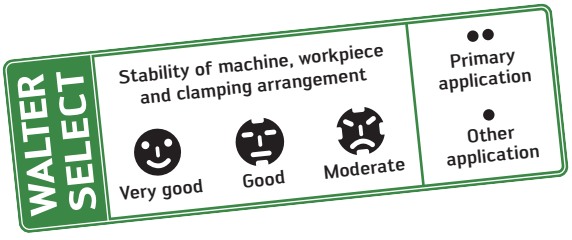
Indexable inserts

Designation	r mm	R mm	P HC WKP25S	P HC WKP35S	P HC WSP45S	P HC WSP45	M HC WSM35S	M HC WSM35	M HC WSP45S	M HC WSP45	K HC WAK15	K HC WKK25S	K HC WKP25S	K HC WKP35S	S HC WSM35S	S HC WSM35	S HC WSP45S	S HC WSP45
SPMT060304-D51	0,4		☻	☹		☠		☹		☠			☹	☠		☹		☠
SPMT060304-F55	0,4			☹		☠		☹		☠	☻			☠		☹		☠
SPMW060304-A57	0,4		☹	☠							☻		☹	☠				
SPMW060304T-A27	0,4		☹	☠									☹	☠				
SPMT09T308-D51	0,8		☻	☹		☠		☹		☠			☹	☠		☹		☠
SPMT09T308-F55	0,8			☹		☠		☹		☠	☻			☠		☹		☠
SPMW09T308-A57	0,8		☹	☠							☻		☹	☠				
SPMW09T308T-A27	0,8		☹	☠									☹	☠				
SPMT120408-D51	0,8		☻	☹		☠		☹		☠			☹	☠		☹		☠
SPMT120408-F55	0,8			☹		☠		☹		☠	☻			☠		☹		☠
SPMW120408-A57	0,8		☹	☠							☻		☹	☠				
SPMW120408T-A27	0,8		☹	☠									☹	☠				
XDGT1303080R-D57		8		☹	☠				☠					☠			☠	
XDMT1303080R-F55		8	☻	☹	☠		☹		☠				☹	☠	☹		☠	
XDGT16T3100R-D57		10		☹	☠				☠					☠			☠	
XDMT16T3100R-F55		10	☻	☹	☠		☹		☠				☹	☠	☹		☠	
XDGT2004125R-D57		12,5		☹	☠				☠					☠			☠	
XDMT2004125R-F55		12,5	☻	☹	☠		☹		☠				☹	☠	☹		☠	
XDGT2405150R-D57		15		☹	☠				☠					☠			☠	
XDMT2405150R-F55		15	☻	☹		☠	☹			☠			☹	☠	☹			☠
XDGT2506160R-D57		16		☹	☠				☠					☠			☠	
XDMT2506160R-F55		16	☻	☹		☠	☹			☠			☹	☠	☹			☠
XDGT3207200R-D57		20		☹	☠				☠					☠			☠	
XDMT3207200R-F55		20	☻	☹	☠		☹		☠				☹	☠	☹		☠	

HC = Coated carbide

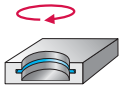
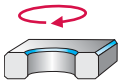
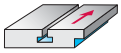






C 301 D 1 C 578 C 604 C 621 C 635

Walter Select – Indexable insert milling cutters
Profiling cutters

Machining WALTER SELECT ●● Primary application ● Other application			
Lead angle κ	**90°**	45°	**90°**
Designation	**F2036**	**M4574**	**M4575**
Dia. range [mm]	16–63	12–40	21–50
Adaption Range	Combishank DIN 1835, Form B and D Modular NCT adaptor	ScrewFit Parallel shank	DIN 1835 B
Page	C 560	C 562	C 564
			
P Steel	●●	●●	●●
M Stainless steel		●●	●●
K Cast iron	●●	●●	●●
N NF metals			
S Materials with difficult cutting properties		●●	●●
H Hard materials			
O Other			
Indexable inserts			
Type	P20200-1 . 1 P20200-1 . 2 P20200-1 . 3 P20200-1 . 4 ...	SDM . 06T204 SDM . 09T308 SDM . 120408	SDM . 06T204 SDM . 09T308 SDM . 120408
Number of cutting edges	2	4	4
Max. depth of cut [mm]	4	3 / 5 / 7	9 / 11 / 14 / 17 / 21

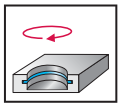
Circular slot milling cutters
F2036

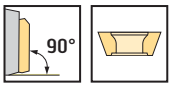




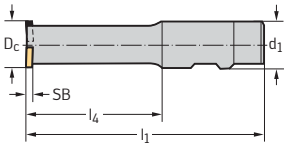
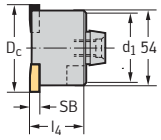
C 2

– Two cutting edges per indexable insert





	P	M	K	N	S	H	O
F2036	●●		●●				

Tool	Designation	D_c mm	d_1 mm	l_4 mm	l_1 mm	$a_{e\ max}$ mm	Z	kg	SB_{H13}* mm	For diameter in mm	No. of indexable inserts	Type
Combishank DIN 1835, Form B and D	F2036.5.16.090.016	16	16	42	90	1,75	1	0,12	1,1	18–22	1	P20200-1 . 1
									1,3	22–32	1	P20200-1 . 2
									1,6	34–38	1	P20200-1 . 3
	F2036.5.25.130.025	25	25	74	130	2	2	0,41	1,3	28–32	2	P20200-1 . 2
									1,6	34–38	2	P20200-1 . 3
									2,15	40–48	2	P20200-1 . 4
										50–63	2	P20200-1 . 5
	F2036.5.32.140.040	40	32	80	140	2,75	4	0,92	2,15	50–63	4	P20200-2 . 1
									2,65	65–82	4	P20200-2 . 2
									3,15	85–100	4	P20200-2 . 3
Modular NCT adaptor	F2036M.0.50.040.063	63	NCT 50	40		4	6	0,69	3,15	85–100	6	P20200-3 . 1
									4,15	102–200	6	P20200-3 . 2
									5,15	210–300	6	P20200-3 . 3

* Nominal size of the slot width of the workpiece in accordance with DIN 472 in relation to the drilled hole diameter.
Bodies and assembly parts are included in the scope of delivery.

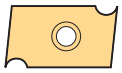
Assembly parts

	D_c [mm]	16–25	40	63
	Clamping screw for indexable insert Tightening torque	FS322 (Torx 7) 0,8 Nm	FS246 (Torx 8) 1,5 Nm	FS326 (Torx 15) 3,0 Nm

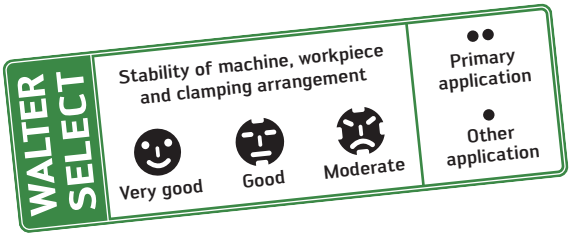
Accessories

	D_c [mm]	16–25	40	63
	Screwdriver for indexable insert	FS309 (Torx 7)	FS230 (Torx 8)	FS229 (Torx 15)

Indexable inserts

	Designation	b mm	P HC			M HC		K HC				N HC	N HW	S HC	
			WKP25S	WKP35S	WSP45S	WSM35S	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WXN15	WK10	WSM35S	WSP45S
	P20200-1.1	0,1 × 45°		●●							●●				
	P20200-1.2	0,15 × 45°		●●							●●				
	P20200-1.3	0,15 × 45°		●●							●●				
	P20200-1.4	0,15 × 45°		●●							●●				
	P20200-1.5	0,15 × 45°		●●							●●				
	P20200-2.1	0,15 × 45°		●●							●●				
	P20200-2.2	0,15 × 45°		●●							●●				
	P20200-2.3	0,15 × 45°		●●							●●				
	P20200-3.1	0,15 × 45°		●●							●●				
	P20200-3.2	0,15 × 45°		●●							●●				
	P20200-3.3	0,15 × 45°		●●							●●				

HC = Coated carbide
HW = Uncoated carbide



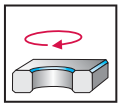
C 330 D 1 C 576 C 607 C 621

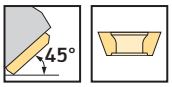
Chamfer milling cutter
M4574



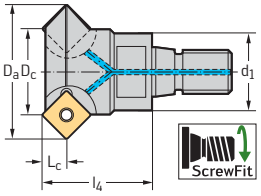
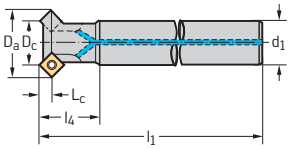
C 2

– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
M4574	●●	●●	●●		●●		

Tool	Designation	D_c mm	D_a mm	d_1 mm	l_4 mm	l_1 mm	L_c mm	Z	kg	No. of index-able inserts	Type
ScrewFit 	M4574-012-T09-02-03	12	20,3	9,7	20		3,5	2	0,03	2	SDM . 06T204
	M4574-016-T14-03-03	16	24,3	14,5	25		3,5	3	0,28	3	
	M4574-020-T18-02-05	20	32,8	18,5	30		5,5	2	0,09	2	SDM . 09T308
	M4574-025-T22-03-05	32	37,8	22	35		5,5	3	0,14	3	
	M4574-032-T28-03-05	32	44,8	28	40		5,5	3	0,24	3	
	M4574-032-T28-03-07	32	48,6	28	40		7,5	3	0,21	3	SDM . 120408
Parallel shank 	M4574-008-A12-01-03	8	16,3	12	30	120	3,5	1	0,11	1	SDM . 06T204
	M4574-010-A12-01-03	10	18,3	12	30	120	3,5	1	0,10	1	
	M4574-012-A16-02-03	12	20,3	16	40	160	3,5	2	0,24	2	
	M4574-012-A16-01-05	12	24,8	16	40	160	5,5	1	0,25	1	SDM . 09T308
	M4574-016-A16-03-03	16	24,3	16	40	160	3,5	3	0,22	3	SDM . 06T204
	M4574-016-A16-02-05	16	28,8	16	40	160	5,5	2	0,25	2	SDM . 09T308
	M4574-020-A20-02-05	20	32,8	20	40	200	5,5	2	0,50	2	
	M4574-025-A25-03-05	25	37,8	25	40	200	5,5	3	0,75	3	
	M4574-025-A25-02-07	25	41,6	25	40	200	7,5	2	0,71	2	SDM . 120408
	M4574-032-A32-03-05	32	44,8	32	40	250	5,5	3	1,52	3	SDM . 09T308
	M4574-032-A32-03-07	32	48,6	32	40	250	7,5	3	1,54	3	SDM . 120408
	M4574-040-A32-03-07	40	56,6	32	40	250	7,5	3	1,63	3	

Tools with a parallel shank can be shortened depending on the application.
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	SDM . 06T204	SDM . 09T308	SDM . 120408
	Clamping screw for indexable insert Tightening torque	FS2084 (Torx 7IP) 0,9 Nm	FS2266 (Torx 10IP) 2,0 Nm	FS1453 (Torx 15IP) 3,5 Nm

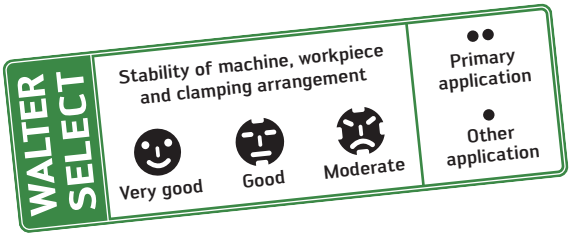
Accessories

	Type	SDM . 06T204	SDM . 09T308	SDM . 120408
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque		FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2268 (Torx 10IP)	FS2014 (Torx 15IP)
	Screwdriver	FS2088 (Torx 7IP)	FS2267 (Torx 10IP)	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	P HC			M HC			K HC				S HC		
			WKP25S	WKP35S	WSP45S	WSM35S	WSM45X	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM45X	WSP45S
	SDMT06T204-D51	0,4	●●	●	•			•			●●	●			•
	SDMT06T204-D57	0,4	●●	●	•	●●		•		●●	●●	●	●●		•
	SDMT06T204-F57	0,4	●●	●	•	●●	●	•	●●		●●	●	●●	●	•
	SDMW06T204-A57	0,4	●	•							●●	●			
	SDMT09T308-D51	0,8	●●	●	•			•			●●	●			•
	SDMT09T308-D57	0,8	●●	●	•	●●		•		●●	●●	●	●●		•
	SDMT09T308-F57	0,8	●●	●	•	●●	●	•	●●		●●	●	●●	●	•
	SDMW09T308-A57	0,8	●	•							●●	●			
	SDMT120408-D51	0,8	●●	●	•			•			●●	●			•
	SDMT120408-D57	0,8	●●	●	•	●●		•		●●	●●	●	●●		•
	SDMT120408-F57	0,8	●●	●	•	●●	●	•	●●		●●	●	●●	●	•
	SDMW120408-A57	0,8	●	•							●●	●			

HC = Coated carbide



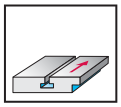
C 299 D 1 C 568 C 606 C 621 C 635

T-slot milling cutters
M4575



C 2

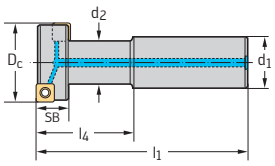
– Four cutting edges per indexable insert





	P	M	K	N	S	H	O
M4575	●●	●●	●●		●●		

Tool	Designation	D_c mm	d_1 mm	d_2 mm	l_4 mm	l_1 mm	SB mm	Z	kg	No. of index-able inserts	Type
Shank DIN 1835 B	M4575-021-W12-02-09	20,5	12	11	27	73	8,75	2	0,05	4	SDM . 06T204
	M4575-025-W16-02-11	24,5	16	12,1	31	80	10,75	2	0,13	4	
	M4575-032-W20-02-14	31,75	20	17	31	90	13,75	2	0,20	4	SDM . 09T308
	M4575-040-W25-02-17	39,5	25	21	49	106	16,75	2	0,42	4	
	M4575-050-W32-02-21	49,5	32	27	61	122	20,75	2	0,72	4	SDM . 120408



Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Type	SDM . 06T204	SDM . 09T308	SDM . 120408
	Clamping screw for indexable insert Tightening torque	FS2084 (Torx 7IP) 0,9 Nm	FS2266 (Torx 10IP) 2,0 Nm	FS1453 (Torx 15IP) 3,5 Nm

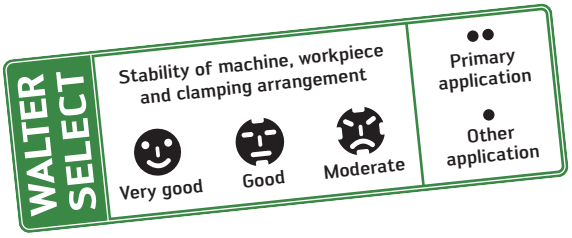
Accessories

	Type	SDM . 06T204	SDM . 09T308	SDM . 120408
	Torque screwdriver, analogue Tightening torque	FS2001 0,4–1,2 Nm	FS2003 1,5–5,0 Nm	FS2003 1,5–5,0 Nm
	Torque screwdriver, digital Tightening torque		FS2248 1,0–6,0 Nm	FS2248 1,0–6,0 Nm
	Interchangeable blade	FS2011 (Torx 7IP)	FS2268 (Torx 10IP)	FS2014 (Torx 15IP)
	Screwdriver	FS2088 (Torx 7IP)	FS2267 (Torx 10IP)	FS1485 (Torx 15IP)

Indexable inserts

	Designation	r mm	P HC			M HC			K HC				S HC		
			WKP25S	WKP35S	WSP45S	WSM35S	WSM45X	WSP45S	WAK15	WKK25S	WKP25S	WKP35S	WSM35S	WSM45X	WSP45S
	SDMT06T204-D51	0,4	☺	☹	☹			☹			😐	😐			☹
	SDMT06T204-D57	0,4	☺	😐	☹	😐		☹		😐	😐	😐	😐		☹
	SDMT06T204-F57	0,4	☺	😐	☹	😐	☹	☹	☺		😐	😐	😐	☹	☹
	SDMW06T204-A57	0,4	😐	☹							😐	😐			
	SDMT09T308-D51	0,8	☺	☹	☹			☹			😐	😐			☹
	SDMT09T308-D57	0,8	☺	😐	☹	😐		☹		😐	😐	😐	😐		☹
	SDMT09T308-F57	0,8	☺	😐	☹	😐	☹	☹	☺		😐	😐	😐	☹	☹
	SDMW09T308-A57	0,8	😐	☹							😐	😐			
	SDMT120408-D51	0,8	☺	☹	☹			☹			😐	😐			☹
	SDMT120408-D57	0,8	☺	😐	☹	😐		☹		😐	😐	😐	😐		☹
	SDMT120408-F57	0,8	☺	😐	☹	😐	☹	☹	☺		😐	😐	😐	☹	☹
	SDMW120408-A57	0,8	😐	☹							😐	😐			

HC = Coated carbide

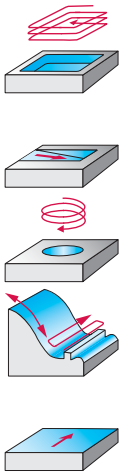


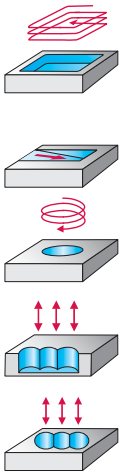
C 299 D 1 C 576 C 607 C 621

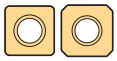
Walter Select – Indexable insert milling cutters
Circular interpolation mills

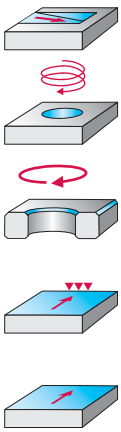
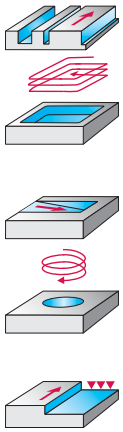
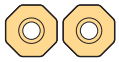
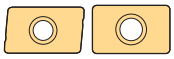
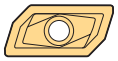
Machining

WALTER SELECT
●● Primary application
● Other application





Lead angle κ				**15°**	
Designation	**F2234**	**F2334**	**F2334R**	**F2330**	**M4002**
Dia. range [mm]	15–160	25–160	25–63	20–85	20–125
Adaption range	ScrewFit DIN 1835 B Cylindrical Bore	ScrewFit DIN 1835 B Parallel shank Cylindrical Bore	ScrewFit Parallel shank Cylindrical Bore	ScrewFit Parallel shank Cylindrical Bore	ScrewFit Parallel shank Cylindrical Bore
Page	C 542	C 546	C 550	C 392	C 424
					
P Steel	●●	●●	●●	●●	●●
M Stainless steel	●●	●●	●●	●●	●●
K Cast iron	●●	●●	●●	●●	●●
N NF metals	●●				
S Materials with difficult cutting properties	●	●●	●●	●●	●●
H Hard materials	●●				●
O Other	●				
Indexable inserts					
Type	RD . X07T1M0 RD .. 0803M0 RD . X1003M0 RD . X12T3M0 ...	RO . X0803M0 RO . X10T3M0 RO . X1204M0 RO . X1605M0 ...	RO . X10T3M0 RO . X1204M0	P2633 . R10 P26379-R10 P2633 . R14 P26379-R14 ...	SDM . 06T2 .. SDM . 09T3 .. SDM . 1204 ..
Number of cutting edges	6/4	4/6/8	4	3	4
Max. depth of cut [mm]	4 / 5 / 6 / 8 / 10	4 / 5 / 6 / 8 / 10	5 / 6	1 / 1,5 / 2	1 / 1,5 / 2

			
	43°	90°	
	F4080	F4042	M2131
	24–160	10–160	25–80
	ScrewFit DIN 1835 B Parallel shank Cylindrical Bore	ScrewFit DIN 1835 B Parallel shank Cylindrical Bore	ScrewFit Parallel shank Similar to HSK-A DIN 69893 Cylindrical Bore
	C 414	C 446	C 464
			
	●●	●●	
	●●	●●	
	●●	●●	
	●●	●●	●●
	●●	●●	
	●	●	
	●	●	●
			
	OD .. 0504 .. ODHX0504ZZR OD .. 0605 .. ODHX0605ZZR	AD . T0803 .. R AD . T1204 .. R AD .. 1606 .. R AD . T1807 .. R	ZDGT1504 .. R ZDGT2005 .. R
	8/1	2	2
	3 / 4	8 / 11,7 / 15 / 16,7	15 / 20

C 2

Cutting data for roughing
Face/shoulder milling

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades: Starting values for cutting speed v_c [m/min] HC WKP35S a_e / D_c* 1/1 1/2	WKP35S a_e / D_c* 1/5	WKP25S a_e / D_c* 1/1 1/2	WKP25S a_e / D_c* 1/5	WAK15 a_e / D_c* 1/1 1/2	WAK15 a_e / D_c* 1/5
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●	250	300	290	320		
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●	220	260	260	330		
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●	215	250	255	320		
		C > 0.55%	Annealed	190	640	P4	●	●●	220	260	260	330		
		C > 0.55%	Heat-treated	300	1010	P5	●	●●	160	180	220	260		
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	210	240	250	315		
	Low-alloyed steel	Annealed		175	590	P7	●	●●	220	270	260	320		
		Heat-treated		285	960	P8	●	●●	170	190	210	250		
		Heat-treated		380	1280	P9	●	●●	130	150	170	190		
		Heat-treated		430	1480	P10	●	●●	110	130	150	170		
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	130	160	140	170		
		Hardened and tempered		300	1010	P12	●	●●	80	90	110	130		
		Hardened and tempered		380	1280	P13	●	●●	70	80	90	110		
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●	140	160				
		Martensitic, heat-treated		330	1110	P15	●	●●	90	110				
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●						
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●						
		Austenitic/ferritic, duplex		230	780	M3	●●	●						
K	Malleable cast iron	Ferritic		200	400	K1	●	●●	160	190	180	210	210	230
		Pearlitic		260	700	K2	●	●●	140	170	160	190	190	210
	Grey cast iron	Low tensile strength		180	200	K3	●	●●	300	330	320	350	380	410
		High tensile strength/austenitic		245	350	K4	●	●●	190	220	180	210	230	260
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●	200	220	220	240	260	280
		Pearlitic		265	700	K6	●	●●	130	150	140	170	170	200
	GGV (CGI)			230	400	K7	●	●●	130	160	150	180	180	200
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●							
		Hardenable, hardened		100	340	N2	●●							
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●							
		≤ 12% Si, hardenable, hardened		90	310	N4	●●							
		> 12% Si, not hardenable		130	450	N5	●●							
	Magnesium-based alloys [3]			70	250	N6	●● [3]							
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●							
		Brass, bronze, red brass		90	310	N8	●●							
		Cu-alloys, short-chipping		110	380	N9	●●							
		High-tensile, Ampco		300	1010	N10	●●							
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●							
			Hardened	280	940	S2	●●							
		Ni or Co base	Annealed	250	840	S3	●●							
			Hardened	350	1180	S4	●●							
			Cast	320	1080	S5	●●							
	Titanium alloys	Pure titanium		200	680	S6	●●							
		α and β alloys, hardened		375	1260	S7	●●							
		β alloys		410	1400	S8	●●							
	Tungsten alloys			300	1010	S9	●●							
	Molybdenum alloys			300	1010	S10	●●							
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●			60	75	65	80
		Hardened and tempered		55 HRC	–	H2		●●						
		Hardened and tempered		60 HRC	–	H3		●●						
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●			45	60	50	65
O	Thermoplastics	Without abrasive fillers				O1	●●	●	400	400			400	400
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	300	300			300	300
	Plastic, glass fibre reinforced	GFRP				O3								
	Plastic, carbon fibre reinforced	CFRP				O4								
	Plastic, aramid fibre reinforced	AFRP				O5								
	Graphite (technical)			80 Shore		O6		●●			400	500	600	800

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 .
[2] Cutting data can also be used without coolant.
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.
* a_e/D_c = 1/10, v_c = 10% higher than 1/5

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

C 2

Cutting material grades																						
Starting values for cutting speed v_c [m/min]																						
HC														HF		HW		CN		BH		DP	
WSP45S		WSM45X		WSM35S		WKK25S		WXN15		WNN15		WMG40		WK10		WSN10		WCB80		WCD10[2]	
a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*	
1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5
230	290																				
190	250																				
180	230																				
190	250																				
130	145																				
175	225																				
190	240																				
130	145																				
100	110																				
80	90																				
115	140																				
75	90																				
65	80																				
115	140	125	155	130	160																
80	100	85	110	80	115																
110	130	120	145	130	155																
90	100	95	110	100	120																
100	120	115	130	120	140																
						190	230									900	1000				
						170	200									800	900				
						350	380									1100	1300	1000	1250		
						190	230									900	1000	800	950		
						240	260									750	900	650	800		
						150	180									650	750	600	700		
						160	190									650	750	600	700		
								2640	2640	2640	2640	1500	1500	2200	2200					3000	4000
								1980	1980	1980	1980	1000	1000	1650	1650					2000	2000
								660	730	660	730			550	605					1500	1500
								530	530	530	530			440	440					1000	1000
								265	310	265	310			220	260					500	500
								530	530	530	530			440	440						
								460	460	460	460			380	380						
								260	300	260	300			220	260						
								190	200	190	200			160	170						
								150	160	150	160			120	130						
65	70	75	80	80	90							75	80								
45	50	50	60	60	65							45	50								
50	55	55	65	60	70							55	60								
30	35	35	40	40	45							25	30								
40	45	45	50	50	55							35	40								
65	70	75	80	80	90							75	80								
30	35	35	40	40	45							25	30								
30	35	30	40	30	45							30	40								
70	80	70	80	70	80							70	80								
70	80	70	80	70	80							70	80								
						65	80											450	550		
																		220	280		
																		140	220		
						50	65											220	280		
400	400			400	400	400	400	400	400			400	400	400	400						
300	300			300	300	300	300	300	300			300	300	300	300						
						600	800	600	800					400	500						

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide

BH = CBN with high CBN content
DP = Polycrystalline diamond
CN = Silicon nitride Si_3N_4

C 2

Cutting data for roughing
Shoulder milling with full effective porcupine milling cutters (F2338F, F4038, F4138, F4238, F4338, F5038, F5138, M3255)

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades: Starting values for cutting speed v_c [m/min] HC WKP35S a_e / D_c* 1/2	WKP35S a_e / D_c* 1/5	WKP25S a_e / D_c* 1/2	WKP25S a_e / D_c* 1/5
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●	195	250	210	275
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●	170	215	200	255
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●	155	190	175	220
		C > 0.55%	Annealed	190	640	P4	●	●●	170	215	200	255
		C > 0.55%	Heat-treated	300	1010	P5	●	●●	130	145	165	200
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	150	210	170	210
	Low-alloyed steel	Annealed		175	590	P7	●	●●	170	215	200	255
		Heat-treated		285	960	P8	●	●●	130	145	155	200
		Heat-treated		380	1280	P9	●	●●	85	100	125	140
		Heat-treated		430	1480	P10	●	●●	80	90	110	120
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	100	120	110	130
		Hardened and tempered		300	1010	P12	●	●●	65	75	80	95
		Hardened and tempered		380	1280	P13	●	●●	60	70	70	80
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●	105	120		
		Martensitic, heat-treated		330	1110	P15	●	●●	60	70		
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●				
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●				
		Austenitic/ferritic, duplex		230	780	M3	●●	●				
K	Malleable cast iron	Ferritic		200	400	K1	●	●●	150	170	120	220
		Pearlitic		260	700	K2	●	●●	120	140	130	150
	Grey cast iron	Low tensile strength		180	200	K3	●	●●	160	180	180	230
		High tensile strength/austenitic		245	350	K4	●	●●	120	140	130	150
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●	140	150	150	160
		Pearlitic		265	700	K6	●	●●	105	115	120	125
	GGV (CGI)			230	400	K7	●	●●	150	170	120	220
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●					
		Hardenable, hardened		100	340	N2	●●					
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●					
		≤ 12% Si, hardenable, hardened		90	310	N4	●●					
		> 12% Si, not hardenable		130	450	N5	●●					
	Magnesium-based alloys [2]			70	250	N6	●●[2]					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●					
		Brass, bronze, red brass		90	310	N8	●●					
		Cu-alloys, short-chipping		110	380	N9	●●					
		High-tensile, Ampco		300	1010	N10	●●					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●					
			Hardened	280	940	S2	●●					
		Ni or Co base	Annealed	250	840	S3	●●					
			Hardened	350	1180	S4	●●					
			Cast	320	1080	S5	●●					
	Titanium alloys	Pure titanium		200	680	S6	●●					
		α and β alloys, hardened		375	1260	S7	●●					
		β alloys		410	1400	S8	●●					
	Tungsten alloys			300	1010	S9	●●					
	Molybdenum alloys			300	1010	S10	●●					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●				
		Hardened and tempered		55 HRC	–	H2		●●				
		Hardened and tempered		60 HRC	–	H3		●●				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●				
O	Thermoplastics	Without abrasive fillers				O1	●●	●	400	400		
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	300	300		
	Plastic, glass fibre reinforced	GFRP				O3						
	Plastic, carbon fibre reinforced	CFRP				O4						
	Plastic, aramid fibre reinforced	AFRP				O5						
	Graphite (technical)			80 Shore		O6		●●			400	500

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 onwards.
[2] Water-miscible coolants must not be used when machining magnesium-based alloys.
* a_e/D_c = 1/10, v_c = 10% higher than 1/5

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

C 2

	Cutting material grades													
	Starting values for cutting speed v_c [m/min]													
	HC												HW	
	WAK15		WSP45S		WSM45X		WSM35S		WKK25S		WXN15		WK10	
	a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*	
	1/2	1/5	1/2	1/5	1/1 1/2	1/5	1/2	1/5	1/2	1/5	1/2	1/5	1/2	1/5
			185	230										
			150	200										
			130	165										
			150	200										
			105	115										
			125	160										
			150	190										
			105	115										
			60	70										
			60	70										
			90	110										
			65	70										
			60	70										
			90	110	95	120	100	130						
			60	70	65	80	70	90						
			85	100	95	110	100	120						
			70	80	75	90	80	100						
			75	90	85	100	90	110						
	210	270							190	250			70	80
	160	180							140	160			65	65
	220	280							200	260			75	85
	160	180							140	160			55	55
	180	190							160	170			70	80
	155	165							135	145			65	65
	210	270							190	250			70	80
											1800	1800	1500	1500
											1440	1440	1200	1200
											540	640	450	530
											430	430	360	360
											220	260	180	215
											430	430	360	360
											170	210	140	175
											280	280	230	230
											170	210	140	175
											130	170	100	130
			50	55	60	65	65	70						
			35	40	40	45	50	50						
			40	45	45	50	50	55						
			25	30	25	30	30	35						
			30	35	40	40	50	45						
			50	65	60	75	65	80						
			30	35	35	40	40	45						
			25	30	30	35	35	40						
			30	35	35	40	40	45						
			25	30	30	35	35	40						
	400	400	400	400			400	400	400	400	400	400	400	400
	300	300	300	300			300	300	300	300	300	300	300	300
	600	800							600	800	600	800	400	500

HC = Coated carbide
HW = Uncoated carbide

C 2

Cutting data for roughing
Slot milling with half effective porcupine milling cutters (F2238, M4256, M4257, M4258, M4792)

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades	
									Starting values for cutting speed v_c [m/min]	
									HC	
									WKP35S	
									a_e / D_c*	
									1/1 1/2	1/5
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●	195	250
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●	170	215
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●	155	190
		C > 0.55%	Annealed	190	640	P4	●	●●	170	215
		C > 0.55%	Heat-treated	300	1010	P5	●	●●	130	145
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	150	210
	Low-alloyed steel	Annealed		175	590	P7	●	●●	170	215
		Heat-treated		285	960	P8	●	●●	130	145
		Heat-treated		380	1280	P9	●	●●	85	100
		Heat-treated		430	1480	P10	●	●●	80	90
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	100	120
		Hardened and tempered		300	1010	P12	●	●●	65	75
		Hardened and tempered		380	1280	P13	●	●●	60	70
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●	105	120
		Martensitic, heat-treated		330	1110	P15	●	●●	60	70
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●		
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●		
		Austenitic/ferritic, duplex		230	780	M3	●●	●		
K	Malleable cast iron	Ferritic		200	400	K1	●	●●	150	170
		Pearlitic		260	700	K2	●	●●	120	140
	Grey cast iron	Low tensile strength		180	200	K3	●	●●	160	180
		High tensile strength/austenitic		245	350	K4	●	●●	120	140
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●	140	150
		Pearlitic		265	700	K6	●	●●	105	115
	GGV (CGI)			230	400	K7	●	●●	150	170
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●			
		Hardenable, hardened		100	340	N2	●●			
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●			
		≤ 12% Si, hardenable, hardened		90	310	N4	●●			
		> 12% Si, not hardenable		130	450	N5	●●			
	Magnesium-based alloys [2]			70	250	N6	●●[2]			
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●			
		Brass, bronze, red brass		90	310	N8	●●			
		Cu-alloys, short-chipping		110	380	N9	●●			
		High-tensile, Ampco		300	1010	N10	●●			
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●			
			Hardened	280	940	S2	●●			
		Ni or Co base	Annealed	250	840	S3	●●			
			Hardened	350	1180	S4	●●			
			Cast	320	1080	S5	●●			
	Titanium alloys	Pure titanium		200	680	S6	●●			
		α and β alloys, hardened		375	1260	S7	●●			
		β alloys		410	1400	S8	●●			
	Tungsten alloys			300	1010	S9	●●			
	Molybdenum alloys			300	1010	S10	●●			
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●		
		Hardened and tempered		55 HRC	–	H2		●●		
		Hardened and tempered		60 HRC	–	H3		●●		
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●		
O	Thermoplastics	Without abrasive fillers				O1	●●	●	400	400
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	300	300
	Plastic, glass fibre reinforced	GFRP				O3				
	Plastic, carbon fibre reinforced	CFRP				O4				
	Plastic, aramid fibre reinforced	AFRP				O5				
	Graphite (technical)			80 Shore		O6		●●		

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 onwards.
[2] Water-miscible coolants must not be used when machining magnesium-based alloys.
* a_e/D_c = 1/10, v_c = 10% higher than 1/5

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

C 2

	Cutting material grades									
	Starting values for cutting speed v_c [m/min]									
	HC									
	WKP25S		WAK15		WSP45S		WSM35S		WKK25S	
	a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*	
	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5
	210	275			185	230				
	200	255			150	200				
	175	220			130	165				
	200	255			150	200				
	165	200			105	115				
	170	210			125	160				
	200	255			150	190				
	155	200			105	115				
	125	140			60	70				
	120	130			50	60				
	110	130			90	110				
	80	95			65	70				
	80	90			50	60				
					90	110	95	120		
					60	70	60	70		
					85	100	100	120		
					75	90	90	110		
					75	90	90	110		
	120	220	210	270					190	250
	130	150	160	180					140	160
	180	230	220	280					200	260
	130	150	160	180					140	160
	150	160	180	190					160	170
	120	125	155	165					135	145
	120	220	210	270					190	250
					50	55	65	70		
					35	40	50	50		
					40	45	50	55		
					25	30	30	35		
					30	35	50	45		
					50	65	65	80		
					30	35	40	45		
					25	30	35	40		
					30	35	40	45		
					25	30	35	40		
	400	400	400	400	400	400	400	400	400	400
	300	300	300	300	300	300	300	300	300	300
	400	500							600	800

HC = Coated carbide

C 2

Cutting data for roughing
Circular interpolation milling
(F2234, F2330, F2334, F2334R, F4042, F4080, M2131, M4002, M4792)

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades: Starting values for cutting speed v_c [m/min] HC WKP35S a_e / D_c* 1/1 1/2	WKP35S a_e / D_c* 1/5	WKP25S a_e / D_c* 1/1 1/2	WKP25S a_e / D_c* 1/5
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●	220	270	260	330
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●	200	230	230	300
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●	210	230	250	310
		C > 0.55%	Annealed	190	640	P4	●	●●	200	230	230	300
		C > 0.55%	Heat-treated	300	1010	P5	●	●●	140	160	200	230
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	190	220	220	290
	Low-alloyed steel	Annealed		175	590	P7	●	●●	200	240	230	290
		Heat-treated		285	960	P8	●	●●	150	170	190	230
		Heat-treated		380	1280	P9	●	●●	110	130	140	160
		Heat-treated		430	1480	P10	●	●●	80	100	110	130
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	120	140	130	150
		Hardened and tempered		300	1010	P12	●	●●	80	90	110	130
		Hardened and tempered		380	1280	P13	●	●●	70	80	100	120
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●	120	140		
		Martensitic, heat-treated		330	1110	P15	●	●●	60	70		
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●				
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●				
		Austenitic/ferritic, duplex		230	780	M3	●●	●				
K	Malleable cast iron	Ferritic		200	400	K1	●	●●	110	120	130	140
		Pearlitic		260	700	K2	●	●●	130	160	150	180
	Grey cast iron	Low tensile strength		180	200	K3	●	●●	270	300	190	310
		High tensile strength/austenitic		245	350	K4	●	●●	150	180	170	200
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●	180	200	200	220
		Pearlitic		265	700	K6	●	●●	120	140	130	160
	GGV (CGI)			230	400	K7	●	●●	120	150	140	170
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●					
		Hardenable, hardened		100	340	N2	●●					
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●					
		≤ 12% Si, hardenable, hardened		90	310	N4	●●					
		> 12% Si, not hardenable		130	450	N5	●●					
	Magnesium-based alloys [2]			70	250	N6	●●[2]					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●					
		Brass, bronze, red brass		90	310	N8	●●					
		Cu-alloys, short-chipping		110	380	N9	●●					
		High-tensile, Ampco		300	1010	N10	●●					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●					
			Hardened	280	940	S2	●●					
		Ni or Co base	Annealed	250	840	S3	●●					
			Hardened	350	1180	S4	●●					
			Cast	320	1080	S5	●●					
	Titanium alloys	Pure titanium		200	680	S6	●●					
		α and β alloys, hardened		375	1260	S7	●●					
		β alloys		410	1400	S8	●●					
	Tungsten alloys			300	1010	S9	●●					
	Molybdenum alloys			300	1010	S10	●●					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●				
		Hardened and tempered		55 HRC	–	H2		●●				
		Hardened and tempered		60 HRC	–	H3		●●				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●				
O	Thermoplastics	Without abrasive fillers				O1	●●	●	300	300		
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	400	400		
	Plastic, glass fibre reinforced	GFRP				O3						
	Plastic, carbon fibre reinforced	CFRP				O4						
	Plastic, aramid fibre reinforced	AFRP				O5						
	Graphite (technical)			80 Shore		O6		●●			400	500

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 onwards.
[2] Water-miscible coolants must not be used when machining magnesium-based alloys.
* a_e/D_c = 1/10, v_c = 10% higher than 1/5

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grades															
	Starting values for cutting speed v_c [m/min]															
	HC												HF		HW	
	WAK15		WSP45S		WSM35S		WKK25S		WNN15		WMG40		WK10	
	a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*		a_e / D_c*	
	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5	1/1 1/2	1/5
			210	260												
			170	220												
			160	210												
			170	220												
			120	130												
			160	210												
			170	210												
			125	150												
			85	95												
			60	65												
			100	130												
			75	90												
			65	75												
			100	120	110	130										
			55	65	60	70										
			90	100	100	120										
			70	80	80	100										
			80	90	90	110										
	150	160					140	150								
	160	170					150	160								
	340	370					330	360								
	200	220					190	210								
	230	250					220	240								
	160	190					150	180								
	150	170					140	160								
									2640	2640	1500	1500	2200	2200		
									1780	1780	900	900	1500	1500		
									600	660			500	540		
									480	480			400	400		
									240	280			200	230		
									480	480			400	400		
									180	200			150	160		
									240	280			200	230		
									180	200			150	160		
									240	280			200	230		
			60	65	70	80					65	70				
			40	45	55	60					40	45				
			45	50	55	65					50	55				
			25	30	35	40					20	25				
			35	40	45	50					30	35				
			65	80	80	100					70	80				
			40	45	50	55					45	50				
			35	40	45	50										
			40	45	50	55										
			35	40	45	50										
	300	300	300	300	300	300	300	300	300	300	300	300	300	300		
	400	400	400	400	400	400	400	400	400	400	400	400	400	400		
	600	800					600	800	600	800			400	500		

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide

C 2

Cutting data for roughing
Slot milling with slotting cutters

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades: Starting values for cutting speed v_c [m/min] HC WKP35S a_e / D_c 1/4*	WKP35S a_e / D_c 1/10	WKP25S a_e / D_c 1/4*	WKP25S a_e / D_c 1/10
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●	195	250	210	285
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●	170	215	200	255
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●	160	205	185	230
		C > 0.55%	Annealed	190	640	P4	●	●●	160	200	185	230
		C > 0.55%	Heat-treated	300	1010	P5	●	●●	130	145	165	200
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	160	205	190	245
	Low-alloyed steel	Annealed		175	590	P7	●	●●	170	215	200	255
		Heat-treated		285	960	P8	●	●●	125	145	155	200
		Heat-treated		380	1280	P9	●	●●	85	95	125	140
		Heat-treated		430	1480	P10	●	●●	80	90	120	130
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	100	120	110	145
		Hardened and tempered		300	1010	P12	●	●●	65	80	75	100
		Hardened and tempered		380	1280	P13	●	●●	60	70	70	90
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●	105	130		
		Martensitic, heat-treated		330	1110	P15	●	●●	60	85		
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●				
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●				
		Austenitic/ferritic, duplex		230	780	M3	●●	●				
K	Malleable cast iron	Ferritic		200	400	K1	●	●●	140	155	155	180
		Pearlitic		260	700	K2	●	●●	135	145	100	155
	Grey cast iron	Low tensile strength		180	200	K3	●	●●	160	180	180	230
		High tensile strength/austenitic		245	350	K4	●	●●	120	140	130	150
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●	140	150	170	190
		Pearlitic		265	700	K6	●	●●	110	120	110	150
	GGV (CGI)			230	400	K7	●	●●	120	135	120	165
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●					
		Hardenable, hardened		100	340	N2	●●					
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●					
		≤ 12% Si, hardenable, hardened		90	310	N4	●●					
		> 12% Si, not hardenable		130	450	N5	●●					
	Magnesium-based alloys [2]			70	250	N6	●●[2]					
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●					
		Brass, bronze, red brass		90	310	N8	●●					
		Cu-alloys, short-chipping		110	380	N9	●●					
		High-tensile, Ampco		300	1010	N10	●●					
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●					
			Hardened	280	940	S2	●●					
		Ni or Co base	Annealed	250	840	S3	●●					
			Hardened	350	1180	S4	●●					
			Cast	320	1080	S5	●●					
	Titanium alloys	Pure titanium		200	680	S6	●●					
		α and β alloys, hardened		375	1260	S7	●●					
		β alloys		410	1400	S8	●●					
	Tungsten alloys			300	1010	S9	●●					
	Molybdenum alloys			300	1010	S10	●●					
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●				
		Hardened and tempered		55 HRC	–	H2		●●				
		Hardened and tempered		60 HRC	–	H3		●●				
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●				
O	Thermoplastics	Without abrasive fillers				O1	●●	●	400	400		
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	300	300		
	Plastic, glass fibre reinforced	GFRP				O3						
	Plastic, carbon fibre reinforced	CFRP				O4						
	Plastic, aramid fibre reinforced	AFRP				O5						
	Graphite (technical)			80 Shore		O6		●●			400	500

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 onwards.
[2] Water-miscible coolants must not be used when machining magnesium-based alloys.
* $a_e = a_{e\,max}$

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

C 2

	Cutting material grades																	
	Starting values for cutting speed v_c [m/min]																	
	HC																HW	
	WKP23S		WAK15		WSP45S		WSM43S		WSM35S		WSM33S		WKK25S		WXN15		WK10	
	a_e / D_c		a_e / D_c		a_e / D_c		a_e / D_c		a_e / D_c		a_e / D_c		a_e / D_c*		a_e / D_c*		a_e / D_c*	
	1/4*	1/10	1/4*	1/10	1/4*	1/10	1/4*	1/10	1/4*	1/10	1/4*	1/10	1/4*	1/10	1/4*	1/10	1/4*	1/10
	210	285			185	230	185	230			185	230						
	200	255			150	200	150	200			150	200						
	185	230			135	170	135	170			135	170						
	185	230			135	170	135	170			135	170						
	165	200			105	125	105	125			105	125						
	190	245			140	180	140	180			140	180						
	200	255			150	190	150	190			150	190						
	155	200			105	115	105	115			105	115						
	125	140			75	85	75	85			75	85						
	120	130			65	75	65	75			65	75						
	110	145			90	110	90	110			90	110						
	75	100			60	70	60	70			60	70						
	70	90			55	65	55	65			55	65						
					90	110	90	110	95	120	90	110						
					60	80	60	80	65	85	60	80						
					85	100	85	100	100	120	85	100						
					70	85	70	85	85	100	70	85						
					75	90	75	90	90	110	75	90						
	155	180	150	200									160	200				
	100	155	120	170									110	170				
	180	230	220	280									200	250				
	130	150	160	180									145	165				
	170	190	180	190									185	210				
	110	150	150	160									120	165				
	120	165	165	175									130	170				
															1800	1800	1500	1500
															1440	1440	1200	1200
															540	640	450	530
															430	430	360	360
															220	280	180	230
															430	430	360	360
															170	210	140	175
															280	280	230	230
															385	385	320	320
															150	190	120	160
					55	60	55	60	70	80	55	60						
					40	45	40	45	50	55	40	45						
					45	50	45	50	55	60	45	50						
					30	35	30	35	35	40	30	35						
					35	40	35	40	45	50	35	40						
					55	60	55	60	70	80	55	60						
					30	35	30	35	40	45	30	35						
					25	30	25	30	35	40	25	30						
					30	35	30	35	40	45	30	35						
					25	30	25	30	35	40	25	30						
			400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
			300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	400	500	600	800									600	800	600	800	400	500

HC = Coated carbide
HW = Uncoated carbide

C 2

Cutting data for roughing
Copy milling

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]	= Cutting data for wet machining	= Dry machining is possible	Cutting material grades: Starting values for cutting speed v_c [m/min] HC WKP35S a_e / D_c 1/1	1/5	1/10
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●	240	300	300
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●	200	255	275
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●	185	240	240
		C > 0.55%	Annealed	190	640	P4	●	●●	155	195	210
		C > 0.55%	Heat-treated	300	1010	P5	●	●●	145	180	185
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	200	255	275
	Low-alloyed steel	Annealed		175	590	P7	●	●●	165	210	230
		Heat-treated		285	960	P8	●	●●	155	195	215
		Heat-treated		380	1280	P9	●	●●	145	180	200
		Heat-treated		430	1480	P10	●	●●	120	155	170
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	110	145	160
		Hardened and tempered		300	1010	P12	●	●●	75	100	100
		Hardened and tempered		380	1280	P13	●	●●	65	80	90
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●	120	155	170
		Martensitic, heat-treated		330	1110	P15	●	●●	110	145	155
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●			
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●			
		Austenitic/ferritic, duplex		230	780	M3	●●	●			
K	Malleable cast iron	Ferritic		200	400	K1	●	●●	250	290	310
		Pearlitic		260	700	K2	●	●●	200	240	260
	Grey cast iron	Low tensile strength		180	200	K3	●	●●	240	280	300
		High tensile strength/austenitic		245	350	K4	●	●●	190	230	250
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●	240	280	300
		Pearlitic		265	700	K6	●	●●	190	230	250
	GGV (CGI)			230	400	K7	●	●●	180	220	250
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●				
		Hardenable, hardened		100	340	N2	●●				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●				
		≤ 12% Si, hardenable, hardened		90	310	N4	●●				
		> 12% Si, not hardenable		130	450	N5	●●				
	Magnesium-based alloys [2]			70	250	N6	●● [2]				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●				
		Brass, bronze, red brass		90	310	N8	●●				
		Cu-alloys, short-chipping		110	380	N9	●●				
		High-tensile, Ampco		300	1010	N10	●●				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●				
			Hardened	280	940	S2	●●				
		Ni or Co base	Annealed	250	840	S3	●●				
			Hardened	350	1180	S4	●●				
			Cast	320	1080	S5	●●				
	Titanium alloys	Pure titanium		200	680	S6	●●				
		α and β alloys, hardened		375	1260	S7	●●				
		β alloys		410	1400	S8	●●				
	Tungsten alloys			300	1010	S9	●●				
	Molybdenum alloys			300	1010	S10	●●				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●			
		Hardened and tempered		55 HRC	–	H2		●●			
		Hardened and tempered		60 HRC	–	H3		●●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●			
O	Thermoplastics	Without abrasive fillers				O1	●●	●	400	450	500
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	300	350	400
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6		●●			

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 onwards.
[2] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

	Cutting material grades														
	Starting values for cutting speed v_c [m/min]														
	HC														
	WKP25S			WAK15			WSP45S			WSM45X			WSM35S		
	a_e / D_c			a_e / D_c			a_e / D_c			a_e / D_c			a_e / D_c		
	1/1	1/5	1/10	1/1	1/5	1/10	1/1	1/5	1/10	1/1 1/2	1/5	1/10	1/1	1/5	1/10
	285	375	395				230	290	365						
	240	310	330				190	250	315						
	230	285	285				155	200	250						
	200	255	255				145	170	215						
	185	230	230				130	145	180						
	240	310	330				190	250	315						
	210	265	300				190	240	300						
	200	255	275				145	170	215						
	185	230	255				130	145	180						
	155	200	220				100	110	140						
	145	185	200				115	140	175						
	100	120	120				75	90	115						
	80	90	110				65	80	100						
	155	200	220				115	140	175	125	150	185	135	165	200
	130	165	165				90	110	140	100	120	150	110	130	165
							110	130	165	120	140	180	130	155	195
							90	110	140	100	120	155	110	130	170
							100	120	150	110	130	165	120	145	180
	320	370	400	370	420	450									
	270	320	350	320	370	400									
	300	350	370	350	400	420									
	250	300	320	300	350	370									
	300	350	370	350	400	420									
	250	300	320	300	350	370									
	240	280	320	290	340	370									
							65	70	90	70	80	100	80	90	115
							45	50	65	50	50	65	60	65	70
							50	55	70	55	60	80	60	70	90
							30	35	45	35	40	50	40	45	55
							40	45	55	45	50	60	50	55	70
							65	80	100	70	90	110	80	100	125
							40	45	55	45	50	60	50	55	70
							35	40	50	35	40	50	40	45	55
							40	45	55	45	50	60	50	55	70
							40	45	55	45	50	60	50	55	70
				400	450	500	500	600	700				500	600	700
				300	350	400	400	500	600				400	500	600
	400	500	600	500	600	700									

HC = Coated carbide

C 2

Cutting data for roughing
Copy milling

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades: Starting values for cutting speed v_c [m/min] HC WXN15 a_e / D_c 1/1	1/5	1/10
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●			
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●			
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●			
		C > 0.55%	Annealed	190	640	P4	●	●●			
		C > 0.55%	Heat-treated	300	1010	P5	●	●●			
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●			
	Low-alloyed steel	Annealed		175	590	P7	●	●●			
		Heat-treated		285	960	P8	●	●●			
		Heat-treated		380	1280	P9	●	●●			
		Heat-treated		430	1480	P10	●	●●			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●			
		Hardened and tempered		300	1010	P12	●	●●			
		Hardened and tempered		380	1280	P13	●	●●			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●			
		Martensitic, heat-treated		330	1110	P15	●	●●			
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●			
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●			
		Austenitic/ferritic, duplex		230	780	M3	●●	●			
K	Malleable cast iron	Ferritic		200	400	K1	●	●●			
		Pearlitic		260	700	K2	●	●●			
	Grey cast iron	Low tensile strength		180	200	K3	●	●●			
		High tensile strength/austenitic		245	350	K4	●	●●			
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●			
		Pearlitic		265	700	K6	●	●●			
	GGV (CGI)			230	400	K7	●	●●			
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●		1920	1920	2110
		Hardenable, hardened		100	340	N2	●●		1440	1440	1630
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●		480	530	580
		≤ 12% Si, hardenable, hardened		90	310	N4	●●		385	385	420
		> 12% Si, not hardenable		130	450	N5	●●		190	225	250
	Magnesium-based alloys [2]			70	250	N6	●●[2]		480	530	580
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●		240	310	340
		Brass, bronze, red brass		90	310	N8	●●		260	325	360
		Cu-alloys, short-chipping		110	380	N9	●●		365	465	515
		High-tensile, Ampco		300	1010	N10	●●		210	280	340
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●				
			Hardened	280	940	S2	●●				
		Ni or Co base	Annealed	250	840	S3	●●				
			Hardened	350	1180	S4	●●				
			Cast	320	1080	S5	●●				
	Titanium alloys	Pure titanium		200	680	S6	●●				
		α and β alloys, hardened		375	1260	S7	●●				
		β alloys		410	1400	S8	●●				
	Tungsten alloys			300	1010	S9	●●				
	Molybdenum alloys			300	1010	S10	●●				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●			
		Hardened and tempered		55 HRC	–	H2		●●			
		Hardened and tempered		60 HRC	–	H3		●●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●			
O	Thermoplastics	Without abrasive fillers				O1	●●	●	700	800	900
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	580	735	810
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6		●●	600	700	800

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 onwards.
[2] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

C 2

	Cutting material grades								
	Starting values for cutting speed v_c [m/min]								
	HC WHH15 a_e / D_c			HF WMG40 a_e / D_c			HW WK10 a_e / D_c		
	1/1	1/5	1/10	1/1	1/5	1/10	1/1	1/5	1/10
	170	225	305						
	150	200	270						
	120	160	220						
	105	140	190						
	80	105	145						
	120	160	220						
	140	185	250						
	120	160	220						
	110	150	200						
	105	140	190						
	105	140	190						
	100	130	180						
	80	100	140						
	120	160	220						
	100	130	180						
	105	140	190						
	90	120	160						
	110	150	200						
	90	120	160						
	110	150	200						
	90	130	180						
	80	110	150						
				1600	1600	1760	2000	2000	2200
				1200	1200	1360	1500	1500	1700
				400	440	480	500	550	600
				320	320	350	400	400	440
				160	190	210	200	235	260
				400	440	480	500	550	600
				200	260	280	250	320	355
				220	270	300	270	340	375
				305	390	430	380	485	535
				170	230	280	190	260	320
				50	55	60			
				40	45	50			
				30	35	40			
				70	90	100			
				30	40	45			
				30	40	45			
				40	45	50			
				40	45	50			
	50	65	85						
	35	50	70						
	35	45	60						
	40	55	80						
	700	800	900	650	800	900	700	850	950
	600	700	800	550	700	800	600	765	840
	600	700	800						

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide

C 2

Cutting data for semi-finishing and finishing
Copy milling

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades: Starting values for cutting speed v_c [m/min] HC WKP35S a_e / D_c* 1/1	1/5	1/20
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●	210	275	375
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●	185	255	340
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●	145	185	260
		C > 0.55%	Annealed	190	640	P4	●	●●	120	165	220
		C > 0.55%	Heat-treated	300	1010	P5	●	●●	90	120	160
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●	190	260	340
	Low-alloyed steel	Annealed		175	590	P7	●	●●	165	220	295
		Heat-treated		285	960	P8	●	●●	145	185	260
		Heat-treated		380	1280	P9	●	●●	130	175	240
		Heat-treated		430	1480	P10	●	●●	120	165	220
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●	130	175	240
		Hardened and tempered		300	1010	P12	●	●●	120	165	220
		Hardened and tempered		380	1280	P13	●	●●	90	120	160
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●	145	185	260
		Martensitic, heat-treated		330	1110	P15	●	●●	110	145	200
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●			
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●			
		Austenitic/ferritic, duplex		230	780	M3	●●	●			
K	Malleable cast iron	Ferritic		200	400	K1	●	●●	170	230	290
		Pearlitic		260	700	K2	●	●●	140	200	250
	Grey cast iron	Low tensile strength		180	200	K3	●	●●	190	250	300
		High tensile strength/austenitic		245	350	K4	●	●●	140	200	250
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●	190	250	300
		Pearlitic		265	700	K6	●	●●	150	210	260
	GGV (CGI)			230	400	K7	●	●●	130	190	240
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●				
		Hardenable, hardened		100	340	N2	●●				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●				
		≤ 12% Si, hardenable, hardened		90	310	N4	●●				
		> 12% Si, not hardenable		130	450	N5	●●				
	Magnesium-based alloys [2]			70	250	N6	●●[2]				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●				
		Brass, bronze, red brass		90	310	N8	●●				
		Cu-alloys, short-chipping		110	380	N9	●●				
		High-tensile, Ampco		300	1010	N10	●●				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●				
			Hardened	280	940	S2	●●				
		Ni or Co base	Annealed	250	840	S3	●●				
			Hardened	350	1180	S4	●●				
			Cast	320	1080	S5	●●				
	Titanium alloys	Pure titanium		200	680	S6	●●				
		α and β alloys, hardened		375	1260	S7	●●				
		β alloys		410	1400	S8	●●				
	Tungsten alloys			300	1010	S9	●●				
	Molybdenum alloys			300	1010	S10	●●				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●			
		Hardened and tempered		55 HRC	–	H2		●●			
		Hardened and tempered		60 HRC	–	H3		●●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●			
O	Thermoplastics	Without abrasive fillers				O1	●●	●	450	500	550
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	350	400	450
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6		●●			

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 onwards.
[2] Water-miscible coolants must not be used when machining magnesium-based alloys.
* a_e/D_c = 1/50, v_c = 40% higher than 1/20

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

C 2

	Cutting material grades																				
	Starting values for cutting speed v_c [m/min]																				
	HC																				
	WKP25S			WAK15			WSP46			WSP45S			WSM45X			WSM36			WSM35S		
	a_e / D_c*			a_e / D_c*			a_e / D_c*			a_e / D_c*			a_e / D_c*			a_e / D_c*			a_e / D_c*		
	1/1	1/5	1/20	1/1	1/5	1/20	1/1	1/5	1/20	1/1	1/5	1/20	1/1 1/2	1/5	1/20	1/1	1/5	1/20	1/1	1/5	1/20
	255	340	460				345	435	545	345	435	545									
	230	310	405				285	375	470	285	375	470									
	185	240	330				235	300	375	235	300	375									
	155	210	285				220	255	320	220	255	320									
	120	155	220				195	220	270	195	220	270									
	230	310	410				290	380	470	290	380	470									
	210	275	375				285	360	450	285	360	450									
	185	240	330				220	255	320	220	255	320									
	165	230	310				195	220	270	195	220	270									
	155	210	285				150	165	205	150	165	205									
	155	210	285				175	210	265	175	210	265									
	145	200	265				115	135	170	115	135	170									
	120	155	220				110	130	150	110	130	150									
	185	240	330				175	210	260	175	210	260	185	230	280	195	250	300	195	250	300
	145	200	265				135	160	205	135	160	205	145	180	215	155	200	235	155	200	235
							165	195	245	165	195	245	170	215	265	195	235	290	195	235	290
							130	160	210	130	160	210	140	180	230	160	200	250	160	200	250
							150	180	230	150	180	230	165	200	250	180	220	270	180	220	270
	230	330	430	280	380	480															
	200	270	370	250	320	420															
	250	350	450	300	400	500															
	200	270	370	250	320	420															
	250	350	450	300	400	500															
	210	290	410	260	320	460															
	190	260	360	240	310	410															
							100	105	130	100	105	130	110	120	150	120	135	170	120	135	170
							70	75	95	70	75	95	80	85	115	90	100	125	90	100	125
							75	85	105	75	85	105	80	95	115	90	105	130	90	105	130
							45	55	70	45	55	70	50	60	80	60	70	90	60	70	90
							60	70	90	60	70	90	65	75	95	75	85	105	75	85	105
							100	120	150	100	120	150	110	135	170	120	150	190	120	150	190
							60	70	90	60	70	90	65	75	95	75	85	105	75	85	105
							50	60	80	50	60	80	55	65	85	65	75	95	65	75	95
							70	80	100	70	80	100	75	85	105	80	90	110	80	90	110
							70	80	100	70	80	100	75	85	105	80	90	110	80	90	110
				450	500	550	550	650	750	550	650	750				550	650	750	550	650	750
				350	400	450	450	550	650	450	550	650				450	550	650	450	550	650
	500	600	700	600	700	800															

HC = Coated carbide

C 2

Cutting data for semi-finishing and finishing
Copy milling

= Cutting data for wet machining
= Dry machining is possible

Material group	Overview of the main material groups and code letters			Brinell hardness HB	Tensile strength R_m N/mm²	Machining group [1]			Cutting material grades: Starting values for cutting speed v_c [m/min] HC WKK25S a_e / D_c* 1/1	1/5	1/20
P	Non-alloyed steel	C ≤ 0.25%	Annealed	125	430	P1	●	●●			
		C > 0.25 ... ≤ 0.55%	Annealed	190	640	P2	●	●●			
		C > 0.25 ... ≤ 0.55%	Heat-treated	210	710	P3	●	●●			
		C > 0.55%	Annealed	190	640	P4	●	●●			
		C > 0.55%	Heat-treated	300	1010	P5	●	●●			
		Free cutting steel (short-chipping)	Annealed	220	750	P6	●	●●			
	Low-alloyed steel	Annealed		175	590	P7	●	●●			
		Heat-treated		285	960	P8	●	●●			
		Heat-treated		380	1280	P9	●	●●			
		Heat-treated		430	1480	P10	●	●●			
	High-alloyed steel and high-alloyed tool steel	Annealed		200	680	P11	●	●●			
		Hardened and tempered		300	1010	P12	●	●●			
		Hardened and tempered		380	1280	P13	●	●●			
	Stainless steel	Ferritic/martensitic, annealed		200	680	P14	●	●●			
		Martensitic, heat-treated		330	1110	P15	●	●●			
M	Stainless steel	Austenitic, quench hardened		200	680	M1	●●	●			
		Austenitic, precipitation hardened (PH)		300	1010	M2	●●	●			
		Austenitic/ferritic, duplex		230	780	M3	●●	●			
K	Malleable cast iron	Ferritic		200	400	K1	●	●●	250	340	430
		Pearlitic		260	700	K2	●	●●	225	280	375
	Grey cast iron	Low tensile strength		180	200	K3	●	●●	270	360	450
		High tensile strength/austenitic		245	350	K4	●	●●	225	280	375
	Cast iron with spheroidal graphite	Ferritic		155	400	K5	●	●●	270	360	450
		Pearlitic		265	700	K6	●	●●	230	280	410
	GGV (CGI)			230	400	K7	●	●●	210	270	360
N	Wrought aluminium alloys	Not hardenable		30	–	N1	●●				
		Hardenable, hardened		100	340	N2	●●				
	Cast aluminium alloys	≤ 12% Si, not hardenable		75	260	N3	●●				
		≤ 12% Si, hardenable, hardened		90	310	N4	●●				
		> 12% Si, not hardenable		130	450	N5	●●				
	Magnesium-based alloys [2]			70	250	N6	●● [2]				
	Copper and copper alloys (bronze/brass)	Non-alloyed, electrolytic copper		100	340	N7	●●				
		Brass, bronze, red brass		90	310	N8	●●				
		Cu-alloys, short-chipping		110	380	N9	●●				
		High-tensile, Ampco		300	1010	N10	●●				
S	Heat-resistant alloys	Fe-based	Annealed	200	680	S1	●●				
			Hardened	280	940	S2	●●				
		Ni or Co base	Annealed	250	840	S3	●●				
			Hardened	350	1180	S4	●●				
			Cast	320	1080	S5	●●				
	Titanium alloys	Pure titanium		200	680	S6	●●				
		α and β alloys, hardened		375	1260	S7	●●				
		β alloys		410	1400	S8	●●				
	Tungsten alloys			300	1010	S9	●●				
	Molybdenum alloys			300	1010	S10	●●				
H	Hardened steel	Hardened and tempered		50 HRC	–	H1		●●			
		Hardened and tempered		55 HRC	–	H2		●●			
		Hardened and tempered		60 HRC	–	H3		●●			
	Hardened cast iron	Hardened and tempered		55 HRC	–	H4		●●			
O	Thermoplastics	Without abrasive fillers				O1	●●	●	700	800	900
	Thermosetting plastics	Without abrasive fillers				O2	●●	●	600	700	800
	Plastic, glass fibre reinforced	GFRP				O3					
	Plastic, carbon fibre reinforced	CFRP				O4					
	Plastic, aramid fibre reinforced	AFRP				O5					
	Graphite (technical)			80 Shore		O6		●●	600	700	900

●● Recommended application (the specified cutting data is regarded as starting values for the recommended application)
● Possible application, reduce cutting data by 30–50% (increase by approx. 70–80% for ISO M)

[1] The classification of the machining groups can be found from page C 672 onwards.
[2] Water-miscible coolants must not be used when machining magnesium-based alloys.
* a_e/D_c = 1/50, v_c = 40% higher than 1/20

The specified cutting data are average standard values.
For special applications, adjustment is recommended.

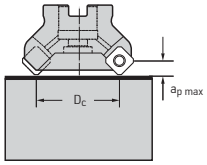
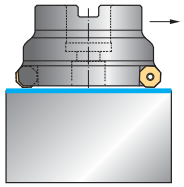
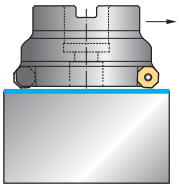
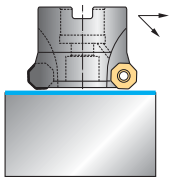
C 2

	Cutting material grades											
	Starting values for cutting speed v_c [m/min]											
	HC						HF			HW		
	WXN15			WHH15			WMG40			WK10		
	a_e / D_c*			a_e / D_c*			a_e / D_c*			a_e / D_c*		
	1/1	1/5	1/20	1/1	1/5	1/20	1/1	1/5	1/20	1/1	1/5	1/20
				210	280	380						
				190	250	340						
				150	200	270						
				130	170	235						
				100	130	180						
				180	240	330						
				170	230	310						
				150	200	270						
				140	190	250						
				130	170	235						
				130	170	235						
				120	160	220						
				110	150	210						
				150	200	270						
				120	160	220						
				130	170	235						
				110	150	200						
				140	190	250						
				110	150	200						
				140	190	250						
				120	160	220						
				110	150	200						
	2400	2400	2640				1600	1600	1760	2000	2000	2200
	1800	1800	2040				1200	1200	1360	1500	1500	1700
	600	660	720				400	440	480	500	550	600
	480	480	530				320	320	350	400	400	440
	240	280	310				160	190	210	200	235	260
	600	660	720				400	440	480	500	550	600
	460	580	640				305	390	430	380	485	535
	320	410	450				220	270	300	270	340	375
	300	380	430				200	260	280	250	320	355
	200	240	270				120	150	180	160	200	230
							55	60	65			
							45	50	55			
							30	40	45			
							80	100	110			
							30	45	50			
				60	80	110						
				40	50	70						
				40	45	60						
				50	70	90						
	800	1000	1100	800	900	1000	600	700	750	700	800	900
	720	920	1010	700	800	900	480	610	670	600	765	840
	600	700	900	700	800	1000				400	500	700

HC = Coated carbide
HW = Uncoated carbide
HF = Uncoated fine-grained carbide

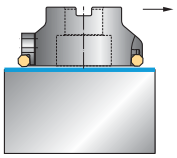
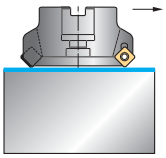
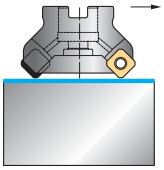
C 2

Feed determination (starting values)
Face milling cutters

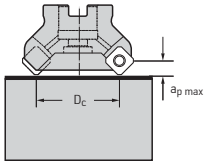
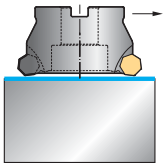
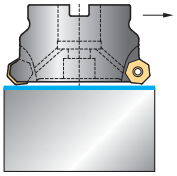
Material group	Cutter type		M2025	M2026	F2010 / F4080	
	Feed per tooth f_{z0} for $a_e = D_c$, $a_p = a_{p\,max} = L_c$				 Xtra·tec®	
	Lead angle κ		42°	42°	43°	
			f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]	
					F4080	F2010 F4080
	Tool Ø or Ø range [mm]		80–160	200–250	32–125	50–315
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		3,0	3,0	3 / 8	4 / 10
P	Non-alloyed steel [1]				0,45	0,50
	Low-alloyed steel				0,40	0,45
	High-alloyed steel and tool steel				0,30	0,35
	Stainless steel				0,20	0,25
M	Stainless steel [2]				0,15	0,15
K	Malleable cast iron		0,30	0,30	0,40	0,45
	Grey cast iron		0,35	0,35	0,50	0,55
	Cast iron with spheroidal graphite		0,30	0,30	0,40	0,45
	GGV (CGI)		0,20	0,20	0,25	0,25
N	Wrought aluminium alloys				0,25	0,25
	Cast aluminium alloys				0,20	0,20
	Magnesium-based alloys [3]				0,15	0,15
	Copper and copper alloys (bronze/brass)				0,15	0,15
S	Heat-resistant alloys				0,15	0,15
	Titanium alloys				0,15	0,15
	Tungsten alloys				0,15	0,15
	Molybdenum alloys				0,15	0,15
H	Hardened steel		0,15	0,15	0,15	0,15
	Hardened cast iron		0,17	0,17	0,17	0,17
O	Thermoplastics				0,20	0,20
	Plastic, carbon fibre reinforced					
	Graphite (technical)				0,15	0,15
	Indexable insert types		ON . . 0504 . . P45424-1	ON . . 0504 . . P45424-2	OD . . 0504 . .	OD . . 0605 . .
	Correction factor Ka_e for the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	$a_e / D_c =$ 1/1 – 1/2	1,0	1,0	1,0	1,0
		1/5	1,1	1,1	1,1	1,1
		1/10	1,2	1,2	1,2	1,2
		1/20	1,3	1,3	1,3	1,3
		1/50				
	Correction factor Ka_p for the feed per tooth depending on the depth of cut a_p	$a_p =$ 1			1,0	1,0
		2			1,0	1,0
		3			1,0	1,0
		4			0,6	1,0
		6			0,6	0,6
	$f_z = f_{z0} \cdot Ka_e \cdot Ka_p$	8			0,6	0,6
		$a_{p\,max} = L_c$			0,6	0,6

[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

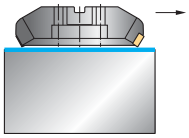
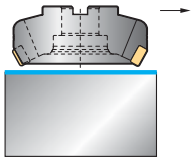
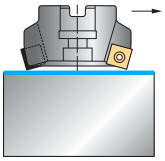
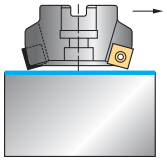
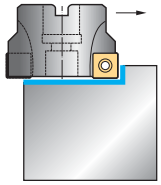
	F2146	F2010 / F2233		F2010 / F4033	
				 Xtra·tec®	
	43°	45°		45°	
	f_{z0} [mm]	f_{z0} [mm]		f_{z0} [mm]	
		F2233	F2010 F2233	F2010 F4033	F4033
	80–250	20–80	25–315	40–315	50–315
	3	5	7	6	9
		0,20	0,25	0,25	0,40
		0,15	0,20	0,20	0,35
		0,15	0,20	0,20	0,30
		0,12	0,15	0,15	0,20
		0,10	0,12	0,12	0,15
	0,30	0,20	0,25	0,25	0,30
	0,35	0,25	0,30	0,30	0,50
	0,30	0,20	0,25	0,25	0,40
	0,20	0,18	0,20	0,20	0,25
		0,12	0,15	0,15	
		0,12	0,15	0,15	
		0,10	0,12	0,12	
		0,10	0,12	0,12	
		0,10	0,12	0,12	0,15
		0,10	0,12	0,12	0,15
		0,10	0,12	0,12	0,15
		0,10	0,12	0,12	0,15
	0,10	0,10	0,12	0,12	0,15
	0,12	0,12	0,14	0,14	0,17
		0,10	0,15	0,15	
		0,10	0,15	0,15	
	OP . . 0504 . .	SD . . 09T3 . .	SP . . 1204 . .	SN . X 120512 . . SN . X 120520 . . SN . X 1205ANN	SNMX 160620 . . SNMX 160640 . . SNGX 1606ANN
	1,0	1,0	1,0	1,0	1,0
	1,1	1,1	1,1	1,1	1,1
	1,2	1,2	1,2	1,2	1,2
	1,3	1,3	1,3	1,3	1,3

Feed determination (starting values)
Face milling cutters (continued)

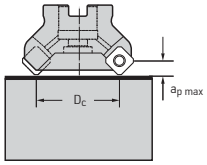
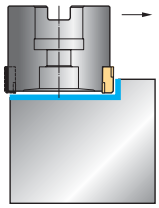
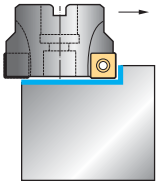
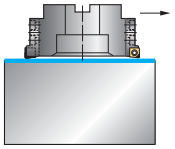
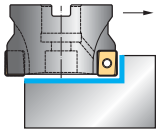
Material group	Cutter type		F4045		M3024	
	Feed per tooth f_{z0} for $a_e = D_c$ $a_p = a_{p\,max} = L_c$		 Xtra·tec®		 Walter BLAXX	
	Lead angle κ		45°		45°	
			f_{z0} [mm]		f_{z0} [mm]	
	Tool Ø or Ø range [mm]		63–200	80–200	40-160	
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		4	6	4,0	
P	Non-alloyed steel [1]				0,25	
P	Low-alloyed steel				0,20	
P	High-alloyed steel and tool steel				0,20	
P	Stainless steel				0,15	
M	Stainless steel [2]				0,12	
K	Malleable cast iron		0,25	0,30	0,25	
K	Grey cast iron		0,30	0,50	0,30	
K	Cast iron with spheroidal graphite		0,25	0,40	0,25	
K	GGV (CGI)		0,20	0,25	0,20	
N	Wrought aluminium alloys					
N	Cast aluminium alloys					
N	Magnesium-based alloys [3]					
N	Copper and copper alloys (bronze/brass)					
S	Heat-resistant alloys					
S	Titanium alloys					
S	Tungsten alloys					
S	Molybdenum alloys					
H	Hardened steel		0,12	0,15		
H	Hardened cast iron		0,14	0,17		
O	Thermoplastics					
O	Plastic, carbon fibre reinforced					
O	Graphite (technical)					
	Indexable insert types		XNHF0705 . .	XNHF0906 . .	XN . U070508 . . XN . U0705ANN . .	
	Correction factor Ka_e for the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	$a_e / D_c =$ 1/1 – 1/2	1,0	1,0	1,0	
		1/5	1,1	1,1	1,1	
		1/10	1,2	1,2	1,2	
		1/20	1,3	1,3	1,3	
	$f_z = f_{z0} \cdot Ka_e$	1/50				

[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

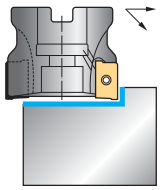
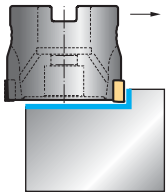
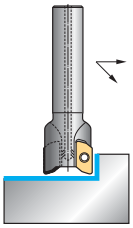
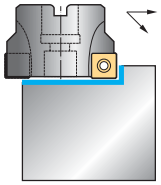
	F2260		M3016	F2010 / F2235	F2010 / F4047	F2010 / F4048
			 Walter BLAXX		 Xtra·tec®	 Xtra·tec®
	60°		60°	75°	75°	88°
	f_{z0} [mm]		f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]
	100–315	125–315	125-315	32–315	40–315	40–315
	11	15	16,0	10	8	10
	0,60	0,60	0,80	0,25	0,22	0,20
	0,45	0,50	0,70	0,20	0,20	0,18
			0,50	0,20	0,20	0,18
			0,40	0,20	0,15	0,12
			0,30	0,15	0,12	0,10
	0,80	0,80	0,80	0,25	0,22	0,20
	1,00	1,00	1,00	0,30	0,25	0,22
	0,80	0,80	0,80	0,25	0,22	0,20
	0,35	0,40	0,35	0,20	0,20	0,18
				0,20		
				0,18		
				0,15		
				0,15		
				0,10	0,10	0,08
				0,10	0,10	0,08
				0,10	0,10	0,08
				0,10	0,10	0,08
	0,40	0,40	0,40	0,10	0,10	0,08
	0,42	0,42	0,42	0,12	0,12	0,10
				0,15		
				0,15		
	LNMU1508 . .	LNMU2010 . .	LNMX201012R- . .	SP . . 1204 . .	SN . X120512 . . SN . X120520 . . SN . X1205ENN	SN . X120512 . . SN . X120520 . . SN . X1205ZNN
	1,0	1,0	1,0	1,0	1,0	1,0
	1,1	1,1	1,1	1,1	1,1	1,1
	1,2	1,2	1,2	1,2	1,2	1,2
	1,3	1,3	1,3	1,3	1,3	1,3

Feed determination (starting values)
Shoulder milling cutter

Material group	Cutter type	F2254	F2010 / . . . R445M	F2250	F2010 / F4041	
	Feed per tooth f_{z0} for $a_e = D_c$ $a_p = a_{p\,max} = L_c$ 				 Xtra·tec®	
	Lead angle κ	89°	89° 45'	75° + 90°	90°	
		f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]	
	Tool Ø or Ø range [mm]	50–160	80–315	63–200	40–315	
	Maximum cutting data $a_{p\,max} = L_c$ [mm]	7	12	3 / 4	13	
P	Non-alloyed steel [1]		0,20		0,20	
P	Low-alloyed steel		0,15		0,15	
P	High-alloyed steel and tool steel		0,15		0,15	
P	Stainless steel		0,12		0,12	
M	Stainless steel [2]		0,10		0,10	
K	Malleable cast iron	0,10	0,20		0,20	
K	Grey cast iron	0,15	0,25		0,25	
K	Cast iron with spheroidal graphite	0,15	0,20		0,20	
K	GGV (CGI)	0,08	0,15		0,15	
N	Wrought aluminium alloys		0,15	0,15	0,12	
N	Cast aluminium alloys		0,15	0,15	0,15	
N	Magnesium-based alloys [3]		0,12	0,15	0,12	
N	Copper and copper alloys (bronze/brass)		0,12	0,10	0,10	
S	Heat-resistant alloys		0,10		0,12	
S	Titanium alloys		0,10		0,12	
S	Tungsten alloys		0,10		0,12	
S	Molybdenum alloys		0,10		0,12	
H	Hardened steel		0,10		0,12	
H	Hardened cast iron		0,12		0,14	
O	Thermoplastics		0,15		0,15	
O	Plastic, carbon fibre reinforced					
O	Graphite (technical)		0,15		0,12	
	Indexable insert types	SNHQ1205 . .	SP . . 1204 . .	SPHW1204 . . WCD10	LNGX1307 . .	
	Correction factor Ka_e $a_e / D_c =$ 1/1 – 1/2	1,0	1,0	1,0	1,0	
	For the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c 1/5	1,4	1,1	1,1	1,1	
	1/10	1,5	1,2	1,2	1,2	
	1/20	1,8	1,3	1,3	1,3	
	$f_z = f_{z0} \cdot Ka_e$ 1/50	2,0				

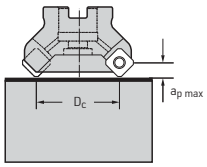
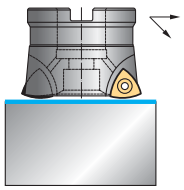
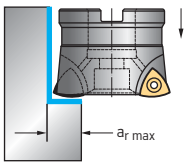
[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

	F2010 / F4042					F2010 / F5 . 41			M2131		M4132		
													
	Xtra·tec®					Walter BLAXX							
	90°					90°			90°		90°		
	f_{z0} [mm]					f_{z0} [mm]			f_{z0} [mm]		f_{z0} [mm]		
	F4042	F4042R	F2010 F4042	F2010 F4042	F4042	F2010 F5041	F2010 F5141	F5241					
	10–50	16–63	25–315	40–315	50–160	25–315	40–315	50–160	25–80	32–63	15–25	25–80	50–125
	8	10	11,7	15	16,7	8,4	12,2	15,2	15	20	5,6	8,4	11,6
	0,15	0,18	0,20	0,25	0,30	0,18	0,24	0,28			0,10	0,15	0,20
	0,10	0,12	0,15	0,18	0,22	0,12	0,18	0,22			0,08	0,12	0,15
	0,10	0,12	0,15	0,18	0,22	0,12	0,18	0,22			0,08	0,12	0,15
	0,08	0,10	0,12	0,15	0,18	0,10	0,14	0,16			0,06	0,10	0,12
	0,08	0,08	0,10	0,12	0,14	0,10	0,12	0,14			0,06	0,08	0,10
	0,12	0,18	0,20	0,25	0,30	0,14	0,24	0,28			0,10	0,15	0,20
	0,15	0,20	0,25	0,30	0,40	0,18	0,30	0,35			0,12	0,20	0,25
	0,12	0,15	0,20	0,25	0,30	0,14	0,24	0,28			0,10	0,15	0,20
	0,10	0,12	0,15	0,18	0,20	0,12	0,18	0,20			0,08	0,10	0,15
	0,10	0,12	0,12	0,15		0,12	0,15	0,15	0,15	0,20			
	0,12	0,15	0,15	0,15		0,15	0,15	0,15	0,12	0,15			
	0,10	0,12	0,12	0,15		0,12	0,15	0,15	0,12	0,12			
	0,08	0,10	0,10	0,12		0,10	0,12	0,12	0,10	0,10			
	0,08	0,10	0,12	0,15	0,18	0,10	0,14	0,17			0,06	0,10	0,10
	0,08	0,10	0,12	0,15	0,18	0,10	0,14	0,17			0,06	0,10	0,10
	0,08	0,10	0,12	0,15	0,18	0,10	0,14	0,17			0,06	0,10	0,10
	0,08	0,10	0,12	0,15	0,18	0,10	0,14	0,17			0,06	0,10	0,10
	0,08	0,08	0,10	0,12	0,14	0,10	0,12	0,14			0,04	0,08	0,10
	0,10	0,10	0,12	0,14	0,16	0,12	0,14	0,20			0,08	0,10	0,12
	0,12	0,15	0,17	0,20		0,14	0,20	0,20	0,15	0,15			
	0,10	0,12	0,15	0,15		0,12	0,18	0,18	0,12	0,12			
	AD . . 0803 . .	AD . . 10T3 . .	AD . . 1204 . .	AD . . 1606 . .	AD . . 1807 . .	LN . . 0904 . .	LN . . 1306 . .	LN . . 1607 . .	ZDGT1504 . .	ZDGT2005 . .	SD . . 06T2 . . .	SD . . 09T3 . . .	SD . . 1204 . . .
	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1
	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3

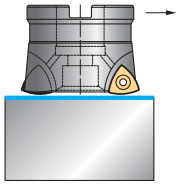
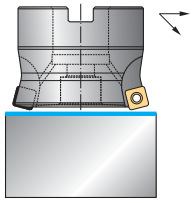
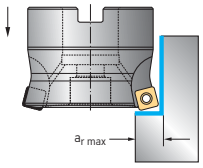
C 2

Feed determination (starting values)
High-feed milling cutters

Material group	Cutter type		F2010 / F2330			F2330		
	Feed per tooth f_{Z0} for $a_e = D_c$, $a_p = a_{p\,max} = L_c$		 For face milling operations			 For plunging		
	Lead angle κ		0–15°			0–15°		
			f_{Z0} [mm]			f_{Z0} [mm]		
			F2330	F2330	F2010 F2330			
	Tool Ø or Ø range [mm]		20–25	32–85	52–315	20–25	32–85	52–85
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		1,0	1,5	2,0	$a_{r\,max}$ = 7 mm	$a_{r\,max}$ = 10 mm	$a_{r\,max}$ = 15 mm
P	Non-alloyed steel [1]		1,20	1,60	2,00	0,18	0,25	0,30
	Low-alloyed steel		1,00	1,40	1,80	0,16	0,22	0,25
	High-alloyed steel and tool steel		0,70	1,00	1,20	0,12	0,16	0,22
	Stainless steel		0,50	0,60	0,80	0,10	0,12	0,15
M	Stainless steel [2]		0,50	0,60	0,80	0,10	0,12	0,15
K	Malleable cast iron		1,00	1,40	1,80	0,16	0,22	0,28
	Grey cast iron		1,20	1,60	2,00	0,18	0,25	0,30
	Cast iron with spheroidal graphite		1,00	1,40	1,80	0,16	0,22	0,28
	GGV (CGI)		1,00	1,40	1,80	0,16	0,22	0,28
N	Wrought aluminium alloys							
	Cast aluminium alloys							
	Magnesium-based alloys [3]							
	Copper and copper alloys (bronze/brass)							
S	Heat-resistant alloys		0,50	0,60	0,80	0,08	0,10	0,12
	Titanium alloys		0,50	0,60	0,80	0,08	0,10	0,12
	Tungsten alloys		0,50	0,60	0,80	0,08	0,10	0,12
	Molybdenum alloys		0,50	0,60	0,80	0,08	0,10	0,12
H	Hardened steel							
	Hardened cast iron							
O	Thermoplastics							
	Plastic, carbon fibre reinforced							
	Graphite (technical)							
	Indexable insert types		P2633 . -R10 P26379-R10	P2633 . -R14 P26379-R14	P2633 . -R25 P26379-R25	P2633 . -R10 P26379-R10	P2633 . -R14 P26379-R14	P2633 . -R25 P26379-R25
	Correction factor **Ka_e** for the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	a_e / D_c = 1/1 – 1/2	1,0	1,0	1,0			
		1/5	1,4	1,4	1,4			
		1/10	1,8	1,8	1,8			
		1/20						
		1/50						
	Correction factor **Ka_p** for the feed per tooth depending on the depth of cut a_p	a_p = 0,5	1,3	1,4	1,5			
		1,0	1,0	1,2	1,4			
		1,5		1,0	1,2			
		2,0			1,0			
	Correction factor **K** $f_Z = f_{Z0} \cdot Ka_e \cdot Ka_p \cdot K$	1 < (L : D_c) = ≤ 2	1,4	1,4	1,4	1,0	1,0	1,0
		2 < (L : D_c) = ≤ 4	1,0	1,0	1,0	0,7	0,7	0,7
		4 < (L : D_c) = ≤ 6	0,7	0,7	0,7	0,5	0,5	0,5

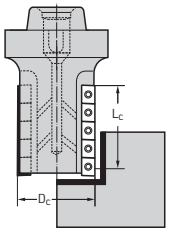
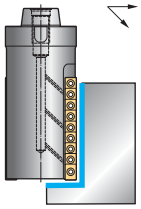
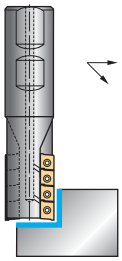
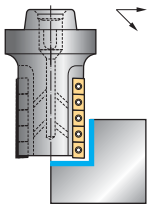
[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

	F2010 / F4030		M4002			M4002		
								
	Xtra·tec®		For face milling operations			For plunging		
	0–21°		15°			15°		
	f_{z0} [mm]		f_{z0} [mm]			f_{z0} [mm]		
	25–63	50–315	20–66	25–66	50–125	20–66	25–66	50–125
	1,0	2,0	1	1,5	2,0	a_r max 5,7	a_r max 8,4	a_r max 11,4
	1,60	2,00	1	1,50	2,00	0,18	0,25	0,30
	1,40	1,80	1	1,40	1,80	0,16	0,22	0,25
	1,00	1,20	0,9	1,20	1,60	0,12	0,16	0,22
	0,60	0,80	0,4	0,80	1,00	0,10	0,12	0,15
	0,60	0,80	0,3	0,50	0,80	0,10	0,12	0,15
	1,60	1,80	0,3	0,50	0,80	0,16	0,22	0,28
	1,40	2,00	1,2	1,40	1,60	0,18	0,25	0,30
	1,40	1,80	1	1,20	1,40	0,16	0,22	0,28
	1,40	1,80	1	1,20	1,40	0,16	0,22	0,28
	0,60	0,80	0,4	0,60	0,80	0,08	0,10	0,12
	0,60	0,80	0,4	0,60	0,80	0,08	0,10	0,12
	0,60	0,80	0,4	0,60	0,80	0,08	0,10	0,12
	0,60	0,80	0,4	0,60	0,80	0,08	0,10	0,12
			0,30	0,50	0,80	0,08	0,10	0,12
			0,32	0,52	0,82	0,10	0,12	0,14
	P23696-1.0	P23696-2.0	SD . . 06T2 . . .	SD . . 09T3 . . .	SD . . 1204 . . .	SD . . 06T2 . . .	SD . . 09T3 . . .	SD . . 1204 . . .
	1,0	1,0	1,0	1,0	1,0			
	1,4	1,3	1,4	1,4	1,4			
	1,8	1,6	1,8	1,8	1,8			
	1,4	1,5						
	1,0	1,4						
		1,2						
		1,0						
	1,4	1,4	1,4	1,4	1,4	1,0	1,0	1,0
	1,0	1,0	1,0	1,0	1,0	0,7	0,7	0,7
	0,7	0,7	0,7	0,7	0,7	0,5	0,5	0,5

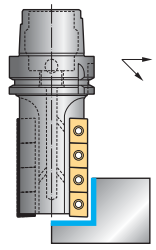
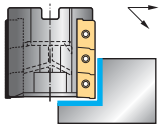
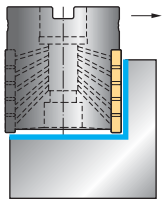
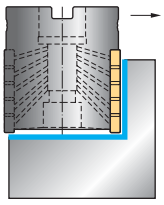
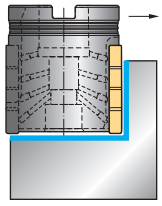
C 2

Feed determination (starting values)
Shoulder/porcupine milling cutters, full effective

Material group	Cutter type		F2338F	F4038	F4138	
		Feed per tooth f_{z0} for $a_e = D_c$ $a_p = a_{p\,max} = L_c$			 Xtra·tec®	 Xtra·tec®	
	Lead angle κ		90°	90°	90°	
			f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]	
	Tool Ø or Ø range [mm]		63–100	20–32	32–80	
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		48–103	15–37	33–76	
P	Non-alloyed steel [1]		0,30	0,15	0,20	
	Low-alloyed steel		0,25	0,10	0,15	
	High-alloyed steel and tool steel		0,20	0,10	0,15	
	Stainless steel		0,15	0,08	0,12	
M	Stainless steel [2]		0,15	0,08	0,10	
K	Malleable cast iron		0,40	0,15	0,25	
	Grey cast iron		0,30	0,12	0,20	
	Cast iron with spheroidal graphite		0,30	0,12	0,20	
	GGV (CGI)		0,30	0,12	0,20	
N	Wrought aluminium alloys			0,12	0,15	
	Cast aluminium alloys			0,10	0,12	
	Magnesium-based alloys [3]			0,10	0,12	
	Copper and copper alloys (bronze/brass)			0,10	0,12	
S	Heat-resistant alloys		0,12	0,08	0,12	
	Titanium alloys		0,12	0,08	0,12	
	Tungsten alloys		0,12	0,08	0,12	
	Molybdenum alloys		0,12	0,08	0,12	
H	Hardened steel					
	Hardened cast iron					
O	Thermoplastics			0,1	0,15	
	Plastic, carbon fibre reinforced					
	Graphite (technical)			0,1	0,12	
	Indexable insert types		SP . . 1506 . . LP . . 1506 . .	AD . . 0803 . .	AD . . 1204 . .	
	Correction factor Ka_e	a_e/D_c = 1/2	1,0**	1,0**	1,0**	
	For the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	1/5	1,1	1,1	1,1	
		1/10	1,2	1,2	1,2	
		1/20	1,3	1,3	1,3	
		1/50		1,5	1,5	
	Correction factor Ka_p	a_p = 6	1,0	1,0	1,0	
	for the feed per tooth depending on the depth of cut a_p	9	1,0	1,0	1,0	
		12	1,0	1,0	1,0	
		$0,5 \times D_c$	1,0	1,0	1,0	
		$0,75 \times D_c$	0,8	0,8	0,8	
	$f_z = f_{z0} \cdot Ka_e \cdot Ka_p$	$1 \times D_c$	0,7	0,7	0,7	
		$a_{p\,max} = L_c$	0,5*	0,5*	0,5*	

