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2020-05-28

SmiCut™ STS

ThreadBurr

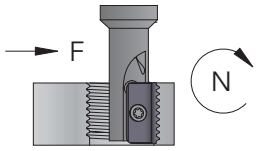
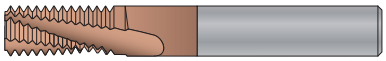
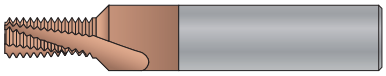
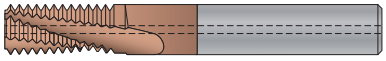
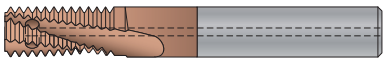
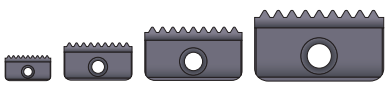
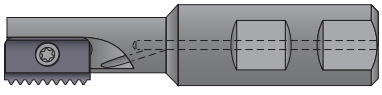
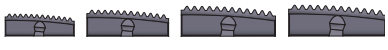
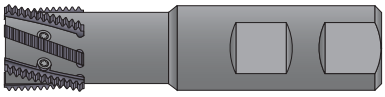
The Master of Threading

Threading and deburring
in one operation

No additional time
for deburring



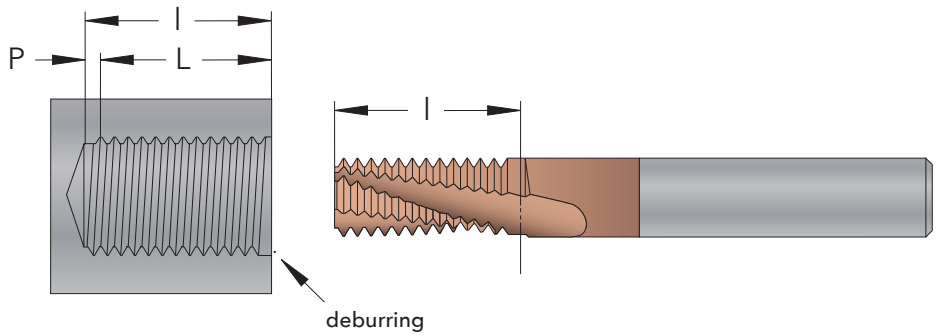
THREAD MILLING
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ThreadBurr

The advantage with ThreadBurr is that you can thread and deburr in one operation. No additional time for deburring and countersink is needed. The deburring operation is made automatically when thread milling, which gives you the deburring without any extra costs.

There is no disadvantage to use the ThreadBurr, even if you doń t use the deburring function. ThreadBurr is standard on all thread mills from SmiCut.

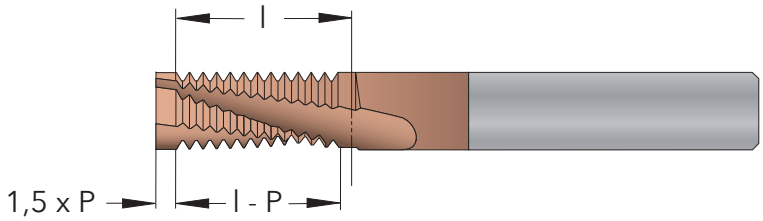


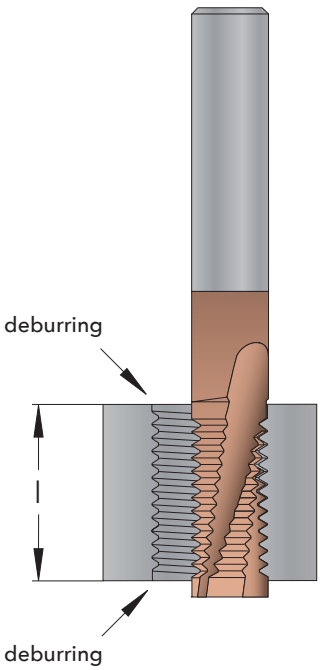
To get a nice entry and a burr free thread you need to start out with going to full depth (l) in to the hole before starting the threading operation. The thread length (L) will be the cutting length (l) minus one pitch (P).

Double ThreadBurr

It is possible to get the thread deburred on both sides. For this operation you need to use a special tool as thread length depends on the thickness of the material. Have in mind the following when you order a tool for deburring on both sides.

- The cutting length (l) should be equivalent to the thickness of the material.





Example

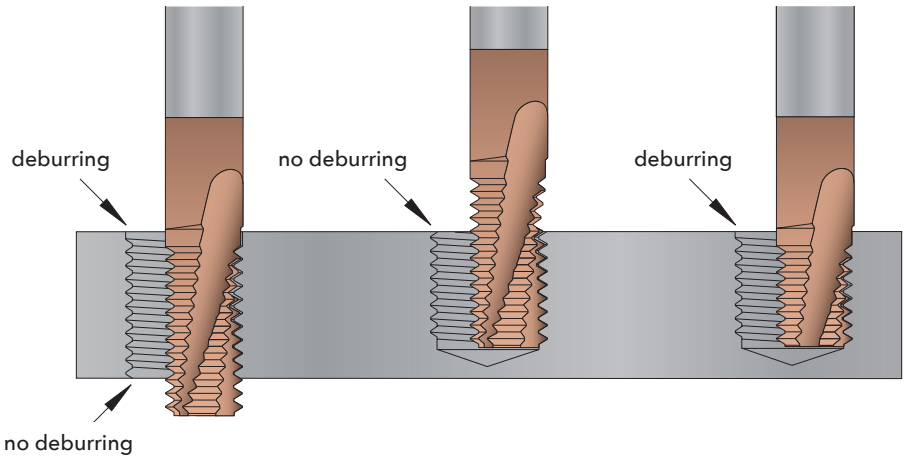
M30x3 thread length 40 mm

40 / 3 = 13,3 Number of pitches
13 x 3 = 39,0 mm Cutting length (l)

Thread Milling with NBB2020D39_3.0ISO_AC (l = 39,0 mm)

SmiCut STS

ThreadBurr



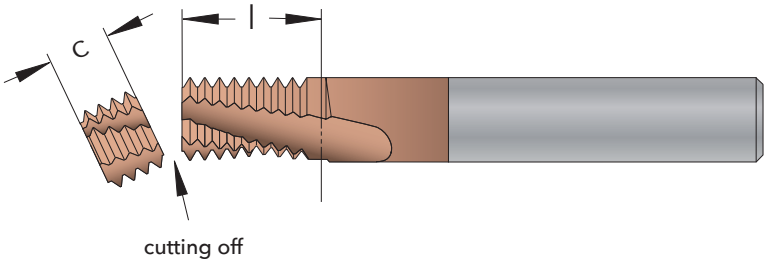
Through holes

You can always use a standard tool for through holes. Please take in mind you should use a tool as short as possible to get best stability and economy.

Blind Holes

With blind holes it is important to have the correct cutting length (l) on the tool to get the thread deburred. Normally you will find a suitable standard tool. If not, we will cut the tool to the correct length with extremely short delivery time and at a reasonable price. Have in mind the following when you order a tool for blind holes.

- The cutting length (l) should be required thread length (L) plus one pitch (P).
- The distance to cut off (c) has to be dividable by the pitch (P).



Example

M16x1,5 thread length 24 mm
Thread Milling with NB1212D29_1.5ISO_AC (L = 29,25 mm)

24 + 1,5 = 25,5 mm	Required cutting length (l)
29,25 -25,5 = 3,75 mm	Maximum cutting off
3,75 / 1,5 = 2,5	Number of pitches to cut off
2 x 1,5 = 3,0 mm	Distance to cut off (c)
29,25 - 3,0 = 26,25 mm	Cutting length (l) after cutting off
26,25 - 1,5 = 24,75 mm	Thread length (L) after cutting off

You only need to cut of the tool when you want to use the deburring function on blind holes and if there is no standard tool with suitable cutting length.

THREAD MILLING

Advantages

1) A secure machining operation

Minimal risk for machining stops as the cutting forces are low and the chips are short. Should there be an accident, the work piece will not be destroyed, as the tool will not be caught since the diameter of the thread mill is less than the thread.

2) Threading in difficult machined materials

The excellent cutting conditions makes it possible to thread mill materials such as hardened steel up to HRC 65, Titanium and other difficult machined materials.

3) Higher thread quality

The cutting conditions are extremely good when you are thread milling. The result of the thread is a higher quality of surface finish, tolerance, angle, etc. compared with other threading methods.

4) Flexible tool

Same cutter can be used for right hand and left hand thread. Threads with different diameters can be made with the same tool as long as the pitch is the same. The same thread mill can be used for blind holes and through holes. W, BSPT, PG, NPT, NPTF and NPSF are thread profiles where you can use the same tool for external and internal thread.

5) Threading in blind holes

When thread milling you will get a complete thread profile to the bottom of the hole. When tapping it´s necessary to drill much deeper as it´s not until the third thread the tap will make a complete thread profile. Sometimes you are able to change the construction as you don´t have to take the deep hole into consideration.

6) Less wear on the machine spindle

Thread milling will give you longer life to the machine spindle compared with tapping as the rotation on the spindle doesn´t need to be stopped and reversed for every thread.

7) Energy-saving production

Low energy consumption as the machine spindle doesn´t need to be stopped and started after each thread.

8) Thread Milling in a lathe with live tools

Reduced machining time compared with thread turning. Excellent chip control.

9) Threading without burrs

The thread entrance will be burr free when using ThreadBurr. Threading and deburring in one operation. No additional time for deburring.

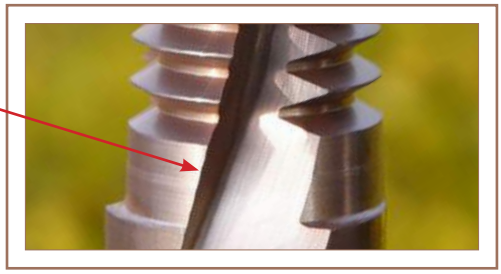
10) Shorter machining time

The machining time will be short as you don´t need to chamfer the thread while using ThreadBurr. Big diameters, fine pitches and long holes saves the most time compared with thread tapping.

11) Correct Thread Diameter right away

The Pitch diameter has been optically measured on thread mills from SmiCut and the theoretical external diameter has been individually laser marked on each cutter so you will get a correct thread straight away. When the tool starts to wear it´s possible to make adjustments in the CNC-program.

Deburring of the thread



Correct Diameter

How to choose correct Thread Mill Diameter

When thread milling, the diameter of the tool has to be smaller than the thread diameter. The reason for this is that the thread has a helix angle, but the tool is straight. If the tool is too big there will be a deviation on the thread profile. The size of this deviation depends on several parameters.

1) Thread diameter
2) Cutter diameter
3) Profile angle
4) Pitch

Big cutter diameter compared with thread diameter, small profile angle and big pitch. These are parameters that gives bigger deviation.



There are three alternatives too choose correct thread mill diameter.

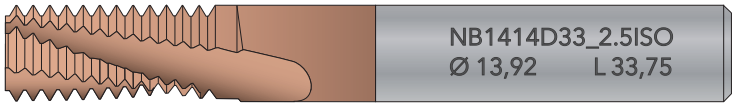
1) SmiCut Catalogue
2) SmiCut Online Store, www.smicutstore.se (see page 8)
3) SmiProg Software, www.smicut.se (see page 9)

How to get correct Thread Diameter

The pitch diameter has become optically measured on thread mills from SmiCut and the theoretical external diameter has been individually laser market on each cutter. This diameter is what you should use in your program to get a correct diameter on your thread.

For coarse threads you are normally in the middle of the tolerance if you use the laser marked value.

Fine threads may be a little bit tight as you get a very small thread profile deviation on these threads (see above). If this is the case you can mill again after adjusting the diameter in your program.



How to get a burr free Thread

Thread Mills from SmiCut (ThreadBurr) will give you a nice entry and a burr free thread. The cutting length is laser marked on the tool and you can find it as well in the catalogue. This is the distance you should go in to the hole from the surface to get a perfect entry.

Select correct Thread Mill

SmiCut Online Store will help you find suitable tools

If you need a Thread Mill for a specific thread and you need help to find the correct tool, just go to www.smicutstore.se and you will very quickly find suitable tools.

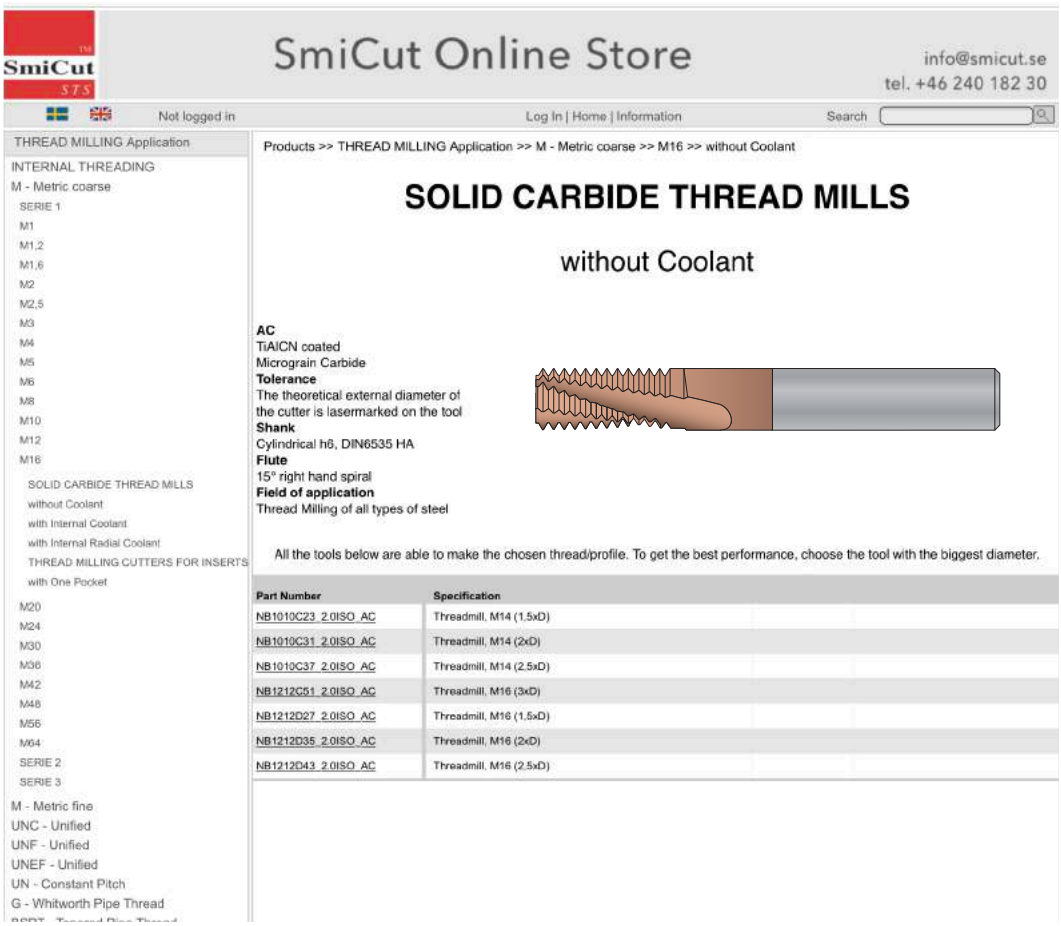
Example: M16 with thread length 32 mm

1) Choose THREAD MILLING Application on the left side
2) Choose M - Metric coarse
3) Choose M16
4) Choose what kind of tool you want, for example without coolant

Now you can see all solid carbide thread mills without coolant that are able to produce M16. From these ones you have to take a tool with a cutting length of at least 32 mm. You can see the cutting length on the part number (see next page for more information about ”code key”). The most suitable tool is NB1212D35_2.0ISO_AC. If you want complete information about the dimensions press on the part number of the tool.

You are as well able to do this thread with a tool with a smaller diameter or longer thread length, but this result in longer machining time and/or not as good cutting conditions. Sometimes you choose this anyhow as you may already have the tool, the price is less or you want to have a tool that can make different sizes of threads.

To check machining time and cutting conditions for different tools, please use ”SmiProg” (see next page).