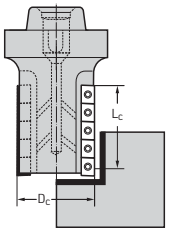
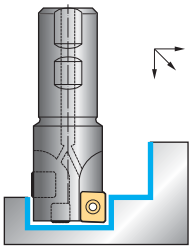
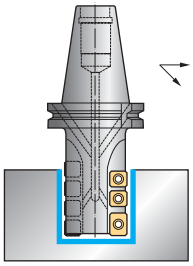
[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.
* only possible if $a_e/D_c < 1/5$
** only possible if $a_p < 0.75 \times D_c$

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

	F4238	F4338	F5038	F5138	M3255
					
	Xtra·tec®	Xtra·tec®	Walter BLAXX	Walter BLAXX	Walter BLAXX
	90°	90°	90°	90°	90°
	f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]
	40–85	63–125	25–40	40–80	50–80
	29–112	31–124	24–48	23–56	46–58
	0,25	0,25	0,18	0,23	
	0,20	0,20	0,13	0,17	
	0,18	0,20	0,13	0,17	
	0,12	0,15	0,10	0,12	
	0,12	0,15	0,10	0,11	
	0,28	0,30	0,20	0,23	
	0,22	0,25	0,18	0,28	
	0,22	0,25	0,15	0,22	
	0,22	0,25	0,15	0,17	
	0,15		0,12	0,15	
	0,12		0,15	0,12	
	0,12		0,12	0,12	
	0,12		0,12	0,12	
	0,12	0,12	0,10	0,12	0,15
	0,12	0,12	0,10	0,12	0,15
	0,12	0,12	0,10	0,12	0,15
	0,12	0,12	0,10	0,12	0,15
	0,15				
	0,15		0,13	0,15	
	AD . . 1606 . .	AD . . 1807 . .	LN . . 0904 . .	LNHU1306 . .	XNHX1306 . . LNHX1206 . .
	1,0**	1,0**	1,0**	1,0**	1,0**
	1,1	1,1	1,1	1,1	1,1
	1,2	1,2	1,2	1,2	1,2
	1,3	1,3	1,3	1,3	1,3
	1,5	1,5	1,5	1,5	1,5
	1,0	1,0	1,0	1,0	1,0
	1,0	1,0		1,0	1,0
	1,0	1,0		1,0	1,0
	1,0	1,0		1,0	1,0
	0,8	0,8		0,8	0,8
	0,7	0,7		0,7	0,7
	0,5*	0,5*	0,5*	0,5*	0,5*

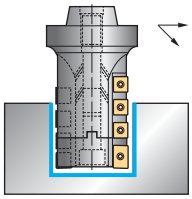
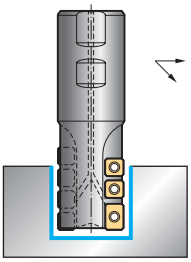
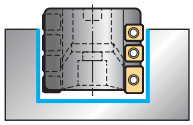
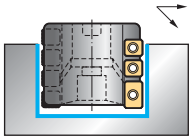
C 2

Feed determination (starting values)
Slot milling cutters

Material group	Cutter type		M4792			F2238		
								
	Feed per tooth f_{Z0} for $a_e = D_c$ $a_p = a_{p\,max} = L_c$							
	Lead angle κ		90°			90°		
			f_{Z0} [mm]			f_{Z0} [mm]		
	Tool Ø or Ø range [mm]		18–20	25–32	40	20–32	40–65	80–125
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		7 + 13	14 + 22	25,0	22–42	50	67–87
P	Non-alloyed steel [1]		0,10*	0,15*	0,20*	0,10	0,15	0,20
P	Low-alloyed steel		0,10*	0,12*	0,15*	0,08	0,12	0,15
P	High-alloyed steel and tool steel		0,08*	0,12*	0,15*	0,08	0,12	0,15
P	Stainless steel		0,06*	0,08*	0,12*	0,06	0,08	0,12
M	Stainless steel [2]		0,06*	0,08*	0,10*	0,06	0,08	0,10
K	Malleable cast iron		0,12*	0,20*	0,25*	0,12	0,20	0,25
K	Grey cast iron		0,10*	0,15*	0,20*	0,10	0,15	0,20
K	Cast iron with spheroidal graphite		0,10*	0,15*	0,20*	0,10	0,15	0,20
K	GGV (CGI)		0,10*	0,15*	0,20*	0,10	0,15	0,20
N	Wrought aluminium alloys							
N	Cast aluminium alloys							
N	Magnesium-based alloys [3]							
N	Copper and copper alloys (bronze/brass)							
S	Heat-resistant alloys		0,06*	0,10*	0,10*	0,06	0,10	0,10
S	Titanium alloys		0,06*	0,10*	0,10*	0,06	0,10	0,10
S	Tungsten alloys		0,06*	0,10*	0,10*	0,06	0,10	0,10
S	Molybdenum alloys		0,06*	0,10*	0,10*	0,06	0,10	0,10
H	Hardened steel							
H	Hardened cast iron							
O	Thermoplastics							
O	Plastic, carbon fibre reinforced							
O	Graphite (technical)							
	Indexable insert types		SD . . 06T204 . . LD . . 08T204 . .	SD . . 09T308 LD . . 14T308 . .	SD . . 120408 . . LD . . 170408 . .	SP . . 0603 . . LP . . 0703 . .	SP . . 09T3 . . LP . . 15T3 . .	SP . . 1204 . . LP . . 1504 . .
	Correction factor **Ka_e**	a_e/D_c = 1/1 – 1/2	1,0	1,0	1,0	1,0	1,0	-
	For the feed per tooth depending on the ratio of depth of cut a_e to milling cutter diameter D_c	1/5	1,1	1,1	1,1	1,1	1,1	1,1
		1/10	1,2	1,2	1,2	1,2	1,2	1,2
		1/20	1,3	1,3	1,3	1,3	1,3	1,3
		1/50						
	Correction factor **Ka_p**	a_p = 6				1,6	1,6	1,6
	for the feed per tooth depending on the depth of cut a_p	9				1,0	1,6	1,6
		12				1,0	1,0	1,6
		0,5 × D_c				1,0	1,0	1,0
		0,75 × D_c				0,8	0,8	0,8
	$f_Z = f_{Z0} \cdot Ka_e \cdot Ka_p$	1 × D_c				0,7	0,7	0,7
		$a_{p\,max.} = L_c$				0,5**	0,5**	0,5**

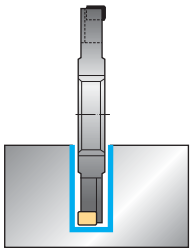
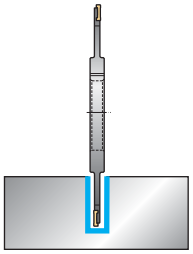
[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.
* only possible if $a_p < 0.75 \times D_c$
** only with $a_e/D_c < 1/5$

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

	F2238CE / CK	M4256	M4257	M4258
				
	90°	90°	90°	90°
	f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]	f_{z0} [mm]
	63–80	20–32	40–63	80–100
	56–117	27–37	47–54	67–78
	0,20	0,10	0,15	0,20
	0,15	0,08	0,12	0,15
	0,15	0,08	0,12	0,15
	0,10	0,06	0,08	0,12
	0,10	0,06	0,08	0,10
	0,25	0,12	0,20	0,25
	0,20	0,10	0,15	0,20
	0,20	0,10	0,15	0,20
	0,20	0,10	0,15	0,20
	0,10	0,06	0,10	0,10
	0,10	0,06	0,10	0,10
	0,10	0,06	0,10	0,10
	0,10	0,06	0,10	0,10
	SP . . 1204 . . LP . . 1504 . .	SD . . 06T204 . . LD . . 08T204 . .	SD . . 09T308 . . LD . . 14T308 . .	SD . . 120408 . . LD . . 170408 . .
	1,0	1,0	1,0	1,0
	1,1	1,1	1,1	1,1
	1,2	1,2	1,2	1,2
	1,3	1,3	1,3	1,3
	1,0	1,6	1,6	1,6
	1,0	1,0	1,6	1,6
	1,0	1,0	1,0	1,6
	1,0	1,0	1,0	1,0
	0,8	0,8	0,8	0,8
	0,7	0,7	0,7	0,7
	0,5**	0,5**	0,5**	0,5**

Feed determination (starting values)
Slotting cutters

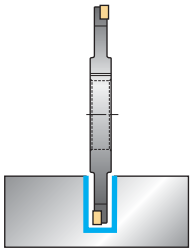
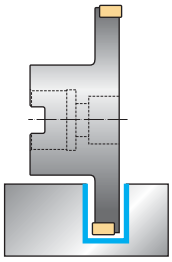
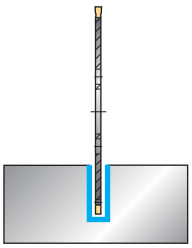
C 2

Material group	Cutter type		F2252						F4053	
	Feed per tooth f_{Z0} for plunging, central positioning		 cross-toothed						 cross-toothed Xtra·tec®	
	Lead angle κ		90°						90°	
			f_{Z0} [mm]						f_{Z0} [mm]	
	Tool Ø or Ø range [mm]		100–160	125–315	125–250	80–160	100–160	125–315	80–160	
	Maximum cutting width SB [mm]		12–16	16–22	22–25	8–10	10–16	16–23,5	4	
P	Non-alloyed steel [1]		0,10	0,14	0,20	0,10	0,10	0,17	0,11	
P	Low-alloyed steel		0,07	0,10	0,14	0,07	0,07	0,13	0,09	
P	High-alloyed steel and tool steel		0,07	0,10	0,14	0,07	0,07	0,13	0,09	
P	Stainless steel		0,05	0,07	0,10	0,05	0,05	0,10	0,05	
M	Stainless steel [2]		0,05	0,07	0,10	0,05	0,05	0,08	0,05	
K	Malleable cast iron		0,08	0,12	0,18	0,08	0,08	0,17	0,11	
K	Grey cast iron		0,10	0,15	0,23	0,10	0,10	0,20	0,12	
K	Cast iron with spheroidal graphite		0,08	0,12	0,18	0,08	0,08	0,17	0,11	
K	GGV (CGI)		0,07	0,10	0,14	0,07	0,07	0,13	0,09	
N	Wrought aluminium alloys		0,10	0,12	0,14	0,10	0,10	0,12		
N	Cast aluminium alloys		0,08	0,10	0,12	0,08	0,08	0,10		
N	Magnesium-based alloys [3]		0,08	0,10	0,12	0,08	0,08	0,10		
N	Copper and copper alloys (bronze/brass)		0,07	0,09	0,11	0,07	0,07	0,10		
S	Heat-resistant alloys		0,05	0,07	0,10	0,05	0,05	0,10	0,05	
S	Titanium alloys		0,05	0,07	0,10	0,05	0,05	0,10	0,05	
S	Tungsten alloys		0,05	0,07	0,10	0,05	0,05	0,10	0,05	
S	Molybdenum alloys		0,05	0,07	0,10	0,05	0,05	0,10	0,05	
H	Hardened steel									
H	Hardened cast iron									
O	Thermoplastics		0,07	0,10	0,15	0,07	0,10	0,12		
O	Plastic, carbon fibre reinforced									
O	Graphite (technical)		0,07	0,10	0,15	0,07	0,10	0,12		
	Indexable insert types		AD . . 0803 . . R/L	AD . . 1204 . . R/L	AD . . 1606 . . R/L	MP . . 0603 . .	MP . . 0803 . .	MP . . 1204 . .	LN . X 0702 . .	
	Correction factor Ka_e for the feed per tooth depending on the ratio of depth of cut a_e to milling cutter diameter D_c	central	1,0	1,0	1,0	1,0	1,0	1,0	1,0	
		a_e / D_c = 1/3	1,5	1,5	1,5	1,5	1,5	1,5	1,5	
		1/5	1,8	1,8	1,8	1,8	1,8	1,8	1,8	
		1/10	2,5	2,5	2,5	2,5	2,5	2,5	2,5	
		1/20	3,3	3,3	3,3	3,3	3,3	3,3	3,3	
	$f_Z = f_{Z0} \cdot Ka_e$	1/50	5,8	5,8	5,8	5,8	5,8	5,8	5,8	

[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

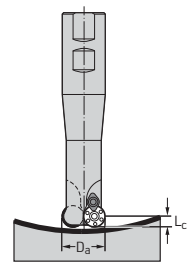
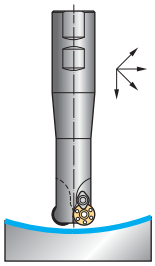
Please note: The feed per tooth f_Z should not exceed 0.6 mm

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

	F4153			F4253					F5055			
												
	cross-toothed Xtra·tec®			cross-toothed Xtra·tec®					Walter BLAXX			
	90° f_{z0} [mm]			90° f_{z0} [mm]					90° f_{z0} [mm]			
	80–200	80–200	80–200	100–200	100–200	125–200	160–200	160–315	63–125	63–160	63–250	63–250
	6	8	10	12	14	16	20	25	1,5	2,0	3,0	4,0
	0,12	0,13	0,14	0,15	0,15	0,20	0,20	0,23	0,06	0,08	0,10	0,12
	0,10	0,12	0,12	0,13	0,13	0,17	0,17	0,20	0,06	0,07	0,09	0,11
	0,10	0,12	0,12	0,13	0,13	0,17	0,17	0,20	0,06	0,07	0,09	0,11
	0,05	0,07	0,07	0,08	0,08	0,10	0,10	0,13	0,05	0,06	0,08	0,09
	0,05	0,07	0,07	0,08	0,08	0,10	0,10	0,13	0,05	0,06	0,08	0,09
	0,12	0,13	0,13	0,15	0,15	0,20	0,20	0,22	0,06	0,07	0,09	0,11
	0,13	0,15	0,15	0,18	0,18	0,23	0,23	0,25	0,06	0,08	0,10	0,12
	0,12	0,13	0,13	0,15	0,15	0,20	0,20	0,22	0,06	0,07	0,09	0,11
	0,10	0,12	0,12	0,13	0,13	0,17	0,17	0,20				
	0,05	0,07	0,07	0,08	0,08	0,10	0,10	0,12	0,05	0,06	0,08	0,09
	0,05	0,07	0,07	0,08	0,08	0,10	0,10	0,12	0,05	0,06	0,08	0,09
	0,05	0,07	0,07	0,08	0,08	0,10	0,10	0,12	0,05	0,06	0,08	0,09
	0,05	0,07	0,07	0,08	0,08	0,10	0,10	0,12	0,05	0,06	0,08	0,09
	LN . U 0803 . .	LN . U 0804 . .	LN . U 1005 . .	LN . U0804 . .	LN . U0804 . .	LN . U1005 . .	LN . U1206 . .	LN . U1605 . .	SX-1E15 . .	SX-2E20 . .	SX-3E30 . .	SX-4E40 . .
	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8
	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3	3,3
	5,8	5,8	5,8	5,8	5,8	5,8	5,8	5,8	5,8	5,8	5,8	5,8

Feed determination (starting values)
Copy milling cutters (toric)

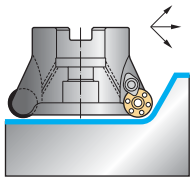
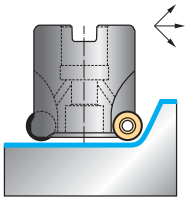
C 2

Material group	Cutter type		F2231						
	Feed per tooth f_{Z0} for $a_e = D_c$ $a_p = a_{p\,max} = L_c$								
	Lead angle κ		–						
			f_{Z0} [mm]						
	Tool Ø or Ø range [mm]		10	16	20	24	30 / 32	40	
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		2,5	4	5	6	7,5 / 8	10	
P	Non-alloyed steel [1]		0,06	0,10	0,15	0,20	0,25	0,30	
P	Low-alloyed steel		0,05	0,08	0,12	0,14	0,20	0,25	
P	High-alloyed steel and tool steel		0,05	0,08	0,12	0,14	0,20	0,25	
P	Stainless steel		0,04	0,06	0,08	0,10	0,12	0,15	
M	Stainless steel [2]		0,04	0,06	0,08	0,10	0,12	0,12	
K	Malleable cast iron		0,06	0,10	0,15	0,20	0,25	0,30	
K	Grey cast iron		0,08	0,12	0,20	0,25	0,30	0,35	
K	Cast iron with spheroidal graphite		0,06	0,10	0,15	0,20	0,25	0,30	
K	GGV (CGI)		0,06	0,10	0,15	0,20	0,25	0,30	
N	Wrought aluminium alloys		0,06	0,10	0,12	0,14	0,16	0,16	
N	Cast aluminium alloys		0,06	0,10	0,12	0,14	0,16	0,16	
N	Magnesium-based alloys [3]		0,06	0,10	0,12	0,14	0,16	0,16	
N	Copper and copper alloys (bronze/brass)		0,05	0,08	0,10	0,12	0,14	0,16	
S	Heat-resistant alloys		0,04	0,06	0,08	0,10	0,10	0,10	
S	Titanium alloys		0,06	0,06	0,08	0,10	0,10	0,10	
S	Tungsten alloys		0,04	0,06	0,08	0,10	0,10	0,10	
S	Molybdenum alloys		0,06	0,06	0,08	0,10	0,10	0,10	
H	Hardened steel		0,03	0,04	0,06	0,06	0,06	0,06	
H	Hardened cast iron		0,04	0,05	0,07	0,07	0,07	0,07	
O	Thermoplastics		0,05	0,07	0,10	0,15	0,20	0,25	
O	Plastic, carbon fibre reinforced								
O	Graphite (technical)		0,05	0,07	0,10	0,12	0,15	0,20	
	Indexable insert types		RD . . 0501 . .	RD . . 0803 . .	RD . . 10T3 . .	RD . . 1204 . .	RD . . 1505 . . RD . . 1605 . .	RD . . 2006 . .	
	Correction factor **Ka_e**	$a_e / D_c =$ 1/1 – 1/2	1,0	1,0	1,0	1,0	1,0	1,0	
	For the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	1/5	1,2	1,2	1,2	1,2	1,2	1,2	
		1/10	1,5	1,5	1,5	1,5	1,5	1,5	
		1/20	1,8	1,8	1,8	1,8	1,8	1,8	
		1/50	2,0	2,0	2,0	2,0	2,0	2,0	
	Correction factor **Ka_p**	$a_p =$ 1	1,3	1,4	1,5	1,6	1,8	2,0	
	for the feed per tooth depending on the depth of cut a_p	2	1,0	1,1	1,2	1,3	1,4	1,5	
		3		1,0	1,0	1,1	1,2	1,2	
		4			1,0	1,0	1,1	1,1	
		6				1,0	1,1	1,1	
	$f_Z = f_{Z0} \cdot Ka_e \cdot Ka_p$	8					1,0	1,1	
		10						1,0	

[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

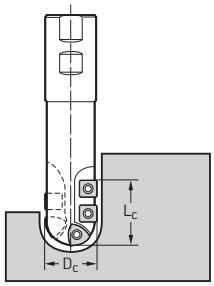
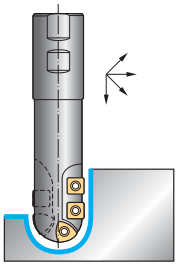
The specified feed rates are average standard values.
For special applications, adjustment is recommended.

C 2

	F2234									F2010 / F2334 / F2334R				
														
										Xtra·tec®				
	–									–				
	f_{Z0} [mm]									f_{Z0} [mm]				
										F2334	F2334	F2334	F2010 F2334	F2334
	12–20	15–42	25	25–35	32–52	35–42	40–100	50–125	63–160	25–32	32–66	40–80	52–315	63–160
	2,5	3,5	4	5	5	6	6	8	10	4	5	6	8	10
	0,06	0,06	0,10	0,10	0,15	0,15	0,20	0,25	0,30	0,11	0,17	0,22	0,28	0,33
	0,05	0,05	0,08	0,08	0,12	0,12	0,14	0,20	0,25	0,09	0,13	0,15	0,22	0,28
	0,05	0,05	0,08	0,08	0,12	0,12	0,14	0,20	0,25	0,09	0,13	0,15	0,22	0,28
	0,04	0,04	0,06	0,06	0,08	0,08	0,10	0,12	0,15	0,07	0,09	0,11	0,13	0,17
	0,04	0,04	0,06	0,06	0,08	0,08	0,10	0,12	0,12	0,07	0,09	0,11	0,13	0,13
	0,06	0,06	0,10	0,10	0,15	0,15	0,20	0,25	0,30	0,11	0,17	0,22	0,28	0,33
	0,08	0,08	0,12	0,12	0,20	0,20	0,25	0,30	0,35	0,13	0,22	0,28	0,33	0,39
	0,06	0,06	0,10	0,10	0,15	0,15	0,20	0,25	0,30	0,11	0,17	0,22	0,28	0,33
	0,06	0,06	0,10	0,10	0,15	0,15	0,20	0,25	0,30	0,11	0,17	0,22	0,28	0,33
	0,06	0,06	0,10	0,10	0,12	0,12	0,14	0,16	0,16					
	0,06	0,06	0,10	0,10	0,12	0,12	0,14	0,16	0,16					
	0,06	0,06	0,10	0,10	0,12	0,12	0,14	0,16	0,16					
	0,05	0,05	0,08	0,08	0,10	0,10	0,12	0,14	0,16					
	0,04	0,04	0,06	0,06	0,08	0,08	0,10	0,10	0,10	0,07	0,09	0,11	0,11	0,11
	0,04	0,04	0,06	0,06	0,08	0,08	0,10	0,10	0,10	0,07	0,09	0,11	0,11	0,11
	0,04	0,04	0,06	0,06	0,08	0,08	0,10	0,10	0,10	0,07	0,09	0,11	0,11	0,11
	0,04	0,04	0,06	0,06	0,08	0,08	0,10	0,10	0,10	0,07	0,09	0,11	0,11	0,11
	0,03	0,03	0,06	0,06	0,06	0,06	0,06	0,06	0,06					
	0,04	0,04	0,07	0,07	0,07	0,07	0,07	0,07	0,07					
	0,05	0,06	0,07	0,09	0,10	0,13	0,15	0,20	0,25					
	0,05	0,06	0,07	0,09	0,10	0,12	0,15	0,17	0,20					
	RD . . 0501 . .	RD . . 07T1 . .	RD . . 0803 . .	RD . . 1003 . .	RD . . 10T3 . .	RD . . 12T3 . .	RD . . 1204 . .	RD . . 1605 . .	RD . . 2006 . .	RO . X0803 . .	RO . X10T3 . .	RO . X1204 . .	RO . X1605 . .	RO . X2006 . .
	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8
	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
	1,3	1,3	1,4	1,5	1,5	1,6	1,6	1,8	2,0	1,4	1,5	1,6	1,8	2,0
	1,0	1,0	1,1	1,2	1,2	1,3	1,3	1,4	1,5	1,1	1,2	1,3	1,4	1,5
			1,0	1,0	1,0	1,1	1,1	1,2	1,2	1,0	1,0	1,1	1,2	1,5
				1,0	1,0	1,0	1,0	1,1	1,1		1,0	1,0	1,1	1,2
						1,0	1,0	1,1	1,1				1,0	1,1
								1,0	1,1					1,1
									1,0					1,0

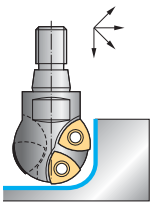
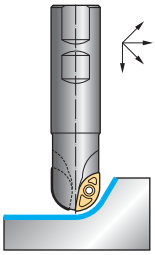
C 2

Feed determination (starting values)
Copy milling cutters

Material group	Cutter type		F2239					
	Feed per tooth f_{Z0} for $a_e = D_c$, $a_p = a_{p\,max} = L_c$							
	Lead angle κ		–					
			f_{Z0} [mm]					
	Tool Ø or Ø range [mm]		20	25	30 / 32	40	50	63
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		25	28	38	51	77	84
P	Non-alloyed steel [1]		0,18	0,24	0,30	0,36	0,36	0,36
P	Low-alloyed steel		0,12	0,17	0,24	0,30	0,30	0,30
P	High-alloyed steel and tool steel		0,12	0,17	0,24	0,30	0,30	0,30
P	Stainless steel		0,08	0,12	0,16	0,20	0,20	0,20
M	Stainless steel [2]		0,08	0,12	0,14	0,14	0,14	0,14
K	Malleable cast iron		0,18	0,24	0,30	0,36	0,36	0,36
K	Grey cast iron		0,24	0,30	0,36	0,42	0,42	0,42
K	Cast iron with spheroidal graphite		0,18	0,24	0,30	0,36	0,36	0,36
K	GGV (CGI)		0,18	0,24	0,30	0,36	0,36	0,36
N	Wrought aluminium alloys							
N	Cast aluminium alloys							
N	Magnesium-based alloys [3]							
N	Copper and copper alloys (bronze/brass)							
S	Heat-resistant alloys		0,08	0,12	0,12	0,12	0,12	0,12
S	Titanium alloys		0,08	0,12	0,12	0,12	0,12	0,12
S	Tungsten alloys		0,08	0,12	0,12	0,12	0,12	0,12
S	Molybdenum alloys		0,08	0,12	0,12	0,12	0,12	0,12
H	Hardened steel							
H	Hardened cast iron							
O	Thermoplastics							
O	Plastic, carbon fibre reinforced							
O	Graphite (technical)							
	Indexable insert types		P26315-R10 SP . . 0603 . .	P26315-R12 SP . . 0603 . .	P26315-R15 P26315-R16 SP . . 09T3 . .	P26315-R20 SP . . 1204 . .	P26315-R25 SP . . 1204 . .	P26315-R32 SP . . 1204 . .
	Correction factor **Ka_e**	a_e / D_c = 1/1 – 1/2	1,0	1,0	1,0	1,0	1,0	1,0
	For the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	1/5	1,2	1,2	1,2	1,2	1,2	1,2
		1/10	1,5	1,5	1,5	1,5	1,5	1,5
		1/20	1,8	1,8	1,8	1,8	1,8	1,8
		1/50	2,0	2,0	2,0	2,0	2,0	2,0
	Correction factor **Ka_p**	a_p = 1	1,9	2,1	2,3	2,5	2,8	3,0
	for the feed per tooth depending on the depth of cut a_p	2	1,5	1,6	1,8	1,9	2,1	2,3
		4	1,2	1,3	1,4	1,5	1,6	1,8
		6	1,1	1,2	1,2	1,3	1,4	1,5
		8	1,1	1,1	1,1	1,2	1,3	1,4
		10	1,0	1,1	1,1	1,2	1,2	1,3
		12,5	0,5	1,0	1,1	1,1	1,1	1,2
		15/16	0,5	0,5	1,0	1,1	1,1	1,1
		20	0,5	0,5	0,5	1,0	1,0	1,0
	$f_Z = f_{Z0} \cdot Ka_e \cdot Ka_p$	$a_{p\,max} = L_c$	0,5	0,5	0,5	0,5	0,5	0,5

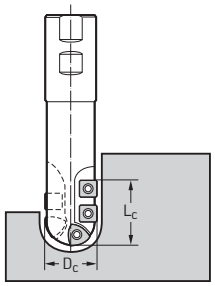
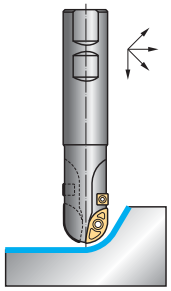
[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

	F2239B					F2339 Form A					
											
	–					–					
	f_{Z0} [mm]					f_{Z0} [mm]					
	20	25	30 / 32	40	50	16	20	25	30 / 32	40	50
	15	20	26	32	39	11	15	20	24 / 25	31	40
	0,18	0,24	0,30	0,36	0,36	0,13	0,15	0,20	0,25	0,30	0,35
	0,12	0,17	0,24	0,30	0,30	0,08	0,10	0,14	0,20	0,25	0,30
	0,12	0,17	0,24	0,30	0,30	0,08	0,10	0,14	0,20	0,25	0,30
	0,08	0,12	0,16	0,20	0,20	0,06	0,07	0,10	0,12	0,14	0,18
	0,08	0,12	0,14	0,14	0,14	0,06	0,07	0,10	0,12	0,12	0,14
	0,18	0,24	0,30	0,36	0,36	0,13	0,15	0,20	0,25	0,30	0,35
	0,24	0,30	0,36	0,42	0,42	0,17	0,20	0,25	0,30	0,35	0,40
	0,18	0,24	0,30	0,36	0,36	0,13	0,15	0,20	0,25	0,30	0,35
	0,18	0,24	0,30	0,36	0,36	0,13	0,15	0,20	0,25	0,30	0,35
	0,08	0,12	0,12	0,12	0,12	0,06	0,07	0,10	0,10	0,10	0,12
	0,08	0,12	0,12	0,12	0,12	0,06	0,07	0,10	0,10	0,10	0,12
	0,08	0,12	0,12	0,12	0,12	0,06	0,07	0,10	0,10	0,10	0,12
	0,08	0,12	0,12	0,12	0,12	0,06	0,07	0,10	0,10	0,10	0,12
	P26315-R10	P26315-R12	R26315-R15 P26315-R16	P26315-R20	P26315-R25	XD . . 130380R . .	XD . . 16T3100R . .	XD . . 2004125R . .	XD . . 2405150R . . XD . . 2506160R . .	XD . . 3207200R . .	XD . . 4009250R . .
	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8
	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
	1,9	2,1	2,3	2,5	2,8	1,6	1,9	2,1	2,3	2,5	2,7
	1,5	1,6	1,8	1,9	2,1	1,3	1,5	1,6	1,8	1,9	2
	1,2	1,3	1,4	1,5	1,6	1,1	1,2	1,3	1,4	1,5	1,6
	1,1	1,2	1,2	1,3	1,4	1,0	1,1	1,2	1,2	1,3	1,4
	1,1	1,1	1,1	1,2	1,3	1,0	1,1	1,1	1,1	1,2	1,3
	1,0	1,1	1,1	1,2	1,2	1,0	1,0	1,1	1,1	1,2	1,2
	0,5	1,0	1,1	1,1	1,1		1,0	1,0	1,1	1,1	1,2
	0,5	0,5	1,0	1,1	1,1		1,0	1,0	1,0	1,1	1,1
	0,5	0,5	0,5	1,0	1,0			1,0	1,0	1,0	1,0
	0,5	0,5	0,5	0,5	0,5				1,0	1,0	1,0

C 2

Feed determination (starting values)
Copy milling cutters (continued)

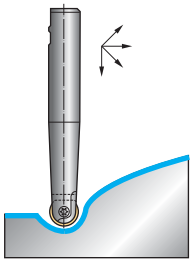
Material group	Cutter type	F2339 Form B					
	Feed per tooth f_{Z0} for $a_e = D_c$ $a_p = a_{p\,max} = L_c$						
	Lead angle κ	–					
		f_{Z0} [mm]					
	Tool Ø or Ø range [mm]	16	20	25	30 / 32	40	
	Maximum cutting data $a_{p\,max} = L_c$ [mm]	24	28	32	42 / 43	57	
P	Non-alloyed steel [1]	0,13	0,15	0,20	0,25	0,30	
P	Low-alloyed steel	0,08	0,10	0,14	0,20	0,25	
P	High-alloyed steel and tool steel	0,08	0,10	0,14	0,20	0,25	
P	Stainless steel	0,06	0,07	0,10	0,12	0,14	
M	Stainless steel [2]	0,06	0,07	0,10	0,12	0,12	
K	Malleable cast iron	0,13	0,15	0,20	0,25	0,30	
K	Grey cast iron	0,17	0,20	0,25	0,30	0,35	
K	Cast iron with spheroidal graphite	0,13	0,15	0,20	0,25	0,30	
K	GGV (CGI)	0,13	0,15	0,20	0,25	0,30	
N	Wrought aluminium alloys						
N	Cast aluminium alloys						
N	Magnesium-based alloys [4]						
N	Copper and copper alloys (bronze/brass)						
S	Heat-resistant alloys	0,06	0,07	0,10	0,10	0,10	
S	Titanium alloys	0,06	0,07	0,10	0,10	0,10	
S	Tungsten alloys	0,06	0,07	0,10	0,10	0,10	
S	Molybdenum alloys	0,06	0,07	0,10	0,10	0,10	
H	Hardened steel						
H	Hardened cast iron						
O	Thermoplastics						
O	Plastic, carbon fibre reinforced						
O	Graphite (technical)						

Indexable insert types			XD . . 130880R . . SP . . 0603 . .	XD . . 16T3100R . . SP . . 0603 . .	XD . . 2004125R . . SP . . 0603 . .	XD . . 2405150R . . XD . . 2506160R . . SP . . 09T3 . .	XD . . 3207200R . . SP . . 1204 . .
Correction factor Ka_e	a_e/D_c =	1/1 – 1/2	1,0	1,0	1,0	1,0	1,0
		1/5	1,2	1,2	1,2	1,2	1,2
For the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c		1/10	1,5	1,5	1,5	1,5	1,5
		1/20	1,8	1,8	1,8	1,8	1,8
		1/50	2,0	2,0	2,0	2,0	2,0
Correction factor Ka_p	a_p =	0,2					
		0,4					
for the feed per tooth depending on the depth of cut a_p		0,6					
		0,8					
		1,0	1,6	1,9	2,1	2,3	2,5
		1,5					
		2,0	1,3	1,5	1,6	1,8	1,9
		3,0					
		4,0	1,1	1,2	1,3	1,4	1,5
		6,0	1,0	1,1	1,2	1,2	1,3
		8,0	1,0	1,1	1,1	1,1	1,2
		10,0	1,0	1,0	1,1	1,1	1,2
$f_Z = f_{Z0} \cdot Ka_e \cdot Ka_p$		12,5	1,0	1,0	1,0	1,1	1,1
		15,0/16,0	1,0	1,0	1,0	1,0	1,1
		20,0	0,5	0,5	1,0	1,0	1,0
		$a_{p\,max} = L_c$	0,5	0,5	0,5	0,5	0,5

[1] and steel casting
[2] and austenitic/ferritic
[3] Do not set correction factor $Ka_e \cdot Ka_p$ higher than 3 when finishing
[4] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

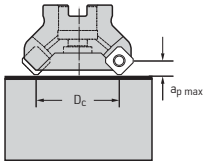
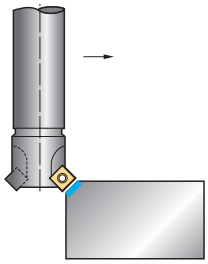
F2139



	–							
	f_{Z0} [mm]							
	8	10	12	16	20	25	30	32
	4	5	6	8	10	12	15	16
	0,08	0,10	0,10	0,12	0,12	0,15	0,15	0,15
	0,06	0,08	0,08	0,10	0,10	0,12	0,12	0,12
	0,06	0,08	0,08	0,10	0,10	0,12	0,12	0,12
	0,05	0,06	0,06	0,08	0,08	0,10	0,10	0,10
	0,05	0,06	0,06	0,08	0,08	0,10	0,10	0,10
	0,08	0,10	0,10	0,12	0,12	0,15	0,15	0,15
	0,10	0,12	0,12	0,15	0,15	0,18	0,18	0,18
	0,08	0,10	0,10	0,12	0,12	0,15	0,15	0,15
	0,08	0,10	0,10	0,12	0,12	0,15	0,15	0,15
	0,04	0,05	0,05	0,06	0,06	0,06	0,06	0,06
	0,04	0,05	0,05	0,06	0,06	0,06	0,06	0,06
	0,04	0,05	0,05	0,06	0,06	0,06	0,06	0,06
	0,04	0,05	0,05	0,06	0,06	0,06	0,06	0,06
	0,04[3]	0,05[3]	0,05[3]	0,06[3]	0,06[3]	0,06[3]	0,06[3]	0,06[3]
	0,05[3]	0,06[3]	0,06[3]	0,07[3]	0,07[3]	0,07[3]	0,07[3]	0,07[3]
	P32 . . -D08	P32 . . -D10	P32 . . -D12	P32 . . -D16	P32 . . -D20	P32 . . -D25	P32 . . -D30	P32 . . -D32
	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8
	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
	1,8	2,3	2,3	2,5	2,5	2,7	2,7	2,7
	1,5	2,0	2,0	2,2	2,2	2,4	2,4	2,4
	1,2	1,7	1,7	1,9	1,9	2,1	2,1	2,1
	1,0	1,3	1,3	1,5	1,5	1,7	1,7	1,7
	0,8	1,0	1,0	1,2	1,2	1,4	1,4	1,4
	0,7	0,8	0,8	1,0	1,0	1,2	1,2	1,2
	0,6	0,7	0,7	0,8	0,8	1,0	1,0	1,0
	0,5	0,6	0,6	0,7	0,7	0,8	0,8	0,8
	0,5	0,5	0,5	0,6	0,6	0,7	0,7	0,7
	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5

C 2

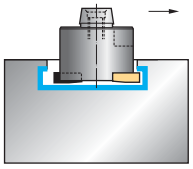
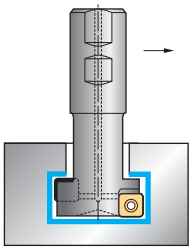
Feed determination (starting values)
Profile mills

Material group	Cutter type		M4574		
	Feed per tooth f_{Z0} for $a_e = D_c$ $a_p = a_{p\,max} = L_c$				
	Lead angle κ		45°		
			f_{Z0} [mm]		
	Tool Ø or Ø range [mm]		12–16	20–40	32–40
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		3	5	7
P	Non-alloyed steel [1]		0,15	0,20	0,25
P	Low-alloyed steel		0,12	0,15	0,20
P	High-alloyed steel and tool steel		0,12	0,15	0,20
P	Stainless steel		0,10	0,12	0,15
M	Stainless steel [2]		0,08	0,10	0,12
K	Malleable cast iron		0,15	0,20	0,25
K	Grey cast iron		0,20	0,25	0,30
K	Cast iron with spheroidal graphite		0,15	0,20	0,25
K	GGV (CGI)		0,15	0,20	0,25
N	Wrought aluminium alloys				
N	Cast aluminium alloys				
N	Magnesium-based alloys [3]				
N	Copper and copper alloys (bronze/brass)				
S	Heat-resistant alloys		0,08	0,10	0,12
S	Titanium alloys		0,08	0,10	0,12
S	Tungsten alloys		0,08	0,10	0,12
S	Molybdenum alloys		0,08	0,10	0,12
H	Hardened steel				
H	Hardened cast iron				
O	Thermoplastics				
O	Plastic, carbon fibre reinforced				
O	Graphite (technical)				
	Indexable insert types		SP . . 0603 . .	SP . . 09T3 . .	SP . . 1204 . .
	Correction factor Ka_e	$a_e / D_c =$ 1/1 – 1/2	1,0	1,0	1,0
	For the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	1/5	1,1	1,1	1,1
		1/10	1,2	1,2	1,2
		1/20	1,3	1,3	1,3
	$f_Z = f_{Z0} \cdot Ka_e$	1/50	1,5	1,5	1,5

[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

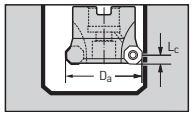
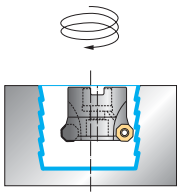
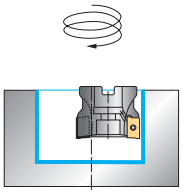
The specified feed rates are average standard values.
For special applications, adjustment is recommended.

C 2

	F2036				M4575		
							
	90°				90°		
	f_{z0} [mm]				f_{z0} [mm]		
	16	25	40	63	21–25	32–40	50
	1,1–1,6	1,3–2,15	2,15–3,15	3,15–5,15			
	0,10	0,16	0,24	0,30	0,10	0,12	0,16
	0,10	0,16	0,24	0,30	0,08	0,09	0,10
	0,08	0,14	0,19	0,25	0,08	0,06	0,08
	0,08	0,14	0,19	0,25	0,06	0,06	0,08
					0,06	0,06	0,06
	0,08	0,14	0,19	0,25	0,08	0,08	0,10
	0,10	0,16	0,24	0,30	0,12	0,16	0,18
	0,09	0,15	0,22	0,28	0,10	0,12	0,12
	0,08	0,14	0,19	0,25	0,08	0,08	0,10
					0,06	0,06	0,06
					0,06	0,06	0,06
					0,06	0,06	0,06
					0,06	0,06	0,06
	P20200-1.1 P20200-1.2 P20200-1.3	P20200-1.2 P20200-1.3 P20200-1.4 P20200-1.5	P20200-2.1 P20200-2.2 P20200-2.3	P20200-3.1 P20200-3.2 P20200-3.4	SD . . 06T204 . . .	SD . . 09T308	SD . . 120408 . . .
					1,0	1,0	1,0
					1,5	1,5	1,5
					1,8	1,8	1,8
					2,5	2,5	2,5

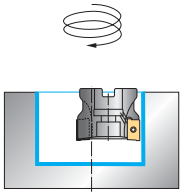
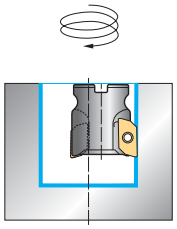
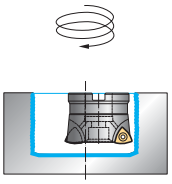
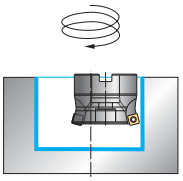
C 2

Feed determination (starting values)
Circular interpolation mills

Material group	Cutter type		F2010 / F4080		F4042	
	Feed per tooth f_{Z0} for $a_e = D_c$, $a_p = a_{p\,max} = L_c$		 Xtra·tec®		 Xtra·tec®	
	Lead angle κ		43°		90°	
			f_{Z0} [mm]		f_{Z0} [mm]	
			F4080	F2010 F4080	F4042	F4042R
	Tool Ø or Ø range [mm]		32–125	50–315	10–50	16–50
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		3 / 8	4 / 10	8	10
P	Non-alloyed steel [1]		0,40	0,45	0,13	0,16
P	Low-alloyed steel		0,36	0,40	0,09	0,10
P	High-alloyed steel and tool steel		0,27	0,32	0,09	0,10
P	Stainless steel		0,18	0,22	0,07	0,09
M	Stainless steel [2]		0,13	0,13	0,07	0,09
K	Malleable cast iron		0,32	0,36	0,10	0,13
K	Grey cast iron		0,40	0,45	0,13	0,18
K	Cast iron with spheroidal graphite		0,32	0,36	0,10	0,13
K	GGV (CGI)		0,32	0,36	0,10	0,13
N	Wrought aluminium alloys		0,22	0,22	0,10	
N	Cast aluminium alloys		0,22	0,22	0,10	
N	Magnesium-based alloys [3]		0,13	0,13	0,09	
N	Copper and copper alloys (bronze/brass)		0,13	0,13	0,09	
S	Heat-resistant alloys		0,13	0,13	0,07	0,09
S	Titanium alloys		0,13	0,13	0,07	0,09
S	Tungsten alloys		0,13	0,13	0,07	0,09
S	Molybdenum alloys		0,13	0,13	0,07	0,09
H	Hardened steel					
H	Hardened cast iron					
O	Thermoplastics		0,20	0,20	0,12	0,15
O	Plastic, carbon fibre reinforced					
O	Graphite (technical)		0,15	0,15	0,10	0,12
	Indexable insert types		OD . . 0504 . .	OD . . 0605 . .	AD . T0803 . .	AD . T10T3 . .
	Correction factor Ka_e For the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	$a_e / D_c =$ 1/1 – 1/2	1,0	1,0	1,0	1,0
		1/5	1,1	1,1	1,1	1,1
		1/10	1,2	1,2	1,2	1,2
		1/20	1,3	1,3	1,3	1,3
		1/50				
	Correction factor **K** $f_Z = f_{Z0} \cdot Ka_e \cdot K$	$1 < (L : D_c) =$ ≤ 2				
		$2 < (L : D_c) =$ ≤ 4				
		$4 < (L : D_c) =$ ≤ 6				

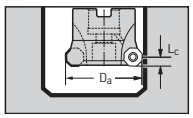
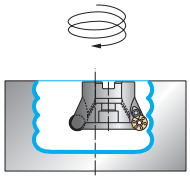
[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

	F2010 / F4042			M2131		F2010 / F2330			M4002		
											
	Xtra·tec®										
	90°			90°		0–15°			15°		
	f_{z0} [mm]			f_{z0} [mm]		f_{z0} [mm]			f_{z0} [mm]		
	F2010 F4042	F2010 F4042	F4042			F2330	F2330	F2010 F2330			
	25–80	40–160	50–160	25–80	32–63	20–25	32–85	52–315	20–66	25–66	50–125
	11,7	15	16,7	15	20	1,0	1,5	2,0	1,0	1,5	2,0
	0,18	0,22	0,27			1,00	1,40	1,80	0,18	0,25	0,30
	0,13	0,16	0,20			0,90	1,25	1,60	0,16	0,22	0,25
	0,13	0,16	0,20			0,60	0,90	1,00	0,12	0,16	0,22
	0,10	0,13	0,16			0,45	0,50	0,70	0,10	0,12	0,15
	0,09	0,10	0,12			0,45	0,50	0,70	0,10	0,12	0,15
	0,18	0,22	0,27			1,00	1,40	1,80	0,16	0,22	0,28
	0,22	0,27	0,36			0,90	1,25	1,60	0,18	0,25	0,30
	0,18	0,22	0,27			0,90	1,25	1,60	0,16	0,22	0,28
	0,18	0,22	0,27			1,00	1,40	1,80	0,16	0,22	0,28
	0,13	0,13		0,13	0,18						
	0,13	0,13		0,13	0,18						
	0,10	0,13		0,13	0,18						
	0,10	0,13		0,11	0,13						
	0,10	0,13	0,16			0,45	0,50	0,70	0,08	0,10	0,12
	0,10	0,13	0,16			0,45	0,50	0,70	0,08	0,10	0,12
	0,10	0,13	0,16			0,45	0,50	0,70	0,08	0,10	0,12
	0,10	0,13	0,16			0,45	0,50	0,70	0,08	0,10	0,12
	0,17	0,20	0,20			0,30	0,40	0,50			
	0,15	0,15	0,15			0,20	0,25	0,30			
	AD . . 1204 . .	AD . T1606 . .	AD . T1807 . .	ZDGT1504 . .	ZDGT2005 . .	P2633 . -R10 P26379-R10	P2633 . -R14 P26379-R14	P2633 . -R25 P26379-R25	SD . . 06T2 . . .	SD . . 09T3 . . .	SD . . 1204 . . .
	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
	1,1	1,1	1,1	1,1	1,1	1,4	1,4	1,4	1,4	1,4	1,4
	1,2	1,2	1,2	1,2	1,2	1,4	1,4	1,4	1,8	1,8	1,8
	1,3	1,3	1,3	1,3	1,3						
						1,4	1,4	1,4	1,4	1,4	1,4
						1,0	1,0	1,0	1,0	1,0	1,0
						0,7	0,7	0,7	0,7	0,7	0,7

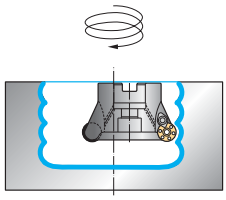
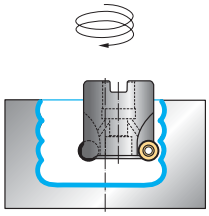
Feed determination (starting values)
Circular interpolation mills

C 2

Material group	Cutter type		F2234				
	Feed per tooth f_{Z0} for $a_e = D_c$ $a_p = a_{p\,max} = L_c$						
	Lead angle κ		–				
			f_{Z0} [mm]				
	Tool Ø or Ø range [mm]		12–20	15–42	25	25–35	
	Maximum cutting data $a_{p\,max} = L_c$ [mm]		2,5	3,5	4	5	
P	Non-alloyed steel [1]		0,06	0,06	0,10	0,10	
P	Low-alloyed steel		0,05	0,05	0,08	0,08	
P	High-alloyed steel and tool steel		0,05	0,05	0,08	0,08	
P	Stainless steel		0,04	0,04	0,06	0,06	
M	Stainless steel [2]		0,04	0,04	0,06	0,06	
K	Malleable cast iron		0,06	0,06	0,10	0,10	
K	Grey cast iron		0,08	0,08	0,12	0,12	
K	Cast iron with spheroidal graphite		0,06	0,06	0,10	0,10	
K	GGV (CGI)		0,06	0,06	0,10	0,10	
N	Wrought aluminium alloys		0,06	0,06	0,10	0,10	
N	Cast aluminium alloys		0,06	0,06	0,10	0,10	
N	Magnesium-based alloys [3]		0,06	0,06	0,10	0,10	
N	Copper and copper alloys (bronze/brass)		0,05	0,05	0,08	0,08	
S	Heat-resistant alloys		0,04	0,04	0,06	0,06	
S	Titanium alloys		0,04	0,04	0,06	0,06	
S	Tungsten alloys		0,04	0,04	0,06	0,06	
S	Molybdenum alloys		0,04	0,04	0,06	0,06	
H	Hardened steel		0,03	0,03	0,06	0,06	
H	Hardened cast iron		0,03	0,03	0,06	0,06	
O	Thermoplastics		0,05	0,06	0,07	0,09	
O	Plastic, carbon fibre reinforced						
O	Graphite (technical)		0,05	0,06	0,07	0,09	
	Indexable insert types		RD . . 0501 . .	RD . . 07T1 . .	RD . . 0803 . .	RD . . 1003 . .	
	Correction factor **Ka_e** For the feed per tooth depending on the ratio of width of cut a_e to milling cutter diameter D_c	a_e/D_c = 1/1 – 1/2	1,0	1,0	1,0	1,0	
		1/5	1,2	1,2	1,2	1,2	
		1/10	1,5	1,5	1,5	1,5	
		1/20	1,8	1,8	1,8	1,8	
		1/50	2,0	2,0	2,0	2,0	
	Correction factor **K**	$1 < (L : D_c) =$ ≤ 2					
		$2 < (L : D_c) =$ ≤ 4					
	$f_Z = f_{Z0} \cdot Ka_e \cdot K$	$4 < (L : D_c) =$ ≤ 6					

[1] and steel casting
[2] and austenitic/ferritic
[3] Water-miscible coolants must not be used when machining magnesium-based alloys.

The specified feed rates are average standard values.
For special applications, adjustment is recommended.

	F2234					F2010 / F2334				
										
	–					–				
	f_{z0} [mm]					f_{z0} [mm]				
						F2334	F2334	F2334	F2010 F2334	F2334
	32–52	35–42	40–100	50–125	63–160	25–32	32–66	40–80	52–315	63–160
	5	6	6	8	10	4	5	6	8	10
	0,15	0,15	0,20	0,25	0,30	0,11	0,17	0,22	0,28	0,33
	0,12	0,12	0,14	0,20	0,25	0,09	0,13	0,15	0,22	0,28
	0,12	0,12	0,14	0,20	0,25	0,09	0,13	0,15	0,22	0,28
	0,08	0,08	0,10	0,12	0,15	0,07	0,09	0,11	0,13	0,17
	0,08	0,08	0,10	0,12	0,12	0,07	0,09	0,11	0,13	0,13
	0,15	0,15	0,20	0,25	0,30	0,11	0,17	0,22	0,28	0,33
	0,20	0,20	0,25	0,30	0,35	0,13	0,22	0,28	0,33	0,39
	0,15	0,15	0,20	0,25	0,30	0,11	0,17	0,22	0,28	0,33
	0,15	0,15	0,20	0,25	0,30	0,11	0,17	0,22	0,28	0,33
	0,12	0,12	0,14	0,16	0,16					
	0,12	0,12	0,14	0,16	0,16					
	0,12	0,12	0,14	0,16	0,16					
	0,10	0,10	0,12	0,14	0,16					
	0,08	0,08	0,10	0,10	0,10	0,07	0,09	0,11	0,11	0,11
	0,08	0,08	0,10	0,10	0,10	0,07	0,09	0,11	0,11	0,11
	0,08	0,08	0,10	0,10	0,10	0,07	0,09	0,11	0,11	0,11
	0,08	0,08	0,10	0,10	0,10	0,07	0,09	0,11	0,11	0,11
	0,06	0,06	0,06	0,06	0,06					
	0,06	0,06	0,06	0,06	0,06					
	0,10	0,13	0,15	0,20	0,25	0,07	0,10	0,15	0,20	0,25
	0,10	0,12	0,15	0,17	0,20	0,07	0,10	0,12	0,15	0,20
	RD . . 10T3 . .	RD . . 12T3 . .	RD . . 1204 . .	RD . . 1605 . .	RD . . 2006 . .	RO . X0803 . .	RO . X10T3 . .	RO . X1204 . .	RO . X1605 . .	RO . X2006 . .
	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8	1,8
	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0

Cutting tool material application charts – Milling

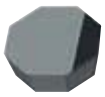
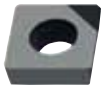
Coated carbide

Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating process	Coating composition	Example of indexable insert
WKP35S	HC – P 35	●●								CVD	$TiCN + Al_2O_3$ (+ TiCN)	
	HC – K 35			●●								
WKP25S	HC – P 25	●●								CVD	$TiCN + Al_2O_3$ (+ TiCN)	
	HC – K 25			●●								
WAK15	HC – K 15			●●						CVD	$TiCN + Al_2O_3$ (+ TiN)	
WSP45S	HC – S 45					●●				PVD	$TiAlN + Al_2O_3$ (Al)	
	HC – P 45	●●										
	HC – M 45		●●									
WSM45X	HC – S 45					●●				CVD	$TiCN + Al_2O_3$ (+ TiCN)	
	HC – M 45		●●									
WSM35S	HC – S 35					●●				PVD	$TiAlN + Al_2O_3$ (Al)	
	HC – M 35		●●									
WKK25S	HC – K 25			●●						PVD	$TiAlN + Al_2O_3$ (Al)	
WSP46	HC – S 45					●●				PVD	$TiAlN + Al_2O_3$	
	HC – P 45	●●										
	HC – M 45		●●									
WSM36	HC – S 35					●●				PVD	$TiAlN + Al_2O_3$	
	HC – M 35		●●									
WHH15	HC – H 15						●●			PVD	TiAlN	
	HC – P 15	●										
	HC – K 15			●								
WNN15	HC – N 15				●●					PVD	TiAlN	
WXN15	HC – N 15				●●					PVD	$TiCN^{plus}$	
WXM15	HC – P 15	●●								PVD	Multilayer TiAlN/ TiN	
	HC – M 15		●									
	HC – K 15			●								

HC = Coated carbide

●● Primary application
● Additional application

Uncoated carbide, ceramic, CBN and PCD

Walter grade designation	Standard designation	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Range of applications 01 05 10 15 20 25 30 35 40 45	Coating process	Coating composition	Example of indexable insert
WK10	HW – N 10				●●					–	–	
WMG40	HF – N 35				●●					–	–	
WCB80	BH – K 05			●●						–	–	
	BH – H 15						●					
WSN10	CN – K 20			●●						–	–	
WCD10	DP – N 10				●●					–	–	

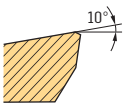
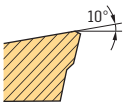
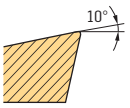
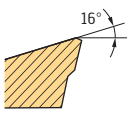
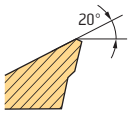
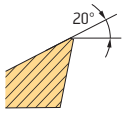
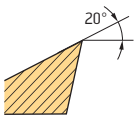
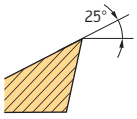
BH = CBN with high CBN content
CN = Silicon nitride ceramic Si_3N_4
DP = Polycrystalline diamond
HF = Uncoated fine-grained carbide
HW = Uncoated carbide

●● Primary application
● Additional application

Geometry overview of positive milling indexable inserts

C 2

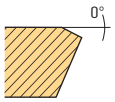
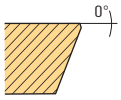
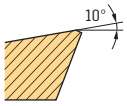
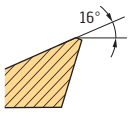
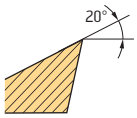
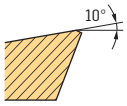
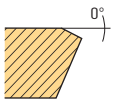
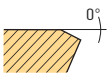
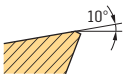
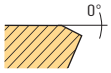
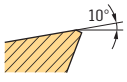
Indexable insert geometry

Geometry example	Remarks on field of applications	Cut Main cutting edge	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Suitable tool families
 AD . T . .	**D51 – The quiet one** – Anti-vibration geometry – For tools with long projection lengths	 10°	●●	●	●●		●			F2010 F2252 F4042 F4042R F4038 F4138 F4238 F4338
	D56 – The stable one – For unfavourable machining conditions – Maximum cutting edge stability – High feeds	 10°	●●	●	●●		●			
	D67 – The powerful one – High cutting edge stability – For machining high-alloy and high tensile steels and Ni-based alloys (such as Inconel) – High level of accuracy	 10°	●●	●●	●		●●			
	F56 – The universal one – For average machining conditions – Can be used universally for most materials	 16°	●●	●●	●●		●●			
	G56 – The easy-cutting one – For good machining conditions – Low cutting forces – Medium feeds	 20°	●●	●●	●●		●●			
	G77 – The special one – For machining titanium materials – Low cutting forces – High level of accuracy	 20°	●	●●			●●			
	G88 – The sharp one – For aluminium machining – Low cutting forces – Sharp cutting edges	 20°				●●			●	
 ZDGT . .	**K85 – The universal one** – For aluminium machining – Low cutting forces – Sharp cutting edges	 25°				●●				M2131

●● Primary application
● Additional application

C 2

Indexable insert geometry

Geometry example	Remarks on field of applications	Cut Main cutting edge	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Suitable tool families
 OD . .	**A27 – The stable one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds		●●		●●					F2010 F4080
	A57 – The special one – For average machining conditions – Predominantly for cast iron machining		●		●●					
	D57 – The universal one – For average machining conditions – Can be used universally for most materials		●●	●●	●●		●●			
	F57 – The easy-cutting one – For good machining conditions – Low cutting forces – Medium feeds		●●	●●	●●		●●			
	G88 – The sharp one – For aluminium machining – Low cutting forces – Sharp cutting edges					●●			●	
	**P26335 – The easy-cutting one** – For good machining conditions – Low cutting forces – Medium feeds		●●	●●	●●		●●			F2010 F2330
	P26337 – The stable one – For unfavourable machining conditions – Maximum cutting edge stability – High feeds		●●	●	●●		●			
	P26339 – The universal one – For average machining conditions – Can be used universally for most materials	Insert corner  Main cutting edge 	●●	●●	●●		●●			
	P26379 – The special one – For circular interpolation machining – Can be used universally for most materials – Wiper version	Insert corner  Main cutting edge 	●●	●●	●●		●●			

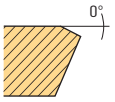
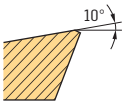
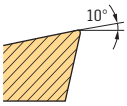
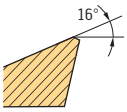
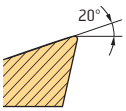
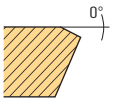
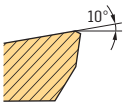
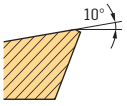
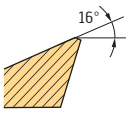
●● Primary application
● Additional application

Geometry overview of positive milling indexable inserts

(continued)

C2

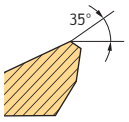
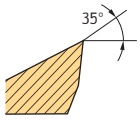
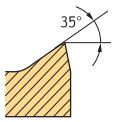
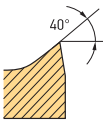
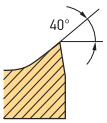
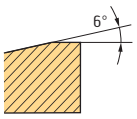
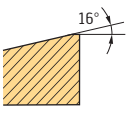
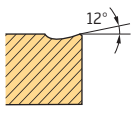
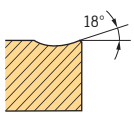
Indexable insert geometry

Geometry example	Remarks on field of applications	Cut Main cutting edge	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Suitable tool families
 RO . X . .	**A27 – The stable one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds		●●		●●					**F2010** **F2334** **F2334R**
	D57 – The universal one – For average machining conditions – Can be used universally for most materials		●●	●●	●●		●●			
	D67 – The powerful one – High cutting edge stability – For machining high-alloy and high tensile steels and Ni-based alloys (e.g. Inconel) – High level of accuracy		●●	●●	●		●●			
	F67 – The easy-cutting one – Specially developed for blade machining – Low cutting forces		●●	●●	●		●●			
	G77 – The special one – For machining titanium materials – Low cutting forces – High level of accuracy		●	●●			●●			
 SD . .	**A57 – The special one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds – No waves on the flank face		●●		●●					**M4002** (SD . . only) **M4132** (SD . . only) **M4574** (SD . . only) **M4575** (SD . . only) **M4792** (SD . . and LD . .) **M4256** (SD . . and LD . .) **M4257** (SD . . and LD . .) **M4258** (SD . . and LD . .)
 LDM . .	**D51 – The quiet one** – Anti-vibration geometry – For tools with long projection lengths – One wave on the flank face		●●	●	●●		●			
	D57 – The stable one – For average to unfavourable machining conditions – Moderate to high feeds – One wave on the flank face		●●	●●	●●		●●			
	F57 – The universal one – For average machining conditions – Medium feeds – Two waves on the flank face		●●	●●	●●		●●			

●● Primary application
● Additional application

Geometry overview of negative milling indexable inserts

Indexable insert geometry

Geometry example	Remarks on field of applications	Cut Main cutting edge	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Suitable tool families
 LNGX . .	**L55 – The universal one** – For average machining conditions – Can be used universally for most materials		●●	●●	●●		●●			F2010 F4041
	L88 – The sharp one – For aluminium machining – Low cutting forces – Sharp cutting edges					●●			●	
 LNHU . .	**L55T – The universal one** – For average machining conditions – Can be used universally for most materials		●●	●●	●●		●●			F2010 F5041 F5141 F5241 F5038 F5138
	L65T – The special one – For machining stainless steels and titanium materials – Low cutting forces		●	●●			●●			
	L85T – The sharp one – For aluminium machining – Low cutting forces – Sharp cutting edges					●●				
 LN . U . .	**B57T – The stable one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds		●●		●●					F4153 F4253
	F57T – The universal one – For average machining conditions – Can be used universally for most materials		●●	●●	●●		●●			
 LN . X . .	**D57T – The stable one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds		●●		●●					F4053
	F57T – The universal one – For average machining conditions – Can be used universally for most materials		●●	●●	●●		●●			

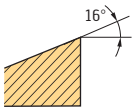
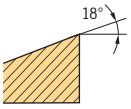
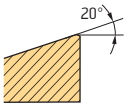
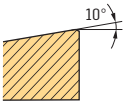
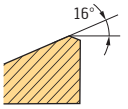
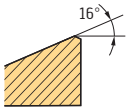
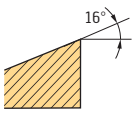
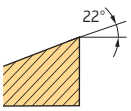
●● Primary application
● Additional application

Geometry overview of negative milling indexable inserts

(continued)

C 2

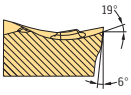
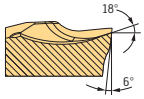
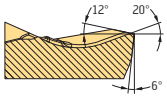
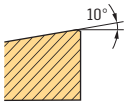
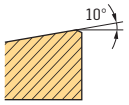
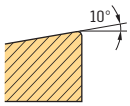
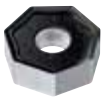
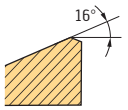
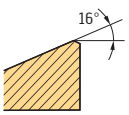
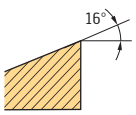
Indexable insert geometry

Geometry example	Remarks on field of applications	Cut Main cutting edge	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Suitable tool families
 ONHF . .	**F67 – The universal one** – For average machining conditions – Universal application	 16°			●●					M2025 M2026
 P45424	**G67 – The universal one** – For finishing operations – For homogeneous surface structures	 18°			●●					M2025 M2026
	**P23696 – The universal one** – For average to unfavourable machining conditions – Can be used universally for most materials	 20°	●●	●●	●●		●●			F4030 F2010
 SN . X . .	**D27 – The special one** – For machining cast iron materials – For sand inclusions or cast skin – Maximum process reliability	 10°	●		●●					F2010 F4033 F4047 F4048
	F27 – The stable one – For unfavourable machining conditions – Maximum cutting edge stability – High feeds	 16°	●●	●	●●		●			
	F57 – The universal one – For average machining conditions – Can be used universally for most materials	 16°	●●	●●	●●		●●			
	F67 – The easy-cutting one – For good machining conditions – Low cutting forces – Medium feeds	 16°	●●	●●	●●		●●			
	K88 – The sharp one – For aluminium machining – Low cutting forces – Sharp cutting edges	 22°				●●			●	

●● Primary application
● Additional application

C2

Indexable insert geometry

Geometry example	Remarks on field of applications	Cut Main cutting edge	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Suitable tool families
 SX . .	**CF6 – The easy-cutting one** – Good machining conditions – Low feeds – Low cutting force		●●	●		●	●		●	F5055
	SF5 – The universal one – Can be used universally for most materials – Light to moderate feeds		●●	●	●		●		●	
	CE4 – The tough one – Moderate to high feeds – Good chip formation – Stable cutting edge		●●		●●					
 XNHF . .	**D27 – The stable one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds				●●					F4045
	D57 – The universal one – For average machining conditions – Universal application				●●					
	D67 – The easy-cutting one – For good machining conditions – Low cutting forces – Medium feeds				●●					
 XN . U . .	**F27 – The stable one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds		●●		●●					M3024
	F57 – The universal one – For average machining conditions – Can be used universally for most materials		●●		●●					
	F67 – The easy-cutting one – For good machining conditions – Low cutting forces – Medium feeds		●●	●	●●					

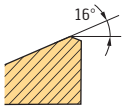
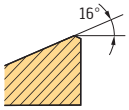
●● Primary application
● Additional application

Geometry overview of negative milling indexable inserts

(continued)

C 2

Indexable insert geometry

Geometry example	Remarks on field of applications	Cut Main cutting edge	Material groups P Steel	M Stainless steel	K Cast iron	N NF metals	S Materials with difficult cutting properties	H Hard materials	O Other	Suitable tool families
 LNMX . .	**F27T – The tough one** – For unfavourable machining conditions – Maximum cutting edge stability – High feeds		●●	●	●●					M3016
	F57T – The universal one – For average machining conditions – Can be used universally for most materials		●●	●	●●		●			

●● Primary application
● Additional application

Guidelines for high-speed applications

1. Maximum permissible RPM:
   The limit values specified in the tables should not be exceeded. Otherwise correct operation and/or reliability are no longer guaranteed.
2. Only use original Walter indexable inserts and assembly parts (screws, etc.).
   New screws should be used after having replaced the indexable inserts five times at the most.
3. Observe the tightening torques specified in the catalogue.
4. Balancing:
   Balancing in two steps must be performed when working at high speeds (> 6000 rpm) or at circumferential speeds of > 1000 m/min:
   a. Basic balancing of the tool body including indexable inserts (can be carried out by Walter if required). In this case, tool adaptors that have been balanced separately beforehand must be used.
   b. Fine balancing of the tool when fully mounted on the adaptor. The fine balancing operation is strongly recommended, as even the smallest concentricity fault can seriously affect the balance status.
5. Short projection lengths reduce concentricity faults, and increase spindle service life. The specified speeds only apply to the use of tools without additional extensions and for tools with a neck length of $\leq 2.2 \times D_c$.
   For tools with longer neck lengths, the speeds must be reduced upon consultation with Walter.
6. Safety guards:
   Appropriate safety guards or machine encapsulations must be used to safely collect particles which spin off, such as chips or cutting edge parts that are broken as a result of collisions.
7. Damaged tools:
   The operating speed must be specified for the repair of an HSC tool. The table values only apply to tools with a condition equivalent to new condition following repair.
8. Use of standards:
   Walter recommends using the balancing standard DIN 69888, which describes the balancing of tools and the requirements in the cutting area.
   DIN 69888 is tailored to the needs of the cutting area, and describes the tool balancing requirements in a practical way. DIN ISO 1940, which was previously often used, describes balancing for all areas of mechanical engineering.
   The requirements when working at circumferential speeds of >1000 m/min are described in DIN ISO 15641.

Walter milling tools

Tool	Safety-related parts	In relation to	n_{max} [rpm] with D														
			Ø 10	Ø 16	Ø 20	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100	Ø 125	Ø 160	Ø 200	Ø 250	Ø 315
F2010	All cartridges										6700	6000	5400	4700	4200	3800	3350
F2139[1]	P32 . .	D_c		40000*	40000*	40000*	40000*										
F2146	OP . . 0504 . .	D_c								12680	11200	10000	9000	7900	7100	6300	
F2231 Form A	RD . . 0501M0	D_a	40000*														
	RD . . 0803M0	D_a		40000*													
	RD . . 10T3M0	D_a			40000*												
	RD . . 1204M0	D_a				33300											
	RD . . 1605M0	D_a					27200										
	RD . . 2006M0	D_a						24300									
F2233	SD . . 09T3 . .	D_c			40000*	39600	35000	31300	28000	25000	22100	19800					
	SP . . 1204 . .	D_c				40000	40000	37600	33600	30000	26600	23800	21200	17000			
F2234	RD . . 0501M0	D_a		40000*	40000*	40000*											
	RD . . 07T1M0	D_a		40000*	40000*	40000*	35000	31300									
	RD . . 0803M0	D_a		40000*	40000*	40000*											
	RD . . 10T3M0	D_a			40000*	40000*	37100										
	RD . . 1204M0	D_a				33300	29400	26300	23500	21000	18600	16600					
	RD . . 1605M0	D_a							21700	19400	17200	15300	13700				
	RD . . 2006M0	D_a								19400	17200	15300	13700	12100			
F2238	LP . . 0703 . .	D_c			40000*	40000*	39900	35700	31900								
	LP . . 15T3 . .	D_c						21900	19600								
	LP . . 1504 . .	D_c							18500	16500	14600	13000	11700				
F2250	All cartridges	D_c							22800	20400	18100	16100	14400	12800	11400	10200	
	Without cartridges SP . . 1204 . .	D_c								22000	19500	17400					
F2330	P2633 . .	D_c			35400	31700	28000	25000	22400	20000	17700						

[1] The specified speed of 40,000 rpm refers to the entire tool diameter range of 8–32 mm.

* Speeds higher than 40,000 rpm are possible under favourable conditions and for short projection lengths upon consultation with Walter.

C2

Walter milling tools

Tool	Safety-related parts	In relation to	n_{max} [rpm] with D														
			Ø 10	Ø 16	Ø 20	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100	Ø 125	Ø 160	Ø 200	Ø 250	Ø 315
F2334 F2334R	RO . . 0803M0	D_a				40000*	37100										
	RO . . 10T3M0	D_a					37100	33200	29700	26500	23500						
	RO . . 1204M0	D_a						28200	25200	22500	19900						
	RO . . 1605M0	D_a							23000	20500	18100	16200	14500				
	RO . . 2006M0	D_a								19400	17200	15300	13700	12100			
F4030	P23696-1.0	D_a				34900	30800	27600	24600	22000							
	P23696-2.0	D_a							20200	18000	15900	14200					
F4033	SN . X1205 . .	D_c						20000	17900	16000	14200	12700	11300	10000			
	SN . X1606 . .	D_c					21000	18800	16800	15000	13300	11900	10600	9400	8400	7500	
F4038	AD . . 0803 . .	D_c			40000*	38000	33600										
F4138	AD . . 1204 . .	D_c					25100	22400	20000	17900	15800						
F4238	AD . . 1606 . .	D_c						15800	14100	12600	11100						
F4338	AD . . 1807 . .	D_c								12600	11100	10000	8900				
F4041	LNGX1307 . .	D_c					16800	15000	13400	12000	10600	9500	8500	7500			
F4042 F4042R	AD . . 0803 . .	D_c		40000*	40000*	38000	33600	30100	26900								
	AD . . 10T3 . .	D_c		39600	35400	31700	28000	25000	22400	20000							
	AD . . 1204 . .	D_c				28400	25100	22400	20000	17900	15800						
	AD . . 1606 . .	D_c						15800	14100	12600	11100	10000	8900	7900			
	AD . . 1807 . .	D_c					17600	15800	14100	12600	11100	10000	8900	7900			
F4045	XN . F0705 . .	D_c								10000	8800	7900	7000	6200	5600		
	XN . F0906 . .	D_c									5700	5100	4600	4000	3600		
F4047	SN . X1205 . .	D_c						18800	16800	15000	13300	11900	10600	9400	8400		
F4048	SN . X1205 . .	D_c						18800	16800	15000	13300	11900	10600	9400	8400		
F4050		D_c									20000	17800	16000	14100	12600		
F4080	OD . . 0504 . .	D_a					29400	26300	23500	21000	18600	16600	14900	13100			
	OD . . 0605 . .	D_a							19600	17500	15500	13800	12400	10900	9800		
F4053	LN . X0702 . .	D_c									21200	19000	17000	15000			
F4153	LN . U0803 . .	D_c									11000	9900	8800	7800			
	LN . U0804 . .	D_c									9300	8300	7400	6500			
	LN . U1005 . .	D_c									13700	12300	11000	9700			
F4253	LN . U0804 . .	D_c											17000	15000			
	LN . U1005 . .	D_c											16100	14200			
	LN . U1206 . .	D_c											12400	10900	9800	8700	
	LN . U1608 . .	D_c												7800	7000	6200	5500
F5041	LN . . 0904 . .	D_c				39600	35000	31300	28000	25000							
F5141	LN . . 1306 . .	D_c						22500	20200	18000	15900	14200	12700	11200			
F5241	LN . . 1607 . .	D_c							20200	18000	15900	14200	12700	11200			
F5038	LN . . 0904 . .	D_c				39600	35000	31300	28000	25000							
F5138	LN . . 1306 . .	D_c						22500	20200	18000	15900						
F5055	SX . .	D_c								5100	4000	3200	2600	2000	1600	1300	

* Speeds higher than 40,000 rpm are possible under favourable conditions and for short projection lengths upon consultation with Walter.

Information on high-speed applications

(continued)

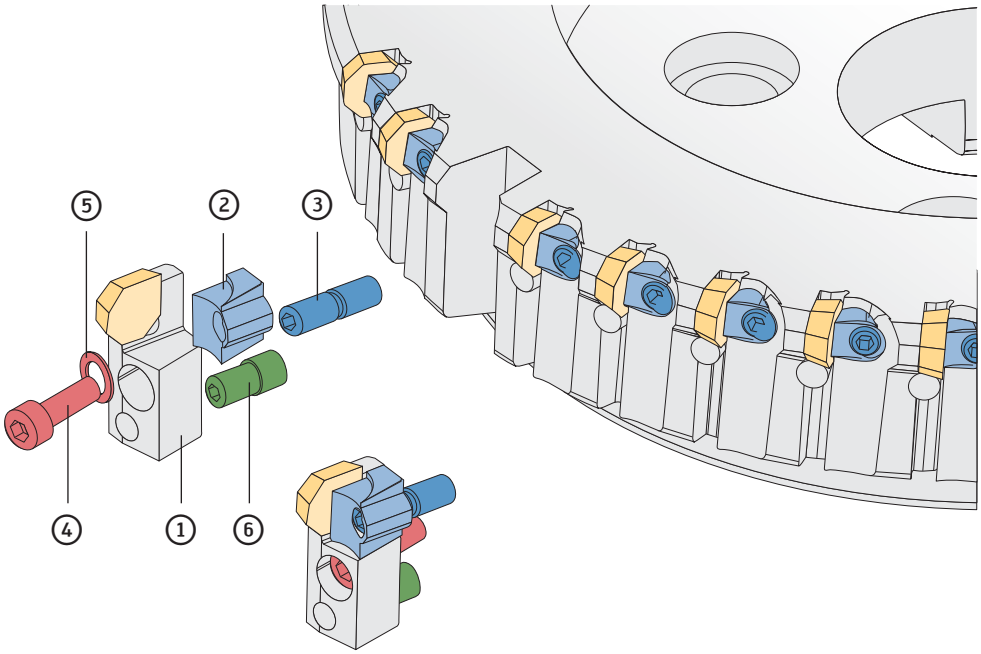
Walter milling tools

Tool	Safety-related parts	In relation to	n_{max} [rpm] with D											
			Ø 08	Ø 10	Ø 12	Ø 16	Ø 18	Ø 20	Ø 21	Ø 25	Ø 30	Ø 32	Ø 35	
M2025	ONHF . . 0504 . . P45424-1	D_c												
M2026	ONHF . . 0504 . . P45424-2	D_c												
M2131	ZDGT1504 . .	D_c								40 000		37 900		
	ZDGT2005 . .	D_c										38 100		
M3016	LNMX2010 . .	D_c												
M3024	XN . U0705 . .	D_c												
M4002	SD . . 06T2 . .	D_a						28 300		25 300		22 400		
	SD . . 09T3 . .	D_a								34 900		30 800	29 500	
	SD . . 1204 . .	D_a												
M4132	SD . . 06T2 . .	D_c				31 700		28 300		25 300				
	SD . . 09T3 . .	D_c								34 900		30 800		
	SD . . 1204 . .	D_c												
M4574	SD . . 06T2 . .	D_c	31 400	29 600	28 100	23 600								
	SD . . 09T3 . .	D_c			35 000	32 500		30 400		28 400		25 000		
	SD . . 1204 . .	D_c								20 600		18 200		
M4575	SD . . 06T2 . .	D_c							28 000	25 300				
	SD . . 09T3 . .	D_c										30 800		
	SD . . 1204 . .	D_c												
M4792	SD . . 06T204 . . LD . . 08T204 . .	D_c					14 000	12 000						
	SD . . 09T308 . . LD . . 14T308 . .	D_c								10 000	7 500	7 200		
	SD . . 120408 . . LD . . 170408 . .	D_c												
M4256	SD . . 06T204 . . LD . . 08T204 . .	D_c						34 300		29 400		25 100		
M4257	SD . . 09T308 . . LD . . 14T308 . .	D_c												
M4258	SD . . 120408 . . LD . . 170408 . .	D_c												
M3255	LNHX1206 . . XNHX1306 . .	D_c												

* Speeds higher than 40,000 rpm are possible under favourable conditions and for short projection lengths upon consultation with Walter.

Setting instructions for the runout of the F2146 close pitch cutter

① Cartridge
② Clamping wedge
③ Compound screw
④ Cap screw
⑤ Spring washer
⑥ Eccentric bolt



Runout amount

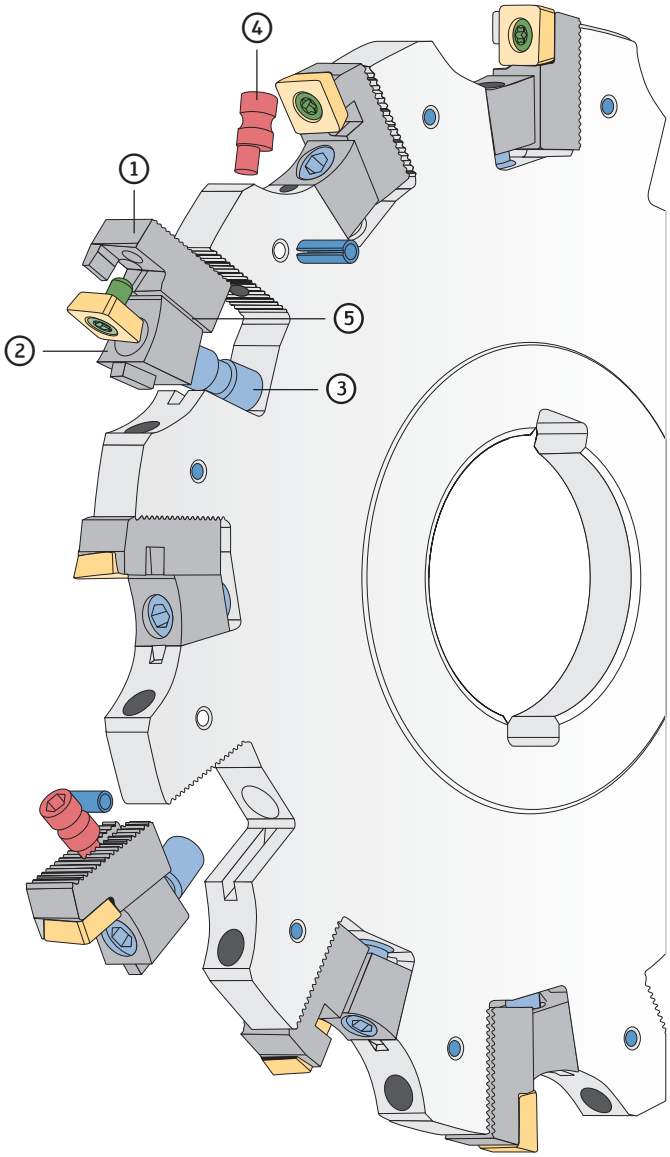
1. Loosen the clamping wedge ② using the compound screw ③ and press the indexable insert over the insert corner into the cartridge ①.
2. Apply light pressure to the clamping wedge ②.
3. Pretension the cap screws ④ until the spring washers ⑤ beneath them are flattened.
4. Set the cutting edges to installation height (remaining approx. 5 µm below the dimension) using the eccentric bolt ⑥.
5. Firmly tighten the clamping wedge ② with the compound screw ③.
6. Tighten the cap screw ④ to 8 Nm with the torque wrench.
7. Check the runout again.

Please note:
When using the roughing and wiper cutting edge combination, the wiper cutting edge must protrude by 0.03-0.04 mm. To reset the cartridge, the indexable insert must be manually pushed down.

Note:
Insert the spring washers ⑤ with the camber pointing towards the screw head.
Coat the eccentric bolt ⑥ with special copper grease (FS663).

Setting instructions for the cutting width of the F2252 slotting cutter, axially adjustable

① Cartridge
② Clamping wedge
③ Compound screw
④ Eccentric bolt
⑤ Spring washer



Cutting width adjustment

1. Undo the compound screw ③ of the clamping wedge ② and then screw it back in until the spring washer ⑤ between the clamping wedge and the front contact surface of the cartridge has built up pre-tension.
2. Set the right-hand cartridge ① with the cutting edge of the indexable insert to half the cutting width (symmetrical to the cutter body for a cross-toothed milling cutter) by turning the eccentric bolt ④.
3. Then set the left-hand cartridge ① in the same way as described under point 2 (half the cutting width for a cross-toothed milling cutters).
4. Ensure that there is sufficient tension against the eccentric bolt ④. Tighten the compound screw ③ further if necessary, i.e. increase the pre-tension via the spring washer ⑤.
5. Tighten the compound screw ③ to the prescribed torque.
6. Check the cutting width and runout again.

Note:
Coat the eccentric bolt ④ and spring washer ⑤ with special copper grease (FS663).

Setting instructions for the F2010 milling cutter

Design principle

Every milling cutter cartridge seat has a conically countersunk threaded hole in which an adjustment screw is inserted.

This screw engages in a corresponding hole in the cartridge. Screwing in the adjusting screw causes it to move, pushing the cartridge upwards in the axial direction of the milling cutter with precision down to the µm (see image).

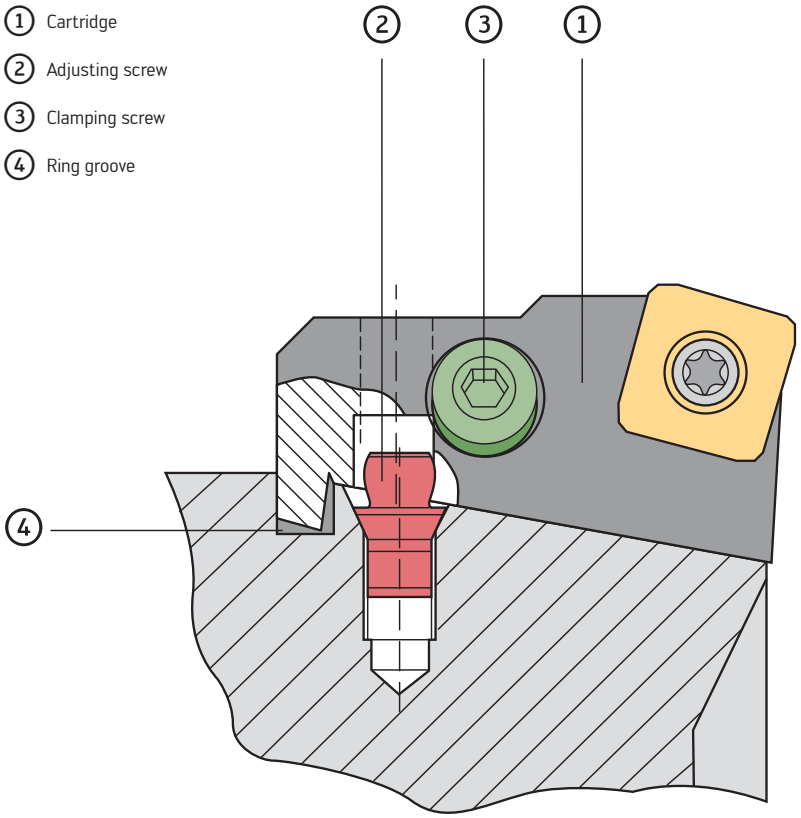


Axial fine adjustment

1. Before the cartridge ① is installed, the adjusting screw ② is screwed in so that the taper is approx. 0.3-0.5 mm above the bottom of the groove.
2. Now the cartridge is installed and the clamping screw ③ is tightened. It is important to ensure that the cartridge is in contact with the fixed stop (rear ring groove ④) and that the adjusting screw is not under load.
3. The cartridge ① can be adjusted to the required position by tightening the adjusting screw ② clockwise.

   When doing so, it is important to ensure that the pre-tension on the adjusting screw is released following adjustment with precision down to the µm. This can be achieved by unscrewing the adjusting screw anticlock-wise to release the tension on it and then screwing it back in without pre-tension.

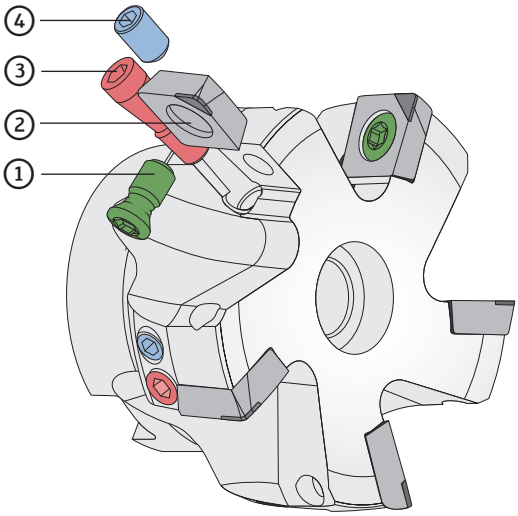
   There is approx. 0.2 mm of adjustment.
4. To reset the cartridge, the adjusting screw ② must be returned to its starting position. The cartridge ① is moved back to the axial starting position after undoing the clamping screw ③.



C 2

Setting instructions for the runout for the F2250 light alloy milling cutter

F2250 with fixed insert seat



① Clamping screw for indexable insert

② PCD indexable insert

③ Countersunk screw

④ Fine balancing screw

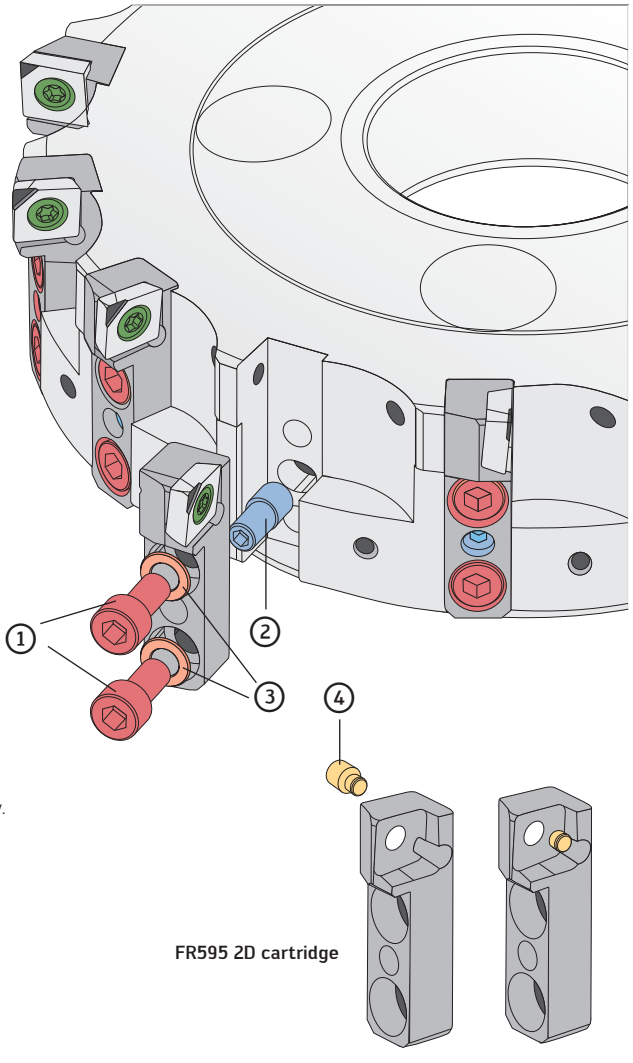
Runout amount

1. Tighten the indexable inserts ② to a torque of 5 Nm.
   The countersunk screw ③ must not yet be screwed in.
2. Then screw in the countersunk screw ③ and pre-tension the indexable insert with a maximum installation height of approx. 0.05-0.08 mm.
3. Then set all indexable inserts to the same installation height. Check the runout again.

Note:
Do not re-tighten the indexable insert clamping screw ①. Coat the countersunk screw with special copper grease (FS663).

Setting instructions for the runout and the secondary cutting edge angle for the F2250 light alloy milling cutter

F2250 in cartridge design



FR595 2D cartridge

① Cap screws

② Eccentric bolt

③ Spring washer

④ Adjusting screw

Runout amount for the 1D cartridge

1. Undo the cap screws ①.
2. Screw in the eccentric bolt ② until the cartridges are located as far back as possible.
3. Pre-tension the cap screws ① until the spring washers ③ underneath them are flattened.
4. Set the cutting edges to installation height (remaining approx. 4 µm over the dimension) using the eccentric bolt ②.
   The cartridges can be adjusted 0.2 mm back and 0.8 mm forward in relation to the nominal installation height.
5. Tighten the cap screws ① to a torque of 14 Nm using the torque wrench.
6. Check the runout again.

Setting the runout and secondary cutting edge amount for the 2D cartridge

1. The adjusting screw ④ must not protrude from the back of the cartridges.
2. The cartridges are assembled in the same way as for the 1D cartridge.
3. Fasten the indexable insert in the insert seat with a torque of 5 Nm. Ensure that the indexable insert is positioned ascending from outside to inside at the front in the body.
4. Place the adjusting screw ④ on the indexable insert and move it to the required position in small steps, taking several measurements. Pass the wrench through the cutter body from the back of the cartridge.
5. Set the runout in accordance with the 1D cartridge. When installing the SPHX1204P-DR-A88 wiper cutting edge, it must protrude 0.04 mm in front of the SPHW1204P-DR-A88 roughing insert.

Note:
Fit the spring washers ③ with the curved part pointing towards the screw head.
Coat the eccentric bolt ② and adjusting screw ④ with special copper grease (FS663).

Setting instructions for the F4253 slotting cutter

① Indexable insert

② Clamping screw for the indexable insert

③ Adjusting screw



Instructions for setting the runout amount of the F4253

If the tool is to be used with a runout amount, the adjusting screws ③ must be fitted.

1. Fit the indexable inserts ① and tighten the clamping screws ② to the recommended torque.
2. Check the runout.
3. Move the highest indexable insert approx. 0.05 mm forwards using the adjusting screw ③.
4. Bring all other indexable inserts to the same height.
5. Check the runout again.

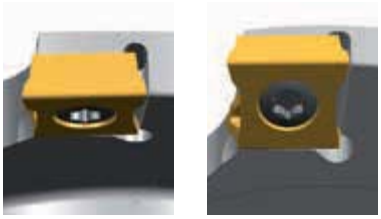
Assembly instructions for F4153 and F4253 slotting cutters

F4153 assembly instructions

Please note:
It is possible to fit the LNHU0803 . . and LNHU0804 . . indexable insert sizes incorrectly.

The indexable insert is fitted correctly if the insert seat is closed on all sides and the cutting edge tapers towards the centre of the milling cutter.

correct



incorrect



F4253 assembly instructions

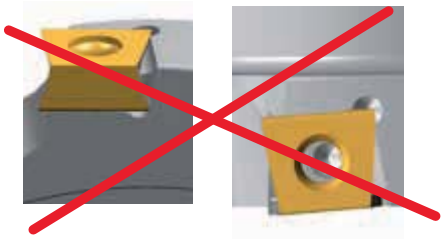
Please note:
It is possible to fit the LNHU0803 . . and LNHU0804 . . indexable insert sizes incorrectly.

The indexable insert is fitted correctly if the insert seat is closed on all sides and the cutting edge tapers towards the centre of the milling cutter.

correct



incorrect



Setting instructions for the F2254 face/shoulder milling cutter

① SNHQ1205ZZN indexable insert

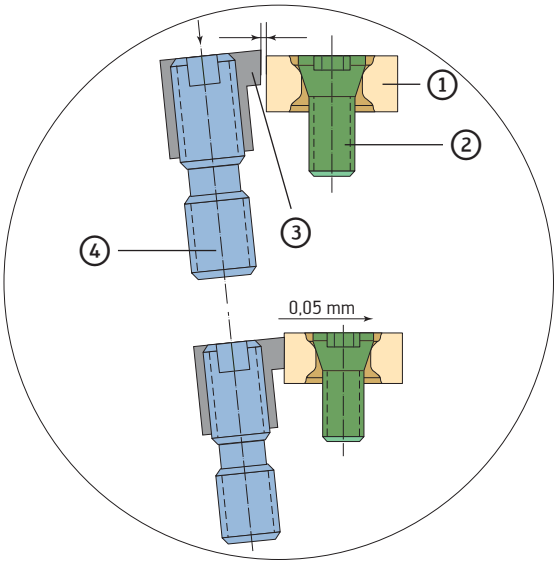
② Clamping screw for the indexable insert

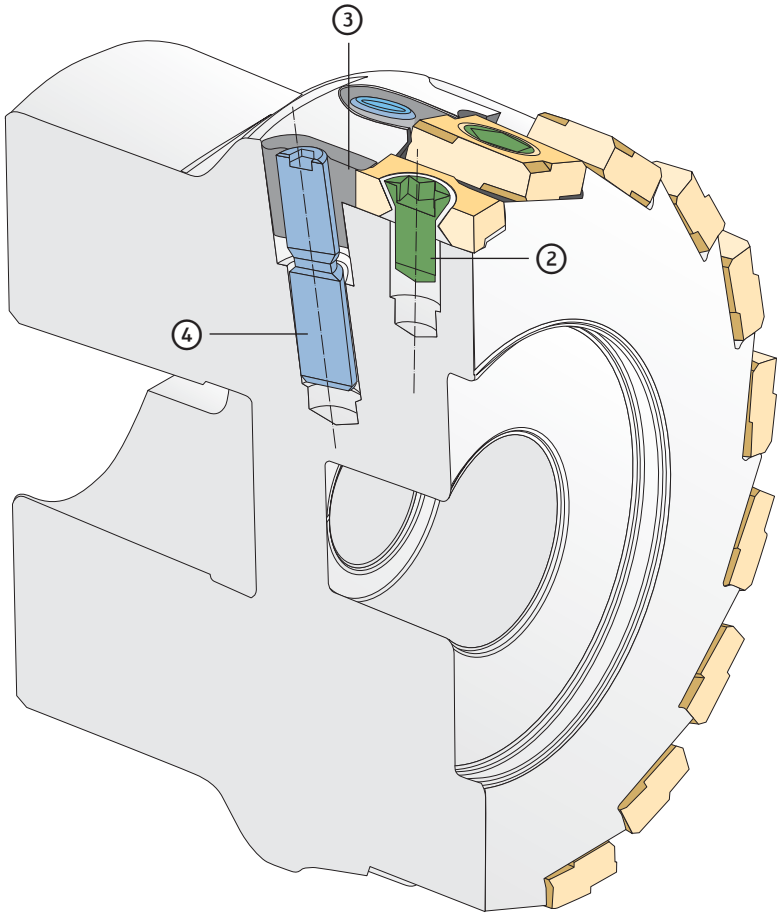
③ Installation key

④ Compound screw

Setting instructions

1. Insert the indexable insert ① into a cleaned insert seat and tighten it to M = 3 Nm using the clamping screw ②. The installation key ③ must not yet be fitted. If necessary, undo the installation key using the compound screw ④ and reinsert and tighten the indexable insert.
2. Check the runout and move the indexable insert with the highest installation height by approx. 0.05 mm using the installation key ③, then bring all other indexable inserts to the same height. Check the runout again.
3. **Do not re-tighten** the indexable insert clamping screw ②.

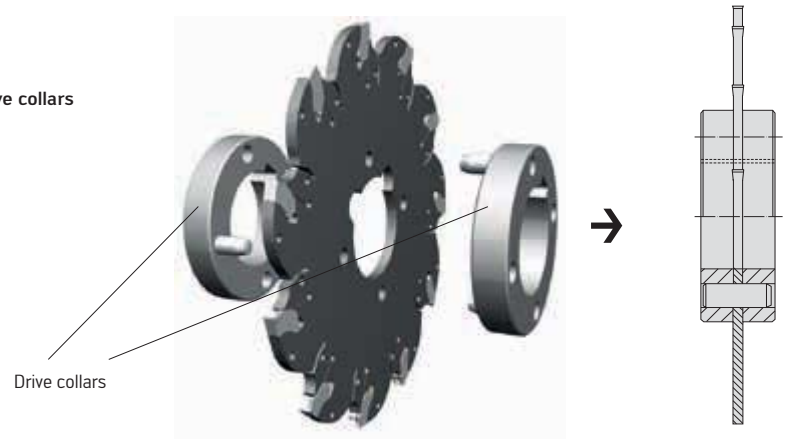




Assembly instructions for Walter BLAXX F5055 slitting cutters

F5055 slitting cutters must always be used with two drive collars or retaining washers (to be ordered separately):

Assembly with drive collars



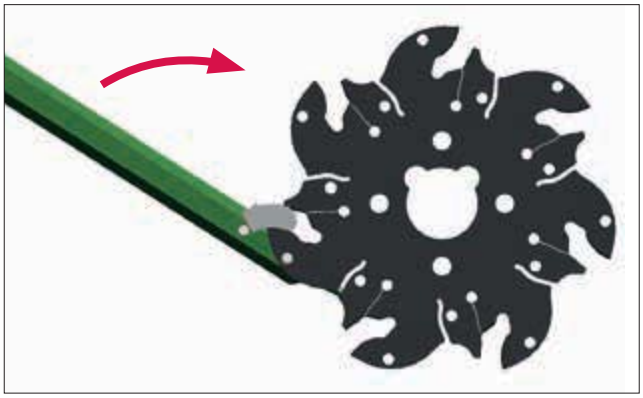
Assembly with retaining washers



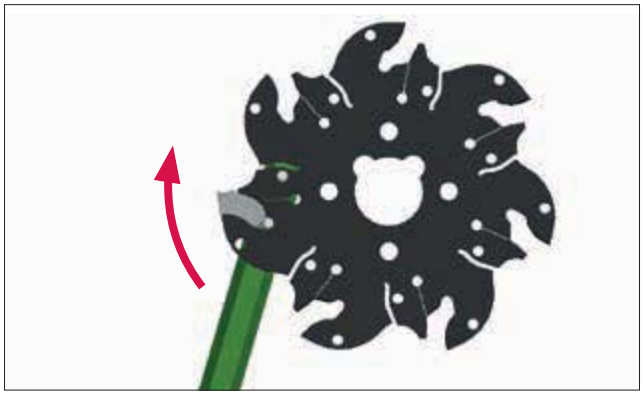
Please note:
When using retaining washers, note the a_e dimension (see page C 661).

Use of the mounting wrench:

Installing the insert



Removing the insert



Note:
Only use the mounting wrench as shown on page C 531. When mounting the indexable insert, always position the wrench in the hole below the insert.

Assembly instructions for F2238 porcupine milling cutter with front piece

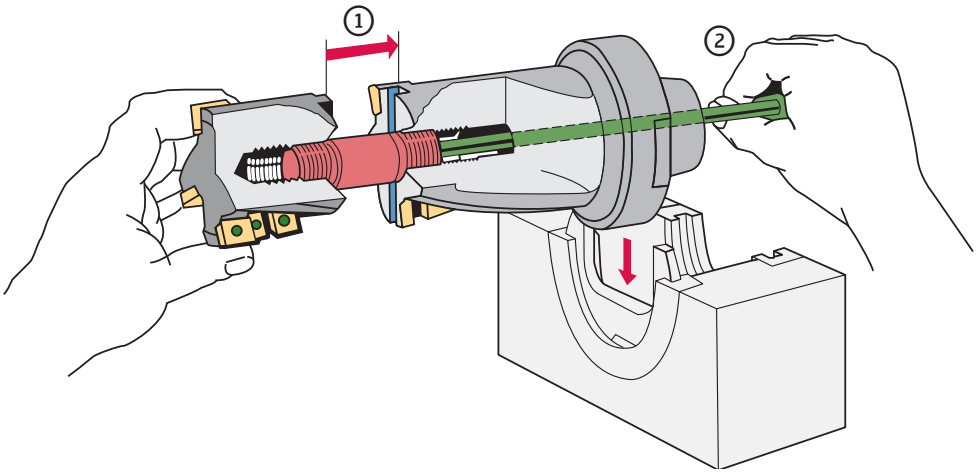
→ Place the steep taper tool in the assembly block

→ Place the tool with NCT cut-off area and insert collar in the assembly block

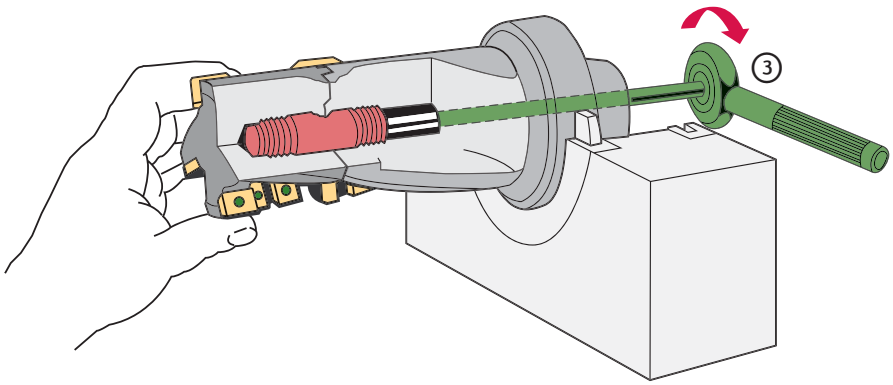
① Place the pull stud in the basic body (with the hexagon socket facing towards the basic body).

Then fit the front piece and align the drive dog in the front piece with the drive slot in the basic body. Hold the front piece in position.

② Using the socket wrench, tighten the pull stud by **turning anticlockwise** until the front piece is seated against the basic body.



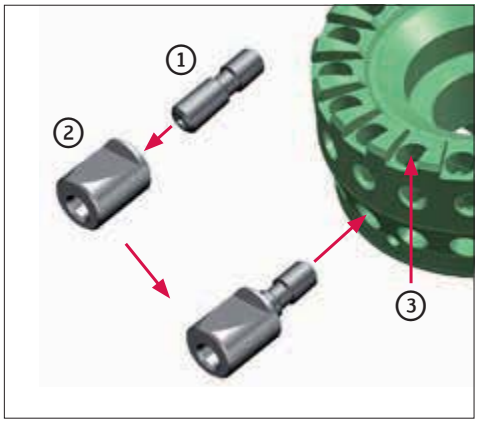
③ Tighten the tightening screw to the specified torque by turning anticlockwise.



Assembly instructions for F4050

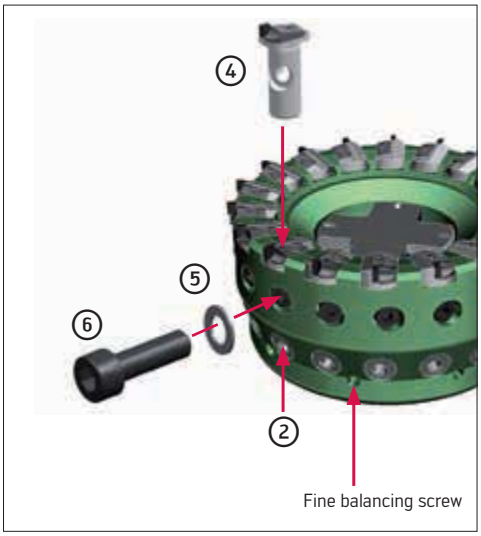
Fitting the adjustment unit

Screw the compound screw ① approx. 1-2 threads deep into the adjusting key ②.
Then fit the adjusting key ② in the body.
Screw in as far as the stop.
If it is stiff to fit, the key must be held in position in the cartridge locating bore ③ using a pin.



Fitting the cartridges

Insert the cartridge ④ into the cartridge locating bore ③ from above.
Then reset the clamping wedge ② as far as the outer stop, while pressing the cartridge ④ downwards.
Now fit the cartridge clamping screw ⑥ with the Schnorr washer ⑤.



Setting instructions for F4050

Requirements

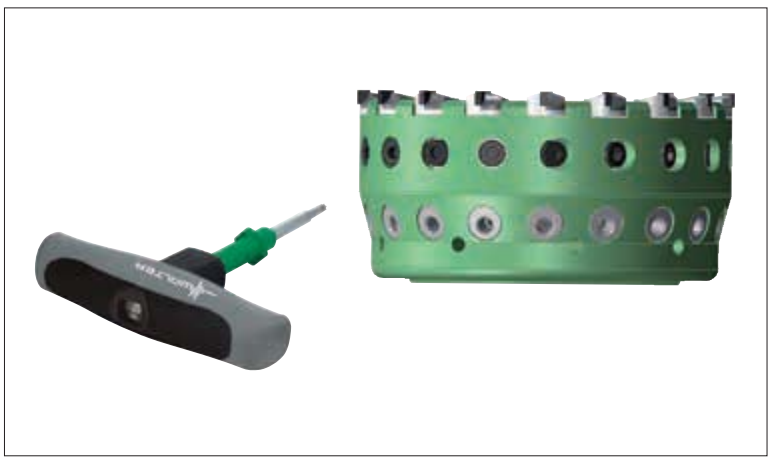
You can set the runout using optical or touch-sensitive measuring devices.
For touch-sensitive measuring devices, a probe fitted with a flattened shoe and having a low measuring force should be used. When using optical measuring devices, check for dirt deposits on the cutting edge. To enable setting to be carried out, all cartridge clamping screws ⑥ must be tightened to a torque of 3 Nm. All adjusting keys ② must be reset to the outer stop.

Setting the runout

The highest cutting edge is the starting point for setting the runout. This should be set to the nominal installation height. All other cutting edges must be set to this height. The cutting edge height can be adjusted using the adjusting key ②. If the cutting edge has been set too high, the cartridge clamping screw ⑥ must be loosened, the adjusting key ② must be turned back and the cartridge must be pressed back down.
Once the cartridge clamping screw ⑥ has been tightened again, the cutting edge can be set.

Once all cartridges are at the same height, all cartridge clamping screws ⑥ must be tightened to a torque of 8 Nm. The clamping wedges ② must be released and then reapplied lightly. Then check the runout again (the runout should be within 5 µm).

When using a wiper finishing cartridge, this should protrude 0.03-0.05 mm axially in relation to the roughing cartridges.



Safety information for the M2131 ramping milling cutter

When using the M2131, the following information must be observed:
Always tighten the indexable insert screws using a torque wrench.
For the tightening torque, see the table on page C 657.
Do not apply lubricant to indexable insert screws.
The indexable insert screws must be replaced after the indexable insert has been replaced five times.
The indexable insert must be in contact with the insert seat across the whole surface (see figures).
Check to ensure that the concentricity and balance status of the adaptor are adequate (see DIN 69888).

Apply pressure to the rear part of the indexable insert when tightening



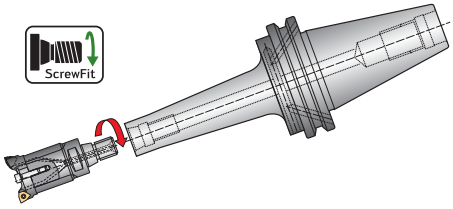
Check with 0.01 mm spacer



The spacer must **not** be able to fit between the indexable insert and insert seat.

Tightening torques

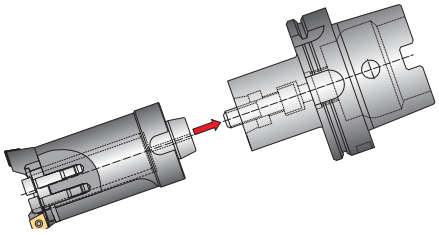
Tightening torques for front pieces with modular ScrewFit interface



Interface	Thread	Tightening torque	Wrench size	Torque wrench	Fork head
T9	M5	6 Nm	8 mm	FS1384	FS1387
T14	M8	25 Nm	12 mm	FS1385	FS1388
T18	M10	50 Nm	14 mm	FS1385	FS1389
T22	M12	80 Nm	17 mm	FS1386	FS1390
T28	M16	150 Nm	21 mm	FS1386	FS1391
T36	M20	200 Nm	30 mm	FS1386	FS1392
T45	M20	200 Nm	36 mm	FS1386	FS1393*

* Use FS1394 adaptor

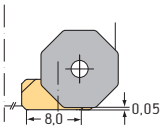
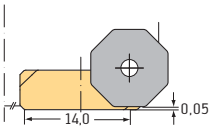
Tightening torques for tools with modular NCT interface



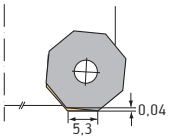
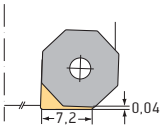
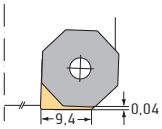
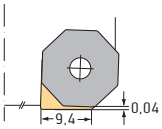
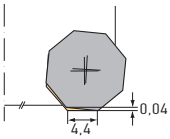
Interface	Thread	Tightening torque	⬡ ↕	Torque wrench	Socket wrench	Limit speed
NCT 25	M8	18 Nm	5	FS1385	FS402	20 000 min^{-1}
NCT 32	M8	18 Nm	5	FS1385	FS402	30 000 min^{-1}
NCT 40	M12	80 Nm	8	FS1386	FS403	30 000 min^{-1}
NCT 50	M12	80 Nm	8	FS1386	FS403	30 000 min^{-1}
NCT 63	M16	150 Nm	12	FS1386	FS404	30 000 min^{-1}
NCT 80	M20	200 Nm	14	FS1386	FS405	30 000 min^{-1}

Roughing/finishing insert combinations on Walter milling tools

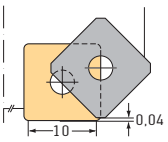
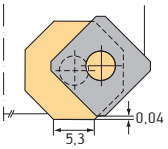
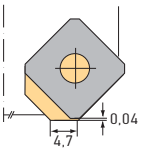
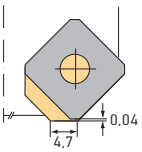
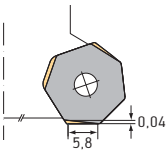
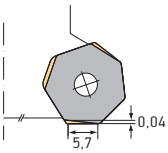
κ = 42°

	Roughing	Finishing
M2025 	Indexable insert ONHF050408-F67	Indexable insert P45424-1-G67
M2026 	Indexable insert ONHF050408-F67	Indexable insert P45424-2-G67

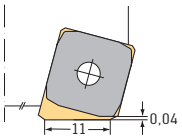
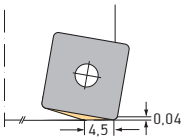
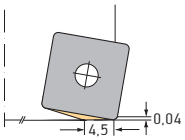
κ = 43°

	Roughing	Finishing
F2010 	Indexable insert OD . . 0605 . . Cartridge FR592M	Indexable insert ODHX0605ZZN Cartridge FR681M
F4080 	Indexable insert ODH . 0504ZZN	Indexable insert ODHX0504ZZR
F4080 	Indexable insert ODH . 0605ZZN	Indexable insert ODHX0605ZZR
F2010 	Indexable insert ODH . 0605 . . Cartridge FR592M	Indexable insert ODHX0605ZZR Cartridge FR592M
F2146 	Indexable insert OP . . 0504 . .	Indexable insert OPHX0504ZZN Cartridge FR683

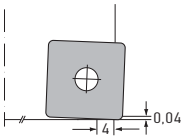
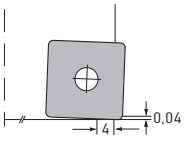
κ = 45°

	Roughing	Finishing
F2010 	Indexable insert SP . . 1204A . . FR495M cartridge	Indexable insert P2905 – grade 1 FR448M cartridge
F2010 	Indexable insert SN . . 1205ANN FR720M cartridge	Indexable insert ODHX0605ZZN FR681M cartridge
F2010 	Indexable insert SNGX1205ANN-F57/-F67 FR720M cartridge	Indexable insert XNGX1205ANN-F67 FR730M cartridge
F4033 	Indexable insert SNGX1205ANN-F57/-F67	Indexable insert XNGX1205ANN-F67
F4045 	Indexable insert XNHF070508	Indexable insert XNHX0705ANN-D67
M3024 	Indexable insert XNGU0705ANN-F57/F67	Indexable insert XNGX0705ANN-F67

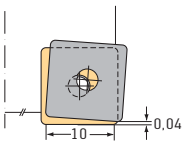
κ = 75°

	Roughing	Finishing
F2010 	Indexable insert SP . . 1204EDR Cartridge FR441M	Indexable insert P2901 – grade 1 FR441M cartridge
F2010 	Indexable insert SNGX1205ENN-F57/-F67 FR727 cartridge	Indexable insert XNGX1205ENN-F67 FR727 cartridge
F4047 	Indexable insert SNGX1205ENN-F57/-F67	Indexable insert XNGX1205ENN-F67

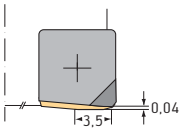
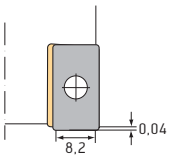
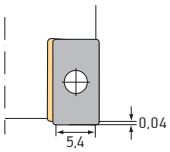
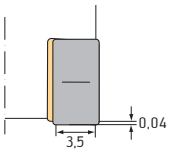
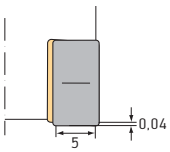
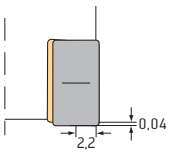
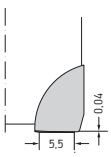
κ = 88°

	Roughing	Finishing
F2010 	Indexable insert SNGX1205ZNN-F57/-F67 FR728M cartridge	Indexable insert XNGX1205ZNN-F67 FR728M cartridge
F4048 	Indexable insert SNGX1205ZNN-F57/-F67	Indexable insert XNGX1205ZNN-F67

κ = 89°45'

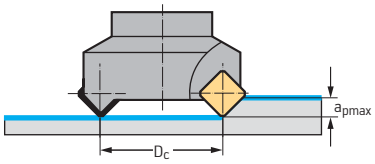
	Roughing	Finishing
F2010 	Indexable insert SP . . 120408 Cartridge FR445M	Indexable insert P2905 – grade 1 Cartridge FR448M

κ = 90°

	Roughing	Finishing
F2250 PKD 	Indexable insert SPHW1204PDR Cartridge FR 594	Indexable insert SPHX1204PDR Cartridge FR 595
F4042 	Indexable insert ADGT1606PER-D67/ -F56/-G77	Indexable insert ADGX1606PER-F56
F4042R 	Indexable insert ADGT10T3PER-D67/-G77	Indexable insert ADGX10T3PER-F56
F5041 	Indexable insert LNHU0904 . . R-L55T/L65T	Indexable insert LNHX0904PDR-L55T
F5141 	Indexable insert LNHU1306 . . R-L55T/L65T	Indexable insert LNHX1306PDR-L55T
F5141 	Indexable insert LNHU1306 . . R-L55T/L65T	Indexable insert LNHX130608R-L55T
F4050 PKD 	Cartridge FR734 WCD10	Cartridge FR735 WCD10

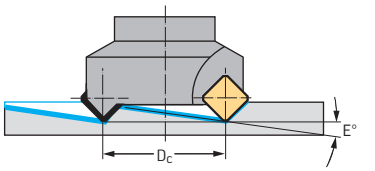
Application information for F2233 face milling cutters

Face milling



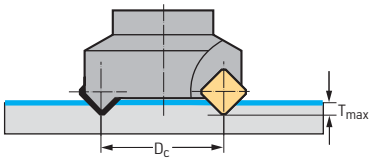
	Max. milling depth a_p [mm]	
	SD . . 09T3 . .	SP . . 1204 . .
a_p	5,0	7,0

Ramping



	Maximum feed angle E [°]			
D_c [mm]	SD . . 09T3 . .	D_c [mm]	SD . . 09T3 . .	SP . . 1204 . .
20	23,4	63	5,2	not suitable for plunging
25	16,8	80	4,0	
32	12,0	100	3,1	
40	9,0	125	2,4	
50	6,8	160	1,9	

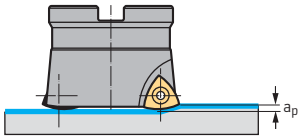
Vertical plunging



	Max. plunging depth T_{max} [mm]	
	SD . . 09T3 . .	SP . . 1204 . .
T_{max}	5,0	not suitable for plunging

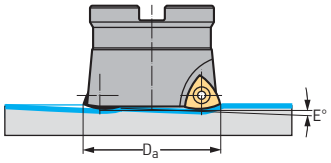
Application information for F2330/F2010 high-feed face milling cutters

Face milling



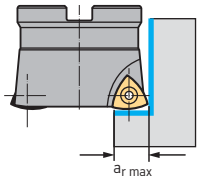
	Max. milling depth a_p [mm]		
	P2633 . – R10 P26379 – R10	P2633 . – R14 P26379 – R14	P2633 . – R25 P26379 – R25
$a_{p\,max}$	1	1,5	2

Ramping



	Maximum feed angle E [°]			
D_a [mm]	P2633 . – R10 P26379 – R10 (F2330)	P2633 . – R14 P26379 – R14	P2633 . – R25 P26379 – R25	P2633 . – R25 P26379 – R25 (F2010 . . . R729M)
20	4,0			
25	2,3			
32		2,5		
35		2,0		
40		1,5		
42		1,4		
52		1,2	2,3	
66		0,9	1,4	
85		0,6	1,0	
87				1,12
107				0,84
132				0,63
167				0,47
207				0,36
257				0,28
322				0,22

Plunge milling

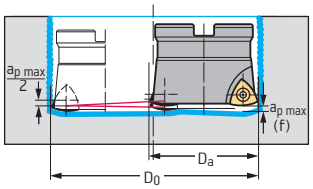


	Maximum plunging depth a_r [mm]		
	P2633 . – R10 P26379 – R10	P2633 . – R14 P26379 – R14	P2633 . – R25 P26379 – R25
$a_{r\,max}$	7	10,3	15

Application information for F2330/F2010 high-feed face milling cutters

(continued)

Circular interpolation of a hole into solid material

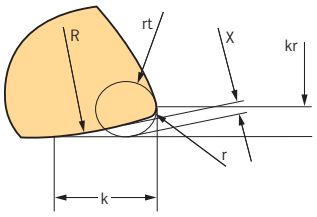


Diameter range for milling a hole in one pass [mm]

	Indexable insert					
	P2633 . – R10 P26379 – R10*		P2633 . – R14 P26379 – R14*		P2633 . – R25 P26379 – R25*	
D_a [mm]	$D_{0\,min}$ [mm]	$D_{0\,min}$ [mm]	$D_{0\,min}$ [mm]	$D_{0\,min}$ [mm]	$D_{0\,min}$ [mm]	$D_{0\,min}$ [mm]
20	24,2	40				
25	34,2	50				
32			41,8	64		
35			47,8	70		
40			57,8	80		
42			61,8	84		
50			77,8	100	67,8	100
52			81,8	104	70,4	102,6
63			103,8	126	93,8	126
66			109,8	132	98,4	130,6
80			137,8	160	127,8	160
85			147,8	170	136,4	168,6

* Special geometry for circular interpolation milling (see geometry description on page C 615).

Programming information

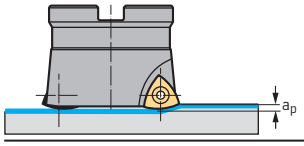


Indexable insert	R [mm]	r [mm]	rt [mm]	k [mm]	kr [mm]	X [mm]
P2633 . – R10	10,0	0,8	2,0	4,0	1,8	0,5
P2633 . – R14	14,0	1,2	2,5	5,5	2,6	0,8
P2633 . – R25	25,0	2,0	3,0	8,0	3,4	0,9
P26379 – R10	10,0	0,4	1,5	4,8	1,5	0,63
P26379 – R14	14,0	0,4	2,2	7,2	2,2	0,91
P26379 – R25	25,0	0,4	2,8	9,6	2,8	1,05

Programming the theoretical tool radius' "rt" results in a maximum deviation from the final contour as shown. The minimum difference (only in the corners) is corrected by the subsequent tools for the remaining machining operations.

Application information for F4030/F2010 high-feed face milling cutters

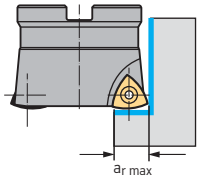
Face milling



Max. milling depth a_p [mm]

	P23696–1.0	P23696–2.0
$a_{p\,max}$	1,0	2,0

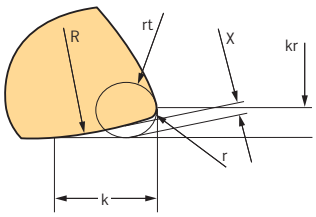
Plunge milling



Maximum plunging depth a_r [mm]

D_a [mm]	P23696–1.0	P23696–2.0
25	6	
32	7	
35	7	
40	7	
42	7	9,5
50	7	10
52	7	10
63	7	10
66		10
80		10
85		10
100		10

Programming information

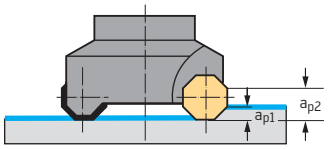


Indexable insert	R [mm]	r [mm]	rt [mm]	k [mm]	kr [mm]	X [mm]
P23696 – R 1.0	14	1,2	2,0	5,8	2,1	0,6
P23696 – R 2.0	18	1,6	3,5	9,2	3,5	1,1

Programming the theoretical tool radius' "rt" results in a maximum deviation from the final contour as shown. The minimum difference (only in the corners) is corrected by the subsequent tools for the remaining machining operations.

Application information for F4080/F2010 octagon face milling cutters

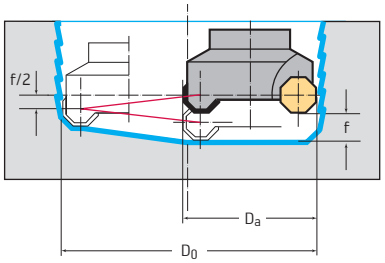
Face milling



	Max. milling depth a_p [mm]	
	OD . . 0504 . .	OD . . 0605 . .
a_{p1}	3	4
a_{p2}	8	10

Circular interpolation of a hole into solid material

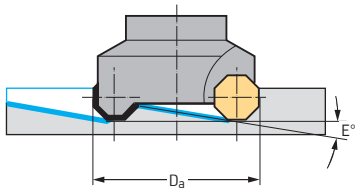
F4080



Diameter range for milling a hole in one pass [mm]

	Indexable insert					
	OD . . 0504 . .			OD . . 0605 . .		
D_a [mm]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	f_{max} [mm]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	f_{max} [mm]
32	40,4	64	4,5			
40	56,4	80	4,5			
50	76,4	100	4,5	69,5	100	5,8
52	80,4	104	4,5	73,5	104	5,8
58	92,4	116	4,5			
60				89,5	120	5,8
63	102,4	126	4,5	95,5	126	5,8
66	108,4	132	4,5	101,5	132	5,8
71	118,4	142	4,5			
73				115,5	146	5,8
80	136,4	160	4,5	129,5	160	5,8
88	152,4	176	4,5			
90				149,5	180	5,8
100	176,4	200	4,5	169,5	200	5,8
108	192,4	216	4,5			
110				189,5	220	5,8
125	226,4	250	4,5	219,5	250	5,8
133	242,4	266	4,5			
135				239,5	270	5,8
160				289,5	320	5,8
170				309,5	340	5,8

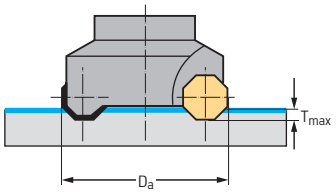
Ramping



Maximum feed angle E [°]

D_a [mm]	OD . . 0504 . . (F4080)	OD . . 0605 . . (F4080)	D_a [mm]	OD . . 050408	OD . . 0605 . . (F4080)	OD . . 0605 . . (F2010 . . R592M)
32	14,0		90		4,0	0,40
36	10,6		100	2,0	3,1	
40	8,3		108	2,0		
50	5,5	9,6	110		3,1	0,31
52	5,1	8,9	125	1,5	2,3	
58	4,6		133	1,5		
60		7,7	135		2,3	0,25
63	3,8	6,2	160		1,7	
66	3,5	5,8	170		1,7	0,19
71	3,2		210			0,15
73		5,4	260			0,12
80	2,7	4,3	325			0,09
88	2,4					

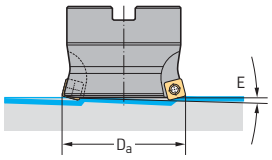
Vertical plunging



	Max. plunging depth T_{max} [mm]	
	OD . . 0504 . .	OD . . 0605 . .
T_{max}	2,8	4,0

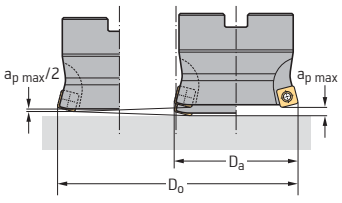
Application information for M4002 high-feed face milling cutters

Ramping



	Maximum plunging depth E [°]		
D_a [mm]	SD . . 06T204 . . .	SD . . 09T308 . . .	SD . . 120408 . . .
20	5,5		
25	3,8	9,0	
32	2,3	4,8	
35	2,1	4,4	
40	1,6	3,0	
42	1,5	2,8	
50	1,3	2,0	2,8
52	1,25	1,8	2,6
63	0,9	1,6	2,0
66	0,9	1,4	1,7
80			1,3
85			1,2
100			0,9
125			0,7

Circular interpolation milling of a hole into solid material

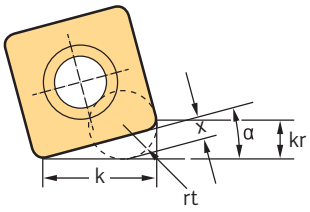


	Diameter range for milling a hole in one pass [mm]					
	Indexable insert					
	SD . . 06T204		SD . . 09T308		SD . . 120408	
D_a [mm]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]
20	28,6	40				
25	38,6	50	33,26	50		
32	52,6	64	47,26	64		
35	58,6	70	53,26	70		
40	68,6	80	63,26	80		
42	72,6	84	67,26	84		
50	88,6	100	83,26	100	77,12	100
52	92,6	104	87,26	104	81,12	104
63	114,6	126	109,26	126	103,12	126
66	120,6	132	115,26	132	109,12	132
80					137,12	160
85					147,12	170
100					177,12	200
125					227,12	250

Application information for M4002 high-feed face milling cutters

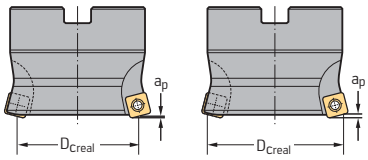
(continued)

Programming information



Indexable insert	α [°]	rt [mm]	x [mm]	kr [mm]	k [mm]
SD . . 06T212	15	2,1	0,68	2,2	4,86
SD . . 06T2ZDR	15	1,3	0,72	2,63	4,29
SD . . 06T204	15	1,7	1	1,83	5,7
SD . . 09T320	15	3,3	0,94	3,41	7,07
SD . . 09T3ZDR	15	2,4	1,09	3,65	6,9
SD . . 09T308	15	2,7	1,43	2,83	8,37
SD . . 120425	15	4,3	1,32	4,46	9,61
SD . . 1204ZDR	15	3,1	1,58	4,85	9,31
SD . . 120408	15	3,5	2,02	3,65	11,44

Increase in productivity

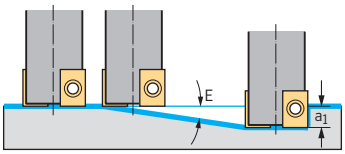


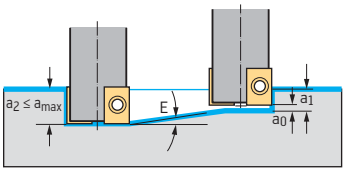
$D_{c\,real} \approx D_c + 8 \cdot a_p$

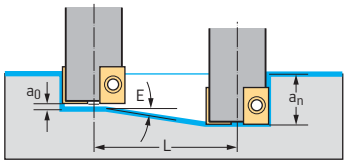
– In order to achieve an increase in productivity, it is recommended to use the $D_{c\,real}$ when calculating the cutting data.
– The $D_{c\,real}$ depends on the depth of cut a_p (see figure).

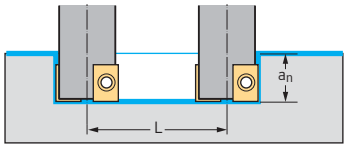
Application information for F4042/F4042R shoulder milling cutters

Ramping and circular plunging into solid material









Plunging with F4042/F4042R shoulder milling cutters

Milling cutter diameter D_c [mm]	AD . . 080304 $a_{p\,max}$ = 8 mm				AD . . 10T308 $a_{p\,max}$ = 10 mm			
	Plunging angle E_{max} [°]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	a_0 [mm]	Plunging angle E_{max} [°]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	a_0 [mm]
10	12,1	15	20	0,75				
12	9,9	17	24	0,8				
16	13,7	21	32	2,0	6,6	20	32	0,9
18	6,95	25	36	2,0				
20	8,9	29	40	1,9	2,9	28	40	0,6
22	4,76	33	44	1,7				
25	5,6	39	50	1,7	2	38	50	0,6
32	3,8	53	64	1,6	1,4	52	64	0,6
40	2,8	69	80	1,6	1,1	68	80	0,6
50	2,2	89	100	1,6	0,8	88	100	0,6
63					0,6	114	126	0,6

Plunging with F4042 shoulder milling cutter

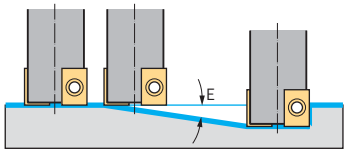
Milling cutter diameter D_c [mm]	AD . . 120408 $a_{p\,max}$ = 11 mm				AD . . 160608 $a_{p\,max}$ = 15 mm			
	Plunging angle E_{max} [°]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	a_0 [mm]	Plunging angle E_{max} [°]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	a_0 [mm]
22	7,4	30	44	2,6				
25	8,5	36	50	2,3	8,5	32	50	1,7
32	5,6	50	64	2,2	7,5	46	64	3,2
36					7,0	54	72	3,2
40	3,9	66	80	2,1	5,9	62	80	2,9
44					4,5	70	88	2,9
50	2,7	86	100	1,9	3,9	82	100	2,6
54					2,7	90	108	2,6
63	2,0	112	126	1,9	2,6	108	126	2,3
66					1,8	114	132	2,3
80	1,5	146	160	1,9	1,9	142	160	2,3
84					1,6	150	168	2,3
100					1,5	182	200	2,3
125					1,2	232	250	2,3
160					0,9	302	320	2,3

Plunging with F4042 shoulder milling cutter

Milling cutter diameter D_c [mm]	AD . . 180712 $a_{p\,max}$ = 16 mm			
	Plunging angle E_{max} [°]	$D_{0\,min}$ [mm]	$D_{0\,max}$ [mm]	a_0 [mm]
50	2,9	74	100	1,7
63	2,1	100	126	1,7
80	1,5	134	160	1,7
100	1,2	174	200	1,7
125	0,9	224	250	1,7
160	0,7	294	320	1,7

Application information for F4042/F4042R/F2010 shoulder milling cutters

(continued)



Maximum feed angle E [°] for F2010

D_c [mm]	AD . . 1204 . . (F2010 . . R718M)	AD . . 1606 . . (F2010 . . R719M)
80	0,65	0,75
100	0,51	0,58
125	0,40	0,46
160	0,31	0,35
200	0,25	0,28
250	0,19	0,22
315	0,15	0,17

Groove depth after two plunging operations:

$$a_2 = 2 \cdot L \cdot \tan E - a_0$$

Groove depth after ramping:

$$a_n = n \cdot L \cdot \tan E - (n-1) \cdot a_0$$

Number of inclined plunging operations:

$$n = \frac{(a_n - a_0)}{(L \cdot \tan E_{max} - a_0)}$$

Feed angle:

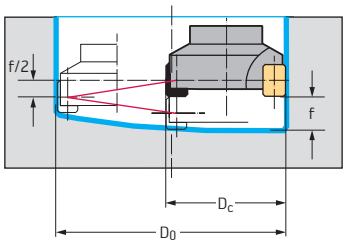
$$\tan E = \frac{[a_n + (n-1) \cdot a_0]}{(n \cdot L)}$$

Explanation of abbreviations:

a_0	[mm]	Amount by which the tool must be lifted at the end of plunging before starting the next plunging operation
a_n	[mm]	Groove depth
a_{max}	[mm]	Max. tool milling depth
E	[°]	Feed angle
L	[mm]	Groove length without radius
n		Number of inclined plunging operations

Application information for F4042/F4042R shoulder milling cutters

Circular interpolation



Max. axial feed per tool revolution ("thread pitch") f [mm]

machined hole diameter D_0 [mm]	AD . . 080304 D_c [mm]										AD . . 10T308 D_c [mm]										
	10	12	16	18	20	22	25	32	40	50	16	20	25	32	40	50	63				
15	3,4																				
20	6,7	4,4									1,5										
30	8,0	8,0	8,0	4,4	4,9						5,1	1,6									
40	8,0	8,0	8,0	8,0	8,0	4,6	4,7				8,7	3,2	1,6								
50	8,0	8,0	8,0	8,0	8,0	7,2	7,8				10,0	4,8	2,7								
60	8,0	8,0	8,0	8,0	8,0	8,0	8,0	5,8			10,0	6,4	3,8	2,1							
80	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	6,2		10,0	9,5	6,0	3,7	2,4						
100	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	6,0	10,0	10,0	8,2	5,2	3,6	2,2					
120	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	10,0	10,0	10,0	6,8	4,8	3,1	1,9				
150	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	10,0	10,0	10,0	9,1	6,6	4,4	2,9				
180	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	10,0	10,0	10,0	10,0	8,4	5,7	3,8				
200	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	10,0	10,0	10,0	10,0	9,7	6,6	4,5				
250	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	10,0	10,0	10,0	10,0	10,0	8,8	6,2				

Max. axial feed per tool revolution ("thread pitch") f [mm]

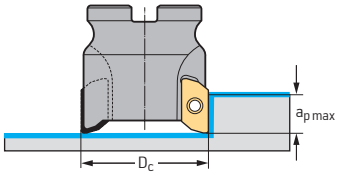
machined hole diameter D_0 [mm]	AD . . 120408 D_c [mm]							AD . . 160608 D_c [mm]													
	22	25	32	40	50	63	80	25	32	36	40	44	50	54	63	66	80	84	100	125	160
32								3,4													
40	7,2	7,0						7,2													
50	11,3	11,0	5,5					11,5	7,6												
60	11,7	11,0	8,6					15,0	11,7	9,4											
80	11,7	11,0	11,0	8,7				15,0	15,0	15,0	13,1	9,1									
100	11,7	11,0	11,0	11,0	7,4			15,0	15,0	15,0	15,0	14,0	10,8	7,0							
120	11,7	11,0	11,0	11,0	10,3	6,4		15,0	15,0	15,0	15,0	15,0	15,0	9,9	8,1	5,5					
150	11,7	11,0	11,0	11,0	11,0	9,7	6,4	15,0	15,0	15,0	15,0	15,0	15,0	14,4	12,4	8,4	7,5	5,9			
180	11,7	11,0	11,0	11,0	11,0	11,0	5,9	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	11,4	10,7	8,6			
200	11,7	11,0	11,0	11,0	11,0	11,0	8,5	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	13,4	12,8	10,3	8,2		
250	11,7	11,0	11,0	11,0	11,0	11,0	10,2	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	14,7	12,3	8,0	
300	11,7	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	11,2	
350	11,7	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	14,4	9,3
400	11,7	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	11,7
450	11,7	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	14,2
500	11,7	11,0	11,0	11,0	11,0	11,0	11,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0

Max. axial feed per tool revolution ("thread pitch") f [mm]

machined drilled hole diameter D_0 [mm]	AD . . 180712 D_c [mm]					
	50	63	80	100	125	160
80	4,8					
100	7,9	4,2				
120	11,1	6,5				
150	15,9	10,0	5,9			
180	16,0	13,4	8,4			
200	16,0	15,7	10,1	5,1		
250	16,0	16,0	14,3	6,4	6,1	
300	16,0	16,0	16,0	9,6	8,6	5,2
350	16,0	16,0	16,0	12,8	11,1	7,1
400	16,0	16,0	16,0	16,0	13,5	8,9
450	16,0	16,0	16,0	16,0	16,0	10,8
500	16,0	16,0	16,0	16,0	16,0	12,6

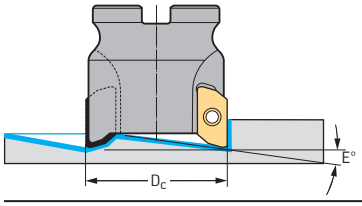
Application information for M2131 ramping milling cutters

Shoulder milling



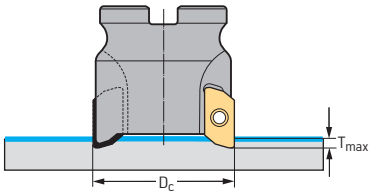
Corner radius [mm]	Max. milling depth a_p [mm] ZD . . 1504 . .	ZD . . 2005 . .
0,4	16,0	21,3
0,8	16,0	21,3
1,2	15,9	21,2
1,6	15,8	21,0
2,0	15,7	20,9
2,5	15,5	20,8
3,0	15,4	20,6
4,0	15,1	20,3
5,0		20,0
6,0		19,8
6,4		19,7

Ramping



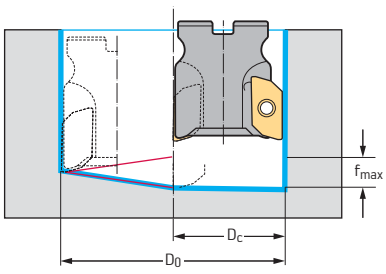
D_c [mm]	Maximum feed angle E [°] ZD . . 1504 . .	ZD . . 2005 . .
25	16	
32	11	16
40	7	12
50	5	8
63	4	6
80	2	

Vertical plunging



Corner radius [mm]	Max. plunging depth T_{max} [mm] ZD . . 1504 . .	ZD . . 2005 . .
0,4	4,5	6,0
0,8	4,5	6,0
1,2	4,4	5,9
1,6	4,2	5,7
2,0	4,1	5,6
2,5	4,0	5,5
3,0	3,8	5,3
4,0	3,5	5,0
5,0		4,7
6,0		4,5
6,4		4,4

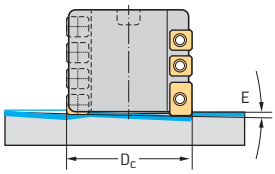
Circular interpolation of a hole into solid material



Milling cutter diameter D_c [mm]	Possible hole diameters and axial feeds ZDGT1504 $D_{0\,min}$ [mm]	ZDGT1504 $D_{0\,max}$ [mm]	ZDGT1504 f_{max} [mm]	ZDGT2005 $D_{0\,min}$ [mm]	ZDGT2005 $D_{0\,max}$ [mm]	ZDGT2005 f_{max} [mm]
25	31	50	5,4			
32	45	64	7,9	38	64	5,4
40	61	80	8,1	54	80	9,3
50	81	100	8,5	74	100	10,6
63	107	126	9,7	100	126	12,2
80	141	160	6,5			

Application information for M4256/M4257/M4258 porcupine milling cutters

Ramping

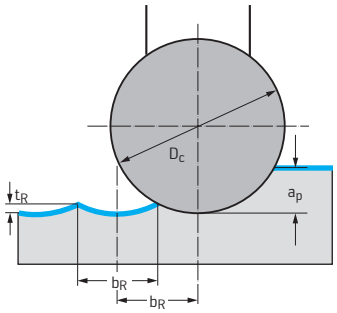


Maximum feed angle E [°]

D_c [mm]	SD . . 06T2 . . LD . . 08T2 . .	SD . . 09T3 . . LD . . 14T3 . .	SD . . 1204 . . LD . . 1704 . .
20	1		
25	2		
32	1,5		
40		1,4	
50		1	
63		0,5	
80			0,5
100			0,4

Application information for F2139/F2239/F2339 ball nose cutters

Line-by-line milling



Groove depth:

$$t_R = 0.5 \cdot \left(D_c - \sqrt{D_c^2 - b_R^2}\right)$$

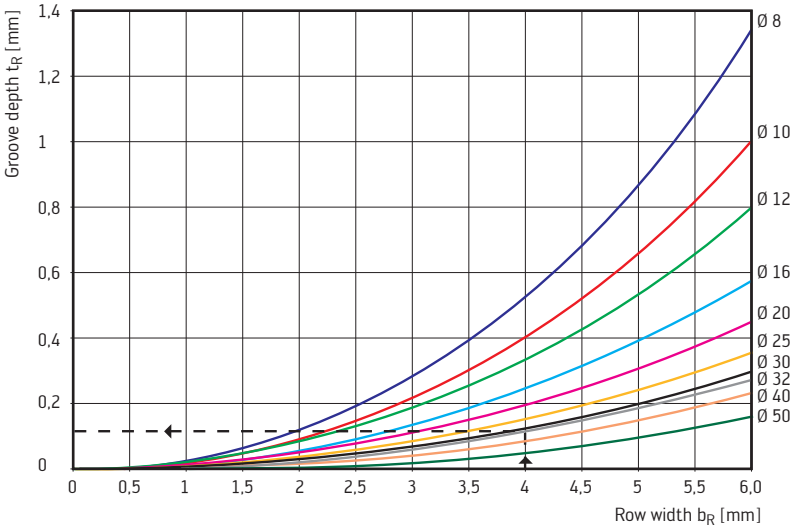
0.3 to 0.5 mm material removal when finishing depending on tool diameter

Application recommendations for copy and finish milling F2139

Tool Ø D_c [mm]	Row width b_R [mm]	Groove depth t_R [mm]
8	0,5	0,008
10	0,6	0,009
12	0,7	0,010
16	0,8	0,010
20	1,0	0,012
25	1,2	0,014
30	1,3	0,014
32	1,4	0,015

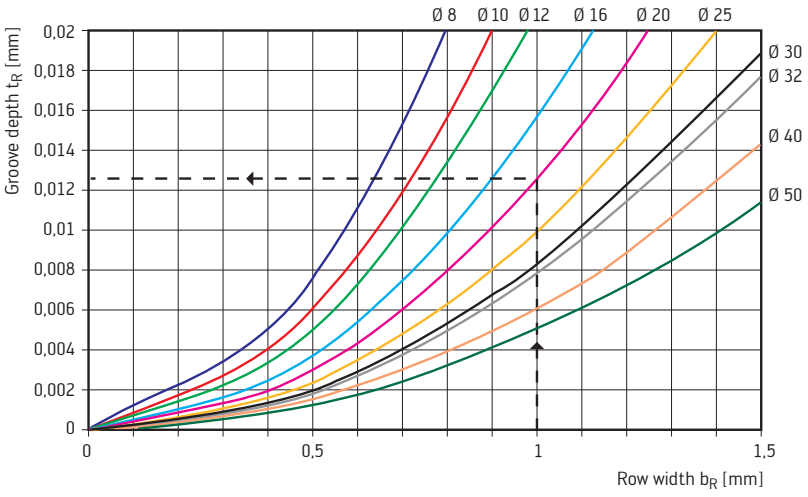
Semi-finishing – Roughing

Example:
D_c = 32 mm
b_R = 4 mm
→ t_R = 0,125 mm



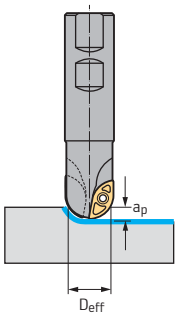
Finishing

Example:
D_c = 20 mm
b_R = 1,0 mm
→ t_R = 0,0125 mm



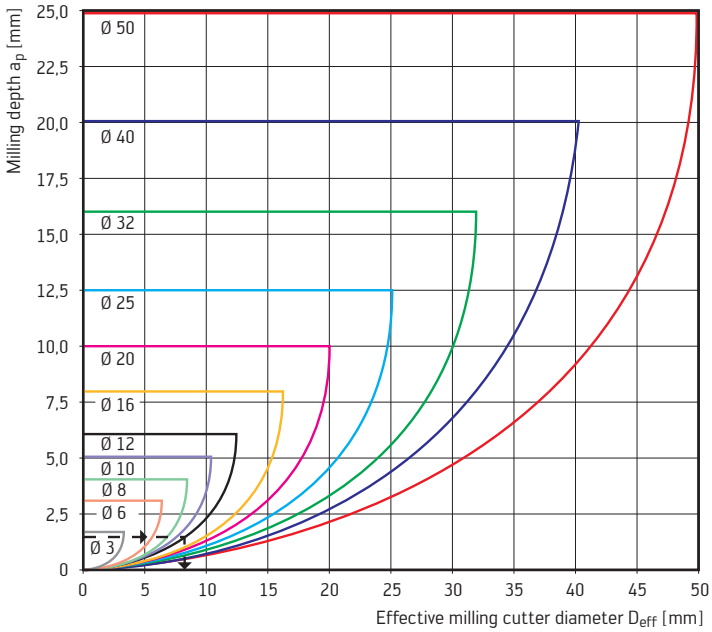
C 2

Determining the effective cutting diameter



Example:

D_c = 12 mm
a_p = 1,5 mm
→ D_{eff} = 8 mm

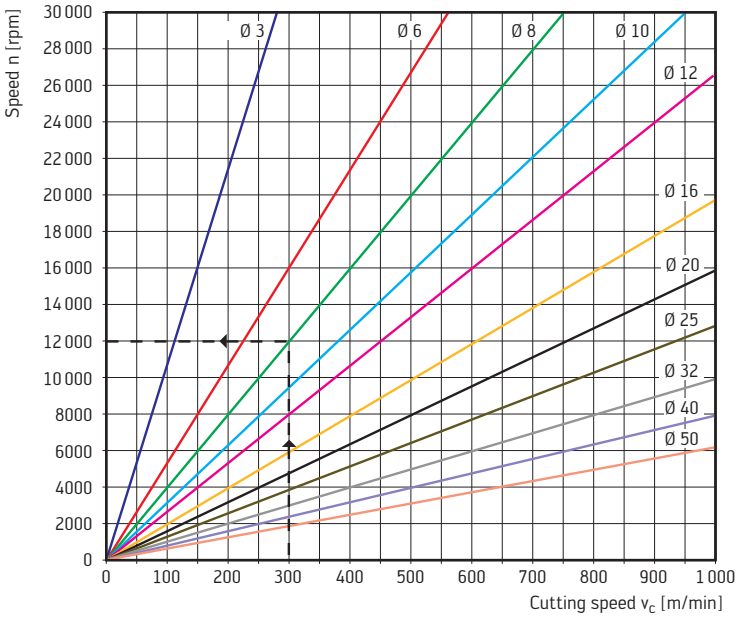


Determining the required speed

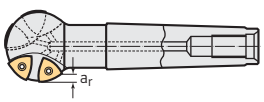
Example:

D_{eff} = 8 mm
v_c = 300 m/min
→ n = 12 000 rpm

$$n = \frac{v_c \cdot 1000}{\pi \cdot D_{eff}} \text{ [rpm]}$$



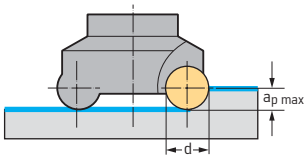
Radial plunging with F2239B



Tool diameter D_c [mm]	a_r [mm]	Tool diameter D_c [mm]	a_r [mm]
20	2,0	32	4,4
25	2,8	40	4,6
30	3,5	50	5,0

Application information for F2231/F2234/F2334/F2334R/F2010 round insert milling cutters

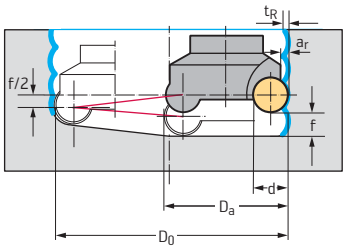
Face milling



Maximum milling depth $a_{p\,max}$ [mm]

	Indexable insert diameter d [mm]							
	d = 5	d = 7	d = 8	d = 10	d = 12	d = 15	d = 16	d = 20
$a_{p\,max}$ [mm]	2,5	3,5	4,0	5,0	6,0	7,5	8,0	10,0

Circular interpolation of a hole into solid material

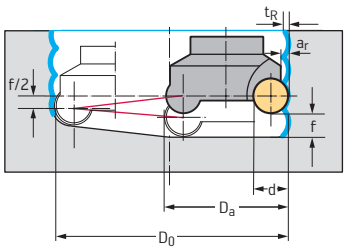


F2334/F2334R:
Diameter range for milling a hole in one pass [mm]

	Indexable insert diameter d [mm]									
	d = 8		d = 10		d = 12		d = 16		d = 20	
D_a [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]
25	34,6	50								
32	48,4	64	45	64						
40			61	80	57,4	80				
50			81,4	100	77,2	100				
52			85	104	81,2	104	75,4	104		
63			102,4	126	103,2	126	97,6	126		
66			113	132	109,4	132	103,4	132	97	132
80					137,8	160	131,4	160	124,8	160
96							163,4	192		
100							171,4	200	164,8	200
116							203,4	232		
125							221,4	250	214,8	250
141							253,4	282		
160									284,8	320

F2231/F2234:
Diameter range for milling a hole in one pass [mm]

	Indexable insert diameter d [mm]															
	d = 5		d = 7		d = 8		d = 10		d = 12		d = 15		d = 16		d = 20	
D_a [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]	D_0 min [mm]	D_0 max [mm]
10	10	20														
12	14,7	24														
15	20,7	30	16	30												
16					16	32										
20	30,6	40	27,2	40			20	40								
24									24	48						
25			37	50	35,2	50	31,6	50								
30			47,1	60			41,3	60			30	60				
32							45,3	64					32	64		
35			57,2	70			51,3	70	47,8	70						
40									57,6	80					40	80
42			71,3	84					61,3	84						
50									77,6	100			69,2	100		
52							84,7	104	80,3	104			72,7	104		
63									103,6	126			95,2	126	88,7	126
66													100,1	132		
80									137,6	160			129,2	160	122,7	160
100									177,6	200			169,2	200	162,7	200
125													219,2	250	212,7	250
160															282,7	320

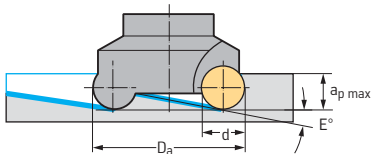


Groove depth on the wall of the hole t_R [mm]

Axial feed rate per revolution f [mm]	Indexable insert diameter d [mm]							
	d = 5	d = 7	d = 8	d = 10	d = 12	d = 15	d = 16	d = 20
1	0,051	0,036	0,031	0,025	0,02	0,017	0,015	0,01
2	0,209	0,146	0,127	0,010	0,08	0,067	0,06	0,05
3	0,500	0,338	0,292	0,230	0,19	0,15	0,14	0,11
4			0,536	0,417	0,34	0,27	0,25	0,20
5			0,878	0,670	0,54	0,43	0,40	0,32
6				(1,000)	0,80	0,63	0,58	0,46
7				(1,429)	(1,12)	0,87	0,81	0,63
8					(1,53)	(1,16)	(1,07)	0,84
$a_{r\,max}$	0,5	0,5	1,25	1,5	2,0	2,3	3,0	4,5

The values in brackets only apply to short drilled holes.

Ramping



F2334/F2334R: Maximum feed angle E [°]

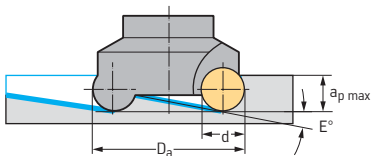
D_a [mm]	Indexable insert diameter d [mm]				
	d = 8	d = 10	d = 12	d = 16	d = 20
25	10,5				
32	6,8	8,6			
40		5,8	7,9		
50		4,0	5,4		
52		3,9	5,3	6,1	
63		3,0	3,4	4,4	
66		2,8	3,4	4,1	5,3
80			2,6	3,1	3,9
96				2,4	
100				2,3	2,8
116				1,9	
125				1,7	2,1
141				1,5	
160					1,5
$a_{p\,max}$ [mm]	6,9	8,8	10,5		1,9

F2234: Maximum feed angle E [°]

D_a [mm]	Indexable insert diameter d [mm]						
	d = 5	d = 7	d = 8	d = 10	d = 12	d = 16	d = 20
12	14,4						
15	8,8	43,7					
20	5,7	9,2					
25	7,9	6,2	7,9	14,6			
30		4,5		9,6			
32				8,0			
35		3,4		6,9	8,5		
40					11,4		
42		2,5			7,0		
50					7,9	15	
52				8,8	7,4	18,5	
63					5,6	10,1	10,9
66						9,4	
80					4,1	7,1	7,3
100					3,1	5,2	5,2
125						3,9	3,8
160							2,8
$a_{p\,max}$ [mm]	4,1	5,4	5,9	7,9	10,4	12,6	16,6

Application information for F2231/F2234/F2334/F2334R/F2010 round insert milling cutters (continued)

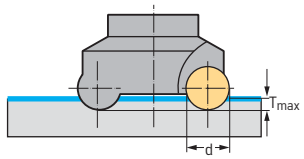
Ramping



F2010: Maximum feed angle E [°]

	Indexable insert diameter d [mm]	
D_a [mm]	RO.X1605.. (F2010 . . . R723M)	
83	2,50	
103	1,89	
128	1,44	
163	1,08	
203	0,84	
253	0,66	
318	0,51	

Vertical plunging



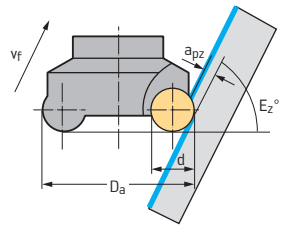
F2334/F2334R: Max. plunging depth T_{max} [mm]

	Indexable insert diameter d [mm]				
	d = 8	d = 10	d = 12	d = 16	d = 20
T_{max} [mm]	2,4	2,6	3,1	1,2	1,6

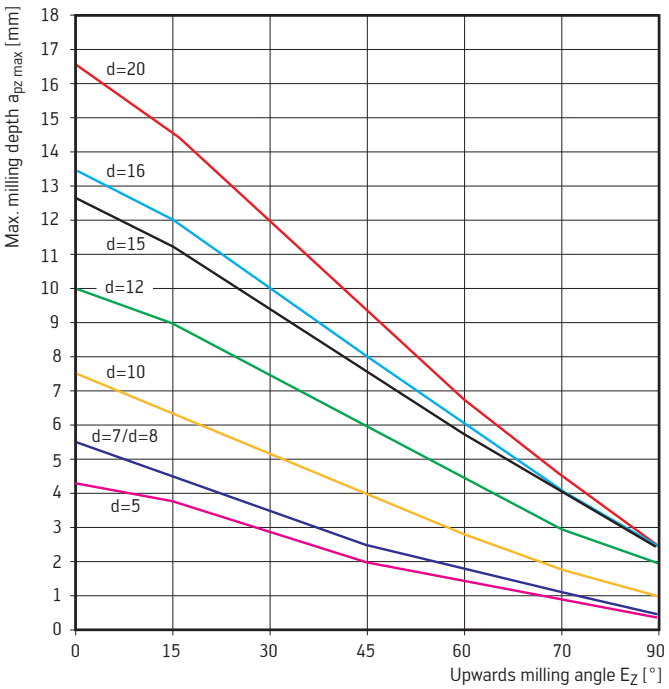
F2231/F2234: Max. plunging depth T_{max} [mm]

	Indexable insert diameter d [mm]							
	d = 5	d = 7	d = 8	d = 10	d = 12	d = 15	d = 16	d = 20
T_{max} [mm]	1,1	1,5	1,9	2,5	4,5	6,0	7,0	6,5

Milling upwards on inclined surfaces



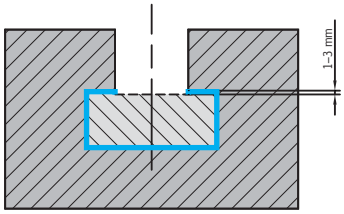
F2231/F2234: Max. plunging depth T_{max} [mm]



Strategies for preparing a T-slot

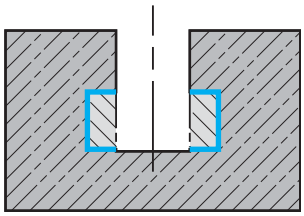
Strategies

Strategy 1



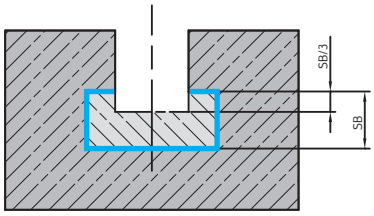
Strategy 1 is recommended if vibration is expected during machining.
The prepared slot should protrude 1-3 mm deep into the T-slot so that the shank of the T-slot milling cutter is free.

Strategy 2



Strategy 2 is recommended for machining on low-power machines and for long-chipping materials.

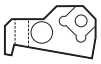
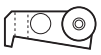
Strategy 3



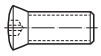
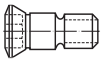
Strategy 3 is the preferred strategy.
The prepared slot should protrude into 1/3 of the T-slot.

Assembly parts and accessories

Spare parts for F2010

	Designation	suitable for	for indexable insert	Clamping screw	Tightening torque
	FR443M	Shoulder milling cutter, κ = 90°	TP . . 1604 . .	FS244 (Torx 15)	3,0 Nm
	FR447M	Shoulder milling cutter, κ = 90°	P 27 . . –4R	FS243 (Torx 20)	5,0 Nm
	FR448M	Shoulder milling cutter, κ = 90°	SP . . 120408 . .	FS243 (Torx 20)	5,0 Nm
	FR451M	Face milling cutter, κ = 75°	SF . . 1203EFR	FS260 (Torx 20)	5,0 Nm
	FR455M	Face milling cutter, κ = 45°	P2894–1	FS243 (Torx 20)	5,0 Nm
	FR456M	Face milling cutter, κ = 45°	SE . . 1504 . .	FS243 (Torx 20)	5,0 Nm
	FR495M	Face milling cutter, κ = 45°	SP . . 1204A . .	FS243 (Torx 20)	5,0 Nm
	FR572M	Round insert milling cutter	RD . . 1204 . .	FS359 (Torx 15)	3,0 Nm

Clamping screws for indexable inserts

Screw types	Designation	Dimensions	Torx	Tightening torque Nm
 Clamping screws with 43° head angle for indexable inserts with countersink	FS322	M2,5 × 5,7	7	0,8
	FS258	M3 × 5,7	8	1,5
	FS246	M3 × 7	8	1,5
	FS1163	M3,5 × 10	15	3,0
	FS320	M4 × 5	15	3,0
	FS318	M4 × 6	15	3,0
	FS245	M4 × 6,5	15	3,0
	FS321	M4 × 7	15	3,0
	FS319	M4 × 8	15	3,0
	FS244	M4 × 9	15	3,0
	FS749	M4 × 10,5	15	3,0
	FS326	M4 × 12	15	3,0
	FS1458	M4 × 12	15IP	2,5
	FS954	M4,5 × 11	20	4,5
	FS260	M5 × 9,5	20	5,0
	FS243	M5 × 11	20	5,0
	FS242	M5 × 13	20	5,0
	FS1165	M5 × 12	20	6,0
	FS1010	M6 × 14	20	5,0
	FS1164	M6 × 15	25	10,0
 Fitting screws	FS925	M2,5 × 6,5	8	0,8
	FS397	M3 × 6,9	8	1,0
	FS2070	M3 × 6,5	8IP	2,0
	FS922	M3,5 × 9,5	15	2,5
	FS390	M4 × 0,5 × 8,4	15	4,0
	FS2071	M4 × 8,4	15IP	4,0
	FS1028	M4,5 × 12,8	20	4,0
	FS1153	M4,5 × 14	20	4,0
	FS391	M5 × 0,5 × 9,1	20	5,0
	FS392	M5 × 0,5 × 12,75	20	5,0
	FS393	M5 × 0,5 × 15,45	20	5,0
	FS2072	M5 × 9,55	20IP	5,0
	FS2073	M5 × 0,5 × 12,75	20IP	5,0
	FS2074	M5 × 15,45	20IP	5,0
	FS2075	M6 × 20,35	20IP	5,0
	FS394	M6 × 0,7 × 20,35	20	5,0
	FS395	M8 × 0,75 × 24,7	30	6,0
	FS2107	M8 × 24,7	30IP	10,0

Screw types	Designation	Dimensions	Torx	Tightening torque Nm
 Clamping screws with 60° head angle for indexable inserts with arched countersink in accordance with ISO	FS1358	M1,8 × 3,5	6	0,4
	FS1012	M1,8 × 4,3	6	0,4
	FS2076	M2 × 3,2	6IP	0,6
	FS1003	M2 × 3,25	6	0,4
	FS1151	M2 × 3,45	6	0,4
	FS2147	M2 × 4,25	6IP	0,6
	FS2148	M2 × 4,95	6IP	0,6
	FS1004	M2,2 × 4,6	7	0,6
	FS2084	M2,2 × 4,6	7IP	0,9
	FS2111	M2,2 × 4,85	7IP	0,9
	FS1020	M2,2 × 5,5	7	0,6
	FS2149	M2,2 × 6,4	7IP	0,9
	FS2066	M2,5 × 5,2	7IP	0,9
	FS924	M2,5 × 4,5	8	0,8
	FS1455	M2,5 × 4,5	8IP	0,8 / 1,2
	FS1129	M2,5 × 5,2	8	0,8
	FS2067	M2,5 × 5,7	7IP	0,9
	FS375	M2,5 × 5,8	7	0,8
	FS923	M2,5 × 6	8	0,8 / 1,2
	FS1454	M2,5 × 6	8IP	0,8 / 1,2
	FS2061	M2,5 × 6,5	7IP	0,9
	FS2077	M3 × 5,3	9IP	1,5
	FS1005	M3 × 6	8	1,0
	FS1456	M3 × 6,2	9IP	1,5 / 2,0
	FS2078	M3 × 7,2	9IP	1,5
	FS1013	M3 × 7,5	8	1,0
	FS1457	M3 × 7,7	9IP	1,5
	FS379	M3 × 8,5	8	1,0
	FS2079	M3 × 8,7	9IP	2,0
	FS920	M3,5 × 7,3	15	2,5
	FS2062	M3,5 × 8,1	15IP	3,0
	FS2266	M3,5 × 8,75	10IP	2,0
	FS359	M3,5 × 9	15	2,5
	FS2119	M3,5 × 9,3	15IP	3,0
	FS2063	M3,5 × 10,1	15IP	3,0
	FS1006	M3,5 × 12	15	2,5
	FS2060	M3,5 × 12,1	15IP	3,0
	FS2279	M3,5 × 12	15IP	3,0
	FS2064	M4 × 0,5 × 11	15IP	3,0
	FS2065	M4 × 0,5 × 14	15IP	3,0
	FS1011	M4 × 7,8	15	3,0
	FS2080	M4 × 8,5	15IP	2,5
	FS2114	M4 × 9	15IP	2,5
	FS378	M4 × 9,5	15	3,0
	FS1453	M4 × 9,7	15IP	2,5 / 3,5
	FS1459*	M4 × 10	15IP	4,0
	FS2163	M4 × 10,8	15IP	3,0
	FS2081	M4 × 12	15IP	3,0
	FS1007	M4 × 12	15	3,0
	FS1029	M5 × 9	20	5,0
	FS2139	M5 × 10	20IP	5,0
	FS1030	M5 × 11	20	5,0
	FS2281	M5 × 11	20IP	5,0
	FS1495	M5 × 13	20IP	5,0
	FS1031	M5 × 13	20	5,0
	FS1009	M5 × 16	20	5,0
	FS2112	M5 × 16	20IP	5,0
	FS2090	M5 × 17,25	20IP	5,0
	FS1036	M6 × 14	20	5,0
	FS2089	M6 × 18,25	25IP	5,0
	FS1008	M6 × 18	20	5,0
	FS1152	M8 × 1 × 18,5	30	10,0
	FS2150	M8 × 22	30IP	10,0

* Screw head with radius

IP = Torx Plus

Fastening bolts for face mill adaptors

When using face mill adaptors A150, A155 and AK155 in combination with porcupine and ramping cutters with cylindrical bore and transverse keyway in accordance with DIN 138, the fastening bolt of the adaptor must be replaced.

Designation	Tightening screw for adaptor*
F4138.B16.040.Z03.33	M8 × 40 (SW6)
F4138.B16.040.Z03.43	M8 × 50 (SW6)
F4138.B22.050.Z04.43	M10 × 45 (SW8)
F4138.B22.050.Z04.54	M10 × 55 (SW8)
F4138.B27.063.Z05.43	M12 × 45 (SW10)
F4138.B27.063.Z05.54	M12 × 55 (SW10)
F4138.B32.080.Z06.54	M16 × 65 (SW14)
F4138.B32.080.Z06.65	M16 × 70 (SW14)
F4238.B22.050.Z03.43	M10 × 45 (SW8)
F4238.B27.063.Z04.43	M12 × 55 (SW10)
F4238.B27.063.Z04.57	M12 × 70 (SW10)
F4238.B27.066.Z04.57	M12 × 70 (SW10)
F4238.B32.080.Z05.57	M16 × 70 (SW14)
F4238.B32.080.Z05.71	M16 × 90 (SW14)
F4238.B32.085.Z05.71	M16 × 90 (SW14)
F4338.B27.063.Z04.31	M12 × 40 (SW10)
F4338.B27.063.Z04.47	M12 × 50 (SW10)
F4338.B27.063.Z04.63	M12 × 65 (SW10)
F4338.B32.080.Z05.31	M16 × 35 (SW14)
F4338.B32.080.Z05.63	M16 × 70 (SW14)
F4338.B32.080.Z05.78	M16 × 90 (SW14)
F4338.B40.100.Z05.78	M20 × 80 (SW17)
F4338.B40.125.Z06.94	M20 × 90 (SW17)

Designation	Tightening screw for adaptor*
F5038.B16.040.Z03.32	M8 × 40 (SW6)
F5038.B16.040.Z03.40	M8 × 50 (SW6)
F5138.B22.040.Z02.34	M10 × 40 (SW8)
F5138.B22.040.Z02.45	M10 × 45 (SW8)
F5138.B22.050.Z03.34	M10 × 40 (SW8)
F5138.B22.050.Z03.45	M10 × 45 (SW8)
F5138.B27.063.Z04.45	M12 × 50 (SW10)
F5138.B27.063.Z04.56	M12 × 60 (SW10)
F5138.B32.080.Z05.56	M16 × 65 (SW14)
F2238.B.050.Z02.42	M10 × 40 (SW8)
F2238.B.063.Z03.50	M12 × 35 (SW10)
F2238.B.065.Z03.50	M12 × 35 (SW10)
F2238.B.080.Z03.67	M16 × 60 (SW14)
F2238.B.082.Z03.67	M16 × 60 (SW14)
F2238.B.100.Z04.77	M20 × 70 (SW17)
F2238.B.125.Z05.87	M24 × 80 (SW19)
M2131-040-B16-03-15	M8 × 40 (SW6)
M2131-050-B22-04-15	M10 × 35 (SW8)
M2131-063-B22-05-15	M10 × 35 (SW8)
M2131-080-B27-05-15	M12 × 40 (SW10)
M2131-050-B22-03-20	M10 × 40 (SW8)
M2131-063-B22-04-20	M10 × 35 (SW8)
M3255-050-B22-04-46	M10 × 45 (SW8)
M3255-050-B22-05-46	M10 × 45 (SW8)
M3255-063-B27-05-46	M12 × 50 (SW10)
M3255-063-B27-06-46	M12 × 50 (SW10)
M3255-080-B32-05-58	M16 × 65 (SW14)
M3255-080-B32-06-58	M16 × 65 (SW14)
M4257-050-B22-02-47	M10 × 45 (SW8)
M4257-063-B27-03-54	M12 × 70 (SW10)
M4258-080-B32-03-67	M16 × 90 (SW14)
M4258-100-B40-04-77	M20 × 80 (SW17)

* ISO 4762 cap screw (12.9)

Torque screwdriver with interchangeable blades

Torque screwdriver



Designation	Size		Scale range
FS2001	1	4	0,4–1,2 Nm
FS2003	3	4	1,5–5,0 Nm
FS2002	1	4	3.5–10.6 in lbs
FS2004	3	4	13.3-44 in lbs



Designation	Size		Scale range
FS2248	3	4	1,0–6,0 Nm

Interchangeable blades	Designation	Torx	
 Torx interchangeable blades Blade length 175 mm	FS2005	6	4
	FS2006	7	
	FS2007	8	
	FS2008	10	
	FS2009	15	
	FS2010	20	
 Torx Plus interchangeable blades Blade length 175 mm	FS2085	6IP	4
	FS2011	7IP	
	FS2012	8IP	
	FS2013	9IP	
	FS2268	10IP	
	FS2014	15IP	
	FS2015	20IP	
	FS2016	25IP	
Complete blade set (FS2005–FS2016) Blade length 175 mm	FS2017		4

IP = Torx Plus

Torque T-handle



Designation		Scale range
FS2041	6	4,5–14 Nm
FS2042	6	40–123 in lbs

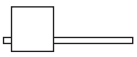
Interchangeable blades	Designation	Torx/SW	
 Torx interchangeable blades Blade length 130 mm	FS2043	15	6
	FS2044	20	
	FS2045	25	
	FS2046	30	
 Torx Plus interchangeable blades Blade length 130 mm	FS2047	15IP	6
	FS2048	20IP	
	FS2049	25IP	
	FS2109	30IP	
 Hexagonal interchangeable blades Blade length 130 mm	FS2050	SW3	6
	FS2051	SW4	
	FS2052	SW5	
Complete blade set (FS2043–FS2052) Blade length 130 mm	FS2053		6

IP = Torx Plus

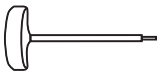
Screwdrivers

Screwdriver types	Designation	Torx
 Screwdriver	FS1063	6
	FS2086	6IP
	FS309	7
	FS2088	7IP
	FS230	8
	FS1483	8IP
	FS1128	9
	FS1484	9IP
	FS2267	10IP
	FS229	15
	FS1485	15IP
	FS228	20
	FS1486	20IP
	FS2167	25
	FS1487	25IP
	FS396	30
	FS2109	30IP

IP = Torx Plus

Screwdriver types	Designation	Torx	WAF
 Torx key	FS2146	6IP	–
	FS2087	6IP	–
	FS325	7	–
	FS1490	7IP	–
	FS257	8	–
	FS1466	9IP	–
	FS1050	10	–
	FS255	15	–
	FS1465	15IP	3,5
	FS1496	15IP	4,0
	FS256	20	–
	FS1154	–	2,0
	FS1155	–	2,5

IP = Torx Plus

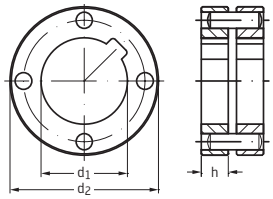
Screwdriver types	Designation	Torx
 Handle key, small	FS1047	15
	FS1048	20
	FS1049	25
 Handle key, large	FS1172	15
	FS1173	20
	FS1174	25
	FS1175	30

Allen key	Designation	Torx	WAF
	ISO 2936–1,3	–	1,3
	ISO 2936–1,5	–	1,5
	ISO 2936–2	–	2
	ISO 2936–2,5	–	2,5
	ISO 2936–3	–	3
	ISO 2936–3,5	–	3,5
	ISO 2936–4	–	4
	ISO 2936–5	–	5
	ISO 2936–6	–	6
	FS1464	20IP	–
	FS1592	25IP	–

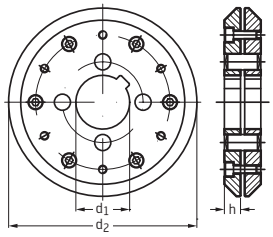
IP = Torx Plus

Drive collars and retaining washers for F5055 Walter BLAXX slitting cutters

Tool

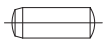


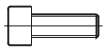
Designation	d_1 mm	d_2 mm	h mm	for D_c mm	for cutting width mm	kg	
FS1346	16	32	8	63	1,5–4,0	0,1	
FS1347	16	38	8	80	1,5–4,0	0,1	
FS1348	22	46	10	100	1,5–4,0	0,1	
FS1349	32	55	10	125	1,5–4,0	0,1	
FS1350	40	80	12	160–250	2,0–4,0	0,4	



FS1351	40	140	12	200 + 250	3,0 + 4,0	1,3	
FS1352	40	190	12	250	3,0 + 4,0	2,5	

Assembly parts

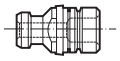
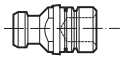




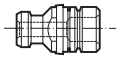
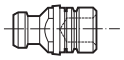
Designation	FS1346	FS1347	FS1348	FS1349	FS1350	FS1351	FS1352
ISO 8734 parallel pin	4 m6 × 16	4 m6 × 16	5 m6 × 20	6 m6 × 20	12 m6 × 20	12 m6 × 20	12 m6 × 20
DIN 912 cap screw						M6 × 16	M6 × 16

Accessories for one-piece milling cutters

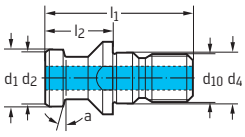
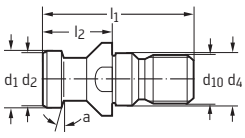
Pull studs without SK40 intermediate bushing

	Pull stud	C100.40.600 for DIN 2080
	Pull stud	C100.40.615 A for DIN 69871 form AD
	Pull stud	C100.40.615 B for DIN 69871 form B

Pull studs without SK50 intermediate bushing

	Pull stud	C100.50.600 for DIN 2080
	Pull stud	C100.50.615 A for DIN 69871 form AD
	Pull stud	C100.50.615 B for DIN 69871 form B

Pull studs for milling tools with steep taper*

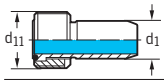
	Designation	for SK	d_1 mm	d_2 mm	d_4 mm	d_{10}	l_1 mm	l_2 mm	a
DIN 69872, form AD 	C100.40.115	40	19	14	17	M16	54	26	15°
	C100.50.115	50	28	21	25	M24	74	34	15°
DIN 69872, form B 	C100.40.215	40	19	14	17	M16	54	26	15°
	C100.50.215	50	28	21	25	M24	74	34	15°

* with FS1079/FS1080 intermediate bushing

Accessories for adaptors

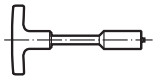
	Designation	Size	Description	suitable for
	FS1079	for SK40	Intermediate bushing for pull stud	Tools with steep taper
	FS1080	for SK50	Intermediate bushing for pull stud	Tools with steep taper

Coolant Transfer units for tools with HSK



Designation	d_{11}	$d_{1\ f8}$ mm	for HSK
FS1064	M18 × 1	12	HSK63–A
FS1065	M24 × 1,5	16	HSK100–A

Socket wrench for installing transfer units



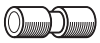
Designation	for HSK
FS952	HSK63–A
FS953	HSK100–A

Assembly parts and accessories

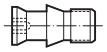
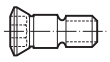
Cartridges for milling tools

	Designation	for indexable insert	suitable for
	FR598	SD . . 0903 . .	F2250

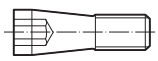
Compound screws

	Designation	Size	suitable for
	FS231	M8 × 24 (SW 4)	FK240, FR/FL281, FR/FL282, FR/FL283, F249
	FS234	M10 × 40 (SW 5)	FR/FL238, FR/FL239, FR/FL243, FR/FL244, FR/FL247, FR/FL248, FR/FL249, FR/FL250, FR/FL259, FR/FL260, FR/FL261, FR/FL262, FR/FL263, FR/FL264, FR/FL265, FR/FL266, FR/FL283, FR/FL285, FR/FL287
	FS235	M8 × 32 (SW 5)	
	FS929	M12 × 76 (Torx 45)	Adaptors

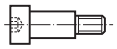
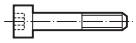
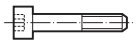
Clamping elements for indexable inserts

	Designation	Size	suitable for
	FS248	M4 × 10,7 (Torx 8)	Milling system 2000
	FS249	M5 × 11,3 (Torx 15)	
	FS250	M6 × 11,6 (Torx 20)	
	FS293	M5 × 11 (Torx 15)	Milling system 2000
	FS305	M5 × 11,6 (Torx 20)	F2044
	FS1015	M3 × 12 (Torx 20)	F2253

Countersunk screws

	Designation	Size	suitable for
	FS1491	M3 × 9,8 (SW 2)	Special tools
	FS2045	M3 × 12 (SW 2)	
	FS2055	M4 × 15 (SW 2,5)	
	FS1148	M5 × 19 (SW 2,5)	
	FS2056	M5 × 23 (SW 3)	
	FS2058	M3 × 13,5 (SW 2,5)	

Miscellaneous screws

	Designation	Size	suitable for
	FS370	SW 10	Clamping screw for front piece, F2038
	FS371	SW 10	Clamping screw for front piece, F2038
	FS372	SW 10	
	FS373	SW 12	
	FS374	SW 12	
	FS935	M2,2 × 6,4 (Torx 7)	Clamping screw
	FS966	M16 × 16	Cap screw

Miscellaneous

	Designation	Size	suitable for
	FS663	100 g	Copaslip



	Page
Calculation formulae – Milling	C 668
Cutting forces of Walter machining groups	C 671
Material comparison tables	C 672
Hardness comparison table	C 694
ISO tolerances	C 695
Clamping systems for milling tools	C 696

Milling calculation formulae

Speed

$$n = \frac{v_c \times 1000}{D_c \times \pi} \quad [min^{-1}]$$

Cutting speed

$$v_c = \frac{D_c \times \pi \times n}{1000} \quad [m/min]$$

Feed rate

$$v_f = f_z \times z \times n \quad [mm/min]$$

Feed per tooth

$$f_z = \frac{v_f}{z \times n} \quad [mm/z]$$

Metal removal rate

$$Q = \frac{a_e \times a_p \times v_f}{1000} \quad [cm^3/min]$$

Power requirement

$$P_{mot} = \frac{Q \times k_c}{60000 \times \eta} \quad [kW]$$

Medium chip thickness

$$h_m = \frac{\left(114{,}7 \times f_z \times \sin\kappa \times \left(\frac{a_e}{D_c}\right)\right)}{\varphi_s} \quad [mm]$$

$$f_z = \frac{h_m \times \varphi_s}{114{,}7 \times \sin\kappa \times \left(\frac{a_e}{D_c}\right)} \quad [mm]$$

or $$h_m \cong f_z \times \sqrt{\frac{a_e}{D_c}} \quad [mm]$$

$$f_z = \frac{h_m}{\sqrt{\frac{a_e}{D_c}}} \quad [mm]$$

as approximation formula for $\frac{a_e}{D_c} < 30°$

Engagement angle

where milling cutter is positioned centrally

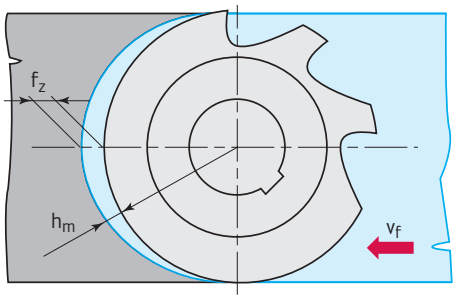
$$\varphi_s = 2 \times \arcsin\left(\frac{a_e}{D_c}\right) \quad [°]$$

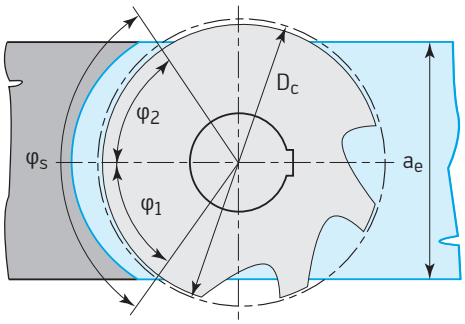
where milling cutter is positioned eccentrically

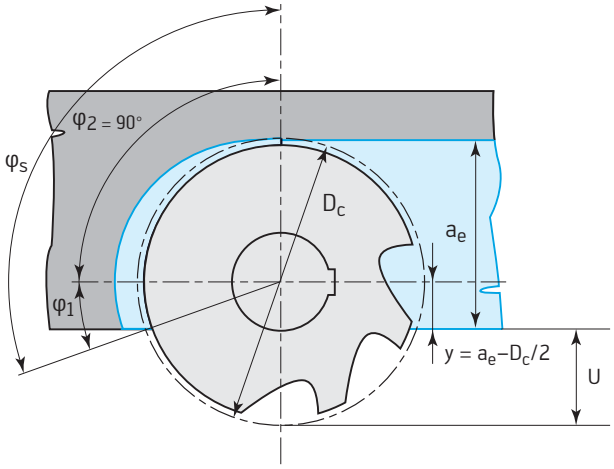
$$\varphi_s = 90° + \arcsin\frac{a_e - \left(\frac{D_c}{2}\right)}{\left(\frac{D_c}{2}\right)} \quad [°]$$

Specific cutting force

$$k_c = \frac{1 - 0{,}01 \times y_0}{h_m^{m_c}} \times k_{c1.1} \quad [N/mm^2]$$







n	Speed	rpm
D_c	Cutting diameter	mm
a_p	Depth of cut	mm
a_e	Width of cut	mm
U	Projection	mm
z	Number of teeth	
v_c	Cutting speed	m/min
v_f	Feed rate	mm/min
f_z	Feed per tooth	mm
Q	Metal removal rate	cm^3/min
P_{mot}	Drive power	kW
h_m	Average chip thickness	mm
η	Machine efficiency (0.7-0.95)	
κ	Lead angle	°
φ_s	Engagement angle	°
φ_1	Up-cut milling area	°
φ_2	Synchronous milling area	°
k_c	Specific cutting force	N/mm^2
$k_c1.1$*	Specific cutting force for 1 mm^2 chip cross section	N/mm^2
m_c*	Increase in the k_c curve	
y	Reverse engagement	mm

*For m_c and $k_{c1.1}$, see table on page C 671

Engagement ratio for external circular interpolation

External contour

$$v_{fa} = \left(1 + \frac{D_a}{D_w + D_a}\right) + v_f \qquad [mm/min]$$

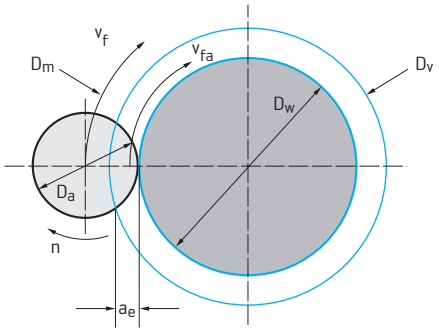
Circular interpolation traverse time

$$T_{rev} = \frac{D_m \times \pi}{n \times f_z \times z} \qquad [min]$$

$$T_{rev} = \frac{(D_w + D_a)\, D_a \times \pi^2 \times 60}{v_c \times f_z \times z \times 1\,000} \qquad [s]$$

Engagement width for external circular interpolation

$$a_e = \frac{(D_v^2 - D_w^2)}{4(D_w + D_a)} \qquad [mm]$$



External contour

v_f	Feed rate	[mm/min]
v_{fa}	Feed rate of the tool axis	[mm/min]
D_a	Milling cutter outer diameter	[mm]
D_m	Mid-point path diameter	[mm]
D_v	Workpiece raw diameter	[mm]
D_w	Workpiece machined diameter	[mm]
a_e	Material removal	[mm]
n	Speed	[rpm]
f_z	Feed per tooth	[mm]
z	Number of teeth	
T_{rev}	Circular interpolation traverse time	[s]

C 3

Engagement ratio for internal circular interpolation of bores

Internal contour

$$v_{fi} = \left(1 - \frac{D_c}{D_w}\right) \times v_f \qquad [mm/min]$$

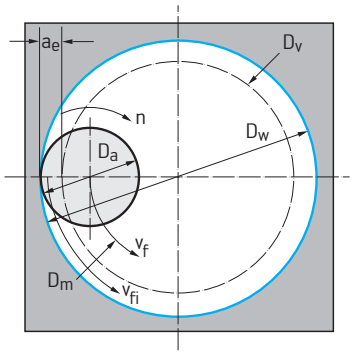
Circular interpolation traverse time

$$T_{rev} = \frac{D_m \times \pi}{n \times f_z \times z} \qquad [min]$$

$$T_{rev} = \frac{(D_w - D_a)\, D_a \times \pi^2 \times 60}{v_c \times f_z \times z \times 1\,000} \qquad [s]$$

Engagement width for circular interpolation

$$a_e = \frac{(D_w^2 - D_v^2)}{4(D_w - D_a)} \qquad [mm]$$



Internal contour

v_f	Feed rate	[mm/min]
v_{fi}	Feed rate of the tool axis	[mm/min]
D_a	Milling cutter outer diameter	[mm]
D_m	Mid-point path diameter	[mm]
D_v	Workpiece raw diameter	[mm]
D_w	Workpiece machined diameter	[mm]
a_e	Material removal	[mm]
n	Speed	[rpm]
f_z	Feed per tooth	[mm]
z	Number of teeth	
T_{rev}	Circular interpolation traverse time	[s]

Cutting forces of Walter machining groups

Description	Tensile strength min R_m [N/mm²]	Tensile strength max R_m [N/mm²]	Spec. cutting force $k_{c1.1}$ [N/mm²]	Increase value m_c	Walter machining group
Non-alloyed and low-alloy steels, C > 0.25%, low and medium tensile strength	350	750	1500	0,21	P1, P6
Non-alloyed and low-alloy steels, C > 0.55%, not heat-treated	400	900	1700	0,25	P2, P3, P4, P7, P14
Low and high-alloy steels, low heat treatment level	750	1100	2000	0,25	P5, P8, P11, P12
Stainless ferritic/martensitic steels, heat-treated	800	1400	2200	0,25	P15
Low and high-alloy steels, medium heat treatment level	1100	1400	2500	0,25	P9
Low and high-alloy steels, high heat treatment level	1200	1600	3000	0,25	P10, P13
Stainless, austenitic steels	400	900	1800	0,21	M1
Stainless, austenitic/ferritic steels + duplex	600	1000	2000	0,21	M3
Stainless, austenitic steels, precipitation hardened (PH steels)	700	1500	2400	0,21	M2
Grey cast iron + CGI + malleable cast iron, low tensile strength	200	400	800	0,28	K1, K3, K7
Ductile cast iron with low tensile strength + malleable cast iron with higher tensile strength	400	600	950	0,28	K2, K5
Grey cast iron with higher tensile strength	300	400	1200	0,28	K4,
Ductile cast iron with high tensile strength + ADI high tensile strength, unalloyed + alloyed	600	800	1400	0,28	K6
Wrought aluminium alloy, not hardened			350	0,25	N1
Wrought aluminium alloy, hardened			600	0,25	N2
Cast aluminium alloy < 12% Si, not hardened			600	0,25	N3
Cast aluminium alloy < 12% Si, hardened, cast aluminium alloy ≥ 12%			700	0,25	N4, N5
Pure copper, copper alloy (brass, bronze) with low tensile strength			550	0,25	N7, N8, N9
High tensile copper alloys, bronze with high tensile strength			1000	0,25	N10
Heat-resistant alloys, iron-based, annealed			2400	0,25	S1
Heat-resistant alloys, iron-based, hardened			2500	0,25	S2
Pure titanium			1300	0,25	S6
Titanium alloys, alpha, alpha/beta and beta alloys			1500	0,25	S7, S8
Heat-resistant alloys, nickel-cobalt-based, annealed			2800	0,25	S3
Heat-resistant alloys, nickel-cobalt-based, hardened			2900	0,25	S4
Heat-resistant alloys, nickel-cobalt-based, cast			3000	0,25	S5
Hardened steels 46 – 52 HRC			3000	0,25	H1
Hardened steels 52 – 58 HRC			3700	0,25	H2
Hardened steels 58 – 62 HRC			4300	0,25	H3
Hardened cast iron 50 – 60 HRC			3500	0,25	H4
Thermoplasts and thermosetting plastics, without abrasive fillers			150	0,2	O1, O2
Fibre-reinforced plastics			300	0,3	O3, O4, O5
Graphite			400	0,25	O6

Comments:
The information consists of standard values and refers to a neutral cutting edge geometry.
The condition of the material and the cutting edge geometry considerably influences the cutting forces.