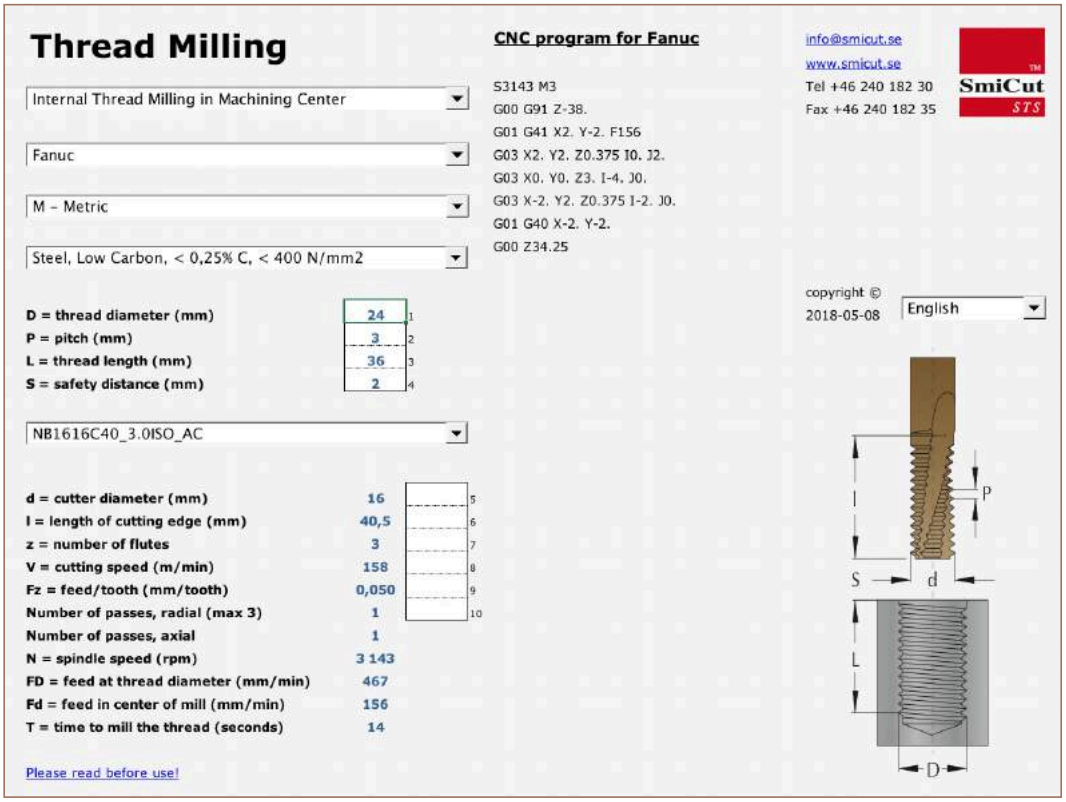


SMIPROG

Software for Thread Milling

SmiProg makes it easy to Thread Mill

Specify control system, material, thread diameter, pitch and thread length. The program will recommend suitable tools. Choose one and you will recieve suggested cutting data, time to mill the thread and CNC programming code. The software is made in excel and is less than 500kb even though it includes 22 different languages. You can download SmiProg free of charge at www.smicut.se



Choose among these languages

Chinese (simp.)
Chinese (trad.)
Czech
Danish
Dutch
English
Estonian
Euskera
Finish
French
German
Hungarian
Italian
Japanese
Korean
Norweigan
Polish
Portugese
Romanian
Russian
Spanish
Swedish

Code Key

NB	10	10	D	23	1.5	ISO	AC
type of tool	shank dimension	cutter diameter	cutting edges	cutting length	pitch	thread profile	carbide grade

N = internal threading
E = external threading
X = in- and external threading
B = burring
BB = burring on both sides
F = chamfering
S = micro, one tooth
M = micro, two teeth
K = internal coolant
T = internal radial coolant

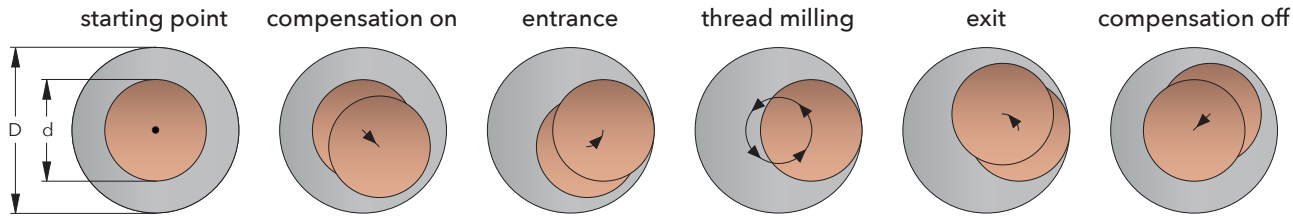
C = three flute
D = four flute
E = five flute
F = six flute

Cutting Speed (V_c) and Material Factor (F_m)

MATERIAL		Hardness HB	Tensile Strenght N/mm²	Cutting Speed (V_c) m/min	Material Factor (F_m)
Steel	Low carbon, C < 0,25%	< 120	< 400	150 - 200	1,2
	Medium carbon, C < 0,55%	< 200	< 700	120 - 170	1,1
	High carbon, C < 0,85%	< 250	< 850	110 - 150	1,0
	Low alloy	< 250	< 850	100 - 140	1,0
	High alloy	< 350	< 1200	70 - 110	0,9
	Hardened, HRC < 45			60 - 100	0,8
	Hardened, HRC < 55			30 - 60	0,7
	Hardened, HRC < 65			20 - 40	0,6
Cast iron	Lamellar graphite	< 150	< 500	130 - 180	1,2
	Lamellar graphite	< 300	< 1000	100 - 150	1,1
	Nodular graphite, malleable	< 200	< 700	100 - 150	1,0
	Nodular graphite, malleable	< 300	< 1000	80 - 120	0,9
Stainless steel	Free machining	< 250	< 850	130 - 180	1,0
	Austenitic	< 250	< 850	90 - 140	0,9
	Ferritic and austenitic	< 300	< 1000	80 - 120	0,8
Titanium	Unalloyed	< 200	< 700	60 - 80	0,8
	Alloyed	< 270	< 900	50 - 70	0,7
	Alloyed	< 350	< 1250	30 - 50	0,6
Nickel	Unalloyed	< 150	< 500	80 - 120	0,8
	Alloyed	< 270	< 900	60 - 80	0,7
	Alloyed	< 350	< 1250	50 - 70	0,6
Copper	Unalloyed	< 100	< 350	150 - 250	1,0
	Brass, bronze	< 200	< 700	130 - 180	1,0
	High strength bronze	< 470	< 1500	60 - 80	0,8
Aluminium	Unalloyed	< 100	< 350	500 - 900	1,4
	Alloyed, Si < 0.5%	< 150	< 500	400 - 800	1,3
	Alloyed, Si < 10%	< 120	< 400	300 - 500	1,2
	Alloyed, Si > 10%	< 120	< 400	200 - 400	1,1
Inconel	718	< 370		50 - 70	0,6
Graphite				300 - 500	1,0

Engagement Factor (F_e)

	B/d = 0,05	B/d = 0,06	B/d = 0,07	B/d = 0,08	B/d = 0,09	B/d = 0,10	B/d = 0,12	B/d = 0,14	B/d = 0,16
L / d = 1,0	1,75	1,59	1,45	1,31	1,20	1,09	0,99	0,90	0,82
L / d = 1,25	1,52	1,38	1,25	1,14	1,04	0,94	0,86	0,78	0,70
L / d = 1,5	1,31	1,20	1,09	0,99	0,90	0,82	0,74	0,67	0,61
L / d = 1,75	1,20	1,09	0,99	0,90	0,82	0,74	0,67	0,61	0,56
L / d = 2,0	1,09	0,99	0,90	0,82	0,74	0,67	0,61	0,56	0,51
L / d = 2,25	0,99	0,90	0,82	0,74	0,67	0,61	0,56	0,51	0,46
L / d = 2,5	0,90	0,82	0,74	0,67	0,61	0,56	0,51	0,46	0,42
L / d = 3,0	0,78	0,70	0,64	0,58	0,53	0,48	0,44	0,40	0,36
L / d = 3,5	0,67	0,61	0,56	0,51	0,46	0,42	0,38	0,35	0,31
L / d = 4,0	0,61	0,56	0,51	0,46	0,42	0,38	0,35	0,31	0,29



CUTTING DATA

Diameter Factor (F_d)

d	Diameter Factor (F_d)
1,5	0,010
2,0	0,011
3,0	0,015
4,0	0,019
5,0	0,024
6,0	0,028
8,0	0,036
10,0	0,044
12,0	0,052
14,0	0,060
16,0	0,067
18,0	0,075
20,0	0,082
25,0	0,101
32,0	0,126
40,0	0,156

Example

M24x3,0 thread length 36 mm
Carbon Steel, up to 400 N/mm²
Thread Milling with NB1616C40_3.0ISO_AC
B = 0,54 x 3 = 1,62 mm
B/d = 1,62/16 = 0,10
L/d = 36/16 = 2,25
F_z = 1,2 x 0,61 x 0,067 = 0,049
n = (160 x 1000) / (π x 16) = 3183 rpm
V_{fD} = 0,049 x 3 x 3183 = 468 mm/min
V_{fd} = 468 x (24-16) / 24 = 156 mm/min
T = (278 x 24) / 468 = 14 seconds

$$B = 0{,}54 \times P$$

$$F_z = F_m \times F_e \times F_d$$

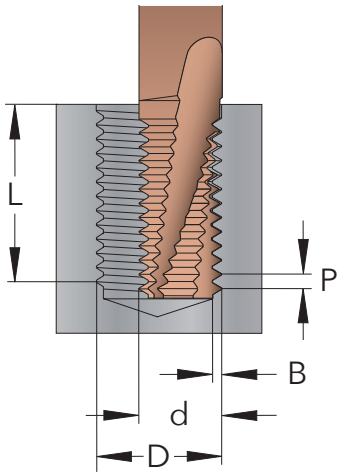
$$n = \frac{V_c \times 1000}{\pi \times d}$$

$$V_{fD} = F_z \times z \times n$$

$$V_{fd} = V_{fD} \times \frac{(D - d)}{D}$$

$$T = 278 \times \frac{D}{V_{fD}}$$

D = thread diameter (mm)
L = thread lenght (mm)
d = cutter diameter (mm)
B = depth of profile (mm)
P = pitch (mm)
z = cutting edges
F_z = feed / flute (mm/flute)
n = spindle speed (rpm)
V_c = cutting speed (m/min)
V_{fD} = feed at thread diameter Ø (mm/min)
V_{fd} = feed at center of mill (mm/min)
T = time to mill the thread (seconds)



Carbide Grades

AC Micrograin Carbide with TiAlCN coating.
Allround Grade with low friction.
Use cutting data according to the tables.

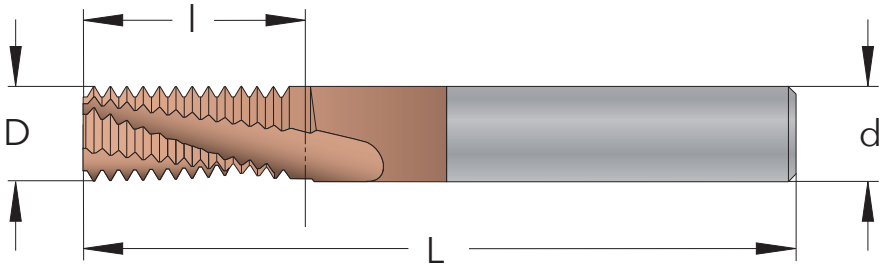
FC Micrograin Carbide with TiAlN coating.
Allround Grade with high heat resistance.
Use cutting data according to the tables.

SmiCut STS

SOLID CARBIDE THREAD MILLS *TiAlCN*

ThreadBurr

AC
TiAlCN coated
Micrograin Carbide
Tolerance
The theoretical external diameter of the cutter is lasermarked on the tool.
Shank
Cylindrical h6, DIN6535 HA
Flute
15° right hand spiral
Field of application
Thread Milling of all types of steel



M

METRIC

Pitch mm	M coarse	M fine	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
0,4	M2 (1,5xD)		NB04015C3_0.4ISO_AC	4	1,5	3	3,4	50
0,4	M2 (2xD)		NB04015C4_0.4ISO_AC	4	1,5	3	4,6	50
0,45	M2,2 (1,5xD)		NB04016C3_0.45ISO_AC	4	1,6	3	3,82	50
0,45	M2,2 (2xD)		NB04016C5_0.45ISO_AC	4	1,6	3	5,17	50
0,45	M2,5 (1,5xD)		NB04019C4_0.45ISO_AC	4	1,9	3	4,27	50
0,45	M2,5 (2xD)		NB04019C5_0.45ISO_AC	4	1,9	3	5,62	50
0,5	M3 (1,5xD)	≥ M4	NB04023C5_0.5ISO_AC	4	2,3	3	5,25	50
0,5	M3 (2xD)	≥ M4	NB04023C6_0.5ISO_AC	4	2,3	3	6,75	50
0,5	M3 (2,5xD)	≥ M4	NB04023C8_0.5ISO_AC	4	2,3	3	8,25	50
0,5	M3 (1,5xD)	≥ M4	NB06023C5_0.5ISO_AC	6	2,3	3	5,25	63
0,5	M3 (2xD)	≥ M4	NB06023C6_0.5ISO_AC	6	2,3	3	6,75	63
0,5	M3 (2,5xD)	≥ M4	NB06023C8_0.5ISO_AC	6	2,3	3	8,25	63
0,5		≥ M5	NB04038C10_0.5ISO_AC	4	3,8	3	10,75	50
0,5		≥ M5	NB06038C10_0.5ISO_AC	6	3,8	3	10,75	63
0,6	M3,5 (1,5xD)		NB04026C6_0.6ISO_AC	4	2,6	3	6,3	50
0,6	M3,5 (2xD)		NB04026C8_0.6ISO_AC	4	2,6	3	8,1	50
0,7	M4 (1,5xD)		NB0403C7_0.7ISO_AC	4	3	3	7,35	50
0,7	M4 (2xD)		NB0403C8_0.7ISO_AC	4	3	3	8,75	50
0,7	M4 (2,5xD)		NB0403C10_0.7ISO_AC	4	3	3	10,85	50
0,7	M4 (1,5xD)		NB0603C7_0.7ISO_AC	6	3	3	7,35	63
0,7	M4 (2xD)		NB0603C8_0.7ISO_AC	6	3	3	8,75	63
0,7	M4 (2,5xD)		NB0603C10_0.7ISO_AC	6	3	3	10,85	63
0,75	M4,5 (1,5xD)		NB04034C7_0.75ISO_AC	4	3,4	3	7,87	50
0,75	M4,5 (2xD)		NB04034C10_0.75ISO_AC	4	3,4	3	10,12	50
0,75		≥ M6	NB06045C10_0.75ISO_AC	6	4,5	3	10,87	63
0,75		≥ M6	NB06045C16_0.75ISO_AC	6	4,5	3	16,87	63
0,8	M5 (1,5xD)		NB04038C8_0.8ISO_AC	4	3,8	3	8,4	50
0,8	M5 (2xD)		NB04038C10_0.8ISO_AC	4	3,8	3	10,8	50
0,8	M5 (2,5xD)		NB04038C13_0.8ISO_AC	4	3,8	3	13,2	50
0,8	M5 (1,5xD)		NB06038C8_0.8ISO_AC	6	3,8	3	8,4	63
0,8	M5 (2xD)		NB06038C10_0.8ISO_AC	6	3,8	3	10,8	63
0,8	M5 (2,5xD)		NB06038C13_0.8ISO_AC	6	3,8	3	13,2	63
1,0	M6 (1,5xD)	≥ M8	NB06045C10_1.0ISO_AC	6	4,5	3	10,5	63
1,0	M6 (2xD)	≥ M8	NB06045C13_1.0ISO_AC	6	4,5	3	13,5	63
1,0	M6 (2,5xD)	≥ M8	NB06045C16_1.0ISO_AC	6	4,5	3	16,5	63
1,0	M6 (3xD)	≥ M8	NB06045C19_1.0ISO_AC	6	4,5	3	19,5	63
1,0		≥ M8	NB0606C10_1.0ISO_AC	6	6	3	10,5	63
1,0		≥ M8	NB0606C13_1.0ISO_AC	6	6	3	13,5	63
1,0		≥ M10	NB0808D10_1.0ISO_AC	8	8	4	10,5	63
1,0		≥ M10	NB0808D13_1.0ISO_AC	8	8	4	13,5	63
1,0		≥ M10	NB0808D17_1.0ISO_AC	8	8	4	17,5	63
1,0		≥ M12	NB1010E14_1.0ISO_ AC	10	10	5	14,5	76
1,0		≥ M12	NB1010E19_1.0ISO_AC	10	10	5	19,5	76
1,0		≥ M14	NB1212F15_1.0ISO_AC	12	12	6	15,5	83
1,0		≥ M14	NB1212F21_1.0ISO_AC	12	12	6	21,5	83
1,25	M8 (1,5xD)	≥ M10	NB0606C14_1.25ISO_AC	6	6	3	14,37	63

continue

M

METRIC

Pitch mm	M coarse	M fine	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
1,25	M8 (2xD)	≥ M10	NB0606C18_1.25ISO_AC	6	6	3	18,12	63
1,25	M8 (2,5xD)	≥ M10	NB0606C21_1.25ISO_AC	6	6	3	21,87	63
1,25	M8 (3xD)	≥ M10	NB0606C25_1.25ISO_AC	6	6	3	25,62	76
1,5	M10 (1,5xD)	≥ M12	NB08075C17_1.5ISO_AC	8	7,5	3	17,25	63
1,5	M10 (2xD)	≥ M12	NB08075C21_1.5ISO_AC	8	7,5	3	21,75	76
1,5	M10 (2,5xD)	≥ M12	NB08075C27_1.5ISO_AC	8	7,5	3	27,75	76
1,5	M10 (3xD)	≥ M12	NB08075C32_1.5ISO_AC	8	7,5	3	32,25	76
1,5		≥ M14	NB1010D17_1.5ISO_AC	10	10	4	17,25	76
1,5		≥ M14	NB1010D23_1.5ISO_AC	10	10	4	23,25	76
1,5		≥ M16	NB1212D15_1.5ISO_AC	12	12	4	15,75	83
1,5		≥ M16	NB1212D21_1.5ISO_AC	12	12	4	21,75	83
1,5		≥ M16	NB1212D29_1.5ISO_AC	12	12	4	29,25	83
1,5		≥ M20	NB1616F18_1.5ISO_AC	16	16	6	18,75	89
1,5		≥ M20	NB1616F26_1.5ISO_AC	16	16	6	26,25	89
1,5		≥ M20	NB1616F35_1.5ISO_AC	16	16	6	35,25	100
1,75	M12 (1,5xD)		NB0808C20_1.75ISO_AC	8	8	3	20,12	76
1,75	M12 (2xD)		NB0808C27_1.75ISO_AC	8	8	3	27,12	76
1,75	M12 (1,5xD)		NB1009C20_1.75ISO_AC	10	9	3	20,12	76
1,75	M12 (2xD)		NB1009C27_1.75ISO_AC	10	9	3	27,12	76
1,75	M12 (2,5xD)		NB1009C32_1.75ISO_AC	10	9	3	32,37	100
1,75	M12 (3xD)		NB1009C37_1.75ISO_AC	10	9	3	37,62	100
2,0	M14 (1,5xD)	≥ M18	NB1010C23_2.0ISO_AC	10	10	3	23	76
2,0	M14 (2xD)	≥ M18	NB1010C31_2.0ISO_AC	10	10	3	31	100
2,0	M14 (2,5xD)	≥ M18	NB1010C37_2.0ISO_AC	10	10	3	37	100
2,0	M16 (1,5xD)	≥ M18	NB1212D27_2.0ISO_AC	12	12	4	27	83
2,0	M16 (2xD)	≥ M18	NB1212D35_2.0ISO_AC	12	12	4	35	100
2,0	M16 (2,5xD)	≥ M18	NB1212D43_2.0ISO_AC	12	12	4	43	100
2,0	M16 (3xD)	≥ M18	NB1212C51_2.0ISO_AC	12	12	3	51	100
2,0		≥ M20	NB1616E29_2.0ISO_AC	16	16	5	29	89
2,0		≥ M20	NB1616E39_2.0ISO_AC	16	16	5	39	100
2,0		≥ M24	NB2020F43_2.0ISO_AC	20	20	6	43	100
2,5	M18 (1,5xD)		NB1212C31_2.5ISO_AC	12	12	3	31,25	100
2,5	M18 (2xD)		NB1212C38_2.5ISO_AC	12	12	3	38,75	100
2,5	M18 (2,5xD)		NB1212C48_2.5ISO_AC	12	12	3	48,75	100
2,5	M20 (1,5xD)		NB1414D33_2.5ISO_AC	14	14	4	33,75	89
2,5	M20 (2xD)		NB1414D43_2.5ISO_AC	14	14	4	43,75	100
2,5	M20 (2,5xD)		NB1615D53_2.5ISO_AC	16	15	4	53,75	120
2,5	M20 (3xD)		NB1615C63_2.5ISO_AC	16	15	3	63,75	120
3,0	M24 (1,5xD)	≥ M30	NB1616C40_3.0ISO_AC	16	16	3	40,5	100
3,0	M24 (2xD)	≥ M30	NB1616C52_3.0ISO_AC	16	16	3	52,5	120
3,0	M24 (2,5xD)	≥ M30	NB1818C64_3.0ISO_AC	18	18	3	64,5	130
3,0		≥ M30	NB2020D46_3.0ISO_AC	20	20	4	46,5	120
3,5	M30 (1,5xD)		NB2020C50_3.5ISO_AC	20	20	3	50,75	120
3,5	M30 (2xD)		NB2020C64_3.5ISO_AC	20	20	3	64,75	150
3,5	M30 (2,5xD)		NB2020C78_3.5ISO_AC	20	20	3	78,75	150