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	Building and construction steels						
	P1	1.0401		C 15	C15		
	P1	1.0402		C 22	C22		
	P2	1.0501		C 35	C35		
	P2	1.0503		C 45	C45		
	P4	1.0535		C 55	C55		
	P4 / P5	1.0601		C 60	C60		
	P6	1.0715		9 SMn 28	11SMn30		
	P6	1.0718		9 SMnPb 28	11SMnPb30		
	P6	1.0722		10 SPb 20	10SPb20		
	P6	1.0726		35 S 20	35S20		
	P6	1.0736		9 SMn 36	11SMn37		
	P6	1.0737		9 SMnPb 36	11SMnPb37	Ledloy	
	P7 / P10	1.0904			55Si7		
	P7 / P10	1.0961		60 SiCr 7	S340MGC, 60SiCr7		
	P1	1.1141		Ck 15	C15E		
	P7 / H2	1.1157		40 Mn 4	40Mn4		
	P1 / P3	1.1158		Ck 25	C25E		
	P7	1.1167		36 Mn 5	36Mn5		
	P7	1.1170		28 Mn 6	28Mn6		
	P2	1.1183		Cf 35	C35G		
	P2	1.1191		Ck 45	C45E		
	P4 / P5	1.1203		Ck 55	C55E		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	080M15, 144917CS, 040A15, 080A15		C18RR, XC18	C15, C16, 1C15	1350	F.111	S 15 C, JIS S 15C	J 409 grade 1015
	040 A 15, 055 M 15, En 2, 22 CS, 22 HS, C 22, 070 M 20	2D, 2	AF42C20, XC25, 1C22	C20, C21	1450	1C22, F112	S 20 C, S22C, JIS S 20C	1020
	080A32, 080A35, 080M36, 1449.40CS		C35, 1C35, AF55C35	C35, 1C35	1572, 155	F.113	S 35 C	1035
	060A47, 080M46, 1449.50HS, 1449.50CS		1C45, AF 65 C 45	C45, 1C45	1650	F.114	JIS S 45C	1045
	070M55, 5770-50	9	C54, 1C55, AF 70 C 55	C55, 1C55	1655	F.115	S 55 C	1055
	060A62, 5770-60, 1449 60HS.CS		C60, 1C60, AF70C55	C60, 1C60		F.115	S 58 C	1060
	230M07		S250	CF9Mn28	1912	F.2111 - 11SMn28	JIS SUM22	1213
			S250Pb	CF9SMnPb28	1914	F.2112 - 11SMnPb28	SUM22L, SUM23L, SUM24L	12L13, 12L14, J 403 grade 12L14, J 1397 grade 12L14
	212M36		35MF6		1957	F.210G		J 403 grade 1141
	240M07	1B	S300	CF9SMn36		F.2113 - 12 SMn 35	SUM 25	J 403 grade 1213, J 403 grade 1215, J 1392 grade 1213
			S300Pb	CF9SMnPb36	1926	F.2114 - 12 SMnPb 35		J 403 grade 12L14, J 1397 grade 12L14
	250A53	45	55S7		2085	F.1440 - 56 Si 7		9255
	250A61		60SC7			F.1442 - 60 SiCr 8		9262
	040A15, 080M15, S14, CS17	32C			1370	F.1511 - C 16 k, F.1110 - C 15 k	S 15, S 15 CK, JIS S 15 C	1015
	150M36	15	35M5					1035, 1041
	070M26		2C25			F.1120 - C 25 k, C25K (F1120)	S 25 C, S 28 C	1025
	150M36	15 B	40M5		2120	F.1203 - 36 Mn5	SMn 438 (H), SCMn 3	1335
	150M28, 150M19, S92	14A, 14B	20M5	C28Mn		28Mn6	SCMn1	1027
	060A35, 080A35		XC38H1TS	C36, C38			S 35 C	1035
	080M46, 060A47		C45RR, XC42H1, XC45, 2C45, XC48, XC48H1		1672	F1140-C45k, F1142-C48k	S 45 C, S 48 C	1045
	060A57	9	XC55H1, 2C55, XC54		1655	F.1150 - C 55 k	S 55 C	1055

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Building and construction steels** (continued)						
	P2 / P3	1.1213		Cf 53	C53G		
	P4 / P5	1.1221		Ck 60	C60E		
	P4 / H1	1.1274		Ck 101	C101E, C100S		
	P11	1.3401		X 120 Mn 12	X120Mn12		
	P7 / H2	1.3505		100 Cr 6	100Cr6		
	P7	1.5415		15 Mo 3	16Mo3		
	P3	1.5423		16 Mo 5	16Mo5		
	P7	1.5622		14 Ni 6	14Ni6		
	P11	1.5662		X 8 Ni 9	X8Ni9		
	P11	1.5680		12 Ni 19	X12Ni5, 12Ni19		
	P9	1.5710		36 NiCr 6	36NiCr6		
	P7	1.5732		14 NiCr 10	14NiCr10		
	P7	1.5752		14 NiCr 14	15NiCr13		
	P7 / P9	1.6511		36 CrNiMo 4	36CrNiMo4		
	P7	1.6523		20NiCrMo2-2	21NiCrMo2		
	P9	1.6546		40 NiCrMo 22	40NiCrMo2-2, 40NiCrMo2KD		
	P7 / P9	1.6582		34 CrNiMo 6	34CrNiMo6		
	P7	1.6587		17 CrNiMo 8, 17 CrNiMo 6, 17 CrNiMo 6 BG	17CrNiMo6, 18CrNiMo7-6		
	P7	1.6657		14 NiCrMo 134	14NiCrMo13-4		
	P7	1.7015		15 Cr 3	15Cr2KD		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	060A52, 070M55		XC48H1TS				S 50 C	1050, 1055
	060A62, 070M60, CS60		C60RR, XC60, 2C60		1665, 168	F.511, F.512	S 58 C	1060
	060A96, 5770-95, CS95		C100RR, C100, XC100, E 100		1870		SUP4	1095
			Z120M12, Z120Mn12		2183	F.82551-AM-X 120 Mn 12	SCMnH1, SCMnH11	
	BL3, 534A99, 535A99, 2S135, S135		Y100C6, 100C6, 100Cr6	100Cr6	2258	F.5230 100 Cr6, F.1310-100 Cr 6, F.131	SUJ 2, SUJ 4	L3, 52100
	1501-240, 1503-243B, 3606-243, 3059-243		15D3, 15Mo3	16Mo3 (KG KW)	2912	F.2601-16 Mo 3		ASTM A20, GR
	1503-245-420			16Mo5KG, 16Mo5KW		F.2602-16Mo5	SB 450 M, SB 480 M	4520
			16N6, 15N6, 15Ni6	14Ni6KG, 14Ni6KT		F.2641-15Ni6		ASTM A350 LF5
	1501-509;510, 3603-509LT, 1502-502-650, 509-690, 1503-509-690		Z8N9, 9Ni490	X10Ni9, X12Ni09		F.2645-X8 Ni09	SL9N53(60)	ASTM A353
			Z18N5, 5Ni390					2515, 2517
	640A35		35NC6				SNC 236	3135
			14NC11	16NiCr11		F.1540-15NiCr11	SNC 415 (H)	3415
	655M13, 655A12, 655H13	36A, 36B	14NC11, 12NC15, 14NC12, 13NiCr14				SNC 815 (H), SNC22, JIS SNC 815	3310, 3415, 9314
	816M40	110	40NCD3, 36CrNiMo4, 35NCD5	38NiCrMo7 (KB)		F.1280-35NiCrMo4		9840
	805H20, 805M20, 806M20	362	20NCD2, 22NCD2	20NiCrMo2	2506	F1552-20NiCrMo2, F1534-20NiCrMo3	SNCM 220 (H)	J 1268 grade 8620H, 8620
	311-Type7		40NCD2	40NiCrMo2 (KB)		F1204-40NiCrMo2, F1205-40NiCrMo2DF	SNCM 240	8740
	816M40, 817M40	24	35NCD6, 34CrNiMo6, 34CrNiMo8	35NiCrMo6KB	2541	F1272-40NiCrMo7, 34CrNiMo6	SNCM 447, JIS SNc M447	4340
	820A16		18NCD6	18NiCrMo7		F.1560-14 NiCrMo13, F.156		
	832H13, 832M13, S157	36C	16NCD13	15NiCrMo13		F1560-14NiCrMo13, F.1569-14NiCrMo131		
	523M15	206	12C3, 15Cr2, 18C3				SCr 415 (H)	5132

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Building and construction steels** (continued)						
	P7 / P8	1.7033		34 Cr 4	34Cr4		
	P7 / P9	1.7035		41 Cr 4	41Cr4		
	P9	1.7045		42 Cr 4	42Cr4		
	P7	1.7131		16 MnCr 5	16MnCr5		
	P7 / P9	1.7176		55 Cr 3	55Cr3		
	P8	1.7218		25 CrMo 4	25CrMo4		
	P7 / P9	1.7220		34 CrMo 4	34CrMo4		
	P7 / P9	1.7223		41 CrMo 4	41CrMo4		
	P7 / P9	1.7225		42 CrMo 4	42CrMo4		
	P7	1.7262		15 CrMo 5	15CrMo5		
	P7	1.7335		13 CrMo 4 4	13CrMo4-5		
	P7 / P10	1.7361		32 CrMo 12	32CrMo12		
	P7	1.7380		10 CrMo 9 10	10CrMo9-10		
	P7	1.7715		14 MoV 6 3	14MoV6-3		
	P7 / P9	1.8159		50 CrV 4	51CrV4		
	P7	1.8509		41 CrAlMo 7	41CrAlMo7	Nitralloy 135	
	P7 / P10	1.8523		39 CrMoV 13 9	40CrMoV13-9		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	530A32, 530H32, 530M32		32C4, 34Cr4	34Cr4(KB)		F.8221-35 Cr 4, F.224	SCr 435 (H)	5132
	530M40, 530A40, 530H40	18	42C4, 41Cr4	41Cr4, 41Cr4KB		38Cr4, 38Cr41, 42Cr4, F.1202-42Cr4	SCR4, SCr 440 (H)	5140
	530A40	18	42C4, 42C4TS	41Cr4	2245	F1201, F1202, F1206, F.1202-42Cr4	SCR4, SCr 440 (H), SCr 440	5140, 5140H
	527M17, 590H17, 590M17		16MC5, 16MC4, 16MnCr5	16MnCr5	2511, 2173	F.1515-16 MnCr5, F.151		J 1268 grade 4118H, C5115
	525A58, 525A60, 525H60	48	55Cr3, 55C3	55Cr3	2253	F.1431-55 Cr3, F.143	SUP 9 (A)	5155
	1717CDS110, 708A25		25CD4, 25CrMo4	25CrMo4 (KB)	2225	F8372-AM26CrMo4, F8330-AM25CrMo4, F1256-30CrMo4-1, F.222	SCM420, SCM430, SCCrM1	4130
	708A37	19B	35CD4, 34CrMo4, 35CD4 / 34CrMo5	34CrMo4KB, 35CrMo4, 35CrMo4F	2234	F8331-AM34CrMo4, F8231-34CrMo4, F1250-35CrMo4, F1254-35CrMo4DF, F.125	SCM 432, SCCrM 3, SCM 435 H	4135, 4137, J 1268 grade 4135H
	708M40, 3111-5.1		42CD4TS	41CrMo4		F8332-AM42CrMo4, F8232-42CrMo4, F1252-40CrMo4	SCm 440, JIS SCM 440	4140
	708A42, 708M40, 709M40	19A	42CD4, 42CrMo4	38CrMo4KB, 42CrMo4, G40CrMo4	2244	F8332-AM42CrMo4, F8232-42CrMo4, F1252-40CrMo4	SCM 440 (H), SNB 7, JIS SCM 440	4140
			12CD4			F.1551-12CrMo4	SCM 415 (H)	
	620-440, 1503-620-440, 1502, 620-470, 3606-620, 620-540, 3604-620-440		15CD3.05, 15CD4.05	14CrMo3, 16CrMo3	2216	F.2631-14CrMo45	SFVA F 12	A387 grade 12Cl2, ASTM A182
	722M24	40B	30CD12	32CrMo12	2240	F.124.A		
	3059-622-490, 3606-622, 1502-622, 3604-622, 622Gr.31, 622Gr.45		12CD9.10, 10CrMo9-10, 10CrMo9-11	12CrMo9 (KW KG), G14CrMo9, 10	2218	TU.H	SFVAF22A, BSCMV4, SCPH32-CF	A387 grade 22, A387 grade 22Cl2, ASTM A182
	1503-660-460, 3604-660					F.2621-13 MoCrV6		
	735A50, 735A51, 735H51, 735M50	47	50CV4, 51CrV4, 50CrV4	50CrV4	2230	F.1430-51CrV4	SUP 10	6150
	905M39	41B	40CAD6.12	41CrAlMo7	2940	F.1740-41CrAlMo7	SACM 645, JIS SACM 645	Nitralloy 135
	897M39	40C						

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Stainless and heat-resistant steels**						
	P14 / P15	1.4000		X 7 Cr 13	X6Cr13		
	P14	1.4001		X 7 Cr 14	X7Cr14		
	P14 / P15	1.4006		X 10 Cr 13, X 12 Cr 13	X12Cr13, X10Cr13		
	P14	1.4016		X 6 Cr 17	X6Cr17		
	P15	1.4027		G-X 20 Cr 14	GX20Cr14		
	P15	1.4034		X 46 Cr 13	X46Cr13		
	P15	1.4057		X 20 CrNi 17 2	X19CrNi17-2, X17CrNi16-2		
	P14 / P15	1.4104		X 12 CrMoS 17	X14CrMoS17		
	P14	1.4113		X 6 CrMo 17 1	X6CrMo17-1		
	P15	1.4313		X 4 CrNi 13 4	X3CrNiMo13-4		
	P15	1.4718		X 45 CrSi 9 3	X45CrSi9-3-1		
	P14	1.4724		X 10 CrAl 13, X 10 CrAlSi 13	X10CrAlSi13, X10CrAl13		
	P14	1.4742		X 10 CrAl 18, X 10 CrAlSi 18	X10CrAl18, X10CrAlSi18		
	P15	1.4747		X 80 CrNiSi 20	X80CrNiSi20	Sil XB	
	P14	1.4762		X 10 CrAl 24, X 10 CrAlSi 25	X10CrAl24, X10CrAlSi25		
	Tool steels						
	P4	1.1545		C 105 W 1	C105U		
	P4	1.1663		C 125 W	C125W, C125U		
	P7 / H2	1.2067		100 Cr 6	99Cr6, 102Cr6		
	P11 / H3	1.2080		X 210 Cr 12	X210Cr12		
	P11 / H1	1.2344		X 40 CrMoV 5 1	X40CrMoV5-1		
	P11 / H3	1.2363		X 100 CrMoV 5 1	X100CrMoV5-1		
	P7 / H2	1.2419		105 WCr 6	107WCr5, 105WCr6, 100WCr6		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	403S17		Z6013, Z6Cr13, Z8C12	X6Cr13	2301	F.3110-X6 Cr13	SUS403, SUS410S, SUS429	403, 13/6
	403S17		Z3014, Z8C13FF	X6Cr13		F.8401-AM-X12 Cr13	SUS403, SUS410S, SUS429	403, 410S, 429
	410S21, 410C21, ANC1A		Z12C13, Z12Cr13, Z10C13	X12Cr13, X10Cr13	2302	F.3401-X12 Cr13	SUS 410, JIS SUS 410	410
	430S15, 430S17, 430S18	60	Z8C17, Z6Cr17	X8Cr17	2320	F.3113-X8 Cr17	SUS 430	430
	ANC1B, ANC1C, 420C24, 420C29		Z20C13M				SCS 2	
	420S45		Z40C14, Z40Cr14, Z38C13M, Z44C14	X40Cr14		F.3405-X46 Cr13		420
	431S29, 6S80, S80	57	Z15CN16.02	X16CrNi16	2321	F.3427-X15 CrNi16, F.313, F3427-X19CrNi172	SUS 431, JIS SUS 431	431
			Z10CF17	X10CrS17	2383	F3117-X10CrS17, F3413-X14CrMoS17	SUS 431, SUS430F	430F, J 405 grade 51435
	434S17		Z8CD17.01	X8CrMo17	2325	F3116-X6CrMo171	SUS 434	434
	425C11, 425C12		Z5CN13.4, Z4CND13.4M, Z6CN13-4, Z8CD17-01	GX6CrNi13 04	2385		SCS 5, SCS 6	CA6. 13/4
	401S45	52	Z45CS9	X45CrSi8		F.3220-X 4 ScrSi 09-03	SUH 1	HNV3
	403S17		Z10C13, Z13C13	X10CrAl12		F.13152-X 10 CrAl13		405
	430S15	60	Z10CAS18, Z12CAS18	X8Cr17		F.3153-X 10 CrAl 18	SUH 21	430
	443S65	59	Z80CSN20.02			F.3222-X 80CrSiNi20-02	SUH 4	HNV6
			Z10CAS24, Z12CAS25	X16Cr26	2322	F.3154-X 10 CrAl24	SUH 446	446
			C105E2U, Y1105	C100KU	1880	F515, F516	SK 3 (TC105)	W110
			Y2120			F.5123 C120		W112
	BL3, 534A99		100Cr6RR, 100C6, Y100C6		2258	F.5230 100 Cr6, F.1310 - 100 Cr6, F.131	SUJ 2, SUJ 4	L3, 52100, L1
	BD3		X200Cr12, Z200C12	X205Cr12KU		F.5212 X210 Cr12	SKD 1, SKS	D3
	BH13		X40CrMoV5, Z40CDV5	X40CrMoV511KU	2242	F.5318 X40 CrMoV5	SKD 61	H13, P20
	BA2		X100CrMoV5, Z100CDV5	X100CrMoV51KU	2260	F.5227 X100 CrMoV5	SKD 12, JIS SKD 12	A2, D2
			105WC13	107WCr5KU	2140	F.5233 105 WCr5, F.523	SKS 2, SKS 3, SKS 31	

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
P	**Tool steels** (continued)						
	P14 / H3	1.2436		X 210 CrW 12	X210CrW12-1, X210CrW12		
	P7 / H2	1.2542		45 WCrV 7	45WCrV8, 45WCrV7		
	P11 / P13	1.2581		X 30 WCrV 9 3	X30WCrV9-3		
	P14 / H3	1.2601		X 165 CrMoV 12	X165CrMoV12		
	P7 / P10 / H1	1.2713		55 NiCrMoV 6	55NiCrMoV6		
	P7 / H3	1.2833		100 V 1	100V1		
	P11 / H3	1.3243		S 6-5-2-5	HS6-5-2-5		
	P11 / H3	1.3255		S 18-1-2-5	HS18-1-2-5		
	P11 / H3	1.3343		S 6-5-2	HS6-5-2		
	P11 / H3	1.3348		S 2-9-2	HS2-9-2		
	P11 / H3	1.3355		S 18-0-1	HS18-0-1		
M	**Stainless and heat-resistant steels**						
	M1	1.4301		X 5 CrNi 18 10	X5CrNi18-10		
	M1	1.4305		X 10 CrNiS 18 9	X8CrNiS18-9		
	M1	1.4306		X 2 CrNi 19 11	X2CrNi19-11		
	M1	1.4308		G-X 6 CrNi 18 9	GX5CrNi19-10		
	M2	1.4310		X 12 CrNi 17 7	X9CrNi18-8, X10CrNi18-8		
	M1	1.4311		X 2 CrNiN 18 10	X2CrNiN18-10		
	M1	1.4401		X 5 CrNiMo 17 12 2	X5CrNiMo17-12-2, X4CrNiMo17-12-2, X5CrNiMo18-10		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
			X210CrW12-1, Z210CW12-01, Z 210 CW 12	X215CrW121KU	2312	F.5213 X210 CrW12, F.521		D6
	BS1		45WCrV8, 45WCrV20	45WCrV8KU	2710	F.5241 45 WCrSi 8, F.524, F524145WCrSi 8		S1
	BH21		X30WCrV9, Z30WCV9	X30WCrV93KU		F.5323 X30 WCrV9	SKD 5	O1, H21
				X165CrMoW12KU	2310	F.5211 X160 CrMoV12		
	BH224					F.528, F520S		L6
	BW2		C105E2UV1, Y1105V, 100V2	102V2KU			SKS 43	W210
	BM35		Z85WDKCV06-05-05-04-02, Z90WDKCV06-05-05-04-02	HS6-5-2-5	2723	F.5613 6-5-2-5	SKH 55	S7, M35
	BT4		Z80WKCV18-05-04-01	HS18-1-1-5		F.5530 18-1-1-5	SKH 3	T4
	BM2		Z85WDCV06-05-04-02	HS6-5-2-5	2722	F.5603 6-5-2	SKH 51	M2
			Z100DCWV09-04-02-02	HS2-9-2	2782	F.5607 2-9-2		M7
	BT1		Z80WCV18-04-01	HS18-0-1		F.5520 18-0-1	SKH 2	T1
	304S15, 304S16, 304S31, 304S11, 304S17, LW21, LWCF21	58E	Z4CN19-10FF, Z5CN17-08, Z6CN18-09, Z7CN18-09	X5CrNi18 10	2332, 233	F.3451-X5 CrNi18-10, F.314, F.3504-X6CrNi19 10, F3504-X5CrNi1810	SUS 304	304, 304H
	303S21, 303S22, 303S31	58M	Z10CNF18.09, Z8CNF18-09	X10CrNiS18 09	2346	F.3508-X10CrNiS18-09	SUS 303, JIS SUS 303	J 405 grade 30303, 303
	304S11, LW20, LWCF20, S536, T74, 304C12 (LT196), 305S11		Z1CN18-12, Z2CN18-10, Z3CN19.10M, Z3CN18-10, Z3CN19-11, Z3CN19-11FF	X3CrNi18 11, X2CrNi18 11, GX2CrNi19 10	2352	F.3503-X 2CrNi19-10, F3503-X 2CrNi18-10	JIS SCS 19, JIS SUS 304L	304L
	304C15, 304C15 (LT196)		Z6CN18.10M				SCS 13	
	301S21, 301S22, 302S26		Z12CN17.07, Z12CN18.07, Z11CN17-08, Z11CN18-08, Z12CN18-09	X12CrNi17 07	2331	F.3517-X12CrNi17 07	SUS 301	301
	304S62		Z3CN18-07Az, Z3CN18-10AZ	X2CrNiN18 11	2371	F3541-X2CrNiN1810	SUS 304 LN	304LN
	316S13, 316S17, 316S19, 316S31, 316S33, 316S16		Z6CND17.11, Z3CD17-11-01, Z6CND17-11, Z6CND17-11-02FF, Z7CND17-11-02, Z7CND17-12-02	X5CrNiMo17 12	2347	F.3543-X5CrNiMo17-12, F.3543-X6 CrNiMo17-12-03, F3543-X5CrNiMo17-122	SUS 316	316

C 3

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
M	**Stainless and heat-resistant steels** (continued)						
	M1	1.4408		G-X 6 CrNiMo 18 10	GX5CrNiMo19-11-2		
	M1	1.4429		X 2 CrNiMoN 17 13 3	X2CrNiMoN17-13-3		
	M1	1.4435		X 2 CrNiMo 18 14 3, X 2 CrNiMo 18 12	X2CrNiMo18-14-3		
	M1	1.4438		X 2 CrNiMo 18 16 4	X2CrNiMo18-15-4		
	M1	1.4460		X 4 CrNiMoN 27 5 2	X3CrNiMoN27-5-2		
	M1	1.4541		X 6 CrNiTi 18 10	X6CrNiTi18-10		
	M1	1.4550		X 6 CrNiNb 18 10	X6CrNiNb18-10		
	M1	1.4571		X 6 CrNiMoTi 17 12 2	X6CrNiMoTi17-12-2		
	M1	DIN 1.4565, 1.4581		G-X 5 CrNiMiNb 18 10	GX5CrNiMoNb19-11-2		
	M1	1.4583		X 10 CrNiMoNb 18 12	X10CrNiMoNb18-12		
	M1	1.4828		X 15 CrNiSi 20 12	X15CrNiSi20-12		
	M2	1.4871		X 53 CrMnNiN 21 9	X53CrMnNiN21-9		
	M1	1.4878		X 12 CrNiTi 18 9	X12CrNiTi18-9, X10CrNiTi18-10		
	Heat-resistant alloys, Fe-based						
	M1	1.4558		X 2 NiCrAlTi 32 20	X2NiCrAlTi32-20		
	M1	1.4563		X 1 NiCrMoCu 31 27 4	X1NiCrMoCu31-27-4		
	M1	1.4864		X 12 NiCrSi 36 16	X12NiCrSi36-16, X12NiCrSi35-16	Incoloy DS	
	M1	1.4958		X 5 NiCrAlTi31-20	X5NiCrAlTi31-20		
	M1	1.4977			X 40 CoCrNi 20 20		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI/ SAE
	316C16, 316C16 (LT196), ANC4B					F.8414-AM-X7 CrNiMo20 10	SCS 14	
	316S62, 316S63		Z2CND17.13Az	X2CrNiMoN17 13	2375	F3543-X2CrNiMoN17133	SUS 316 LN	316LN
	316S11, 316S13, 316S14, 316S31, LW22, LWCF22, 316S12		Z2CND17.13, Z3CND17-12-03, Z3CND18-14-03	X2CrNiMo17 13	2353	F.3533-X2 CrNiMo 17-12-03, F.3534-X6 CrNiMo 17-12-03		316L
	317S12		Z2CND19.15, Z2CND19-15-04, Z3CND19-15-04	X2CrNiMo18 16	2367	F3539-X2CrNiMo18164	SUS 317 L	317L
			Z3CND25-07Az, Z5CND27-05Az		2324	F3309-X8CrNiMo27-05, F3552-X8CrNiMo266	SUS 329 J1	329
	321S12, 321S31, 321S51 (1010, 1105) LW24, LWCF24	58B, 58C	Z6CNT18.10	X6CrNiTi18 11	2337	F.3553-X7 CrNiTi 18-11, F.3523-X 6 CrNiTi 18-11, 09 Ch 18N10T, F3523-X6CrNiTi1810	SUS 321, JIS SUS 321	321, 15/5 PH, 17/4 PH
	347S20, 347S31, 347S51, ANC3B	58F, 58G	Z6CNNb18.10	X6CrNiNb18 11, X8CrNiNb18 11	2338	F.3552-X 7 CrNiNb 18-11, F.3524-X 67 CrNiNb 18-11, F3524-X6CrNiNb1810	SUS 347	347, 13/8 MO
	320S31, 320S17, 320S18	58J	Z6CNDT17.12	X6CrNiMoTi17 12	2350	F.3552-X 6 CrNiMoTi17-12-03, F3535-X6CrNiMoTi17122	SUS 316 Ti	316Ti, 326Ti
	318C17, ANC4C		Z4CNDNb18.12M	GX6crNiMoNb20 11			SCS 22	Nitronic 50.60
				X6CrNiMoNb17 13				
	309S24		Z15CNS20.12, Z17CNS20-12, Z9CN24-13	X16CrNi23 14		F3312-X15CrNiSi20-12	SUH 309	309
	349S54		Z52CMN21.09, Z53CMNS21-09Az, Z53CMN21-09Az	X53CrMnNiN21 9		F.3217-X53 CrMnNiN 21-09	SUH 35, SUH 36	EV8, 2205 Duplex
	321S20, 321S51	58B, 58C	T6CNT18.12 (B), Z6CNT18-10		2337	F.3523-X 6CrNiTi 18 11	SUS 321	321
								N08800 Incoloy 800
								N08028 Alloy 28
	NA17		Z12NCS37.18, Z12NCS35.16, Z20NCS33-16			F.3313-X12 CrNi 36-16	SUH 330	N08830 Alloy 330
			Z 42 CNKDWNb					

C3

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
K	**Grey cast iron**						
	K3	0.6010	EN-JL1010	GG-10, GG 10	EN-GJL-100		
	K3	0.6015	EN-JL1020	GG-15, GG 15	EN-GJL-150		
	K3	0.6020	EN-JL1030	GG-20, GG 20	EN-GJL-200		
	K3	0.6025	EN-JL1040	GG-25, GG 25	EN-GJL-250		
	K4	0.6030	EN-JL1050	GG-30, GG 30	EN-GJL-300		
	K4	0.6035	EN-JL1060	GG-35, GG 35	EN-GJL-350		
	K4	0.6040		GG-40, GG 40	EN-GJL-400		
	K4	0.6660		GGL-NiCr 20 2			
	K4			GG-26Cr, GG 26Cr	EN-GJL-260 Cr		
	K7			GGV 45	EN-GJV-450		
	Ductile cast iron						
	K5	0.7040	EN-JS1030	GGG-40	EN-GJS-400-15		
	K6	0.7050	EN-JS1050	GGG-50	EN-GJS-500-7		
	K6	0.7060	EN-JS1060, EN-JS 1092	GGG-60	EN-GJS-600-3, EN-GJS-600-3U		
	K6	0.7070	EN-JS1070, EN-JS 1102	GGG-70	EN-GJS-700-2, EN-GJS-700-2U		
	Malleable cast iron						
	K1	0.8035	EN-JM 1010	GTW-35, GTW-35-04	GTW-35-04, EN-GJMW-350-4		
	K1	0.8040	EN-JM 1030	GTW-40-05, GTW-40	EN-GJMW-400-5, GTW-40-05		
	K1	0.8045	EN-JM 1040	GTW-45-07, GTW-45	EN-GJMW-450-7		
	K1	0.8135	EN-JM 1130	GTS-35-10, GTS-35	EN-GJMB 350-10		
	K1	0.8145	EN-JM 1140	GTS-45-06, GTS-45	EN-GJMB 450-6, GTS-45-06		
	K1	0.8155	EN-JM 1160	GTS-55-04, GTS-55	EN-GJMB 550-4, GTS-55-04		
	K2	0.8165	EN-JM 1180	GTS 65-02, GTS-65	EN-GJMB 650-2, GTS-65-02		
	K2	0.8170	EN-JM 1190	GTS 70-02, GTS-70	EN-GJMB 700-2, GTS-70-02		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
			Ft10D, FGL100	G10	0110	FG 10	FC 100, FC10	ASTM A-48-76
	Grade 150		Ft15D, FGL150	G15	0115	FG 15	FC 150	NO 20B
	Grade 220		Ft20D, FGL200	G20	0120	FG 20	FC 200, FC20	NO 30B
	Grade 260		Ft25D, FGL250	G25	0125	FG 25	FC25, FC 250	NO 35B
	Grade 300		Ft30D, FGL300	G30	0130	FG 30	FC 300	NO 40B
	Grade 350		Ft35D, FGL350	G35	0135	FG 35	FC 350	NO 55B
	Grade 400		Ft40D, FGL400		0140			
	L-NiCr20 2		L-NC 20 2		0523			
	420 / 12		FGS 400-12	GS400-12	0717		FCD 400, FCD40	60/40/18
	500 / 7		FGS 500-7	GS500-7	0727		FCD 500, FCD50	70/50/05
	600 / 3		FGS 600-3	GS600-3	0732		FCD 600, FCD60	80/55/06
	700 / 2		FGS 700-2	GS700-2	0737		FCD 700, FCD70	100/70/03 120/90/02
	W 35-04		MB 35-7				FCMW 330	
	W 410 / 4		MB 40-10				FCMW 350	
	45-07		MB 45-7				FCMWP 440	
	B 340 / 12		MN 35-10		0815		FCMB 340	32510
	P 440 / 7, P 45-06		MP 50-5		0854			40010
	P 540 / 5, P 55-04		MP 60-3		0856			50005
	P 65-02				0862			60004
	P 70-02		MP 70-2		0862			70003

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
N	**Aluminium alloys**						
	N1	3.0255	EN AW-1050A	Al99.5	Al99.5		
	N4	3.1371	EN AC-21000	G-AlCu4TiMg	G-AlCu4TiMg		
	N2	3.1655	EN AW-2011	AlCuBiPb	AlCu6BiPb		
	N2	3.1734		Y-Legierung	AlCu4Mg1.5Ni2, WL 3.1734		
	N4	3.2371	EN AC-42100	G-AlSi7Mg	G-AlSi7Mg, AlSi7Mg		
	N4	3.2373	EN AC-43300	G-AlSi9Mg	G-AlSi9Mg, AlSi9Mg		
	N4	3.2381	EN AC-43000	G-AlSi10Mg	G-AlSi10Mg, AlSi10Mg		
	N4	3.2382	EN AC-43400	GD-AlSi10Mg	AlSi10Mg(Fe)		
	N4	3.2383	EN AC-43200	G-AlSi10MgCu	G-AlSi10MgCu, AlSi10Mg (Cu)		
	N3	3.2581	EN AC-44200	G-AlSi12	G-AlSi12, AlSi12		
	N3	3.2582	EN AC-44300	GD-AlSi12	GD-AlSi12, AlSi12 (Fe)		
	N3	3.2583	EN AC-47000	G-AlSi12 (Cu)	G-AlSi12 (Cu)		
	N2	3.3315	EN AW-5005A	AlMg1	AlMg1C		
	N3	3.3561	EN AC-51300	G-AlMg5	G-AlMg5		
	N2	3.4345	EN AW-7022	AlZnMgCu0.5	AlZnMgCu0.5		
	N4	DIN 3.3211					
	N4	DIN 3.4365					
	Copper alloys						
	N7	2.0240	CW502L	CuZn15	CuZn15	Medium red tombac, gold tombac	
	N7	2.0265	CW505L	CuZn30	CuZn30	Half tombac, soldered brass, cartridge brass, polished brass, metarsic	
	N7	2.0321	CW508L	CuZn37	CuZn37	Pressed brass, etching quality, tuned brass, soft brass, stamped brass	
	N7	2.0592	CC765S	G-CuZn35Al1, GK-CuZn35Al1, GZ-CuZn35Al1	CuZn35Mn2Al1Fe1-C		
	N7	2.0596	CC764S	G-CuZn34Al2, GK-CuZn34Al2, GZ-CuZn34Al2	CuZn34Mn3Al2Fe1-C		
	N7	2.0966	CW307G	CuAl10Ni5Fe4	CuAl10Ni5Fe4		
	N7	2.0975	CC333G	G-CuAl11Ni, G-CuAl10Ni	G-CuAl11Ni		
	N7	2.1050	CC480K	G-CuSn10Zn	CuSn10-C		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	1B		A5	4507	4007	L-3051	A1x1, A1050	1050A
			A-U5GT			L-2140	AC1B	B26
	FC1		A-U5PbBi	6362	4355	L-3182	A2011	2011
	LM14		A-U4NT	3045		L-2150	AC5A	
	2L99, LM25		A-S7G0.3	7257	4244	L-2651	AC4C, JIS AC4 CH (AL 9)	B25
			A7-S10G	3051	4253		AC4A, JIS AC4 A (AL 4)	A13560
	LM9		A-S10G	3051	4253	L-2560, L-2561	JIS AC4 A (AL 4V)	A13600
	LM9		A-S10G	3051	4253	L-2560, L-2561	AC4A	
			A-S9GU				JIS ADC3 (AL 4)	A360.2
	LM6		A-S13	4514	4261	L-2520, L-2521	AC3A	A413.2
	LM6, LM20		A-S13, A-S12	4514, G-AlSi13	4261	L-2520, 21	AC3A	A413.0
	LM20		A-S12U	3048	4260	L-2530	ADC1 (AK 12), AC3A (AL 12)	413.1
	N41		A-G0, 6	5764	4106	L-3350	A2x8, A5005	5005A
	N6, LM5		A-G6	3058	4146	L-3320	JIS AC7A (AL28)	5056A, 514.1
			A-Z5GU0.6					
								6061-T6
								7075-T6
	CZ 102		CuZn15				C2300	C23000
	CZ 106		CuZn30				C2600	C26000
	CZ 108		CuZn37				C2720	C27400
	HTB 1							C86500
								C86200
	CA 104		CuAl9Ni5Fe3Mn, U-A10N					C63000
	AB2		CuAl11Ni5Fe	G-CuAl11Fe4Ni4				B-148-52
	G1, CT1							C90700

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
N	**Copper alloys** (continued)						
	N7	2.1052	CC483K	G-CuSn12, GZ-CuSn12, GC-CuSn12	CuSn12-C		
	N9	2.1090	CC493K	G-CuSn7ZnPb, GZ-CuSn7ZnPb, GC-CuSn7ZnPb	CuSn7Zn4Pb7-C	Rotguss 7	
	N9	2.1096	CC491K	G-CuSn5ZnPb	CuSn5Zn5Pb5-C	Rotguss 5	
	N9	2.1098	CC490K	G-CuSn2ZnPb	CuSn3Zn8Pb5-C	Alloy 5A	
	N9	2.1176	CC495K	G-CuPb10Sn, GZ-CuPb10Sn, GC-CuPb10Sn	CuSn10Pb10-C		
	N9	2.1182	CC496K	G-CuPb15Sn, GZ-CuPb15Sn, GC-CuPb15Sn	CuSn7Pb15-C		
	N9	2.1188	CC497K	G-CuPb20Sn	CuSn5Pb20-C		
	N7	2.1293	CW106C	CuCrZr	CuCr1Zr		
	N7			CuAl6.5Fe2.5Sn0.25		AMPCO 8	
	N7					AMPCO 6	
	N10			CuAl13Fe4.5		AMPCO 21	
	N10					AMPCO 26	
	Magnesium-based alloys						
	N6	3.5101	EN-MC35110	G-MgZn 4 SE 1 Zr 1	EN-MCMgZn4RE1Zr, G-MgZn4SE1Zr1		
	N6	3.5103	EN-MC65120	G-MgSE 3 Zn 2 Zr 1	EN-MCMgRE3Zn2Zr, G-MgSE3Zn2Zr1		
	N6	3.5106	EN-MC65210	G-MgAg 3 SE 2 Zr 1	EN-MCMgRE2Ag2Zr, G-MgAg3SE2Zr1		
	N6	3.5161		MgZn6Zr, MgZn 6 Zr F 29	MgZn6Zr, MgZn6Zr F29		
	N6	3.5200		MgMn2	MgMn2		
	N6	3.5312		MgAl3Zn	MgAl3Zn		
	N6	3.5470	EN-MC21320	MgAl4Si1	EN-MCMgAl4Si		
	N6	3.5612		MgAl6Zn	MgAl6Zn		
	N6	3.5632	EN-MC21150	G-MgAl 6 Zn 3	G-MgAl6Zn3	AZ63	
	N6	3.5662		G-MgAl 6	G-MgAl6		
	N6	3.5812	EN-MC21110	G-MgAl 8 Zn 1	G-MgAl8Zn1	AZ81 hp	
	N6	3.5912	EN-MC21120	GD-MgAl 9 Zn 1	GD-MgAl9Zn1	AZ91	

C3

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	Pb2		A53-707, CuSn12					Amcoloy 712, B505
			CuSn7Pb6Zn4					C93200
	LG2		CuPb5Sn5Zn5					C83600
	LG1							
	LB2		CuPb10Sn10					C93700
	LB1							C93800
	LB5		CuPb20Sn5					C94100
	CC 102			CuCrZr				C18200
								AMPCO 8
								AMPCO 6
								AMPCO 21
								AMPCO 26
	RZ5, MAG5, MAG9, TZ6		G-Z4TR, ZH62					ZE41
	ZRE1, MAG6		G-TR3Z2					EZ33
	MSR, QE22		G-Ag2, 5					QE22
	ZW1, ZW3, ZW6, ZW21, MAG 161, MAG 131, MAG 141, MAG 151							M1
	MAG 101, AM503		G-M2					
	AZ31, MAG 111		G-A3Z1, AZ31					52, 510
			G-A4S1					
	MAG121, AZM		G-A6Z1, AZ61					520, 531
			AZ63					
	MAG1, MAG2, AZ80, AZ81, A8		G-A9, AZ81	AZ81 hp			AZ81 hp	AZ81
	AZ91, MAG3, MAG7		G-A9Z1, AZ91	AZ91 hp				HK31

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
S	**Titanium and titanium alloys**						
	S6	3.7025		Ti 1	Ti 99.8	Titanium grade 1	
	S7	3.7115.1		TiAl 5 Sn 2	TiAl5Sn2.5		
	S6	3.7124		TiCu2	TiCu2		
	S7	3.7164, 3.7165		TiAl 6 V 4	TiAl6V4	Titanium grade 5	
	Heat-resistant alloy Ni/Co-based						
	S3	2.4360		NiCu30Fe	NiCu30	Monel 400	
	S4	2.4375		NiCu30Al	NiCu30Al3Ti	Monel K500	
	S3	2.4630		NiCr20Ti		Nimonic 75	
	S3	2.4642		NiCr30Fe		Inconel 690, Alloy 690	
	S4	2.4668		NiCr19Fe19NbMo, NiCr19Fe19Nb5Mo3, NiCr19NbMo	NiCr19Nb5Mo3	Inconel 718, Udimet 630	
	S4	2.4669		NiCr15Fe7TiAl, Alloy X-750	NiCr15Fe7Ti2Al	Inconel X-750, Alloy X-750	
	S3	2.4856		NiCr22Mo9Nb, Alloy 625	NiCr22Mo9Nb	Inconel 625	
	S3	2.4858		NiCr21Mo, Alloy 825	NiFe30Cr21Mo3	Incoloy 825	
	S4	DIN 2.4698					
	S4	DIN 2.4654					
H	**Hardened cast iron**						
	H4	0.9640		G-X300CrMoNi1521	GX300CrMoNi15-2-1		
	H4	0.9645		G-X260CrMoNi2021	GX260CrMoNi20-2-1		
	H4	0.9650		G-X260Cr27	GX260Cr27		
	H4	0.9655		G-X300CrMo271	GX300CrMo27-1		
	Chilled cast iron						
	H4	0.9620		G-X260NiCr42	GX260NiCr42	Ni hard 2	
	H4	0.9625		G-X330NiCr42	GX330NiCr42	Ni hard 1	
	H4	0.9630		G-X300CrNiSi952	GX300CrNiSi952	Ni hard 4	
	H4	0.9635		G-X300CrMo153	GX300CrMo15-3		

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
	TA.1		T-35			Ti-P01		R2050
								R54620
	TA.21, TA.22, TA.23, TA.24, TA.52, TA.53, TA.54, TA.55, TA.58		T-U2			Ti-P11		
	TA.10, TA.11, TA.12, TA.13, TA.28, TA.56		T-A6V			Ti-P63		4911, 4928, 4935, 4954, 4965, 4967, 6AL4V
	3072-76, NA13		NU30					Monel 400
	3072-76, HC202, 3146, Na18							AMS 4676, Monel K500
	HR5, 703 B, 203-4		NC 20 T					Nitronic 75, Nimonic 90/120
								Inconel 690
	HR 8		NC 19 FeNb					Inconel 718
	HR 505		NC 15 FeTNb					5542G, Inconel X-750
			NC 22 FeDNB					Incoloy 825
	3072-76		NC 21 FeDU					
								Hastelloy C
								Waspaloy
	Grade 3A, grade 3B, BS4844							
	Grade 3C							
	Grade 3D				0466			A532111A 25% CR
	Grade 3E							A532111A 25% CR
	Grade 2A, BS4844 (1986) 2A				0512			Ni hard 2
	Grade 2B, BS4844 (1986) 2B				0513			Ni hard 1
	Grade 2C, grade 2D, grade 2E, BS4844 (1986) 2E				0457			Ni hard 4
	Grade 3A; B, grade 3B							

Material comparison table

Material group	Machining group	Germany					
		Mat. no. DIN	Mat. no. DIN EN	DIN	DIN EN	Manufacturer designation	
O	**Thermosetting plastics**						
	02					EP, epoxide, epoxy	
	02					Bakelite	
	02					Pertinax	
	02					Resitex	
	Thermoplastics						
	01					PMMA, polymethyl metacrylate, Plexiglass, acrylic glass	
	01					PC, polycarbonate, Makrolon	
	01					PA, polyacrylamide	

	Great Britain		France	Italy	Sweden	Spain	Japan	USA
	B.S.	EN	AFNOR	UNI	SS	UNE	JIS	AISI / SAE
								Epoxy, Bakelite
								Phenolic
								Phenolic w/glass
								Resitex
								Plexiglas, acrylic, polycarbonate
								UHMW
								Acetal plastics, Delrin, Celcon, Teflon, nylon

Hardness comparison table
Tensile strength, Brinell, Vickers and Rockwell hardness (extract from DIN 50150)

Tensile strength R_m N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRC
255	80	76,0	
270	85	80,7	
285	90	85,5	
305	95	90,2	
320	100	95,0	
335	105	99,8	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	156	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	235	223	
770	240	228	20,3
785	245	233	21,3
800	250	238	22,2
820	255	242	23,1
835	260	247	24,0
850	265	252	24,8
865	270	257	25,6
880	275	261	26,4
900	280	266	27,1
915	285	271	27,8
930	290	276	28,5
950	295	280	29,2
965	300	285	29,8
995	310	295	31,0
1030	320	304	32,2
1060	330	314	33,3
1095	340	323	34,4
1125	350	333	35,5
1155	360	342	36,6
1190	370	352	37,7
1220	380	361	38,8
1255	390	371	39,8
1290	400	380	40,8
1320	410	390	41,8
1350	420	399	42,7
1385	430	409	43,6

Tensile strength R_m N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRC
1420	440	418	44,5
1455	450	428	45,3
1485	460	437	46,1
1520	470	447	46,9
1555	480	(456)	47,7
1595	490	(466)	48,4
1630	500	(475)	49,1
1665	510	(485)	49,8
1700	520	(494)	50,5
1740	530	(504)	51,1
1775	540	(513)	51,7
1810	550	(523)	52,3
1845	560	(532)	53,0
1880	570	(542)	53,6
1920	580	(551)	54,1
1955	590	(561)	54,7
1995	600	(570)	55,2
2030	610	(580)	55,7
2070	620	(589)	56,3
2105	630	(599)	56,8
2145	640	(608)	57,3
2180	650	(618)	57,8
	660		58,3
	670		58,8
	680		59,2
	690		59,7
	700		60,1
	720		61,0
	740		61,8
	760		62,5
	780		63,3
	800		64,0
	820		64,7
	840		65,3
	860		65,9
	880		66,4
	900		67,0
	920		67,5
	940		68,0

Any hardness values converted on the basis of this table will be approximate only.
See DIN 50150.
Values in brackets are theoretically calculated values.

Material property	Unit/test method	Symbol
Tensile strength	N/mm²	R_m
Vickers hardness	Diamond pyramid 136° Testing force F ≥ 98 N	HV
Brinell hardness Calculated from: HB = 0.95 × HV	0.102 × F/D² = 30 N/mm² F = testing force in N D = sphere diameter in mm	HB
Rockwell hardness C	Diamond cone 120° Overall testing force 1471 ± 9 N	HRC

ISO tolerances

Nominal size range in mm	Tolerances* for external dimensions																	
	d11	e7	e8	h5	h6	h7	h8	h9	h10	h11	h12	js14	js16	k6	k10	k11	k12	m7	p7
> 3	−20 −80	−14 −24	−14 −28	0 −4	0 −6	0 −10	0 −14	0 −25	0 −40	0 −60	0 −100	+125 −125	+300 −300	+6 0	+40 0	+60 0	+100 0	+12 +2	+16 +6
> 3 ≤ 6	−30 −105	−20 −32	−20 −38	0 −5	0 −8	0 −12	0 −18	0 −30	0 −48	0 −75	0 −120	+150 −150	+375 −375	+9 +1	+48 0	+75 0	+120 0	+16 +4	+24 +12
> 6 ≤ 10	−40 −130	−25 −40	−25 −47	0 −6	0 −9	0 −15	0 −22	0 −36	0 −58	0 −90	0 −150	+180 −180	+450 −450	+10 +1	+58 0	+90 0	+150 0	+21 +6	+30 +15
> 10 ≤ 18	−50 −160	−32 −50	−32 −59	0 −8	0 −11	0 −18	0 −27	0 −43	0 −70	0 −110	0 −180	+215 −215	+550 −550	+12 +1	+70 0	+110 0	+180 0	+25 +7	+36 +18
> 18 ≤ 30	−65 −195	−40 −61	−40 −73	0 −9	0 −13	0 −21	0 −33	0 −52	0 −84	0 −130	0 −210	+260 −260	+650 −650	+15 +2	+84 0	+130 0	+210 0	+29 +8	+43 +22
> 30 ≤ 50	−80 −240	−60 −75	−50 −89	0 −11	0 −16	0 −25	0 −39	0 −62	0 −100	0 −160	0 −250	+310 −310	+800 −800	+18 +2	+100 0	+160 0	+250 0	+34 +9	+51 +26
> 50 ≤ 80	−100 −290	−80 −90	−60 −106	0 −13	0 −19	0 −30	0 −46	0 −74	0 −120	0 −190	0 −300	+370 −370	+950 −950	+21 +2	+120 0	+190 0	+300 0	+41 +11	+62 +32
> 80 ≤ 120	−120 −340	−72 −107	−72 −126	0 −15	0 −22	0 −35	0 −54	0 −87	0 −140	0 −220	0 −350	+435 −435	+1100 −1100	+25 +3	+140 0	+220 0	+350 0	+48 +13	+72 +37
> 120 ≤ 180	−145 −395	−86 −125	−85 −148	0 −18	0 −25	0 −40	0 −63	0 −100	0 −160	0 −250	0 −400	+500 −500	+1250 −1250	+28 +3	+160 0	+250 0	+400 0	+55 +15	+83 +43
> 180 ≤ 250	−170 −460	−100 −148	−100 −172	0 −20	0 −29	0 −46	0 −72	0 −115	0 −185	0 −290	0 −460	+575 −575	+1450 −1450	+33 +4	+185 0	+290 0	+460 0	+63 +17	+96 +50
> 250 ≤ 315		−110 −162																	+108 +56
> 315 ≤ 400		−125 −182																	+119 +52
> 400 ≤ 500		−135 −198																	+131 +53

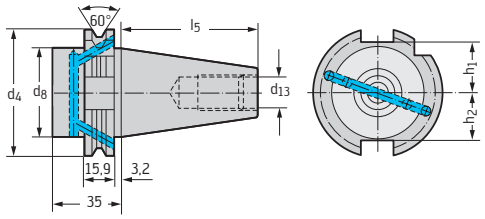
Nominal size range in mm	Tolerances* for external dimensions
	z9
> 3	+51 +26
> 3 ≤ 6	+65 +35
> 6 ≤ 10	+78 +42
> 10 ≤ 14	+93 +50
> 14 ≤ 18	+103 +60
> 18 ≤ 24	+125 +73
> 24 ≤ 30	+140 +88
> 30 ≤ 40	+174 +112
> 40 ≤ 50	+196 +136
> 50 ≤ 65	+246 +172
> 65 ≤ 80	+284 +210
> 80 ≤ 100	+345 +258
> 100 ≤ 120	+397 +310
> 120 ≤ 140	+465 +365
> 140 ≤ 160	+515 +415
> 160 ≤ 180	+565 +465
> 180 ≤ 200	+635 +520

Nominal size range in mm	Tolerances* for internal dimensions			
	H6	H7	H11	H12
> 3	+6 0	+10 0	+60 0	+0,10 0
> 3 ≤ 6	+8 0	+12 0	+75 0	+0,12 0
> 6 ≤ 10	+9 0	+15 0	+90 0	+0,15 0
> 10 ≤ 18	+11 0	+18 0	+110 0	+0,18 0
> 18 ≤ 30	+13 0	+21 0	+130 0	+0,21 0
> 30 ≤ 50	+16 0	+25 0	+160 0	+0,25 0
> 50 ≤ 80	+19 0	+30 0	+190 0	+0,30 0
> 80 ≤ 120	+22 0	+35 0	+220 0	+0,35 0
> 120 ≤ 180	+25 0	+40 0	+250 0	+0,40 0
> 180 ≤ 250	+29 0	+46 0	+290 0	+0,46 0

* Tolerances in µm in accordance with DIN ISO 286 (previously: DIN 7160 or DIN 7161)

Clamping systems for tools and tool adaptors

Tool adaptor
DIN 69871 part 1, form B

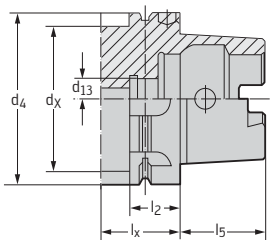


(with internal coolant supply; dimensions similar to form A)

SK no.	l_5 mm	d_4 mm	d_8 max. mm	d_{13}	h_2 mm	h_1 mm
40	68,40	63,55	50	M16	22,8	25,0
50	101,75	97,50	80	M24	35,5	37,7

C 3

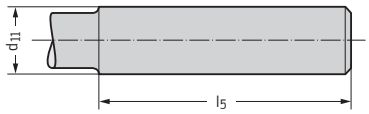
HSK tool adaptor
DIN 69893 part 1, form A



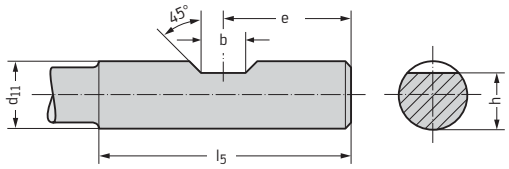
HSK	l_5 mm	d_4 mm	d_8 max. mm	d_{13}	l_2 mm	$l_{x\ min.}$ mm
63	32	63	53	M18 × 1,0	26	42
100	50	100	85	M24 × 1,5	29	45

Parallel shank
DIN 1835 A/DIN 1835 B

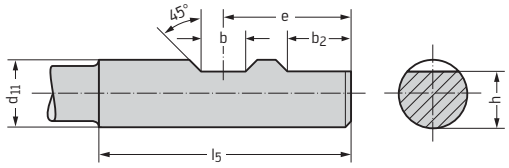
Form A
for d_{11} = 3-20 mm



Form B
for d_{11} = 3-20 mm



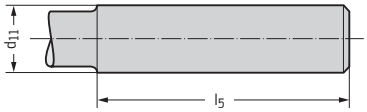
Form B
for d_{11} = 25 mm



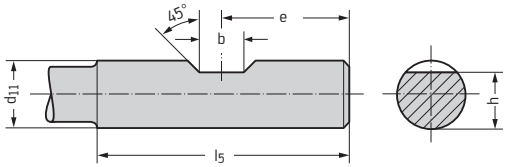
d_{11} h_6 mm	l_5 +2 mm	b +0,05 mm	e −1 mm	b_2 +1 mm	h h_{13} mm
3	28	–	–	–	–
4	28	–	–	–	–
5	28	–	–	–	–
6	36	4,2	18	–	4,8
8	36	5,5	18	–	6,6
10	40	7	20	–	8,4
12	45	8	22,5	–	10,4
16	48	10	24	–	14,2
20	50	11	25	–	18,2
25	56	12	32	17	23,0
32	60	14	36	19	30,0
40	70	14	40	19	38,0
50	80	18	45	23	47,8

Parallel shank
DIN 6535 HA/DIN 6535 HB

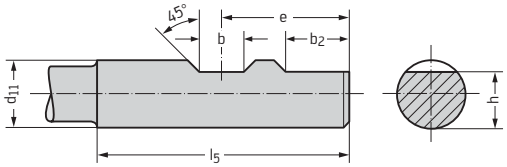
Form HA
for d_{11} = 6-20 mm



Form HB
for d_{11} = 6-20 mm

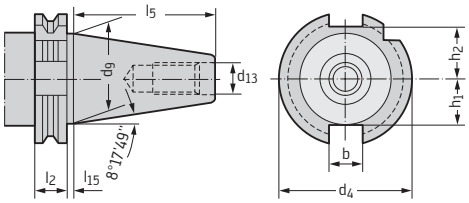


Form HB
for d_{11} = 25 mm



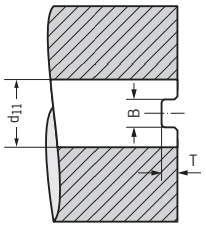
d_{11} h_6 mm	l_5 +2 mm	b +0,05 mm	e −1 mm	b_2 +1 mm	h h_{11} mm
6	36	4,2	18	–	5,1
8	36	5,5	18	–	6,9
10	40	7	20	–	8,5
12	45	8	22,5	–	10,4
14	45	8	22,5	–	12,7
16	48	10	24	–	14,2
18	48	10	24	–	16,2
20	50	11	25	–	18,2
25	56	12	32	17	23,0

Tool adaptor
(SK) DIN 69871 part 1, form A



SK no.	l_5 −0,3 mm	l_2 −0,1 mm	l_{15} ±0,2 mm	d_9 mm	d_{13}	d_4 −0,1 mm	b H12 mm	h_1 −0,4 mm	h_2 −0,4 mm
40	68,40	15,9	3,2	44,45	M16	63,55	16,1	22,8	25,0
50	101,75	15,9	3,2	69,85	M24	97,50	25,7	35,5	37,7

Bore with transverse keyway
DIN 138 – A 10



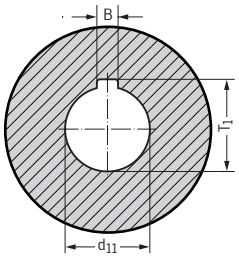
d_{11} mm	B H11 mm	T H12 mm
16	8,4	5,6
22	10,4	6,3
27	12,4	7
32	14,4	8
40	16,4	9

C3

Clamping systems for tools and tool adaptors

(continued)

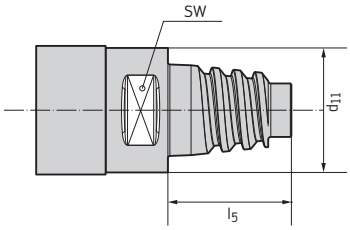
Bore with longitudinal keyway
DIN 138 – L 10



d_{11} H7 mm	B mm	T_1 mm
16	4	17,7
22	6	24,1
27	7	29,8
32	8	34,8
40	10	43,5
50	12	53,6
60	14	64,2

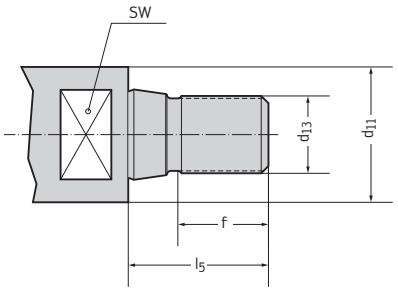
C 3

ConeFit tool adaptor



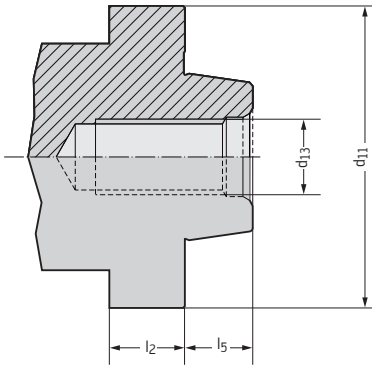
Type	d_{11} mm	l_5 mm	SW mm
E10	9,7	12,4	8
E12	11,7	14,5	10
E16	15,5	18,7	12
E20	19,3	21,3	16
E25	24,2	25,6	20

ScrewFit tool adaptor



Type	d_{11} mm	d_{13}	l_5 mm	f mm	SW mm
T09	9,7	M5	14	6	8
T14	14,5	M8	18	10	12
T18	18,5	M10	21	12	14
T22	22	M12	23	14	17
T28	28	M16	29	18	21
T36	36	M20	35	20	30
T45	45	M20	35	20	36

NCT tool adaptor

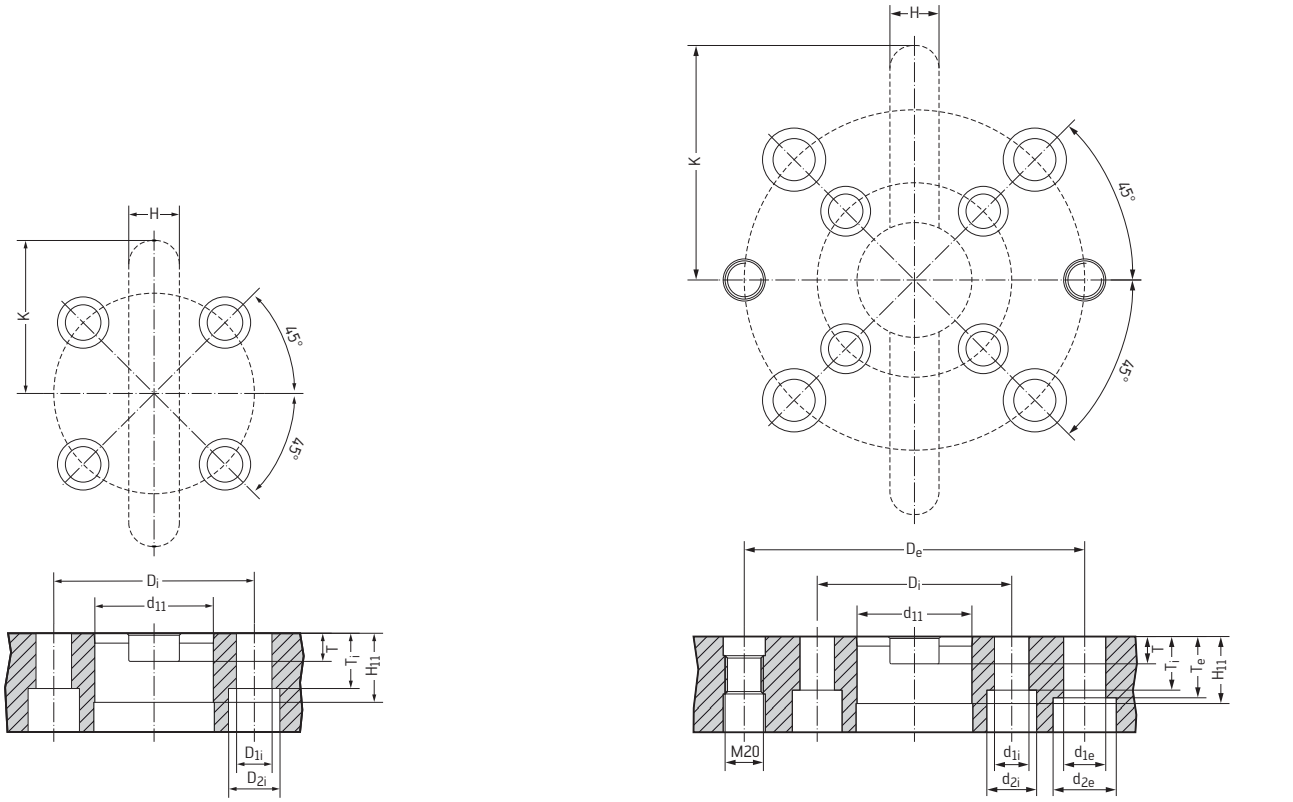


Type	d_{11} mm	d_{13}	l_5 mm	l_2 mm
25	24,85	M8	6,975	14
32	31,85	M8	6,975	14
40	39,85	M12	11,975	16
50	49,85	M12	11,975	16
63	62,85	M16	15,975	16
80	79,85	M20	17,975	18

C 3

Bores with transverse keyway for spindle heads in accordance with DIN 2079 form B

	d_{11} mm	H_{11} mm	D_i mm	d_{1i} mm	d_{2i} mm	D_e mm	d_{1e} mm	d_{2e} mm	H mm	T mm	K mm	T_i mm	T_e mm
ISO 40/40 B	40	30	66,7	14	–	–	–	–	16,455	9,075	52,5	–	–
ISO 60/50 B	60	35	101,6	18	26	–	–	–	25,64	14,25	77,5	28	–
ISO 60/60–50 BB	60	35	101,6	18	26	177,8	22	33	25,64	14,25	122,5	28	32



Technologies made by Walter

Technology brands

Tiger·tec® Silver	With Tiger·tec® Silver, Walter is offering a world first in coating technology for indexable inserts. The special aluminium oxide layer with optimised microstructure reduces wear during turning, milling and drilling operations, and increases toughness and temperature resistance for significantly higher cutting data.
Walter BLAXX	Walter BLAXX is the benchmark for a new generation of milling cutters: The milling bodies are extremely robust thanks to their special surface treatment. The milling systems, which are mainly positioned tangentially, are equipped with Tiger·tec® indexable inserts. Tools with the Walter BLAXX designation combine high wear resistance with unbeatable performance data.
Xtra·tec®	Xtra·tec® indexable insert milling cutters and drills guarantee extremely soft cutting action and optimal surface quality on almost all materials. Indexable inserts with highly positive geometries and the Tiger·tec® Silver coating have a particularly beneficial hardness/toughness ratio. For maximum productivity and process reliability.
Walter Green	Walter Green: Sustainability and responsible use of resources are central components of our company principles. We use our "Walter Green" seal to show how we implement these principles, such as by offsetting our CO_2 emissions with environmental conservation projects.
Walter Capto™	Walter Capto™ is a modular tool body adaptor system. It is suitable for all turning, milling, drilling and threading processes. Its ISO-standardised polygon taper absorbs torsional moments and bending moments extremely well and ensures optimal repeat accuracy.
ConeFit	Walter ConeFit is an extremely flexible solid carbide milling system with a wide range of high-performance replaceable heads and shaft variants. Its conical thread can self-centre, thereby guaranteeing maximum stability and concentricity.
ScrewFit	Walter ScrewFit users benefit from maximum flexibility. Its modular interface is suitable for a wide variety of adaptors and a wide range of tool diameters and lengths for milling and drilling.
	The Walter precision cooling system provides cooling at the centre of chip formation. Its dual coolant jets are directed precisely onto the flank and rake faces of the insert. This system provides significantly increased tool life, improved chip breaking and greater efficiency for turning and grooving applications.
XD Technology	Walter Titex solid carbide drilling and reaming tools stand for precision, high performance and cost-effectiveness when drilling practically any material. Walter Titex XD technology offers the greatest precision and cost-effectiveness in deep-hole drilling operations up to 70 x D_C without pecking.
Walter Xpress	Walter Xpress is the rapid ordering and delivery service for high-quality special tools, offering maximum delivery times of 2-4 weeks following receipt of the order. The ordering process is clearly structured and guarantees absolute planning security. Quotations for all enquiries are calculated and provided within 24 hours.

Walter General Catalogue

Contents

		Page
A – Turning catalogue		A 2
	A 1: ISO turning	A 4
	A 2: Grooving	A 269
	A 3: Thread turning	A 421
	A 4: General information – Turning	A 465
B – Drilling and Threading catalogue		B 2 & B 706
Drilling	B 1: Solid drilling	B 4
	B 2: Counterboring and precision boring	B 494
	B 3: Reaming	B 651
	B 4: General information – Drilling	B 695
Threading	B 5: Tapping	B 708
	B 6: Thread forming	B 1023
	B 7: Thread milling	B 1083
	B 8: Threading dies	B 1135
	B 9: General information – Threading	B 1143
C – Milling catalogue		C 2
	C 1: Solid carbide, PCD and HSS milling tools	C 4
	C 2: Milling tools with indexable inserts	C 274
	C 3: General information – Milling	C 667
D – Adaptors catalogue		
	D 1: Stationary adaptors	**D 3**
	D 2: Rotating adaptors	**D 50**
	D 3: General information – Adaptors	**D 159**

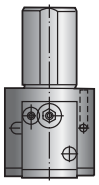


		Page
Walter Capto™ adaptors	Product range overview	D 4
	Clamping units	D 6
VDI adaptors, one-piece	Product range overview	D 14
	Designation key	D 15
	VDI clamping units	D 16
Technical information	Assembly instructions	D 22
Assembly parts and accessories	Fixtures	D 30
	Masters	D 33
	Extensions and reducers	D 34
	Clamping units	D 36

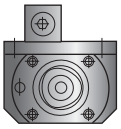
Product range overview of Walter Capto™ clamping units and adaptors

Manual clamping units

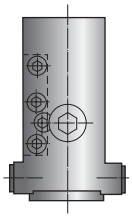
Type 2045 / 2055 / 2065
Page D 9



Type 2080
Page D 8



Type 2085
Page D 8



Type 2090
Page D 10

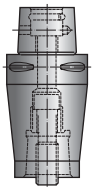


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Page D 9

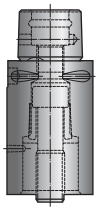


Intermediate adaptors

C . – 391.02
Page D 61

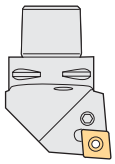


C . – 391.01
Page D 60

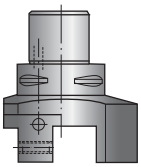


Tool adaptors

Walter Capto™ turning tools
Page A 84

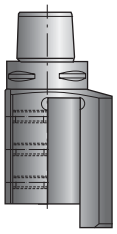


C . – ASHA
Page D 12



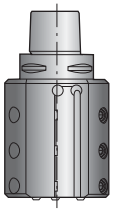


C . – ASH
Page D 11



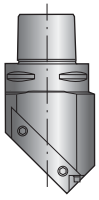


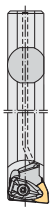
C . – ASH.3
Page D 11



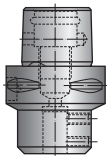


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Page D 12

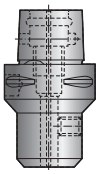


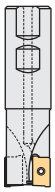


C . – 131
Page D 65

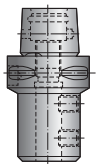


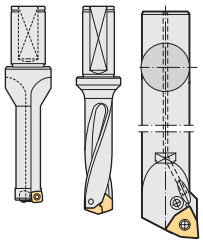
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Page D 64





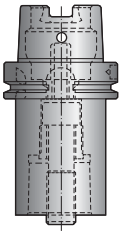
C . – 391.27
Page D 66



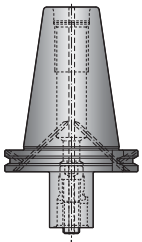


Masters

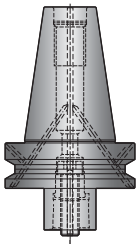
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C . – 390.410
Page D 54



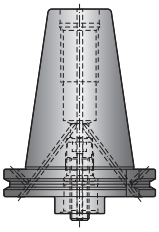
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C . – 390B.140
Page D 55



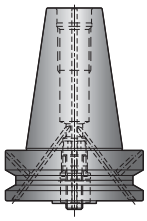
MAS-BT
C . – 390B.55/58
Page D 56



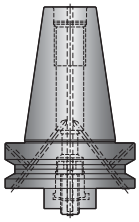
SK*
C . – 390B.540
Page D 57



MAS-BT*
C . – 390B.555/558
Page D 58

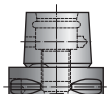


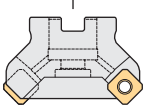
CAT-V
C . – A390B.45
Page D 59



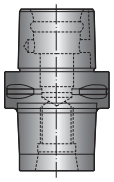
Walter Capto™

AK155.C
Page D 67





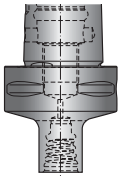
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Page D 108





ScrewFit

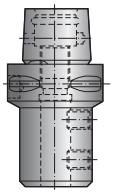
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Page D 117

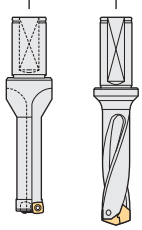




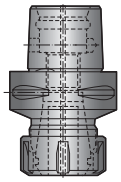
ConeFit

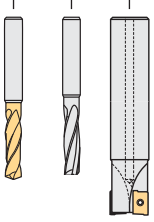
C . – 391.27
Page D 66



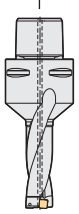


C . – 391.14
Page D 62

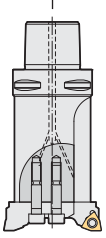




Optional
B421x.C.
Page B 192

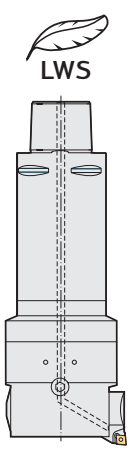


B3220.C.
Ø 41–153 mm
Page B 516



B4031.C.
Ø 90–153 mm
Page B 517

LWS



* BIG-PLUS SYSTEM, BIG DAISHOWA licence

VDI DIN 69880 clamping units
Type 2030 / 2040 / 2050 / 2060





– Manually actuated
– DIN ISO 10889

Tool	Designation	Size	d_1	l_2 mm	l_3 mm	l_4 mm	l_5 mm	b_1 mm	b_2 mm	h mm	h_2 mm	h_3 mm
VDI DIN 69880 Bushing clamp, angled	C3-R/LC2030-41020M	C3	VDI30	20	41	60		74		57	38	30
	C3-R/LC2030-41030M	C3	VDI30	30	41	60		73		57	41	30
	C4-R/LC2040-51030M	C4	VDI40	30	51	75		86		75	54	38
	C4-R/LC2040-51040M	C4	VDI40	40	51	75		86		75	60	38
	C5-R/LC2040-53030M	C5	VDI40	30	53	85		99		82	47	41
	C5-R/LC2040-53040M	C5	VDI40	40	53	85		99		82	53	41
	C5-R/LC2050-53030M	C5	VDI50	30	53	85		99		86	53	43
	C5-R/LC2050-53040M	C5	VDI50	40	53	85		99		86	65	43
	C5-R/LC2060-43040M	C5	VDI60	40	43	75		99		94	76	53
	C6-R/LC2060-53040	C6	VDI60	40	53	95		122		105	70	53
VDI DIN 69880 bushing clamp, straight	C3-R/LC2030-00060M	C3	VDI30			60	44	50	38	61		34
	C4-R/LC2040-00075M	C4	VDI40			75	53	75	48	75		38
	C5-R/LC2040-00085M	C5	VDI40			85	72	75	64	82		41
	C4-R/LC2050-00065M	C4	VDI50			65	39	70	48	83		42
	C5-R/LC2050-00085M	C5	VDI50			85	61	83	64	90		45
	C5-R/LC2060-00075M	C5	VDI60			75	16	80	64	82		58
	C6-R/LC2060-00095	C6	VDI60			95	50	84	84	105		58

Drawing shows right-hand version
Note: Provided that no tool is clamped (and the clamping units are stored in the tool room), the clamping units should be fitted with a cover plug to protect the polygon adaptor.
For Walter Capto™ tightening torques, see “Assembly parts and accessories”
Important: The maximum cooling lubricant pressure is 80 bar
For the selection of VDI clamping units, see “Technical information/Stationary adaptors”
Ordering example, right-hand tool: C3-RC2030-41020M/ordering example, left-hand tool: C3-LC2030-41020M

D 36

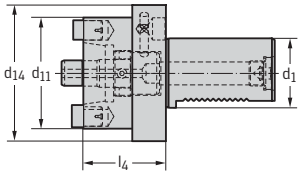
VDI DIN 69880 master
AK135M



– Modular NCT adaptor
– DIN ISO 10889

Tool

VDI DIN 69880



Designation	d_1	d_{11}	d_{14} mm	l_4 mm	kg
AK135M.5.40.060.N8	VDI40	NCT 80	83	60	2,72
AK135M.5.50.060.N8	VDI50	NCT 80	98	60	3,66
AK135M.5.60.060.N8	VDI60	NCT 80	123	60	5,5

D 157 D 152 D 148

Clamping units
Type 2080 / 2085



– Manually actuated
– With square shank for external machining

Tool	Designation	Size	l_1*** mm	l_2 mm	l_3 mm	l_5 mm	b_1* mm	b_2*** mm	h mm	h_2 mm	h_3 mm	h_4 mm	T_h mm
VDI DIN 69880	C3-R/LC2080-48090M	C3	90	46	48	90	67	38	20	20	54	73	
	C4-R/LC2080-59110A	C4	110	57	59	110	83	48	25	25	77	86	G 1/4
	C5-R/LC2080-77110A	C5	110	76	77	110	109	64	32	32	92	100	G 1/4
	C6-R/LC2080-93140**	C6	140	95	140	93	135		40	40	105	122	G 1/4
VDI DIN 69880	C3-R/LC2085-4038M	C3	95	79	25	19	38	20	40	20	62		G1/8
	C4-R/LC2085-5048	C4	126	101	30,5	24	48	25	50	25	54		G1/8
	C5-R/LC2085-6464	C5	146	118	36	32	64	32	64	32	68		G1/8

Drawing shows right-hand version
Length and depth of the groove in the turret
Bushing clamp
For the selection of VDI clamping units, see “Technical information/Stationary adaptors”
Important: The maximum cooling lubricant pressure is 80 bar
For Walter Capto™ tightening torques, see “Assembly parts and accessories”
* Groove depth in the turret with type 2080
** One-piece version
*** Length and depth of the groove in the turret with type 2085
Ordering example, right-hand tool: C3-RC2080-48090M/ordering example, left-hand tool: C3-LC2080-48090M

D 39

Clamping units
Type 3000 / 2000 / 20.5





– With round shank for internal machining
– Manually actuated

Tool	Designation	Size	d_1 mm	d_{14} mm	l_4 mm	l_3* mm	l_5 mm	b_2 mm	h mm	h_4 mm	T_h
Clamped using a centre screw Type 3000	C3-NC3000-08018-32	C3	32	45,5	18	0	18		30	26	G1/8
	C3-NC3000-10018-40	C3	40	45,5	18	20	18		37	26	G1/8
	C4-NC3000-10020-40	C4	40	51,5	20	10	20		37	28	G1/8
	C5-NC3000-12024-50	C5	50	61,5	24	0	24		47	33	G1/8
Bushing clamp Type 2000	C3-NC2000-08018-32	C3	32	45,5	18	0	18		30	26	G1/8
	C4-NC2000-10020-40	C4	40	51,5	20	8	20		37	28	G1/8
	C4-NC2000-12020-50	C4	50	51,5	20	28	20		47	28	G1/8
	C5-NC2000-12024-50	C5	50	61,5	24	0	24		47	33	G1/8
	C5-NC2000-14024-60	C5	60	61,5	25	20	25		57	33	G1/8
Bushing clamp Type 20.5	C4-R/LC2045-00075M	C4	40	68,9	75		75	48	37		G1/8
	C5-R/LC2055-00085M	C5	50	83,4	85		85	64	47		G1/8
	C6-R/LC2065-00095	C6	60	105,7	95		95	84	57		G1/8

Drawing shows right-hand version
For the selection of VDI clamping units, see “Technical information/Stationary adaptors”
Important: The maximum cooling lubricant pressure is 80 bar
For Walter Capto™ tightening torques, see “Assembly parts and accessories”
* Maximum allowable reduction of the clamping unit length
Ordering example, right-hand tool: C4-RC2045-00075M/ordering example, left-hand tool: C4-LC2045-00075M

D 42

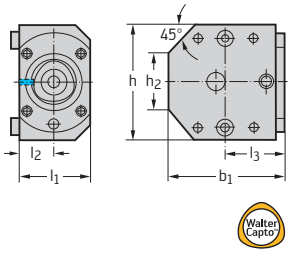
Clamping units
Type 2090



– Manually actuated
– For special mounting applications

Tool

Bushing clamp



Designation	Size	l_1 mm	l_2 mm	l_3 mm	b_1 mm	h mm
C3-R/LC2090-19039M	C3	38	19	39	73	54
C4-R/LC2090-24043A	C4	48	24	43	86	77
C5-R/LC2090-32048A	C5	64	32	48	100	92
C6-R/LC2090-42060	C6	84	42	60	122	105
C8-R/LC2090-50088	C8	100	50	88	146	133

Drawing shows right-hand version
Note: Provided that no tool is clamped (and the clamping units are stored in the tool room), the clamping units should be fitted with a cover plug to protect the polygon adaptor.
For an application example, see “Technical information/Stationary adaptors”
Important: The maximum cooling lubricant pressure is 80 bar
For Walter Capto™ tightening torques, see “Assembly parts and accessories”
Ordering example, right-hand tool: C3-RC2090-19039M/ordering example, left-hand tool: C3-LC2090-19039M

D 41

Axial adaptor
C.-ASH



– ISO 26623
– For shank tools

Tool

Machining	Size	h mm	b_1 mm	b_2 mm	d_{14} mm	f mm	h_2 mm	h_3 mm	l_3 mm	l_4 mm	kg
Walter Capto™ in accordance with ISO 26623											
C5-ASHR/L-30098-20	C5	20	29	30	90	10	33	41	20	98	2,4
C6-ASHR/L-30100-20	C6	20	29	30	90	10	33	41	20	100	2,46
C6-ASHR/L-38130-25	C6	25	32	38	110	13	33	50	25	130	3,46
C8-ASHR/L-40140-32	C8	32	40	40	110	8	40	55	32	140	5,33
Walter Capto™ in accordance with ISO 26623											
C6-ASHS-58115-32	C6	32	58	58	140	33				115	7,65
Walter Capto™ in accordance with ISO 26623											
C5-ASHR/L3-36123-20	C5	20			90	16			20	123	3,62
C6-ASHR/L3-36125-20	C6	20			90	16			20	125	3,91
C8-ASHR/L3-45150-32	C8	32			120	20			32	150	7,36

Important: Adaptors are designed for machines with an automatic tool changing system.
Please ensure that no malfunctions occur between the magazine and tool change cycle.
Ordering example, right-hand tool: C5-ASHR-30098-20/ordering example, left-hand tool: C5-ASHL-30098-20
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	for C5-ASHR/L-30...	for C6-ASHR/L-30...	for C6-ASHR/L-38...	for C6-ASHS-...	for C5-/C8-ASHR/L-3...
Screw	3214 020-461	3214 020-411	3214 020-512	3214 040-462	3214 020-512
Cooling lubricant nozzle	FS1479	FS1479	FS1480	FS1478	FS1479

D 154

Radial adaptor
C.-ASHA



– For shank tools
– ISO 26623

Tool

Tool	Designation	Size	h mm	b_2 mm	h_2 mm	b_1 mm	d_{14} mm	f mm	h_1 mm	l_4 mm	l_5 mm	kg
Walter Capto™ in accordance with ISO 26623	C5-ASHA-38058-20M	C5	20	23	38		90			58	38	1
	C6-ASHA-38060-20M	C6	20	23	38		90			60	40	2
	C6-ASHA-45071-25M	C6	25	30	45		110			71	45	3
	C6-ASHA-50071-32M	C6	32		50		130			71	45	3
	C8-ASHA-55085-32M	C8	32	40	55		142			85	53	5
Walter Capto™ in accordance with ISO 26623	C8-ASHR/L45-50135-32	C8	32		40	45	140	17	32	135		

Important: Adaptors are designed for machines with an automatic tool changing system.
Please ensure that no malfunctions occur between the magazine and tool change cycle.
Ordering example, right-hand tool: C8-ASHR45-50135-32/ordering example, left-hand tool: C8-ASHL45-50135-32
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

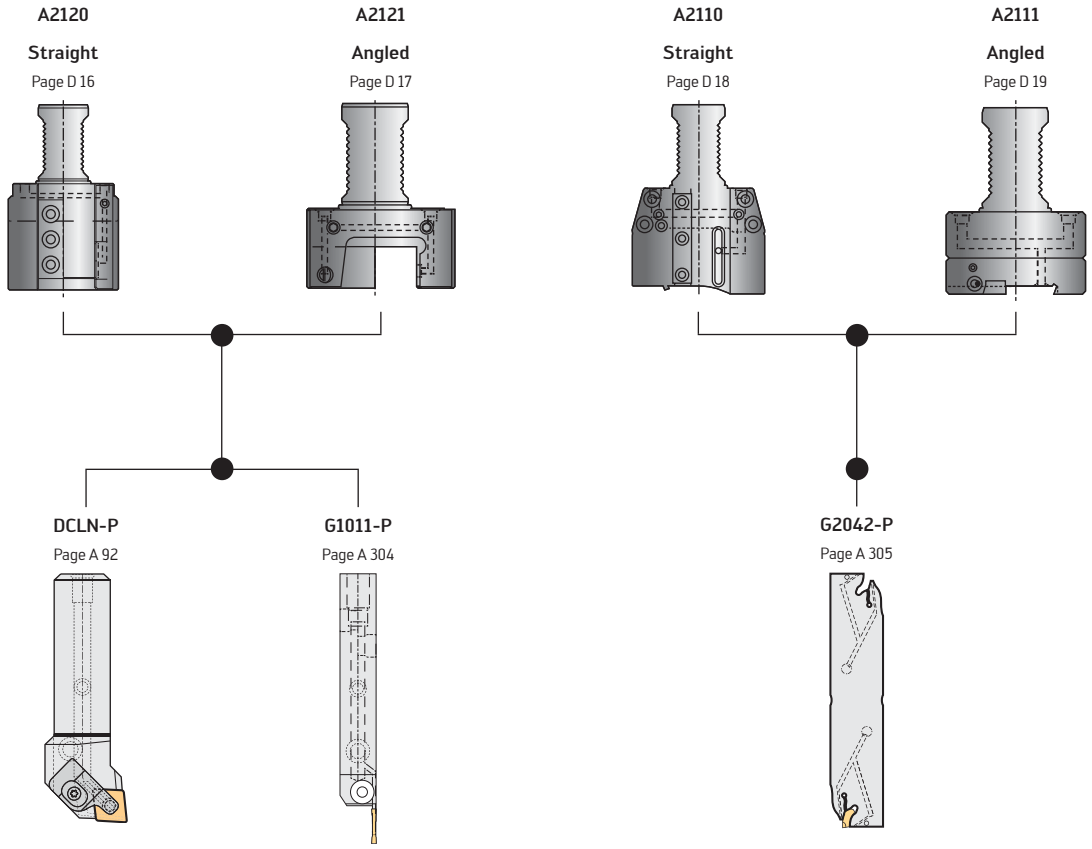
l_5 mm	40	45	53
Screw	3214 020-411	3214 040-462	3214 020-512
Cooling lubricant nozzle	FS1476	FS1478	FS1476

D 154



Product range overview for VDI adaptors

VDI adaptors – Square shanks/parting blades



Designation key for VDI adaptors

A	2	1	10	–	V30	–	25	L	–	080	–	P
1	2	3	4	5	6		7	8		9		10

1	
Tool group	
A	Adaptors

2	
Generation	
1	
2	

3	
Tool type	
0	Monoblock
1	Shank adaptor

4	
Tool type	
10	Parting blade adaptor, axial
11	Parting blade adaptor, radial
20	Square shank adaptor, axial
21	Square shank adaptor, radial

5	
Delimiters	
–	Metric
.	Inches

6	
Machine-side adaptor type	
V25	VDI25 d = 25 mm
V30	VDI30 d = 30 mm
V40	VDI40 d = 40 mm
V50	VDI50 d = 50 mm
BT45	BMT45A
BT55	BMT55A
BT65	BMT65A
DO	Doosan Puma 2100, 2600, 3100

7	
Tool type	
Blade adaptor	
26	Blade height in mm
32	Blade height in mm
Shank adaptor	
20	Shank height in mm
25	Shank height in mm

8	
Tool-side version adaptor type	
R	Right
L	Left
N	Neutral

9	
Length of the adaptor	
Blade adaptor	
045	= 45 mm
080	= 80 mm
087	= 87 mm
Shank adaptor	
070	= 70 mm
085	= 85 mm
100	= 100 mm

10	
Variant	
P	Precision cooling

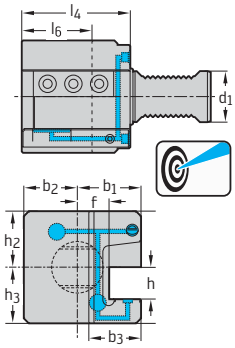
VDI adaptor – DIN 69880 shank tools
A2120-VDI-P



– Precision cooling
– For star turrets

Tool

Shank DIN 1835 E



Designation	d_1	h mm	b_1 mm	b_2 mm	b_3 mm	f mm	l_4 mm	l_6 mm	h_2 mm	h_3 mm	kg
A2120-V30-20R/L-070-P	VDI30	20	54	30	34	34	70	22	35	35	1,9
A2120-V40-25R/L-085-P	VDI40	25	50	42	41	25	85	30	44	44	3,5

The maximum recommended coolant pressure is 80 bar (1160 psi)
Ordering example, right-hand tool: A2120-V30-20R-070-P/ordering example, left-hand tool: A2120-V30-20L-070-P
Bodies and assembly parts are included in the scope of delivery.