M

METRIC (external)

Pitch mm	EXTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
1,0	EB1010D21_1.0ISO_AC	10	10	4	21,5	76
1,5	EB1212D26_1.5ISO_AC	12	12	4	26,25	83
2,0	EB1616D35_2.0ISO_AC	16	16	4	35	100

UN

UNIFIED

Pitch TPI	UNC	UNF	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
44		No.5 (1,5xD)	NB04024C5_44UN_AC	4	2,4	3	5,48	50
40	No.5 (1,5xD)		NB04023C5_40UN_AC	4	2,3	3	5,4	50
40	No.5 (2xD)		NB04023C7_40UN_AC	4	2,3	3	7,3	50
40	No.5 (2,5xD)		NB04023C8_40UN_AC	4	2,3	3	8,57	50
40		No.6 (1,5xD)	NB04026C6_40UN_AC	4	2,6	3	6,03	50
36		No.8 (1,5xD)	NB04031C7_36UN_AC	4	3,1	3	7,41	50
36		No.8 (2xD)	NB04031C9_36UN_AC	4	3,1	3	9,53	50
32	No.6 (1,5xD)		NB04025C6_32UN_AC	4	2,5	3	6,75	50
32	No.6 (2xD)		NB04025C8_32UN_AC	4	2,5	3	8,33	50
32	No.6 (2,5xD)		NB04025C10_32UN_AC	4	2,5	3	9,92	50
32	No.8 (1,5xD)		NB0403C7_32UN_AC	4	3	3	7,54	50
32	No.8 (2xD)		NB0403C9_32UN_AC	4	3	3	9,13	50
32	No.8 (2,5xD)		NB0403C11_32UN_AC	4	3	3	11,51	50
32		No.10 (1,5xD)	NB04036C8_32UN_AC	4	3,6	3	8,33	50
32		No.10 (2xD)	NB04036C10_32UN_AC	4	3,6	3	10,72	50
32			NB0606D13_32UN_AC	6	6	4	13,1	63
28		No.12 (1,5xD)	NB0404C9_28UN_AC	4	4	3	9,52	50
28		No.12 (2xD)	NB0404C12_28UN_AC	4	4	3	12,25	50
28		1/4 (1,5xD)	NB0605C10_28UN_AC	6	5	3	10,43	63
28		1/4 (2xD)	NB0605C14_28UN_AC	6	5	3	14,06	63
28			NB0808D17_28UN_AC	8	8	4	17,69	63
24	No.10 (1,5xD)		NB04038C9_24UN_AC	4	3,8	3	9	50
24	No.10 (2xD)		NB04038C11_24UN_AC	4	3,8	3	11,11	50
24	No.10 (2,5xD)		NB04038C13_24UN_AC	4	3,8	3	13,23	50
24	No.12 (1,5xD)		NB0404C10_24UN_AC	4	4	3	10,05	50
24	No.12 (2xD)		NB0404C12_24UN_AC	4	4	3	12,17	50
24	No.12 (2,5xD)		NB0404C15_24UN_AC	4	4	3	15,35	50
24		5/16 (1,5xD)	NB0606C13_24UN_AC	6	6	3	13,23	63
24		5/16 (2xD)	NB0606C17_24UN_AC	6	6	3	17,46	63
24		3/8 (1,5xD)	NB08076C15_24UN_AC	8	7,6	3	15,35	63
24		3/8 (2xD)	NB08076C20_24UN_AC	8	7,6	3	20,64	76
20	1/4 (1,5xD)		NB06045C10_20UN_AC	6	4,5	3	10,8	63
20	1/4 (2xD)		NB06045C14_20UN_AC	6	4,5	3	14,6	63
20	1/4 (2,5xD)		NB06045C17_20UN_AC	6	4,5	3	17,15	63
20		7/16 (1,5xD)	NB0808C18_20UN_AC	8	8	3	18,41	63
20		7/16 (2xD)	NB0808C23_20UN_AC	8	8	3	23,5	76
20		1/2 (1,5xD)	NB1010D21_20UN_AC	10	10	4	20,96	76
20		1/2 (2xD)	NB1010D27_20UN_AC	10	10	4	27,31	76
20			NB1212E28_20UN_AC	12	12	5	28,57	83
18	5/16 (1,5xD)		NB06058C13_18UN_AC	6	5,8	3	13,41	63
18	5/16 (2xD)		NB06058C17_18UN_AC	6	5,8	3	17,64	63
18	5/16 (2,5xD)		NB06058C21_18UN_AC	6	5,8	3	21,87	63
18		9/16 (1,5xD)	NB1010D23_18UN_AC	10	10	4	23,28	76
18		9/16 (2xD)	NB1010D30_18UN_AC	10	10	4	30,34	100
18		5/8 (1,5xD)	NB1212D26_18UN_AC	12	12	4	26,11	83
18		5/8 (2xD)	NB1212D33_18UN_AC	12	12	4	33,16	100
16	3/8 (1,5xD)		NB0606C16_16UN_AC	6	6	3	16,67	63
16	3/8 (2xD)		NB0606C21_16UN_AC	6	6	3	21,43	63
16	3/8 (2,5xD)		NB0807C26_16UN_AC	8	7	3	26,19	76
16		3/4 (1,5xD)	NB1212D31_16UN_AC	12	12	4	30,96	100
16		3/4 (2xD)	NB1212D40_16UN_AC	12	12	4	40,48	100
16			NB1616E35_16UN_AC	16	16	5	35,72	100
14	7/16 (1,5xD)		NB0808C19_14UN_AC	8	8	3	19,05	63
14	7/16 (2xD)		NB0808C24_14UN_AC	8	8	3	24,49	76
14	7/16 (2,5xD)		NB0808C30_14UN_AC	8	8	3	29,94	76
14		7/8 (1,5xD)	NB1616E35_14UN_AC	16	16	5	35,38	100
14		7/8 (2xD)	NB1616E46_14UN_AC	16	16	5	46,26	120
13	1/2 (1,5xD)		NB0808C22_13UN_AC	8	8	3	22,47	76
13	1/2 (2xD)		NB0808C28_13UN_AC	8	8	3	28,33	76
13	1/2 (2,5xD)		NB10093C34_13UN_AC	10	9,3	3	34,19	100

continue

UN — UNIFIED

Pitch TPI	UNC	UNF	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
12	9/16 (1,5xD)		NB1010C24_12UN_AC	10	10	3	24,34	76
12	9/16 (2xD)		NB1010C30_12UN_AC	10	10	3	30,69	100
12			NB1616E43_12UN_AC	16	16	5	43,39	100
11	5/8 (1,5xD)		NB1010C26_11UN_AC	10	10	3	26,55	76
11	5/8 (2xD)		NB1010C35_11UN_AC	10	10	3	35,79	100
11	5/8 (2,5xD)		NB12117C42_11UN_AC	12	11,7	3	42,72	100
10	3/4 (1,5xD)		NB1212C31_10UN_AC	12	12	3	31,75	100
10	3/4 (2xD)		NB1212C41_10UN_AC	12	12	3	41,91	100
9	7/8 (1,5xD)		NB1616C38_9UN_AC	16	16	3	38,1	100
9	7/8 (2xD)		NB1616C49_9UN_AC	16	16	3	49,39	120
8	1 (1,5xD)		NB1616C42_8UN_AC	16	16	3	42,86	100
8	1 (2xD)		NB1616C55_8UN_AC	16	16	3	55,56	120
8			NB2020D49_8UN_AC	20	20	4	49,21	120
7	1 1/8 - 1 1/4 (1,5xD)		NB2020C52_7UN_AC	20	20	3	52,61	120
6	1 3/8 - 1 1/2 (1,5xD)		NB2525C61_6UN_AC	25	25	3	61,38	130

G/Rp — WHITWORTH PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
28	G 1/16 - 1/8	XB0606C10_28W_AC	6	6	3	10,43	63
19	G 1/4 - 3/8	XB0808C15_19W_AC	8	8	3	15,37	63
19	G 1/4 - 3/8	XB1010D22_19W_AC	10	10	4	22,06	76
14	G 1/2 - 7/8	XB1212D20_14W_AC	12	12	4	20,86	83
14	G 1/2 - 7/8	XB1212D28_14W_AC	12	12	4	28,12	83
14	G 1/2 - 7/8	XB1616E28_14W_AC	16	16	5	28,12	89
11	G 1 - 1 1/2	XB1212C26_11W_AC	12	12	3	26,55	83
11	G 1 - 3	XB1616D40_11W_AC	16	16	4	40,41	100
11	G ≥ 1	XB2020E49_11W_AC	20	20	5	49,65	120

R/Rc — BSPT PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
28	Rc 1/16 - 1/8	XB0606C10_28BSPT_AC	6	6	3	10,43	63
19	Rc 1/4 - 3/8	XB0808C15_19BSPT_AC	8	8	3	15,37	63
14	Rc 1/2 - 7/8	XB1212D20_14BSPT_AC	12	12	4	20,86	83
11	Rc 1 - 2	XB1616D31_11BSPT_AC	16	16	4	31,17	89

PG — STEEL CONDUIT THREAD DIN 40430

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
20	Pg 7	XB0808C21_20PG_AC	8	8	3	20,96	63
18	Pg 9 - 16	XB1010C27_18PG_AC	10	10	3	27,52	76
16	Pg 21- 48	XB1212D31_16PG_AC	12	12	4	30,96	83

NPSF — NPSF PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
27	1/16 - 1/8	XB0606C12_27NPSF_AC	6	6	3	12,70	63
18	1/4 - 3/8	XB0808C16_18NPSF_AC	8	8	3	16,23	63
14	1/2 - 3/4	XB1212D22_14NPSF_AC	12	12	4	22,68	83
11,5	1	XB1616D29_11.5NPSF_AC	16	16	4	29,82	89

NPT

NPT PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
27	1/16 - 1/8	XB0606C10_27NPT_AC	6	6	3	10,82	63
18	1/4 - 3/8	XB0808C16_18NPT_AC	8	8	3	16,23	63
14	1/2 - 3/4	XB1212D22_14NPT_AC	12	12	4	22,68	83
14	3/4	XB1616D22_14NPT_AC	16	16	4	22,68	89
11,5	1 - 2	XB1616D29_11.5NPT_AC	16	16	4	29,82	89
8	≥ 2 1/2	XB2020D42_8NPT_AC	20	20	4	42,86	100

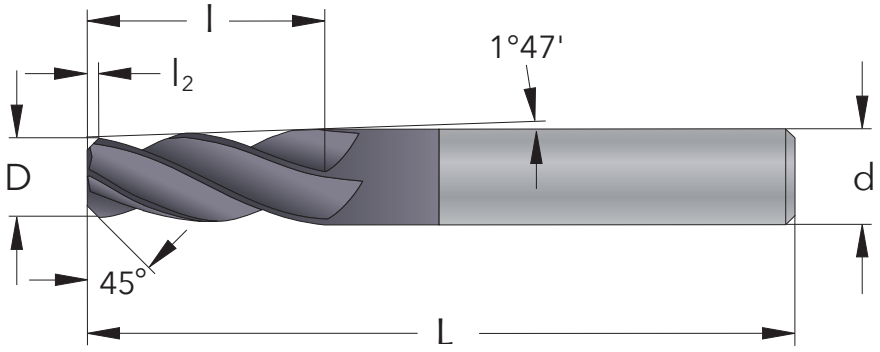
NPTF

NPTF DRYSEAL PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
27	1/16 - 1/8	XB0606C10_27NPTF_AC	6	6	3	10,82	63
18	1/4 - 3/8	XB0808C16_18NPTF_AC	8	8	3	16,23	63
14	1/2 - 3/4	XB1212D22_14NPTF_AC	12	12	4	22,68	83
11,5	1 - 2	XB1616D29_11.5NPTF_AC	16	16	4	29,82	89
8	≥ 2 1/2	XB2020D42_8NPTF_AC	20	20	4	42,86	100

Tapered End Mills for NPT/NPTF/BSPT

FC
TiAlN coated
Micrograin Carbide
Tolerance
D 5,0 - 17,0 +0 / -0,050
Shank
Cylindrical h6, DIN6535 HA
Flute
30° right hand spiral
Field of application
Before Thread Milling of
NPT/NPTF/BSPT



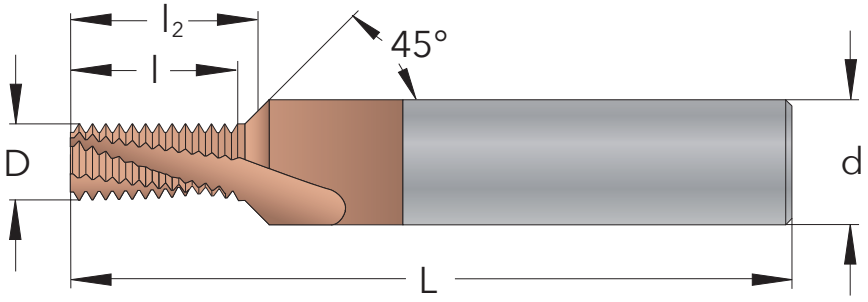
D mm	d mm	Part Number	Cutting edges	l mm	l_2 mm	L mm
5	6	NPT0605D16_FC	4	16	1,0	63
8,5	10	NPT10085D24_FC	4	24	1,5	76
14	16	NPT1614D32_FC	4	32	2	89
17	20	NPT2017D48_FC	4	48	3	120

Chamfering of the thread



Premilling of conical holes result in longer tool life of thread mill

AC
TiAlCN coated
Micrograin Carbide
Tolerance
The theoretical external diameter of the cutter is lasermarked on the tool.
Shank
Cylindrical h6, DIN6535 HA
Flute
15° right hand spiral
Field of application
Thread Milling of all types of steel

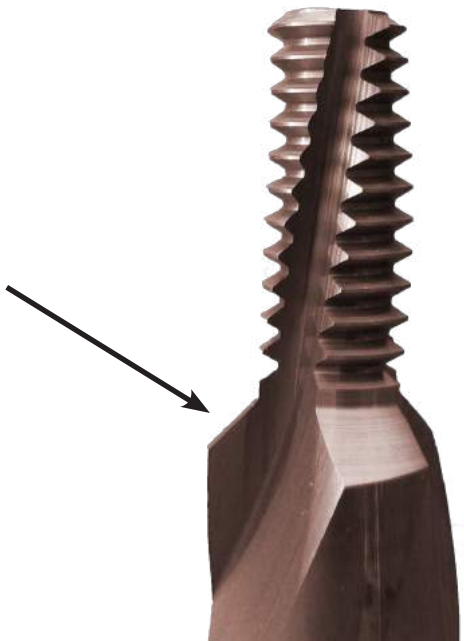


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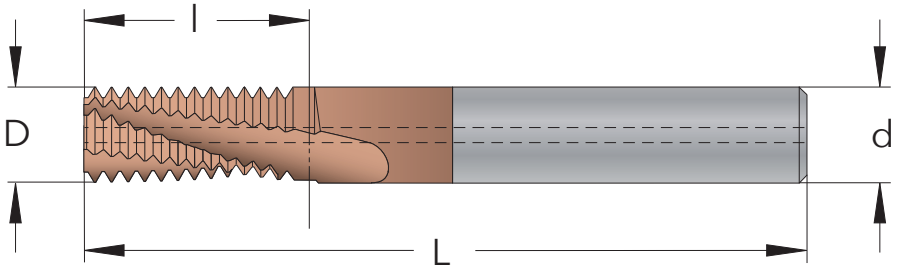
METRIC

Pitch mm	M coarse	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	l_2 mm	L mm
0,5	M3 (1,5xD)	NF06023C5_0.5ISO_AC	6	2,3	3	5,25	5,85	63
0,5	M3 (2xD)	NF06023C6_0.5ISO_AC	6	2,3	3	6,75	7,35	63
0,5	M3 (2,5xD)	NF06023C8_0.5ISO_AC	6	2,3	3	8,25	8,85	63
0,5	M3 (3xD)	NF06023C9_0.5ISO_AC	6	2,3	3	9,75	10,35	63
0,7	M4 (1,5xD)	NF0603C7_0.7ISO_AC	6	3	3	7,35	8,2	63
0,7	M4 (2xD)	NF0603C8_0.7ISO_AC	6	3	3	8,75	9,6	63
0,7	M4 (2,5xD)	NF0603C10_0.7ISO_AC	6	3	3	10,85	11,7	63
0,7	M4 (3xD)	NF0603C12_0.7ISO_AC	6	3	3	12,95	13,8	63
0,8	M5 (1,5xD)	NF06038C8_0.8ISO_AC	6	3,8	3	8,4	9,4	63
0,8	M5 (2xD)	NF06038C10_0.8ISO_AC	6	3,8	3	10,8	11,8	63
0,8	M5 (2,5xD)	NF06038C13_0.8ISO_AC	6	3,8	3	13,2	14,2	63
0,8	M5 (3xD)	NF06038C16_0.8ISO_AC	6	3,8	3	16,4	17,4	63
1,0	M6 (1,5xD)	NF08045C10_1.0ISO_AC	8	4,5	3	10,5	11,75	63
1,0	M6 (2xD)	NF08045C13_1.0ISO_AC	8	4,5	3	13,5	14,75	63
1,0	M6 (2,5xD)	NF08045C16_1.0ISO_AC	8	4,5	3	16,5	17,75	63
1,25	M8 (1,5xD)	NF1006C14_1.25ISO_AC	10	6	3	14,37	16	76
1,25	M8 (2xD)	NF1006C18_1.25ISO_AC	10	6	3	18,12	19,75	76
1,25	M8 (2,5xD)	NF1006C21_1.25ISO_AC	10	6	3	21,87	23,5	76
1,5	M10 (1,5xD)	NF12075C17_1.5ISO_AC	12	7,5	3	17,25	19,25	83
1,5	M10 (2xD)	NF12075C21_1.5ISO_AC	12	7,5	3	21,75	23,75	83
1,5	M10 (2,5xD)	NF12075C27_1.5ISO_AC	12	7,5	3	27,75	29,75	83
1,75	M12 (1,5xD)	NF1409C20_1.75ISO_AC	14	9	3	20,12	22,5	89
1,75	M12 (2xD)	NF1409C27_1.75ISO_AC	14	9	3	27,12	29,5	89
1,75	M12 (2,5xD)	NF1409C32_1.75ISO_AC	14	9	3	32,37	34,75	89