Accessories

h [mm]	20	25
Key	ISO2936-5 (SW 5)	ISO2936-6 (SW 6)

D 160 D 43 D 28

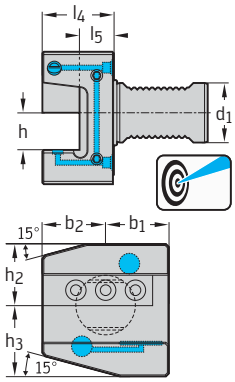
VDI adaptor – DIN 69880 shank tools
A2121-VDI-P



– Precision cooling
– For disc turrets

Tool

Shank DIN 1835 E



Designation	d_1	h mm	b_1 mm	b_2 mm	l_4 mm	l_5 mm	h_2 mm	h_3 mm	kg
A2121-V30-20R/L-070-P	VDI30	20	35	35	35,5	15,5	35	38	1
A2121-V40-25R/L-085-P	VDI40	25	43	43	48	23	41	48	3
A2121-V50-25R/L-100-P	VDI50	25	50	50	48	23	50	55	4

The maximum recommended coolant pressure is 80 bar (1160 psi)
Ordering example, right-hand tool: A2121-V30-20R-070-P/ordering example, left-hand tool: A2121-V30-20L-070-P
Bodies and assembly parts are included in the scope of delivery.

Accessories

	d_1	VDI30	VDI40 / VDI50
	Key	ISO2936-5 (SW 5)	ISO2936-6 (SW 6)

D 160 D 44 D 28

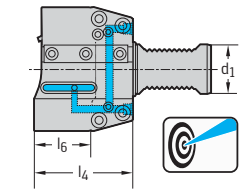
VDI adaptor – DIN 69880 parting blades
A2110-VDI-P

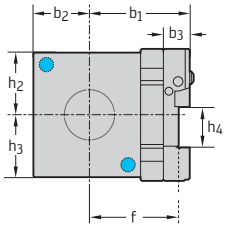


– Precision cooling
– For star turrets – peripheral mount

Tool

Shank DIN 1835 E





Designation	d_1	h_4 mm	b_1 mm	b_2 mm	b_3 mm	f mm	l_4 mm	l_6 mm	h_2 mm	h_3 mm	kg
A2110-V25-26R/L-083-P	VDI25	26	43	30	17	38	83	52	37	37	1,2
A2110-V30-26R/L-090-P	VDI30	26	50	35	17	45	90	52	37	37	1,5
A2110-V30-32R/L-084-P	VDI30	32	51	35	17	46	84	52	39	39	1,6
A2110-V40-32R/L-080-P	VDI40	32	76	42,5	20	67,5	80	46	50	50	3,1

Ordering example, right-hand tool: A2110-V25-26R-083-P/ordering example, left-hand tool: A2110-V25-26L-083-P
Bodies and assembly parts are included in the scope of delivery.

Accessories



h_4 [mm]	26	32
Key	FS1592 (Torx 25IP)	FS1592 (Torx 25IP)
ISO 2936-4 key	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)
ISO 2936-5 key	ISO2936-5 (SW 5)	
ISO 2936-6 key		ISO2936-6 (SW 6)

D 160 D 45 D 26

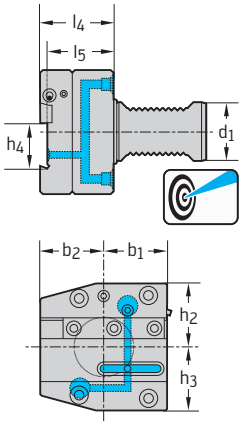
VDI adaptor – DIN 69880 parting blades
A2111-VDI-P



– Precision cooling
– For disc turrets – face mount

Tool

Shank DIN 1835 E



Designation	d_1	h_4 mm	b_1 mm	b_2 mm	l_4 mm	l_5 mm	h_2 mm	h_3 mm	kg
A2111-V30-26R/L-045-P	VDI30	26	35	35	50,5	45,5	33	33	2,0
A2111-V30-32R/L-045-P	VDI30	32	42,5	42,5	50,5	45,5	43	43	2,9
A2111-V40-32R/L-045-P	VDI40	32	42,5	42,5	50,5	45,5	43	43	3,2

The maximum recommended coolant pressure is 80 bar (1160 psi)
Ordering example, right-hand tool: A2111-V30-26R-045-P/ordering example, left-hand tool: A2111-V30-26L-045-P
Bodies and assembly parts are included in the scope of delivery.

Accessories



h_4 [mm]	26	32
Key	FS1592 (Torx 25IP)	FS1592 (Torx 25IP)
ISO 2936-4 key	ISO2936-4 (SW 4)	ISO2936-4 (SW 4)
ISO 2936-5 key	ISO2936-5 (SW 5)	ISO2936-6 (SW 6)

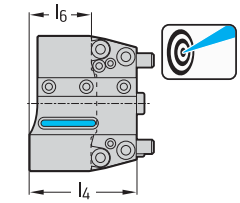
D 154 D 46 D 27

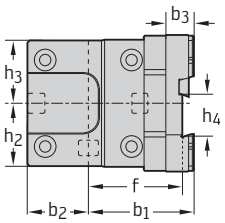
BMT adaptor – Parting blades
A2110-BMT-P



– Precision cooling
– For BMT star turrets

Tool





Designation	d_1	h_4 mm	b_1 mm	b_2 mm	b_3 mm	f mm	l_4 mm	l_6 mm	h_2 mm	h_3 mm	kg
A2110-BT45-26R/L-080-P	BT45	26	69	40	20	60,5	80	41	42	42	1,8
A2110-BT55-32R/L-080-P	BT55	32	77,5	44	20	69	80	46	50	50	2,2
A2110-BT65-32R/L-083-P	BT65	32	79	47	20	70,5	83	45	50	50	2,7

The maximum recommended coolant pressure is 80 bar (1160 psi)
Ordering example, right-hand tool: A2110-BT45-26R-080-P/ordering example, left-hand tool: A2110-BT45-26L-080-P
Bodies and assembly parts are included in the scope of delivery.

Accessories



h_4 [mm] / d_1	26 BT45	32 BT55	32 BT65
Key	FS1592 (Torx 25IP)	FS1592 (Torx 25IP)	FS1592 (Torx 25IP)
ISO 2936-5 key	ISO2936-5 (SW 5)		ISO2936-5 (SW 5)
ISO 2936-6 key	ISO2936-6 (SW 6)	ISO2936-6 (SW 6)	ISO2936-6 (SW 6)
ISO 2936-8 key		ISO2936-8 (SW 8)	

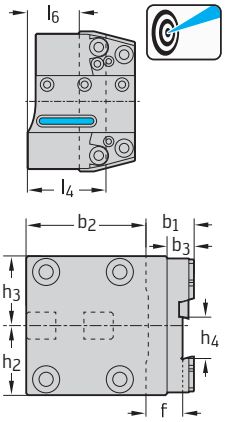
D 160 D 47 D 26

Doosan adaptor – Parting blades
A2110-DO-P



– Precision cooling
– For Doosan star turrets

Tool



Designation	h_4 mm	b_1 mm	b_2 mm	b_3 mm	f mm	l_4 mm	l_6 mm	h_2 mm	h_3 mm	kg
A2110-DO-32R/L-058-P	32	35,5	90	20	27	58	38	52	52	2,7

The maximum recommended coolant pressure is 80 bar (1160 psi)
Ordering example, right-hand tool: A2110-DO-32R-058-P/ordering example, left-hand tool: A2110-DO-32L-058-P
Bodies and assembly parts are included in the scope of delivery.

Accessories

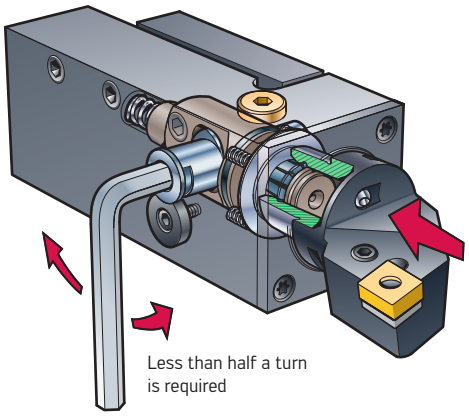


Key	FS1592 (Torx 25IP)
ISO 2936-6 key	ISO2936-6 (SW 6)
ISO 2936-10 key	ISO2936-10 (SW 10)

D 160 D 48 D 26

Operating instructions for Walter Capto™

Clamping principle for types 2035, 2045, 2055, 2065, 2080, 2085 and 2090 and VDI



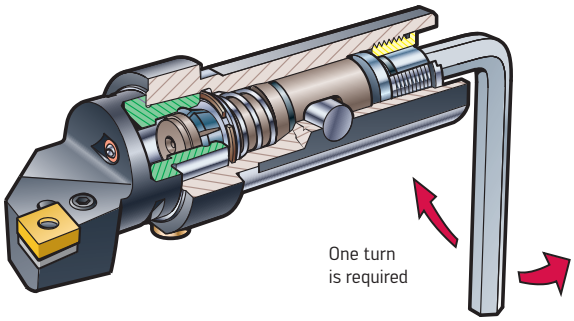
Clamped using a bushing –
Drawbar activated by a cam
The drawbar is moved forwards and backwards using a cam.
The tool is clamped and released by an eccentric shaft.

Recommended torque:

C3: 35 Nm
C4: 50 Nm
C5: 70 Nm
C6: 90 Nm
C8: 130 Nm

For torque wrenches, see page D 154.

Clamping principle for type 2000



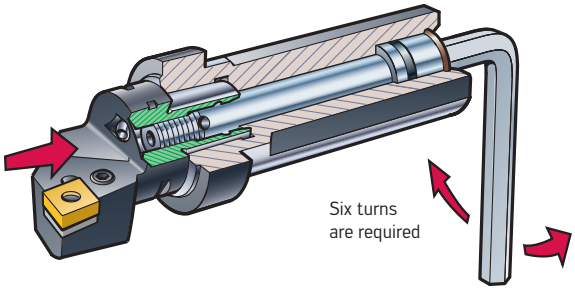
Clamped using a bushing –
Drawbar activated by a screw
The movement of the drawbar is controlled by a screw at the end of the clamping unit.

Recommended torque:

C3: 35 Nm
C4: 50 Nm
C5: 70 Nm

For torque wrenches, see page D 154.

Clamping principle for type 3000



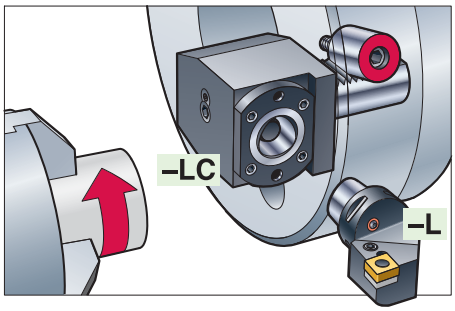
Clamped directly using a centre screw
The thread in the coupling system is used to clamp and release the tool with the centre screw.

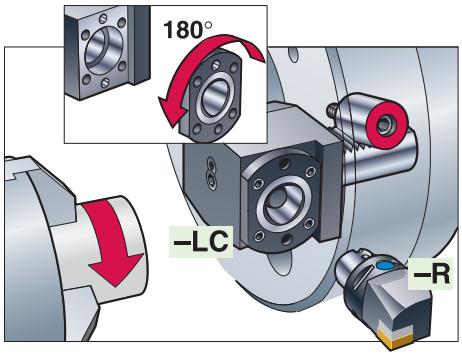
Recommended torque:
C3: 45 Nm
C4: 55 Nm
C5: 95 Nm
C6: 170 Nm
C8: 170 Nm

For torque wrenches, see page D 154.

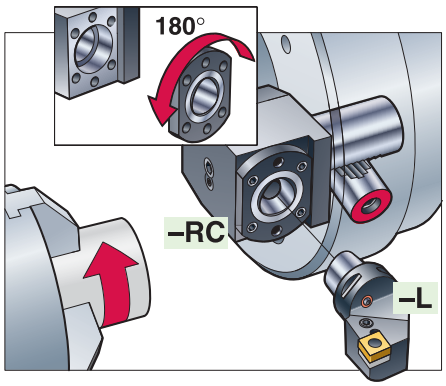
Conversion of VDI turrets to Walter Capto™ – Selection of clamping units

External machining

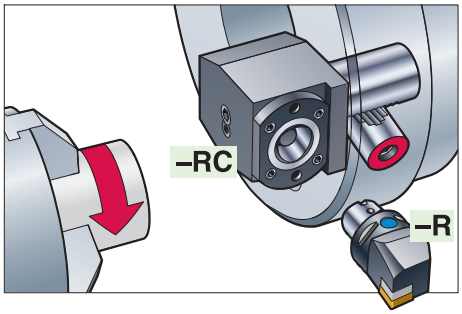




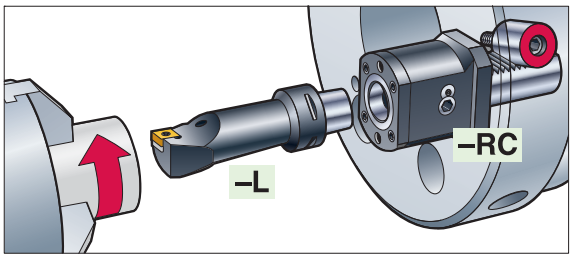
Important:
Turn polygon socket 180° – see page D 32.

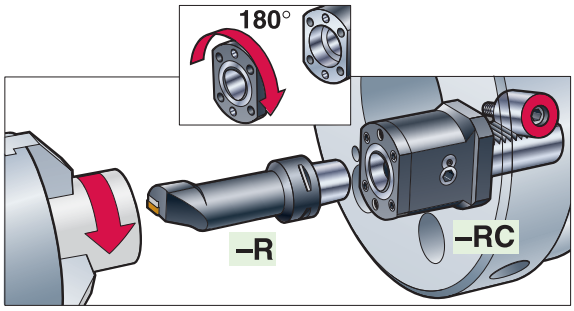


Important:
Turn polygon socket 180° – see page D 32.

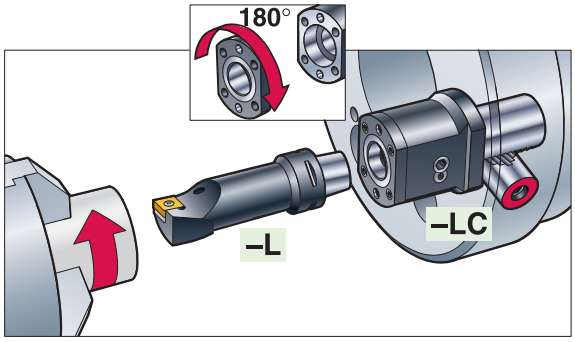


Internal machining

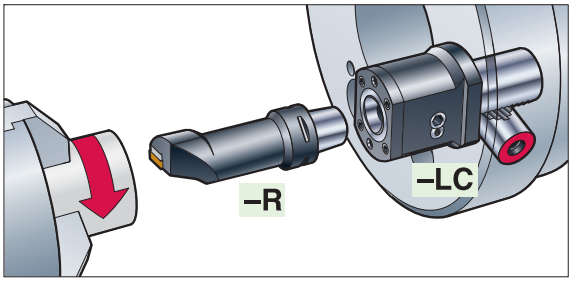




Important:
Turn polygon socket 180° – see page D 32.

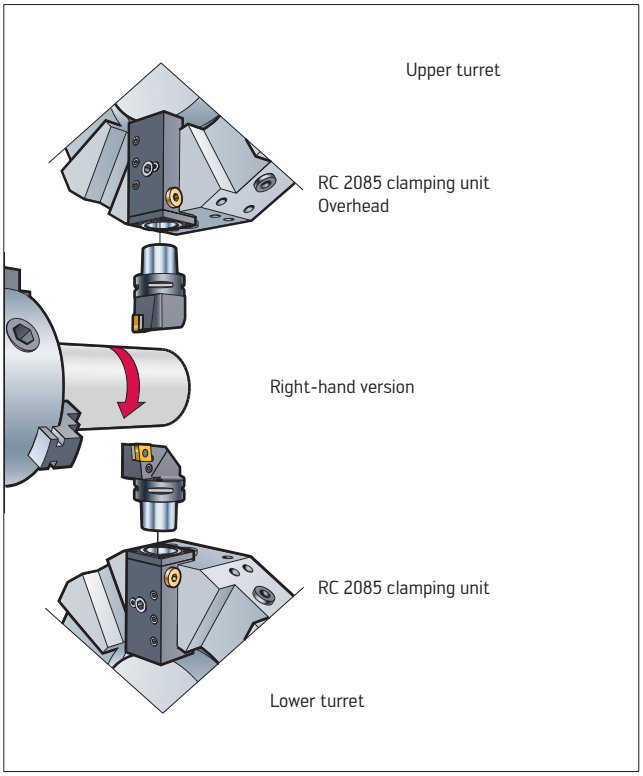


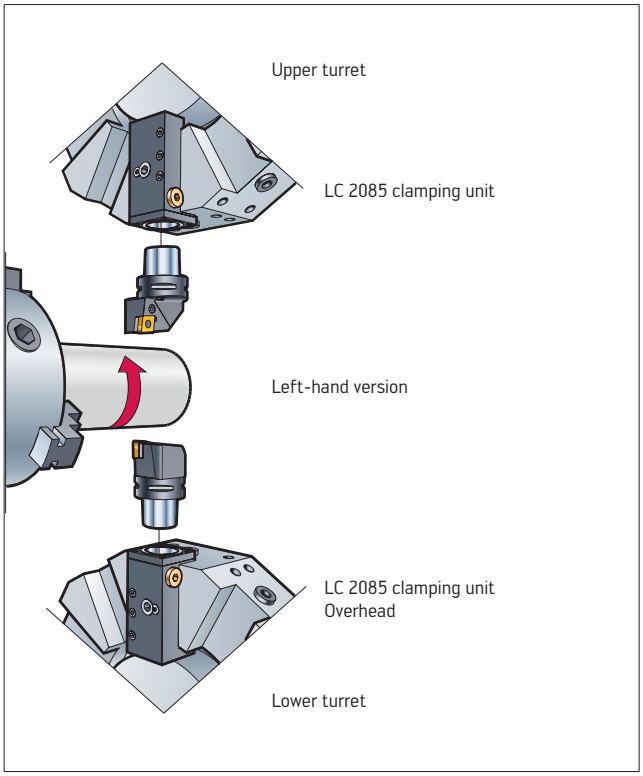
Important:
Turn polygon socket 180° – see page D 32.



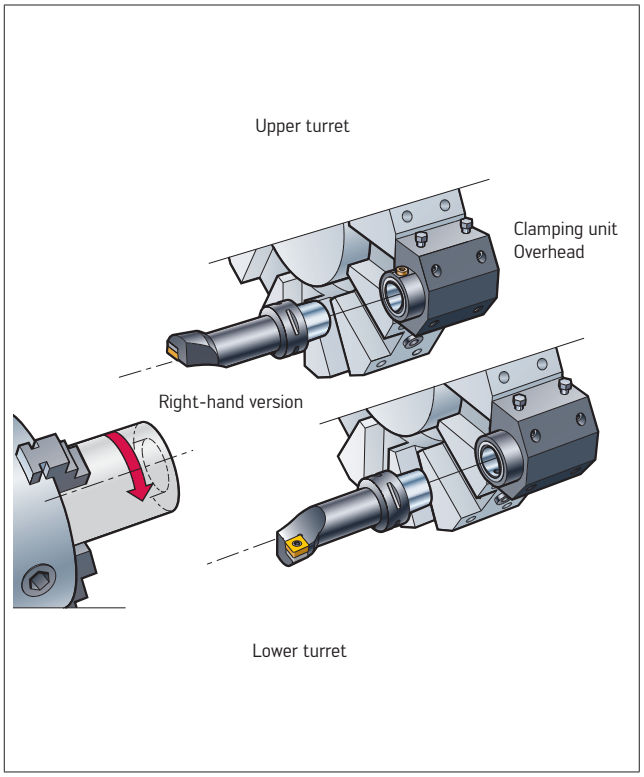
Conversion of turrets with square or round shank adaptors to Walter Capto™ – Selection of clamping units, type 2000/3000/2085

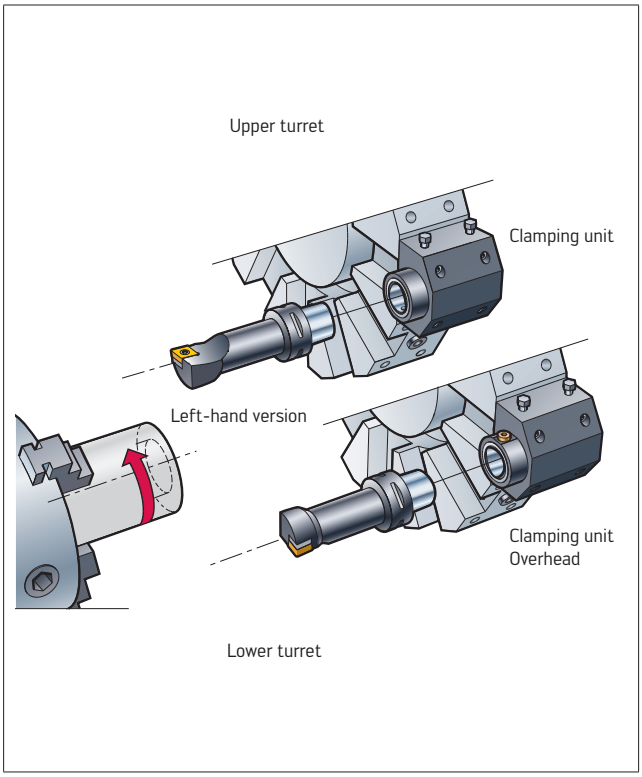
External machining with RC 2085/LC 2085 clamping unit





Internal machining with NC 2000/3000/2035/2045/2055/2065 clamping unit





Assembly instructions on the use of the RC/LC 2090 clamping unit

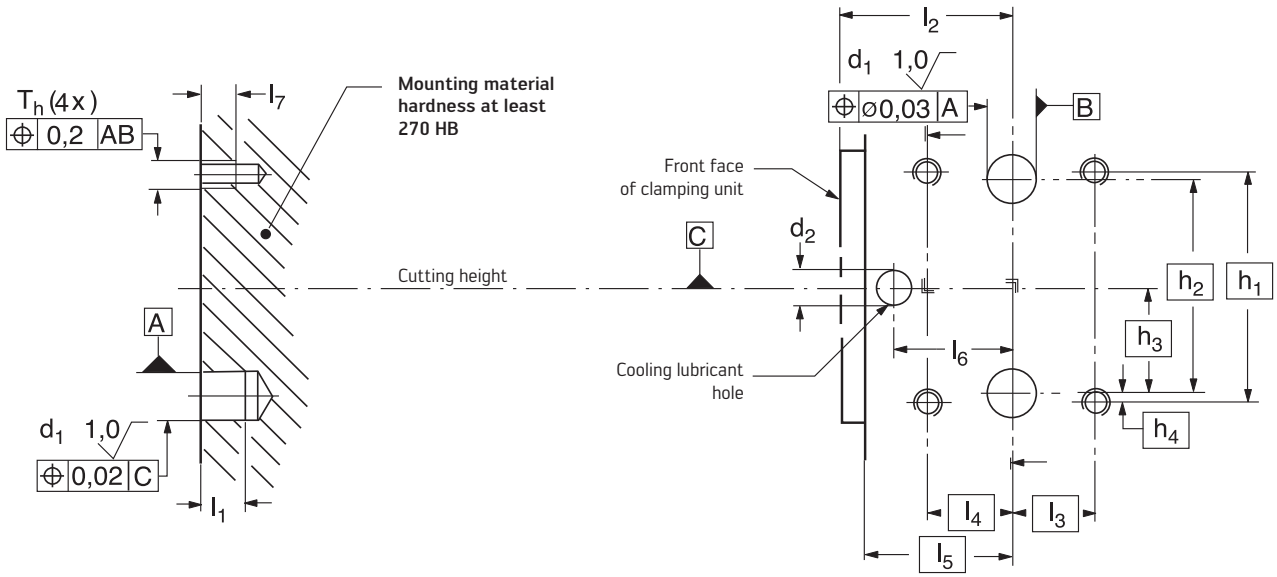
Application example



The type 2090 clamping unit has been designed for universal applications.
For instructions on the design and use of these clamping units, please see below.



Drilling pattern



Clamping unit	d_1/H7 mm	d_2 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	l_5 mm	l_6 mm	l_7 mm	T_h
C3-R/LC2090-19039M	12	5	42	39	19,5	1,5	8,5	39	19	19	33,5	28	7,5	M6
C4-R/LC2090-24043A	16	7	60	55	27,5	2,5	11	43	19	19	36,5	30	11	M8
C5-R/LC2090-32048A	20	7	70	62	31	4	12	48	21	21	39,5	33	13	M10
C6-R/LC2090-42060	25	10	82	71	35,5	5,5	20	60	24,5	24,5	50,5	41	12	M10
C8-R/LC2090-50088	32	11	110	92	46	9	20	88	43	43	76	63	145	M12

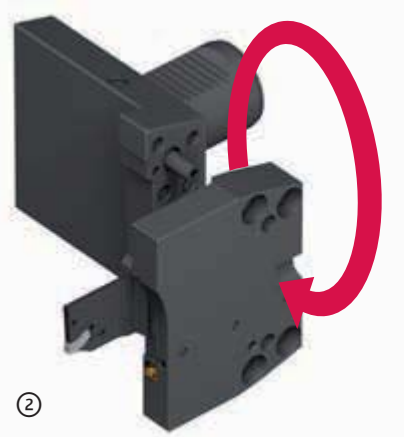
Installation instructions for precision-cooled parting blades


①


②

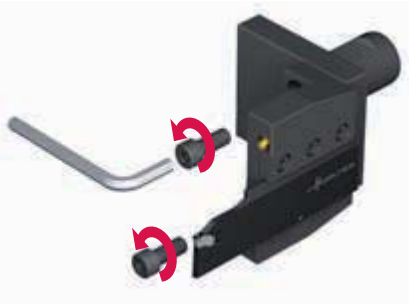
Conversion instructions for the A2110-P/version 1

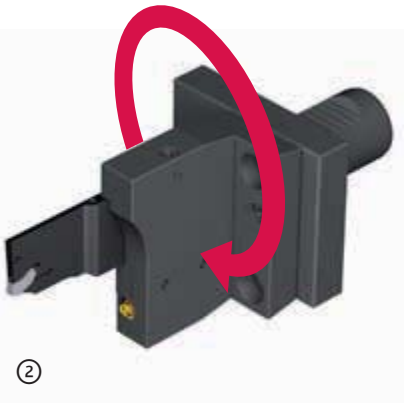

①

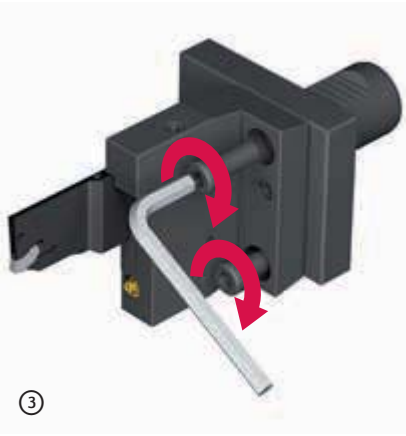

②


③

Conversion instructions for the A2110-P/version 2


①

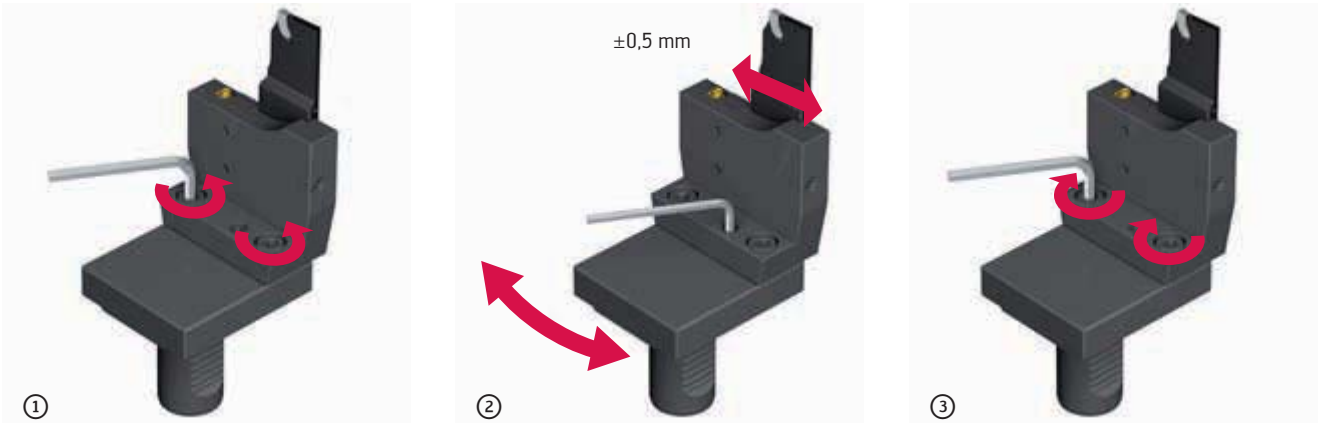

②


③

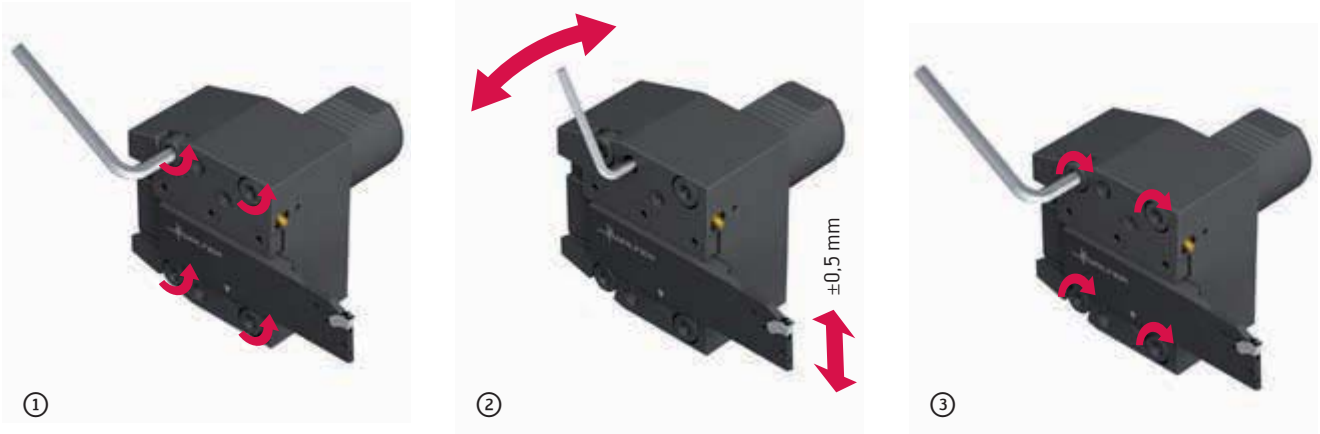
Setting the centre height for the A2110-P/version 1



Setting the centre height for the A2110-P/version 2



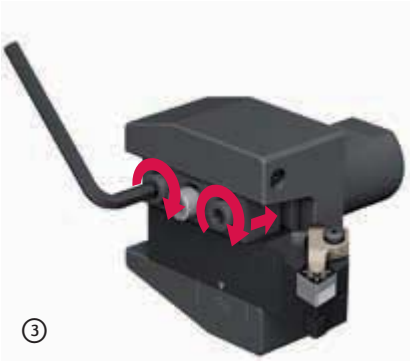
Setting the centre height for the A2111-P



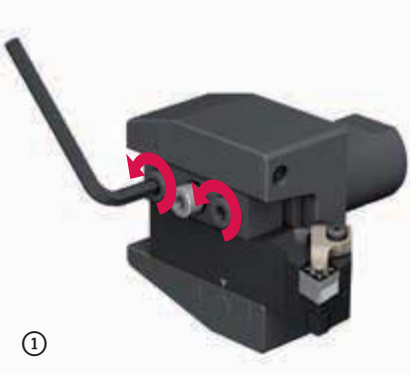
Installation instructions for precision-cooled shank tools







Removal instructions







Star turret



A2120- . . **L** . . -P / DCLN**L** . . -P



A2120- . . **R** . . -P / DCLN**R** . . -P



A2120- . . **L** . . -P / DCLN**L** . . -P
Overhead



A2120- . . **R** . . -P / DCLN**R** . . -P
Overhead

Disc turret



A2121- . . **L** . . -P / G1011 . . **R** . . -P



A2121- . . **R** . . -P / G1011 . . **L** . . -P



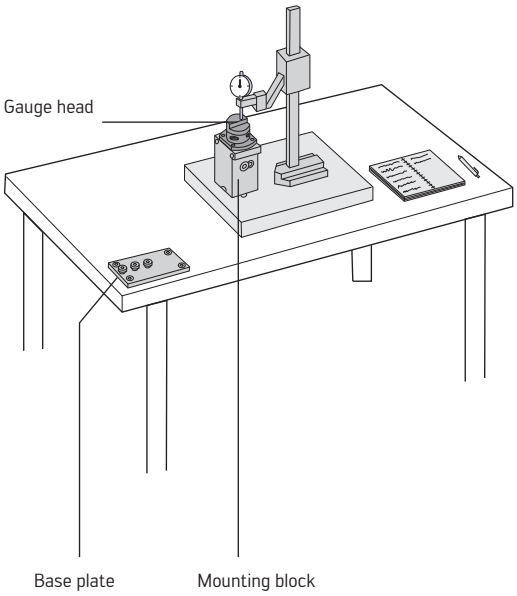
A2121- . . **L** . . -P / G1011 . . **R** . . -P
Overhead



A2121- . . **R** . . -P / G1011 . . **L** . . -P
Overhead

Measuring fixtures for Walter Capto™

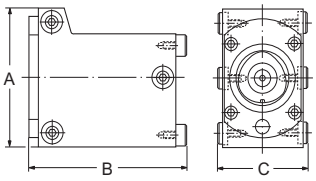
Walter Capto™ fixture



The precision of the Walter Capto™ coupling system provides outstanding repeat accuracy when replacing the cutting head. This degree of precision has consistently proven to be beneficial, for example during manual changeover operations where indexable inserts are changed outside the machine.
The new, easy-to-operate Walter Capto™ fixture can be used to measure the position of the cutting edge at two coordinates.
Once the measured cutting head has been mounted in the adaptor, any cutting edge deviation can be compensated for by the machine control system.
The fixture can be used in combination with any normal gauge and test plate.
However, Walter recommends using an indicator with zero setting and a flat tracing probe.

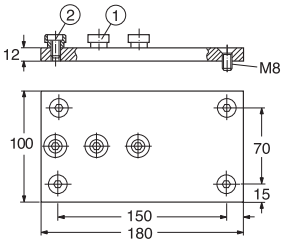
Basic equipment
If you already have a surface plate with measuring device, all you require is the following additional equipment:
– Fixture for tool gauging
– Base plate
– Gauge head (see MAS gauges)

Mounting block for tool gauging



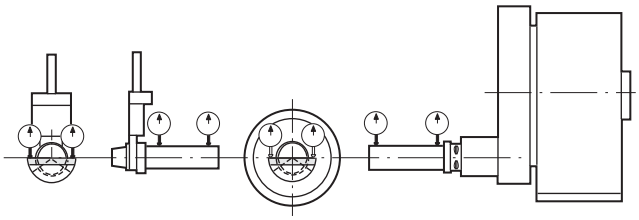
Order no.	Size	Dimensions [mm] A	B	C
C3-PMU-01M	C3	65	85	44
C4-PMU-01M	C4	77	94	54
C5-PMU-01M	C5	94	130	70
C6-PMU-01	C6	114	135	90
C8-PMU-01	C8	133	150	106

Base plate

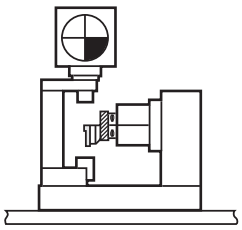


Order no.	Size	Spare parts ① Pin	② Screw
C-HP-01	C3–C8	5638 060-01	3212 020-409

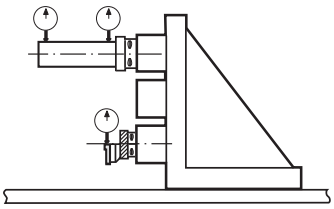
Measuring fixture for Walter Capto™



Spindle alignment Tool centre line



Spindle alignment

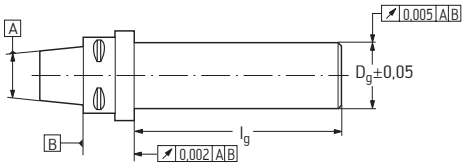


Geometric checking of indexing devices

The Walter Capto™ modular system provides outstanding repeat accuracy. However, this is only helpful if the other various components that are important during the entire machining process are also set accurately and correctly.
Walter therefore offers a wide range of measuring devices for axial and centre measurement for all coupling system sizes, the use of which is highly recommended for setting the most important parameters, such as:

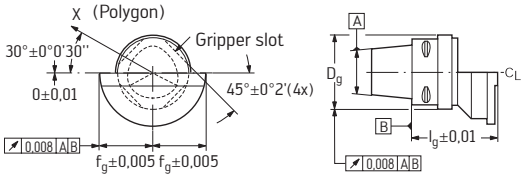
- Centre line
- Spindle alignment
- Tool position for the gripper
- Centre height of the tool and the cutting edge position (f_1 and l_1). The gauges can be used for premeasuring
- Indexing device

Axial gauge/MAS-11 gauges



Order no.	Size	Dimensions [mm] D_g	l_g
C3-MAS-11	C3	25	160
C4-MAS-11	C4	25	160
C5-MAS-11	C5	32	215
C6-MAS-11	C6	40	320
C8-MAS-11	C8	40	320

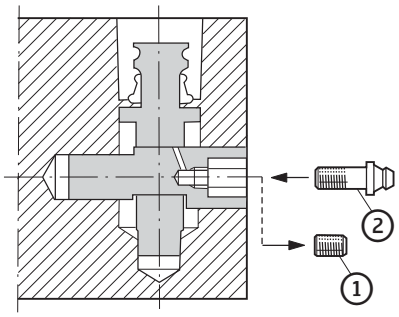
Centre height gauge/MAS-01 gauges



Order no.	Size	Dimensions [mm] f_g	D_g	l_g
C3-MAS-01	C3	22	34	40
C4-MAS-01	C4	27	42	50
C5-MAS-01	C5	35	52	60
C6-MAS-01	C6	45	65	65
C8-MAS-01	C8	55	80	82

Accessories for Walter Capto™

Lubrication



All manually actuated clamping units are lubricated prior to delivery with BP Energrease ACS-2[1].
The lubrication should be checked and replaced after approximately six months. New grease can be pumped through the eccentric bolt.

1. Undo the blanking screw ① .
2. Insert the lubricating nipple ② 5692 012-01 (see below for ordering information).
3. Please ensure that the clamping mechanism is in the clamped position.
4. Using a grease gun, dispense grease until it begins to emerge externally .
5. Remove the lubricating nipple.
6. Replace the blanking screw ① back into the eccentric bolt.

CAUTION:
The clamping unit must be clamped during the lubrication process.

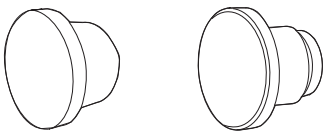
[1] Alternatives:
STATOIL Beacon 325, MOBIL Temp SHC 32, MOBIL grease, MOBIL special grease or any equivalent commercially available grease.

Lubricating nipple for Walter Capto™ clamping units



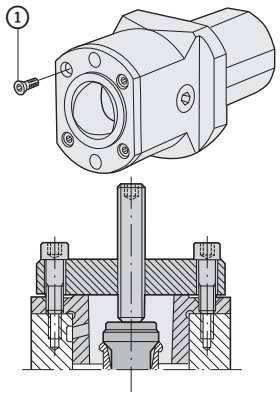
Order no.	Size	
5692 012-01	C3—C8	

Cover plug for Walter Capto™ tapers in clamping units



Order no.	Size	
C3-CP-01	C3	
C4-CP-01	C4	
C5-CP-01	C5	
C6-CP-01	C6	
C8-CP-01	C8	

Operating instructions – Turning the cutting head 180°

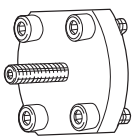


If overhead machining is required, proceed as described in the following steps:

Turn the polygon socket 180°.

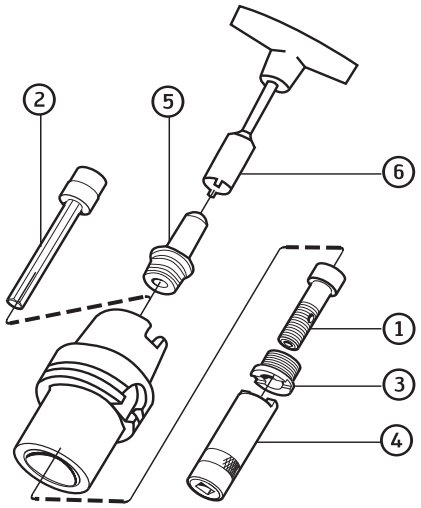
1. Undo four screws ①.
   Recommended keys (to be ordered separately):
   C3: (T15) FS 1047
   C4: (T20) FS 1048
   C5: (T25) FS 1049
   C6: ISO 2936-5 hexagon (5 mm)
   C8: ISO 2936-6 hexagon (6 mm)
2. Remove the polygon socket. Please use a removal fixture (see below for ordering information).
   – Secure the removal fixture to the polygon socket using the four screws.
   – Tighten the centre screw of the fixture until the polygon socket is released.
3. Turn the polygon socket 180° and reinstall, using a plastic or copper hammer if necessary.

Removal fixture for removing the polygon socket from manual clamping units



Order no.	Size	
C3-WDT-01M	C3	
C4-WDT-02	C4	
C5-WDT-02	C5	
C6-WDT-02	C6	
C8-WDT-02	C8	

Assembly parts and accessories for masters C . – 390.410



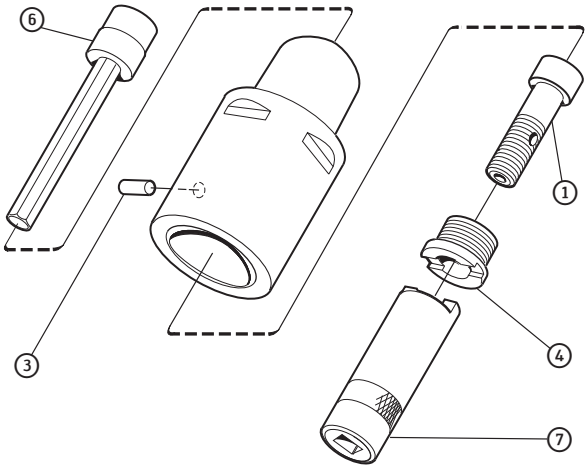
Assembly parts		Coupling system size				
		C3	C4	C5	C6	C8
1	Centre screw	5512 067-01	5512 067-02	5512 067-03	5512 067-04	5512 067-04
3	Threaded ring	5512 091-04	5512 091-03	5512 091-01	5512 091-02	5512 091-02
5	Transfer unit for					
	HSK 50	5692 020-03	5692 020-03			
	HSK 63	5692 020-04	5692 020-04	5692 020-04		
	HSK 80	5692 020-05	5692 020-05	5692 020-05	5692 020-05	
	HSK 100		5692 020-06	5692 020-06	5692 020-06	5692 020-06

Accessories		Coupling system size				
		C3	C4	C5	C6	C8
2	Extension key (mm)	5680 015-05 (SW 8,0)	5680 015-05 (SW 8,0)	5680 015-01 (SW 10,0)	5680 015-02 (SW 14,0)	5680 015-02 (SW 14,0)
4	Socket wrench for threaded ring	5680 065-13	5680 065-10	5680 065-11	5680 065-12	5680 065-12
6	Socket wrench for transfer unit					
	HSK 50	FS 1212	FS 1212			
	HSK 63	FS 952	FS 952	FS 952		
	HSK 80	FS 1213	FS 1213	FS 1213	FS 1213	
	HSK 100		FS 953	FS 953	FS 953	FS 953

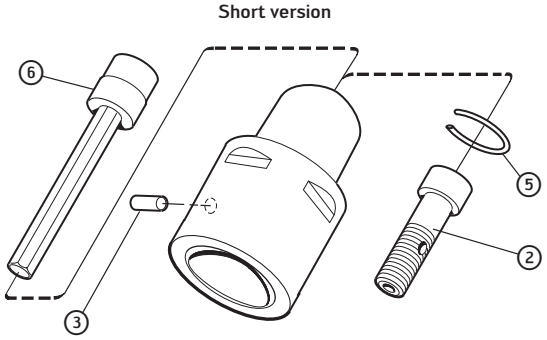
Important:
In machines with automatic tool changing systems, the transfer unit or the threaded ring must be mounted in the basic holder.
The clamping system release mechanism can be damaged if the transfer unit/threaded ring is not installed.

Assembly parts and accessories for extensions
C . – 391.01

Normal version



Short version



Assembly parts	Coupling system size				
	C3	C4	C5	C6	C8
① Centre screw Normal version	5512 067-01	5512 067-02	5512 067-03	5512 067-04	5512 067-04
② Centre screw Short version	5512 068-01	5512 068-02	5512 068-03	5512 068-04	5512 068-05
③ Pin	3113 020-304	3113 020-355	3113 020-406	3113 020-457	3113 020-509
④ Retaining nut	5512 091-04	5512 091-03	5512 091-01	5512 091-02	5512 091-02
⑤ Circlip	5545 040-02	5545 040-03	5545 040-07	5545 040-08	5545 040-08

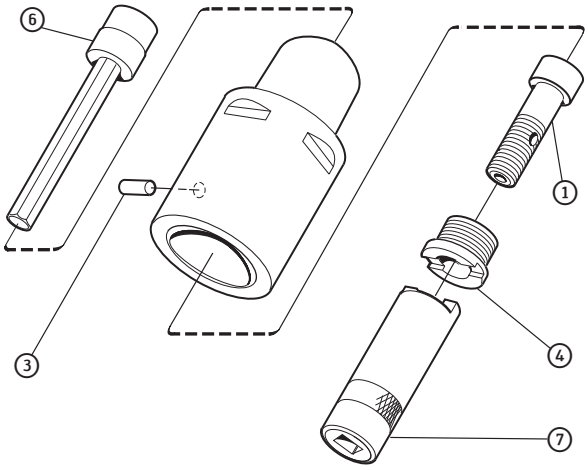
Note:

The centre screw ① and ② can be used to extend Walter Capto™ cutting heads with internal coolant supply.

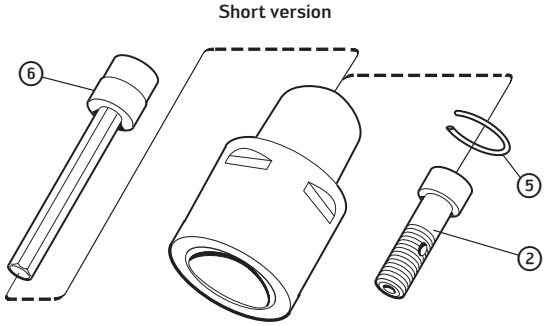
Accessories	Coupling system size				
	C3	C4	C5	C6	C8
⑥ Extension key (mm)	5680 015-05 (SW 8,0)	5680 015-05 (SW 8,0)	5680 015-01 (SW 10,0)	5680 015-02 (SW 14,0)	5680 015-02 (SW 14,0)
⑦ Socket wrench for retaining nut	5680 065-13	5680 065-10	5680 065-11	5680 065-12	5680 065-12

Assembly parts and accessories for reducers
C . – 391.02

Normal version



Short version



Assembly parts

Coupling system size – Machine side	C4 / C5 / C6 / C8	C5	C6 / C8	C6	C8	C8
Coupling system size – Tool side	C3	C4	C4	C5	C5	C6
① Centre screw Normal version	5512 067-01	5512 067-02	5512 067-02	5512 067-03	5512 067-03	5512 067-04
② Centre screw Short version	5512 068-01	5512 068-06	5512 068-02	5512 068-07	5512 068-08	5512 068-05
③ Pin	3113 020-304	3113 020-355	3113 020-355	3113 020-406	3113 020-406	3113 020-457
④ Retaining nut	5512 091-04	5512 091-03	5512 091-03	5512 091-01	5512 091-01	5512 091-02
⑤ Circlip	5545 040-02	5545 040-07	5545 040-03	5545 040-08	5545 040-08	5545 040-08

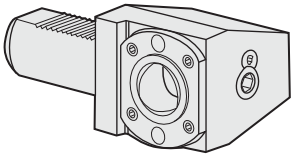
Note:

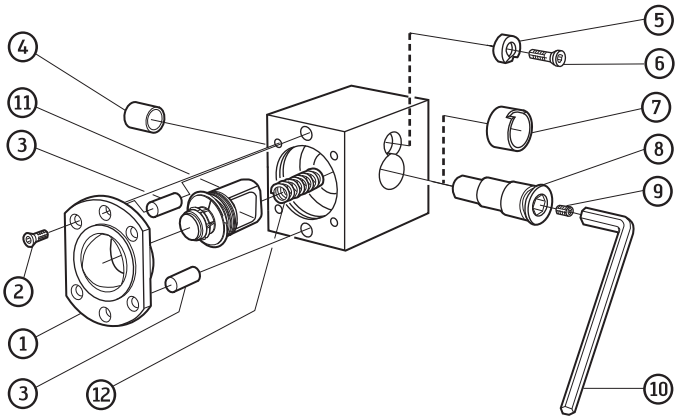
The centre screw ① and ② can be used to extend Walter Capto™ cutting heads with internal coolant supply.

Accessories

Coupling system size – Machine side	C4 / C5 / C6 / C8	C5	C6 / C8	C6	C8	C8
Coupling system size – Tool side	C3	C4	C4	C5	C5	C6
⑥ Extension key	5680 015-05 (SW 8,0)	5680 015-05 (SW 8,0)	5680 015-05 (SW 8,0)	5680 015-01 (SW 10,0)	5680 015-01 (SW 10,0)	5680 015-02 (SW 14,0)
⑦ Socket wrench for retaining nut	5680 065-13	5680 065-10	5680 065-10	5680 065-11	5680 065-11	5680 065-12

Assembly parts and accessories for clamping units
VDI – DIN 69880 angled version
Type 2030 / 2040 / 2050 / 2060

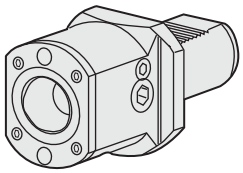


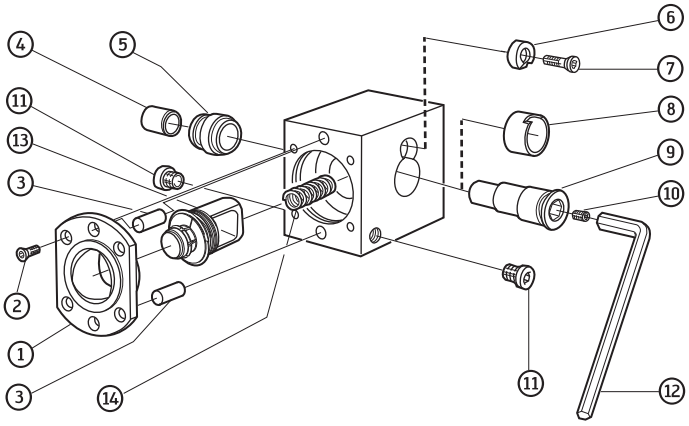


Assembly parts	Coupling system size			
	C3	C4	C5	C6
(1) Adaptor sleeve	5252 010-01	5252 010-02	5252 010-03	5252 010-04
(2) Screw (4×)	416.1-834	5513 020-26	5513 020-14	3213 010-410
(3) Pin	3111 050-558	3111 050-610	3111 050-661	3111 050-715
(4) Plain bearing	3823 010-101	3823 010-122	3823 010-162	3823 010-183
(5) Retaining washer	5541 030-01	5541 030-02	5541 030-03	5541 030-04
(6) Screw	416.1-834	416.1-834	5513 020-14	5513 020-14
(7) Plain bearing	5638 022-01	5638 022-02	5638 022-03	5638 022-04
(8) Eccentric bolt	5333 025-01	5333 025-02	5333 025-03	5333 025-04
(9) Screw	3214 010-355	3214 010-355	3214 010-355	3214 010-355
(11) Drawbar (set)	5461 100-101	5461 100-111	5461 100-121	5461 100-131
(12) Spring	5561 001-71	5561 001-41	5561 001-41	5561 001-41

Accessories	Coupling system size			
	C3	C4	C5	C6
(10) Key	SW 8 (DIN 911)	SW 10 (DIN 911)	SW 12 (DIN 911)	SW 12 (DIN 911)

Assembly parts and accessories for clamping units
VDI – DIN 69880 straight version
Type 2030 / 2040 / 2050 / 2060

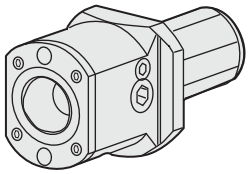


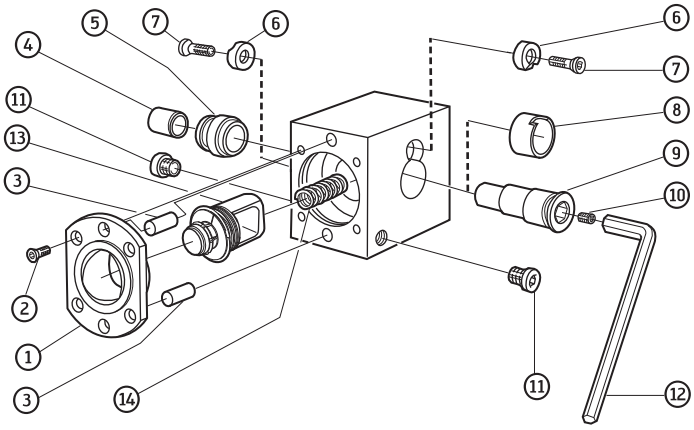


Assembly parts	Coupling system size			
	C3	C4	C5	C6
① Adaptor sleeve	5252 010-01	5252 010-02	5252 010-03	5252 010-04
② Screw (4×)	416.1-834	5513 020-26	5513 020-14	3213 010-410
③ Pin	3111 050-558	3111 050-610	3111 050-661	3111 050-715
④ Plain bearing	3823 010-101	3823 010-122	3823 010-162	3823 010-183
⑤ Bushing	5638 024-01	5638 024-02	5638 024-03	5638 024-04
⑥ Retaining washer	5541 030-01	5541 030-02	5541 030-03	5541 030-04
⑦ Screw	416.1-834	416.1-834	5513 020-14	5513 020-14
⑧ Plain bearing	5638 022-01	5638 022-02	5638 022-03	5638 022-04
⑨ Eccentric bolt	5333 025-01	5333 025-02	5333 025-03	5333 025-04
⑩ Screw	3214 010-355	3214 010-355	3214 010-355	3214 010-355
⑪ Seal	3611 005-180	3611 005-180	3611 005-180	3611 005-140
⑬ Drawbar (set)	5461 100-101	5461 100-111	5461 100-121	5461 100-131
⑭ Spring	5561 001-71	5561 001-41	5561 001-41	5561 001-41

Accessories	Coupling system size			
	C3	C4	C5	C6
⑫ Key	SW 8 (DIN 911)	SW 10 (DIN 911)	SW 12 (DIN 911)	SW 12 (DIN 911)

Assembly parts and accessories for clamping units
Round shank with flats
Type 2035 / 2045 / 2055 / 2065

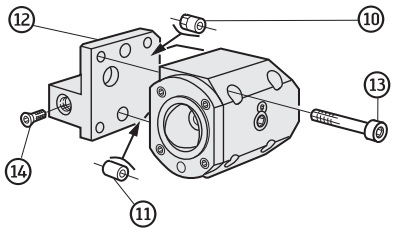


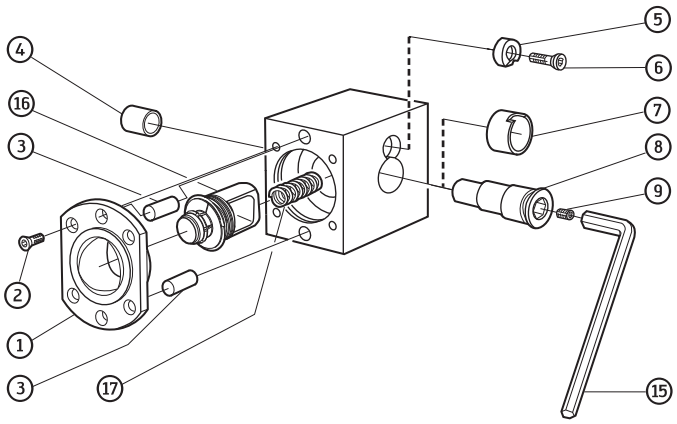


Assembly parts	Coupling system size			
	C3	C4	C5	C6
① Adaptor sleeve	5252 010-01	5252 010-02	5252 010-03	5252 010-04
② Screw (4×)	416.1-834	5513 020-26	5513 020-14	3213 010-410
③ Pin	3111 020-558	3111 020-610	3111 020-661	3111 020-715
④ Plain bearing	3823 010-101	3823 010-122	3823 010-162	3823 010-183
⑤ Bushing	5638 024-01	5638 024-02	5638 024-03	5638 024-04
⑥ Retaining washer	5541 030-01	5541 030-02	5541 030-03	5541 030-04
⑦ Screw	416.1-834	416.1-834	5513 020-14	5513 020-14
⑧ Plain bearing	5638 022-01	5638 022-02	5638 022-03	5638 022-04
⑨ Eccentric bolt	5333 025-01	5333 025-02	5333 025-03	5333 025-04
⑩ Screw	3214 010-355	3214 010-355	3214 010-355	3214 010-355
⑪ Seal	3611 005-180	3611 005-180	3611 005-180	3611 005-140
⑬ Drawbar (set)	5461 100-101	5461 100-111	5461 100-121	5461 100-131
⑭ Spring	5561 001-71	5561 001-41	5561 001-41	5561 001-41

Accessories	Coupling system size			
	C3	C4	C5	C6
⑫ Key	SW 8 (DIN 911)	SW 10 (DIN 911)	SW 12 (DIN 911)	SW 12 (DIN 911)

Assembly parts and accessories for clamping units Type 2080

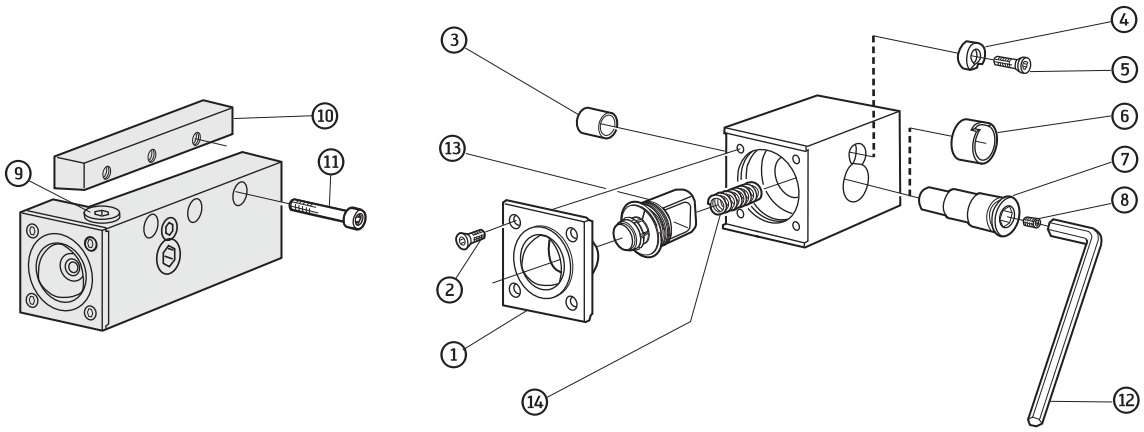




Assembly parts	Coupling system size			
	C3	C4	C5	C6
① Adaptor sleeve	5252 010-01	5252 010-02	5252 010-03	5252 010-04
② Screw (4×)	416.1-834	5513 020-26	5513 020-14	3213 010-410
③ Pin	3111 020-558	3111 020-610	3111 020-661	3111 020-715
④ Plain bearing	3823 010-101	3823 010-122	3823 010-162	3823 010-183
⑤ Retaining washer	5541 030-01	5541 030-02	5541 030-03	5541 030-04
⑥ Screw	416.1-834	416.1-834	5513 020-14	5513 020-14
⑦ Plain bearing	5638 022-01	5638 022-02	5638 022-03	5638 022-04
⑧ Eccentric bolt	5333 025-01	5333 025-02	5333 025-03	5333 025-04
⑨ Screw	3214 010-355	3214 010-355	3214 010-355	3214 010-355
⑩ Shim pin	5552 063-05	5552 063-07	5552 063-06	—
⑪ Pin	5552 061-07	5552 061-09	5552 061-08	—
⑫ Right-hand adaptor	5253 005-01	5253 005-15	5253 005-11	—
⑫ Left-hand adaptor	5253 005-02	5253 005-16	5253 005-12	—
⑬ Screw	3212 010-363	3212 010-364	3212 010-416	—
⑭ Seal	3611 005-180	3611 005-140	—	—
⑯ Drawbar (set)	5461 100-101	5461 100-111	5461 100-121	5461 100-131
⑰ Spring	5561 001-71	5561 001-41	5561 001-41	5561 001-41

Accessories	Coupling system size			
	C3	C4	C5	C6
⑮ Key	SW 8 (DIN 911)	SW 10 (DIN 911)	SW 12 (DIN 911)	SW 12 (DIN 911)

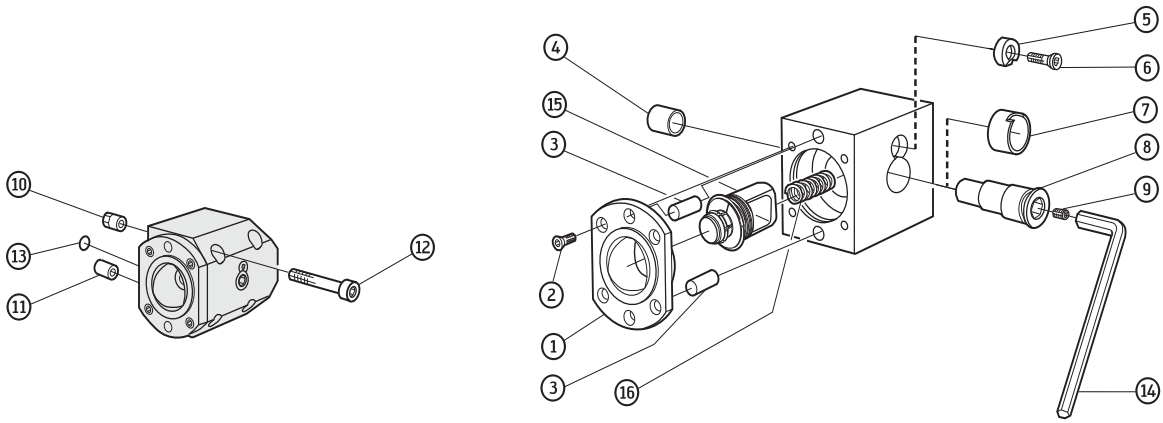
Assembly parts and accessories for clamping units Type 2085



Assembly parts	Coupling system size C3	C4	C5
① Adaptor sleeve	5252 015-01	5252 015-02	5252 015-03
② Screw (4×)	416.1-834	5513 020-26	5513 020-14
③ Plain bearing	3823 010-101	3823 010-122	3823 010-162
④ Retaining washer	5541 030-01	5541 030-02	5541 030-03
⑤ Screw	416.1-834	416.1-834	5513 020-14
⑥ Plain bearing	5638 022-01	5638 022-02	5638 022-03
⑦ Eccentric bolt	5333 025-01	5333 025-02	5333 025-03
⑧ Screw	3214 010-355	3214 010-355	3214 010-355
⑨ Seal	3611 005-180	3611 005-180	3611 005-180
⑩ Clamping wedge system	5421 115-01	5421 115-02	5421 115-03
⑪ Screw	3212 101-362	3212 101-364	3212 101-416
⑬ Drawbar (set)	5461 100-101	5461 100-111	5461 100-121
⑭ Spring	5561 001-71	5561 001-41	5561 001-41

Accessories	Coupling system size C3	C4	C5
⑫ Key	SW 8 (DIN 911)	SW 10 (DIN 911)	SW 12 (DIN 911)

Assembly parts and accessories for clamping units Type 2090

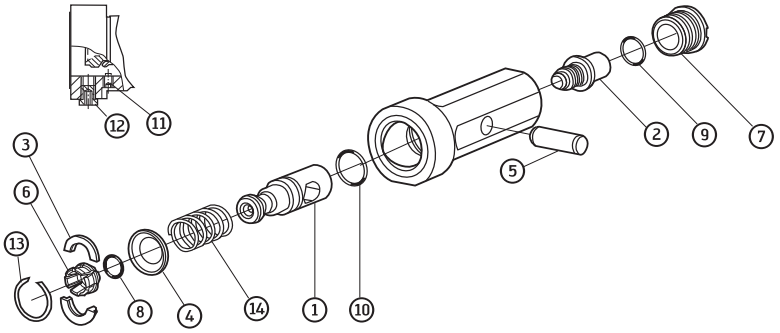


Assembly parts	Coupling system size				
	C3	C4	C5	C6	C8
① Adaptor sleeve	5252 010-01	5252 010-02	5252 010-03	5252 010-04	5252 010-05
② Screw (4×)	416.1-834	5513 020-26	5513 020-14	3213 010-410	3213 010-462
③ Pin	3111 050-558	3111 050-610	3111 050-661	3111 050-715	3111 050-769
④ Plain bearing	3823 010-101	3823 010-122	3823 010-162	3823 010-183	3823 010-225
⑤ Retaining washer	5541 030-01	5541 030-02	5541 030-03	5541 030-04	5541 030-05
⑥ Screw	416.1-834	416.1-834	5513 020-14	5513 020-14	5513 020-14
⑦ Plain bearing	5638 022-01	5638 022-02	5638 022-03	5638 022-04	5638 022-05
⑧ Eccentric bolt	5333 025-01	5333 025-02	5333 025-03	5333 025-04	5333 025-05
⑨ Screw	3214 010-355	3214 010-355	3214 010-355	3214 010-355	3214 010-355
⑩ Shim pin	5552 063-05	5552 063-07	5552 063-06	5552 063-03	5552 063-04
⑪ Pin	5552 061-07	5552 061-09	5552 061-08	5552 061-05	5552 061-06
⑫ Screw	3212 010-363	3212 010-414	3212 010-466	3212 010-469	3212 010-521
⑬ O-ring	5641 001-22	3671 010-114	3671 010-114	3671 010-119	3671 010-119
⑮ Drawbar (set)	5461 100-101	5461 100-111	5461 100-121	5461 100-131	5461 100-141
⑯ Spring	5561 001-71	5561 001-41	5561 001-41	5561 001-41	5561 001-41

Accessories	Coupling system size				
	C3	C4	C5	C6	C8
⑭ Key	SW 8 (DIN 911)	SW 10 (DIN 911)	SW 12 (DIN 911)	SW 12 (DIN 911)	SW 12 (DIN 911)

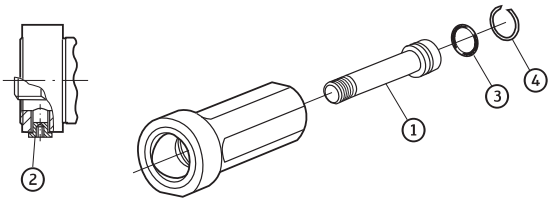
Assembly parts and accessories for clamping units Type 2000 /3000

Type 2000 – Bushing clamp



Assembly parts	Coupling system size C3	C4	C5
① Drawbar	5461 105-01	5461 105-02	5461 105-03
② Clamping screw	5519 105-01	5519 105-02	5519 105-03
③ Split guide ring	5546 002-01	5546 002-02	5546 002-03
④ Ring	5541 028-01	5541 028-02	5541 028-03
⑤ Locking pin	5552 032-01	5552 032-02	5552 032-03
⑥ Segment (1 set = 6 pieces)	5549 120-08	5549 120-06	5549 120-07
⑦ Threaded bushing	5512 091-03	5512 091-01	5512 091-02
⑧ O-ring	5641 005-01	5641 005-05	5641 005-06
⑨ O-ring	3671 010-118	3671 010-120	3671 010-124
⑩ O-ring	3671 010-124	3671 010-126	3671 010-128
⑪ Screw	3214 020-204	3214 020-255	3214 020-255
⑫ Seal	3611 005-180	3611 005-180	3611 005-180
⑬ Circlip	5545 042-01	3421 105-026	3421 105-032
⑭ Spring	5561 001-52	5561 001-53	5561 001-54

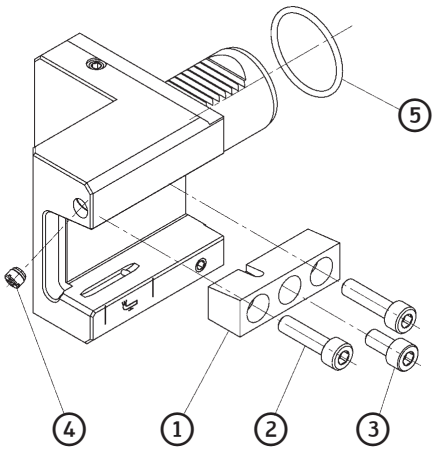
Type 3000 – Clamped using a centre screw



Assembly parts	Coupling system size C3	C4	C5
① Clamping screw	5512 096-01	5512 096-02	5512 096-03
② Seal	3611 005-180	3611 005-180	3611 005-180
③ O-ring	3671 010-020	3671 010-022	3671 010-024
④ Circlip	5545 040-03	5545 040-05	5545 040-06

Accessories	Coupling system size C3	C4	C5
Key	SW 8 (DIN 911)	SW 10 (DIN 911)	SW 12 (DIN 911)

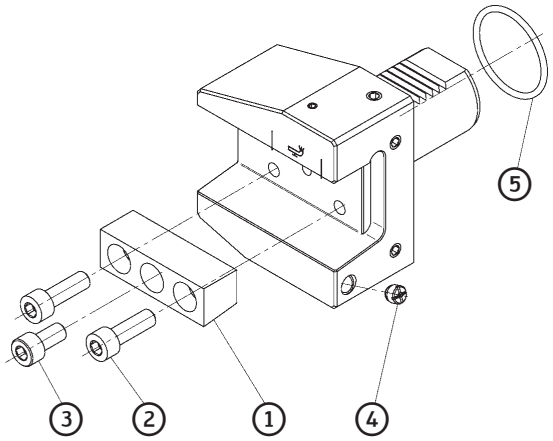
Assembly parts and accessories for VDI Type A2120-P



Assembly parts

		30 / 20	40 / 25
1	Wedge	FK392	FK393
2	Screw	M06X025 ISO4762 12.9	FS972
3	Screw	M06X014 ISO4762 12.9	M08X016 ISO4762 12.9
4	Screw	FS2278	FS2278
5	O-ring	O-RING 28.3 x 1.78 70/75	O-RING 37.77 x 2.62 70/75

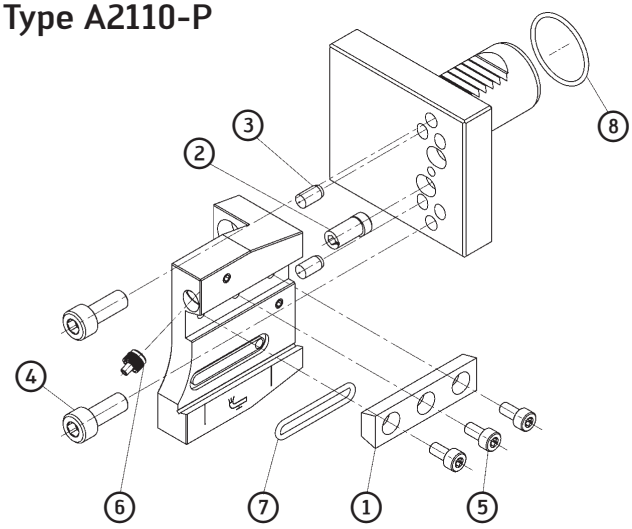
Assembly parts and accessories for VDI
Type A2121-P

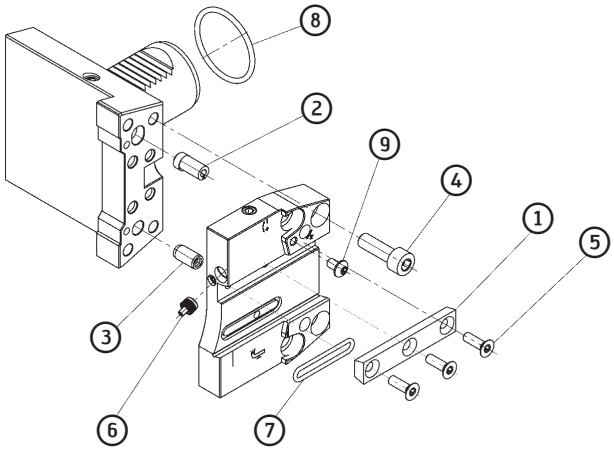


Assembly parts

	30 / 20	40 / 25	50 / 25
① Wedge	FK392	FK393	FK393
② Screw	M06X014 ISO4762 12.9	M08X025 ISO4762 12.9	M08X025 ISO4762 12.9
③ Screw	M06X025 ISO4762 12.9	M08X016 ISO4762 12.9	M08X016 ISO4762 12.9
④ Screw	FS2278	FS2278	FS2278
⑤ O-ring	O-RING 28.3 x 1.78 70/75	O-RING 37.77 x 2.62 70/75	O-RING 47.29 x 2.62 70/75

Assembly parts and accessories for VDI Type A2110-P

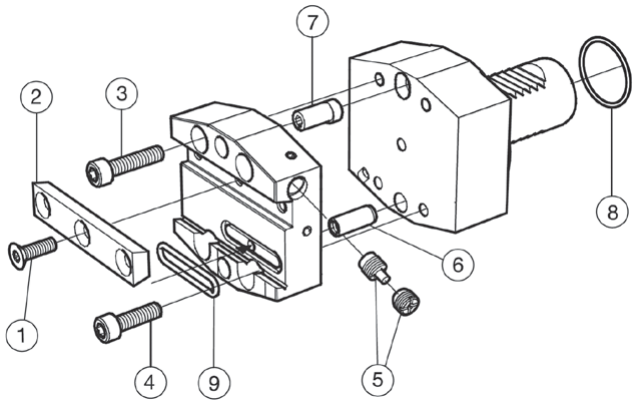




Assembly parts

		25 / 26	30 / 26	30 / 32	40 / 32
1	Wedge	FK383	FK383	FK383	FK384
2	Eccentric pin	FS2275	FS2275	FS2275	FS2275
3	Parallel pin	06,0M6X012 DIN7	06,0M6X012 DIN7	06,0M6X012 DIN7	08,0M6X016 ISO8735
4	Screw	M08X016 ISO4762 12.9	M06X020 DIN7984 8.8	M06X020 DIN7984 8.8	M08X025 ISO4762 12.9
5	Screw	M05X010 ISO14579 8.8	M05X010 ISO14579 8.8	M05X010 ISO14579 8.8	M05X016 ISO14581 8.8
6	Nozzle	FS1477	FS1477	FS1477	FS1477
7	O-ring	O-RING 24 x 2 70/80	O-RING 24 x 2 70/80	O-RING 24 x 2 70/80	O-RING 27 x 2 70/80
8	O-ring	O-RING 23.52 x 1.78 70/75	O-RING 28.3 x 1.78 70/75	O-RING 28.3 x 1.78 70/75	O-RING 37.77 x 2.62 70/75
9	Screw				M5X8-10.9-Torx

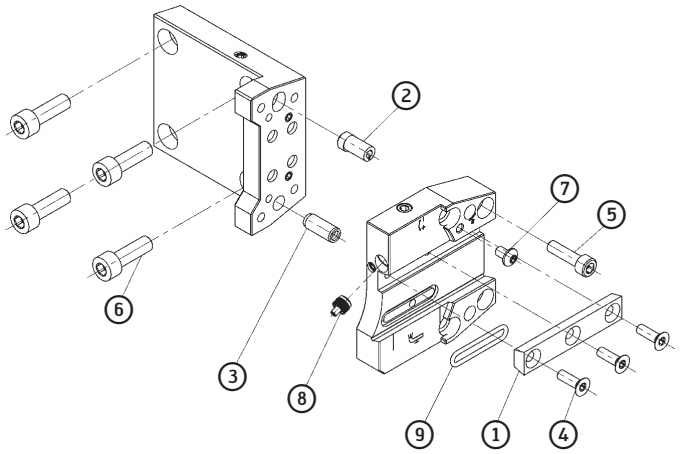
Assembly parts and accessories for VDI
Type A2111-P



Assembly parts

		30 / 26	30 / 32	40 / 32
1	Screw	M05X016 ISO14581 8.8	M05X016 ISO14581 8.8	M05X016 ISO14581 8.8
2	Wedge	FK384	FK384	FK384
3	Screw	M06X025 ISO4762 12.9	M08X025 ISO4762 12.9	M08X025 ISO4762 12.9
4	Screw	M06X020 DIN 7984 10.9		
5	Screw	FS2278	FS2278	FS2278
	Nozzle	FS1477	FS1477	FS1477
6	Parallel pin	08,0M6X020 ISO8735	08,0M6X020 ISO8735	08,0M6X020 ISO8735
7	Eccentric pin	5333 011-01	5333 011-01	5333 011-01
8	O-ring	O-RING 28.3 x 1.78 70/75	O-RING 28.3 x 1.78 70/75	O-RING 28.3 x 1.78 70/75
9	O-ring	O-RING 24 x 2 70/80	O-RING 27 x 2 70/80	O-RING 27 x 2 70/80

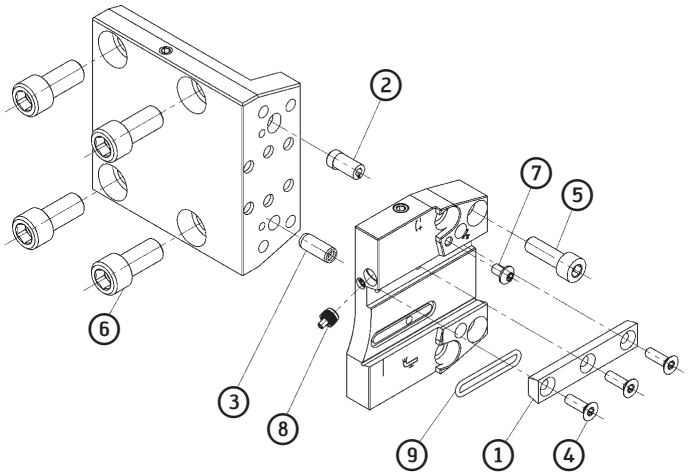
Assembly parts and accessories for VDI
Type A2110-BMT-P



Assembly parts

		BT45	BT55	BT65
1	Wedge	FK384	FK384	FK384
2	Eccentric pin	FS2275	FS2275	FS2275
3	Parallel pin	08,0M6X020 ISO8735	08,0M6X016 ISO8735	08,0M6X016 ISO8735
4	Screw	M05X016 ISO14581 8.8	M05X016 ISO14581 8.8	M05X016 ISO14581 8.8
5	Screw	M06X022 ISO4762 12.9	-	M06X022 ISO4762 12.9
6	Screw	M08X025 ISO4762 12.9	M10X020 ISO4762 12.10	M08X025 ISO4762 12.9
	Screw	-	M010X025 ISO4762 12.9	-
7	Screw	FS2287	FS2287	FS2287
8	Nozzle	FS1477	FS1477	FS1477
9	O-ring	O-RING 24 x 2 70/80	O-RING 27 x 2 70/80	O-RING 27 x 2 70/80

Assembly parts and accessories for VDI
Type A2110-DO-P



Assembly parts	DO
1 Wedge	FK384
2 Eccentric pin	FS2275
3 Parallel pin	08,0M6X020 ISO8735
4 Screw	M05X016 ISO14581 8.8
5 Screw	M08X022 ISO4762 12.9
6 Screw	M12X025 ISO4762 12.9
7 Screw	FS2287
8 Nozzle	FS1477
9 O-ring	O-RING 27 x 2 70/80

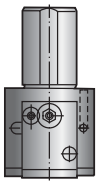
		Page
Walter Capto™ adaptors	Product range overview	D 52
	Masters	D 54
	Intermediate adaptors	D 60
	Tool adaptors	D 62
Walter NCT adaptors	Product range overview	D 70
	Designation key	D 71
	Masters	D 72
	Intermediate adaptors	D 78
	Tool adaptors	D 82
ScrewFit adaptors for front pieces	Product range overview	D 94
	Designation key	D 95
	Intermediate adaptors	D 96
	Tool adaptors	D 98
ConeFit adaptors for milling cutter heads	Product range overview	D 110
	Designation key	D 111
	Tool adaptors	D 112
Adaptors, one-piece – HSK, SK	Product range overview	D 118
	Designation key	D 120
	Masters	D 122
	Tool adaptors	D 123
Technical information	Assembly instructions	D 148
	Synchronous machining	D 149

		Page
Assembly parts and accessories	Masters and intermediate elements	D 150
	Extensions and reducers	D 151
	NCT accessories	D 152
	ScrewFit accessories	D 152
	ConeFit accessories	D 153
	Assembly accessories – Rotating adaptors	D 154

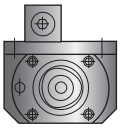
Product range overview of Walter Capto™ clamping units and adaptors

Manual clamping units

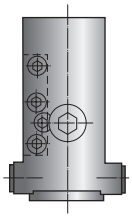
Type 2045 / 2055 / 2065
Page D 9



Type 2080
Page D 8



Type 2085
Page D 8



Type 2090
Page D 10

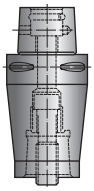


Type 2000 / 3000 / 20.5
Page D 9

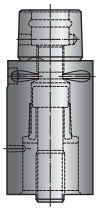


Intermediate adaptors

C . – 391.02
Page D 61

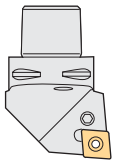


C . – 391.01
Page D 60

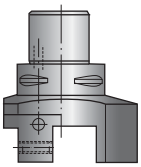


Tool adaptors

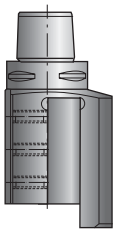
Walter Capto™ Turning tools
Page A 84



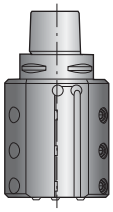
C . – ASHA
Page D 12



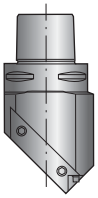
C . – ASH
Page D 11



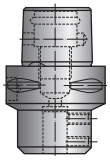
C . – ASH.3
Page D 11



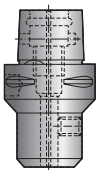
C . – ASH.45
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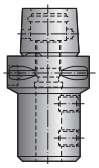
C . – 131
Page D 65

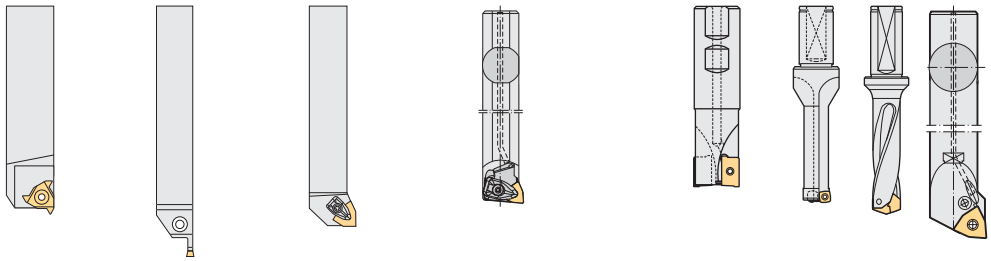


C . – 391.20
Page D 64



C . – 391.27
Page D 66

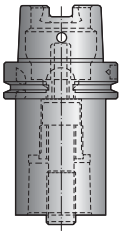




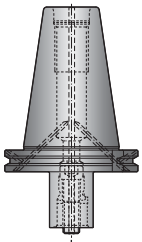
D 2

Masters

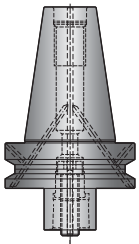
HSK
C . – 390.410
Page D 54



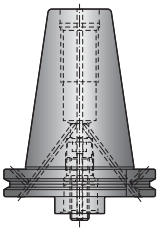
SK
C . – 390B.140
Page D 55



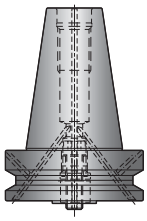
MAS-BT
C . – 390B.55/58
Page D 56



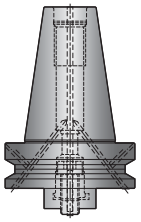
SK*
C . – 390B.540
Page D 57



MAS-BT*
C . – 390B.555/558
Page D 58

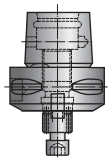


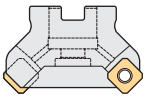
CAT-V
C . – A390B.45
Page D 59



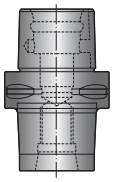
Walter Capto™

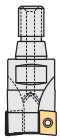
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Page D 67





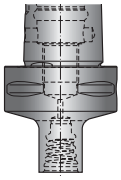
AK580.C
Page D 108





ScrewFit

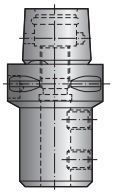
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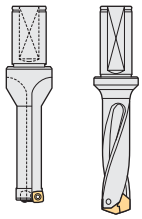




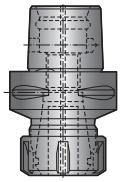
ConeFit

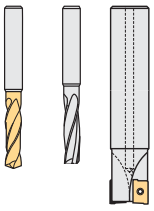
C . – 391.27
Page D 66



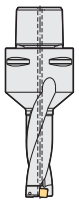


C . – 391.14
Page D 62

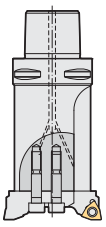




Optional
B421x.C.
Page B 192

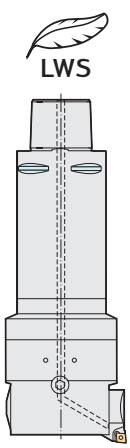


B3220.C.
Ø 41–153 mm
Page B 516



B4031.C.
Ø 90–153 mm
Page B 517

LWS



* BIG-PLUS SYSTEM, BIG DAISHOWA licence

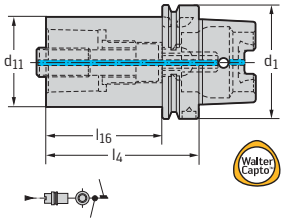
HSK DIN 69893-1 A master
C.-390.410



D 2

Tool

HSK DIN 69893-1 A



Designation	d_1	d_{11}	l_4 mm	l_{16} mm	kg
C4-390.410-63 080C	HSK-A63	C4	80	54	1,11
C5-390.410-63 090C	HSK-A63	C5	90	64	1,46
C3-390.410-63 075C	HSK-A63	C3	75	49	0,94
C4-390.410-100 090A	HSK-A100	C4	90	61	2,67
C5-390.410-100 100A	HSK-A100	C5	100	71	3,01
C6-390.410-100 110A	HSK-A100	C6	110	81	3,7
C8-390.410-100 120A	HSK-A100	C8	120	91	4,87

For Walter Capto™ tightening torques, see “Assembly parts and accessories”

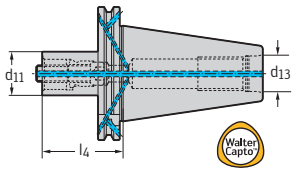
D 33

DIN 69871 AD/B master
C.-390B.140



– ISO 7388-1

Tool	Designation	d_1	d_{11}	l_4 mm	d_{13} mm	kg
SK DIN 69871 AD/B	C3-390B.140-40 060	SK40	C3	60	M16	0,98
	C4-390B.140-40 060	SK40	C4	60	M16	1,08
	C5-390B.140-40 040	SK40	C5	40	M16	0,92
	C5-390B.140-40 080	SK40	C5	80	M16	1,5
	C6-390B.140-40 085	SK40	C6	85	M16	1,81
	C3-390B.140-50 060	SK50	C3	60	M24	2,73
	C3-390B.140-50 030	SK50	C3	30	M24	2,62
	C3-390B.140-40 030	SK50	C3	30	M24	0,83
	C4-390B.140-50 060	SK50	C4	60	M24	2,84
	C4-390B.140-50 030	SK50	C4	30	M24	2,62
	C4-390B.140-40 030	SK50	C4	60	M24	0,82
	C5-390B.140-50 030	SK50	C5	30	M24	2,62
	C5-390B.140-50 070	SK50	C5	70	M24	3,1
	C6-390B.140-50 030	SK50	C6	30	M24	2,5
	C6-390B.140-50 080	SK50	C6	80	M24	3,6
	C8-390B.140-50 070	SK50	C8	70	M24	3,74
	C8-390B.140-50 120	SK50	C8	120	M24	5,57



For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

D 154

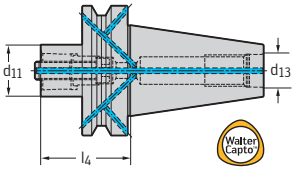
MAS-BT JIS B 6339 AD/B master
C.-390B.55 + C.-390B.58



D 2

– ISO 7388-2

Tool



Designation	d_1	d_{11}	l_4 mm	d_{13} mm	kg
C3-390B.55-40 060	BT40	C3	60	M16	1,1
C3-390B.55-40 030	BT40	C3	30	M16	0,95
C4-390B.55-40 060	BT40	C4	60	M16	1,18
C4-390B.55-40 030	BT40	C4	30	M16	0,91
C5-390B.55-40 050	BT40	C5	50	M16	1,12
C5-390B.55-40 090	BT40	C5	90	M16	1,7
C6-390B.55-40 075	BT40	C6	75	M16	1,71
C3-390B.58-50 070	BT50	C3	70	M24	3,68
C3-390B.58-50 040	BT50	C3	40	M24	3,55
C4-390B.58-50 070	BT50	C4	70	M24	3,76
C4-390B.58-50 040	BT50	C4	40	M24	3,53
C5-390B.58-50 040	BT50	C5	40	M24	3,44
C5-390B.58-50 080	BT50	C5	80	M24	3,97
C6-390B.58-50 050	BT50	C6	50	M24	3,5
C6-390B.58-50 100	BT50	C6	100	M24	4,6
C8-390B.58-50 070	BT50	C8	70	M24	4,04
C8-390B.58-50 120	BT50	C8	120	M24	5,88

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

D 154

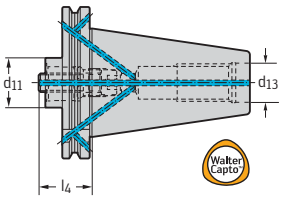
DIN 69871 AD/B master
C.-390B.540 + C.-390.540



– BIG-PLUS SYSTEM – BIG DAISHOWA licence
– ISO 7388-1

Tool

SK DIN 69871 AD/B



Designation	d_1	d_{11}	l_4 mm	d_{13} mm	kg
C3-390B.540-40 030	SK40	C3	30	M16	0,85
C4-390B.540-40 040	SK40	C4	40	M16	0,93
C5-390B.540-40 050	SK40	C5	50	M16	1,1
C6-390B.540-40 085	SK40	C6	85	M16	1,82
C3-390.540-50 030A	SK50	C3	30	M24	2,6
C4-390.540-50 030A	SK50	C4	30	M24	2,6
C5-390.540-50 030A	SK50	C5	30	M24	2,6
C6-390.540-50 050A	SK50	C6	50	M24	2,4
C8-390.540-50 070A	SK50	C8	70	M24	3,4

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

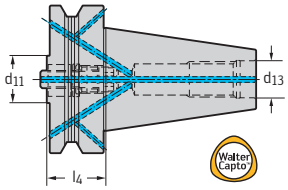
D 154

MAS-BT JIS B 6339 AD/B master
C.-390B.555 + C.-390B.558



– BIG-PLUS SYSTEM – BIG DAISHOWA licence
– ISO 7388-2

Tool



Designation	d_1	d_{11}	l_4 mm	d_{13} mm	kg
C3-390B.555-40 030	BT40	C3	30	M16	3
C4-390B.555-40 040	BT40	C4	40	M16	3
C5-390B.555-40 050	BT40	C5	50	M16	1,12
C6-390B.555-40 075	BT40	C6	75	M16	1,72
C3-390B.558-50 040	BT50	C3	40	M24	3,6
C4-390B.558-50 040	BT50	C4	40	M24	3,6
C5-390B.558-50 040	BT50	C5	40	M24	3,6
C6-390B.558-50 050	BT50	C6	50	M24	3,55
C8-390B.558-50 070	BT50	C8	70	M24	1,82

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

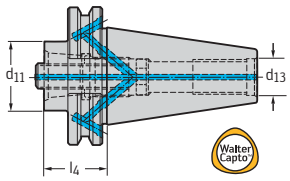
D 154

ASME B5.50 master
C.-A390B.45



Tool

ASME B5.50



Designation	d_1	d_{11}	l_4 mm	d_{13} mm	kg
C3-A390B.45-40 030	CAT40	C3	30	5/8"-11	0,83
C3-A390B.45-40 060	CAT40	C3	60	5/8"-11	1
C4-A390B.45-40 030	CAT40	C4	30	5/8"-11	0,83
C4-A390B.45-40 060	CAT40	C4	60	5/8"-11	1,1
C5-A390B.45-40 040	CAT40	C5	40	5/8"-11	0,93
C5-A390B.45-40 080	CAT40	C5	80	5/8"-11	1,5
C6-A390B.45-40 085	CAT40	C6	85	5/8"-11	1,93
C3-A390B.45-50 030	CAT50	C3	30	1"-8	2,6
C3-A390B.45-50 060	CAT50	C3	60	1"-8	2,71
C4-A390B.45-50 030	CAT50	C4	30	1"-8	2,62
C4-A390B.45-50 060	CAT50	C4	60	1"-8	2,83
C5-A390B.45-50 030	CAT50	C5	30	1"-8	2,6
C5-A390B.45-50 070	CAT50	C5	70	1"-8	3,1
C6-A390B.45-50 030	CAT50	C6	30	1"-8	2,51
C6-A390B.45-50 080	CAT50	C6	80	1"-8	3,6
C8-A390B.45-50 070	CAT50	C8	70	1"-8	3,73
C8-A390B.45-50 120	CAT50	C8	120	1"-8	5,55

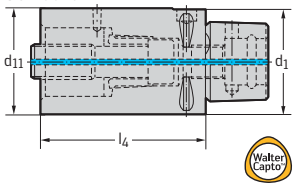
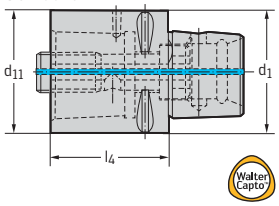
D 154

Extension
C.-391.01



D 2

– ISO 26623

Tool	Designation	d_1	d_{11}	l_4 mm	kg
Walter Capto™ in accordance with ISO 26623 	C3-391.01-32 060A	C3	C3	60	0,36
	C3-391.01-32 080A	C3	C3	80	0,47
	C4-391.01-40 060A	C4	C4	60	0,57
	C4-391.01-40 080A	C4	C4	80	0,74
	C5-391.01-50 080A	C5	C5	80	1,18
	C5-391.01-50 100A	C5	C5	100	1,44
	C6-391.01-63 100A	C6	C6	100	2,27
	C6-391.01-63 140A	C6	C6	140	3,16
	C8-391.01-80 100A	C8	C8	100	3,70
	C8-391.01-80 125A	C8	C8	125	4,63
Walter Capto™ in accordance with ISO 26623 	C3-391.01-32 035*	C3	C3	35	0,22
	C4-391.01-40 040*	C4	C4	40	0,41
	C5-391.01-50 050*	C5	C5	50	0,75
	C6-391.01-63 060*	C6	C6	60	1,36
	C8-391.01-80 065*	C8	C8	65	2,41

* Short version only for bushing clamp
For Walter Capto™ tightening torques, see “Assembly parts and accessories”

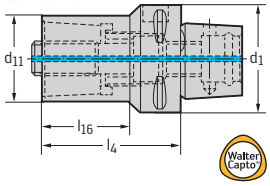
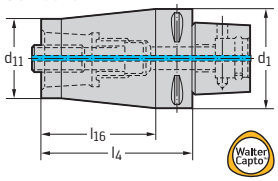
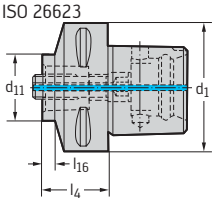
D 34

Reducer
C.-391.02



– ISO 26623

D 2

Tool	Designation	d_1	d_{11}	l_4 mm	l_{16} mm	kg
Walter Capto™ in accordance with ISO 26623 	C4-391.02-32 055A	C4	C3	55	31	0,45
	C5-391.02-40 065A	C5	C4	65	40	0,81
	C5-391.02-32 060A	C5	C3	60	35	0,69
	C6-391.02-40 080A	C6	C4	80	51,3	1,3
	C6-391.02-50 080A	C6	C5	80	51,5	1,51
	C6-391.02-32 070A	C6	C4	70	39	1,12
	C8-391.02-63 080A	C8	C6	80	53,1	2,54
	C8-391.02-50 080A	C8	C5	80	49,3	2,27
	C8-391.02-32 060A	C8	C3	60	29,3	1,7
	C8-391.02-40 070A	C8	C4	70	36,5	1,93
Walter Capto™ in accordance with ISO 26623 	C4-391.02-32 070A	C4	C3	70	12	0,59
	C5-391.02-40 085A	C5	C4	85	12	1,11
	C6-391.02-50 110A	C6	C5	110	12	2,21
	C8-391.02-63 120A	C8	C6	120	12	2,1
Walter Capto™ in accordance with ISO 26623 	C5-391.02-32 033*	C5	C3	33	10	0,53
	C5-391.02-40 040*	C5	C4	40	18	0,6
	C6-391.02-32 032*	C6	C3	32	6	0,9
	C6-391.02-40 040*	C6	C4	40	11,3	0,99
	C6-391.02-50 050*	C6	C5	50	26,5	1,08
	C8-391.02-50 045*	C8	C5	45	10	1,93
	C8-391.02-63 055*	C8	C6	55	20	2,11

* Short version only for bushing clamp
For Walter Capto™ tightening torques, see “Assembly parts and accessories”

D 35

ER collet chuck
C.-391.14

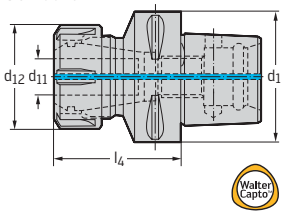


– For ER collets in accordance with DIN 6499/ISO 15488
– ISO 26623

D 2

Tool

Walter Capto™ in accordance with ISO 26623



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	kg
C3-391.14-20 045	C3	1-13	35	45	ER20	0,23
C4-391.14-20 052	C4	1-13	35	52	ER20	0,41
C4-391.14-25 052	C4	1-16	42	52	ER25	0,68
C4-391.14-32 054	C4	1-20	50	54	ER32	0,47
C5-391.14-20 055	C5	1-13	35	55	ER20	0,8
C5-391.14-25 055	C5	1-16	42	55	ER25	0,64
C5-391.14-32 057	C5	1-20	50	57	ER32	0,69
C6-391.14-20 060	C6	1-13	35	60	ER20	0,94
C6-391.14-25 060	C6	1-16	42	60	ER25	1,03
C6-391.14-25 100	C6	1-16	42	100	ER25	1,42
C6-391.14-32 060	C6	1-20	50	60	ER32	1,05
C6-391.14-32 100	C6	1-20	50	100	ER32	1,63
C6-391.14-40 065	C6	2-26	63	65	ER40	1,22
C8-391.14-25 070	C8	1-16	42	70	ER25	1,7
C8-391.14-32 070	C8	1-20	50	70	ER32	1,7
C8-391.14-40 070	C8	2-26	63	70	ER40	2
C8-391.14-32 160	C8	1-20	50	160	ER32	4,1

For collets, see "Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER20	ER25	ER32	ER40
	Clamping nut	FS1451	FS1540	FS1541	FS1542

Accessories

	Collets	ER20	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 154 D 170

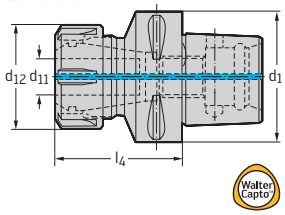
ER collet chucks for internal coolant
C.-391.14



– For ER collets in accordance with DIN 6499/ISO 15488
– For use with sealing disc

Tool

Walter Capto™ in accordance with ISO 26623



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	kg
C3-391.14-20 050	C3	1-13	35	50	ER20	0,31
C4-391.14-20 057	C4	1-13	35	57	ER20	0,49
C4-391.14-25 057	C4	1-16	42	57	ER25	0,80
C4-391.14-32 059	C4	1-20	50	59	ER32	0,64
C5-391.14-20 060	C5	1-13	35	60	ER20	0,88
C5-391.14-25 060	C5	1-16	42	60	ER25	0,76
C5-391.14-32 062	C5	1-20	50	62	ER32	0,86
C6-391.14-20 065	C6	1-13	35	65	ER20	1,08
C6-391.14-25 065	C6	1-16	42	65	ER25	1,15
C6-391.14-25 105	C6	1-16	42	105	ER25	1,54
C6-391.14-32 065	C6	1-20	50	65	ER32	1,22
C6-391.14-32 105	C6	1-20	50	105	ER32	1,8
C6-391.14-40 070	C6	2-26	63	70	ER40	1,54
C8-391.14-25 075	C8	1-16	42	75	ER25	1,7
C8-391.14-32 075	C8	1-20	50	75	ER32	1,8
C8-391.14-40 075	C8	2-26	63	75	ER40	2,1
C8-391.14-32 165	C8	1-20	50	165	ER32	1,8

If collet chucks are used for the internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For collets, see “Assembly parts and accessories”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER20	ER25	ER32	ER40
	Clamping nut for internal coolant supply	FS1359	FS1449	FS1360	FS1450

Accessories

	Collets	ER20	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 154 D 170

Weldon shank adaptor
C.-391.20

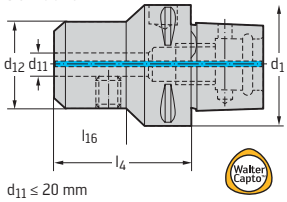


– For shanks in accordance with DIN 6535 HB
– ISO 26623

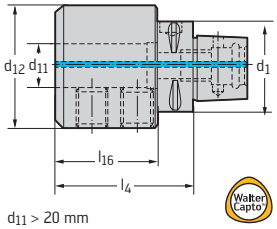
D 2

Tool

Walter Capto™ in accordance with ISO 26623



$d_{11} \leq 20$ mm

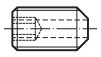


$d_{11} > 20$ mm

Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{16} mm	kg
C3-391.20-06 045A	C3	6	25	45	26,5	0,25
C3-391.20-08 045A	C3	8	28	45	28	0,27
C3-391.20-10 050	C3	10	35	50	35	0,37
C3-391.20-12 055	C3	12	42	55	40	0,52
C4-391.20-06 050	C4	6	25	50	26,5	0,39
C4-391.20-08 050	C4	8	28	50	26,5	0,42
C4-391.20-10 050A	C4	10	35	50	28,6	0,47
C4-391.20-12 055A	C4	12	42	55	35	0,53
C4-391.20-14 055	C4	14	44	55	35	0,63
C4-391.20-16 055	C4	16	48	55	35	0,69
C5-391.20-06 050	C5	6	25	50	26,5	0,6
C5-391.20-08 050	C5	8	28	50	26	0,62
C5-391.20-10 055	C5	10	35	55	27,5	0,71
C5-391.20-12 060	C5	12	42	60	36	0,84
C5-391.20-14 060	C5	14	44	60	37	0,86
C5-391.20-16 060	C5	16	48	60	39	0,93
C5-391.20-18 060	C5	18	50	60	60	0,95
C5-391.20-20 060	C5	20	52	60	40	0,98
C5-391.20-25 080	C5	25	65	80	60	1,68
C6-391.20-06 055	C6	6	25	55	25	0,98
C6-391.20-08 055	C6	8	28	55	26	1
C6-391.20-10 060	C6	10	35	60	30	1,12
C6-391.20-12 060	C6	12	42	60	33	1,2
C6-391.20-14 060	C6	14	44	60	33,5	1,22
C6-391.20-16 065	C6	16	48	65	35,5	1,36
C6-391.20-18 065	C6	18	50	65	39	1,37
C6-391.20-20 065	C6	20	52	65	37,5	1,4
C6-391.20-25 080	C6	25	65	80	58	2
C6-391.20-32 090	C6	32	72	90	68	2,47
C6-391.20-40 100	C6	40	90	100	77	3,72
C8-391.20-16 070	C8	16	48	70	32,5	2,38
C8-391.20-20 070	C8	20	52	70	35	2,39
C8-391.20-25 080	C8	25	65	80	53,7	2,73
C8-391.20-32 080	C8	32	72	80	53,7	2,88
C8-391.20-40 110	C8	40	90	110	79	5,05

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	6	8	10	12–14	16–18	20	25	32	40
	Screw	3214 050-357	3214 050-407	3214 050-458	3214 050-509	3214 050-539	3214 050-559	3214 050-590	3214 050-610	3214 050-611

Accessories

	d_{11} [mm]	6	8	10	12–18	20	25–40
	ISO 2936 Allen key	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-5 (SW 5)	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)

D 154

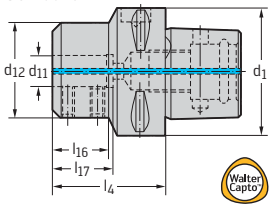
Toolholder for ISO boring bars
C.-131



– For boring bars with clamping surface
– ISO 26623

Tool

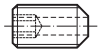
Walter Capto™ in accordance with ISO 26623



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{16} mm	l_{17} mm	kg
C3-131-00035-10	C3	10	36	35	20	20	0,28
C3-131-00040-12	C3	12	36	40	24	24	0,31
C4-131-00040-10	C4	10	36	40	19	20	0,44
C4-131-00045-12	C4	12	36	45	24	24	0,46
C4-131-00050-16	C4	16	36	50	29	32	0,47
C5-131-00045-10	C5	10	36	45	21	20	0,63
C5-131-00045-12	C5	12	36	45	22,5	24	0,64
C5-131-00055-16	C5	16	36	55	31	32	0,68

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	10–12	16
	Screw	5514 020-04	5514 020-02

Accessories

	d_{11} [mm]	10–12	16
	ISO 2936 Allen key	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)

D 154

Adaptor for drilling and reaming tools
C.-391.27

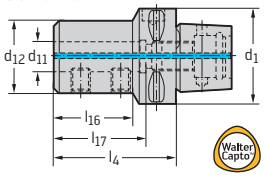


D 2

– For drilling and reaming tools with shank design
– ISO 26623

Tool

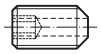
Walter Capto™ in accordance with ISO 26623



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{16} mm	l_{17} mm	kg
C3-391.27-16 056	C3	16	36	56	41	49,5	0,39
C3-391.27-20 060	C3	20	40	60	45	51,5	0,46
C4-391.27-16 056	C4	16	36	56	32,5	49,5	0,49
C4-391.27-20 060	C4	20	40	60	60	51,5	0,55
C4-391.27-25 077	C4	25	45	77	57	57,5	0,76
C5-391.27-16 065	C5	16	36	65	41,7	49,5	0,75
C5-391.27-20 060	C5	20	40	60	37,7	51,5	0,74
C5-391.27-32 075	C5	32	52	75	55	61,5	0,98
C5-391.27-25 071	C5	25	45	71	46,7	57,5	0,88
C6-391.27-16 070	C6	16	36	70	43	49,5	1,14
C6-391.27-20 070	C6	20	40	70	43,8	51,5	1,17
C6-391.27-25 070A	C6	25	45	70	43,8	57,5	1,23
C6-391.27-32 075	C6	32	52	75	49,8	61,5	1,31
C6-391.27-40 085	C6	40	65	85	63	71,5	1,73

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16–20	25–32	40
	Screw	5514 042-04	416.1-838	5514 042-06

Accessories

	d_{11} [mm]	16–20	25–32	40
	ISO 2936 Allen key	ISO2936-4 (SW 4)	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)

D 154

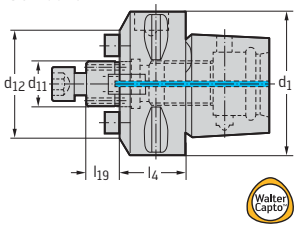
Milling cutter adaptor
AK155.8.C



– ISO 26623

Tool

Walter Capto™ in accordance with ISO 26623



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	kg
AK155.8.C4.020.16	C4	16	38	20	17	0,29
AK155.8.C5.025.16	C5	16	38	25	17	0,53
AK155.8.C5.025.22	C5	22	48	25	19	0,62
AK155.8.C5.030.27	C5	27	60	30	21	0,8
AK155.8.C6.030.16	C6	16	38	30	17	0,95
AK155.8.C6.025.22	C6	22	48	25	19	0,92
AK155.8.C6.025.27	C6	27	60	25	21	0,98
AK155.8.C6.035.32	C6	32	78	35	24	1,46

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16	22	27	32
	ISO 4762 fastening bolt	FS938 (SW 6)	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)

Accessories

	d_{11} [mm]	16	22	27	32
	ISO 2936 Allen key	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)

Strength class with fastening bolt 12.9

D 157 D 154

Walter Capto™ hydro-expansion chuck ISO 26623
AK182.C

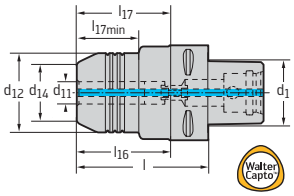


D2

– For tools with shank in accordance with DIN 1835 form A
– ISO 26623

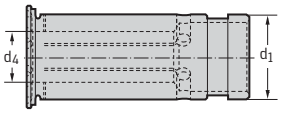
Tool

Walter Capto™ in accordance with ISO 26623



Designation	d_1	d_{11} mm	d_{12} mm	d_{14} mm	l_4 mm	l_{16} mm	l_{17} mm	l_{17min} mm	kg
AK182.C5.070.12	C5	12	42	32	70	10	46	36	1
AK182.C5.075.20	C5	20	49,5	38	75	12	51	41	1,1
AK182.C6.075.12	C6	12	42	32	75	10	46	36	1,5
AK182.C6.080.20	C6	20	52,5	38	80	15	51	41	1,6

Accessories



	d_4 mm	3	4	5	6	7	8	9	10	11
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	FS2194	FS2195	FS2196	FS2197	-	FS2198	-	-	-
	d_1 = 20 mm	FS2213	FS2214	FS2215	FS2216	-	FS2217	-	FS2218	-
	d_1 = 32 mm	-	-	-	FS2231	-	FS2232	-	FS2233	-
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	FS2189	FS2190	FS2191	FS2192	-	FS2193	-	-	-
	d_1 = 20 mm	FS2199	FS2200	FS2201	FS2202	FS2203	FS2204	FS2205	FS2206	FS2207
	d_1 = 32 mm	-	-	-	FS2222	-	FS2223	-	FS2224	-

Continued	d_4 mm	12	13	14	15	16	18	20	25
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2219	-	FS2220	-	FS2221	-	-	-
	d_1 = 32 mm	FS2234	-	FS2235	-	FS2236	FS2237	FS2238	FS2239
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2208	FS2209	FS2210	FS2211	FS2212	-	-	-
	d_1 = 32 mm	FS2225	-	FS2226	-	FS2227	FS2228	FS2229	FS2230

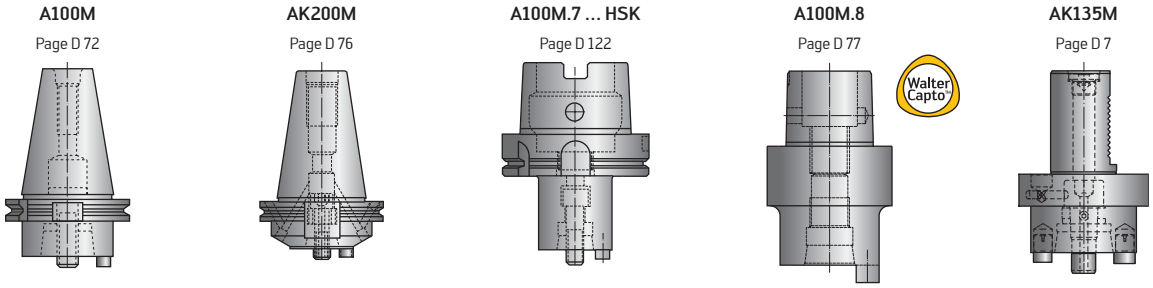
D 157 D 154



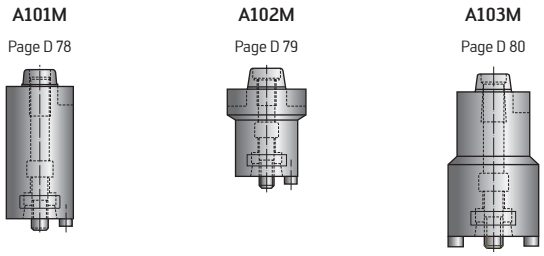
Product range overview of Walter NCT adaptors

D 2

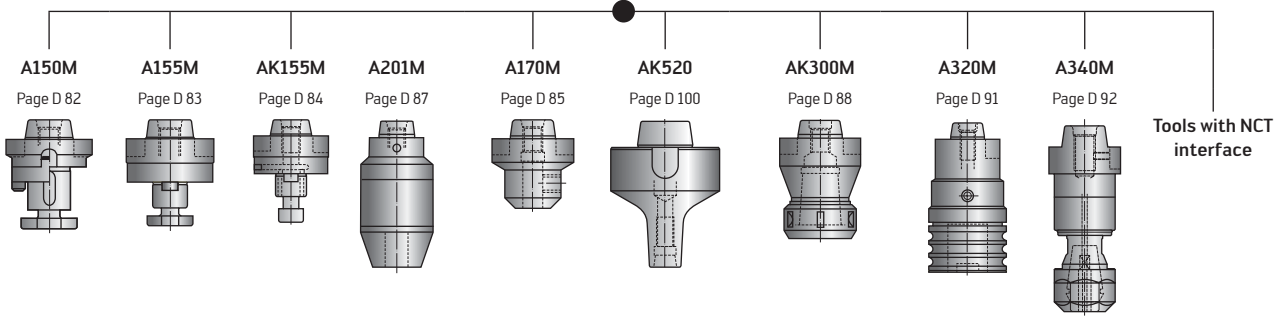
Masters

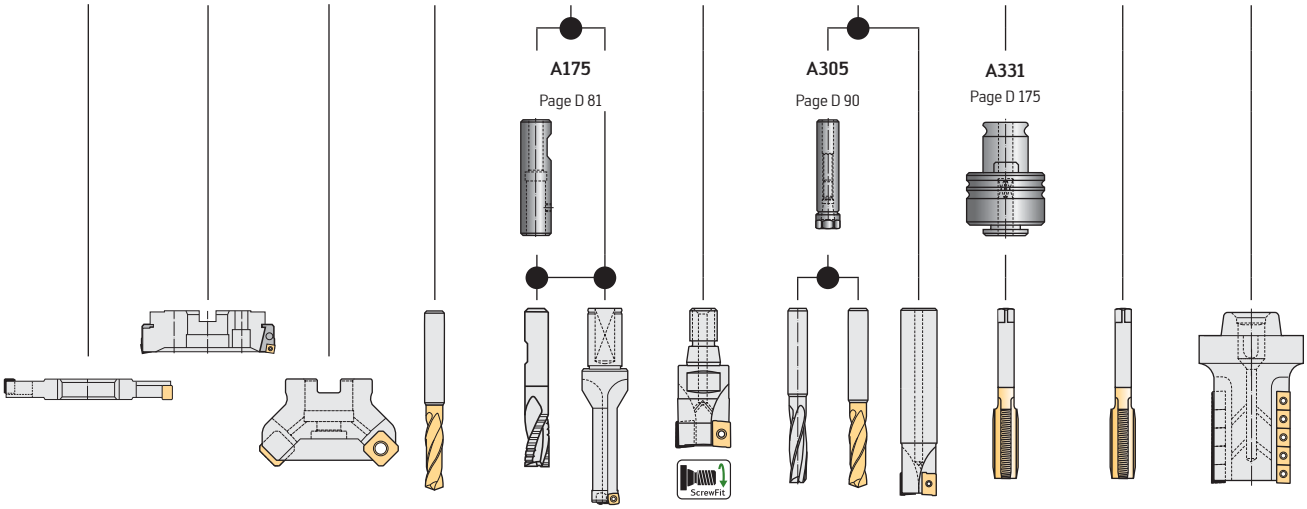


Intermediate elements



NCT adaptor





Designation key for NCT adaptors

A	K	200	M	.	2	.	50	.	030	.	63
1	2	3	4		5		6		7		8

1	2	3	4
Tool group	Coolant supply	Family	Modular system
A Adaptors	K With internal coolant supply		

5	6	7	8
Spindle-side interface type	Spindle-side interface size	Projection length	Tool-side interface size
0 NCT			
1 Steep taper DIN 2080			
2 Steep taper DIN 69871/1 AD			
3 Steep taper ANSI/ASME B 5.50 – 1985			
4 MAS BT steep taper			
5 Steep taper DIN 69871/1 AD + B			
7 HSK-A DIN 69893/1			
8 Capto™			

DIN 2080 master
A100M.1

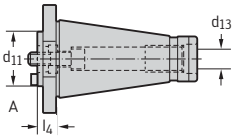


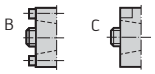
D 2

– Modular NCT adaptor
– ISO 297

Tool

SK DIN 2080 / ISO 2583





Designation	d_1	d_{11}	l_4 mm	d_{13} mm	Version	kg
A100M.1.40.030.63	SK40	NCT 63	30	M16	B	1,09
A100M.1.50.020.25	SK50	NCT 25	20	M24	C	2,79
A100M.1.50.020.32	SK50	NCT 32	20	M24	C	2,77
A100M.1.50.020.40	SK50	NCT 40	20	M24	C	2,6
A100M.1.50.020.50	SK50	NCT 50	20	M24	A	2,75
A100M.1.50.020.63	SK50	NCT 63	20	M24	B	2,6
A100M.1.50.025.80	SK50	NCT 80	25	M24	B	2,75

SK40 with ring groove, designed for Ott spindle clamp
For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

D 160 D 150 D 148

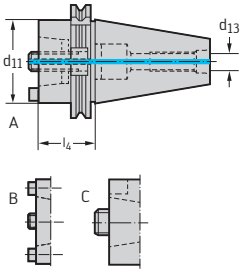
DIN 69871-1 AD master
A100M.2



– Modular NCT adaptor
– ISO 7388-1

Tool

SK DIN 69871



Designation	d_1	d_{11}	l_4 mm	d_{13} mm	Version	kg
A100M.2.40.020.25	SK40	NCT 25	20	M16	C	0,8
A100M.2.40.020.32	SK40	NCT 32	20	M16	C	0,8
A100M.2.40.030.40	SK40	NCT 40	30	M16	C	0,9
A100M.2.40.030.50	SK40	NCT 50	30	M16	A	0,97
A100M.2.40.050.63	SK40	NCT 63	50	M16	B	1,31
A100M.2.40.090.80	SK40	NCT 80	90	M16	B	2,4
A100M.2.50.020.25	SK50	NCT 25	20	M24	C	2,63
A100M.2.50.020.32	SK50	NCT 32	20	M24	C	2,76
A100M.2.50.020.40	SK50	NCT 40	20	M24	C	2,58
A100M.2.50.020.50	SK50	NCT 50	20	M24	A	2,6
A100M.2.50.020.63	SK50	NCT 63	20	M24	B	2,55
A100M.2.50.025.80	SK50	NCT 80	25	M24	B	2,55

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

D 160 D 150 D 148

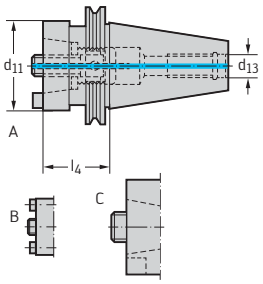
ASME B5.50 master
A100M.3



D 2

– Modular NCT adaptor

Tool	Designation	d_1	d_{11}	l_4 mm	d_{13} mm	Version	kg
ASME B5.50	A100M.3.50.035.63	CAT50	NCT 63	35	1"-8	B	2,95
	A100M.3.50.050.80	CAT50	NCT 80	50	1"-8	B	3,3



For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"

D 160 D 150 D 148

MAS-BT JIS B 6339 master
A100M.4

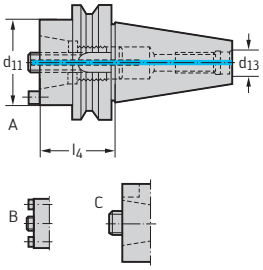


– Modular NCT adaptor
– ISO 7388-2

D 2

Tool

JIS B 6339



Designation	d_1	d_{11}	l_4 mm	d_{13} mm	Version	kg
A100M.4.40.030.25	BT40	NCT 25	30	M16	C	1,06
A100M.4.40.030.32	BT40	NCT 32	30	M16	C	1,06
A100M.4.40.030.40	BT40	NCT 40	30	M16	C	0,9
A100M.4.40.030.50	BT40	NCT 50	30	M16	A	1
A100M.4.40.040.63	BT40	NCT 63	40	M16	B	1,18
A100M.4.40.090.80	BT40	NCT 80	90	M16	B	2,69
A100M.4.50.040.25	BT50	NCT 25	40	M24	C	3,65
A100M.4.50.040.32	BT50	NCT 32	40	M24	C	3,55
A100M.4.50.040.40	BT50	NCT 40	40	M24	C	3,75
A100M.4.50.040.50	BT50	NCT 50	40	M24	A	3,55
A100M.4.50.040.63	BT50	NCT 63	40	M24	B	3,68
A100M.4.50.040.80	BT50	NCT 80	40	M24	B	3,52

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

D 160 D 150 D 148

DIN 69871 AD/B master
AK200M.2

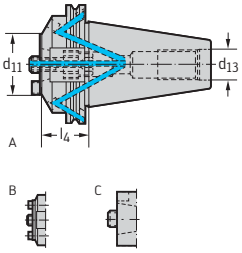


D 2

– Modular NCT adaptor
– ISO 7388-1

Tool

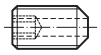
SK DIN 69871 AD/B



Designation	d_1	d_{11}	l_4 mm	d_{13} mm	Version	kg
AK200M.2.40.030.25	SK40	NCT 25	30	M16	C	0,98
AK200M.2.40.060.63	SK40	NCT 63	60	M16	B	1,48
AK200M.2.50.030.25	SK50	NCT 25	30	M24	C	3
AK200M.2.50.030.32	SK50	NCT 32	30	M24	C	3
AK200M.2.50.030.40	SK50	NCT 40	30	M24	C	2,97
AK200M.2.50.030.50	SK50	NCT 50	30	M24	A	2,99
AK200M.2.50.030.63	SK50	NCT 63	30	M24	B	2,95
AK200M.2.50.030.80	SK50	NCT 80	30	M24	B	2,81

Please note: Delivery status: Form AD
The delivery status is form AD. To convert to form B, remove both blanking screws which are screwed into the sides.
For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_1 mm	SK40	SK50
	ISO 4026 blanking screw	M04X004 ISO 4026	
	ISO 4026 blanking screw		FS974

D 160 D 150 D 148

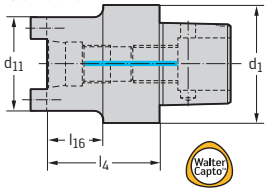
Walter Capto™ master
A100M.8



– Modular NCT adaptor
– ISO 26623

Tool

Walter Capto™ in accordance with ISO 26623



Designation	d_1	d_{11}	l_4 mm	l_{16} mm	kg
A100M.8.63.045.25.C6	C6	NCT 63	45	20	0,93
A100M.8.63.045.32.C6	C6	NCT 63	45	20	0,96
A100M.8.63.060.40.C6	C6	NCT 63	60	30	1,2
A100M.8.63.060.50.C6	C6	NCT 63	60	30	1,39
A100M.8.63.070.63.C6	C6	NCT 63	70	40	1,85
A100M.8.63.070.80.C6	C6	NCT 63	70	31	2,15
A100M.8.80.065.63.C8	C8	NCT 80	65	35	2,5
A100M.8.80.070.80.C8	C8	NCT 80	70	40	3,1

D 160 D 150 D 148

Extension
A101M

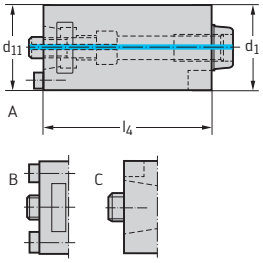


D 2

– Modular NCT adaptor

Tool

Modular NCT adaptor



Designation	d_1	d_{11}	l_4 mm	Version	kg
A101M.0.25.050.25	NCT 25	NCT 25	50	C	0,16
A101M.0.25.060.25	NCT 25	NCT 25	60	C	1,06
A101M.0.32.050.32	NCT 32	NCT 32	50	C	0,3
A101M.0.32.060.32	NCT 32	NCT 32	60	C	0,5
A101M.0.32.075.32	NCT 32	NCT 32	75	C	0,45
A101M.0.40.070.40	NCT 40	NCT 40	70	C	0,6
A101M.0.40.080.40	NCT 40	NCT 40	80	C	0,7
A101M.0.50.070.50	NCT 50	NCT 50	70	A	0,97
A101M.0.50.080.50	NCT 50	NCT 50	80	A	1,1
A101M.0.50.100.50	NCT 50	NCT 50	100	A	1,4
A101M.0.63.080.63	NCT 63	NCT 63	80	B	1,8
A101M.0.63.100.63	NCT 63	NCT 63	100	B	2,26
A101M.0.63.120.63	NCT 63	NCT 63	120	B	2,7
A101M.0.63.140.63	NCT 63	NCT 63	140	B	3,2
A101M.0.63.160.63	NCT 63	NCT 63	160	B	3,56
A101M.0.80.100.80	NCT 80	NCT 80	100	B	3,58
A101M.0.80.120.80	NCT 80	NCT 80	120	B	4,37
A101M.0.80.140.80	NCT 80	NCT 80	140	B	5,1
A101M.0.80.160.80	NCT 80	NCT 80	160	B	5,86

D 151 D 148

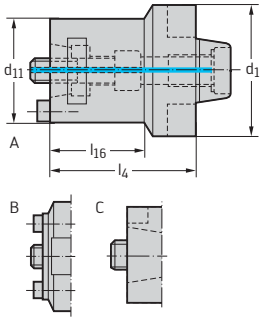
Reducer
A102M



– Modular NCT adaptor

Tool

Modular NCT adaptor



Designation	d_1	d_{11}	l_4 mm	l_{16} mm	Version	kg
A102M.0.32.050.25	NCT 32	NCT 25	50	32	C	0,23
A102M.0.40.050.25	NCT 40	NCT 25	50	30	C	0,31
A102M.0.40.050.32	NCT 40	NCT 32	50	28	C	0,39
A102M.0.50.050.25	NCT 50	NCT 25	50	25	C	0,4
A102M.0.50.050.32	NCT 50	NCT 32	50	25	C	0,5
A102M.0.50.070.40	NCT 50	NCT 40	70	50	C	0,7
A102M.0.63.050.25	NCT 63	NCT 25	50	20	C	0,66
A102M.0.63.060.25	NCT 63	NCT 25	60	30	C	0,6
A102M.0.63.080.25	NCT 63	NCT 25	80	50	C	0,75
A102M.0.63.050.32	NCT 63	NCT 32	50	20	C	0,73
A102M.0.63.060.32	NCT 63	NCT 32	60	30	C	0,6
A102M.0.63.080.32	NCT 63	NCT 32	80	50	C	0,93
A102M.0.63.070.40	NCT 63	NCT 40	70	45	C	0,9
A102M.0.63.080.40	NCT 63	NCT 40	80	55	C	0,96
A102M.0.63.100.40	NCT 63	NCT 40	100	75	C	1
A102M.0.63.120.40	NCT 63	NCT 40	120	95	C	1,3
A102M.0.63.140.40	NCT 63	NCT 40	140	115	C	1,55
A102M.0.63.070.50	NCT 63	NCT 50	70	45	A	1,16
A102M.0.63.080.50	NCT 63	NCT 50	80	55	A	1,3
A102M.0.63.100.50	NCT 63	NCT 50	100	75	A	1,6
A102M.0.63.120.50	NCT 63	NCT 50	120	95	A	1,87
A102M.0.63.140.50	NCT 63	NCT 50	140	115	A	2,15
A102M.0.80.080.40	NCT 80	NCT 40	80	45	C	1,58
A102M.0.80.080.50	NCT 80	NCT 50	80	48	A	1,85
A102M.0.80.080.63	NCT 80	NCT 63	80	50	B	2,24

D 151 D 148

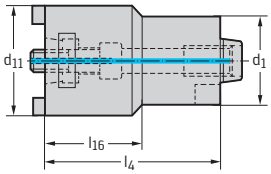
Expansion
A103M



D 2

– Modular NCT adaptor

Tool	Designation	d_1	d_{11}	l_4 mm	l_{16} mm	kg
Modular NCT adaptor	A103M.0.63.090.80	NCT 63	NCT 80	90	45	2,5



D 151 D 148

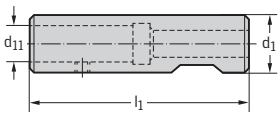
DIN 1835 B milling cutter extension
A175



– For tools with cylindrical shank

Tool

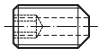
Parallel shank



Designation	d_1 mm	d_{11} mm	l_1 mm	kg
A175.0.20.090.04	20	4	90	0,2
A175.0.20.090.05	20	5	90	0,2
A175.0.20.090.06	20	6	90	0,19
A175.0.20.090.08	20	8	90	0,18
A175.0.20.090.10	20	10	90	0,16
A175.0.20.090.12	20	12	90	0,16
A175.0.20.130.04	20	4	130	0,2
A175.0.20.130.05	20	5	130	0,3
A175.0.20.130.06	20	6	130	0,3
A175.0.20.130.08	20	8	130	0,28
A175.0.20.130.10	20	10	130	0,28
A175.0.20.130.12	20	12	130	0,25
A175.0.25.100.14	25	14	100	0,25
A175.0.25.100.16	25	16	100	0,25
A175.0.25.150.14	25	14	150	0,45
A175.0.25.150.16	25	16	150	0,43

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} mm	4	5	6-10	12	14-16
	Clamping screw	M04X008 DIN 913	M05X008 DIN 913	M06X006 DIN 913	M06X005 DIN 913	M06X006 DIN 913

Combination adaptor A150M

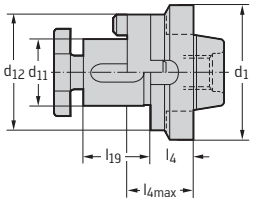


D 2

– For tools in accordance with DIN 841 and DIN 1880
– For tools in accordance with DIN 842 and DIN 1830

Tool

Modular NCT adaptor



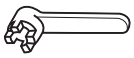
Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{4max} mm	l_{19} mm	kg
A150M.0.32.030.16	NCT 32	16	32	20	30	27	0,25
A150M.0.40.030.16	NCT 40	16	32	20	30	27	0,31
A150M.0.40.030.22	NCT 40	22	40	18	30	31	0,4
A150M.0.50.035.16	NCT 50	16	32	25	35	27	0,44
A150M.0.50.035.22	NCT 50	22	40	23	35	31	0,54
A150M.0.50.035.27	NCT 50	27	48	23	35	33	0,63
A150M.0.50.040.32	NCT 50	32	58	26	40	38	1
A150M.0.63.035.16	NCT 63	16	32	25	35	27	0,55
A150M.0.63.035.22	NCT 63	22	40	23	35	31	0,66
A150M.0.63.035.27	NCT 63	27	48	23	35	33	0,75
A150M.0.63.040.32	NCT 63	32	58	26	40	38	1,08
A150M.0.63.040.40	NCT 63	40	70	26	40	41	1,45
A150M.0.80.040.22	NCT 80	22	40	28	40	31	1,03
A150M.0.80.040.27	NCT 80	27	48	28	40	33	1,75
A150M.0.80.040.32	NCT 80	32	58	26	40	38	1,42
A150M.0.80.040.40	NCT 80	40	70	26	40	41	1,8
A150M.0.80.045.50	NCT 80	50	90	29	45	46	2,84
A150M.0.80.055.60	NCT 80	60	110	39	55	66	4,97

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16	22	27	32	40	50	60
	DIN 6366 drive collar	FS424	FS425	FS426	FS427	FS428	FS429	FS911
	DIN 6367 milling cutter fastening bolt	FS430	FS431	FS432	FS433	FS434	FS435	FS912

Accessories

	d_{11} [mm]	16	22	27	32	40	50	60
	Wrench for milling cutter fastening bolt	FS436	FS437	FS438	FS439	FS440	FS441	FS913
	Spacer ring set b_1 = 2, 10, 20 mm					FS422	FS423	FS914
	Spacer ring set b_1 = 2, 5, 10 mm	FS418	FS419	FS420				
	Spacer ring set b_1 = 3, 5, 10 mm				FS421			
	Spacer rings b_1 = 2 mm	FS461	FS465	FS469	FS473	FS477	FS481	FS915
	Spacer rings b_1 = 3 mm	FS462	FS466	FS470	FS474	FS478	FS482	FS916
	Spacer rings b_1 = 5 mm	FS463	FS467	FS471	FS475	FS479	FS483	FS917
	Spacer rings b_1 = 10 mm	FS464	FS468	FS472	FS476	FS480	FS484	FS918

Strength class with fastening bolt 12.9

D 152 D 148

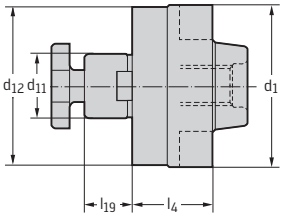
Face Mill adaptor
A155M



– For tools in accordance with DIN 1880
– With enlarged collar and fixed drive pins

Tool

Modular NCT adaptor



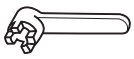
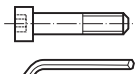
Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	kg
A155M.0.63.030.22	NCT 63	22	50	30	19	0,7
A155M.0.63.030.27	NCT 63	27	60	30	21	0,83
A155M.0.63.030.32	NCT 63	32	78	30	24	1,2
A155M.0.63.045.40*	NCT 63	40	89	45	27	2,1
A155M.0.80.030.22	NCT 80	22	50	30	19	0,96
A155M.0.80.030.27	NCT 80	27	60	30	21	1,15
A155M.0.80.030.32	NCT 80	32	78	30	24	1,4
A155M.0.80.040.40*	NCT 80	40	89	40	27	2,1
A155M.0.80.065.60*	NCT 80	60	128	65	50	5,19

* With 4 additional threaded holes for tools with ISO 40 or ISO 50 adaptor in accordance with DIN 2079
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	22	27	32	40	60
	DIN 6367 milling cutter fastening bolt	FS431	FS432	FS433	FS434	FS912

Accessories

	d_{11} [mm]	22	27	32	40	60
	Wrench for milling cutter fastening bolt	FS437	FS438	FS439	FS441	FS913
	ISO 4762 milling cutter fastening bolt	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)	FS942 (SW 17)	
	ISO 2936 key	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)	ISO2936-17 (SW 17)	

Strength class with fastening bolt 12.9

D 152 D 148

Milling cutter adaptor
AK155M

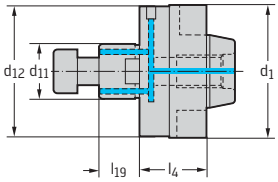


D 2

– With enlarged collar and fixed drive pins
– For tools with tenon in accordance with DIN 1880

Tool

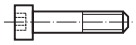
Modular NCT adaptor



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	kg
AK155M.0.50.025.16	NCT 50	16	38	25	17	0,39
AK155M.0.50.025.22	NCT 50	22	48	25	19	0,47
AK155M.0.63.030.16	NCT 63	16	68	30		0,63
AK155M.0.63.030.22	NCT 63	22	48	30	19	0,71
AK155M.0.63.030.27	NCT 63	27	60	30	21	0,84
AK155M.0.63.030.32	NCT 63	32	78	30	24	1,15
AK155M.0.80.030.27	NCT 80	27	60	30	21	1,2
AK155M.0.80.030.32	NCT 80	32	78	30	24	1,45
AK155M.0.80.040.40*	NCT 80	40	89	40	27	2,06

* With 4 additional threaded holes for tools with ISO 40 or ISO 50 adaptor in accordance with DIN 2079
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16	22	27	32	40
	ISO 4762 fastening bolt	FS938 (SW 6)	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)	FS942 (SW 17)

Accessories

	d_{11} [mm]	16	22	27	32	40
	ISO 2936 Allen key	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)	ISO2936-17 (SW 17)

Strength class with fastening bolt 12.9

D 152 D 148

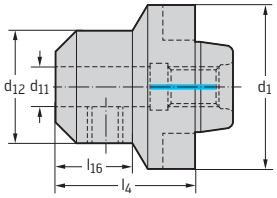
Weldon shank adaptor
A170M



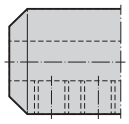
– For tools with shank in accordance with DIN 1835 form B/DIN 6535 HB

Tool

Modular NCT adaptor



$d_{11} \leq 20$ mm

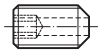


$d_{11} > 20$ mm

Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{16} mm	kg
A170M.0.40.070.16	NCT 40	16	48	70	70	0,8
A170M.0.50.050.06	NCT 50	6	25	50	27	0,4
A170M.0.50.050.08	NCT 50	8	28	50	27	0,42
A170M.0.50.060.10	NCT 50	10	35	60	35	0,59
A170M.0.50.065.12	NCT 50	12	42	65	42	0,74
A170M.0.50.070.16	NCT 50	16	48	70	48	1
A170M.0.50.065.14	NCT 50	14	44	65	42	0,76
A170M.0.50.070.18	NCT 50	18	50	70	70	0,94
A170M.0.63.070.16	NCT 63	16	48	70	42	1,16
A170M.0.63.070.20	NCT 63	20	52	70	45	1,03
A170M.0.63.080.25	NCT 63	25	63	80	80	1,7
A170M.0.63.085.32	NCT 63	32	72	85	85	2,05
A170M.0.63.070.18	NCT 63	18	50	70	42	1,2
A170M.0.80.070.20	NCT 80	20	52	70	38	1,65
A170M.0.80.085.25	NCT 80	25	63	85	62	2,15
A170M.0.80.085.32	NCT 80	32	72	85	65	2,15
A170M.0.80.095.40	NCT 80	40	78	95	75	2,7

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	6	8	10	12–14	16–18	20	25	32–40
	DIN 1835-B clamping screw	FS835	M08X010	M10X012	M12X016	M14X016	M16X016	M18X2X020	M20X2X020

D 152 D 148

Adaptor for eccentric sleeve
A170M...EX

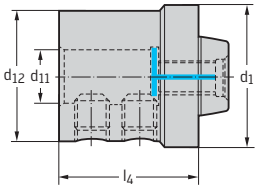


D2

– For diameter adjustment of indexable insert drills with parallel shank

Tool

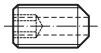
Modular NCT adaptor



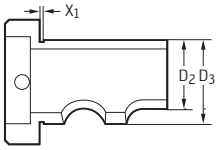
Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	kg
A170M.0.63.079.32.EX	NCT 63	32	72	79	1,95
A170M.0.80.079.32.EX	NCT 80	32	72	79	2,33
A170M.0.80.087.40.EX	NCT 80	40	78	87	2,6
A170M.0.80.096.50.EX	NCT 80	50	85	96	3,2

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	32–40	50
	DIN 1835-B screw	M20X2X020	M24X2X025

Accessories



d_{11} mm	Designation	D_c Insert Drill mm	D_2 mm	D_3 mm	X_1 mm
Eccentric sleeve adjustment range: -0.1 to +0.3 mm relative to the nominal diameter	FS2165	13,5–16,49	20	32	4
	FS2131	16,5–25,49	25	32	4
	FS3132	15,5–35,99	32	40	4
	FS2133	36–59	40	50	4



ISO 2936 key	for D_3 = 32–40 mm = SW10	for D_3 = 50 mm = SW12

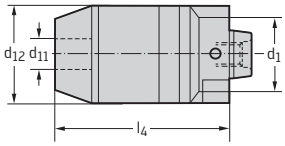
B 456 D 152 D 148

Small drill chuck
A201M



– With clamping mechanism backup

Tool	Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	kg
Modular NCT adaptor	A201M.0.50.092.13	NCT 50	1 - 13	50	92	1,25



The clamping mechanism backup prevents parts from coming loose if the spindle stops suddenly

D 152 D 148

ER collet chuck
AK300M

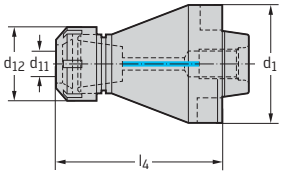


D 2

– For ER collets in accordance with DIN 6499/ISO 15488

Tool

Modular NCT adaptor



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	kg
AK300M.0.25.050.10	NCT 25	1-10	28	50	ER16	0,17
AK300M.0.32.050.10	NCT 32	1-10	28	50	ER16	0,20
AK300M.0.40.080.16	NCT 40	1-16	42	80	ER25	0,59
AK300M.0.50.080.16	NCT 50	1-16	42	80	ER25	0,80
AK300M.0.50.080.20	NCT 50	1-20	50	80	ER32	0,88
AK300M.0.50.080.26	NCT 50	2-26	63	80	ER40	0,95
AK300M.0.63.080.26	NCT 63	2-26	63	80	ER40	1,30

Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER16	ER25	ER32	ER40
	Clamping nut	FS1537	FS1540	FS1541	FS1542

Accessories

	Collets	ER16	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 174 D 152 D 148

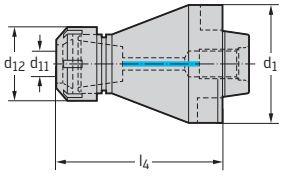
ER collet chuck with internal coolant AK300M



– For ER collets in accordance with DIN 6499/ISO 15488

Tool

Modular NCT adaptor



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	kg
AK300M.0.25.055.10	NCT 25	1-10	28	55	ER16	0,18
AK300M.0.32.055.10	NCT 32	1-10	28	55	ER16	0,21
AK300M.0.40.085.16	NCT 40	1-16	42	85	ER25	0,62
AK300M.0.50.085.16	NCT 50	1-16	42	85	ER25	0,83
AK300M.0.50.085.20	NCT 50	1-20	50	85	ER32	0,86
AK300M.0.50.085.26	NCT 50	2-26	63	85	ER40	1,01
AK300M.0.63.085.26	NCT 63	2-26	63	85	ER40	1,36

If collet chucks are used for the internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For collets, see “Assembly parts and accessories”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER16	ER25	ER32	ER40
	Clamping nut for internal coolant supply	FS1448	FS1449	FS1360	FS1450

Accessories

	Collets	ER16	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 174 D 152 D 148

DIN 1835 B ER collet chuck
A305

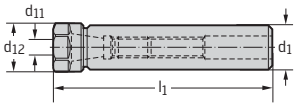


D 2

– For ER collets in accordance with DIN 6499/ISO 15488

Tool

Designation	d_1 mm	d_{11} mm	d_{12} mm	l_1 mm	Collets	kg
DIN 1835 B						
A305.0.16.120.06	16	1-6	19	120	ER11	0,15
A305.0.16.180.06	16	1-6	19	180	ER11	0,2
A305.0.25.140.10	25	1-10	28	140	ER16	0,4
A305.0.25.180.10	25	1-10	28	180	ER16	0,52



Bodies and assembly parts are included in the scope of delivery.

Assembly parts

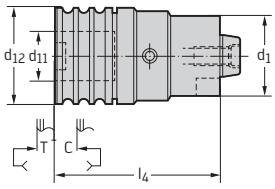
Collets	ER11	ER16
Clamping nut	FS653	FS1537
Tightening torque	30,0 Nm	

D 174

Tap quick-change chuck
A320M



– With elastic length compensation for compression and extension

Tool	Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	Length compen-sation C	Length compen-sation T	Collet size	For taps
Modular NCT adaptor	A320M.0.40.110.19	NCT 40	19	36	110	7,5	7,5	1	M 4-M12
	A320M.0.50.136.31	NCT 50	31	53	136	12,5	12,5	3	M8-M20
	A320M.0.63.180.48	NCT 63	48	78	180	20	20	4	M14-M33
	A320M.0.63.196.60	NCT 63	60	96	196	22,5	22,5	5	M22-M48

An A331 quick-change collet is required for every chuck – see “Assembly parts and accessories”

D 176 D 152 D 148

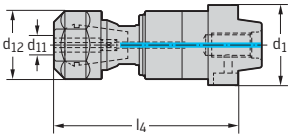
Synchronous tapping adaptor
A340M



D 2

– For ER collets in accordance with DIN 6499/ISO 15488
– For thread cutting on synchronous spindles

Tool

Tool	Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	Collets	kg
Modular NCT adaptor	A340M.0.40.092.10	NCT 40	4,5-10	34	92	ER20	0,9
	A340M.0.50.105.16	NCT 50	4,5-16	50	105	ER32	1,6

If collet chucks are used for the internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For tap collets, see “Assembly parts and accessories”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER20	ER32
	Clamping nut for internal coolant supply	FS1359	FS1360
	Tensioning key	FS1539	FS1545

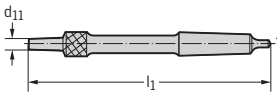
D 174 D 152 D 148

Shell reamer holder for F7133
Z2311



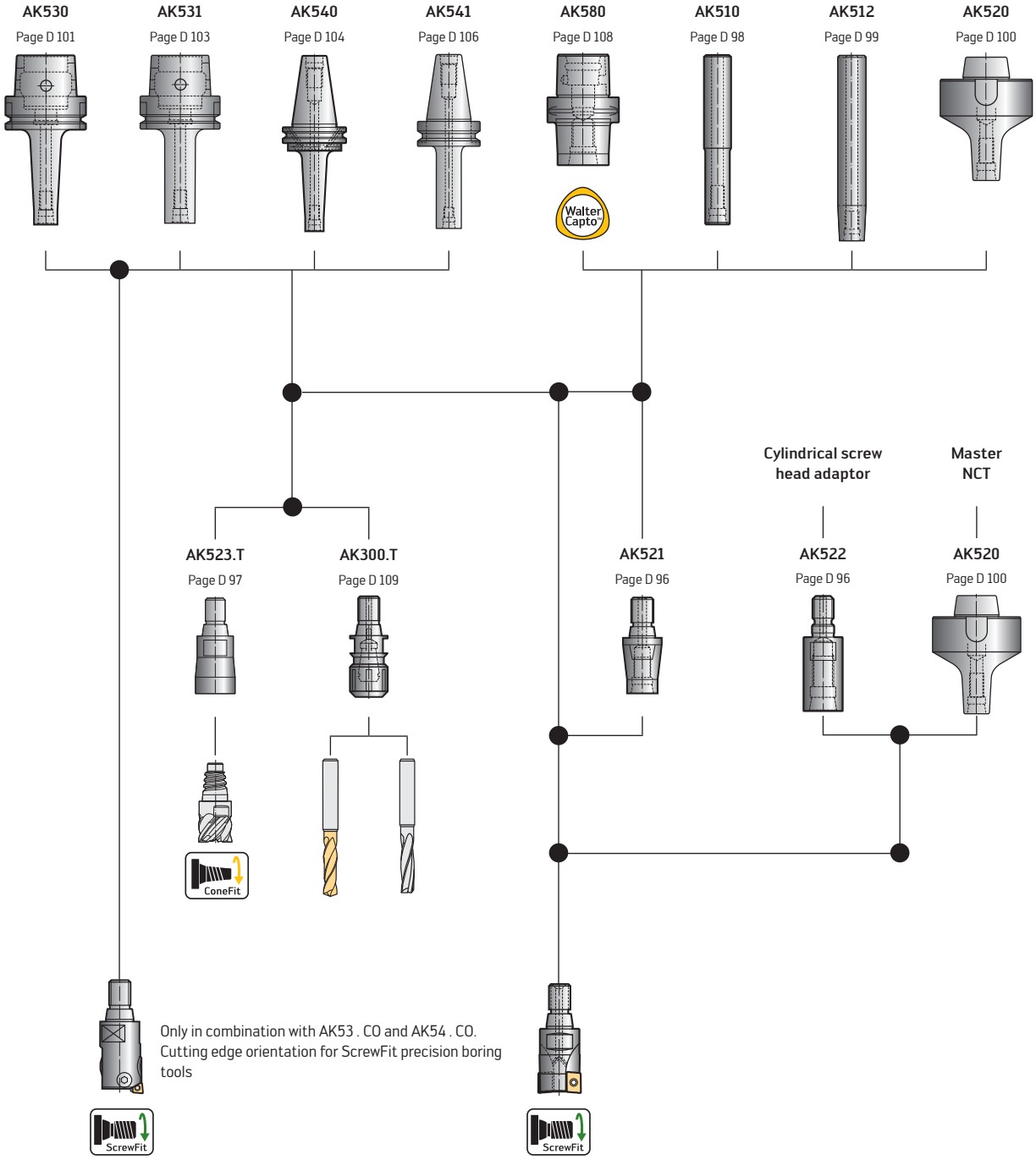
D 2

– For F7133 shell reamers

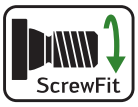
Tool	Designation	d_{11} mm	l_1 mm	kg
Morse taper 	Z2311-13	13	250	0,6
	Z2311-16	16	261	0,74
	Z2311-19	19	298	1,29
	Z2311-22	22	312	1,58
	Z2311-27	27	359	2,19
	Z2311-32	32	376	4,22
	Z2311-40	40	396	5,5
	Z2311-50	50	416	7,85

D 165

Product range overview of ScrewFit



Designation key for ScrewFit adaptors



A	K	540	.	S	50	.	T	22	.	050	CO
1	2	3		4	5		6	7		8	9

1	
Tool range	
A	Adaptors

2	
Coolant supply	
K	With internal coolant supply

3
Family

4			
Spindle-side interface			
H	HSK	T	ScrewFit
M	Morse taper	BT	MAS BT steep taper
N	NCT	C	Capto™
S	Steep taper	Z	Parallel shank

5
Spindle-side interface size

6	
Interface	
T	ScrewFit
TC	Cylindrical screw head

7
Tool-side interface size

8
Projection length

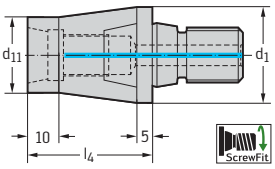
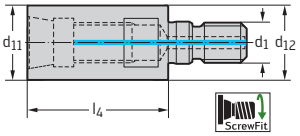
9	
Variant/cutting edge orientation (optional)	
CS	Solid carbide version
CO	Cutting edge orientation

Reducer
AK521 / AK522



D 2

– For ScrewFit front pieces

Tool	Designation	d_1	d_{11}	d_{12} mm	l_4 mm	kg
ScrewFit 	AK521.T14.25.T09	T14	T09		25	0,03
	AK521.T18.30.T14	T18	T14		30	0,05
	AK521.T22.35.T18	T22	T18		35	0,09
	AK521.T28.40.T22	T28	T22		40	0,16
	AK521.T36.45.T28	T36	T28		45	0,31
	AK521.T45.50.T36	T45	T36		50	0,46
Conversion kit 	AK522.TC06.25.T09	M6	T09	9,7	25	0,01
	AK522.TC08.30.T14	M8	T14	14,5	30	0,03
	AK522.TC10.35.T18	M10	T18	18,5	35	0,06
	AK522.TC12.40.T22	M12	T22	22	40	0,10
	AK522.TC16.40.T28	M16	T28	28	40	0,16

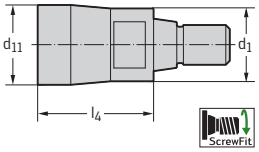
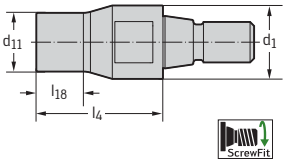
For the tightening torques of screw-fit front pieces, see “Rotating adaptors/Assembly parts and accessories”
AK522: For converting cylindrical screw shank to Walter screw-fit

D 152

Adaptor – ScrewFit to ConeFit
AK523.T



– For ConeFit milling cutter heads

Tool	Designation	d_1	d_{11}	l_4 mm	l_{18} mm	kg
ScrewFit 	AK523.T14.25.E16	T14	E16	25		0,06
	AK523.T18.30.E20	T18	E20	30		0,11
	AK523.T22.35.E25	T22	E25	35		0,2
ScrewFit 	AK523.T14.10.E12	T14	E12	25	10	0,05

For the tightening torques of screw-fit front pieces, see “Rotating adaptors/Assembly parts and accessories”
For the tightening torques of milling cutter heads, see “Rotating adaptors/Assembly parts and accessories”

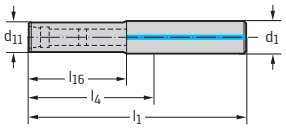
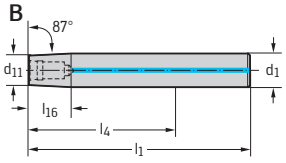
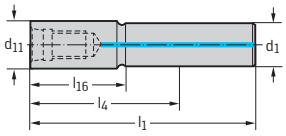
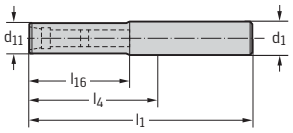
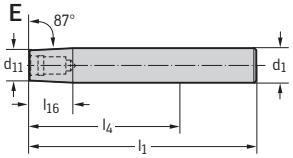
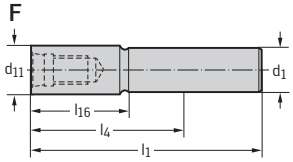
D 152

DIN 1835 A adaptor
AK510 / A510



D 2

– For ScrewFit front pieces

Tool	Designation	d_1	d_{11}	l_{16} mm	l_4 mm	l_1 mm	Version	kg
Shank DIN 1835 A A  B  C  ScrewFit	AK510.Z10.T09.030	10	T09	10	30	70	A	0,05
	AK510.Z10.T09.060	10	T09	20	60	100	A	0,06
	AK510.Z12.T09.060	12	T09	20	60	105	A	0,08
	AK510.Z16.T09.090	16	T09	20	90	140	A	0,15
	AK510.Z16.T14.050	16	T14	45	50	100	A	0,13
	AK510.Z16.T14.110	16	T14	45	110	160	A	0,2
	AK510.Z20.T14.108	20	T14	52	108	160	B	0,32
	AK510.Z20.T18.068	20	T18	50	68	120	A	0,24
	AK510.Z20.T18.128	20	T18	50	128	180	A	0,33
	AK510.Z25.T14.152	25	T14	100	152	210	B	0,62
	AK510.Z25.T18.122	25	T18	62	122	180	B	0,57
	AK510.Z25.T22.072	25	T22	55	72	130	A	0,38
	AK510.Z25.T22.142	25	T22	55	142	200	A	0,64
	AK510.Z25.T28.072	25	T28	55	72	130	C	0,47
	AK510.Z25.T28.142	25	T28	55	142	200	C	0,73
	AK510.Z32.T18.178	32	T18	128	178	240	B	1,09
	AK510.Z32.T22.138	32	T22	95	138	200	B	0,96
	AK510.Z32.T28.138	32	T28	40	138	200	B	1,11
	AK510.Z32.T36.090	32	T36	60	90	150	C	0,9
	AK510.Z32.T36.140	32	T36	60	140	200	C	1,21
	AK510.Z40.T22.228	40	T22	172	228	300	B	2,1
	AK510.Z40.T28.228	40	T28	115	228	300	B	2,57
	AK510.Z40.T36.130	40	T36	60	130	200	A	1,4
	AK510.Z40.T36.230	40	T36	100	230	300	A	2,55
	AK510.Z40.T45.080	40	T45	60	80	150	C	1,48
	AK510.Z40.T45.230	40	T45	100	230	300	C	2,8
Shank DIN 1835 A Solid carbide shank D  E  F  ScrewFit	A510.Z10.T09.070-CS	10	T09	29	70	120		0,13
	A510.Z12.T09.120-CS	12	T09	32	120	170		0,26
	A510.Z16.T14.120-CS	16	T14	37	120	170		0,41
	A510.Z16.T14.070-CS	16	T14	38	70	120		0,27
	A510.Z20.T14.278-CS	20	T14	37	278	330		1,4
	A510.Z20.T18.123-CS	20	T18	45	123	175		0,7
	A510.Z20.T18.070-CS	20	T18	45	70	120		0,44
	A510.Z25.T18.277-CS	25	T18	45	277	335		2,19
	A510.Z25.T22.122-CS	25	T22	55	122	180		1,07
	A510.Z25.T22.282-CS	25	T22	55	282	340		2,2
	A510.Z25.T22.070-CS	25	T22	55	70	130		0,7
	A510.Z25.T28.127-CS	25	T28	60	127	185		1,19
	A510.Z25.T28.070-CS	25	T28	55	70	130		0,79
	A510.Z32.T28.283-CS	32	T28	60	283	345		3,65

For the tightening torques of screw-fit front pieces, see "Rotating adaptors/Assembly parts and accessories"

D 152

DIN 1835 A adaptor
AK512

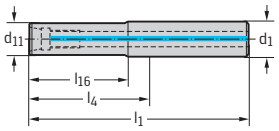


– Steel shank with solid carbide core
– For ScrewFit front pieces

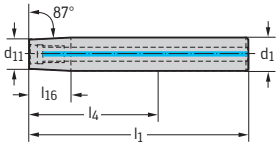
Tool

Shank DIN 1835 A

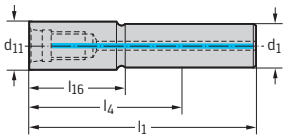
A



B



C



ScrewFit

Designation	d_1	d_{11}	l_{16} mm	l_4 mm	l_1 mm	Version	kg
AK512.Z16.T14.070	16	T14	38	70	120	B	0,2
AK512.Z16.T14.120	16	T14	37	120	170	B	0,3
AK512.Z20.T18.123	20	T18	45	123	175	A	0,5
AK512.Z25.T22.122	25	T22	55	122	180	A	0,8
AK512.Z25.T28.127	25	T28	60	127	185	C	0,9
AK512.Z32.T28.283	32	T28	60	283	345	B	2,6

For the tightening torques of screw-fit front pieces, see "Rotating adaptors/Assembly parts and accessories"

D 152

NCT adaptor
AK520

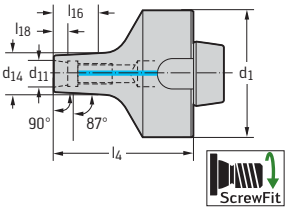


D 2

– For ScrewFit front pieces

Tool

Modular NCT adaptor



Designation	d_1	d_{11}	d_{14} mm	l_4 mm	l_{16} mm	l_{18} mm	kg
AK520.N50.T09.050	NCT 50	T09	12	50	14	10	0,42
AK520.N50.T09.075	NCT 50	T09	12	75	31	10	0,44
AK520.N50.T09.100	NCT 50	T09	12	100	31	10	0,47
AK520.N50.T14.055	NCT 50	T14	16	55	20	10	0,43
AK520.N50.T14.085	NCT 50	T14	16	85	50	10	0,49
AK520.N50.T14.120	NCT 50	T14	16	120	85	10	0,58
AK520.N50.T18.095	NCT 50	T18	20	95	62	10	0,57
AK520.N50.T18.060CO	NCT 50	T18	20	60	24	10	0,46
AK520.N50.T22.115	NCT 50	T22	25	115	83	10	0,3
AK520.N50.T22.065CO	NCT 50	T22	25	65	33	10	0,5
AK520.N63.T18.095	NCT 63	T18	20	95	60	10	0,81
AK520.N63.T18.145	NCT 63	T18	20	145	110	10	1,03
AK520.N63.T18.060CO	NCT 63	T18	20	60	22	10	0,71
AK520.N63.T22.115	NCT 63	T22	25	115	80	10	0,96
AK520.N63.T22.165	NCT 63	T22	25	165	130	10	1,3
AK520.N63.T22.215	NCT 63	T22	25	215	183	10	1,77
AK520.N63.T22.265	NCT 63	T22	25	265	235	10	2,34
AK520.N63.T22.065CO	NCT 63	T22	25	65	30	10	0,74
AK520.N63.T28.150	NCT 63	T28	32	150	118	10	1,46
AK520.N63.T28.085CO	NCT 63	T28	32	85	48	10	0,9
AK520.N63.T36.070CO	NCT 63	T36	40	70	48	10	0,8
AK520.N63.T36.095	NCT 63	T36	40	95	48	10	0,9
AK520.N63.T36.120	NCT 63	T36	40	120	48	10	1,1
AK520.N63.T45.080CO	NCT 63	T45	50	80	58	10	0,9
AK520.N63.T45.130	NCT 63	T45	50	130	58	10	1,1
AK520.N63.T45.180	NCT 63	T45	50	180	58	10	1,6
AK520.N80.T28.220	NCT 80	T28	32	220	180	10	2,82
AK520.N80.T36.070CO	NCT 80	T36	40	70	48	10	1
AK520.N80.T36.095	NCT 80	T36	40	95	48	10	1,1
AK520.N80.T36.120	NCT 80	T36	40	120	48	10	1,3
AK520.N80.T45.080CO	NCT 80	T45	50	80	57	10	1,1
AK520.N80.T45.130	NCT 80	T45	50	130	58	10	1,3
AK520.N80.T45.180	NCT 80	T45	50	180	58	10	1,7

...CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.
For the tightening torques of screw-fit front pieces, see “Rotating adaptors/Assembly parts and accessories”

D 152 D 148

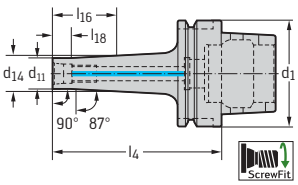
DIN 69893-1 A adaptor
AK530



– For ScrewFit front pieces

Tool

HSK DIN 69893-1 A



Designation	d_1	d_{11}	d_{14} mm	l_4 mm	l_{16} mm	l_{18} mm	kg
AK530.H63A.T09.045	HSK-A63	T09	12	45	14	10	0,7
AK530.H63A.T09.070	HSK-A63	T09	12	70	39	10	0,72
AK530.H63A.T09.095	HSK-A63	T09	12	95	64	10	0,75
AK530.H63A.T14.045	HSK-A63	T14	16	45	11	10	0,7
AK530.H63A.T14.095	HSK-A63	T14	16	95	61	10	0,8
AK530.H63A.T14.070	HSK-A63	T14	16	70	36	10	0,75
AK530.H63A.T14.120	HSK-A63	T14	20	120	86	10	0,87
AK530.H63A.T18.100	HSK-A63	T18	20	100	66	10	0,87
AK530.H63A.T18.075	HSK-A63	T18	20	75	41	10	0,79
AK530.H63A.T18.125	HSK-A63	T18	20	125	91	10	0,47
AK530.H63A.T18.150	HSK-A63	T18	20	150	116	10	1,09
AK530.H63A.T18.050CO	HSK-A63	T18	20	50	16	10	0,72
AK530.H63A.T22.085	HSK-A63	T22	25	85	51	10	0,87
AK530.H63A.T22.135	HSK-A63	T22	25	135	101	10	1,12
AK530.H63A.T22.160	HSK-A63	T22	25	160	126	10	1,29
AK530.H63A.T22.110	HSK-A63	T22	25	110	76	10	0,99
AK530.H63A.T22.060CO	HSK-A63	T22	25	60	26	10	0,77
AK530.H63A.T28.090	HSK-A63	T28	32	90	56	10	0,99
AK530.H63A.T28.140	HSK-A63	T28	32	140	108	10	1,37
AK530.H63A.T28.165	HSK-A63	T28	32	165	133	10	1,65
AK530.H63A.T28.115	HSK-A63	T28	32	115	81	10	1,17
AK530.H63A.T28.065CO	HSK-A63	T28	32	65	31	10	0,84
AK530.H63A.T36.090	HSK-A63	T36	40	90	59	10	1,15
AK530.H63A.T36.115	HSK-A63	T36	40	115	85	10	1,42
AK530.H63A.T36.065CO	HSK-A63	T36	40	65	33	10	0,91
AK530.H63A.T45.090	HSK-A63	T45	50	90	62	10	1,44
AK530.H63A.T45.065CO	HSK-A63	T45	50	65	36	10	1,1

Balance class: G6.3 where n = 25,000 rpm
...CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.
For accessories for HSK, see "Assembly parts and accessories"
For the tightening torques of screw-fit front pieces, see "Rotating adaptors/Assembly parts and accessories"

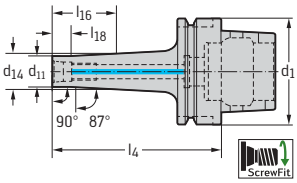
D 161 D 152

DIN 69893-1 A adaptor
AK530



D 2

– For ScrewFit front pieces

Tool	Designation	d_1	d_{11}	d_{14} mm	l_4 mm	l_{16} mm	l_{18} mm	kg
HSK DIN 69893-1 A	AK530.H100A.T22.100	HSK-A100	T22	25	100	61	10	2,31
	AK530.H100A.T22.150	HSK-A100	T22	25	150	113	10	2,58
	AK530.H100A.T22.200	HSK-A100	T22	25	200	163	10	3
	AK530.H100A.T22.055CO	HSK-A100	T22	25	55	16	10	2,12
	AK530.H100A.T28.110	HSK-A100	T28	32	110	73	10	2,49
	AK530.H100A.T28.160	HSK-A100	T28	32	160	123	10	2,96
	AK530.H100A.T28.210	HSK-A100	T28	32	210	173	10	3,49
	AK530.H100A.T28.260	HSK-A100	T28	32	260	223	10	4,17
	AK530.H100A.T28.060CO	HSK-A100	T28	32	60	23	10	2,18
	AK530.H100A.T36.120	HSK-A100	T36	40	120	83	10	2,84
	AK530.H100A.T36.170	HSK-A100	T36	40	170	133	10	3,53
	AK530.H100A.T36.220	HSK-A100	T36	40	220	183	10	4,34
	AK530.H100A.T36.270	HSK-A100	T36	40	270	233	10	5,32
	AK530.H100A.T36.070CO	HSK-A100	T36	40	70	33	10	2,34
	AK530.H100A.T45.120	HSK-A100	T45	50	120	83	10	3,29
	AK530.H100A.T45.170	HSK-A100	T45	50	170	133	10	4,27
	AK530.H100A.T45.220	HSK-A100	T45	50	220	183	10	5,39
	AK530.H100A.T45.270	HSK-A100	T45	50	270	233	10	6,72
	AK530.H100A.T45.070CO	HSK-A100	T45	50	70	33	10	2,52

Balance class: G6.3 where n = 16,000 rpm
...CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.
For accessories for HSK, see “Assembly parts and accessories”
For the tightening torques of screw-fit front pieces, see “Rotating adaptors/Assembly parts and accessories”

D 161 D 152

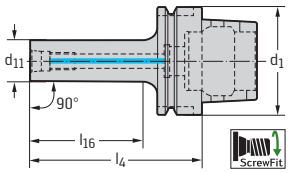
DIN 69893-1 A adaptor
AK531



– Cutting edge-oriented (CO)
– For ScrewFit front pieces

Tool

HSK DIN 69893-1 A



Designation	d_1	d_{11}	l_4 mm	l_{16} mm	kg
AK531.H63A.T18.075CO	HSK-A63	T18	75	41	0,77
AK531.H63A.T22.110CO	HSK-A63	T22	110	76	0,92
AK531.H63A.T28.115CO	HSK-A63	T28	115	81	1,07
AK531.H63A.T36.115CO	HSK-A63	T36	115	84	1,3
AK531.H63A.T45.090CO	HSK-A63	T45	90	62	1,3
AK531.H100A.T22.100CO	HSK-A100	T22	100	66	2,5
AK531.H100A.T28.110CO	HSK-A100	T28	110	76	2,7
AK531.H100A.T36.120CO	HSK-A100	T36	120	86	2,9
AK531.H100A.T45.170CO	HSK-A100	T45	170	136	3,2

HSK-A63: Balance class G6.3 where n = 25,000 rpm; HSK-A100: Balance class G6.3 where n = 16,000 rpm
…CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.
For accessories for HSK, see “Assembly parts and accessories”
For the tightening torques of screw-fit front pieces, see “Rotating adaptors/Assembly parts and accessories”

D 161 D 152

DIN 69871 AD/B adaptor
AK540

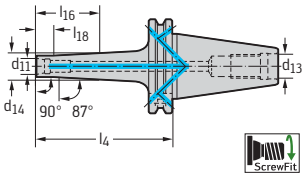


D 2

– For ScrewFit front pieces
– ISO 7388-1

Tool

SK DIN 69871 AD/B



Designation	d_1	d_{11}	d_{14} mm	l_4 mm	l_{16} mm	l_{18} mm	d_{13}	kg
AK540.S40.T09.040	SK40	T09	12	40	17	10	M16	0,85
AK540.S40.T09.065	SK40	T09	12	65	42	10	M16	0,87
AK540.S40.T09.090	SK40	T09	12	90	67	10	M16	0,9
AK540.S40.T14.045	SK40	T14	16	45	16	10	M16	0,86
AK540.S40.T14.095	SK40	T14	16	95	72	10	M16	0,96
AK540.S40.T14.070	SK40	T14	16	70	47	10	M16	0,9
AK540.S40.T14.120	SK40	T14	16	120	97	10	M16	1,04
AK540.S40.T18.100	SK40	T18	20	100	77	10	M16	1,04
AK540.S40.T18.075	SK40	T18	20	75	52	10	M16	0,95
AK540.S40.T18.125	SK40	T18	20	125	102	10	M16	1,19
AK540.S40.T18.150	SK40	T18	20	150	127	10	M16	1,31
AK540.S40.T18.050CO	SK40	T18	20	50	28	10	M16	0,88
AK540.S40.T18.040CO	SK40	T18	20	40	16	10	M16	0,82
AK540.S40.T22.110	SK40	T22	25	110	87	10	M16	1,14
AK540.S40.T22.085	SK40	T22	25	85	62	10	M16	1,03
AK540.S40.T22.135	SK40	T22	25	135	112	10	M16	1,35
AK540.S40.T22.160	SK40	T22	25	160	137	10	M16	1,52
AK540.S40.T22.060CO	SK40	T22	25	60	39	10	M16	0,94
AK540.S40.T22.040CO	SK40	T22	25	40	16	10	M16	0,83
AK540.S40.T28.065	SK40	T28	32	65	42	10	M16	1
AK540.S40.T28.115	SK40	T28	32	115	92	10	M16	1,33
AK540.S40.T28.090	SK40	T28	32	90	67	10	M16	1,18
AK540.S40.T28.140	SK40	T28	32	140	117	10	M16	1,63
AK540.S40.T28.165	SK40	T28	32	165	142	10	M16	1,88
AK540.S40.T28.040CO	SK40	T28	32	40	17	10	M16	0,88
AK540.S40.T36.065	SK40	T36	40	65	42	10	M16	1,11
AK540.S40.T36.090	SK40	T36	40	90	67	10	M16	1,36
AK540.S40.T36.115	SK40	T36	40	115	92	10	M16	1,65
AK540.S40.T36.040CO	SK40	T36	40	40	17	10	M16	0,88
AK540.S40.T45.065	SK40	T45	50	65	42	10	M16	1,28
AK540.S40.T45.090	SK40	T45	50	90	67	10	M16	1,95
AK540.S40.T45.040CO	SK40	T45	50	40	17	10	M16	0,98

The delivery status is form AD. To convert to form B, remove both grub screws.
...CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.
For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"
For the tightening torques of screw-fit front pieces, see "Rotating adaptors/Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_1	SK40
	DIN 913 grub screw	M04X005 DIN 913 (SW 2)

D 161 D 152

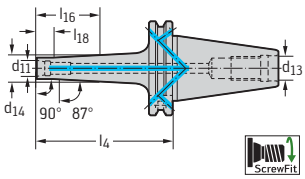
DIN 69871 AD/B adaptor
AK540



– For ScrewFit front pieces
– ISO 7388-1

Tool

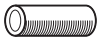
SK DIN 69871 AD/B



Designation	d_1	d_{11}	d_{14} mm	l_4 mm	l_{16} mm	l_{18} mm	d_{13}	kg
AK540.S50.T22.100	SK50	T22	25	100	77	10	M24	3,02
AK540.S50.T22.150	SK50	T22	25	150	127	10	M24	3,35
AK540.S50.T22.200	SK50	T22	32	200	177	10	M24	3,76
AK540.S50.T22.050CO	SK50	T22	25	50	27	10	M24	2,82
AK540.S50.T28.100	SK50	T28	32	100	77	10	M24	3,16
AK540.S50.T28.150	SK50	T28	32	150	127	10	M24	3,62
AK540.S50.T28.200	SK50	T28	32	200	177	10	M24	4,75
AK540.S50.T28.250	SK50	T28	32	250	227	10	M24	4,7
AK540.S50.T28.050CO	SK50	T28	32	50	27	10	M24	2,9
AK540.S50.T36.100	SK50	T36	40	100	77	10	M24	3,4
AK540.S50.T36.150	SK50	T36	40	150	127	10	M24	4,07
AK540.S50.T36.200	SK50	T36	40	200	177	10	M24	4,85
AK540.S50.T36.250	SK50	T36	40	250	227	10	M24	5,68
AK540.S50.T36.050CO	SK50	T36	40	50	27	10	M24	2,9
AK540.S50.T45.100	SK50	T45	50	100	77	10	M24	3,78
AK540.S50.T45.150	SK50	T45	50	150	127	10	M24	4,73
AK540.S50.T45.200	SK50	T45	50	200	177	10	M24	5,84
AK540.S50.T45.250	SK50	T45	50	250	227	10	M24	6,99
AK540.S50.T45.050CO	SK50	T45	50	50	27	10	M24	3,03

The delivery status is form AD. To convert to form B, remove both grub screws.
...CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.
For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"
For the tightening torques of screw-fit front pieces, see "Rotating adaptors/Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_1	SK50
	DIN 913 grub screw	M06X006 DIN 913 (SW 3)

D 161 D 152

DIN 69871 AD/B adaptor
AK541

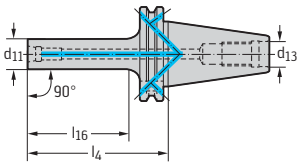


– Cutting edge-oriented (CO)
– For ScrewFit front pieces

D 2

Tool

SK DIN 69871 AD/B



Designation	d_1	d_{11}	l_4 mm	l_{16} mm	d_{13}	kg
AK541.S40.T18.075CO	SK40	T18	75	50	M16	0,95
AK541.S40.T22.110CO	SK40	T22	110	85	M16	1
AK541.S40.T28.115CO	SK40	T28	115	90	M16	1,25
AK541.S40.T36.115CO	SK40	T36	115	92	M16	1,4
AK541.S40.T45.090CO	SK40	T45	90	67	M16	1,6
AK541.S50.T22.100CO	SK50	T22	100	75	M24	2,73
AK541.S50.T28.100CO	SK50	T28	100	75	M24	2,9
AK541.S50.T36.150CO	SK50	T36	150	125	M24	3,4
AK541.S50.T45.200CO	SK50	T45	200	175	M24	4,6

The delivery status is form AD. To convert to form B, remove both grub screws.
Balance class: G6.3 where n = 25,000 rpm
...CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.
For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"
For the tightening torques of screw-fit front pieces, see "Rotating adaptors/Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

		40	50
	DIN 913 grub screw	M04X005 DIN 913 (SW 2)	M06X006 DIN 913 (SW 3)

D 161 D 152

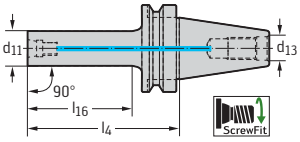
MAS-BT JIS B 6339 adaptor
AK541



– Cutting edge-oriented (CO)
– For ScrewFit front pieces

Tool

JIS B 6339



Designation	d_1	d_{11}	l_4 mm	l_{16} mm	d_{13}	kg
AK541.BT40.T18.085CO	BT40	T18	85	53	M16	1,07
AK541.BT40.T28.125CO	BT40	T28	125	93	M16	1,35
AK541.BT40.T36.125CO	BT40	T36	125	93	M16	1,6
AK541.BT40.T45.100CO	BT40	T45	100	68	M16	1,75
AK541.BT40.T22.120CO	BT40	T22	120	88	M16	1,2
AK541.BT50.T22.120CO	BT50	T22	120	77	M24	3,85
AK541.BT50.T28.120CO	BT50	T28	120	77	M24	4
AK541.BT50.T36.170CO	BT50	T36	170	127	M24	4,53
AK541.BT50.T45.220CO	BT50	T45	220	177	M24	5,7

Balance class: G6.3 where n = 25,000 rpm
...CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.
For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"
For the tightening torques of screw-fit front pieces, see "Rotating adaptors/Assembly parts and accessories"

D 161 D 152

Walter Capto™ adaptor
AK580.C

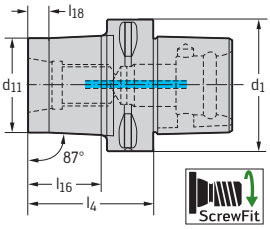


– For ScrewFit front pieces
– ISO 26623

D2

Tool

Walter Capto™ in accordance with ISO 26623



Designation	d_1	d_{11}	l_4 mm	l_{16} mm	l_{18} mm	kg
AK580.C3.T09.30	C3	T09	30	12	10	0,14
AK580.C3.T14.45CO	C3	T14	45	27	10	0,16
AK580.C3.T18.45CO	C3	T18	45	27	10	0,18
AK580.C3.T22.45CO	C3	T22	45	27	10	0,2
AK580.C3.T28.55CO	C3	T28	55	40	10	0,28
AK580.C4.T09.30	C4	T09	30		7	0,28
AK580.C4.T14.45CO	C4	T14	45	22	10	0,3
AK580.C4.T18.45CO	C4	T18	45	22	10	0,31
AK580.C4.T22.45CO	C4	T22	45	22	10	0,32
AK580.C4.T28.55CO	C4	T28	55	32	10	0,39
AK580.C4.T36.55CO	C4	T36	55	35	10	0,46
AK580.C4.T45.55CO	C4	T45	55		35	0,6
AK580.C5.T09.35	C5	T09	35		10	0,05
AK580.C5.T14.45	C5	T14	45	22	10	0,05
AK580.C5.T18.45	C5	T18	45	22	10	0,47
AK580.C5.T22.45	C5	T22	45	22	10	0,51
AK580.C5.T28.55	C5	T28	55	32	10	0,59
AK580.C5.T36.55	C5	T36	55	32	10	0,65
AK580.C5.T45.55	C5	T45	55	35	10	0,81
AK580.C6.T14.50	C6	T14	50	25	10	0,84
AK580.C6.T18.50	C6	T18	50	25	10	0,86
AK580.C6.T22.50	C6	T22	50	25	10	0,87
AK580.C6.T28.60	C6	T28	60	35	10	0,95
AK580.C6.T36.60	C6	T36	60	35	10	1,02
AK580.C6.T45.60CO	C6	T45	60	35	10	1,19

For the tightening torques of screw-fit front pieces, see “Rotating adaptors/Assembly parts and accessories”
…CO = Interface is manufactured to be cutting edge-oriented. For the use of B4030.T and B3230.T.