Chamfering of the thread



AC
TiAlCN coated
Micrograin Carbide
Tolerance
The theoretical external diameter of the cutter is lasermarked on the tool.
Shank
Cylindrical h6, DIN6535 HA
Flute
15° right hand spiral
Field of application
Thread Milling of all types of steel

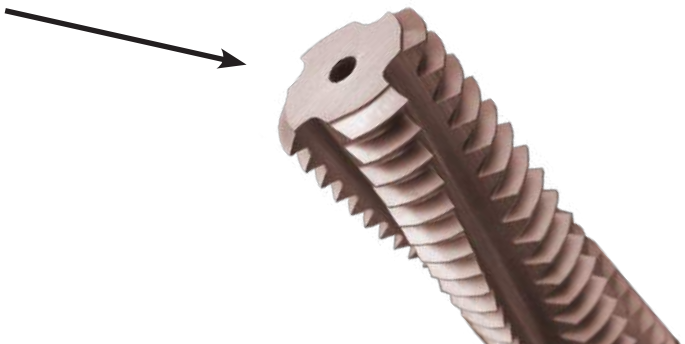


M

METRIC

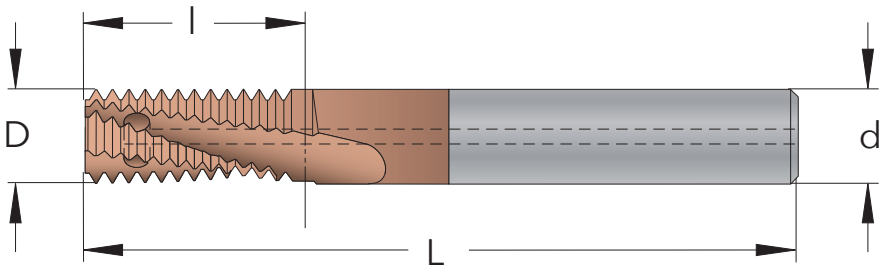
Pitch mm	M coarse	M fine	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
0,8	M5 (1,5xD)		NBK04038C8_0.8ISO_AC	4	3,8	3	8,4	50
0,8	M5 (2xD)		NBK04038C10_0.8ISO_AC	4	3,8	3	10,8	50
0,8	M5 (2,5xD)		NBK04038C13_0.8ISO_AC	4	3,8	3	13,2	50
1,0	M6 (1,5xD)	≥ M8	NBK06045C10_1.0ISO_AC	6	4,5	3	10,5	63
1,0	M6 (2xD)	≥ M8	NBK06045C13_1.0ISO_AC	6	4,5	3	13,5	63
1,0	M6 (2,5xD)	≥ M8	NBK06045C16_1.0ISO_AC	6	4,5	3	16,5	63
1,0		≥ M10	NBK0808D17_1.0ISO_AC	8	8	3	17,5	76
1,25	M8 (1,5xD)	≥ M10	NBK0606C14_1.25ISO_AC	6	6	3	14,37	63
1,25	M8 (2xD)	≥ M10	NBK0606C18_1.25ISO_AC	6	6	3	18,12	63
1,25	M8 (2,5xD)	≥ M10	NBK0606C21_1.25ISO_AC	6	6	3	21,87	63
1,5	M10 (1,5xD)	≥ M12	NBK08075C17_1.5ISO_AC	8	7,5	3	17,25	76
1,5	M10 (2xD)	≥ M12	NBK08075C21_1.5ISO_AC	8	7,5	3	21,75	76
1,5	M10 (2,5xD)	≥ M12	NBK08075C27_1.5ISO_AC	8	7,5	3	27,75	76
1,5	M10 (3xD)	≥ M12	NBK08075C32_1.5ISO_AC	8	7,5	3	32,25	76
1,5		≥ M16	NBK1212D29_1.5ISO_AC	12	12	4	29,25	100
1,5		≥ M20	NBK1616F35_1.5ISO_AC	16	16	6	35,25	120
1,75	M12 (1,5xD)		NBK0808C20_1.75ISO_AC	8	8	3	20,12	76
1,75	M12 (2xD)		NBK0808C27_1.75ISO_AC	8	8	3	27,12	76
1,75	M12 (1,5xD)		NBK1009C20_1.75ISO_AC	10	9	3	20,12	100
1,75	M12 (2xD)		NBK1009C27_1.75ISO_AC	10	9	3	27,12	100
1,75	M12 (2,5xD)		NBK1009C32_1.75ISO_AC	10	9	3	32,37	100
1,75	M12 (3xD)		NBK1009C37_1.75ISO_AC	10	9	3	37,62	100
2,0	M14 (1,5xD)	≥ M18	NBK1010C23_2.0ISO_AC	10	10	3	23	100
2,0	M14 (2xD)	≥ M18	NBK1010C31_2.0ISO_AC	10	10	3	31	100
2,0	M16 (1,5xD)	≥ M18	NBK1212D27_2.0ISO_AC	12	12	4	27	100
2,0	M16 (2xD)	≥ M18	NBK1212D35_2.0ISO_AC	12	12	4	35	100
2,0	M16 (2,5xD)	≥ M18	NBK1212D43_2.0ISO_AC	12	12	4	43	100
2,0	M16 (3xD)	≥ M18	NBK1212C51_2.0ISO_AC	12	12	3	51	100
2,0		≥ M20	NBK1616E39_2.0ISO_AC	16	16	5	39	120
2,5	M20 (1,5xD)		NBK1414D33_2.5ISO_AC	14	14	4	33,75	100
2,5	M20 (2xD)		NBK1414D43_2.5ISO_AC	14	14	4	43,75	100
2,5	M20 (2,5xD)		NBK1615D53_2.5ISO_AC	16	15	4	53,75	120
3,0	M24 (1,5xD)	≥ M30	NBK1616C40_3.0ISO_AC	16	16	3	40,5	120
3,0	M24 (2xD)	≥ M30	NBK1616C52_3.0ISO_AC	16	16	3	52,5	120
3,5	M30 (1,5xD)		NBK2020C50_3.5ISO_AC	20	20	3	50,75	150
3,5	M30 (2xD)		NBK2020C64_3.5ISO_AC	20	20	3	64,75	150

Internal Coolant



ThreadBurr with Internal Radial Coolant

AC
TiAlCN coated
Micrograin Carbide
Tolerance
The theoretical external diameter of the cutter is lasermarked on the tool.
Shank
Cylindrical h6, DIN6535 HA
Flute
15° right hand spiral
Field of application
Thread Milling of all types of steel



M

METRIC

Pitch mm	M coarse	M fine	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
1,0		≥ M10	NBT0808D17_1.0ISO_AC	8	8	4	17,5	76
1,25	M8 (2xD)	≥ M10	NBT0606C18_1.25ISO_AC	6	6	3	18,12	76
1,5	M10 (2xD)	≥ M12	NBT08075C21_1.5ISO_AC	8	7,5	3	21,75	76
1,5		≥ M16	NBT1212D29_1.5ISO_AC	12	12	4	29,25	100
1,75	M12 (2xD)		NBT0808C27_1.75ISO_AC	8	8	3	27,12	76
1,75	M12 (2xD)		NBT1009C27_1.75ISO_AC	10	9	3	27,12	100
2,0	M14 (2xD)	≥ M18	NBT1010C31_2.0ISO_AC	10	10	3	31	100
2,0	M16 (2xD)	≥ M18	NBT1212D35_2.0ISO_AC	12	12	4	35	100
2,0		≥ M20	NBT1616E39_2.0ISO_AC	16	16	5	39	100

G/Rp

WHITWORTH PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
28	G 1/16 - 1/8	XBT0606C10_28W_AC	6	6	3	10,43	76
19	G 1/4 - 3/8	XBT1010D22_19W_AC	10	10	4	22,06	100
14	G 1/2 - 7/8	XBT1212D28_14W_AC	12	12	4	28,12	100
11	G 1 - 3	XBT1616D40_11W_AC	16	16	4	40,41	100

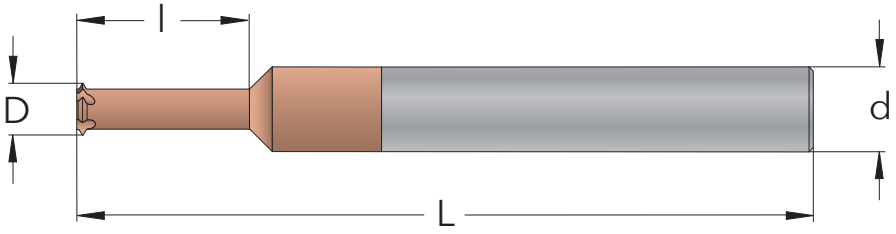
Internal Radial Coolant



SOLID CARBIDE THREAD MILLS *TiAlCN*

Micro, one tooth

AC / LC
TiAlCN / AlCrN coated
Micrograin Carbide
Tolerance
D 1,0 - 4,0 +0 / -0,050
Shank
Cylindrical h6, DIN6535 HA
Flute
15° right hand spiral
Field of application
Thread Milling of all types of steel



60°

PARTIAL PROFILE 60°

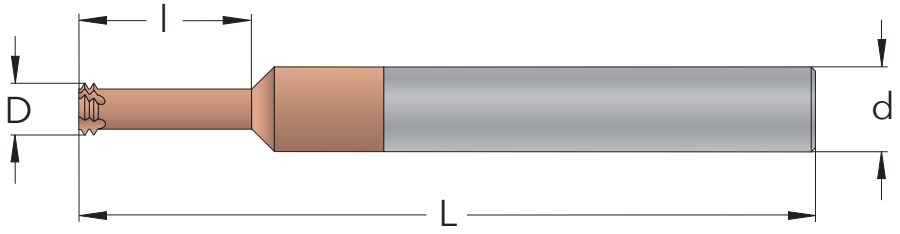
M coarse	M fine	UNC UNF	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
M1	M1		NS03007C1.7_P60_LC	3	0,7	3	1,7	39
M1	M1		NS03007C2.5_P60_LC	3	0,7	3	2,5	39
M1	M1		NS03007C3.2_P60_LC	3	0,7	3	3,2	39
M1,2	M1,2		NS03009C2.0_P60_LC	3	0,9	3	2	39
M1,2	M1,2		NS03009C2.9_P60_LC	3	0,9	3	2,9	39
M1,2	M1,2		NS03009C3.9_P60_LC	3	0,9	3	3,9	39
M1,4	M1,4		NS03010C2.2_P60_LC	3	1,03	3	2,3	39
M1,4	M1,4		NS03010C3.3_P60_LC	3	1,03	3	3,3	39
M1,4	M1,4		NS03010C4.4_P60_LC	3	1,03	3	4,4	39
M1,6	M1,4	No.0-80	NS03011C2.5_P60_LC	3	1,16	3	2,5	39
M1,6	M1,4	No.0-80	NS03011C3.6_P60_LC	3	1,16	3	3,6	39
M1,6	M1,4	No.0-80	NS03011C5.1_P60_LC	3	1,16	3	5,1	39
M1,8	M1,6	No.1	NS03013C2.8_P60_LC	3	1,35	3	2,8	39
M1,8	M1,6	No.1	NS03013C4.2_P60_LC	3	1,35	3	4,2	39
M1,8	M1,6	No.1	NS03013C5.6_P60_LC	3	1,35	3	5,6	39
M2-M2,2	M1,8-M2	No.2	NS03015C3.8_P60_AC	3	1,5	3	3,8	39
M2-M2,2	M1,8-M2	No.2	NS03015C5.4_P60_AC	3	1,5	3	5,4	39
M2,5	M2,2	No.3	NS03019C4.3_P60_AC	3	1,9	3	4,3	39
M2,5	M2,2	No.3	NS03019C6.2_P60_AC	3	1,9	3	6,2	39
	M2,5	No.4	NS03021C4.9_P60_AC	3	2,1	3	4,9	39
	M2,5	No.4	NS03021C7.1_P60_AC	3	2,1	3	7,1	39
M3		No.5	NS03023C5.4_P60_AC	3	2,3	3	5,4	39
M3		No.5	NS03023C7.8_P60_AC	3	2,3	3	7,8	39
M3,5	M3	No.6	NS03026C6.1_P60_AC	3	2,6	3	6,1	39
M3,5	M3	No.6	NS03026C8.7_P60_AC	3	2,6	3	8,7	39
M4	M3,5-M4	No.8	NS0303C7.1_P60_AC	3	3	3	7,1	39
M4	M3,5-M4	No.8	NS0303C10.2_P60_AC	3	3	3	10,2	39
M4,5	M4,5	No.10	NS04036C8.3_P60_AC	4	3,6	3	8,3	50
M4,5	M4,5	No.10	NS04036C12.0_P60_AC	4	3,6	3	12	50
M5-M6	M5-M6	No.12	NS0404C10.0_P60_AC	4	4	3	10	50
M5-M6	M5-M6	No.12	NS0404C14.5_P60_AC	4	4	3	14,5	50



SmiCut STS

Micro, two teeth

AC
TiAlCN coated
Micrograin Carbide
Tolerance
The theoretical external diameter of the cutter is lasermarked on the tool.
Shank
Cylindrical h6, DIN6535 HA
Flute
15° right hand spiral
Field of application
Thread Milling of all types of steel



M

METRIC

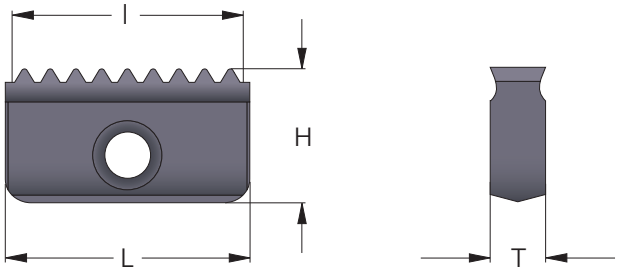
Pitch mm	M coarse	INTERNAL Part Number	d mm	D mm	Cutting edges	l mm	L mm
0,4	M2 (1,5xD)	NM03015C3_0.4ISO_AC	3	1,5	3	3,4	39
0,4	M2 (2,25xD)	NM03015C5_0.4ISO_AC	3	1,5	3	5	39
0,45	M2,2 (1,5xD)	NM03016C3_0.45ISO_AC	3	1,6	3	3,8	39
0,45	M2,2 (2,25xD)	NM03016C5_0.45ISO_AC	3	1,6	3	5,4	39
0,45	M2,5 (1,5xD)	NM03019C4_0.45ISO_AC	3	1,9	3	4,2	39
0,45	M2,5 (2,25xD)	NM03019C6_0.45ISO_AC	3	1,9	3	6,1	39
0,5	M3 (1,5xD)	NM03023C5_0.5ISO_AC	3	2,3	3	5	39
0,5	M3 (2,25xD)	NM03023C7_0.5ISO_AC	3	2,3	3	7,3	39
0,6	M3,5 (1,5xD)	NM03026C6_0.6ISO_AC	3	2,6	3	6	39
0,6	M3,5 (2,25xD)	NM03026C8_0.6ISO_AC	3	2,6	3	8,5	39
0,7	M4 (1,5xD)	NM0303C7_0.7ISO_AC	3	3	3	7	39
0,7	M4 (2,25xD)	NM0303C10_0.7ISO_AC	3	3	3	10	39
0,8	M5 (1,5xD)	NM04038C9_0.8ISO_AC	4	3,8	3	9	50
0,8	M5 (2,25xD)	NM04038C12_0.8ISO_AC	4	3,8	3	12,1	50
1,0	M6 (1,5xD)	NM06045C10_1.0ISO_AC	6	4,5	3	10	63
1,0	M6 (2,25xD)	NM06045C14_1.0ISO_AC	6	4,5	3	14,5	63
1,25	M8 (1,5xD)	NM0606C14_1.25ISO_AC	6	6	3	14	63
1,25	M8 (2,25xD)	NM0606C19_1.25ISO_AC	6	6	3	19,3	63



SmiCut STS

THREAD MILLING INSERTS

TiAlN



M

METRIC

Pitch mm	M coarse	M fine	INTERNAL Part Number	l mm	L mm	T mm	H mm	Cutting edges
1,0		≥ M16	14I_1.0ISO_FC	14	14	3,1	7,5	2
1,0		≥ M24	21I_1.0ISO_FC	21	21	4,7	12	2
1,5		≥ M16	14I_1.5ISO_FC	13,5	14	3,1	7,5	2
1,5		≥ M24	21I_1.5ISO_FC	21	21	4,7	12	2
1,5		≥ M35	30I_1.5ISO_FC	30	30	5,5	16	2
2,0	M16	≥ M18	14I_2.0ISO_FC	14	14	3,1	7,5	2
2,0		≥ M24	21I_2.0ISO_FC	20	21	4,7	12	2
2,0		≥ M36	30I_2.0ISO_FC	30	30	5,5	16	2
2,0		≥ M56	40I_2.0ISO_FC	40	40	6,3	20	2
2,5	M18-M22		14I_2.5ISO_FC	12,5	14	3,1	7,5	2
3,0	M24	≥ M30	21I_3.0ISO_FC	21	21	4,7	12	2
3,0		≥ M40	30I_3.0ISO_FC	30	30	5,5	16	2
3,0		≥ M58	40I_3.0ISO_FC	39	40	6,3	20	2
3,5	M30-M33		21I_3.5ISO_FC	21	21	4,7	12	2
4,0	M36-M39	≥ M42	30I_4.0ISO_FC	28	30	5,5	16	2
4,0		≥ M64	40I_4.0ISO_FC	40	40	6,3	20	2
4,5	M42-M45		30I_4.5ISO_FC	27	30	5,5	16	2
5,0	M48-M52		30I_5.0ISO_FC	30	30	5,5	16	2
5,5	M56-M60		30I_5.5ISO_FC	27,5	30	5,5	16	2
6,0	M64-M68	≥ M72	40I_6.0ISO_FC	36	40	6,3	20	2