D 160 D 152

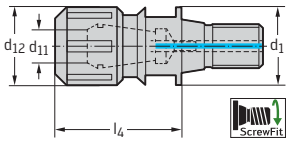
ER collet chuck
AK300.T



– For ER collets in accordance with DIN 6499/ISO 15488

Tool

ScrewFit



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	kg
AK300.T18.030.06	T18	1-6	19	30	ER11	0,06
AK300.T22.030.06	T22	1-6	19	30	ER11	0,1
AK300.T22.040.10	T22	1-10	28	40	ER16	0,93
AK300.T22.045.10	T22	1-10	28	45	ER16	0,93
AK300.T28.040.10	T28	1-10	28	40	ER16	0,93
AK300.T28.045.10	T28	1-10	28	45	ER16	0,93
AK300.T36.050.16	T36	1-16	42	50	ER25	0,93
AK300.T36.055.16	T36	1-16	42	55	ER25	0,93

If collet chucks are used with internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For collets, see “Assembly parts and accessories”
For the tightening torques of screw-fit front pieces, see “Rotating adaptors/Assembly parts and accessories”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER11	ER16	ER25
	Clamping nut Tightening torque	FS653 30,0 Nm	FS1537	FS1540
	Clamping nut for internal coolant supply		FS1448	FS1449

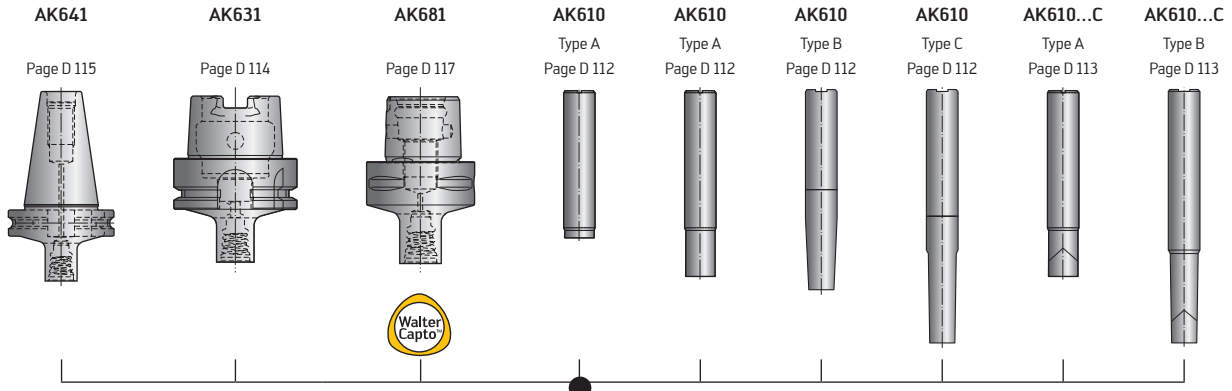
Accessories

	Collets	ER16	ER25
	Tensioning key	FS1539	FS1544

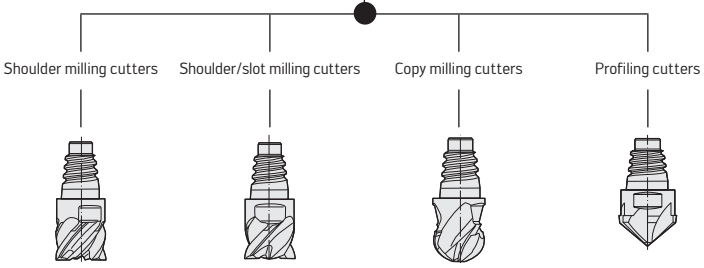
D 174 D 152 D 168

Product range overview of ConeFit

Tool adaptors



For ConeFit tools, see the “Milling” catalogue



Designation key for ConeFit adaptors

A	K	641	.	H	6	3	.	E	10	.	0	4	9	.	C
1	2	3		4	5			6	7		8				9

1	2	3	4
Tool group	**Coolant supply**	**Family**	**Spindle-side interface**
A Adaptors	K With internal coolant supply		H HSK S Steep taper BT MAS BT steep taper C Capto™ Z Parallel shank

5	6	7
Spindle-side interface size	**Interface**	**Tool-side interface size**
	E ConeFit	

8	9
Projection length	**Variant**
	C Solid carbide version

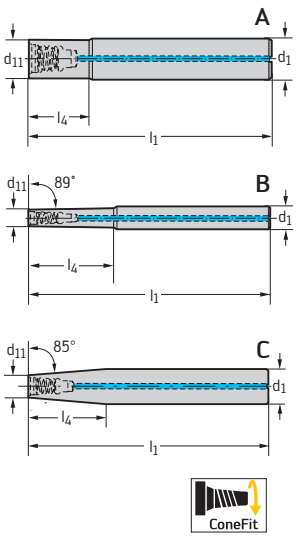
DIN 6535 HA adaptor
AK610



D 2

– For ConeFit milling cutter heads

Tool	Designation	d_1 mm	d_{11}	l_4 mm	l_1 mm	Version	kg
Shank DIN 6535 HA	AK610.Z10.E10.020	10	E10	20	75	A	0,05
	AK610.Z12.E10.005	12	E10	5	65	A	0,06
	AK610.Z12.E12.022	12	E12	22	100	A	0,09
	AK610.Z16.E10.050	16	E10	50	160	B	0,21
	AK610.Z16.E10.036	16	E10	92	140	C	0,20
	AK610.Z16.E10.005	16	E10	5	65	A	0,11
	AK610.Z16.E12.005	16	E12	5	65	A	0,10
	AK610.Z16.E12.060	16	E12	60	170	B	0,22
	AK610.Z16.E12.025	16	E12	25	140	C	0,20
	AK610.Z16.E16.025	16	E16	25	110	A	0,17
	AK610.Z20.E16.005	20	E16	5	70	A	0,17
	AK610.Z20.E16.025	20	E16	25	110	A	0,24
	AK610.Z20.E16.075	20	E16	75	190	B	0,39
	AK610.Z20.E20.030	20	E20	30	120	A	0,26
	AK610.Z25.E16.054	25	E16	55	170	C	0,57
	AK610.Z25.E20.005	25	E20	5	80	A	0,28
	AK610.Z25.E25.040	25	E25	40	140	A	0,50
	AK610.Z32.E20.073	32	E20	73	180	C	0,96
	AK610.Z32.E25.005	32	E25	5	80	A	0,46
	AK610.Z32.E25.045	32	E25	45	200	C	1,17



For the tightening torques of screw-fit milling cutter heads, see "Rotating adaptors/Assembly parts and accessories"

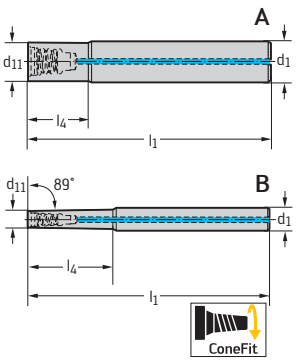
D 153

DIN 6535 HA adaptors
AK610



– For ConeFit milling cutter heads
– With solid carbide shank

Tool	Designation	d_1 mm	d_{11}	l_4 mm	l_1 mm	Version	kg
Shank DIN 6535 HA	AK610.Z10.E10.050C	10	E10	50	100	A	0,10
	AK610.Z12.E12.048C	12	E12	48	100	A	0,14
	AK610.Z16.E10.100C	16	E10	100	155	B	0,3
	AK610.Z16.E12.090C	16	E12	90	150	B	0,34
	AK610.Z16.E16.080C	16	E16	80	135	A	342,3
	AK610.Z20.E16.118C	20	E16	118	175	B	0,62
	AK610.Z20.E20.038C	20	E20	38	95	A	0,34
	AK610.Z20.E20.110C	20	E20	110	180	A	0,7
	AK610.Z25.E25.120C	25	E25	120	200	A	1,2



For the tightening torques of screw-fit milling cutter heads, see “Rotating adaptors/Assembly parts and accessories”

D 153

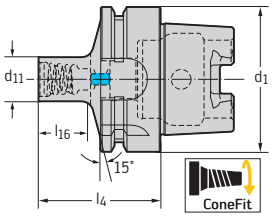
DIN 69893-1 A adaptor
AK631



D 2

– For ConeFit milling cutter heads

Tool	Designation	d_1	d_{11}	l_4 mm	l_{16} mm	kg
HSK DIN 69893-1 A	AK631.H63A.E10.049	HSK-A63	E10	49	13,5	0,73
	AK631.H63A.E12.051	HSK-A63	E12	51	15,8	0,74
	AK631.H63A.E16.056	HSK-A63	E16	56	21,3	0,75
	AK631.H63A.E20.053	HSK-A63	E20	53	18,8	0,76
	AK631.H63A.E25.059	HSK-A63	E25	59	25,5	0,79



For accessories for HSK, see “Assembly parts and accessories”
For the tightening torques of screw-fit milling cutter heads, see “Rotating adaptors/Assembly parts and accessories”

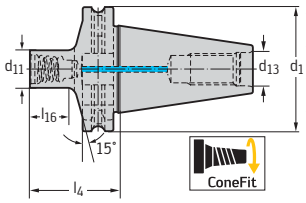
D 161 D 153

DIN 69871 adaptor
AK641



– For ConeFit milling cutter heads
– ISO 7388-1

Tool	Designation	d_1	d_{11}	l_4 mm	l_{16} mm	d_{13}	kg
SK DIN 69871	AK641.S40.E10.041	SK40	E10	41	12,7	M16	0,92
	AK641.S40.E12.044	SK40	E12	44	16	M16	0,91
	AK641.S40.E16.049	SK40	E16	49	21,5	M16	0,93
	AK641.S40.E20.046	SK40	E20	46	19	M16	0,94
	AK641.S40.E25.051	SK40	E25	51	24,6	M16	0,97



For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
For the tightening torques of screw-fit milling cutter heads, see “Rotating adaptors/Assembly parts and accessories”

D 161 D 153

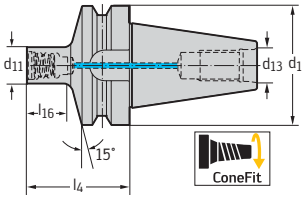
MAS-BT JIS B 6339 adaptor
AK641



D 2

– For ConeFit milling cutter heads
– ISO 7388-2

Tool	Designation	d_1	d_{11}	l_4 mm	l_{16} mm	d_{13}	kg
JIS B 6339	AK641.BT40.E10.051	BT40	E10	51	13	M16	1,11
	AK641.BT40.E12.054	BT40	E12	54	16,3	M16	1,12
	AK641.BT40.E16.060	BT40	E16	60	22,8	M16	1,14
	AK641.BT40.E20.056	BT40	E20	56	19,3	M16	1,13
	AK641.BT40.E25.062	BT40	E25	62	26	M16	1,3



For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
For the tightening torques of screw-fit milling cutter heads, see “Rotating adaptors/Assembly parts and accessories”

D 161 D 153

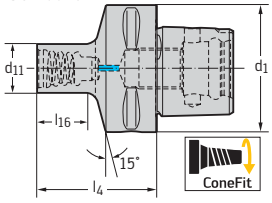
Walter Capto™ adaptor
AK681



– For ConeFit milling cutter heads
– ISO 26623

Tool

Walter Capto™ in accordance with ISO 26623



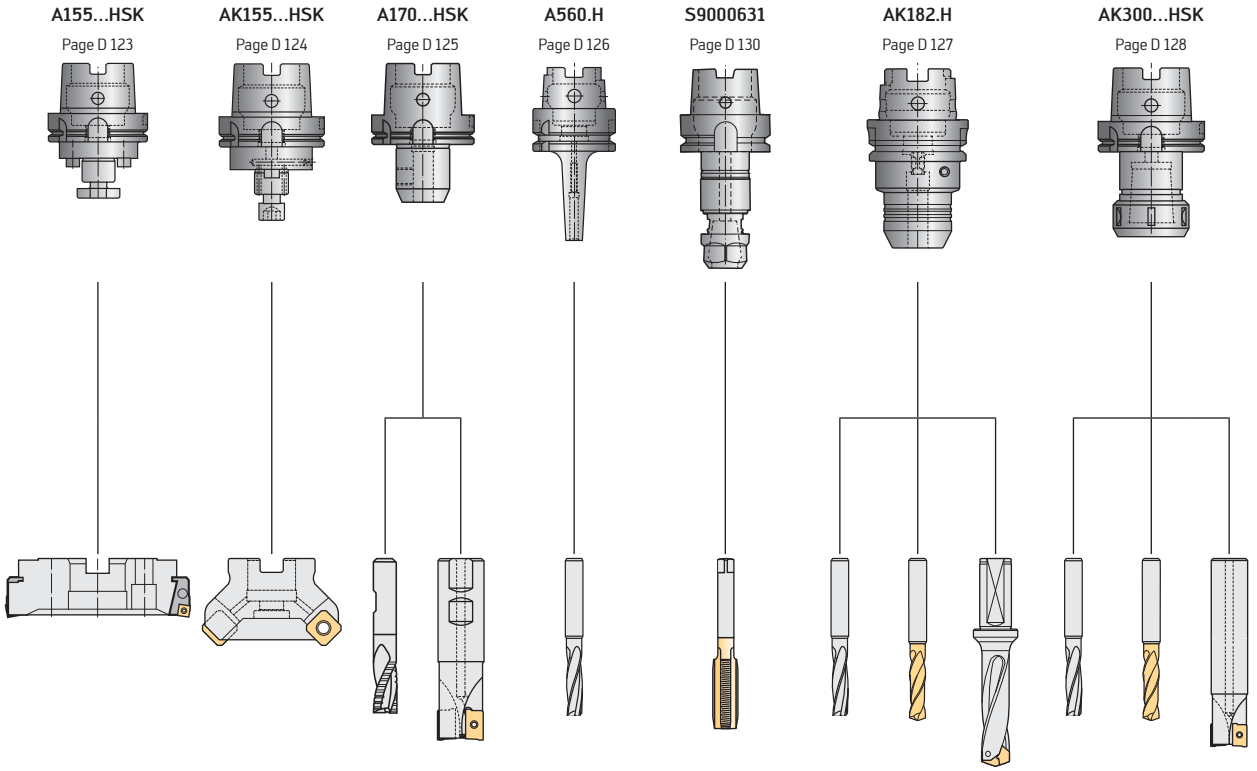
Designation	d_1	d_{11}	l_4 mm	l_{16} mm	kg
AK681.C5.E10.042	C5	E10	42	12,8	0,5
AK681.C5.E12.045	C5	E12	45	16	0,51
AK681.C5.E16.050	C5	E16	50	21,5	0,53
AK681.C5.E20.047	C5	E20	47	19	0,52
AK681.C5.E25.052	C5	E25	52	24,7	0,56
AK681.C6.E12.049	C6	E12	49	16,3	0,89
AK681.C6.E16.054	C6	E16	54	21,8	0,90
AK681.C6.E20.051	C6	E20	51	19,3	0,91
AK681.C6.E25.056	C6	E25	56	25	0,94

For the tightening torques of screw-fit milling cutter heads, see “Rotating adaptors/Assembly parts and accessories”

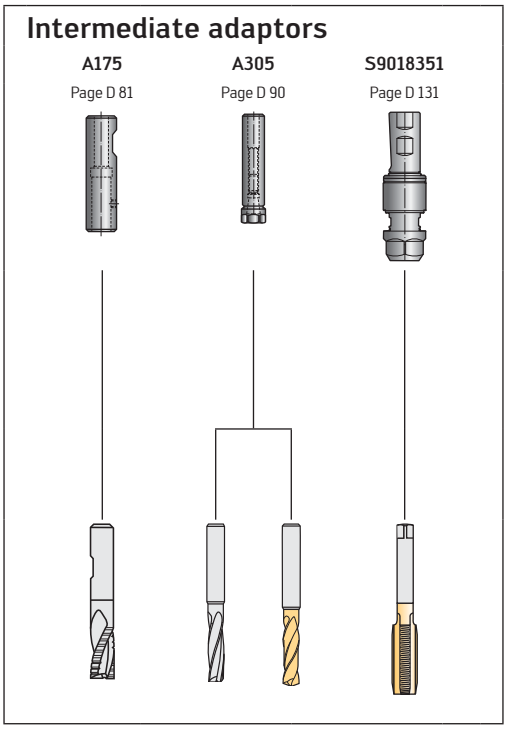
D 160 D 153

Product range overview of Walter HSK adaptors

Tool adaptors

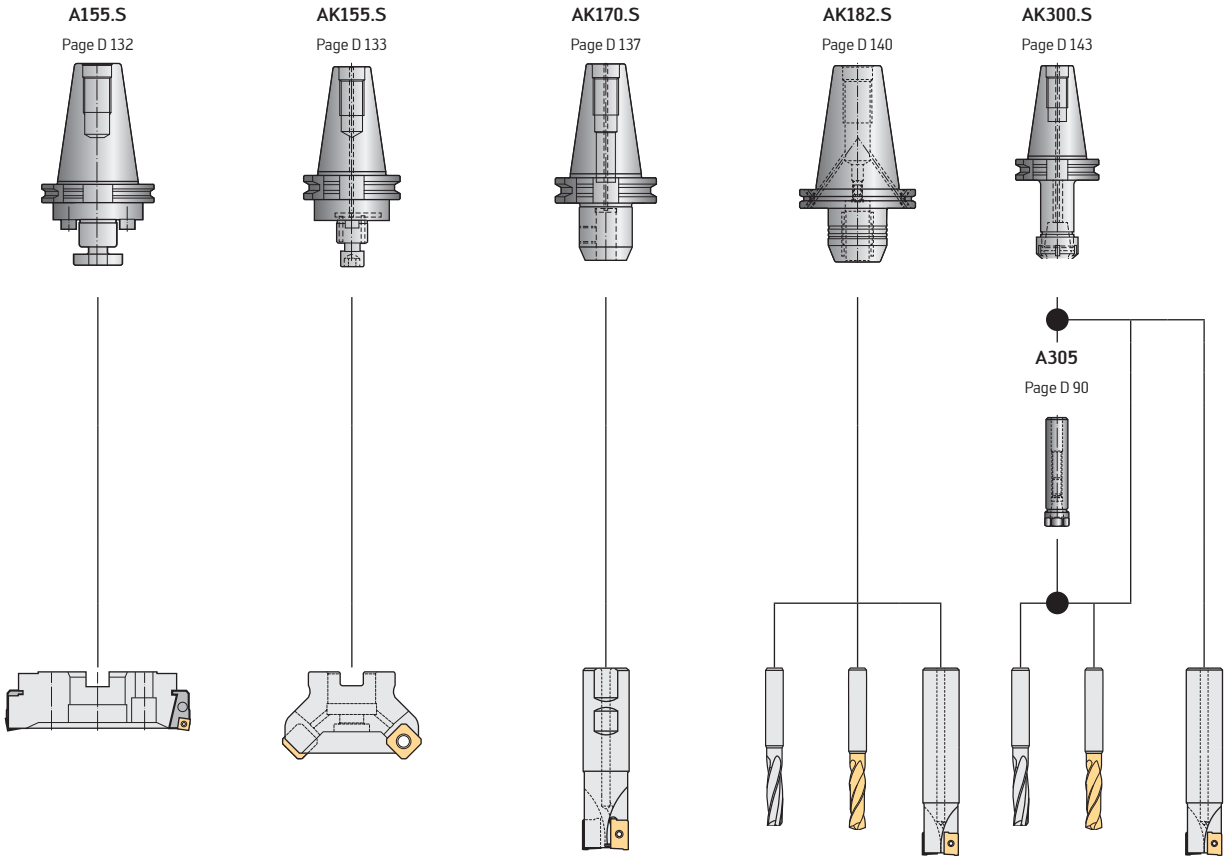


Intermediate adaptors



Product range overview of Walter SK adaptors

Tool adaptors



Designation key for HSK adaptors

A	K	155	.	7	.	063	.	050	.	16	HSK
1	2	3		4		5		6		7	

1	2	3	4
Tool group	**Generation**	**Family**	**Spindle-side interface**
A Adaptors	K With internal coolant supply	**155** Bore with transverse keyway **170** Weldon **171** Whistle Notch **182** Hydro-expansion **300** Collet	**7** HSK-A DIN 69893/1

5	6	7
Spindle-side interface size	**Projection length**	**Tool-side interface size**

Designation key for SK adaptors

AK	155	.	S	40	.	035	.	16
1	2	3	4	5		6		7

1	2	3	4
Tool range	**Coolant supply**	**Family**	**Spindle-side interface**
A Adaptors	K With internal coolant supply	155 Bore with transverse keyway 170 Weldon 182 Hydro-expansion 300 Collet	BT MAS BT steep taper S Steep taper

5	6	7
Spindle-side interface size	**Projection length**	**Tool-side interface size**

DIN 69893-1 A master
A100M...HSK

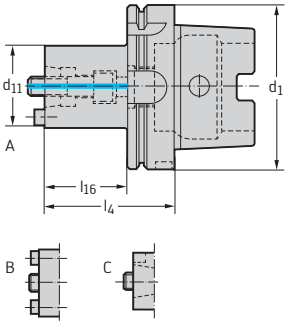


D 2

– Modular NCT adaptor

Tool

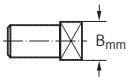
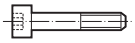
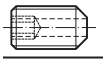
HSK DIN 69893-1 A



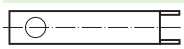
Designation	d_1	d_{11}	l_4 mm	l_{16} mm	Version	kg
A100M.7.063.055.25.HSK	HSK-A63	NCT 25	55	29	C	0,72
A100M.7.063.080.25.HSK	HSK-A63	NCT 25	80	54	C	0,85
A100M.7.063.055.32.HSK	HSK-A63	NCT 32	55	29	C	0,79
A100M.7.063.080.32.HSK	HSK-A63	NCT 32	80	54	C	0,99
A100M.7.063.065.40.HSK	HSK-A63	NCT 40	65	39	C	1
A100M.7.063.080.40.HSK	HSK-A63	NCT 40	80	54	C	1,12
A100M.7.063.065.50.HSK	HSK-A63	NCT 50	65	39	A	1,24
A100M.7.063.080.50.HSK	HSK-A63	NCT 50	80	54	A	1,45
A100M.7.063.075.63.HSK	HSK-A63	NCT 63	75	49	B	1,67
A100M.7.063.100.63.HSK	HSK-A63	NCT 63	100	74	B	2,19
A100M.7.063.080.80.HSK	HSK-A63	NCT 80	80	54	B	2,24
A100M.7.100.060.25.HSK	HSK-A100	NCT 25	60	31	C	2,21
A100M.7.100.080.25.HSK	HSK-A100	NCT 25	80	51	C	2,32
A100M.7.100.060.32.HSK	HSK-A100	NCT 32	60	31	C	2,27
A100M.7.100.080.32.HSK	HSK-A100	NCT 32	80	51	C	2,41
A100M.7.100.080.40.HSK	HSK-A100	NCT 40	80	51	C	2,51
A100M.7.100.080.50.HSK	HSK-A100	NCT 50	80	51	A	2,83
A100M.7.100.080.63.HSK	HSK-A100	NCT 63	80	51	B	3,23
A100M.7.100.100.63.HSK	HSK-A100	NCT 63	100	71	B	3,69
A100M.7.100.100.80.HSK	HSK-A100	NCT 80	100	71	B	4,48

Only use FS1064 (HSK 63) and FS1065 (HSK 100) transfer units.
For accessories for HSK, see "Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11}	NCT 25	NCT 32	NCT 40	NCT 50	NCT 63	NCT 80
	Drive pin 1				FS554	FS555	FS556
	Drive pin 2					FS557	FS558
	Cap screw	FS414	FS414	FS415	FS415	FS416	FS417
	Threaded ring	FS410	FS410	FS411	FS411	FS412	FS413
	ISO 4027 threaded pin	M04X006 DIN 914 45H (SW 2)	M04X008 DIN 914 45H (SW 2)	M05X010 DIN 914 45H (SW 2,5)	M05X010 DIN 914 45H (SW 2,5)	M06X012 ISO4027 (SW 3)	M06X016 DIN 914 45H (SW 3)

Accessories

	d_{11}	NCT 25 / NCT 32	NCT 40 / NCT 50	NCT 63	NCT 80
	Pipe wrench for threaded ring	FS738	FS739	FS740	FS741

D 155 D 148

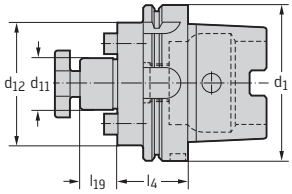
DIN 69893-1 A shell end milling cutter arbor A155...HSK



– For tools in accordance with DIN 1880

Tool

HSK DIN 69893-1 A



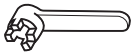
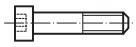
Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	kg
A155.7.063.050.22.HSK	HSK-A63	22	48	50	19	1,13
A155.7.063.060.27.HSK	HSK-A63	27	60	60	21	1,48
A155.7.063.060.32.HSK	HSK-A63	32	78	60	24	1,84
A155.7.063.060.40.HSK*	HSK-A63	40	89	60	27	2,18
A155.7.063.100.22.HSK	HSK-A63	22	48	100	19	0,18
A155.7.063.100.27.HSK	HSK-A63	27	60	100	21	2,37
A155.7.063.100.32.HSK	HSK-A63	32	78	100	24	3,3
A155.7.100.050.22.HSK	HSK-A100	22	48	50	19	2,52
A155.7.100.050.27.HSK	HSK-A100	27	60	50	21	2,72
A155.7.100.050.32.HSK	HSK-A100	32	78	50	24	3,12
A155.7.100.060.40.HSK*	HSK-A100	40	89	60	27	3,84
A155.7.100.075.60.HSK*	HSK-A100	60	128	75	40	6,78
A155.7.100.100.22.HSK	HSK-A100	22	100	100	19	3,23
A155.7.100.100.27.HSK	HSK-A100	27	60	100	21	3,78
A155.7.100.100.32.HSK	HSK-A100	32	78	100	24	4,95
A155.7.100.100.40.HSK*	HSK-A100	40	89	100	27	5,74
A155.7.100.160.60.HSK*	HSK-A100	60	128	160	40	15,29

* With 4 additional threaded holes for tools with tool connection in accordance with DIN 2079
For accessories for HSK, see "Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	22	27	32	40	60
	DIN 6367 milling cutter fastening bolt	FS431	FS432	FS433	FS434	FS912

Accessories

	d_{11} [mm]	22	27	32	40	60
	Wrench for milling cutter fastening bolt	FS437	FS438	FS439	FS440	FS913
	ISO 4762 milling cutter fastening bolt	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)	FS942 (SW 17)	
	ISO 2936 key	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)	ISO2936-17 (SW 17)	

Strength class with fastening bolt 12.9

D 155

DIN 69893-1 A shell end milling cutter arbor AK155...HSK

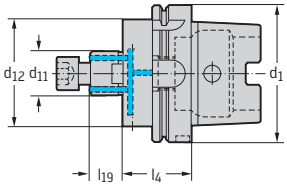


D 2

– For tools in accordance with DIN 1880

Tool

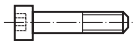
HSK DIN 69893-1 A



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	kg
AK155.7.063.050.16.HSK	HSK-A63	16	38	50	17	0,92
AK155.7.063.050.22.HSK	HSK-A63	22	48	50	19	1,08
AK155.7.063.060.27.HSK	HSK-A63	27	60	60	21	1,45
AK155.7.063.060.32.HSK	HSK-A63	32	78	60	24	1,78
AK155.7.063.060.40.HSK*	HSK-A63	40	89	60	27	2,1
AK155.7.100.050.22.HSK	HSK-A100	22	48	50	19	2,47
AK155.7.100.050.27.HSK	HSK-A100	27	60	50	21	3,5
AK155.7.100.050.32.HSK	HSK-A100	32	78	50	24	3,5
AK155.7.100.060.40.HSK*	HSK-A100	40	89	60	27	3,7

* With 4 additional threaded holes for tools with tool connection in accordance with DIN 2079
For accessories for HSK, see "Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16	22	27	32	40
	ISO 4762 fastening bolt	FS938 (SW 6)	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)	FS942 (SW 17)

Accessories

	d_{11} [mm]	16	22	27	32	40
	ISO 2936 Allen key	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)	ISO2936-17 (SW 17)

Strength class with fastening bolt 12.9

D 155

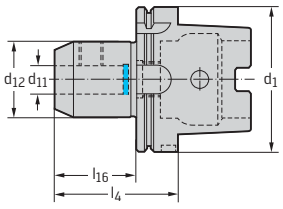
DIN 69893-1 A Weldon adaptor
A170...HSK



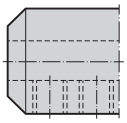
– For tools with shank in acc. with DIN 1835 form B

Tool

HSK DIN 69893-1 A



$d_{11} \leq 20$ mm

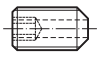


$d_{11} > 20$ mm

Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{16} mm	kg
A170.7.063.065.06.HSK	HSK-A63	6	25	65	39	0,81
A170.7.063.065.08.HSK	HSK-A63	8	28	65	39	0,84
A170.7.063.065.10.HSK	HSK-A63	10	35	65	39	0,93
A170.7.063.080.12.HSK	HSK-A63	12	42	80	54	1,2
A170.7.063.080.14.HSK	HSK-A63	14	44	80	54	1,24
A170.7.063.080.16.HSK	HSK-A63	16	48	80	54	1,34
A170.7.063.080.18.HSK	HSK-A63	18	50	80	54	1,55
A170.7.063.080.20.HSK	HSK-A63	20	52	80	54	1,4
A170.7.063.110.25.HSK	HSK-A63	25	65	110	84	2,35
A170.7.063.110.32.HSK	HSK-A63	32	72	110	84	2,64
A170.7.100.080.06.HSK	HSK-A100	6	25	80	51	2,25
A170.7.100.080.08.HSK	HSK-A100	8	28	80	51	2,34
A170.7.100.080.10.HSK	HSK-A100	10	35	80	51	2,46
A170.7.100.080.12.HSK	HSK-A100	12	42	80	51	2,56
A170.7.100.080.14.HSK	HSK-A100	14	44	80	51	2,62
A170.7.100.100.16.HSK	HSK-A100	16	48	100	71	2,98
A170.7.100.100.18.HSK	HSK-A100	18	50	100	71	3,03
A170.7.100.100.20.HSK	HSK-A100	20	52	100	71	3,09
A170.7.100.100.25.HSK	HSK-A100	25	65	100	71	3,6
A170.7.100.100.32.HSK	HSK-A100	32	72	100	71	3,75
A170.7.100.105.40.HSK	HSK-A100	40	80	105	76	4,15

For accessories for HSK, see "Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

d_{11} [mm]	6	8	10	12–14	16–18	20	25	32–40
 DIN 1835-B clamping screw	FS835	M08X010	M10X012	M12X016	M14X016	M16X016	M18X2X020	M20X2X020

D 155

DIN 69893-1 A shrink-fit adaptor
A560.H

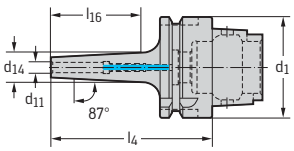


D 2

– For tools with parallel shank in accordance with DIN 1835 (h6 or better)

Tool

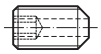
HSK DIN 69893-1 A



Designation	d_1	d_{11}	d_{14} mm	l_4 mm	l_{18} mm	kg
A560.H63A.05.080	HSK-A63	5	15	80	45	0,73
A560.H63A.06.080	HSK-A63	6	17	80	45	0,75
A560.H63A.08.080	HSK-A63	8	21	80	45	0,78
A560.H63A.10.085	HSK-A63	10	25	85	50	0,87
A560.H63A.12.090	HSK-A63	12	30	90	55	0,95
A560.H63A.16.095	HSK-A63	16	34	95	60	1,04
A560.H63A.20.100	HSK-A63	20	41	100	68	1,21
A560.H63A.25.115	HSK-A63	25	48	115	85	1,5

Balance class: G6.3 where n = 25,000 rpm
For accessories for HSK, see “Assembly parts and accessories”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11}	5	6	8	10	12	16–25
	Threaded pin	FS1137 (SW 2)	FS1138 (SW 2,5)	FS1139 (SW 3)	FS1140 (SW 4)	FS1141 (SW 5)	FS1142 (SW 6)

Accessories

	d_{11}	5	6	8	10	12	16–25
	ISO 2936 Allen key	ISO2936-2 (SW 2)	ISO2936-2,5 (SW 2,5)	ISO2936-3 (SW 3)	ISO2936-4 (SW 4)	ISO2936-5 (SW 5)	ISO2936-6 (SW 6)

D 155

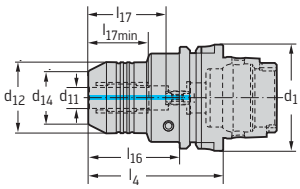
DIN 69893-1 A hydro-expansion chuck
AK182.H



– For tools with shank in accordance with DIN 1835 form A

Tool

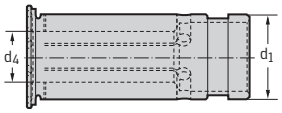
HSK DIN 69893-1 A



Designation	d_1	d_{11} mm	d_{12} mm	d_{14} mm	l_4 mm	l_{16} mm	l_{17} mm	l_{17min} mm	kg
AK182.H63.080.12	HSK-A63	12	52,5	42	80	34	46	36	1,25
AK182.H63.080.20	HSK-A63	20		52,5	80	54	51	41	1,32
AK182.H100.090.20	HSK-A100	20		52,5	90	61	51	41	2,8
AK182.H100.100.32	HSK-A100	32		72	100	71	61	51	3,8

For accessories for HSK, see "Assembly parts and accessories"

Accessories



	d_4 mm	3	4	5	6	7	8	9	10	11
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	FS2194	FS2195	FS2196	FS2197	-	FS2198	-	-	-
	d_1 = 20 mm	FS2213	FS2214	FS2215	FS2216	-	FS2217	-	FS2218	-
	d_1 = 32 mm	-	-	-	FS2231	-	FS2232	-	FS2233	-
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	FS2189	FS2190	FS2191	FS2192	-	FS2193	-	-	-
	d_1 = 20 mm	FS2199	FS2200	FS2201	FS2202	FS2203	FS2204	FS2205	FS2206	FS2207
	d_1 = 32 mm	-	-	-	FS2222	-	FS2223	-	FS2224	-

Continued	d_4 mm	12	13	14	15	16	18	20	25
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2219	-	FS2220	-	FS2221	-	-	-
	d_1 = 32 mm	FS2234	-	FS2235	-	FS2236	FS2237	FS2238	FS2239
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2208	FS2209	FS2210	FS2211	FS2212	-	-	-
	d_1 = 32 mm	FS2225	-	FS2226	-	FS2227	FS2228	FS2229	FS2230

D 157 D 155

DIN 69893-1 A ER collet chuck AK300...HSK

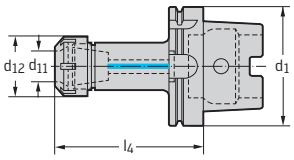


D 2

– For ER collets in accordance with DIN 6499/ISO 15488

Tool

HSK DIN 69893-1 A



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	kg
AK300.7.063.105.10.HSK	HSK-A63	1-10	28	105	ER16	0,98
AK300.7.063.105.16.HSK	HSK-A63	1-16	42	105	ER25	1,08
AK300.7.063.105.20.HSK	HSK-A63	1-20	50	105	ER32	1,24
AK300.7.063.125.26.HSK	HSK-A63	2-26	63	125	ER40	1,84
AK300.7.100.105.20.HSK	HSK-A100	1-20	50	105	ER32	2,62
AK300.7.100.125.26.HSK	HSK-A100	2-26	63	125	ER40	3,20

If collet chucks are used for the internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For collets, see “Assembly parts and accessories”
For accessories for HSK, see “Assembly parts and accessories”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER16	ER25	ER32	ER40
	Clamping nut for internal coolant supply	FS1448	FS1449	FS1360	FS1450

Accessories

	Collets	ER16	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 155 D 174

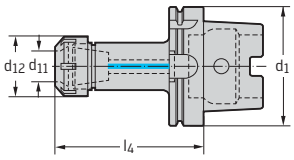
DIN 69893-1 A ER collet chuck
AK300...HSK



– For ER collets in accordance with DIN 6499/ISO 15488

Tool

HSK DIN 69893-1 A



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	kg
AK300.7.063.100.10.HSK	HSK-A63	1-10	28	100	ER16	0,97
AK300.7.063.100.16.HSK	HSK-A63	1-16	42	100	ER25	1,05
AK300.7.063.100.20.HSK	HSK-A63	1-20	50	100	ER32	1,26
AK300.7.063.120.26.HSK	HSK-A63	2-26	63	120	ER40	1,78
AK300.7.100.100.20.HSK	HSK-A100	1-20	50	100	ER32	2,64
AK300.7.100.120.26.HSK	HSK-A100	2-26	63	120	ER40	3,14

For collets, see "Assembly parts and accessories"
For accessories for HSK, see "Assembly parts and accessories"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER16	ER25	ER32	ER40
	Clamping nut	FS1537	FS1540	FS1541	FS1542

Accessories

	Collets	ER16	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 155 D 174

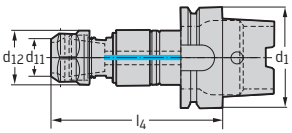
DIN 69893-1 A synchronous tapping adaptor
S9000631



D 2

Tool

HSK DIN 69893-1 A



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	Collets	kg
S9000631-20	HSK-A63	M4-M12	34	102	ER20	1,4
S9000631-25	HSK-A63	M8-M20	40	122	ER25	2
S9000631-40	HSK-A63	M16-M30	63	156	ER40	3,8

If collet chucks are used for the internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For collets, see “Assembly parts and accessories”
For accessories for HSK, see “Assembly parts and accessories”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER20	ER25	ER40
	Clamping nut for internal coolant supply	S9300ERC-20	S9300ERC-25	FS1450
	Tensioning key		FS1544	FS1546

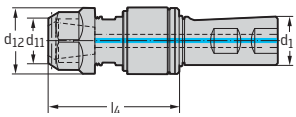
D 155

Synchronous tapping chuck
S9018351



Tool

DIN 1835 combishank
Form B+D



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	Collets	kg
S9018351-11	25	M2-M5	19	52	ER11	0,5
S9018351-20	25	M4-M12	34	69	ER20	0,8
S9018351-25	25	M8-M20	42	88	ER25	1,4

If collet chucks are used for the internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For collets, see “Assembly parts and accessories”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER20	ER25
	Clamping nut for internal coolant supply	S93000ERC-20	S9300ERC-25
	Tensioning key		FS1544

D 155

DIN 69871-A milling cutter arbor
A155.S

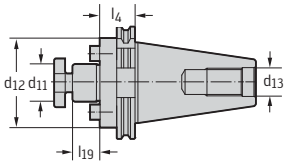


D 2

– For tools in accordance with DIN 1880
– ISO 7388-1

Tool

SK DIN 69871-A



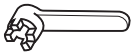
Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	d_{13}	kg
A155.S40.035.16	SK40	16	36	35	17	M16	0,94
A155.S40.035.22	SK40	22	48	35	19	M16	1,05
A155.S40.035.27	SK40	27	48	35	21	M16	1,2
A155.S40.050.32	SK40	32	78	50	24	M16	1,75
A155.S40.100.16	SK40	16	36	100	17	M16	1,94
A155.S40.100.22	SK40	22	48	100	19	M16	1,95
A155.S40.100.27	SK40	27	60	100	21	M16	2,5
A155.S40.100.32	SK40	32	78	100	24	M16	3,55
A155.S50.035.22	SK50	22	48	35	19	M24	2,85
A155.S50.035.27	SK50	27	60	35	21	M24	3,1
A155.S50.035.32	SK50	32	78	35	24	M24	3,35
A155.S50.050.40*	SK50	40	89	50	27	M24	4,1
A155.S50.070.60*	SK50	60	127	70	40	M24	7,2
A155.S50.100.22	SK50	22	48	100	19	M24	4,55
A155.S50.100.27	SK50	27	60	100	21	M24	5,3
A155.S50.100.32	SK50	32	78	100	24	M24	6,55
A155.S50.100.40*	SK50	40	89	100	27	M24	9,5

* With 4 additional threaded holes for tools with tool connection in accordance with DIN 2079
For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16	22	27	32	40	60
	DIN 6367 milling cutter fastening bolt	FS430	FS431	FS432	FS433	FS434	FS912

Accessories

	d_{11} [mm]	16	22	27	32	40	60
	Wrench for milling cutter fastening bolt	FS436	FS437	FS438	FS439	FS440	FS913
	ISO 4762 milling cutter fastening bolt	FS938 (SW 6)	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)	FS942 (SW 17)	
	ISO 2936 key	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)	ISO2936-17 (SW 17)	

Strength class with fastening bolt 12.9

D 155

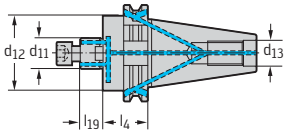
DIN 69871 AD/B milling cutter arbor
AK155.S



– For tools in accordance with DIN 1880
– ISO 7388-1

Tool

SK DIN 69871 AD/B



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	d_{13}	kg
AK155.S40.035.16	SK40	16	36	35	17	M16	0,94
AK155.S40.035.22	SK40	22	48	35	19	M16	1,05
AK155.S40.035.27	SK40	27	48	35	21	M16	1,2
AK155.S40.050.32	SK40	32	78	50	24	M16	1,75
AK155.S50.035.16	SK50	16	36	35	17	M24	2,7
AK155.S50.035.22	SK50	22	48	35	19	M24	2,85
AK155.S50.035.27	SK50	27	60	35	21	M24	3,1
AK155.S50.035.32	SK50	32	78	35	24	M24	3,35

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16	22	27	32
	ISO 4762 fastening bolt	FS938 (SW 6)	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)

Accessories

	d_{11} [mm]	16	22	27	32
	ISO 2936 key	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)

Strength class with fastening bolt 12.9

D 155

MAS-BT JIS B 6339 milling cutter arbor A155.BT

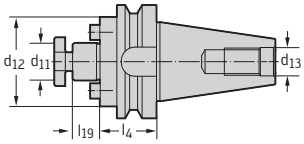


– For tools in accordance with DIN 1880
– ISO 7388-2

D 2

Tool

JIS B 6339



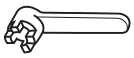
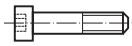
Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	d_{13}	kg
A155.BT40.035.16	BT40	16	36	35	17	M16	1,14
A155.BT40.035.22	BT40	22	48	35	19	M16	1,15
A155.BT40.035.27	BT40	27	48	35	21	M16	1,3
A155.BT40.065.32	BT40	32	78	65	24	M16	2
A155.BT40.100.16	BT40	16	36	100	17	M16	1,8
A155.BT40.100.22	BT40	22	48	100	19	M16	2
A155.BT40.100.27	BT40	27	60	100	21	M16	2,5
A155.BT50.055.22	BT50	22	48	55	19	M24	3,65
A155.BT50.055.27	BT50	27	60	55	21	M24	3,9
A155.BT50.055.32	BT50	32	78	55	24	M24	4,15
A155.BT50.055.40*	BT50	40	89	55	27	M24	4,9
A155.BT50.080.60*	BT50	60	127	80	40	M24	3,75
A155.BT50.100.22	BT50	22	48	100	19	M24	4,5
A155.BT50.100.27	BT50	27	60	100	21	M24	5,75
A155.BT50.100.32	BT50	32	78	100	24	M24	6,5

* With 4 additional threaded holes for tools with tool connection in accordance with DIN 2079
For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16	22	27	32	40	60
	DIN 6367 milling cutter fastening bolt	FS430	FS431	FS432	FS433	FS434	FS912

Accessories

	d_{11} [mm]	16	22	27	32	40	60
	Wrench for milling cutter fastening bolt	FS436	FS437	FS438	FS439	FS440	FS913
	ISO 4762 milling cutter fastening bolt	FS938 (SW 6)	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)	FS942 (SW 17)	
	ISO 2936 key	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)	ISO2936-17 (SW 17)	

Strength class with fastening bolt 12.9

D 155

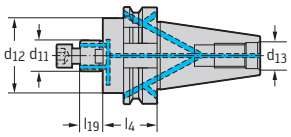
MAS-BT JIS B 6339 milling cutter arbor
AK155.BT



– For tools in accordance with DIN 1880
– ISO 7388-2

Tool

JIS B 6339



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	d_{13}	kg
AK155.BT40.035.16	BT40	16	36	35	17	M16	1,14
AK155.BT40.035.22	BT40	22	48	35	19	M16	1,15
AK155.BT40.035.27	BT40	27	48	35	21	M16	1,3
AK155.BT40.065.32	BT40	32	78	65	24	M16	2
AK155.BT50.055.16	BT50	16	36	55	17	M24	3,5
AK155.BT50.055.22	BT50	22	48	55	19	M24	3,65
AK155.BT50.055.27	BT50	27	60	55	21	M24	3,9
AK155.BT50.055.32	BT50	32	78	55	24	M24	4,15

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	16	22	27	32
	ISO 4762 fastening bolt	FS938 (SW 6)	FS939 (SW 8)	FS940 (SW 10)	FS941 (SW 14)

Accessories

	d_{11} [mm]	16	22	27	32
	ISO 2936 key	ISO2936-6 (SW 6)	ISO2936-8 (SW 8)	ISO2936-10 (SW 10)	ISO2936-14 (SW 14)

Strength class with fastening bolt 12.9

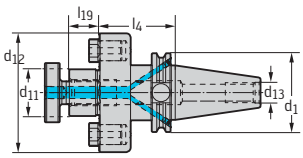
D 155

ASME B5.50 milling cutter arbor
AA001.K



D 2

– For tools in accordance with DIN 1880

Tool	Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{19} mm	d_{13}	kg
ASME B5.50 	AA001.K40-B19-038	CAT40	3/4	44	38	17	5/8"-11	1,11
	AA001.K40-B25-051	CAT40	1	57	51	17	5/8"-11	1,5
	AA001.K40-B38-061	CAT40	1 1/2	95	61	24	5/8"-11	2,88
	AA001.K50-B19-038	CAT50	3/4	44	38	17	1"-8	3,22
	AA001.K50-B25-051	CAT50	1	57	51	17	1"-8	3,63
	AA001.K50-B25-102	CAT50	1	57	102	17	1"-8	4,49
	AA001.K50-B38-061	CAT50	1 1/2	95	61	24	1"-8	4,86
	AA001.K50-B38-102	CAT50	1 1/2	95	102	24	1"-8	6,49
	AA001.K50-B63-061	CAT50	2 1/2	124	61	29	1"-8	6,45

D 162 D 155

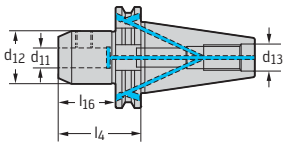
DIN 69871 AD/B Weldon adaptor
AK170.S



– For tools with shank in acc. with DIN 1835 form B
– ISO 7388-1

Tool

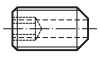
SK DIN 69871 AD/B



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{16} mm	d_{13}	kg
AK170.S40.050.12	SK40	12	42	50	44	M16	1
AK170.S40.063.16	SK40	16	48	63	47	M16	1
AK170.S40.063.20	SK40	20	52	63	49	M16	1,3
AK170.S40.100.25	SK40	25	65	100	59	M16	2,3
AK170.S40.100.32	SK40	32	72	100	63	M16	2,5
AK170.S40.050.06	SK40	6	25	50	35	M16	1
AK170.S40.050.08	SK40	8	28	50	35	M16	0,9
AK170.S40.050.10	SK40	10	35	50	39	M16	1
AK170.S40.050.14	SK40	14	42	50	44	M16	1
AK170.S40.063.18	SK40	18	48	63	47	M16	1,2
AK170.S50.063.12	SK50	12	42	63	44	M24	3
AK170.S50.063.16	SK50	16	48	63	47	M24	3,1
AK170.S50.063.20	SK50	20	52	63	49	M24	3,1
AK170.S50.080.25	SK50	25	65	80	59	M24	3,8
AK170.S50.100.32	SK50	32	72	100	63	M24	4,5
AK170.S50.100.40	SK50	40	78	100	73	M24	4,86
AK170.S50.063.06	SK50	6	25	63	35	M24	2,8
AK170.S50.063.08	SK50	8	28	63	35	M24	2,7
AK170.S50.063.10	SK50	10	35	63	39	M24	2,9
AK170.S50.063.14	SK50	14	42	63	44	M24	3
AK170.S50.063.18	SK50	18	48	63	47	M24	3

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	d_{11} [mm]	6	8	10	12–14	16–18	20	25	32–40
	DIN 1835-B clamping screw	FS835	M08X010	M10X012	M12X016	M14X016	M16X016	M18X2X020	M20X2X020

D 155

MAS-BT JIS B 6339 Weldon adaptor
AK170.BT

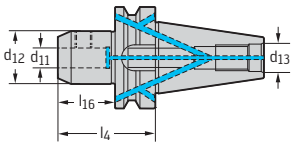


D 2

– For tools with shank in acc. with DIN 1835 form B
– ISO 7388-2

Tool

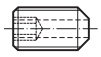
JIS B 6339



Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{16} mm	d_{13}	kg
AK170.BT40.063.12	BT40	12	42	63	44	M16	1,3
AK170.BT40.063.16	BT40	16	48	63	47	M16	1,2
AK170.BT40.063.20	BT40	20	52	63	49	M16	1,4
AK170.BT40.090.25	BT40	25	65	90	59	M16	2,4
AK170.BT40.100.32	BT40	32	72	100	63	M16	2,6
AK170.BT40.050.06	BT40	6	25	50	35	M16	0,9
AK170.BT40.050.08	BT40	8	28	50	35	M16	1
AK170.BT40.063.10	BT40	10	35	63	39	M16	1,1
AK170.BT40.063.14	BT40	14	44	63	44	M16	1,2
AK170.BT40.063.18	BT40	18	50	63	47	M16	1,3
AK170.BT50.080.12	BT50	12	42	80	44	M24	3,8
AK170.BT50.080.16	BT50	16	48	80	47	M24	3,9
AK170.BT50.080.20	BT50	20	52	80	49	M24	3,9
AK170.BT50.100.25	BT50	25	65	100	59	M24	4,6
AK170.BT50.105.32	BT50	32	72	105	63	M24	5,3
AK170.BT50.115.40	BT50	40	78	115	75	M24	5,5
AK170.BT50.063.06	BT50	6	25	63	35	M24	3,6
AK170.BT50.063.08	BT50	8	28	63	35	M24	3,5
AK170.BT50.070.10	BT50	10	35	70	39	M24	3,7

For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

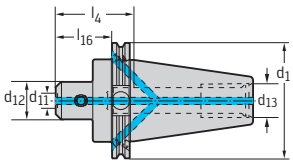
	d_{11} [mm]	6	8	10	12–14	16–18	20	25	32–40
	DIN 1835-B clamping screw	FS835	M08X010	M10X012	M12X016	M14X016	M16X016	M18X2X020	M20X2X020

D 155

ASME B5.50 Weldon shank adaptor
AB044.K



– For tools with shank in acc. with DIN 1835 form B

Tool	Designation	d_1	d_{11} mm	d_{12} mm	l_4 mm	l_{16} mm	d_{13}	kg
ASME B5.50 	AB044.K40-W07-064	CAT40	1/4	17	64	2,8	5/8"-11	1,11
	AB044.K40-W09-044	CAT40	3/8	20	44	2,8	5/8"-11	0,95
	AB044.K40-W09-064	CAT40	3/8	20	64	2,8	5/8"-11	1,14
	AB044.K40-W13-044	CAT40	1/2	26	44	9,4	5/8"-11	1,09
	AB044.K40-W13-067	CAT40	1/2	23	67	4,6	5/8"-11	1,18
	AB044.K40-W15-044	CAT40	5/8	26	44	9,4	5/8"-11	1,14
	AB044.K40-W15-070	CAT40	5/8	26	70	5,6	5/8"-11	1,23
	AB044.K40-W19-044	CAT40	3/4	26	44	9,4	5/8"-11	1
	AB044.K40-W19-089	CAT40	3/4	29	89	7,6	5/8"-11	1,45
	AB044.K40-W26-044	CAT40	1	40	44	4,3	5/8"-11	0,98
	AB044.K40-W26-102	CAT40	1	36	102	7,6	5/8"-11	1,61
	AB044.K40-W31-102	CAT40	1 1/4	43	102	10,6	5/8"-11	2,07
	AB044.K40-W39-102	CAT40	1 1/2	48	102	9,1	5/8"-11	2,2
	AB044.K50-W13-067	CAT50	1/2	22	67	4,6	1"-8	3,25
	AB044.K50-W15-095	CAT50	5/8	26	95	5,8	1"-8	3,54
	AB044.K50-W19-095	CAT50	3/4	29	95	7,6	1"-8	3,63
	AB044.K50-W26-102	CAT50	1	36	102	7,6	1"-8	3,83
	AB044.K50-W31-102	CAT50	1 1/4	42	102	10,7	1"-8	4,13
	AB044.K50-W39-102	CAT50	1 1/2	49	102	10,7	1"-8	4,06
	AB044.K50-W51-143	CAT50	2	74	143	10,7	1"-8	7,35

D 162 D 155

DIN 69871 AD/B hydro-expansion chuck
AK182.S

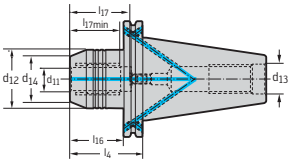


– For tools with shank in accordance with DIN 1835 form A
– ISO 7388-1

D 2

Tool

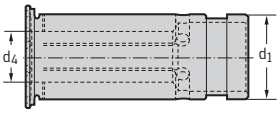
SK DIN 69871 AD/B



Designation	d_1	d_{11} mm	d_{12} mm	d_{14} mm	l_4 mm	l_{16} mm	l_{17} mm	l_{17min} mm	d_{13}	kg
AK182.S40.050.12	SK40	12	42	32	50	10	46	36	M16	1,1
AK182.S40.065.20	SK40	20	49,25	38	65	14	51	41	M16	1,3
AK182.S50.065.20	SK50	20	49,25	38	65	14	51	41	M24	3,1
AK182.S50.081.32	SK50	32	72	58,5	81	18	61	51	M24	4,1

The delivery status is form AD. To convert to form B, remove both grub screws.
For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

Accessories



	d_4 mm	3	4	5	6	7	8	9	10	11
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	FS2194	FS2195	FS2196	FS2197	-	FS2198	-	-	-
	d_1 = 20 mm	FS2213	FS2214	FS2215	FS2216	-	FS2217	-	FS2218	-
	d_1 = 32 mm	-	-	-	FS2231	-	FS2232	-	FS2233	-
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	FS2189	FS2190	FS2191	FS2192	-	FS2193	-	-	-
	d_1 = 20 mm	FS2199	FS2200	FS2201	FS2202	FS2203	FS2204	FS2205	FS2206	FS2207
	d_1 = 32 mm	-	-	-	FS2222	-	FS2223	-	FS2224	-

Continued	d_4 mm	12	13	14	15	16	18	20	25
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2219	-	FS2220	-	FS2221	-	-	-
	d_1 = 32 mm	FS2234	-	FS2235	-	FS2236	FS2237	FS2238	FS2239
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2208	FS2209	FS2210	FS2211	FS2212	-	-	-
	d_1 = 32 mm	FS2225	-	FS2226	-	FS2227	FS2228	FS2229	FS2230

D 157 D 155

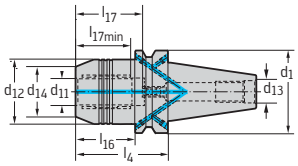
MAS-BT JIS B 6339 hydro-expansion chuck
AK182.BT



– For tools with shank in accordance with DIN 1835 form A
– ISO 7388-2

Tool

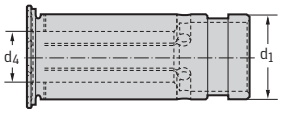
JIS B 6339



Designation	d_1	d_{11} mm	d_{12} mm	d_{14} mm	l_4 mm	l_{16} mm	l_{17} mm	l_{17min} mm	d_{13}	kg
AK182.BT30.069.12	BT30	12	42	32	69	10	46	36	M12	1,1
AK182.BT30.090.20	BT30	20	42	38	90	15	51	41	M12	1,1
AK182.BT40.058.12	BT40	12	42	32	58	10	46	36	M16	1,2
AK182.BT40.072.20	BT40	20	49,25	38	72	14	51	41	M16	1,4
AK182.BT50.084.20	BT50	20	49,25	38	84	14	51	41	M24	4,1
AK182.BT50.090.32	BT50	32	72	58,5	90	18	61	51	M24	4,6

For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”

Accessories



	d_4 mm	3	4	5	6	7	8	9	10	11
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	FS2194	FS2195	FS2196	FS2197	-	FS2198	-	-	-
	d_1 = 20 mm	FS2213	FS2214	FS2215	FS2216	-	FS2217	-	FS2218	-
	d_1 = 32 mm	-	-	-	FS2231	-	FS2232	-	FS2233	-
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	FS2189	FS2190	FS2191	FS2192	-	FS2193	-	-	-
	d_1 = 20 mm	FS2199	FS2200	FS2201	FS2202	FS2203	FS2204	FS2205	FS2206	FS2207
	d_1 = 32 mm	-	-	-	FS2222	-	FS2223	-	FS2224	-

Continued	d_4 mm	12	13	14	15	16	18	20	25
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2219	-	FS2220	-	FS2221	-	-	-
	d_1 = 32 mm	FS2234	-	FS2235	-	FS2236	FS2237	FS2238	FS2239
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2208	FS2209	FS2210	FS2211	FS2212	-	-	-
	d_1 = 32 mm	FS2225	-	FS2226	-	FS2227	FS2228	FS2229	FS2230

D 157 D 155

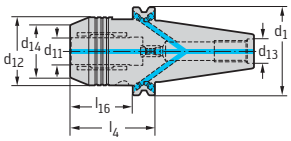
ASME B5.50 hydro-expansion chuck
AK182.CAT



D 2

Tool

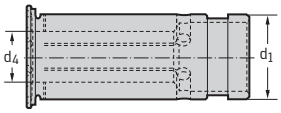
ASME B5.50



Designation	d_1	d_{11} mm	d_{12} mm	d_{14} mm	l_4 mm	l_{16} mm	l_{17} mm	l_{17min} mm	d_{13}	kg
AK182.CAT40.065.20	CAT40	20	49,25	38	65	36	51	41	5/8"-11	1,3
AK182.CAT50.081.32	CAT50	32	72	58,5	81	43	61	51	1"-8	4,1

For pull studs for steep tapers, see "Assembly parts and accessories/Steep taper pull studs"

Accessories



		d_4 mm 3	4	5	6	7	8	9	10	11
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	FS2194	FS2195	FS2196	FS2197	-	FS2198	-	-	-
	d_1 = 20 mm	FS2213	FS2214	FS2215	FS2216	-	FS2217	-	FS2218	-
	d_1 = 32 mm	-	-	-	FS2231	-	FS2232	-	FS2233	-
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	FS2189	FS2190	FS2191	FS2192	-	FS2193	-	-	-
	d_1 = 20 mm	FS2199	FS2200	FS2201	FS2202	FS2203	FS2204	FS2205	FS2206	FS2207
	d_1 = 32 mm	-	-	-	FS2222	-	FS2223	-	FS2224	-

Continued	d_4 mm 12	13	14	15	16	18	20	25
Adaptor sleeves for peripheral cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2219	-	FS2220	-	FS2221	-	-	-
	d_1 = 32 mm	FS2234	-	FS2235	-	FS2236	FS2237	FS2238	FS2239
Sealed adaptor sleeves for internal cooling	d_1 = 12 mm	-	-	-	-	-	-	-	-
	d_1 = 20 mm	FS2208	FS2209	FS2210	FS2211	FS2212	-	-	-
	d_1 = 32 mm	FS2225	-	FS2226	-	FS2227	FS2228	FS2229	FS2230

D 157 D 155

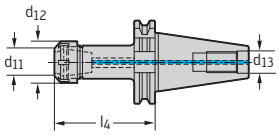
DIN 69871 A ER collet chuck
AK300.S



– For ER collets in accordance with DIN 6499/ISO 15488
– ISO 7388-1

Tool

SK DIN 69871



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	d_{13}	kg
AK300.S40.070.ER16	SK40	1-10	28	70	ER16	M16	1
AK300.S40.070.ER20	SK40	1-13	34	70	ER20	M16	1,1
AK300.S40.070.ER25	SK40	1-16	42	70	ER25	M16	1,2
AK300.S40.070.ER32	SK40	1-20	50	70	ER32	M16	1,4
AK300.S40.070.ER40	SK40	2-26	63	70	ER40	M16	1,5
AK300.S40.100.ER16	SK40	1-10	28	100	ER16	M16	1,1
AK300.S40.100.ER20	SK40	1-13	34	100	ER20	M16	1,3
AK300.S40.100.ER25	SK40	1-16	42	100	ER25	M16	1,5
AK300.S40.100.ER32	SK40	1-20	50	100	ER32	M16	1,8
AK300.S40.100.ER40	SK40	2-26	63	100	ER40	M16	1,9
AK300.S50.070.ER20	SK50	1-13	34	70	ER20	M24	2,9
AK300.S50.070.ER25	SK50	1-16	42	70	ER25	M24	3,2
AK300.S50.070.ER32	SK50	1-20	50	70	ER32	M24	3,1
AK300.S50.070.ER40	SK50	2-26	63	70	ER40	M24	3,5
AK300.S50.100.ER20	SK50	1-13	34	100	ER20	M24	3,1
AK300.S50.100.ER25	SK50	1-16	42	100	ER25	M24	3,6
AK300.S50.100.ER32	SK50	1-20	50	100	ER32	M24	3,8
AK300.S50.100.ER40	SK50	2-26	63	100	ER40	M24	4,1

For collets, see “Assembly parts and accessories”
For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER16	ER20	ER25	ER32	ER40
	Clamping nut	FS1537	FS2183	FS1540	FS1541	FS1542

Accessories

	Collets	ER16 / ER20	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 155 D 174

DIN 69871 AD/B ER collet chuck
AK300.S

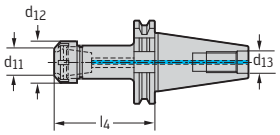


D 2

– For ER collets in accordance with DIN 6499/ISO 15488
– ISO 7388-1

Tool

SK DIN 69871 AD/B



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	d_{13}	kg
AK300.S40.075.ER16	SK40	1-10	28	75	ER16	M16	1
AK300.S40.075.ER20	SK40	1-13	34	75	ER20	M16	1,1
AK300.S40.075.ER25	SK40	1-16	42	75	ER25	M16	1,3
AK300.S40.075.ER32	SK40	1-20	50	75	ER32	M16	1,4
AK300.S40.075.ER40	SK40	2-26	63	75	ER40	M16	1,6
AK300.S40.105.ER16	SK40	1-10	28	105	ER16	M16	1,1
AK300.S40.105.ER20	SK40	1-13	34	105	ER20	M16	1,3
AK300.S40.105.ER25	SK40	1-16	42	105	ER25	M16	1,7
AK300.S40.105.ER32	SK40	1-20	50	105	ER32	M16	1,8
AK300.S40.105.ER40	SK40	2-26	63	105	ER40	M16	2
AK300.S50.075.ER20	SK50	1-13	34	75	ER20	M24	2,9
AK300.S50.075.ER25	SK50	1-16	42	75	ER25	M24	3,2
AK300.S50.075.ER32	SK50	1-20	50	75	ER32	M24	3,3
AK300.S50.075.ER40	SK50	2-26	63	75	ER40	M24	3,3
AK300.S50.105.ER20	SK50	1-13	34	105	ER20	M24	3,1
AK300.S50.105.ER25	SK50	1-16	42	105	ER25	M24	3,4
AK300.S50.105.ER32	SK50	1-20	50	105	ER32	M24	3,7
AK300.S50.105.ER40	SK50	2-26	63	105	ER40	M24	4,1

If collet chucks are used for the internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For collets, see “Assembly parts and accessories”
For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER16	ER20	ER25	ER32	ER40
	Clamping nut for internal coolant supply	FS1448	FS1359	FS1449	FS1360	FS1450

Accessories

	Collets	ER16 / ER20	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 155 D 174

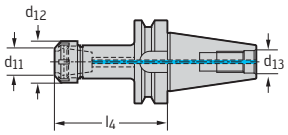
MAS-BT JIS B 6339 ER collet chuck
AK300.BT



– For ER collets in accordance with DIN 6499/ISO 15488
– ISO 7388-2

Tool

JIS B 6339



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	d_{13}	kg
AK300.BT40.070.ER16	BT40	1-10	28	70	ER16	M16	1,1
AK300.BT40.070.ER20	BT40	1-13	34	70	ER20	M16	1,1
AK300.BT40.070.ER25	BT40	1-16	42	70	ER25	M16	1,3
AK300.BT40.070.ER32	BT40	1-20	50	70	ER32	M16	1,4
AK300.BT40.070.ER40	BT40	2-26	63	70	ER40	M16	1,6
AK300.BT40.100.ER16	BT40	1-10	28	100	ER16	M16	1,3
AK300.BT40.100.ER20	BT40	1-13	34	100	ER20	M16	1,5
AK300.BT40.100.ER25	BT40	1-16	42	100	ER25	M16	1,7
AK300.BT40.100.ER32	BT40	1-20	50	100	ER32	M16	1,8
AK300.BT40.100.ER40	BT40	2-26	63	100	ER40	M16	1,9
AK300.BT50.070.ER20	BT50	1-13	34	70	ER20	M24	3,7
AK300.BT50.070.ER25	BT50	1-16	42	70	ER25	M24	4
AK300.BT50.070.ER32	BT50	1-20	50	70	ER32	M24	4
AK300.BT50.080.ER40	BT50	2-26	63	70	ER40	M24	4,2
AK300.BT50.100.ER20	BT50	1-13	34	100	ER20	M24	4,1
AK300.BT50.100.ER25	BT50	1-16	42	100	ER25	M24	4,3
AK300.BT50.100.ER32	BT50	1-20	50	100	ER32	M24	4,5
AK300.BT50.100.ER40	BT50	2-26	63	100	ER40	M24	4,9

For collets, see “Assembly parts and accessories”
For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER16	ER20	ER25	ER32	ER40
	Clamping nut	FS1537	FS2183	FS1540	FS1541	FS1542

Accessories

	Collets	ER16 / ER20	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 155 D 174

MAS-BT JIS B 6339 ER collet chuck
AK300.BT

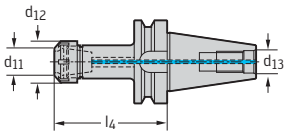


D 2

– For ER collets in accordance with DIN 6499/ISO 15488
– ISO 7388-2

Tool

JIS B 6339



Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	d_{13}	kg
AK300.BT40.075.ER16	BT40	1-10	28	75	ER16	M16	1,1
AK300.BT40.075.ER20	BT40	1-13	34	75	ER20	M16	1,2
AK300.BT40.075.ER25	BT40	1-16	42	75	ER25	M16	1,4
AK300.BT40.075.ER32	BT40	1-20	50	75	ER32	M16	1,5
AK300.BT40.075.ER40	BT40	2-26	63	75	ER40	M16	1,6
AK300.BT40.105.ER16	BT40	1-10	28	105	ER16	M16	1,3
AK300.BT40.105.ER20	BT40	1-13	34	105	ER20	M16	1,5
AK300.BT40.105.ER25	BT40	1-16	42	105	ER25	M16	1,7
AK300.BT40.105.ER32	BT40	1-20	50	105	ER32	M16	1,8
AK300.BT40.105.ER40	BT40	2-26	63	105	ER40	M16	1,9
AK300.BT50.075.ER20	BT50	1-13	34	75	ER20	M24	3,7
AK300.BT50.075.ER25	BT50	1-16	42	75	ER25	M24	4
AK300.BT50.075.ER32	BT50	1-20	50	75	ER32	M24	4
AK300.BT50.085.ER40	BT50	2-26	63	75	ER40	M24	4,2
AK300.BT50.105.ER20	BT50	1-13	34	105	ER20	M24	4,1
AK300.BT50.105.ER25	BT50	1-16	42	105	ER25	M24	4,3
AK300.BT50.105.ER32	BT50	1-20	50	105	ER32	M24	4,5
AK300.BT50.105.ER40	BT50	2-26	63	105	ER40	M24	4,9

If collet chucks are used for the internal coolant supply, the sealing discs under “Assembly parts and accessories” must be used
The clamping nut can be damaged if the chuck is used without a sealing disc.
For collets, see “Assembly parts and accessories”
For pull studs for steep tapers, see “Assembly parts and accessories/Steep taper pull studs”
Bodies and assembly parts are included in the scope of delivery.

Assembly parts

	Collets	ER16	ER20	ER25	ER32	ER40
	Clamping nut for internal coolant supply	FS1448	FS1359	FS1449	FS1360	FS1450

Accessories

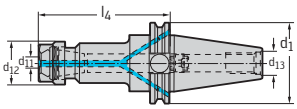
	Collets	ER16 / ER20	ER25	ER32	ER40
	Tensioning key	FS1539	FS1544	FS1545	FS1546

D 155 D 174

ASME B5.50 ER collet chuck
AB009.K



– For ER collets in accordance with DIN 6499/ISO 15488

Tool	Designation	d_1	d_{11}	d_{12} mm	l_4 mm	Collets	d_{13}	kg
ASME B5.50 	AB009.K40-ER16-067	CAT40	1-10	28	67	ER16	5/8"-11	0,98
	AB009.K40-ER16-105	CAT40	1-10	28	105	ER16	5/8"-11	1,25
	AB009.K40-ER20-105	CAT40	1-13	34	105	ER20	5/8"-11	1,32
	AB009.K40-ER20-156	CAT40	1-13	34	155	ER20	5/8"-11	1,59
	AB009.K40-ER25-105	CAT40	1-16	42	105	ER25	5/8"-11	1,48
	AB009.K40-ER32-079	CAT40	1-20	50	79	ER32	5/8"-11	1,25
	AB009.K40-ER32-105	CAT40	1-20	50	105	ER32	5/8"-11	1,5
	AB009.K40-ER40-105	CAT40	2-26	63	105	ER40	5/8"-11	1,77
	AB009.K50-ER20-105	CAT50	1-13	34	105	ER20	1"-8	3,41
	AB009.K50-ER25-105	CAT50	1-16	42	105	ER25	1"-8	3,59
	AB009.K50-ER32-105	CAT50	1-20	50	105	ER32	1"-8	3,72
	AB009.K50-ER40-105	CAT50	2-26	63	105	ER40	1"-8	3,93

D 155 D 174

Walter NCT assembly instructions



1. Assembly device with accessories



2. Example tool combination



3. Clean the inside taper and the support face



4. Insert the V 530 insert collar into the V 510.10.050 flange



5. Insert the extension into the insert collar



6. Screw the extension and the cutter adaptor together by hand using the socket wrench



7. Tighten using a torque wrench



8. Insert the master into the associated flange



9. Screw the NC tool elements together with the master



10. Tighten using a torque wrench



11. Insert the assembled tool adaptor into the steep taper



12. Install and tighten the tool

For tightening torques for NCT, see “Technical information”

Synchronous machining

To reduce process times in threading operations, manufacturers are increasingly favouring higher rotational speeds and cutting speeds (HSC). Synchronous machining is recommended for high cutting speeds in particular.

Walter Prototyp offers **Synchrospeed** tools which have been optimised specifically for this process variant. The key characteristics of these tools are their extremely high clearance, their extra short threaded section and their sharp cutting edges.

While Synchrospeed threading tools have been developed exclusively for synchronous applications, Eco threading tools can be used for both rigid and conventional tapping.

Synchronous tapping requires a machine that can synchronise the rotary motion of the main spindle with the feed motion. This is usually a standard feature on today's machining centres. Synchronous taps are compatible with conventional Weldon chucks as well as collet chucks (with square drive if possible). Both clamping devices have the disadvantage of being unable to compensate for the axial forces that are generated.

A better alternative is the synchronous tapping adaptor with minimum compensation. The synchronous tapping adaptor is a tapping chuck for machining centres with synchronous control. It guarantees a precisely defined minimum compensation and is matched to the geometry of Synchrospeed tools.



Synchronous tapping adaptor

The special features of the synchronous tapping adaptor

Unlike all other known tapping chucks, the synchronous tapping adaptor is based on a precision-machined flexor with high spring rate, which compensates both radially and axially for microscopic changes in position. The patented microcompensator is made from a special alloy originally developed for NASA. Conventional synchronous chucks use plastic parts for this purpose, but these lose their flexibility over time, at which point they are no longer able to provide microcompensation.

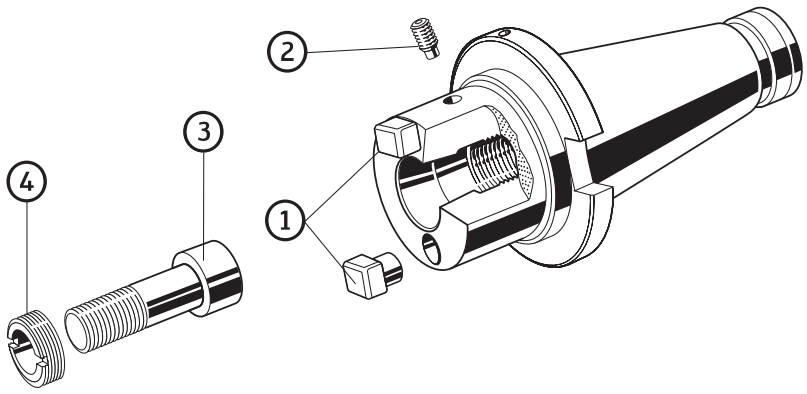
The synchronous tapping adaptor helps to considerably reduce the pressure forces that act on the flanks of the tap. This results in:

- Improved surface quality on the flanks of the cut thread
- Greater process reliability thanks to the reduced risk of breakage, particularly for small dimensions
- Longer threading tool life thanks to less friction
- Maximum utilisation of machine power



Flexor with minimum compensation

Assembly parts and accessories for Walter NCT masters



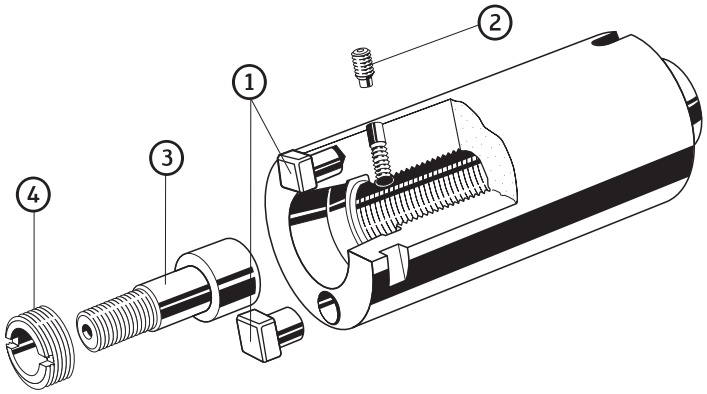
Assembly parts			d_{11} = 25 mm	d_{11} = 32 mm	d_{11} = 40 mm	d_{11} = 50 mm	d_{11} = 63 mm	d_{11} = 80 mm
①	Drive pin					FS554	FS555 (B = 12) FS557 (B = 14)	FS556 (B = 14) FS558 (B = 16)
②	DIN 914 threaded pin	for SK 40	M4 × 12	M4 × 10	M5 × 10	M5 × 10	M6 × 8	M6 × 16
		for SK 50	M4 × 12	M4 × 12	M5 × 12	M5 × 12	M6 × 16	M6 × 16
③	Screw	for SK 40	FS414	FS414	FS415	FS415	FS416	FS850
		for SK 50	FS414	FS414	FS415	FS415	FS416	FS417
④	Threaded ring		FS410	FS410	FS411	FS411	FS412	FS413

Accessories	d_{11} = 25 mm	d_{11} = 32 mm	d_{11} = 40 mm	d_{11} = 50 mm	d_{11} = 63 mm	d_{11} = 80 mm
Pipe wrench for threaded ring	FS738	FS738	FS739	FS739	FS740	FS741

Axial clamping

d_{11} mm	③ Thread	Wrench size	Torque wrench	Socket wrench	Tightening torque	Limit speed
25	M8	5	FS1385	FS402	18 Nm	20 000 rpm
32	M8	5	FS1385	FS402	18 Nm	30 000 rpm
40	M12	8	FS1386	FS403	80 Nm	30 000 rpm
50	M12	8	FS1386	FS403	80 Nm	30 000 rpm
63	M16	12	FS1386	FS404	150 Nm	30 000 rpm
80	M20	14	FS1386	FS405	200 Nm	30 000 rpm

Assembly parts and accessories for Walter NCT reducers and extensions



Assembly parts		d_{11} = 25 mm	d_{11} = 32 mm	d_{11} = 40 mm	d_{11} = 50 mm	d_{11} = 63 mm	d_{11} = 80 mm
1	Drive pin	FK 311	FK 312	FK 313	FS554	FS555 (B = 12) FS557 (B = 14)	FS556 (B = 14) FS558 (B = 16)
	Screw for drive pin	FS502	FS503	FS504			
2	DIN 914 threaded pin	M4 × 6	M4 × 8	M5 × 10	M5 × 12	M6 × 16	M6 × 16
3	Screw	FS414	FS414	FS415	FS415	FS416	FS417
4	Threaded ring	FS410	FS410	FS411	FS411	FS412	FS413

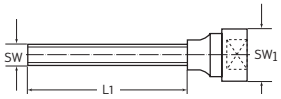
Accessories	d_{11} = 25 mm	d_{11} = 32 mm	d_{11} = 40 mm	d_{11} = 50 mm	d_{11} = 63 mm	d_{11} = 80 mm
Pipe wrench for threaded ring	FS738	FS738	FS739	FS739	FS740	FS741

Axial clamping

d_{11} mm	③ Thread	Wrench size	Torque wrench	Socket wrench	Tightening torque	Limit speed
25	M8	5	FS1385	FS402	18 Nm	20 000 rpm
32	M8	5	FS1385	FS402	18 Nm	30 000 rpm
40	M12	8	FS1386	FS403	80 Nm	30 000 rpm
50	M12	8	FS1386	FS403	80 Nm	30 000 rpm
63	M16	12	FS1386	FS404	150 Nm	30 000 rpm
80	M20	14	FS1386	FS405	200 Nm	30 000 rpm

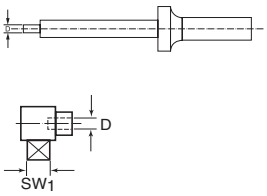
Accessories for NCT and ScrewFit

Socket wrench for NCT tools



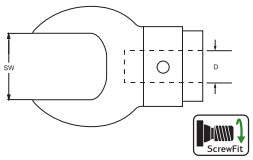
Designation	SW mm	SW_1 mm	L_1 mm	for NCT mm	for Walter porcupine milling cutters D_c mm
FS402	5	9,52	130	25-32	
FS403	8	12,7	130	40-50	
FS404	12	12,7	150	63	
FS405	14	12,7	150	80	
FS1043	8	12,7	329		63
FS1044	10	12,7	329		80

Torque wrench and head pieces



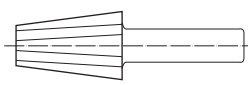
Designation	D mm	Torque range	SW_1 mm	
FS1384	16	2-25 Nm		
FS1385	16	10–100 Nm		
FS1386	16	20–200 Nm		
FS398	16		9,52	
FS399	16		12,7	

Wrench heads for ScrewFit tools

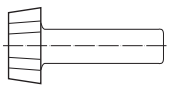


Designation	SW mm	for NCT	D mm	Tightening torque
FS1387	SW 8	T 9	16	6 Nm
FS1388	SW 12	T 14	16	25 Nm
FS1389	SW 14	T 18	16	50 Nm
FS1390	SW 17	T 22	16	80 Nm
FS1391	SW 21	T 28	16	150 Nm
FS1392	SW 30	T 36	16	200 Nm
FS1393	SW 36	T 45	22	200 Nm
FS1394	Adaptor for FS1393 (from D 22 to D 16)		22	200 Nm

Taper cleaner



Version A

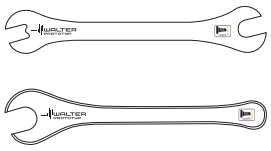


Version B for NCT

Designation	for tapered shank	Version	
V520.40.000	ISO 40	A	
V520.45.000	ISO 45	A	
V520.50.000	ISO 50	A	
V520.25.032	D_2 = 25 + 32	B	
V520.40.050	D_2 = 40 + 45	B	
V520.63.000	D_2 = 63	B	
V520.80.000	D_2 = 80	B	

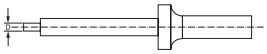
Accessories for ConeFit

Open-ended spanner



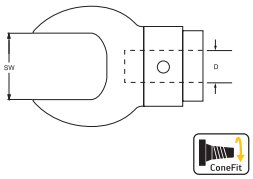
Designation	E	SW	Type
FS2124-E10	10	8 + 6 for Spade	Twin head
FS2125-E12	12	10 + 8 for Spade	Twin head
FS2126-E16	16	12 + 10 for Spade	Twin head
FS2127-E20	20	16	Single head
FS2128-E25	25	20	Single head

Torque wrench



Designation	D	Torque range	
FS1384	16	2–25 Nm	
FS1385	16	10–100 Nm	

Wrench heads for ConeFit tools



Designation	E	SW	D	Nm
FS2135-E10–R	10	8	16	12
FS2136-E12–R	12	10	16	15
FS2137-E16–R	16	12	16	30
FS2138-E20–R	20	16	16	50
FS2141-E25-R	25	20	16	65

Set

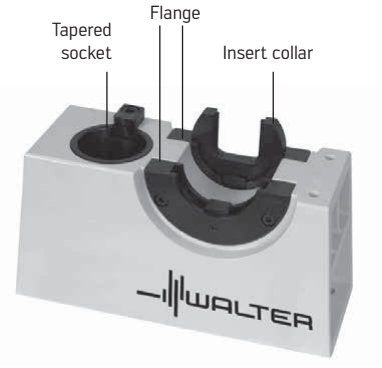
ConeFit SET-E12-MULTI – metric



Designation	E	Contents	Remarks
CONEFIT-SET-E12-MULTI	12	H3E82378-E12-12	Qmax roughing cutter
		H3E21138-E12-12	N 50 finishing face milling cutter
		H3E21317-E12-12	N50 Tough Guys
		H3E58318-E12-12	Chamfer milling cutter 90°
		AK610.Z12.E12.022	Toolholder type A
		AK610.Z16.E12.025	Toolholder type C
		FS2125-E12	Open-ended spanner

Assembly accessories for Walter Capto™

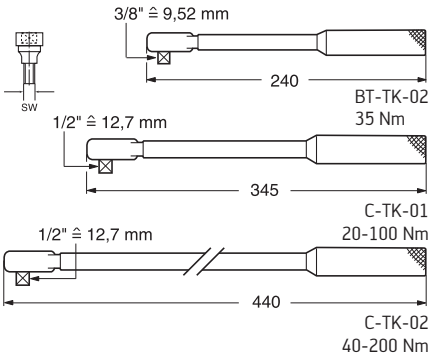
Assembly device, flange, insert collars



Size	Basic body with integrated tapered socket Order no.	Flange Order no.	Insert collar Order no.	Tapered socket Order no.
C3	V500.00.C3	V510.23.050	V530.C3	V540.C3
C4	V500.00.C4	V510.23.050	V530.C4	V540.C4
C5	V500.00.C5	V510.23.050	V530.C5	V540.C5
C6	V500.00.C6	V510.23.050	V530.C6	V540.C6
C8	V500.00.C8	V510.23.050	V530.C8	V540.C8

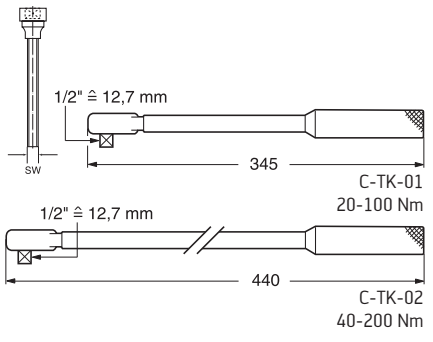
The assembly device is already equipped with the appropriate tapered socket.
The flange and insert collar must be ordered separately. The fixture enables two flanges (e.g. for equipping two different Walter Capto™ sizes) to be mounted opposite each other on the basic body.

Torque wrench for bushing/cam clamping



Torque wrench Order no.	Size	Tightening torque Nm	Spare parts Wrench adaptor	Spare parts WAF [mm]
BT-TK-02	C3	35	5680 035-05	8
C-TK-01	C4	50	5680 035-06	10
C-TK-01	C5	70	5680 035-07	12
C-TK-01	C6	90	5680 035-07	12
C-TK-02	C8	130	5680 035-07	12

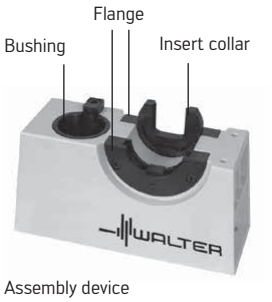
Torque wrench for centre screw clamping



Torque wrench Order no.	Size	Tightening torque Nm	Spare parts Wrench adaptor	Spare parts WAF [mm]
C-TK-01	C3	45	5680 015-05	8
C-TK-01	C4	55	5680 015-05	8
C-TK-01	C5	95	5680 015-01	14
C-TK-02	C6	170	5680 015-02	14
C-TK-02	C8	170	5680 015-02	14

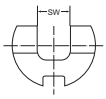
Assembly accessories for SK and HSK

Assembly device, flange, insert collars



Assembly device


Flange



Insert collar

Assembly device		Bushing	Flange		Insert collars for NCT		
Designation	Integrated bushing for	Designation	Designation	for	Insert collars Designation	SW mm	D_1 mm
V 500.00.040	SK 40	V540.23.040	V 510.10.040	ISO 40 DIN 2080			
			V 510.23.040	ISO 40 DIN 69871 ANSI B5.50 und CAT			
			V 510.40.040	ISO 40 MAS BT			
V 500.00.050	SK 50	V540.23.050	V 510.10.050	ISO 50 DIN 2080 (Adaptor for NCT insert collars)	V 530.22.025 V 530.27.032 V 530.32.040 V 530.41.050 V 530.55.063 V 530.70.080	22 27 32 41 55 70	25 32 40 50 63 80
					Insert collars suitable for V 510.10.050 flange		
			V 510.23.050	ISO 50 DIN 69871 ANSI B5.50 and CAT			
			V 510.24.050	ISO 50 DIN 69871 part 2, form C			
			V 510.40.050	ISO 50 MAS BT			
V 500.00.HSK063	HSK 63	V540.HSK.063AC	V 510.HSK063AC	HSK 63 Form A+C			
V 500.00.HSK100	HSK 100	V540.HSK.100AC	V 510.HSK100AC	HSK 100 Form A+C			

The assembly device, flange and insert collars must be ordered separately. The assembly device is equipped with a suitable bushing.
Up to two flanges can be mounted on the assembly device.

Assembly set


NCT assembly set



ScrewFit assembly set

Designation	Consisting of	
FS 1407	Torque wrench	FS 1385 + 1386
	Socket wrench	FS 402–405
	Taper cleaner	all V 520, version B
	Insert collars	all V 530
	Torx inserts	FS 806–808
	Wooden box	
FS 1395	Torque wrench	FS 1384 – FS 1386
	Fork heads	FS 1387 – FS 1393
	Adaptor	FS 1394
	Wooden box	

Tightening torques for thread cutting and tap shank dimensions

Standard values for torque adjustment of tapping chucks

Thread type	Dimensions [mm]	Pitch [mm]	Torque setting value for thread cutting	Fracture torque of taps	Torque setting value for thread forming
M, MF	1	≤ 0,25	0,03*	0,03	0,07*
M, MF	1,2	≤ 0,25	0,07*	0,07	0,12
M, MF	1,4	≤ 0,3	0,1*	0,1	0,16
M, MF	1,6	≤ 0,35	0,15*	0,15	0,25
M, MF	1,8	≤ 0,35	0,24*	0,24	0,3
M, MF	2	≤ 0,4	0,3*	0,3	0,4
M, MF	2,5	≤ 0,45	0,4	0,6	0,6
M, MF	3	≤ 0,5	0,6	1	1
M, MF	3,5	≤ 0,6	1,0	1,6	1,5
M, MF	4	≤ 0,7	1,6	2,3	2,4
M, MF	5	≤ 0,8	2,5	5	4
M, MF	6	≤ 1,0	5	8,1	8
M, MF	8	≤ 1,25	10	20	17
M, MF	10	≤ 1,5	18	41	30
M, MF	12	≤ 1,75	25	70	50
M, MF	14	≤ 2,0	45	130	75
M, MF	16	≤ 2,0	50	160	85
M, MF	18	≤ 2,5	80	260	150
M, MF	20	≤ 2,5	90	390	160
M, MF	22	≤ 2,5	100	450	170
M, MF	24	≤ 3,0	103	550	260
M, MF	27	≤ 3,0	160	850	290
M, MF	30	≤ 3,5	220	1100	430
M, MF	33	≤ 3,5	240	1600	470
M, MF	36	≤ 4,0	280	2300	650
M, MF	39	≤ 4,0	320		
M, MF	42	≤ 4,5	400		
M, MF	45	≤ 4,5	420		
M, MF	48	≤ 5,0	560		
M, MF	52	≤ 5,0	630		
M, MF	56	≤ 5,5	710		

When correction values are used, the torque setting can exceed the fracture torque of the tap.
Basis: Material: 42CrMo4, 1000 N/mm², thread depth: $1.5 \times D_n$
* Thread depth not reached

Tap shank dimensions

Shank dimensions [mm]	DIN 371	DIN 374	DIN 376	Square pin	Size
3,5 × 2,7	M3	M5	M5	FS779	1, 3, 4
4,5 × 3,4	M4	M6	M6	FS536	1, 3, 4
6,0 × 4,9	M5 / M6	M8	M8	FS538	1, 3, 4
7,0 × 5,5		M10	M10	FS539	1, 3, 4
8,0 × 6,2	M8			FS540	1, 3, 4
9,0 × 7,0		M12	M12	FS541	1, 3, 4
10,0 × 8,0	M10			FS542	1, 3, 4
11,0 × 9,0		M14	M14	FS543	1, 3, 4
12,0 × 9,0		M16	M16	FS544	1, 3, 4
14,0 × 11,0		M18	M18	FS545	1, 3, 4
16,0 × 12,0		M20	M20	FS546	1, 3, 4
18,0 × 14,5		M22 / M24	M22 / M24	FS547	1, 3, 4
20,0 × 16,0		M27	M27	FS548	1, 3, 4
22,0 × 18,0		M30	M30	FS549	1, 3, 4
25,0 × 20,0		M33	M33	FS550	1, 3, 4
18,0 × 14,5		M22 / M24	M22 / M24	FS780	5
20,0 × 16,0		M27	M27	FS781	5
22,0 × 18,0		M30	M30	FS782	5
25,0 × 20,0		M33	M33	FS783	5
28,0 × 22,0		M36	M36	FS784	5
32,0 × 24,0		M39 / M42	M39 / M42	FS785	5
36,0 × 29,0		M48	M48	FS786	5

Conversion for other materials

Material	Factor
Soft steel	0,7
Steel 1200 N/mm²	1,2
Steel 1600 N/mm²	1,4
VA	1,3
GG/GGG	0,6
Aluminium/copper	0,4
Ti alloys	1,1
Ni alloys	1,4

Fastening Bolts for face mill adaptors

When using face mill adaptors A150, A155 and AK155 in combination with porcupine milling cutters and ramping milling cutters with cylindrical bore and transverse keyway in accordance with DIN 138, the fastening bolt of the adaptor must be replaced.