G/Rp

WHITWORTH PIPE THREAD

Pitch TPI	Norm	INTERNAL / EXTERNAL Part Number	l mm	L mm	T mm	H mm	Cutting edges
19	G 3/8	14X_19W_FC	13,37	14	3,1	7,5	2
14	G 1/2 - 5/8	14X_14W_FC	12,7	14	3,1	7,5	2
14	G 3/4 - 7/8	21X_14W_FC	19,96	21	4,7	12	2
11	G 1	14X_11W_FC	13,85	14	3,1	7,5	1
11	G 1	21X_11W_FC	20,78	21	4,7	12	2
11	G 1 1/8	30X_11W_FC	30,02	30	5,5	16	2
11	G ≥ 2	40X_11W_FC	39,25	40	6,3	20	2

R/Rc

BSPT PIPE THREAD

Pitch TPI	Norm	INTERNAL / EXTERNAL Part Number	l mm	L mm	T mm	H mm	Cutting edges
19	Rc 3/8	14X_19BSPT_FC	13,37	14	3,1	7,5	1
14	Rc 1/2 - 5/8	14X_14BSPT_FC	12,7	14	3,1	7,5	1
14	Rc 3/4 - 7/8	21X_14BSPT_FC	19,96	21	4,7	12	1
11	Rc 1	21X_11BSPT_FC	20,78	21	4,7	12	1
11	Rc 1 1/8	30X_11BSPT_FC	30,02	30	5,5	16	1
11	Rc ≥ 2	40X_11BSPT_FC	39,25	40	6,3	20	1

PG

STEEL CONDUIT THREAD DIN 40430

Pitch TPI	Norm	INTERNAL / EXTERNAL Part Number	l mm	L mm	T mm	H mm	Cutting edges
18	Pg 9 - 16	14X_18PG_FC	14,11	14	3,1	7,5	2
18	Pg 13,5 - 16	21X_18PG_FC	21	21	4,7	12	2
16	Pg 21 - 48	21X_16PG_FC	20,64	21	4,7	12	2
16	Pg 29 - 48	30X_16PG_FC	30	30	5,5	16	2

UN

UNIFIED

Pitch TPI	UNC	UNF	UNEF	INTERNAL Part Number	I mm	L mm	T mm	H mm	Cutting edges
32				14I_32UN_FC	13,49	14	3,1	7,5	2
28				14I_28UN_FC	13,61	14	3,1	7,5	2
24			5/8	14I_24UN_FC	13,75	14	3,1	7,5	2
20			3/4 - 1	14I_20UN_FC	13,97	14	3,1	7,5	2
20			1	21I_20UN_FC	20,32	21	4,7	12	2
20				30I_20UN_FC	29,21	30	5,5	16	2
18		5/8	1 1/8-1 5/8	14I_18UN_FC	14,11	14	3,1	7,5	2
18			1 1/8-1 5/8	21I_18UN_FC	21,17	21	4,7	12	2
18			1 1/4-1 5/8	30I_18UN_FC	29,63	30	5,5	16	2
16		3/4		14I_16UN_FC	12,7	14	3,1	7,5	2
16				21I_16UN_FC	20,64	21	4,7	12	2
16				30I_16UN_FC	30,16	30	5,5	16	2
16				40I_16UN_FC	39,69	40	6,3	20	2
14		7/8		14I_14UN_FC	12,7	14	3,1	7,5	2
14		7/8		21I_14UN_FC	19,96	21	4,7	12	2
12		1-1 1/2		14I_12UN_FC	12,7	14	3,1	7,5	2
12		1 1/8-1 1/2		21I_12UN_FC	21,12	21	4,7	12	2
12		1 1/2		30I_12UN_FC	29,63	30	5,5	16	2
12				40I_12UN_FC	40,22	40	6,3	20	2
10	3/4			14I_10UN_FC	12,7	14	3,1	7,5	2
8				21I_8UN_FC	19,05	21	4,7	12	2
8				30I_8UN_FC	28,57	30	5,5	16	2
8				40I_8UN_FC	38,1	40	6,3	20	2
7	1 1/8-1 1/4			21I_7UN_FC	21,77	21	4,7	12	2
6	1 1/2			30I_6UN_FC	29,63	30	5,5	16	2
6				40I_6UN_FC	38,1	40	6,3	20	2
5	1 3/4			30I_5UN_FC	30,48	30	5,5	16	1
4	3 - 4			40I_4UN_FC	38,1	40	6,3	20	2

NPT

NPT PIPE THREAD

Pitch TPI	Norm	INTERNAL / EXTERNAL Part Number	I mm	L mm	T mm	H mm	Cutting edges
18	3/8	14X_18NPT_FC	12,7	14	3,1	7,5	1
14	1/2 - 5/8	14X_14NPT_FC	12,7	14	3,1	7,5	1
14	3/4 - 7/8	21X_14NPT_FC	19,96	21	4,7	12	1
11,5	1	21X_11.5NPT_FC	19,88	21	4,7	12	1
11,5	1 1/4 - 2	30X_11.5NPT_FC	28,71	30	5,5	16	1
8	≥ 2 1/2	30X_8NPT_FC	28,58	30	5,5	16	1
8	≥ 2 1/2	40X_8NPT_FC	38,1	40	6,3	20	1

NPTF

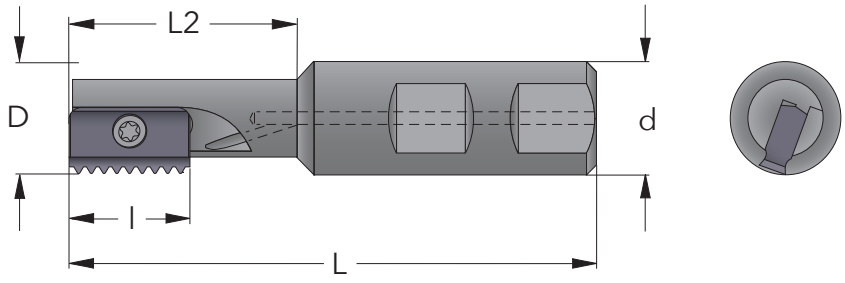
NPTF DRYSEAL PIPE THREAD

Pitch TPI	Norm	INTERNAL / EXTERNAL Part Number	I mm	L mm	T mm	H mm	Cutting edges
18	3/8	14X_18NPTF_FC	12,7	14	3,1	7,5	1
14	1/2 - 5/8	14X_14NPTF_FC	12,7	14	3,1	7,5	1
14	3/4 - 7/8	21X_14NPTF_FC	19,96	21	4,7	12	1
11,5	1	21X_11.5NPTF_FC	19,88	21	4,7	12	1
11,5	1 1/4 - 2	30X_11.5NPTF_FC	28,71	30	5,5	16	1
8	≥ 2 1/2	30X_8NPTF_FC	28,58	30	5,5	16	1
8	≥ 2 1/2	40X_8NPTF_FC	38,1	40	6,3	20	1

- Part number with I is for internal thread profile.
- Part number with X is for in- and external thread profile.
- For external profile indicate E instead of I. The price is 10% higher for E.

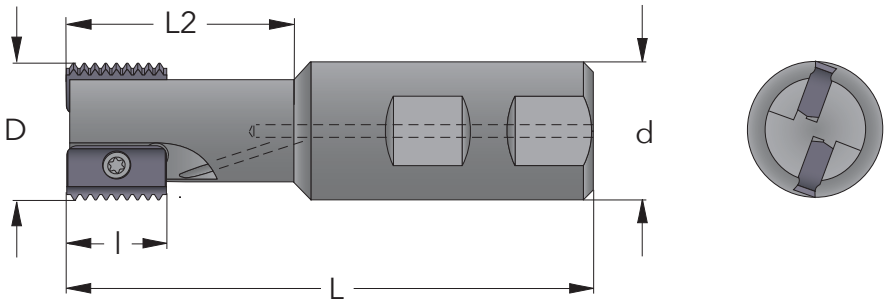
THREAD MILLING TOOLHOLDERS

with One Pocket



D mm	d mm	Part Number	l mm	L2 mm	L mm	Cutting edges
12	20	SR0012F14	14	20	75	1
14,5	20	SR0014H14	14	25	85	1
17	20	SR0017H14	14	30	85	1
18	20	SR0018H21	21	30	85	1
21	20	SR0021H21	21	40	94	1
25	20	SR0025K21	21	-	125	1
29	25	SR0029J30	30	50	110	1
31	25	SR0031M30	30	-	150	1
38	32	SR0038M30	30	-	150	1
48	40	SR0048M40	40	78	153	1
48	40	SR0048R40	40	-	210	1

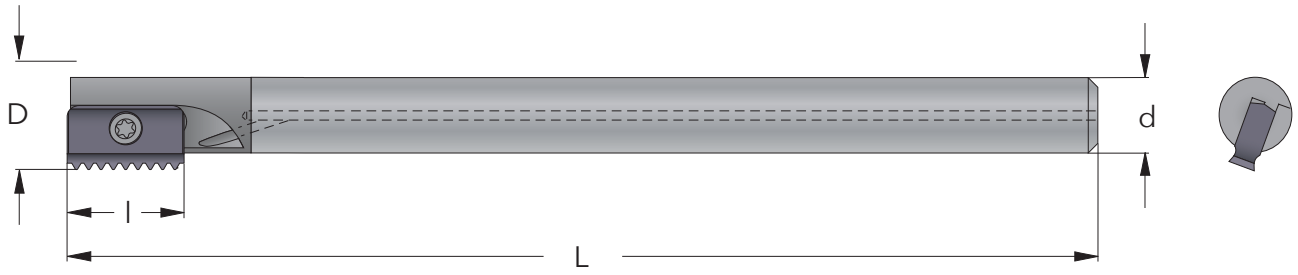
with Two Pockets



D mm	d mm	Part Number	l mm	L2 mm	L mm	Cutting edges
20	20	SR0020H14-2	14	41	93	2
30	25	SR0030J21-2	21	52	108	2
40	32	SR0040L30-2	30	70	130	2
50	40	SR0050M40-2	40	78	153	2

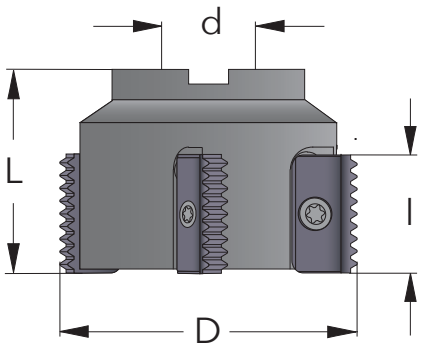
THREAD MILLING TOOLHOLDERS

with Carbide Shank



D mm	d mm	Part Number	l mm	L mm	Cutting edges
13	10	SR0013J14C	14	150	1
15	12	SR0015K14C	14	175	1
21	16	SR0021M21C	21	200	1
27	20	SR0027S30C	30	260	1
33	25	SR0033T30C	30	270	1

with Multi Pockets

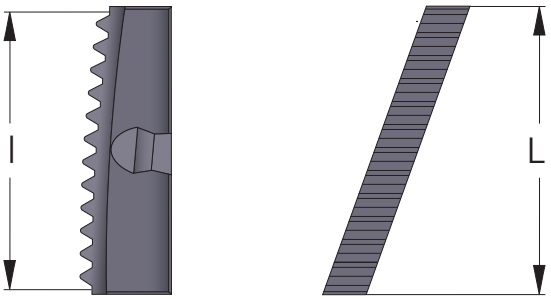


D mm	d mm	Part Number	l mm	L mm	Cutting edges
63	22	SR0063C21-5	21	50	5
63	22	SR0063C30-4	30	50	4
80	27	SR0080D30-4	30	55	4
100	32	SR0100D30-4	30	60	4
80	27	SR0080D40-4	40	65	4
100	32	SR0100E40-4	40	70	4

Spare Parts

Insert mm	Screw to insert	Torx key
14	S14	K14
21	S21	K21
30	S30	K30
40	S40	K40

Spiral Fluted



M

METRIC

Pitch mm	M fine	INTERNAL Part Number	l mm	L mm	Cutting edges
1,0	≥ M27	H23I_1.0ISO_FC	27	27	1
1,5	≥ M27	H23I_1.5ISO_FC	27	27	1
1,5	≥ M36	H32I_1.5ISO_FC	31,5	32	1
1,5	≥ M52	H45I_1.5ISO_FC	36	37	1
1,5	≥ M68	H63I_1.5ISO_FC	37,5	38	1
2,0	≥ M27	H23I_2.0ISO_FC	26	27	1
2,0	≥ M36	H32I_2.0ISO_FC	32	32	1
2,0	≥ M52	H45I_2.0ISO_FC	36	37	1
2,0	≥ M68	H63I_2.0ISO_FC	38	38	1
3,0	≥ M30	H23I_3.0ISO_FC	27	27	1
3,0	≥ M39	H32I_3.0ISO_FC	30	32	1
3,0	≥ M52	H45I_3.0ISO_FC	36	37	1
3,0	≥ M72	H63I_3.0ISO_FC	36	38	1
3,5	≥ M30	H23I_3.5ISO_FC	24,5	27	1
4,0	≥ M36	H23I_4.0ISO_FC	24	27	1
4,0	≥ M42	H32I_4.0ISO_FC	32	32	1
4,0	≥ M56	H45I_4.0ISO_FC	36	37	1
4,0	≥ M72	H63I_4.0ISO_FC	36	38	1
4,5	≥ M42	H32I_4.5ISO_FC	31,5	32	1
5,0	≥ M48	H32I_5.0ISO_FC	30	32	1
5,5	≥ M56	H45I_5.5ISO_FC	33	37	1
6,0	≥ M64	H45I_6.0ISO_FC	36	37	1
6,0	≥ M80	H63I_6.0ISO_FC	36	38	1

G/Rp

WHITWORTH PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	l mm	L mm	Cutting edges
14	G ≥ 7/8	H23X_14W_FC	25,4	27	1
11	G ≥ 1	H23X_11W_FC	25,4	27	1
11	G ≥ 1 1/8	H32X_11W_FC	30,02	32	1
11	G ≥ 1 3/4	H45X_11W_FC	36,95	37	1
11	G ≥ 2 1/2	H63X_11W_FC	36,95	38	1

R/Rc

BSPT PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	l mm	L mm	Cutting edges
11	Rc ≥ 1	H23X_11BSPT_FC	25,4	27	1
11	Rc ≥ 1 1/8	H32X_11BSPT_FC	30,02	32	1
11	Rc ≥ 1 3/4	H45X_11BSPT_FC	36,95	37	1
11	Rc ≥ 2 1/2	H63X_11BSPT_FC	36,95	38	1

SmiCut STS

NPT

NPT PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	l mm	L mm	Cutting edges
11,5	1 - 2	H23X_11.5NPT_FC	26,5	27	1
11,5	1 1/4 - 2	H32X_11.5NPT_FC	30,92	32	1
11,5	2	H45X_11.5NPT_FC	35,34	37	1
8	2 1/2	H45X_8NPT_FC	34,93	37	1
8	3	H63X_8NPT_FC	38,1	38	1

NPTF

NPTF PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	l mm	L mm	Cutting edges
11,5	1 - 2	H23X_11.5NPTF_FC	26,5	27	1
11,5	1 1/4 - 2	H32X_11.5NPTF_FC	30,92	32	1

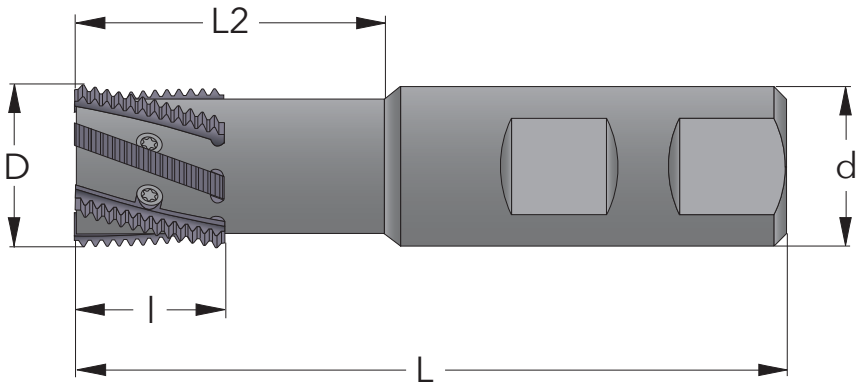
UN

UNIFIED

Pitch TPI	Standard	INTERNAL Part Number	l mm	L mm	Cutting edges
24	≥ 1	H23I_24UN_FC	26,46	27	1
20	≥ 1 1/16	H23I_20UN_FC	26,67	27	1
20	≥ 1 3/8	H32I_20UN_FC	31,75	32	1
18	≥ 1 1/16	H23I_18UN_FC	26,81	27	1
18	≥ 1 3/8	H32I_18UN_FC	31,04	32	1
16	≥ 1 1/8	H23I_16UN_FC	26,99	27	1
16	≥ 1 1/2	H32I_16UN_FC	31,75	32	1
16	≥ 2	H45I_16UN_FC	36,51	37	1
16	≥ 2 5/8	H63I_16UN_FC	38,1	38	1
12	≥ 1 1/8	H23I_12UN_FC	25,4	27	1
12	≥ 1 1/2	H32I_12UN_FC	31,75	32	1
12	≥ 2	H45I_12UN_FC	35,98	37	1
12	≥ 2 3/4	H63I_12UN_FC	38,1	38	1
8	≥ 1 1/8	H23I_8UN_FC	25,4	27	1
8	≥ 1 1/2	H32I_8UN_FC	31,75	32	1
8	≥ 2 1/8	H45I_8UN_FC	34,93	37	1
8	≥ 2 3/4	H63I_8UN_FC	38,1	38	1
7	≥ 1 1/4	H23I_7UN_FC	25,4	27	1
6	≥ 1 5/8	H32I_6UN_FC	29,63	32	1
6	≥ 2 1/8	H45I_6UN_FC	33,97	37	1
6	≥ 2 7/8	H63I_6UN_FC	38,1	38	1
5	≥ 1 3/4	H32I_5UN_FC	30,48	32	1