Designation	Fastening bolt for adaptor*
F4138.B16.040.Z03.33	M8 × 40 (SW6)
F4138.B16.040.Z03.43	M8 × 50 (SW6)
F4138.B22.050.Z04.43	M10 × 45 (SW8)
F4138.B22.050.Z04.54	M10 × 55 (SW8)
F4138.B27.063.Z05.43	M12 × 45 (SW10)
F4138.B27.063.Z05.54	M12 × 55 (SW10)
F4138.B32.080.Z06.54	M16 × 65 (SW14)
F4138.B32.080.Z06.65	M16 × 70 (SW14)
F4238.B22.050.Z03.43	M10 × 45 (SW8)
F4238.B27.063.Z04.43	M12 × 55 (SW10)
F4238.B27.063.Z04.57	M12 × 70 (SW10)
F4238.B27.066.Z04.57	M12 × 70 (SW10)
F4238.B32.080.Z05.57	M16 × 70 (SW14)
F4238.B32.080.Z05.71	M16 × 90 (SW14)
F4238.B32.085.Z05.71	M16 × 90 (SW14)
F4338.B27.063.Z04.31	M12 × 40 (SW10)
F4338.B27.063.Z04.47	M12 × 50 (SW10)
F4338.B27.063.Z04.63	M12 × 65 (SW10)
F4338.B32.080.Z05.31	M16 × 35 (SW14)
F4338.B32.080.Z05.63	M16 × 70 (SW14)
F4338.B32.080.Z05.78	M16 × 90 (SW14)
F4338.B40.100.Z05.78	M20 × 80 (SW17)
F4338.B40.125.Z06.94	M20 × 90 (SW17)
F5038.B16.040.Z03.32	M8 × 40 (SW6)
F5038.B16.040.Z03.40	M8 × 50 (SW6)
F5138.B22.040.Z02.34	M10 × 40 (SW8)
F5138.B22.040.Z02.45	M10 × 45 (SW8)

Designation	Fastening bolt for adaptor*
F5138.B22.050.Z03.34	M10 × 40 (SW8)
F5138.B22.050.Z03.45	M10 × 45 (SW8)
F5138.B27.063.Z04.45	M12 × 50 (SW10)
F5138.B27.063.Z04.56	M12 × 60 (SW10)
F5138.B32.080.Z05.56	M16 × 65 (SW14)
F2238.B.050.Z02.42	M10 × 40 (SW8)
F2238.B.063.Z03.50	M12 × 35 (SW10)
F2238.B.065.Z03.50	M12 × 35 (SW10)
F2238.B.080.Z03.67	M16 × 60 (SW14)
F2238.B.082.Z03.67	M16 × 60 (SW14)
F2238.B.100.Z04.77	M20 × 70 (SW17)
F2238.B.125.Z05.87	M24 × 80 (SW19)
M2131-040-B16-03-15	M8 × 40 (SW6)
M2131-050-B22-04-15	M10 × 35 (SW8)
M2131-063-B22-05-15	M10 × 35 (SW8)
M2131-080-B27-05-15	M12 × 40 (SW10)
M2131-050-B22-03-20	M10 × 40 (SW8)
M2131-063-B22-04-20	M10 × 35 (SW8)
M3255-050-B22-04-46	M10 × 45 (SW8)
M3255-050-B22-05-46	M10 × 45 (SW8)
M3255-063-B27-05-46	M12 × 50 (SW10)
M3255-063-B27-06-46	M12 × 50 (SW10)
M3255-080-B32-05-58	M16 × 65 (SW14)
M3255-080-B32-06-58	M16 × 65 (SW14)
M4257-050-B22-02-47	M10 × 45 (SW8)
M4257-063-B27-03-54	M12 × 70 (SW10)
M4258-080-B32-03-67	M16 × 90 (SW14)
M4258-100-B40-04-77	M20 × 80 (SW17)

* ISO 4762 cap screw (12.9)

Recommended a_p [mm] limits for AK182 hydraulic expansion chuck

D_C [mm]		12 mm			16 mm		20 mm	
Adaptor in the hydraulic expansion chuck		AK182 … 12 direct	AK182 … 20 reduced	AK182 … 32 reduced	AK182 … 20 reduced	AK182 … 32 reduced	AK182 … 20 direct	AK182 … 32 reduced
P	ISO-P	10	15	30	10	25	10	20
M	ISO-M	10	13	30	10	30	10	23
K	ISO-K	12	18	40	12	30	10	28
N	Aluminium	30	40	40	40	40	16	40
S	Inconel	8	12	27	10	23	8	18

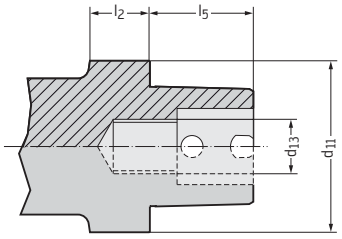


Page

Clamping systems for tools and tool adaptors	D 160
ISO tolerances	D 167
ER collets	D 168
ER tapping collets	D 170
Sealing discs	D 172
Quick-change collets	D 175
Torque setting tools for A331 quick-change collet	D 176
F5055 assembly parts	D 177
Pull stud	D 178
Transfer units for HSK adaptors	D 179

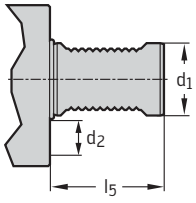
Clamping systems for tools and tool adaptors

Walter Capto™ tool adaptor ISO 26623



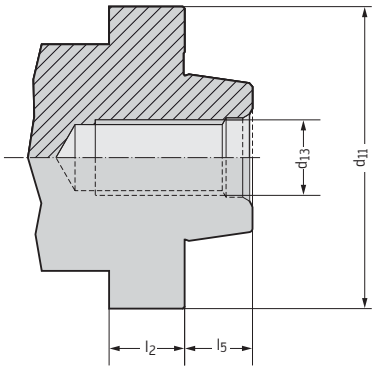
Type	d_{11} mm	l_2 mm	l_5 mm	d_{13}
Capto™ C3	32	15	19	M12 × 1,5
Capto™ C4	40	20	24	M14 × 1,5
Capto™ C5	50	20	30	M16 × 1,5
Capto™ C6	63	22	38	M20 × 2
Capto™ C8	80	30	48	M20 × 2

VDI tool adaptor DIN 69880



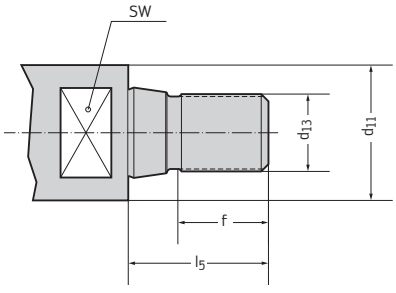
Type	d_1 mm	d_2 mm	l_5 mm
VDI 16	16	8	32
VDI 20	20	10	40
VDI 25	25	10	48
VDI 30	30	14	55
VDI 40	40	14	63
VDI 50	50	16	78

NCT tool adaptor



Type	d_{11} mm	d_{13}	l_5 mm	l_2 mm
25	24,85	M8	6,975	14
32	31,85	M8	6,975	14
40	39,85	M12	11,975	16
50	49,85	M12	11,975	16
63	62,85	M16	15,975	16
80	79,85	M20	17,975	18

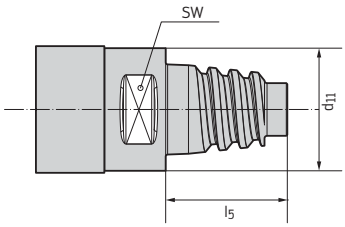
ScrewFit tool adaptor



Type	d_{11} mm	d_{13}	l_5 mm	f mm	SW mm
T09	9,7	M5	14	6	8
T14	14,5	M8	18	10	12
T18	18,5	M10	21	12	14
T22	22	M12	23	14	17
T28	28	M16	29	18	21
T36	36	M20	35	20	30
T45	45	M20	35	20	36

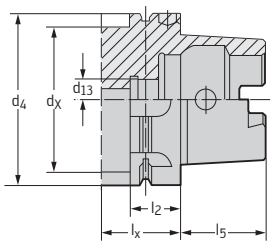
Clamping systems for tools and tool adaptors

ConeFit tool adaptor



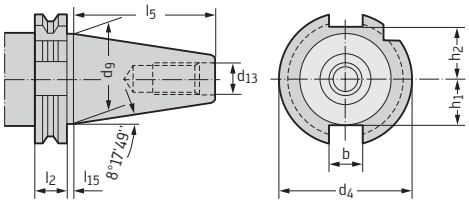
Type	d_{11} mm	l_5 mm	SW mm
E10	9,7	12,4	8
E12	11,7	14,5	10
E16	15,5	18,7	12
E20	19,3	21,3	16
E25	24,2	25,6	20

HSK tool adaptor DIN 69893 part 1, form A



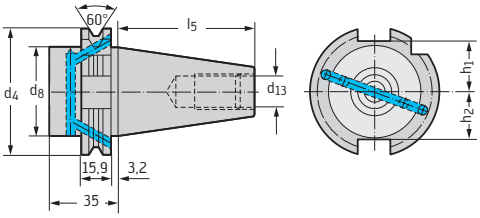
HSK	l_5 mm	d_4 mm	$d_{x\ max.}$ mm	d_{13}	l_2 mm	$l_{x\ min.}$ mm
63	32	63	53	M18 × 1,0	26	42
100	50	100	85	M24 × 1,5	29	45

SK tool adaptor DIN 69871 part 1, form A



SK No.	l_5 - 0,3 mm	l_2 - 0,1 mm	l_{15} ± 0,2 mm	d_9 mm	d_{13}	d_4 - 0,1 mm	b H12 mm	h_1 - 0,4 mm	h_2 - 0,4 mm
40	68,4	15,9	3,2	44,45	M16	63,55	16,1	22,8	25,0
50	101,75	15,9	3,2	69,85	M24	97,50	25,7	35,5	37,7

SK tool adaptor DIN 69871 part 1, form B

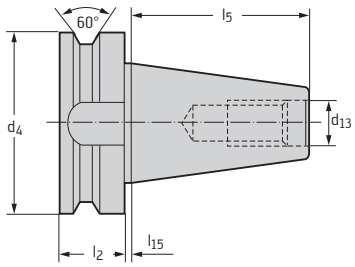


SK No.	l_5 mm	d_4 mm	$d_{8\ max.}$ mm	d_{13}	h_2 mm	h_1 mm
40	68,40	63,55	50	M16	22,8	25,0
50	101,75	97,50	80	M24	35,5	37,7

(with internal coolant supply; dimensions similar to form A)

Clamping systems for tools and tool adaptors

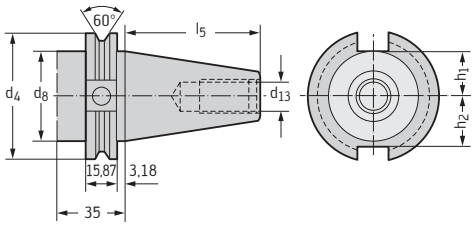
MAS BT tool adaptor



SK No.	l_5 mm	d_4 mm	d_{13}	l_2 mm	l_{15} mm
40	65,4	63	M16	25	2
50	101,8	100	M24	35	3

D 3

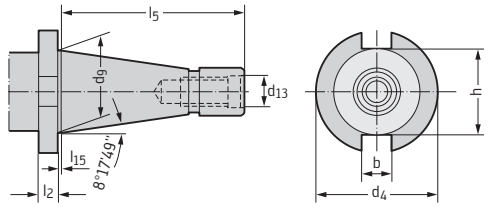
CAT tool adaptor ANSI B5.50 / CAT



(ANSI / ASME B5.50 – 1985)

SK No.	l_5 mm	d_4 mm	d_8 mm	d_{13}	h_2 mm	h_1 mm
40	68,25	63,5	44,5	M16	22,6	25,0
50	101,6	98,4	70,0	M24	35,3	37,7

SK tool adaptor DIN 2080

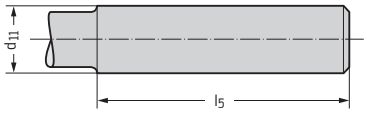


SK No.	d_9 mm	l_5 mm	l_{15} ± 0,2 mm	d_{13}	d_4 - 0,4 mm	l_2 ± 0,15 mm	b H12 mm	h max. mm
40	44,45	93,4	1,6	M16	63	10	16,1	45
50	69,85	126,8	3,2	M24	97,5	12	25,7	70,6

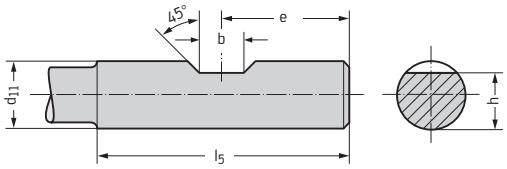
Clamping systems for tools and tool adaptors

Parallel shank DIN 6535 HA / DIN 6535 HB

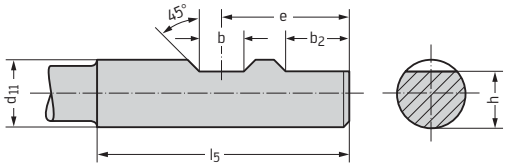
Form HA
for d_{11} = 6-20 mm



Form HB
for d_{11} = 6-20 mm



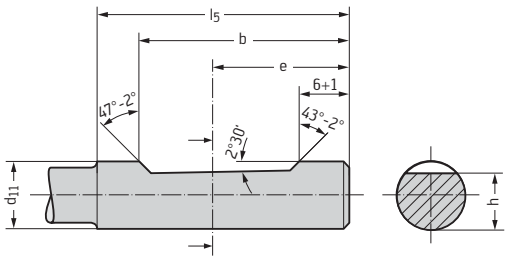
Form HB
for d_{11} = 25 mm



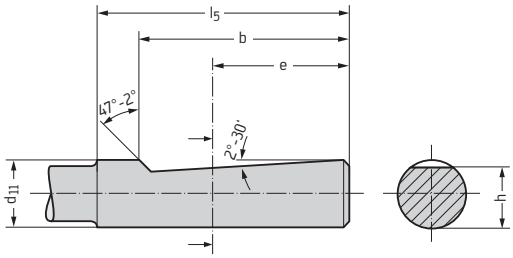
d_{11} h6 mm	l_5 +2 mm	b +0,05 mm	e -1 mm	b_2 +1 mm	h h11 mm
6	36	4,2	18	–	5,1
8	36	5,5	18	–	6,9
10	40	7	20	–	8,5
12	45	8	22,5	–	10,4
14	45	8	22,5	–	12,7
16	48	10	24	–	14,2
18	48	10	24	–	16,2
20	50	11	25	–	18,2
25	56	12	32	17	23,0

Parallel shank DIN 6535 HE

for d_{11} = 6-20 mm



for d_{11} = 25 mm

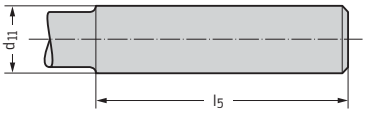


d_{11} h6 mm	l_5 +2 mm	b -1 mm	e mm	h mm
6	36	25	18	5,1
8	36	25	18	6,9
10	40	28	20	8,5
12	45	33	22,5	10,4
14	45	33	22,5	12,7
16	48	36	24	14,2
18	48	36	24	16,2
20	50	38	25	18,2
25	56	44	32	23,0

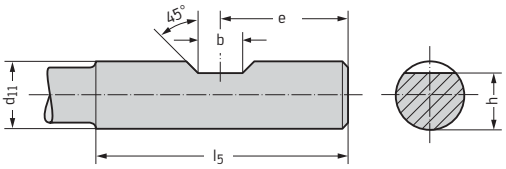
Clamping systems for tools and tool adaptors

Parallel shank DIN 1835 A / DIN 1835 B

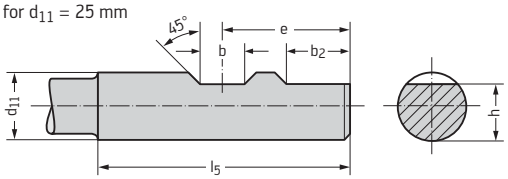
Form A
for d_{11} = 3-20 mm



Form B
for d_{11} = 3-20 mm



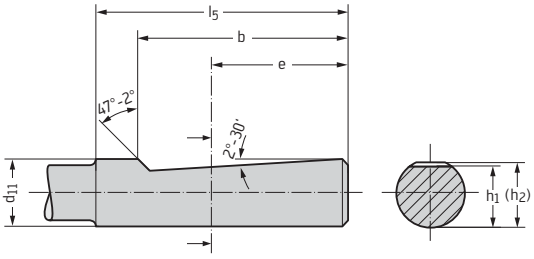
Form B
for d_{11} = 25 mm



d_{11} h6 mm	l_5 +2 mm	b +0,05 mm	e -1 mm	b_2 +1 mm	h h13 mm
3	28	–	–	–	–
4	28	–	–	–	–
5	28	–	–	–	–
6	36	4,2	18	–	4,8
8	36	5,5	18	–	6,6
10	40	7	20	–	8,4
12	45	8	22,5	–	10,4
16	48	10	24	–	14,2
20	50	11	25	–	18,2
25	56	12	32	17	23,0
32	60	14	36	19	30,0
40	70	14	40	19	38,0
50	80	18	45	23	47,8

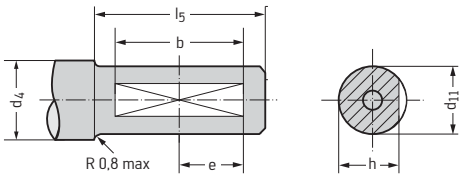
Parallel shank DIN 1835 E

Form E



d_{11} h6 mm	l_5 +2 mm	b -1 mm	e mm	h_1 mm	(h_2) h13 mm
6	36	25	18	5,4	4,8
8	36	25	18	7,2	6,6
10	40	28	20	9,1	8,4
12	45	33	22,5	11,2	10,4
16	48	36	24	15,0	14,2
20	50	38	25	19,1	18,2
25	56	44	32	24,1	23,0
32	60	48	35	31,2	30,0

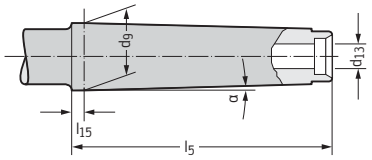
Parallel shank ISO 9766:1990 (E)



d_{11} h6 mm	d_4 min. mm	h h13 mm	l_5 ±1 mm	e mm	b mm
20	25	18,2	50	14,5	29
25	31	23	56	17,5	35
32	38	30	60	19,5	39

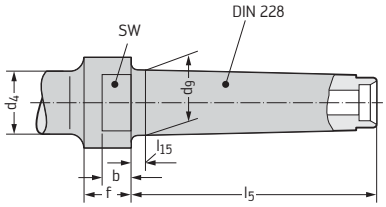
Clamping systems for tools and tool adaptors

MT tool adaptor DIN 228 A



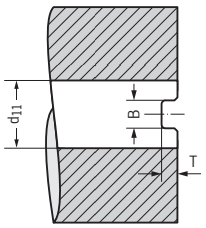
MT	d_9 mm	l_5 mm	l_{15} mm	α	d_{13}
0	9,045	53	3	1°29′27″	–
1	12,065	57	3,5	1°25′43″	M6
2	17,780	69	5	1°25′50″	M10
3	23,825	86	5	1°26′16″	M12
4	31,267	109	6,5	1°29′15″	M16
5	44,399	136	6,5	1°30′26″	M20

MT tool adaptor DIN 2207



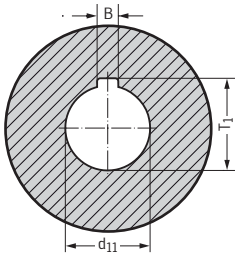
MT	d_9 mm	l_5 mm	l_{15} mm	d_4 mm	f mm	b mm	SW d_9 mm
3	23,825	86	5	36	18	12	24
4	31,267	109	6,5	43	23	15	32
5	44,399	136	6,5	60	28	18	45

Bore with transverse keyway DIN 138 – A 10



d_{11} mm	B H11 mm	T H12 mm
16	8,4	5,6
22	10,4	6,3
27	12,4	7
32	14,4	8
40	16,4	9

Bore with longitudinal keyway DIN 138 – L 10

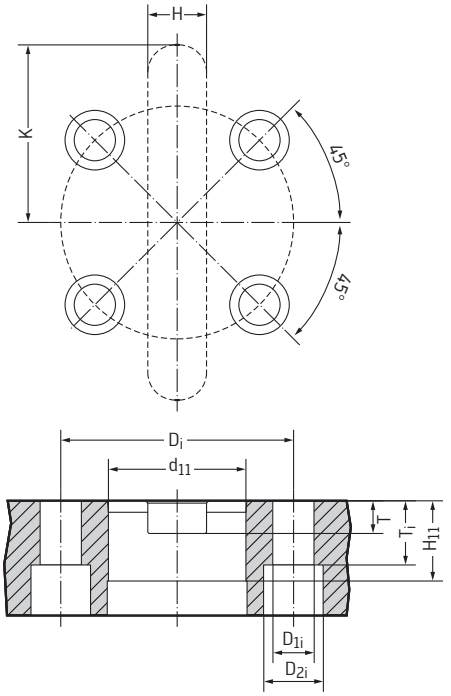


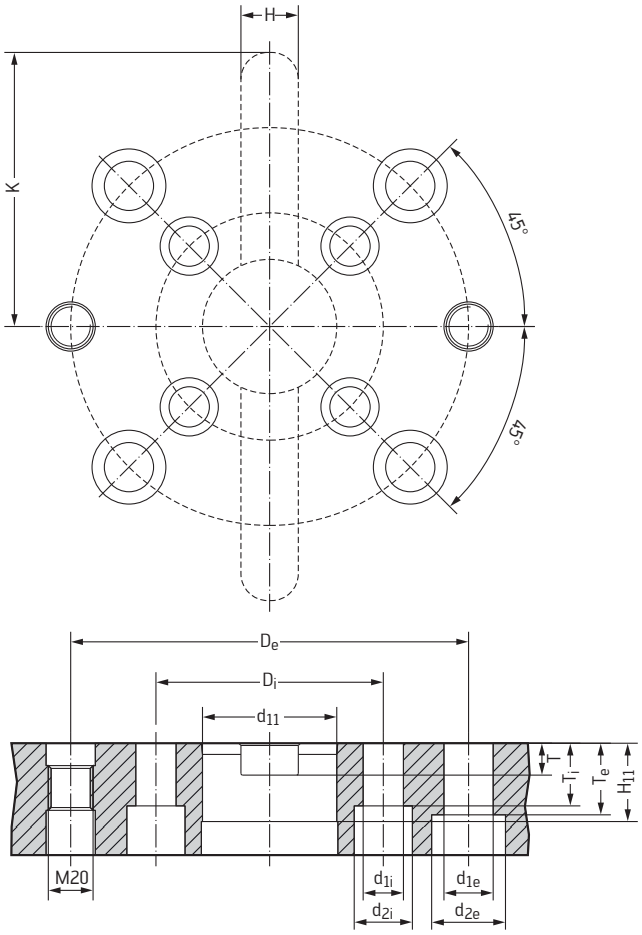
d_{11} H7 mm	B mm	T_1 mm
16	4	17,7
22	6	24,1
27	7	29,8
32	8	34,8
40	10	43,5
50	12	53,6
60	14	64,2

Clamping systems for tools and tool adaptors

Bores with transverse keyway for spindle heads in accordance with DIN 2079 form B	d_{11} mm	H_{11} mm	D_i mm	d_{1i} mm	d_{2i} mm	D_e mm	d_{1e} mm	d_{2e} mm	H mm	T mm	K mm	T_i mm	T_e mm
ISO 40/40 B	40	30	66,7	14	–	–	–	–	16,455	9,075	52,5	–	–
ISO 60/50 B	60	35	101,6	18	26	–	–	–	25,64	14,25	77,5	28	–
ISO 60/60-50 BB	60	35	101,6	18	26	177,8	22	33	25,64	14,25	122,5	28	32

D 3





ISO tolerances

Nominal size range in mm	Tolerances* for external dimensions																
	d11	e8	h5	h6	h7	h8	h9	h10	h11	h12	js14	js16	k6	k10	k11	k12	m7
> 3	-20 -80	-14 -28	0 -4	0 -6	0 -10	0 -14	0 -25	0 -40	0 -60	0 -100	+125 -125	+300 -300	+6 0	+40 0	+60 0	+100 0	+12 +2
> 3 ≤ 6	-30 -105	-20 -38	0 -5	0 -8	0 -12	0 -18	0 -30	0 -48	0 -75	0 -120	+150 -150	+375 -375	+9 +1	+48 0	+75 0	+120 0	+16 +4
> 6 ≤ 10	-40 -130	-25 -47	0 -6	0 -9	0 -15	0 -22	0 -36	0 -58	0 -90	0 -150	+180 -180	+450 -450	+10 +1	+58 0	+90 0	+150 0	+21 +6
> 10 ≤ 18	-50 -160	-32 -59	0 -8	0 -11	0 -18	0 -27	0 -43	0 -70	0 -110	0 -180	+215 -215	+550 -550	+12 +1	+70 0	+110 0	+180 0	+25 +7
> 18 ≤ 30	-65 -195	-40 -73	0 -9	0 -13	0 -21	0 -33	0 -52	0 -84	0 -130	0 -210	+260 -260	+650 -650	+15 +2	+84 0	+130 0	+210 0	+29 +8
> 30 ≤ 50	-80 -240	-50 -89	0 -11	0 -16	0 -25	0 -39	0 -62	0 -100	0 -160	0 -250	+310 -310	+800 -800	+18 +2	+100 0	+160 0	+250 0	+34 +9
> 50 ≤ 80	-100 -290	-60 -106	0 -13	0 -19	0 -30	0 -46	0 -74	0 -120	0 -190	0 -300	+370 -370	+950 -950	+21 +2	+120 0	+190 0	+300 0	+41 +11
> 80 ≤ 120	-120 -340	-72 -126	0 -15	0 -22	0 -35	0 -54	0 -87	0 -140	0 -220	0 -350	+435 -435	+1100 -1100	+25 +3	+140 0	+220 0	+350 0	+48 +13
> 120 ≤ 180	-145 -395	-85 -148	0 -18	0 -25	0 -40	0 -63	0 -100	0 -160	0 -250	0 -400	+500 -500	+1250 -1250	+28 +3	+160 0	+250 0	+400 0	+55 +15
> 180 ≤ 250	-170 -460	-100 -172	0 -20	0 -29	0 -46	0 -72	0 -115	0 -185	0 -290	0 -460	+575 -575	+1450 -1450	+33 +4	+185 0	+290 0	+460 0	+63 +17

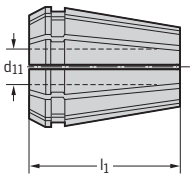
Nominal size range in mm	Tolerances* for external dimensions
	z9
> 3	+51 +26
> 3 ≤ 6	+65 +35
> 6 ≤ 10	+78 +42
> 10 ≤ 14	+93 +50
> 14 ≤ 18	+103 +60
> 18 ≤ 24	+125 +73
> 24 ≤ 30	+140 +88
> 30 ≤ 40	+174 +112
> 40 ≤ 50	+196 +136
> 50 ≤ 65	+246 +172
> 65 ≤ 80	+284 +210
> 80 ≤ 100	+345 +258
> 100 ≤ 120	+397 +310
> 120 ≤ 140	+465 +365
> 140 ≤ 160	+515 +415
> 160 ≤ 180	+565 +465
> 180 ≤ 200	+635 +520

Nominal size range in mm	Tolerances* for internal dimensions			
	H6	H7	H11	H12
> 3	+6 0	+10 0	+60 0	+0,10 0
> 3 ≤ 6	+8 0	+12 0	+75 0	+0,12 0
> 6 ≤ 10	+9 0	+15 0	+90 0	+0,15 0
> 10 ≤ 18	+11 0	+18 0	+110 0	+0,18 0
> 18 ≤ 30	+13 0	+21 0	+130 0	+0,21 0
> 30 ≤ 50	+16 0	+25 0	+160 0	+0,25 0
> 50 ≤ 80	+19 0	+30 0	+190 0	+0,30 0
> 80 ≤ 120	+22 0	+35 0	+220 0	+0,35 0
> 120 ≤ 180	+25 0	+40 0	+250 0	+0,40 0
> 180 ≤ 250	+29 0	+46 0	+290 0	+0,46 0

* Tolerances in µm in accordance with DIN ISO 286 (previously: DIN 7160 or DIN 7161)

DIN 6499 ER collets
C330



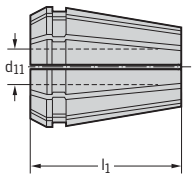
Tool	Designation	Collets	d_{11} mm	l_1 mm	kg
DIN 6499 	C330.06.010	ER11	1.00 - 0.75	18	0,02
	C330.06.020	ER11	2.00 - 1.75	18	0,01
	C330.06.030	ER11	3.00 - 2.50	18	0,02
	C330.06.040	ER11	4.00 - 3.50	18	0,01
	C330.06.050	ER11	5.00 - 4.50	18	0,01
	C330.06.060	ER11	6.00 - 5.50	18	0,01
	C330.10.010	ER16	1.0 - 0.5	27,5	0,02
	C330.10.020	ER16	2.0 - 1.0	27,5	0,01
	C330.10.030	ER16	3.0 - 2.0	27,5	0,01
	C330.10.040	ER16	4.0 - 3.0	27,5	0,02
	C330.10.050	ER16	5.0 - 4.0	27,5	0,02
	C330.10.060	ER16	6.0 - 5.0	27,5	0,02
	C330.10.070	ER16	7.0 - 6.0	27,5	0,02
	C330.10.080	ER16	8.0 - 7.0	27,5	0,02
	C330.10.090	ER16	9.0 - 8.0	27,5	0,01
	C330.10.100	ER16	10.0 - 9.0	27,5	0,01
	C330.13.060	ER20	6.0 - 5.0	31,5	0,05
	C330.13.050	ER20	5.0 - 4.0	31,5	0,05
	C330.13.120	ER20	12.0 - 11.0	31,5	0,03
	C330.13.030	ER20	3.0 - 2.0	31,5	0,05
	C330.13.010	ER20	1.0 - 0.5	31,5	0,05
	C330.13.110	ER20	11.0 - 10.0	31,5	0,03
	C330.13.130	ER20	13.0 - 12.0	31,5	0,03
	C330.13.040	ER20	4.0 - 3.0	31,5	0,05
	C330.13.020	ER20	2.0 - 1.0	31,5	0,05
	C330.13.070	ER20	7.0 - 6.0	31,5	0,05
	C330.13.080	ER20	8.0 - 7.0	31,5	0,04
	C330.13.100	ER20	10.0 - 9.0	31,5	0,04
	C330.13.090	ER20	9.0 - 8.0	31,5	0,04
	C330.16.020	ER25	2.0 - 1.0	34	0,08
	C330.16.030	ER25	3.0 - 2.0	34	0,08
	C330.16.040	ER25	4.0 - 3.0	34	0,08
	C330.16.050	ER25	5.0 - 4.0	34	0,08
	C330.16.060	ER25	6.0 - 5.0	34	0,08
	C330.16.070	ER25	7.0 - 6.0	34	0,08
	C330.16.080	ER25	8.0 - 7.0	34	0,08
	C330.16.090	ER25	9.0 - 8.0	34	0,07
	C330.16.100	ER25	10.0 - 9.0	34	0,07
	C330.16.110	ER25	11.0 - 10.0	34	0,07
	C330.16.120	ER25	12.0 - 11.0	34	0,06
	C330.16.130	ER25	13.0 - 12.0	34	0,06
	C330.16.140	ER25	14.0 - 13.0	34	0,06
	C330.16.150	ER25	15.0 - 14.0	34	0,05
	C330.16.160	ER25	16.0 - 15.0	34	0,05

D 3

D 174

DIN 6499 ER collets
C330



Tool	Designation	Collets	d_{11} mm	l_1 mm	kg
DIN 6499 	C330.20.020	ER32	2.0 - 1.0	40	0,14
	C330.20.030	ER32	3.0 - 2.0	40	0,15
	C330.20.040	ER32	4.0 - 3.0	40	0,16
	C330.20.050	ER32	5.0 - 4.0	40	0,16
	C330.20.060	ER32	6.0 - 5.0	40	0,16
	C330.20.070	ER32	7.0 - 6.0	40	0,16
	C330.20.080	ER32	8.0 - 7.0	40	0,16
	C330.20.090	ER32	9.0 - 8.0	40	0,15
	C330.20.100	ER32	10.0 - 9.0	40	0,15
	C330.20.110	ER32	11.0 - 10.0	40	0,14
	C330.20.120	ER32	12.0 - 11.0	40	0,14
	C330.20.130	ER32	13.0 - 12.0	40	0,12
	C330.20.140	ER32	14.0 - 13.0	40	0,13
	C330.20.150	ER32	15.0 - 14.0	40	0,13
	C330.20.160	ER32	16.0 - 15.0	40	0,12
	C330.20.170	ER32	17.0 - 16.0	40	0,12
	C330.20.180	ER32	18.0 - 17.0	40	0,11
	C330.20.190	ER32	19.0 - 18.0	40	0,10
	C330.20.200	ER32	20.0 - 19.0	40	0,10
	C330.26.030	ER40	3.0 - 2.0	46	0,27
	C330.26.040	ER40	4.0 - 3.0	46	0,3
	C330.26.050	ER40	5.0 - 4.0	46	0,29
	C330.26.060	ER40	6.0 - 5.0	46	0,29
	C330.26.070	ER40	7.0 - 6.0	46	0,27
	C330.26.080	ER40	8.0 - 7.0	46	0,29
	C330.26.090	ER40	9.0 - 8.0	46	0,29
	C330.26.100	ER40	10.0 - 9.0	46	0,29
	C330.26.110	ER40	11.0 - 10.0	46	0,28
	C330.26.120	ER40	12.0 - 11.0	46	0,28
	C330.26.130	ER40	13.0 - 12.0	46	0,28
	C330.26.140	ER40	14.0 - 13.0	46	0,27
	C330.26.150	ER40	15.0 - 14.0	46	0,26
	C330.26.160	ER40	16.0 - 15.0	46	0,26
	C330.26.170	ER40	17.0 - 16.0	46	0,26
	C330.26.180	ER40	18.0 - 17.0	46	0,24
	C330.26.190	ER40	19.0 - 18.0	46	0,24
	C330.26.200	ER40	20.0 - 19.0	46	0,24
	C330.26.210	ER40	21.0 - 20.0	46	0,22
	C330.26.220	ER40	22.0 - 21.0	46	0,21
	C330.26.230	ER40	23.0 - 22.0	46	0,2
	C330.26.240	ER40	24.0 - 23.0	46	0,19
	C330.26.250	ER40	25.0 - 24.0	46	0,18
	C330.26.260	ER40	26.0 - 24.0	46	0,17

D 174

ER tapping collets DIN 6499
C340

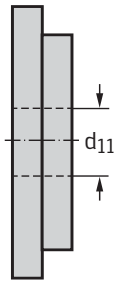


– ER – GB in accordance with DIN 6499

Tool	Designation	Collets	d_{11} mm	l_1 mm	SW mm	kg
DIN 6499	C340.11.028	ER11	2,8	18	2,1	0,01
	C340.11.035	ER11	3,5	18	2,7	0,01
	C340.11.045	ER11	4,5	18	3,4	0,01
	C340.11.060	ER11	6	18	4,9	0,01
	C340.20.045	ER20	4,5	31,5	3,4	0,05
	C340.20.060	ER20	6	31,5	4,9	0,05
	C340.20.070	ER20	7	31,5	5,5	0,05
	C340.20.080	ER20	8	31,5	6,2	0,05
	C340.20.090	ER20	9	31,5	7	0,04
	C340.20.100	ER20	10	31,5	8	0,04
	C340.25.080	ER25	8	34	6,2	0,08
	C340.25.090	ER25	9	34	7	0,08
	C340.25.100	ER25	10	34	8	0,07
	C340.25.110	ER25	11	34	9	0,07
	C340.25.120	ER25	12	34	9	0,07
	C340.25.140	ER25	14	34	11	0,06
	C340.25.160	ER25	16	34	12	0,05
	C340.32.045	ER32	4,5	40	3,4	0,17
	C340.32.060	ER32	6	40	4,9	0,16
	C340.32.070	ER32	7	40	5,5	0,17
	C340.32.080	ER32	8	40	6,2	0,17
	C340.32.090	ER32	9	40	7	0,16
	C340.32.100	ER32	10	40	8	0,16
	C340.32.110	ER32	11	40	9	0,16
	C340.32.120	ER32	12	40	9	0,16
	C340.32.140	ER32	14	40	11	0,15
	C340.32.160	ER32	16	40	12	0,13
	C340.40.120	ER40	12	46	9	0,17
	C340.40.140	ER40	14	46	11	0,16
	C340.40.160	ER40	16	46	12	0,14
	C340.40.180	ER40	18	46	14,5	0,15
	C340.40.200	ER40	20	46	16	0,17
	C340.40.220	ER40	22	46	18	0,19

D 174

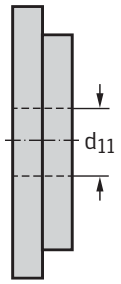
Sealing discs for ER collets in accordance with DIN 6499 with internal coolant supply



Designation	ER size	d_{11} mm
FS1238	16	3,0–2,5
FS1239	16	3,5–3,0
FS1240	16	4,0–3,5
FS1241	16	4,5–4,0
FS1242	16	5,0–4,5
FS1243	16	5,5–5,0
FS1244	16	6,0–5,5
FS1245	16	6,5–6,0
FS1246	16	7,0–6,5
FS1247	16	7,5–7,0
FS1248	16	8,0–7,5
FS1249	16	8,5–8,0
FS1250	16	9,0–8,5
FS1251	16	9,5–9,0
FS1252	16	10,0–9,5
FS1408	20	3,0–2,5
FS1409	20	3,5–3,0
FS1410	20	4,0–3,5
FS1411	20	4,5–4,0
FS1412	20	5,0–4,5
FS1413	20	5,5–5,0
FS1361	20	6,0–5,5
FS1414	20	6,5–6,0
FS1362	20	7,0–6,5
FS1415	20	7,5–7,0
FS1363	20	8,0–7,5
FS1416	20	8,5–8,0
FS1364	20	9,0–8,5
FS1417	20	9,5–9,0
FS1365	20	10,0–9,5
FS1418	20	10,5–10,0
FS1419	20	11,0–10,5
FS1420	20	11,5–11,0
FS1421	20	12,0–11,5
FS1422	20	12,5–12,0
FS1423	20	13,0–12,5
FS1253	25	3,0–2,5
FS1254	25	3,5–3,0
FS1255	25	4,0–3,5
FS1256	25	4,5–4,0

Designation	ER size	d_{11} mm
FS1257	25	5,0–4,5
FS1258	25	5,5–5,0
FS1259	25	6,0–5,5
FS1260	25	6,5–6,0
FS1261	25	7,0–6,5
FS1262	25	7,5–7,0
FS1263	25	8,0–7,5
FS1264	25	8,5–8,0
FS1265	25	9,0–8,5
FS1266	25	9,5–9,0
FS1267	25	10,0–9,5
FS1268	25	10,5–10,0
FS1269	25	11,0–10,5
FS1270	25	11,5–11,0
FS1271	25	12,0–11,5
FS1272	25	12,5–12,0
FS1273	25	13,0–12,5
FS1274	25	13,5–13,0
FS1275	25	14,0–13,5
FS1276	25	14,5–14,0
FS1277	25	15,0–14,5
FS1278	25	15,5–15,0
FS1279	25	16,0–15,5
FS1424	32	3,0–2,5
FS1425	32	3,5–3,0
FS1426	32	4,0–3,5
FS1427	32	4,5–4,0
FS1428	32	5,0–4,5
FS1429	32	5,5–5,0
FS1366	32	6,0–5,5
FS1430	32	6,5–6,0
FS1367	32	7,0–6,5
FS1431	32	7,5–7,0
FS1368	32	8,0–7,5
FS1432	32	8,5–8,0
FS1369	32	9,0–8,5
FS1433	32	9,5–9,0
FS1370	32	10,0–9,5
FS1434	32	10,5–10,0
FS1371	32	11,0–10,5

Sealing discs for ER collets in accordance with DIN 6499 with internal coolant supply

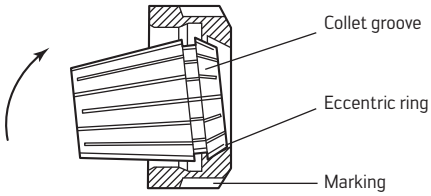


Designation	ER size	d_{11} mm
FS1435	32	11,5–11,0
FS1372	32	12,0–11,5
FS1436	32	12,5–12,0
FS1373	32	13,0–12,5
FS1437	32	13,5–13,0
FS1374	32	14,0–13,5
FS1438	32	14,5–14,0
FS1375	32	15,0–14,5
FS1439	32	15,5–15,0
FS1376	32	16,0–15,5
FS1440	32	16,5–16,0
FS1441	32	17,0–16,5
FS1442	32	17,5–17,0
FS1443	32	18,0–17,5
FS1444	32	18,5–18,0
FS1445	32	19,0–18,5
FS1446	32	19,5–19,0
FS1447	32	20,0–19,5
FS1280	40	3,0–2,5
FS1281	40	3,5–3,0
FS1282	40	4,0–3,5
FS1283	40	4,5–4,0
FS1284	40	5,0–4,5
FS1285	40	5,5–5,0
FS1286	40	6,0–5,5
FS1287	40	6,5–6,0
FS1288	40	7,0–6,5
FS1289	40	7,5–7,0
FS1290	40	8,0–7,5
FS1291	40	8,5–8,0
FS1292	40	9,0–8,5
FS1293	40	9,5–9,0
FS1294	40	10,0–9,5
FS1295	40	10,5–10,0
FS1296	40	11,0–10,5
FS1297	40	11,5–11,0
FS1298	40	12,0–11,5
FS1299	40	12,5–12,0
FS1300	40	13,0–12,5
FS1301	40	13,5–13,0

Designation	ER size	d_{11} mm
FS1302	40	14,0–13,5
FS1303	40	14,5–14,0
FS1304	40	15,0–14,5
FS1305	40	15,5–15,0
FS1306	40	16,0–15,5
FS1307	40	16,5–16,0
FS1308	40	17,0–16,5
FS1309	40	17,5–17,0
FS1310	40	18,0–17,5
FS1311	40	18,5–18,0
FS1312	40	19,0–18,5
FS1313	40	19,5–19,0
FS1314	40	20,0–19,5
FS1315	40	20,5–20,0
FS1316	40	21,0–20,5
FS1317	40	21,5–21,0
FS1318	40	22,0–21,5
FS1319	40	22,5–22,0
FS1320	40	23,0–22,5
FS1321	40	23,5–23,0
FS1322	40	24,0–23,5
FS1323	40	24,5–24,0
FS1324	40	25,0–24,5
FS1325	40	25,5–25,0
FS1326	40	26,0–25,5

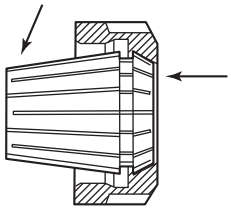
Assembly instruction for collet chucks with ER collets (C330, C340) and sealing discs

Fitting the collet chuck



Fitting

1. Fit the collet groove into the eccentric ring of the clamping nut at the marked point.
2. Now tilt the collet all the way into the ring until you hear it click into place.
3. Insert the cutting tool.
4. Screw the clamping nut onto the toolholder and tighten it.

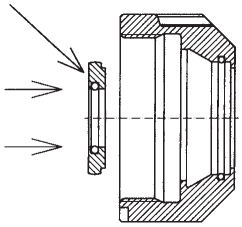


Removal

After unscrewing from the toolholder, simultaneously press on the front face and down on the rear diameter of the collet .

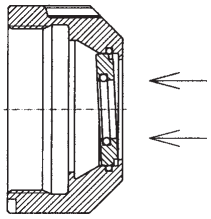
D 3

Fitting the sealing discs



Fitting

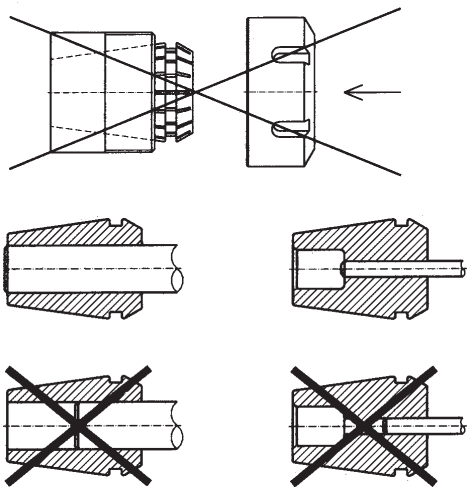
1. Insert the sealing disc into the nut so that the inscription is at the rear.
2. Insert the sealing disc and press it until you hear a click.
3. If correctly fitted, the sealing disc is flush with the front of the nut.



Removal

Press the disc from the outside until it jumps out.

Note



a. The collet must be engaged in the clamping nut during assembly.

b. Never clamp oversized shanks.
Use the next collet size up,
e.g. shank diameter = 14.3 with collet
Collet diameter 15-14 mm

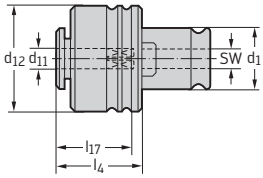
c. Where possible, clamp the tool shank along the whole length of the collet (min. $^{2}/_{3}$ of the collet length).

Quick-change collet
A331



– With overload clutch

Tool



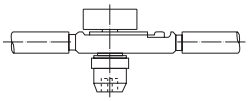
Designation	d_1 mm	d_{11} mm	d_{12} mm	l_4 mm	l_{17} mm	SW mm	Collet size	kg
A331.0.19.025.03	19	3,5	32	25	21	2,7	1	0,2
A331.0.19.025.04	19	4,5	32	25	23	3,4	1	0,2
A331.0.19.025.05	19	5,5	32	25	24	4,3	1	0,2
A331.0.19.025.06	19	6	32	25	25	4,9	1	0,2
A331.0.19.025.07	19	7	32	25	25	5,5	1	0,2
A331.0.19.025.08	19	8	32	25	26	6,2	1	0,2
A331.0.19.025.09	19	9	32	25	27	7	1	0,2
A331.0.19.025.10	19	10	32	25	28	8	1	0,2
A331.0.31.034.06	31	6	50	34	38	4,9	3	0,5
A331.0.31.034.07	31	7	50	34	38	5,5	3	0,6
A331.0.31.034.08	31	8	50	34	39	6,2	3	0,6
A331.0.31.034.09	31	9	50	34	40	7	3	0,6
A331.0.31.034.10	31	10	50	34	41	8	3	0,5
A331.0.31.034.11	31	11	50	34	42	9	3	0,5
A331.0.31.034.12	31	12	50	34	42	9	3	0,5
A331.0.31.034.14	31	14	50	34	44	11	3	0,5
A331.0.31.034.16	31	16	50	34	45	12	3	0,5
A331.0.48.045.11	48	11	72	45	56	9	4	1,6
A331.0.48.045.12	48	12	72	45	56	9	4	1,6
A331.0.48.045.14	48	14	72	45	58	11	4	1,6
A331.0.48.045.16	48	16	72	45	59	12	4	1,6
A331.0.48.045.18	48	18	72	45	61	14,5	4	1,6
A331.0.48.045.20	48	20	72	45	63	16	4	1,6
A331.0.48.045.22	48	22	72	45	65	18	4	1,5
A331.0.48.045.25	48	25	72	45	67	20	4	1,5
A331.0.60.068.18	60	18	95	68	88	14,5	5	4
A331.0.60.068.20	60	20	95	68	90	16	5	4
A331.0.60.068.22	60	22	95	68	92	18	5	3,9
A331.0.60.068.25	60	25	95	68	94	20	5	3,9
A331.0.60.068.28	60	28	95	68	96	22	5	3,9
A331.0.60.068.32	60	32	95	68	98	24	5	3,7
A331.0.60.068.36	60	36	95	68	103	29	5	4

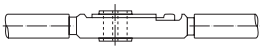
A collet is required for each tap shank diameter (order in accordance with D2).
For tightening torques for setting the overload clutch to the correct torque, see “Technical information/Rotating adaptors”
Delivery status: The torque is set in accordance with the “Metric thread” table – see “Technical information/Rotating adaptors”

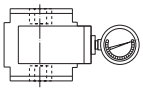
D 156 D 176

Torque setting tools for A331 quick-change collet

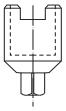
Setting tools



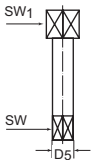






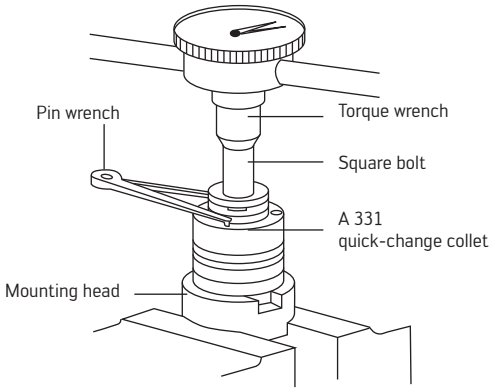


Setting tool	Designation	for collet Size	Thread	Torque Nm	
Torque wrench	FS518	1	M3–M12	30	
	FS519	3	M8–M20	120	
	FS791	4	M14–M33	300	
Ratchet	FS792	5	M22–M48		
Torque setting device	FS793	5	M22–M48	1000	
Pin wrench	FS524	1			
	FS526	3			
	FS527	4			
	FS794	5			
Mounting head	FS520	1			
	FS522	3			
	FS523	4			
	FS795	5			



Designation	for collet Size	D_5 mm	SW_1 mm	SW mm
FS779	1, 3, 4	3,5	13	2,7
FS536	1, 3, 4	4,5	13	3,4
FS538	1, 3, 4	6,0	13	4,9
FS539	1, 3, 4	7,0	13	5,5
FS540	1, 3, 4	8,0	13	6,2
FS541	1, 3, 4	9,0	13	7,0
FS542	1, 3, 4	10,0	13	8,0
FS543	1, 3, 4	11,0	13	9,0
FS544	1, 3, 4	12,0	13	9,0
FS545	1, 3, 4	14,0	13	11,0
FS546	1, 3, 4	16,0	13	12,0
FS547	1, 3, 4	18,0	13	14,5
FS548	1, 3, 4	20,0	13	16,0
FS549	1, 3, 4	22,0	13	18,0
FS550	1, 3, 4	25,0	13	20,0
FS780	5	18,0	25	14,5
FS781	5	20,0	25	16,0
FS782	5	22,0	25	18,0
FS783	5	25,0	25	20,0
FS784	5	28,0	25	22,0
FS785	5	32,0	25	24,0
FS786	5	36,0	25	29,0

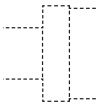
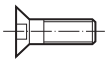
Square bolt



For tightening torques, see “Technical information/Rotating adaptors”

Assembly parts and accessories for F5055

Assembly parts

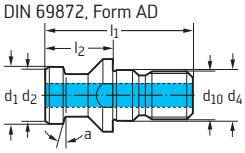
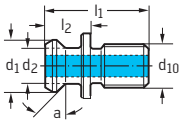
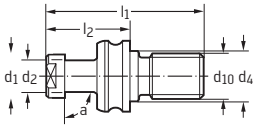
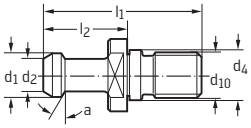
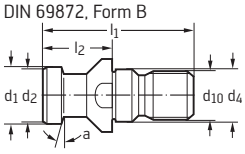
	D_c mm	63		80		100	125	160
	d_1 mm	T36	16	T45	16	22	32	40
	Adaptor part		AA704-B16-G16-040-A		AA704-B16-G16-040-B	AA704-B22-G22-040-B	AA704-B27-G32-050-B	AA704-B40-G40-063-B
	Adaptor part	AA766-T36-G16-040		AA766-T45-G16-050				
	Clamping screw for body	FS2270 (SW 2,5) 4,0 NM					FS2271 (SW 3) 5,0 Nm	FS2272 (SW 5) 10,0 Nm

Accessories

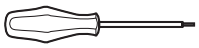
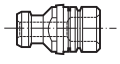
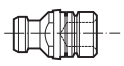
	D_c mm	63	80	100	125	160
	Mounting wrench for cutting insert	FS2249	FS1494			
	Screwdriver for clamping screw	ISO 2936-2,5 (SW 2,5)			ISO 2936-3 (SW 3)	ISO 2936-5 (SW 5)
	Torque T-handle	–			FS2041	
	Interchangeable blade for torque T-handle	–			FS2050 (SW 3)	FS2052 (SW 5)

Accessories for tool adaptors

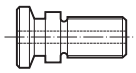
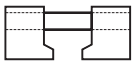
Pull stud for steep taper

	Designation	for SK	d_1 mm	d_2 mm	d_4 mm	d_{10}	l_1 mm	l_2 mm	a
DIN 69872, Form AD 	C100.40.115	40	19	14	17	M16	54	26	15°
	C100.50.115	50	28	21	25	M24	74	34	15°
ANSI B5.50 	C100.40.345	40	18,8	12,8		M16	38	16,2	45°
	C100.50.345	50	28,9	19,5		M24	58	25,4	45°
CAT 	C100.40.390	40	15	10	17	M16	52	26,75	90°
	C100.50.390	50	23	17	25	M24	85	45,2	90°
MAS BT 	C100.40.430	40	15	10	17	M16	60	35	30°
	C100.40.445	40	15	10	17	M16	60	35	45°
	C100.50.430	50	23	17	25	M24	85	45	30°
	C100.50.445	50	23	17	25	M24	85	45	45°
DIN 69872, Form B 	C100.40.215	40	19	14	17	M16	54	26	15°
	C100.50.215	50	28	21	25	M24	74	34	15°

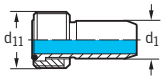
Accessories for adaptors

	Designation	D_c = 20–32mm	D_c = 40–65mm	D_c = 80–125mm	D_c = 50mm	D_c = 63–80mm
	Screwdriver	FS230 (Torx 8)	FS229 (Torx 15)	FS228 (Torx 20)		
	Socket wrench for FS1032 + FS1033					FS1043 (SW8)
	Pull stud	C100.40.600 for DIN 2080 (SK40)			C100.50.600 for DIN 2080 (SK50)	
	Pull stud	C100.40.615 A for DIN 69871 Form AD (SK40)			C100.50.615 A for DIN 69871 Form AD (SK50)	
	Pull stud	C100.40.615 B for DIN 69871 Form B (SK40)			C100.50.615 B for DIN 69871 Form B (SK50)	

Accessories for adaptors

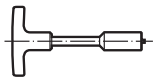
	Designation	Size	Description	suitable for
	FS709 FS710 FS711 FS712	M12 × 18 (SW 16) M12 × 17 (SW 19) M16 × 24 (SW 22) M20 × 30 (SW 30)	Tensioning bolt	NCT radial adaptors
	FS930 FS931 FS932 FS933	M4 × 10 (Torx 15)	Clamping unit	NCT radial adaptors
	FS1079 FS1080	for SK 40 for SK 50	Intermediate bushing for pull stud	Tools with steep taper

Transfer units for HSK adaptors



Designation	d_{11}	$d_{1\ f8}$ mm	for HSK	
FS1064	M18 × 1	12	HSK63–A	
FS1065	M24 × 1,5	16	HSK100–A	

Socket wrench for installing transfer units



Designation	for HSK			
FS952	HSK63–A			
FS953	HSK100–A			

Technologies made by Walter

Technology brands	
Tiger·tec® Silver	With Tiger·tec® Silver, Walter is offering a world first in coating technology for indexable inserts. The special aluminium oxide layer with optimised microstructure reduces wear during turning, milling and drilling operations, and increases toughness and temperature resistance for significantly higher cutting data.
Walter BLAXX	Walter BLAXX is the benchmark for a new generation of milling cutters: The milling bodies are extremely robust thanks to their special surface treatment. The milling systems, which are mainly positioned tangentially, are equipped with Tiger·tec® indexable inserts. Tools with the Walter BLAXX designation combine high wear resistance with unbeatable performance data.
Xtra·tec®	Xtra·tec® indexable insert milling cutters and drills guarantee extremely soft cutting action and optimal surface quality on almost all materials. Indexable inserts with highly positive geometries and the Tiger·tec® Silver coating have a particularly beneficial hardness/toughness ratio. For maximum productivity and process reliability.
Walter Green	Walter Green: Sustainability and responsible use of resources are central components of our company principles. We use our "Walter Green" seal to show how we implement these principles, such as by offsetting our CO_2 emissions with environmental conservation projects.
Walter Capto™	Walter Capto™ is a modular tool body adaptor system. It is suitable for all turning, milling, drilling and threading processes. Its ISO-standardised polygon taper absorbs torsional moments and bending moments extremely well and ensures optimal repeat accuracy.
ConeFit	Walter ConeFit is an extremely flexible solid carbide milling system with a wide range of high-performance replaceable heads and shaft variants. Its conical thread can self-centre, thereby guaranteeing maximum stability and concentricity.
ScrewFit	Walter ScrewFit users benefit from maximum flexibility. Its modular interface is suitable for a wide variety of adaptors and a wide range of tool diameters and lengths for milling and drilling.
	The Walter precision cooling system provides cooling at the centre of chip formation. Its dual coolant jets are directed precisely onto the flank and rake faces of the insert. This system provides significantly increased tool life, improved chip breaking and greater efficiency for turning and grooving applications.
XD Technology	Walter Titex solid carbide drilling and reaming tools stand for precision, high performance and cost-effectiveness when drilling practically any material. Walter Titex XD technology offers the greatest precision and cost-effectiveness in deep-hole drilling operations up to 70 x DC without pecking.
Walter Xpress	Walter Xpress is the rapid ordering and delivery service for high-quality special tools, offering maximum delivery times of 2-4 weeks following receipt of the order. The ordering process is clearly structured and guarantees absolute planning security. Quotations for all enquiries are calculated and provided within 24 hours.

Alphanumeric index for **adaptors**

Designation	Page
A	
A100M...HSK	D 122
A100M.1	D 72
A100M.2	D 73
A100M.3	D 74
A100M.4	D 75
A100M.8	D 77
A101M	D 78
A102M	D 79
A103M	D 80
A150M	D 82
A155...HSK	D 123
A155.BT	D 134
A155.S	D 132
A155M	D 83
A170...HSK	D 125
A170M	D 85
A170M...Ex	D 86
A175	D 81
A201M	D 87
A2110-BMT-P	D 20
A2110-DO-P	D 21
A2110-VDI-P	D 18
A2111-VDI-P	D 19
A2120-VDI-P	D 16
A2121-VDI-P	D 17
A305	D 90
A320M	D 91
A331	D 175
A340M	D 92
A510	D 98
A560.H	D 126
AA001.K	D 136
AB009.K	D 147
AB044.K	D 139
AK135M	D 7
AK155...HSK	D 124
AK155.8.C	D 67
AK155.BT	D 135
AK155.S	D 133
AK155M	D 84
AK170.BT	D 138
AK170.S	D 137
AK182.BT	D 141
AK182.C	D 68

Designation	Page
AK182.CAT	D 142
AK182.H	D 127
AK182.S	D 140
AK200M.2	D 76
AK300...HSK	D 128–D 129
AK300.BT	D 145–D 146
AK300.S	D 143–D 144
AK300.T	D 109
AK300M	D 88–D 89
AK510	D 98
AK512	D 99
AK520	D 100
AK521	D 96
AK522	D 96
AK523.T	D 97
AK530	D 101–D 102
AK531	D 103
AK540	D 104–D 105
AK541	D 106–D 107
AK580.C	D 108
AK610	D 112–D 113
AK631	D 114
AK641	D 115–D 116
AK681	D 117
C	
C.-131	D 65
C.-390.410	D 54
C.-390B.140	D 55
C.-390B.540 + C.-390.540	D 57
C.-390B.55 + C.-390B.58	D 56
C.-390B.555 + C.-390B.558	D 58
C.-391.01	D 60
C.-391.02	D 61
C.-391.14	D 62–D 63
C.-391.20	D 64
C.-391.27	D 66
C.-A390B.45	D 59
C.-ASH	D 11
C.-ASHA	D 12
C330	D 168–D 169
C340	D 170

Designation	Page
D	
D68AW	D 11–D 12
S	
S9000631	D 130
S9018351	D 131
T	
Typ 2030 / 2040 / 2050 / 2060	D 6
Typ 2080 / 2085	D 8
Typ 2090	D 10
Typ 3000 / 2000 / 20.5	D 9
Z	
Z2311	D 93

Alphanumeric index for **turning tools**

Designation	Page

A

A...-DCLN	A 199
A...-DDUN	A 201
A...-DSKN	A 203
A...-DTFN	A 205
A...-DVUN	A 207
A...-DWLN	A 208
A...-NTS-I	A 453
A...-PCLN	A 200
A...-PDUN	A 202
A...-PSKN	A 204
A...-PTFN	A 206
A...-PVQB	A 217
A...-PVUB	A 219
A...-PWLN	A 209
A...-SCLC / E...-SCLC	A 210
A...-SDQC	A 211
A...-SDUC / E...-SDUC	A 212
A...-SDUC...-X	A 213
A...-SSKC	A 214
A...-STFC / E...-STFC	A 215
A...-SVQB	A 216
A...-SVUB	A 218
A...-SWLC	A 220
AK600	A 221

C

C...-DCLN	A 148, A 222
C...-DCLN...-P	A 149
C...-DCMN	A 182
C...-DDJN	A 151
C...-DDJN...-P	A 152
C...-DDMN	A 183
C...-DDUN	A 154, A 224
C...-DSDN	A 161
C...-DSKN	A 157
C...-DSRN	A 155
C...-DSSN	A 159
C...-DTGN...-P	A 163
C...-DVJN	A 164
C...-DVMN	A 184
C...-DWLN	A 165, A 228
C...-DWLN...-P	A 166
C...-G2612	A 378
C...-G2622	A 380
C...-MTJN	A 162
C...-NCAE	A 368
C...-NCBE	A 370
C...-NCCE	A 374
C...-NCEE	A 382
C...-NCFE	A 386
C...-NCFE...C	A 388
C...-NCHE	A 384
C...-NCLE	A 372
C...-NCNE	A 376
C...-NCOE	A 390
C...-NCOE...C	A 392
C...-NTS-OE	A 452
C...-NTS-OI	A 455
C...-NTS-SE	A 451
C...-NTS-SI	A 454
C...-PCLN	A 150, A 223
C...-PDJN	A 153
C...-PDUN	A 225
C...-PRDC	A 172
C...-PRSC	A 174
C...-PSKN	A 158, A 226
C...-PSRN	A 156
C...-PSSN	A 160
C...-PTFN	A 227
C...-PVHB	A 177
C...-PVJB	A 179
C...-PVVB	A 181
C...-PWLN	A 167, A 229
C...-SCLC	A 168, A 230
C...-SCMC	A 185
C...-SDJC	A 169
C...-SDNC	A 170
C...-SDUC	A 231
C...-SRDC	A 171, A 186
C...-SRSC	A 173
C...-STFC	A 232
C...-STGC	A 175
C...-SVHB	A 176
C...-SVJB	A 178
C...-SVMB	A 187
C...-SVQB	A 233
C...-SVVB	A 180
CCGT	A 37–A 40, A 69
CCGW	A 69
CCMT	A 37–A 40
CCMW	A 37–A 40, A 66
CNGG	A 20–A 23
CNGN	A 73
CNMA	A 20–A 23, A 64, A 73
CNMG	A 20–A 23
CNMM	A 20–A 23
CPGT	A 41
CPGW	A 66
CPMT	A 41
CRDC	A 147
CRDN	A 146
CRSN	A 145

D

DCBN	A 96
DCGT	A 42–A 44, A 70
DCGW	A 70
DCKN	A 98
DCLN	A 93
DCLN...-P	A 94
DCMT	A 42–A 44
DCMW	A 42–A 44, A 67
DDHN	A 101
DDJN	A 102
DDJN...-P	A 103
DDNN	A 105
DNGG	A 24–A 26
DNGN	A 73
DNMA	A 24–A 26, A 64, A 73
DNMG	A 24–A 26
DNMM	A 24–A 26
DPGT	A 45
DPMT	A 45
DSBN	A 106
DSBN...-P	A 107
DSDN	A 113
DSKN	A 109
DSSN	A 111
DTGN	A 116
DTGN...-P	A 117
DVJN	A 121
DVPN	A 120
DVVN	A 122
DWLN	A 123
DWLN...-P	A 124

G

G1011	A 308
G1011...-P	A 310
G1041	A 321
G1041...C	A 322
G1041...C-P	A 323

Designation	Page
G1042	A 320
G1111	A 318
G1332	A 347
G1511	A 314
G1511...-P	A 316
G1521	A 315
G1551	A 317
G2012	A 326
G2012...-P	A 328
G2042...N	A 330
G2042...N...-P	A 331
G2042...R/L	A 332
G2042...R/L...C	A 333
G2042...R/L...C-P	A 335
G2042...R/L...-P	A 334
G2612	A 348
G2622	A 350
G2661...-P	A 337
GX	A 278–A 285

I

I12	A 325

M

MTJN	A 115

N

NCAE	A 338
NCAI	A 364
NCBE	A 338
NCCE	A 342
NCCI	A 366
NCEE	A 352
NCFE	A 356
NCFE...C	A 358
NCHE	A 354
NCLE	A 340
NCNE	A 344
NCOE	A 360
NCOE...C	A 362
NTS	A 426–A 443
NTS-SE	A 450

P

P8TP	A 54
PCBN	A 97
PCKN	A 99
PCLN	A 95
PCSN	A 100
PDJN	A 104
PRDC	A 131
PRGC	A 133
PSBN	A 108
PSDN	A 114
PSKN	A 110
PSSN	A 112
PTFN	A 119
PTGN	A 118
PVHB	A 139
PVJB	A 141
PVVB	A 143
PWLN	A 125

R

RCGT	A 46–A 47
RCGX	A 76
RCMT	A 46–A 47
RCMX	A 46–A 47
RNGN	A 74
RPGN	A 77
RPGX	A 76

S

S...-NTS-I	A 453
SBN	A 336
SCGT	A 48–A 49
SCGW	A 71
SCLC	A 126
SCMT	A 48–A 49
SCMW	A 48–A 49
SDHC	A 127
SDJC	A 128
SDNC	A 129
SNGN	A 74
SNMA	A 27–A 29, A 65, A 74
SNMG	A 27–A 29
SNMM	A 27–A 29
SPGT	A 50
SPMT	A 50
SRDC	A 130
SRSC	A 132
SSBC	A 134
SSDC	A 135
SSDCN	A 136
STGC	A 137
SVHB	A 138
SVJB	A 140
SVVB	A 142
SWLC	A 144
SX	A 286–A 288

T

TCGT	A 51–A 53
TCGW	A 71
TCMT	A 51–A 53
TCMW	A 51–A 53, A 67
TNMA	A 30–A 32, A 65, A 75
TNMG	A 30–A 32
TNMM	A 30–A 32
TPGT	A 54
TPMT	A 54

V

VBGT	A 55–A 57
VBMT	A 55–A 57
VBMW	A 68
VCGT	A 55–A 57, A 72
VCGW	A 72
VCMT	A 55–A 57
VCMW	A 55–A 57
VNGG	A 33
VNMA	A 33
VNMG	A 33

W

WCGT	A 58–A 59
WCMT	A 58–A 59
WCMW	A 68
WNMA	A 34–A 36
WNMG	A 34–A 36
WNMM	A 34–A 36

X

XLCFN	A 324
XLDE	A 312
XLDE...C	A 313

Alphanumeric index for **drilling and threading tools**

Designation	Page
20160	B 774
20165	B 773
20167	B 772
202061	B 763
20207	B 959
20211	B 748
202161	B 764
2021616	B 764
2021763	B 765
202661	B 764
2026616	B 764
2026763	B 765
20311	B 790
2031115	B 792
203115	B 790
20312	B 825
20316	B 831
20361	B 790
2036115	B 792
2036155	B 793
20362	B 825
204069	B 964
204089	B 963
20410	B 794
2041006	B 794
204101	B 828
2041014	B 919
2041015	B 828
204102	B 827
204104	B 826
204105	B 794
204107	B 797
20410T2	B 807
20410TR	B 807
20411	B 749
2041210	B 796
2041215	B 796
20416	B 829
2041606	B 829
204164	B 920
2041663	B 830
20417	B 768
20430	B 795
20460	B 794
2046006	B 794
204602	B 827
204605	B 794
204607	B 797
20460T2	B 807

Designation	Page
20460TR	B 807
20461	B 749
2046210	B 796
2046215	B 796
20466	B 829
2046606	B 829
2046663	B 830
20467	B 768
20480	B 795
205106	B 808
2051062	B 808
2051315	B 813
205606	B 808
2056062	B 808
2056315	B 813
20801	B 776
20844	B 778
2084805	B 777
20890	B 775
20934	B 779
20944	B 779
20954	B 779
212161	B 847
2121763	B 848
212661	B 847
2126763	B 848
21311	B 855
21361	B 855–B 856
2136115	B 859
213614	B 858
21368	B 857
21410	B 860
214101	B 874
21416	B 875
2141663	B 876
21460	B 860
2146005	B 860
2146006	B 860
21460T2	B 865
21460TR	B 865
21466	B 875
2146663	B 876
21480	B 861
2148005	B 861
2156062	B 866
2156315	B 870
22207	B 884
222079	B 967
22217	B 885

Designation	Page
22257	B 884
22267	B 885
22400	B 888
224069	B 971
22410	B 889
224101	B 921
224102	B 899
224104	B 898
22416	B 901
224164	B 900
22450	B 888
22460	B 889
224602	B 899
224604	B 898
22466	B 901
224664	B 900
23207	B 907
2320763	B 924
232079	B 974
23217	B 908
23257	B 907
232579	B 974
23267	B 908
23400	B 911
2340663	B 923
234069	B 979
234079	B 978
23410	B 912
234101	B 922
234104	B 916
23416	B 918
234164	B 917
23450	B 911
234569	B 979
234579	B 978
23460	B 912
234604	B 916
23466	B 918
234664	B 917
24165	B 929
24167	B 942
24195	B 929
24361	B 932
243612	B 943
24460	B 933
245606	B 935
2456062	B 935
2456315	B 938
25167	B 944

Designation	Page
25460	B 945
25467	B 948
255630	B 947
25567	B 946
2556702	B 946
26167	B 949
26460	B 950
26567	B 951
27160	B 952
29100	B 955
29900	B 956
30016	B 771
30060	B 769
30063	B 770
40311	B 791
60000	B 1136
60003	B 1137
61000	B 1138
62000	B 1139
63000	B 1140
64000	B 1141
7021345	B 767
7021365	B 766
7021366	B 766
7026345	B 767
7026365	B 766
7051315	B 835
7051365	B 834
7051366	B 834
7051770	B 832
7051773	B 832
7051775	B 832
7053770	B 833
7056315	B 835
7056365	B 834
7056770	B 832
7056773	B 832
7056775	B 832
7058770	B 833
7126365	B 849
7156365	B 878
7156770	B 877
7456770	B 941
8021006	B 989
8026006	B 989
80311	B 995
8031106	B 995
8031116	B 996
8031310	B 994
803141	B 993
8031417	B 993
8031806	B 997
8031906	B 998
8036310	B 994
80410	B 991
8041006	B 991
804101	B 992
8041056	B 990
804601	B 992
8046056	B 990
8121006	B 999
8126006	B 999
81311	B 1003
8136310	B 1002
8136417	B 1001
8141056	B 1000
8146056	B 1000
8231106	B 1004
8331106	B 1005
8431206	B 1006

A

A1111	B 275–B 278
A1114	B 385
A1114L	B 387
A1114S	B 386
A1115	B 381
A1115L	B 383
A1115S	B 382
A1148	B 270–B 274
A1149XPL	B 262–B 266
A1154TFT	B 267–B 269
A1163	B 134–B 135
A1164TIN	B 130–B 133
A1166	B 136–B 138
A1166TIN	B 136–B 138
A1167A	B 139–B 141
A1167B	B 142–B 144
A1174	B 380
A1174C	B 384
A1211	B 308–B 315
A1211TIN	B 308–B 315
A1212	B 316–B 318
A1222	B 303–B 307
A1231	B 322–B 324
A1234	B 319–B 321
A1244	B 298–B 302
A1247	B 294–B 297
A1249XPL	B 288–B 291
A1254TFT	B 292–B 293
A1263	B 167–B 168
A1276TFL	B 166
A1511	B 336–B 338
A1522	B 332–B 335
A1544	B 330–B 331
A1547	B 327–B 329
A1549TFP	B 325–B 326
A1622	B 339–B 341
A1722	B 342
A1822	B 343
A1922L	B 345
A1922S	B 344
A2258	B 279–B 281
A3143	B 282–B 283
A3153	B 284–B 285
A3162	B 152–B 153
A3279XPL	B 124–B 129
A3289DPL	B 31–B 33
A3293TTP	B 34–B 36
A3299XPL	B 37–B 42
A3367	B 161–B 163
A3379XPL	B 154–B 160
A3382XPL	B 57–B 59
A3387	B 67
A3389AML	B 50
A3389DPL	B 51–B 53
A3393TTP	B 54–B 56
A3399XPL	B 60–B 66
A3486TIP	B 85
A3487	B 84
A3586TIP	B 85
A3687	B 97
A3879XPL	B 124–B 129
A3899XPL	B 37–B 42
A3967	B 161–B 163
A3979XPL	B 154–B 160
A3999XPL	B 60–B 66
A4211	B 346–B 352
A4211TIN	B 346–B 352
A4244	B 353–B 354
A4247	B 355–B 356
A4411	B 359–B 361
A4422	B 357–B 358
A4611	B 363–B 364
A4622	B 362
A4722	B 365

Alphanumeric index for **drilling and threading tools** (continued)

Designation	Page
A6181AML	B 118
A6181TFT	B 119
A6292TIN	B 286–B 287
A6488TML	B 78
A6489AMP	B 77
A6489DPP	B 79–B 81
A6493TTP	B 82–B 83
A6588TML	B 93
A6589AMP	B 92
A6589DPP	B 94–B 96
A6685TFP	B 103
A6689AMP	B 102
A6785TFP	B 107
A6789AMP	B 105
A6794TFP	B 106
A6885TFP	B 110
A6889AMP	B 109
A6985TFP	B 114
A6989AMP	B 112
A6994TFP	B 113
A7191TFT	B 120–B 121
A7495TTP	B 115
A7595TTP	B 116

B

B3212	B 242
B3213	B 244
B3214	B 246
B4010	B 212
B4011	B 200
B4012C	B 198
B4013	B 202
B4015	B 204, B 206
B4017	B 208, B 210
B4212	B 214, B 216, B 218
B4213	B 220, B 222, B 224, B 228
B4213.C	B 226
B4214	B 230, B 232, B 234
B4215	B 236, B 238, B 240

C

CCGT	B 506–B 507, B 510, B 512
CCGW	B 512
CCMT	B 506–B 507, B 510
CCMW	B 511
CPGT	B 510

D

D70611	B 1053
D7061100	B 1053
D70617	B 1055
D7061700	B 1055
D7061706	B 1057
D7063100	B 1054
D7063700	B 1056
D7066706	B 1057
D7166706	B 1069
D7466706	B 1075
DB133	B 150–B 151, B 164–B 165
DC150	B 43–B 46, B 68–B 73, B 86–B 88, B 98–B 100, B 145–B 149
DC170	B 28–B 30, B 47–B 49, B 74–B 76, B 89–B 91, B 101, B 104, B 108, B 111
DP2061105	B 1046
DP2061185	B 1047
DP2061705	B 1050
DP2063105	B 1048
DP2063705	B 1051
DP2064105	B 1049
DP2064705	B 1052
DP2066105	B 1046
DP2066185	B 1047
DP2066705	B 1050
DP2068105	B 1048
DP2068705	B 1051
DP2069705	B 1052
DP2161705	B 1067
DP2166705	B 1067
DP2168805	B 1068
DP2261705	B 1072
DP2266705	B 1072
DP2361705	B 1073
DP2366705	B 1073
DP2466705	B 1074

E

E20314	B 814
E2031406	B 814
E2031416	B 815
E2031436	B 819
E2031446	B 816
E2031456	B 818
E2031466	B 817
E20364	B 814
E2036406	B 814
E2036416	B 815
E2036436	B 819
E2036446	B 816
E2036456	B 818
E2036466	B 817
E2051905	B 806
E2056905	B 806
E2061305	B 1044
E2061604	B 1045
E2066305	B 1044
E2066604	B 1045
E2136416	B 872
E2136466	B 871
E22314	B 896
E22364	B 896
E23314	B 915
E23364	B 915
E24364	B 939
E2436406	B 939
E3111	B 614–B 615
E6818	B 618
E6819	B 616
E6819TIN	B 616
E7818	B 619
E7819	B 617
EP2021302	B 742
EP2021305	B 742
EP2021342	B 743
EP2021382	B 744
EP2023302	B 745
EP2023305	B 745
EP2026302	B 742
EP2026305	B 742
EP2026342	B 743
EP2026382	B 744
EP2028302	B 745
EP2028305	B 745
EP2051302	B 780
EP2051305	B 780
EP2051312	B 781
EP2051342	B 782
EP2051352	B 785
EP2051362	B 784
EP2051382	B 783
EP2053302	B 786
EP2053305	B 786
EP2056302	B 780
EP2056305	B 780

Designation	Page
EP2056312	B 781
EP2056342	B 782
EP2056352	B 785
EP2056362	B 784
EP2056382	B 783
EP2058302	B 786
EP2058305	B 786
EP2061105	B 1034
EP2061106	B 1034
EP2061115	B 1035
EP2061116	B 1035
EP2061705	B 1037
EP2061706	B 1037
EP2061745	B 1038
EP2061746	B 1038
EP2061805	B 1039
EP2061806	B 1039
EP2063105	B 1036
EP2063106	B 1036
EP2063705	B 1040
EP2063706	B 1040
EP2063805	B 1041
EP2063806	B 1041
EP2066105	B 1034
EP2066106	B 1034
EP2066115	B 1035
EP2066116	B 1035
EP2066705	B 1037
EP2066706	B 1037
EP2066745	B 1038
EP2066746	B 1038
EP2066805	B 1039
EP2066806	B 1039
EP2068105	B 1036
EP2068705	B 1040
EP2068805	B 1041
EP2126302	B 836
EP2126342	B 837
EP2156302	B 850
EP2156312	B 852
EP2156362	B 851
EP2166115	B 1062
EP2166705	B 1063
EP2166706	B 1063
EP2166745	B 1064
EP2166746	B 1064
EP2168705	B 1065
EP2168706	B 1065
EP2221302	B 879
EP2226302	B 879
EP2251302	B 886
EP2251312	B 887
EP2256302	B 886
EP2256312	B 887
EP2321302	B 902
EP2326302	B 902
EP2351302	B 909
EP2351312	B 910
EP2356302	B 909
EP2356312	B 910
EP2426302	B 925
EP2456302	B 930

F

F1131	B 681–B 683
F1231	B 684
F1342	B 668–B 670
F1352	B 671–B 673
F1352HUN	B 675
F2162	B 665
F2171	B 664
F2481	B 660–B 661
F2481TMS	B 660–B 661
F2482	B 662–B 663
F2482TMS	B 662–B 663
F3234	B 679
F4142	B 676
F4152	B 677
F4162	B 667
F4171	B 666
F6134	B 680
F7133	B 678

H

H5033008	B 1093
H5036006	B 1100
H5036016	B 1100
H505500	B 1105
H5055006	B 1105
H505501	B 1105
H5055016	B 1105
H5055106	B 1106
H5055116	B 1106
H5075011	B 1107
H5075018	B 1107
H5083008	B 1110
H5087006	B 1108
H5087016	B 1108
H508800	B 1109
H5088006	B 1109
H5088016	B 1109
H5133008	B 1094
H5150106	B 1095
H5287006	B 1111
H5287016	B 1111
H528800	B 1112
H5288006	B 1112
H5336006	B 1101
H5336016	B 1101
H5387006	B 1113
H5387016	B 1113
H538800	B 1114
H5388006	B 1114
H5551106	B 1103
H5651106	B 1104
HP8061106	B 1058
HP8061716	B 1059
HP8061746	B 1061
HP8061816	B 1060
HP8166716	B 1070
HP8166746	B 1071

K

K1111	B 397
K1111TIN	B 397
K1112	B 398
K1113	B 407
K1113TIN	B 407
K1114	B 408
K1131	B 399
K1161	B 396
K1161XPL	B 396
K1215	B 406
K1311	B 400
K1313	B 409
K1411L	B 403
K1411M	B 402
K1411S	B 401
K1811	B 404
K1911	B 405
K2031407	B 820
K2036407	B 820
K2511	B 410

Alphanumeric index for **drilling and threading tools** (continued)

Designation	Page
K2513	B 411
K2929	B 369
K3281TFT	B 117
K3299XPL	B 27
K3879XPL	B 123
K3899XPL	B 27
K4929	B 370
K5191TFT	B 122
K6221	B 366
K6222	B 367
K6223	B 368

L

LCMX	B 188

M

M20213	B 760
M2021305	B 760
M2021306	B 760
M20233	B 761
M2023306	B 761
M20263	B 760
M2026305	B 760
M2026306	B 760
M203009	B 958
M205049	B 961
M20513	B 810
M2051305	B 810
M2051306	B 810
M2051332	B 811
M20533	B 812
M2053306	B 812
M205549	B 961
M20563	B 810
M2056305	B 810
M2056306	B 810
M2056332	B 811
M2121305	B 845
M21263	B 845
M2126305	B 845
M2128305	B 846
M21513	B 868
M2151305	B 868
M21563	B 868
M2156305	B 868
M2158305	B 869
M22213	B 883
M2221305	B 883
M22263	B 883
M2226305	B 883
M225049	B 969
M22513	B 893
M2251305	B 893
M225532	B 894
M225549	B 969
M22563	B 893
M2256305	B 893
M225632	B 895
M23213	B 906
M2321305	B 906
M23263	B 906
M2326305	B 906
M233009	B 973
M235049	B 976
M23513	B 914
M2351305	B 914
M23563	B 914
M2356305	B 914
M24263	B 928
M2426305	B 928
M24563	B 937
M2456305	B 937

N

N20219	B 762
N205069	B 962
N20516	B 821
N205166	B 822
N20536	B 823
N205569	B 962
N20566	B 821
N21566	B 873
N225069	B 970
N22516	B 897
N235069	B 977
N24566	B 940

P

P20200	B 750
P20210	B 752
P2021005	B 752
P202103	B 755
P202108	B 753
P20230	B 758
P2023005	B 758
P202603	B 755
P202608	B 753
P203009	B 957
P20310	B 751
P2031005	B 751
P2031006	B 751
P203103	B 754
P2031035	B 754
P20330	B 757
P2033005	B 757
P20340	B 759
P2034005	B 759
P203509	B 957
P20360	B 751
P2036005	B 751
P2036006	B 751
P203603	B 754
P2036035	B 754
P20380	B 757
P20390	B 759
P2039005	B 759
P20509	B 798
P205099	B 960
P205183	B 801
P2051832	B 801
P20519	B 799
P2051905	B 799
P2051935	B 802
P205198	B 800
P20539	B 804
P2053905	B 804
P20549	B 805
P2054905	B 805
P205599	B 960
P205683	B 801
P2056832	B 801
P20569	B 799
P2056905	B 799
P2056935	B 802
P205698	B 800
P20589	B 804
P2058905	B 804
P20599	B 805
P2059905	B 805
P21210	B 842
P212608	B 843

Designation	Page
P21360	B 840–B 841
P2136005	B 840–B 841
P21380	B 844
P2138005	B 844
P21519	B 862
P215599	B 965
P21569	B 862–B 863
P2156905	B 862–B 863
P21589	B 864
P2158905	B 864
P22200	B 880
P22210	B 881
P223009	B 966
P22310	B 882
P2231005	B 882
P22360	B 882
P2236005	B 882
P22509	B 890
P225099	B 968
P22519	B 891
P22559	B 890
P22569	B 891
P23200	B 903
P23210	B 904
P2321005	B 904
P233009	B 972
P233509	B 972
P23360	B 905
P2336005	B 905
P235099	B 975
P23519	B 913
P2351905	B 913
P235599	B 975
P23569	B 913
P2356905	B 913
P24360	B 927
P2436005	B 927
P24569	B 934
P2456905	B 934
P265676	B 892
P28210	B 953
P28360	B 953
P284..	B 187
P28519	B 954
P28569	B 954
P40310	B 756
P40360	B 756
P40519	B 803
P40569	B 803
P484 .	B 185–B 186
P6500	B 190
PCLN	B 592
PSKN	B 593
PTFC	B 598
PTFN	B 594

S

S2021302	B 747
S2021305	B 747
S2026302	B 747
S2026305	B 747
S2051302	B 788
S2051305	B 788
S2051312	B 789
S2051315	B 789
S20516	B 824
S2051604	B 824
S2056302	B 788
S2056305	B 788
S2056312	B 789
S2056315	B 789
S2061305	B 1042
S2061306	B 1042
S2061345	B 1043
S2066305	B 1042
S2066306	B 1042
S2066345	B 1043
S2126302	B 839
S2126305	B 839
S2156302	B 854
S2156305	B 854
S2166305	B 1066
S2426302	B 926
S2456302	B 931
SCLC, SCFC	B 595
SCMT	B 508
SSSC, SSKC	B 596
SSSC/PSSC	B 597
SWFC	B 599

T

TC115	B 787, B 853
TC142	B 809, B 867, B 936
TC216	B 746, B 838
TC610	B 1090, B 1092, B 1096, B 1098, B 1102
TC611	B 1091, B 1097, B 1099
TCGT	B 513
TCMT	B 184
TCMW	B 184

W

WCGT	B 514–B 515
WCMT	B 509, B 514–B 515
WCMW	B 514–B 515
WOEX	B 189
WOMX	B 189

Z

Z2311	B 678

Alphanumeric index for **milling tools**

Designation	Page
A	
ADGT	C 284–C 285
ADGX	C 309
ADHT	C 284–C 285
ADKT	C 284–C 285
ADMT	C 286–C 288
C	
CNHQ	C 325
CNHU	C 325
CNMQ	C 325
CNMU	C 325
F	
F1375	C 218
F1616	C 218
F1675	C 217
F1676	C 217
F1678	C 216
F1682	C 216
F2010	C 356, C 358, C 360, C 362, C 364, C 366, C 368, C 370, C 372, C 374, C 432, C 434, C 436, C 438, C 440, C 442, C 536
F2036	C 560
F2139	C 538
F2146	C 376
F2231	C 540
F2233	C 378, C 380
F2234	C 542, C 544
F2235	C 382
F2238	C 488
F2238CE	C 490
F2238CE.C	C 494
F2238CK	C 492
F2239	C 552
F2239B	C 552
F2250	C 384, C 386
F2252	C 500, C 502, C 504, C 506, C 508, C 510, C 512, C 514, C 516, C 518, C 520, C 522
F2254	C 388
F2260	C 390
F2330	C 392
F2334	C 546, C 548
F2334R	C 550
F2338F	C 468
F2339	C 554, C 556
F4030	C 394
F4033	C 396, C 398
F4038	C 470
F4041	C 444
F4042	C 446, C 450, C 452, C 454, C 456
F4042R	C 448
F4045	C 400, C 402
F4047	C 404
F4048	C 406
F4050	C 408, C 410, C 412
F4053	C 524
F4080	C 414, C 416
F4138	C 472, C 474
F4153	C 526
F4238	C 476
F4253	C 528
F4338	C 478
F4722	C 219–C 220
F4723	C 221
F5038	C 480
F5041	C 458
F5055	C 530, C 532
F5138	C 482
F5141	C 460
F5241	C 462
H	
H1E0111	C 153
H1E01118	C 153
H1E12018	C 147
H1E58018	C 162
H1E58118	C 160
H1E58318	C 158
H1E58518	C 156
H1E92718	C 145
H2034217	C 42
H2038217	C 43
H2134217	C 42
H2138217	C 43
H2EC34217	C 139
H2EC38217	C 139
H2EC94717	C 140
H3021138	C 21
H3023138	C 21
H3027419	C 65
H3058917	C 31
H3070118	C 58
H3070318	C 60
H3071118	C 57
H3071318	C 59
H3094718	C 80
H3094728	C 61
H3170318	C 60
H3171318	C 59
H3178128	C 20
H3180278	C 101
H3182378	C 98
H3183017	C 56
H3183378	C 98
H3185378	C 97
H3186378	C 97
H3187278	C 99
H3E21138	C 135
H3E21317	C 143
H3E23138	C 135
H3E29148	C 146
H3E58118	C 161
H3E58318	C 159
H3E58518	C 157
H3E68118	C 163
H3E82378	C 149
H3E85378	C 148
H3E93718	C 144
H3E94718	C 144
H4033217	C 38
H4034217	C 39
H4036217	C 38
H4038217	C 40
H404491	C 30
H4044918	C 30
H4044919	C 67
H4044928	C 64
H404691	C 105
H4046918	C 105
H4046919	C 117
H4046928	C 113
H4046988	C 112
H4133217	C 38
H4134217	C 39
H4135217	C 41
H4137217	C 41
H4138217	C 40
H4180378	C 101
H4189278	C 100
H4189378	C 100
H4E34217	C 138

Designation	Page
H4E38217	C 138
H602111	C 104
H602311	C 45
H6023114	C 45
H602411	C 46
H602511	C 46
H602551	C 47
H602641	C 49
H602681	C 49
H602881	C 50
H6028818	C 50
H608411	C 53
H608771	C 53
H608871	C 54
H618911	C 54
H6E2211	C 141
H6E2511	C 142
H7073417	C 18
H7073717	C 55
H8001119	C 114
H8001919	C 116
H8004028	C 106
H8004128	C 106
H8004728	C 109
H8004788	C 111
H8005728	C 62
H8005828	C 64
H8005928	C 62
H8006419	C 115
H8006428	C 107
H8014028	C 108
H8014128	C 110
H8015728	C 63
H8015828	C 63
H8016419	C 115
H8016428	C 107
H8074128	C 108
H8083128	C 19
H8095919	C 66
H8E01118	C 152
H8E11118	C 151
H901411	C 48
H901451	C 48

L

Designation	Page
LDMT	C 288–C 289
LDMW	C 288–C 289
LNGX	C 312
LNHU	C 326–C 328
LNHX	C 327, C 329, C 333
LNKU	C 325
LNMU	C 326–C 327
LNMX	C 327, C 329
LPGT	C 289–C 290
LPGW	C 289–C 290
LPMT	C 289–C 290
LPMW	C 289–C 290

M

Designation	Page
M2025	C 418
M2026	C 418
M2131	C 464
M3016	C 420
M3024	C 422
M3255	C 496
M4002	C 424, C 426
M4132	C 466
M4256	C 498
M4257	C 498
M4258	C 498
M4574	C 562
M4575	C 564
M4792	C 486
MB265	C 52
MB266	C 51
MC111	C 26–C 27
MC112	C 28–C 29
MC122	C 23–C 25
MC129	C 22
MC213	C 90–C 92
MC216	C 86–C 89
MC232	C 95–C 96
MC251	C 44
MC321	C 81–C 82
MC322	C 83
MC324	C 84–C 85
MC326	C 68–C 78
MC341	C 37
MC413	C 120–C 121
MC416	C 118–C 119
MC500	C 123
MC501	C 124
MC502	C 125
MC503	C 126
MC504	C 127
MC716	C 93–C 94
MC726	C 79
MPHT	C 290
MPHW	C 290
MPHX	C 290
MPMT	C 290
MPMX	C 290

O

Designation	Page
ODHT	C 291–C 292
ODHW	C 291–C 292
ODHX	C 309
ODMT	C 291–C 292
ODMW	C 291–C 292
ONHF	C 312
OPHN	C 292
OPHX	C 310

P

Designation	Page
P20200	C 330
P2352	C 313
P23522	C 313
P23696	C 313
P2372	C 313
P26315	C 293
P26325	C 293
P26335	C 294
P26337	C 294
P26339	C 294
P26379	C 294
P2901	C 310–C 311
P2903	C 310–C 311
P2905	C 310–C 311
P300611	C 177
P302201	C 181
P302211	C 183
P302621	C 185
P310611	C 178
P3106117	C 178
P311612	C 179
P3116127	C 179
P311712	C 186
P3117127	C 186
P311722	C 187
P312001	C 192
P3120017	C 192
P312011	C 193

Alphanumeric index for **milling tools** (continued)

Designation	Page
P3120117	C 193
P312021	C 189
P3120217	C 189
P312028	C 190
P3120287	C 190
P3120387	C 195
P3120537	C 194
P3120717	C 197
P3120937	C 194
P3121017	C 196
P312111	C 196
P312201	C 180
P3122017	C 180
P312211	C 182
P3122117	C 182
P312221	C 184
P3122317	C 184
P312301	C 175
P3123017	C 175
P3123117	C 175
P312401	C 176
P312411	C 176
P312673	C 188
P312771	C 188
P3128417	C 195
P313231	C 206
P314101	C 205
P314801	C 204
P3148016	C 204
P315801	C 207
P315821	C 207
P315831	C 208
P315851	C 208
P316601	C 200
P3166017	C 200
P316881	C 209
P3201	C 295
P3204	C 295
P4110217	C 191
P4117027	C 172
P4406	C 331
P44280	C 331
P44290	C 331
P44462	C 331
P45420	C 334
P45424	C 334
P602612	C 173
P612612	C 173
P632612	C 174
P8112017	C 201

R

Designation	Page
RDGT	C 297
RDGX	C 298
RDHW	C 297
RDHX	C 298
RDMT	C 297
RDMW	C 297
RDMX	C 298
RNGN	C 314
ROGX	C 296
ROHX	C 296
ROMX	C 296
RPGN	C 299

S

Designation	Page
SDGT	C 300, C 302–C 303
SDHW	C 301–C 303
SDMT	C 299–C 300, C 302–C 303
SDMW	C 299, C 302–C 303
SEHT	C 302–C 303
SEHW	C 302–C 303
SEKN	C 305
SEKR	C 305
SEMR	C 305
SNEF	C 318
SNGX	C 314–C 318
SNHQ	C 332
SNHX	C 315–C 316
SNMX	C 314–C 316
SPFN	C 305–C 306
SPFR	C 305–C 306
SPGT	C 301–C 304
SPHT	C 301
SPHW	C 301, C 304
SPHX	C 310–C 311
SPJW	C 304
SPKN	C 305–C 306
SPKT	C 302–C 303
SPMN	C 305–C 306
SPMT	C 301–C 303
SPMW	C 301–C 303
SX	C 332

T

Designation	Page
TNEF	C 319
TPAW	C 306
TPJW	C 306

X

Designation	Page
XDGT	C 307
XDMT	C 307
XNGU	C 320–C 321
XNGX	C 322–C 324
XNHF	C 319–C 320
XNHX	C 323, C 330
XNMU	C 320–C 321

Z

Designation	Page
ZDGT	C 308

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