THREAD MILLING TOOLHOLDERS

Spiral Fluted

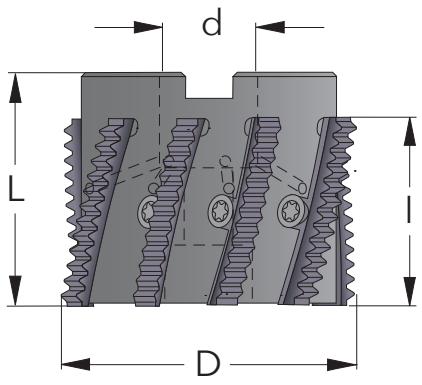


D mm	d mm	Part Number	l mm	L2 mm	L mm	Cutting edges
23	25	SRH23-2	27	50	110	2
23	25	SRH23M-2	27	75	150	2
32	32	SRH32-5	32	60	130	5
32	32	SRH32P-5	32	90	180	5
45	32	SRH45-6	37	-	130	6



THREAD MILLING TOOLHOLDERS

Spiral Fluted



D mm	d mm	Part Number	l mm	L mm	Cutting edges
32	16	SRH32-5M	32	52	5
45	22	SRH45-6M	37	60	6
63	22	SRH63-9	38	50	9

Spare Parts

Insert mm	Screw to insert	Torx key
H23	S23	K21
H32	S32	K22
H45	S45	K40
H63	S63	K40

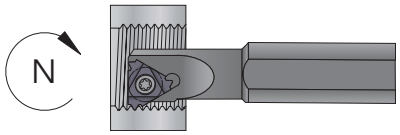
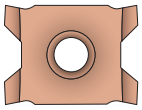
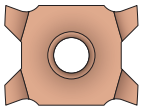
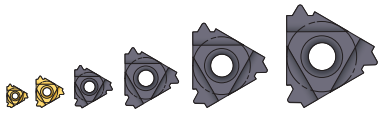
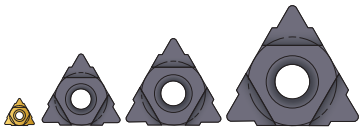
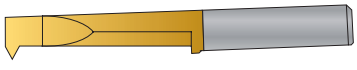
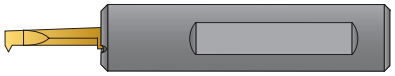


FourCut
THREADING

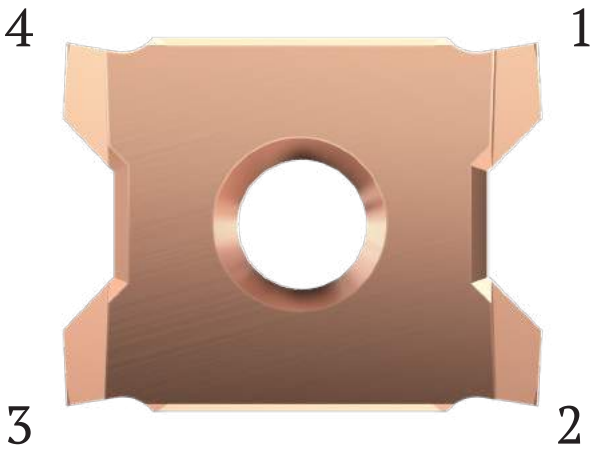


THREAD TURNING

CONTENTS

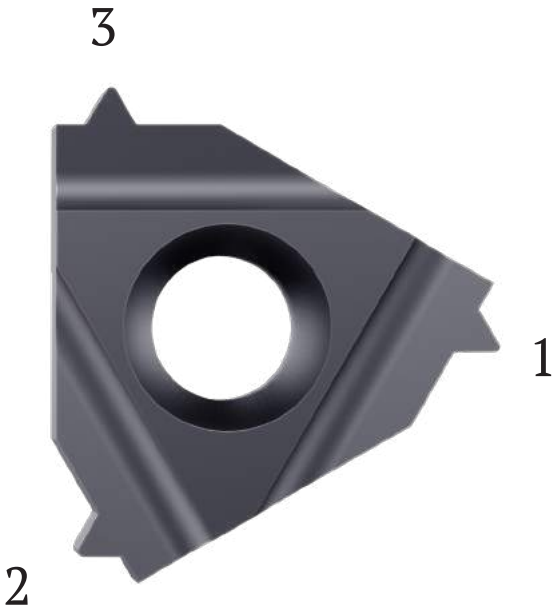
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Cost-effective

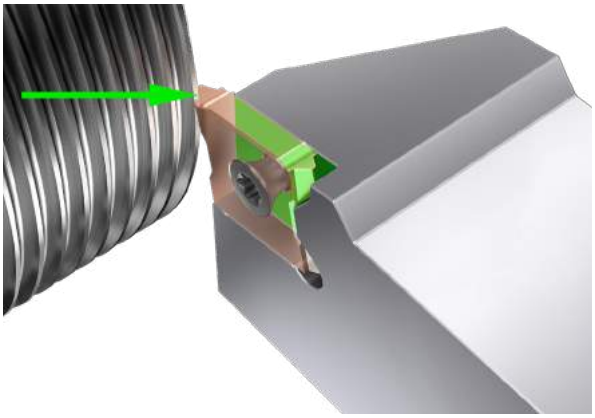


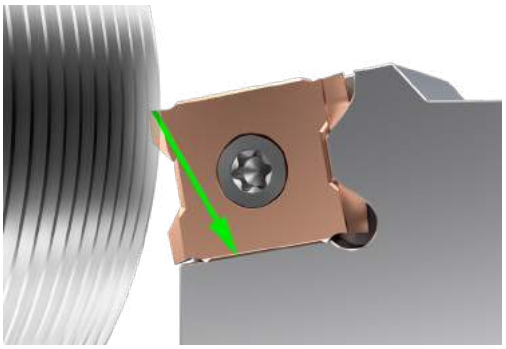
Four Cutting Edges - for the Price of Three

As the price for the inserts are the same, the FourCut threading insert is 25% cheaper as it has four cutting edges instead of three.



Strength

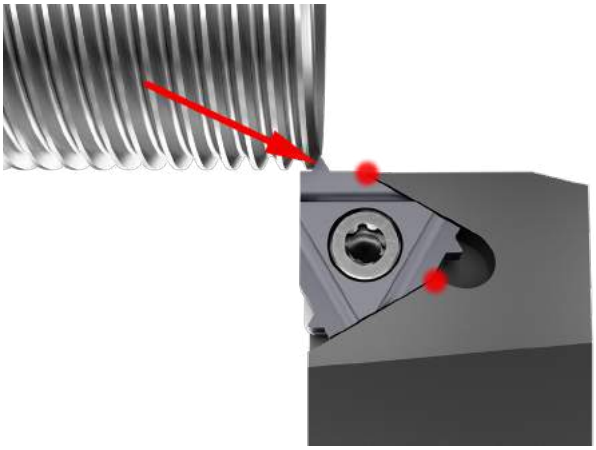


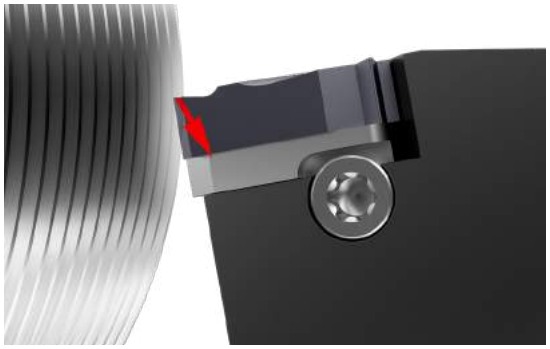


Strong and Stable Machining

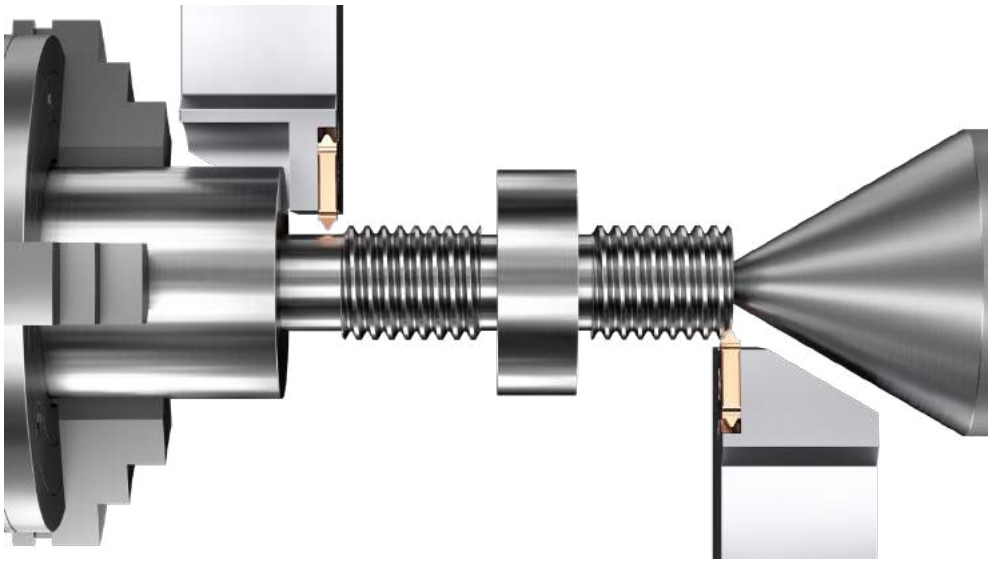
FourCut is a vertical insert. This gives a very strong insert. The cutting forces go in to the insert and you don´t need any anvil as the carbide insert take up the forces.

No problem with the side forces as the flat surface of the insert take up these forces. No weak point on the toolholder.





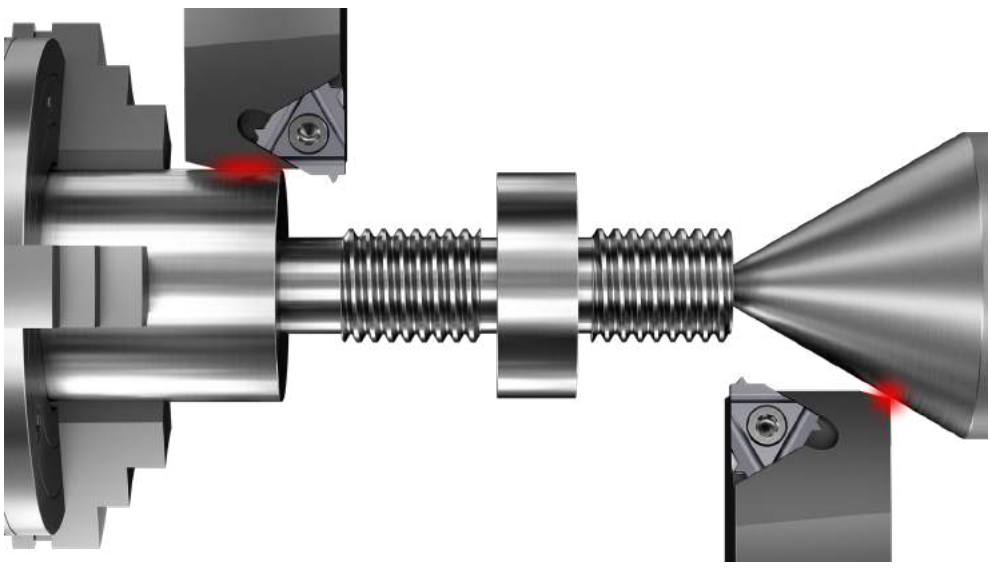
Accessibility



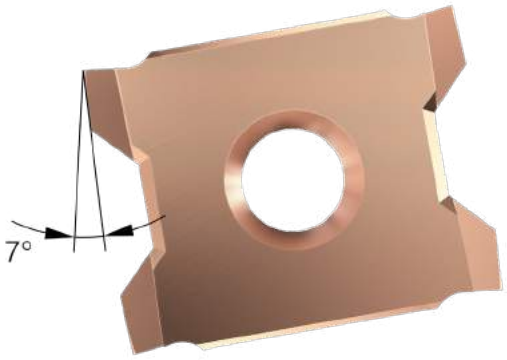
Minimum Waste of Material

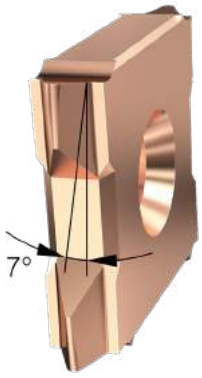
With a vertical insert the accessibility gives you two main advantages.

1) Less waste of material as you don´t need to turn away material to be able to make the thread.
2) As you have more space you can use a live center when you are turning small diameters. This will give you a stable machining and a better quality of the thread.



Optimal Clearance

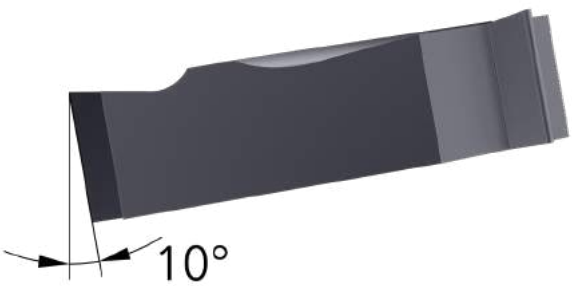


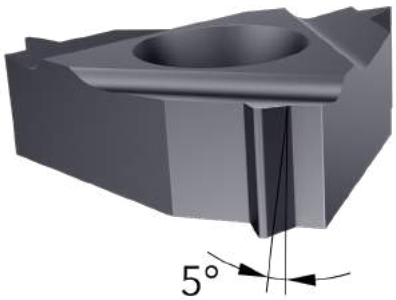


Perfect Cutting Conditions

The inserts are ground on all sides with a complex grinding technology on 6-axis grinding machines to get a 7° clearance angle all around the thread profile which gives the following advantages:

1) Extra clearance on the flanks gives better cutting conditions.
2) Same toolholder for different helix angles as the extra clearance allow you to have bigger difference in helix angle.
3) Less clearance on the radius gives stronger cutting edge and longer tool life.



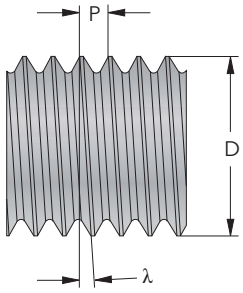


THREAD TURNING INSERTS

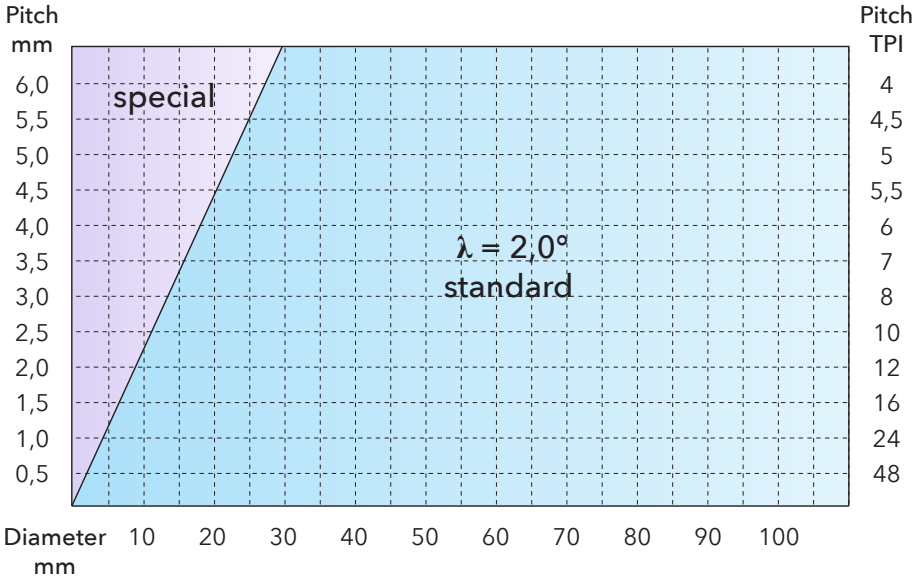
Helix Angle

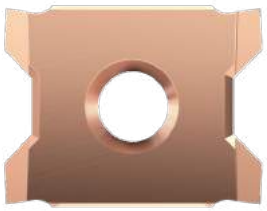
To get good cutting conditions the threading insert has to be inclined into the toolholder at approximately the same angle as the helix angle of the thread.

$$\tan \lambda = \frac{P}{\pi \times D}$$

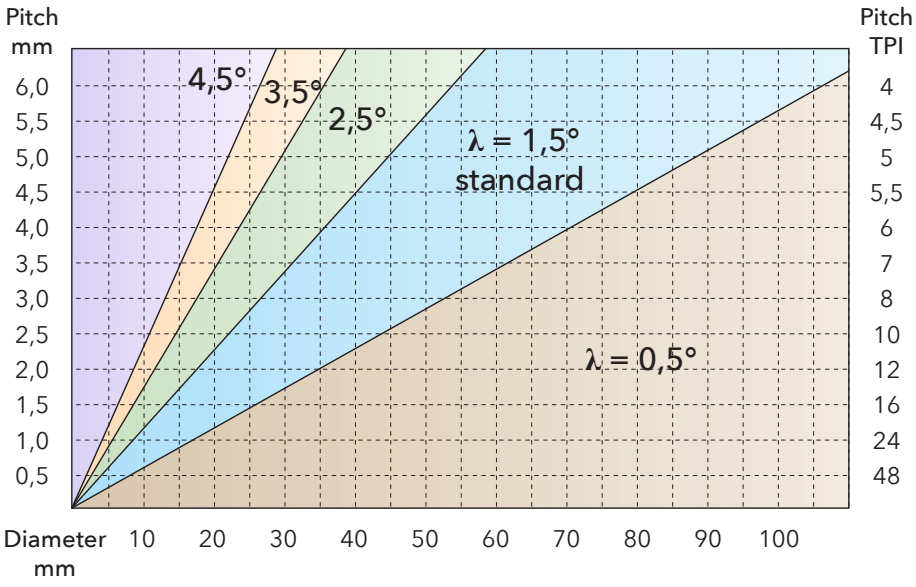


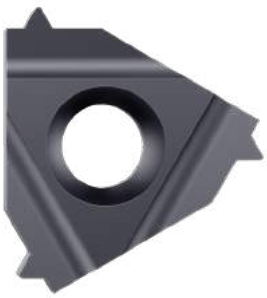
The FourCut inserts has extra clearance on the flanks and therefore it is not so important to have correct helix angle. The standard toolholder has 2° helix angle and it is possible to make almost all threads with the same holder.



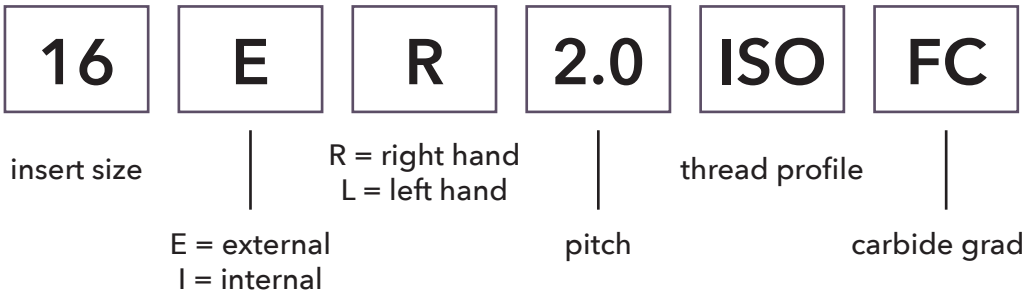


On the triangular inserts it is more important to have a similar helix angle on the toolholder as the thread. The standard toolholder has an anvil which gives 1,5° helix angle. If you need bigger or smaller, you just change the anvil.

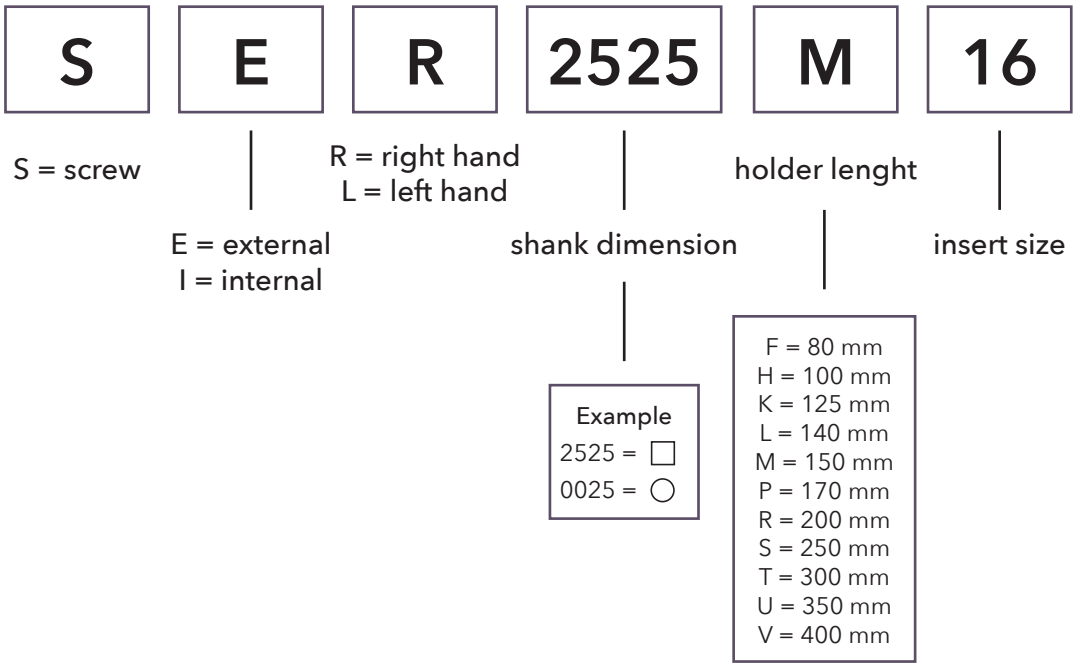




Inserts



Toolholders



Cutting Speed (V_c) and Material Factor (F_m)

MATERIAL		Hardness HB	Tensile Strenght N/mm²	Cutting Speed (V_c) m/min	Material Factor (F_m)
Steel	Low carbon, C < 0,25%	< 120	< 400	150 - 200	1,2
	Medium carbon, C < 0,55%	< 200	< 700	120 - 170	1,1
	High carbon, C < 0,85%	< 250	< 850	110 - 150	1,0
	Low alloy	< 250	< 850	100 - 140	1,0
	High alloy	< 350	< 1200	70 - 110	0,9
	Hardened, HRC < 45			60 - 100	0,8
	Hardened, HRC < 55			30 - 60	0,7
	Hardened, HRC < 65			20 - 40	0,6
Cast iron	Lamellar graphite	< 150	< 500	130 - 180	1,2
	Lamellar graphite	< 300	< 1000	100 - 150	1,1
	Nodular graphite, malleable	< 200	< 700	100 - 150	1,0
	Nodular graphite, malleable	< 300	< 1000	80 - 120	0,9
Stainless steel	Free machining	< 250	< 850	130 - 180	1,0
	Austenitic	< 250	< 850	90 - 140	0,9
	Ferritic and austenitic	< 300	< 1000	80 - 120	0,8
Titanium	Unalloyed	< 200	< 700	60 - 80	0,8
	Alloyed	< 270	< 900	50 - 70	0,7
	Alloyed	< 350	< 1250	30 - 50	0,6
Nickel	Unalloyed	< 150	< 500	80 - 120	0,8
	Alloyed	< 270	< 900	60 - 80	0,7
	Alloyed	< 350	< 1250	50 - 70	0,6
Copper	Unalloyed	< 100	< 350	150 - 250	1,0
	Brass, bronze	< 200	< 700	130 - 180	1,0
	High strength bronze	< 470	< 1500	60 - 80	0,8
Aluminium	Unalloyed	< 100	< 350	500 - 900	1,4
	Alloyed, Si < 0.5%	< 150	< 500	400 - 800	1,3
	Alloyed, Si < 10%	< 120	< 400	300 - 500	1,2
	Alloyed, Si > 10%	< 120	< 400	200 - 400	1,1
Inconel	718	< 370		50 - 70	0,6
Graphite				300 - 500	1,0

Threading Methods

RIGHT HAND THREAD			
Tool	Anvil	Rotation	Direction
SER	AE +		
SEL	AI -		
SIR	AI +		
SIL	AE -		

LEFT HAND THREAD			
Tool	Anvil	Rotation	Direction
SEL	AI +		
SER	AE -		
SIL	AE +		
SIR	AI -		

SmiCut STS

Number of Passes

Pitch				Material Factor (F_m)								
ISO	UN	W	NPT	0,6	0,7	0,8	0,9	1,0	1,1	1,2	1,3	1,4
0,5				7	6	5	4	4	4	4	4	4
0,75	32	28		8	6	6	5	4	4	4	4	4
1,0	28-24	19		8	7	6	6	5	5	4	4	4
1,25	20			9	8	7	6	6	5	5	4	4
1,5	18-16	14		10	9	8	7	6	5	5	5	4
1,75	14			12	10	9	8	7	6	6	5	5
2,0	13-12		27	14	12	11	9	8	8	7	7	6
2,5	11-10	11	18	16	14	13	11	10	9	8	8	7
3,0	9-8		14	18	16	14	12	11	10	9	8	8
3,5	7			20	17	15	13	12	11	10	9	9
4,0	6		11,5	22	19	16	14	13	12	11	10	9
4,5				23	20	17	15	14	12	11	10	10
5,0	5			24	20	18	16	14	13	12	11	10
5,5	4,5		8	25	21	19	17	15	14	13	12	11
6,0	4			27	23	20	18	16	15	13	12	11

Radial Infeed Each Pass

	Percentage of the total infeed																
PASS	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	33	28	25	22	20	19	18	16	14	12	11	11	11	11	10	10	9
2	27	24	20	18	17	16	15	14	13	11	10	10	10	10	10	9	9
3	22	19	17	16	15	14	13	12	11	10	9	9	9	9	9	8	8
4	18	16	15	14	13	12	11	10	9	9	9	8	8	9	8	8	8
5		13	13	12	11	10	9	8	8	8	8	8	8	8	8	7	7
6			10	10	10	9	8	8	8	8	8	7	7	7	7	6	6
7				8	8	8	7	8	8	7	7	7	7	6	6	6	6
8					6	7	7	7	7	7	7	7	6	6	6	6	6
9						5	7	7	7	7	7	6	6	5	6	5	5
10							5	6	6	6	6	6	5	5	5	5	5
11								4	5	6	6	5	5	5	5	5	5
12									4	5	5	5	5	4	4	5	5
13										4	4	4	4	4	4	4	4
14											3	4	4	4	3	4	4
15												3	3	3	3	4	3
16													2	2	2	3	3
17														2	2	2	2
18															2	1,5	2
19																1,5	1,5
20																	1,5

Carbide Grades

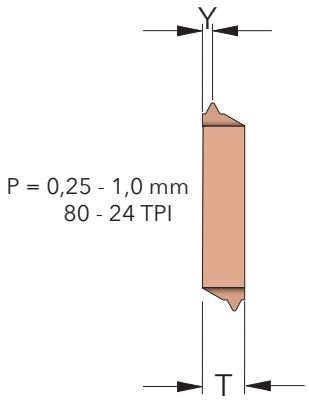
FC Micrograin Carbide with TiAlN coating.
Allround Grade with high heat resistance.
Use cutting data according to the tables.

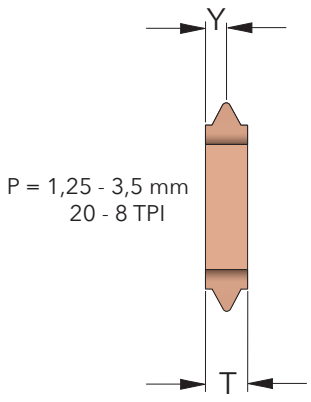
BC Micrograin Carbide with TiN coating.
Suitable for internal thread turning of small dimensions. Cutting speed 40% less than FC.

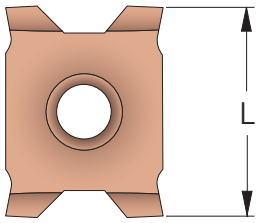
HC Micrograin Carbide with AlTiSiN coating.
Allround Grade with high hardness and heat resistance.
Use cutting data according to the tables.

THREAD TURNING INSERTS

FourCut







M

METRIC

Pitch mm	Part Number EXTERNAL	L mm	T mm	Y mm
0,25	12E_0.25ISO_HC	12	2,4	0,2
0,3	12E_0.3ISO_HC	12	2,4	0,2
0,35	12E_0.35ISO_HC	12	2,4	0,25
0,4	12E_0.4ISO_HC	12	2,4	0,3
0,45	12E_0.45ISO_HC	12	2,4	0,4
0,5	12E_0.5ISO_HC	12	2,4	0,4
0,6	12E_0.6ISO_HC	12	2,4	0,4
0,7	12E_0.7ISO_HC	12	2,4	0,4
0,75	12E_0.75ISO_HC	12	2,4	0,4
0,8	12E_0.8ISO_HC	12	2,4	0,5
1,0	12E_1.0ISO_HC	12	2,4	0,6
1,25	12E_1.25ISO_HC	12	2,4	1,2
1,5	12E_1.5ISO_HC	12	2,4	1,2
1,75	12E_1.75ISO_HC	12	2,4	1,2
2,0	12E_2.0ISO_HC	12	2,4	1,2
2,5	12E_2.5ISO_HC	12	3,6	1,8
3,0	12E_3.0ISO_HC	12	3,6	1,8
3,5	12E_3.5ISO_HC	12	3,6	1,8

UN

UNIFIED

Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
80	12E_80UN_HC	12	2,4	0,2
72	12E_72UN_HC	12	2,4	0,25
64	12E_64UN_HC	12	2,4	0,3
56	12E_56UN_HC	12	2,4	0,4
48	12E_48UN_HC	12	2,4	0,4
44	12E_44UN_HC	12	2,4	0,4
40	12E_40UN_HC	12	2,4	0,4
36	12E_36UN_HC	12	2,4	0,4
32	12E_32UN_HC	12	2,4	0,5
28	12E_28UN_HC	12	2,4	0,6
24	12E_24UN_HC	12	2,4	0,6
20	12E_20UN_HC	12	2,4	1,2
18	12E_18UN_HC	12	2,4	1,2
16	12E_16UN_HC	12	2,4	1,2
14	12E_14UN_HC	12	2,4	1,2
13	12E_13UN_HC	12	2,4	1,2
12	12E_12UN_HC	12	2,4	1,2
11	12E_11UN_HC	12	3,6	1,8
10	12E_10UN_HC	12	3,6	1,8
9	12E_9UN_HC	12	3,6	1,8
8	12E_8UN_HC	12	3,6	1,8

THREAD TURNING INSERTS

FourCut

SmiCut STS

60°

PARTIAL PROFILE 60°

Pitch mm	Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
0,35 - 1,0	72-24	12E_AA60_HC	12	2,4	0,6
0,5 - 2,0	48-12	12E_A60_HC	12	2,4	1,2
0,5 - 3,0	48-8	12E_AG60_HC	12	3,6	1,8
1,75 - 3,0	14-8	12E_G60_HC	12	3,6	1,8

55°

PARTIAL PROFILE 55°

Pitch mm	Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
0,35 - 1,0	72-24	12E_AA55_HC	12	2,4	0,6
0,5 - 2,0	48-12	12E_A55_HC	12	2,4	1,2
0,5 - 3,0	48-8	12E_AG55_HC	12	3,6	1,8
1,75 - 3,0	14-8	12E_G55_HC	12	3,6	1,8

BS/G/Rp

WHITWORTH PIPE THREAD

Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
28	12E_28W_HC	12	2,4	0,6
24	12E_24W_HC	12	2,4	0,6
20	12E_20W_HC	12	2,4	1,2
19	12E_19W_HC	12	2,4	1,2
18	12E_18W_HC	12	2,4	1,2
16	12E_16W_HC	12	2,4	1,2
14	12E_14W_HC	12	2,4	1,2
12	12E_12W_HC	12	2,4	1,2
11	12E_11W_HC	12	3,6	1,8
10	12E_10W_HC	12	3,6	1,8
9	12E_9W_HC	12	3,6	1,8
8	12E_8W_HC	12	3,6	1,8

R/Rc

BSPT PIPE THREAD

Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
28	12E_28BSPT_HC	12	2,4	1,2
19	12E_19BSPT_HC	12	2,4	1,2
14	12E_14BSPT_HC	12	3,6	1,8
11	12E_11BSPT_HC	12	3,6	1,8

NPT

NPT PIPE THREAD

Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
27	12E_27NPT_HC	12	2,4	0,6
18	12E_18NPT_HC	12	2,4	1,2
14	12E_14NPT_HC	12	2,4	1,2
11,5	12E_11.5NPT_HC	12	3,6	1,8

NPTF

NPTF DRYSEAL PIPE THREAD

Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
27	12E_27NPTF_HC	12	2,4	0,6
18	12E_18NPTF_HC	12	2,4	1,2
14	12E_14NPTF_HC	12	2,4	1,2
11,5	12E_11.5NPTF_HC	12	3,6	1,8

■ All inserts have ground profile and chipbreaker.

SmiCut STS

THREAD TURNING INSERTS

FourCut

PG

STEEL CONDUIT THREAD DIN 40430

Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
20	12E_20PG_HC	12	2,4	1,2
18	12E_18PG_HC	12	2,4	1,2
16	12E_16PG_HC	12	2,4	1,2

TR

TRAPEZ DIN 103

Pitch mm	Part Number EXTERNAL	L mm	T mm	Y mm
1,5	12E_1.5TR_HC	12	2,4	1,2
2,0	12E_2.0TR_HC	12	2,4	1,2
3,0	12E_3.0TR_HC	12	3,6	1,8

ACME

ACME

Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
16	12E_16ACME_HC	12	2,4	1,2
14	12E_14ACME_HC	12	2,4	1,2
12	12E_12ACME_HC	12	2,4	1,2
10	12E_10ACME_HC	12	3,6	1,8
8	12E_8ACME_HC	12	3,6	1,8

STACME

STUB ACME

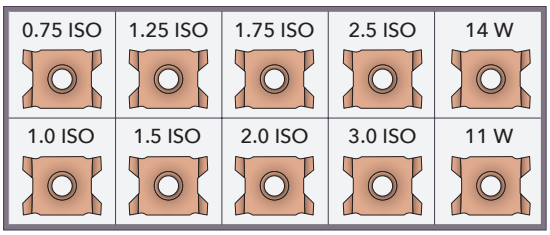
Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm
16	12E_16STACME_HC	12	2,4	1,2
14	12E_14STACME_HC	12	2,4	1,2
12	12E_12STACME_HC	12	2,4	1,2
10	12E_10STACME_HC	12	3,6	1,8
8	12E_8STACME_HC	12	3,6	1,8

MJ

METRIC

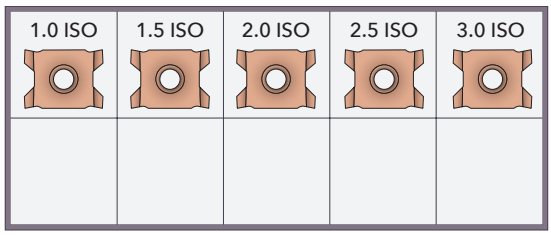
Pitch mm	Part Number EXTERNAL	L mm	T mm	Y mm
1,0	12E_1.0MJ_HC	12	2,4	0,6
1,5	12E_1.5MJ_HC	12	2,4	1,2
2,0	12E_2.0MJ_HC	12	3,6	1,8

Threading Inserts Kits



Part Number
10X12E_HC

10 different inserts in one box.

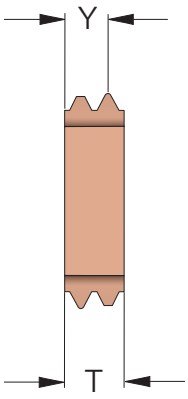


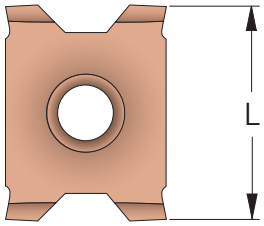
Part Number
5X12E_HC

5 different inserts in one box.

THREAD TURNING INSERTS

FourCut Multitooth





M METRIC

Pitch mm	Part Number EXTERNAL	L mm	T mm	Y mm	Radial infeed per pass 1	2	3
1,0	12ER_1.0ISO2M_HC	12	2,4	1,7	0,24	0,21	0,18
1,5	12ER_1.5ISO2M_HC	12	3,6	2,55	0,43	0,30	0,21
2,0	12ER_2.0ISO2M_HC	12	3,6	2,8	0,57	0,40	0,28

G/Rp WHITWORTH PIPE THREAD

Pitch TPI	Part Number EXTERNAL	L mm	T mm	Y mm	Radial infeed per pass 1	2	3
14	12ER_14W2M_HC	12	3,6	2,7	0,55	0,38	0,25



Advantages with Multitooth Inserts

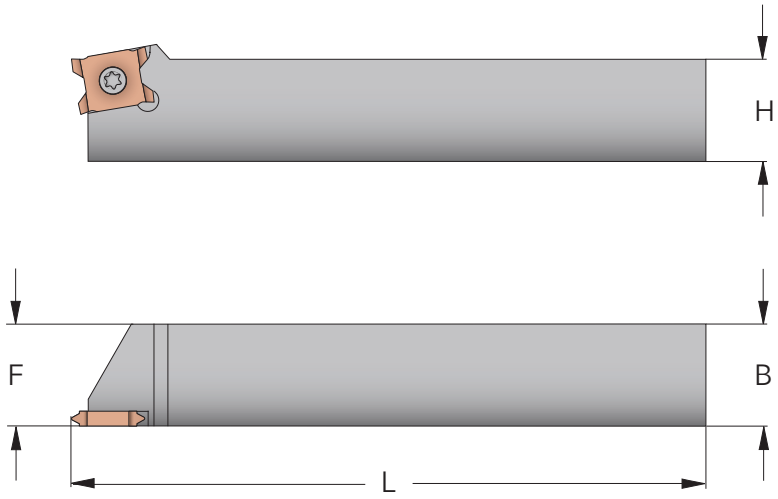
With multitooth inserts the machining time can be reduced about 50% as two cutting edges are working every pass.

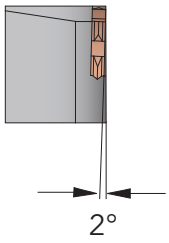
The first edge will cut the flanks of the thread and the second one will make the root radius. This will result in three easy breakable chips.

It is important to use radial infeed to get best performance. Above you have recommended infeed per pass for each insert.

THREAD TURNING TOOLHOLDERS

FourCut External



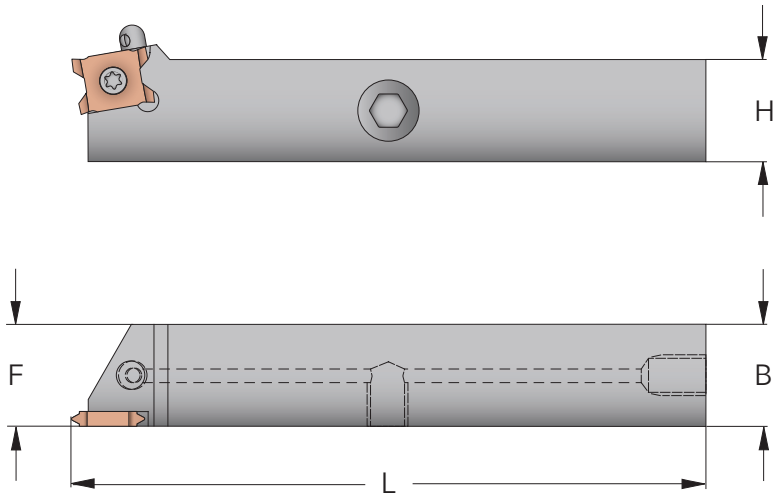


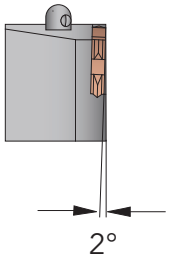


Insert mm	Part Number	B/H mm	L mm	F mm
12	SER1010H12	10	100	10
12	SER1212H12	12	100	12
12	SER1616H12	16	100	16
12	SER2020K12	20	125	20
12	SER2525M12	25	150	25

The Part Numbers are for Right Hand Toolholders. For Left Hand specify L instead of R. The Price is 10% higher for L.

with Internal Coolant





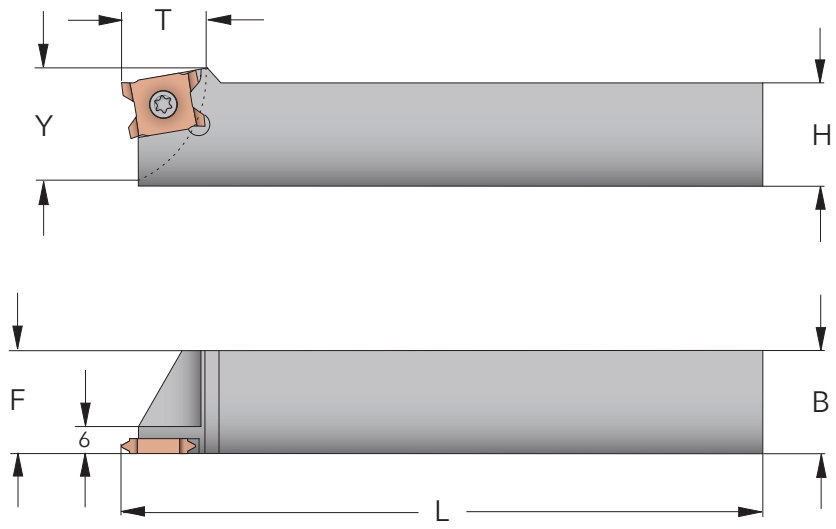


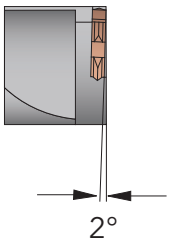
Insert mm	Part Number	B/H mm	L mm	F mm	PLUG
12	SER1212H12-J*	12	100	12	M8x1
12	SER1616H12-J	16	100	16	G1/8
12	SER2020K12-J	20	125	20	G1/8
12	SER2525M12-J	25	150	25	G1/8

* This toolholder also has a plug on the backside, totally three plugs.

THREAD TURNING TOOLHOLDERS

with Extra Accessibility

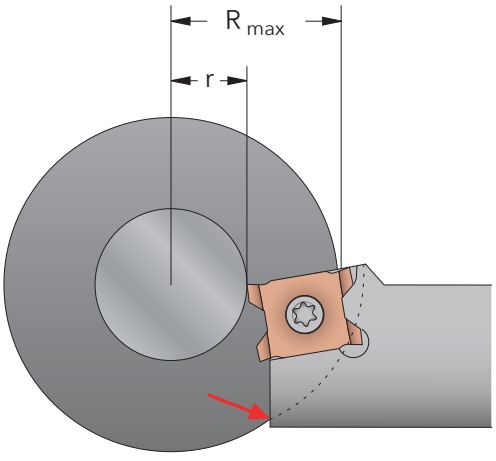






Insert mm	Part Number	B/H mm	L mm	F mm	T mm	Y mm
12	SER1212T09H12	12	100	12	9	11,0
12	SER1616T11H12	16	100	16	11	14,7
12	SER2020T14K12	20	125	20	14	18,7
12	SER2525T18M12	25	150	25	18	23,8

Maximum Allowable Access



When you are working between shoulders there is a limit of the accessibility which depends on the toolholder and the diameters of the workpiece.

$$R_{max} = \sqrt{(r + 2{,}5)^2 + Y^2}$$

$$T = R - r$$

You should never exceed the calculated R_{max} or the T dimension of the toolholder. If you need better accessibility you have to modify the holder.

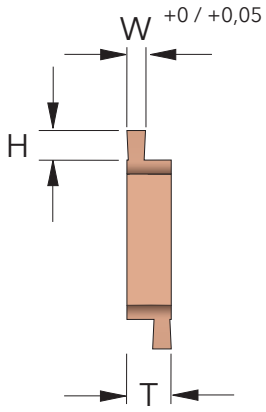
For diagram of accessibility go to smicut.com/acc

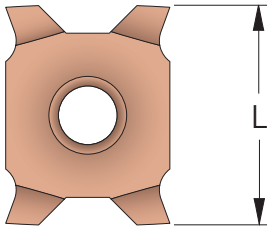
Spare Parts

Insert mm	Screw to insert	Torx key
12	T9XM3	TORX_T9

GROOVING INSERTS

FourCut



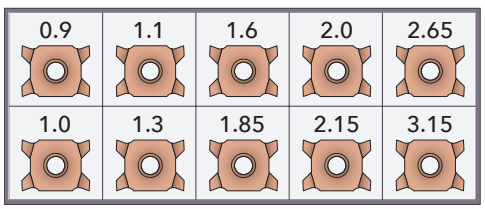


SQ

GROOVING

W +0 / +0,05	EXTERNAL Part Number	L mm	T mm	H mm
0,5	12ER_0.5SQ_HC	12	2,4	1,0
0,6	12ER_0.6SQ_HC	12	2,4	1,2
0,7	12ER_0.7SQ_HC	12	2,4	1,4
0,8	12ER_0.8SQ_HC	12	2,4	1,6
0,9	12ER_0.9SQ_HC	12	2,4	1,8
1,0	12ER_1.0SQ_HC	12	2,4	2,0
1,1	12ER_1.1SQ_HC	12	2,4	2,0
1,2	12ER_1.2SQ_HC	12	2,4	2,0
1,3	12ER_1.3SQ_HC	12	2,4	2,0
1,4	12ER_1.4SQ_HC	12	2,4	2,0
1,5	12ER_1.5SQ_HC	12	2,4	2,0
1,6	12ER_1.6SQ_HC	12	2,4	2,0
1,7	12ER_1.7SQ_HC	12	2,4	2,0
1,85	12ER_1.85SQ_HC	12	2,4	2,0
2,0	12ER_2.0SQ_HC	12	2,4	2,0
2,15	12ER_2.15SQ_HC	12	2,4	2,0
2,3	12ER_2.3SQ_HC	12	2,4	2,0
2,5	12ER_2.5SQ_HC	12	3,6	2,0
2,65	12ER_2.65SQ_HC	12	3,6	2,0
2,8	12ER_2.8SQ_HC	12	3,6	2,0
3	12ER_3.0SQ_HC	12	3,6	2,0
3,15	12ER_3.15SQ_HC	12	3,6	2,0
3,3	12ER_3.3SQ_HC	12	3,6	2,0
3,5	12ER_3.5SQ_HC	12	3,6	2,0

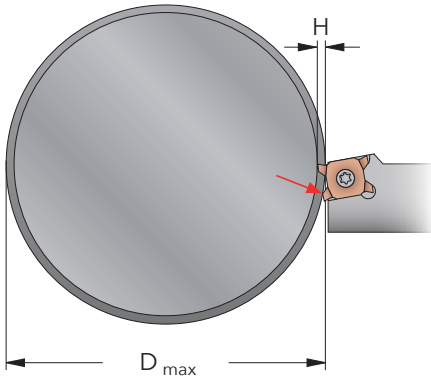
Grooving Inserts Kit



Part Number
10X12SQ_HC

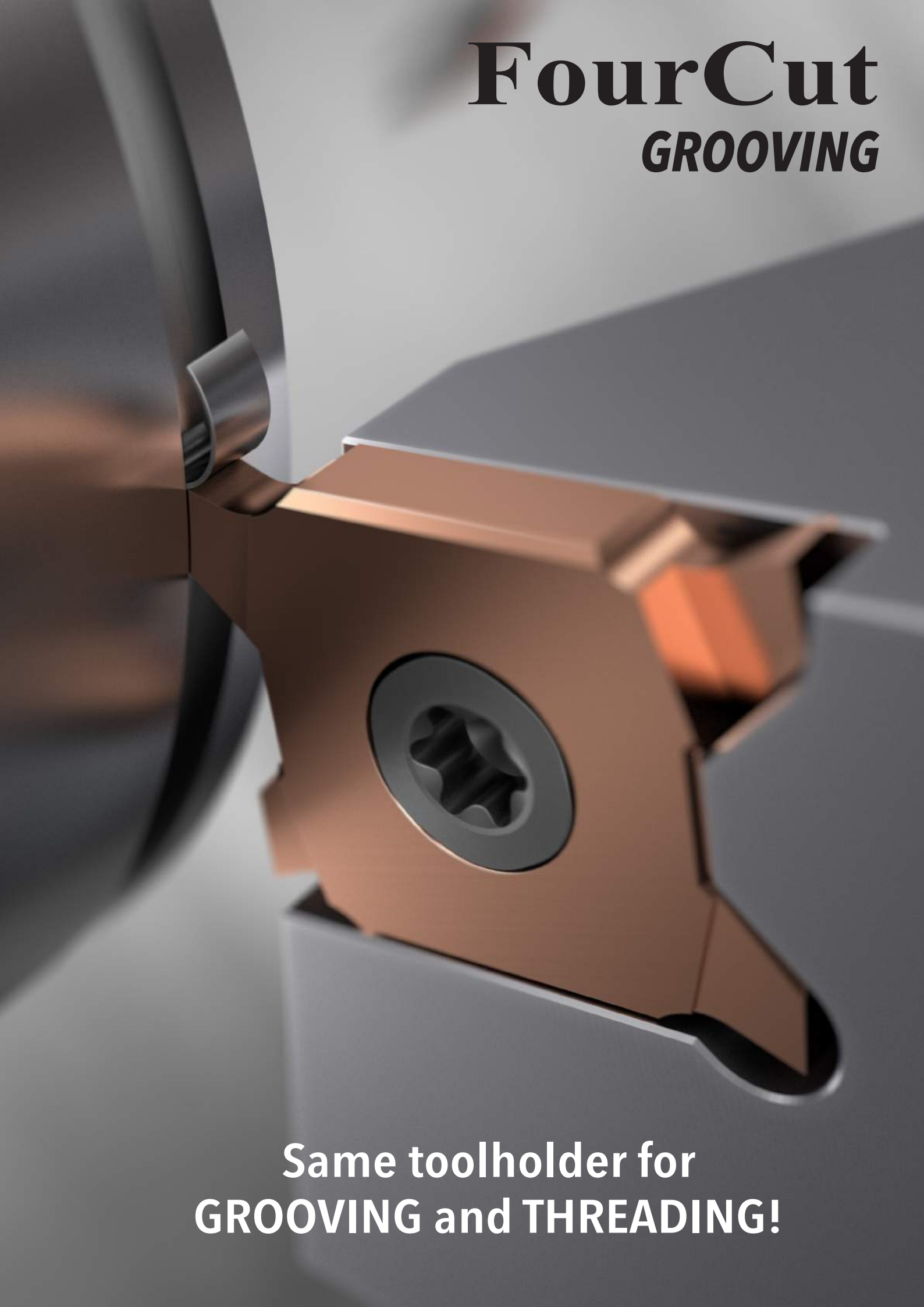
10 different inserts in one box

Maximum Grooving Diameter



H mm	D max mm
2,0	70
1,9	80
1,8	93
1,7	111
1,6	139
1,5	185

You are not able to use the maximum grooving depth when the diameter is bigger then D_{max} as the cutting edge below will touch the part.



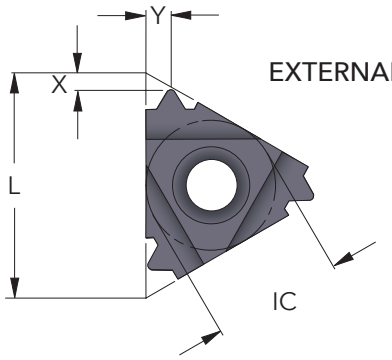
FourCut
GROOVING

Same toolholder for
GROOVING and THREADING!

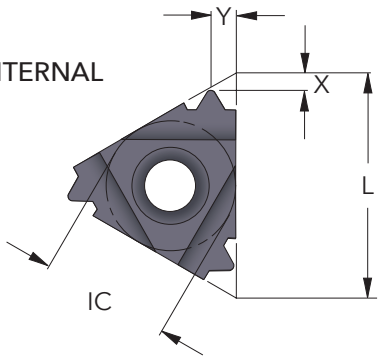
SmiCut STS

THREAD TURNING INSERTS

Triangular



EXTERNAL



INTERNAL

M METRIC

Pitch mm	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
0,5	6	5/32				06IR_0.5ISO_BC	0,9	0,5
0,5	16	3/8	16ER_0.5ISO_FC	0,6	0,6			
0,7	16	3/8	16ER_0.7ISO_FC	0,6	0,6			
0,75	6	5/32				06IR_0.75ISO_BC	0,8	0,5
0,75	8	3/16				08IR_0.75ISO_BC	0,6	0,5
0,75	16	3/8	16ER_0.75ISO_FC	0,6	0,6			
0,8	16	3/8	16ER_0.8ISO_FC	0,6	0,6			
1,0	6	5/32				06IR_1.0ISO_BC	0,7	0,6
1,0	8	3/16				08IR_1.0ISO_BC	0,6	0,6
1,0	11	1/4				11IR_1.0ISO_FC	0,6	0,7
1,0	16	3/8	16ER_1.0ISO_FC	0,7	0,7	16IR_1.0ISO_FC	0,6	0,7
1,25	6	5/32				06IR_1.25ISO_BC	0,6	0,6
1,25	8	3/16				08IR_1.25ISO_BC	0,6	0,7
1,25	11	1/4				11IR_1.25ISO_FC	0,8	0,8
1,25	16	3/8	16ER_1.25ISO_FC	0,8	0,9	16IR_1.25ISO_FC	0,8	0,9
1,5	8	3/16				08IR_1.5ISO_BC	0,6	0,7
1,5	11	1/4				11IR_1.5ISO_FC	0,8	1,0
1,5	16	3/8	16ER_1.5ISO_FC	0,8	1,0	16IR_1.5ISO_FC	0,8	1,0
1,75	8	3/16				08IR_1.75ISO_BC	1,0	0,8
1,75	16	3/8	16ER_1.75ISO_FC	0,9	1,2			
2,0	11	1/4				11IR_2.0ISO_FC	0,8	0,9
2,0	16	3/8	16ER_2.0ISO_FC	1,0	1,3	16IR_2.0ISO_FC	1,0	1,3
2,5	16	3/8	16ER_2.5ISO_FC	1,1	1,5	16IR_2.5ISO_FC	1,1	1,5
3,0	16	3/8	16ER_3.0ISO_FC	1,2	1,6	16IR_3.0ISO_FC	1,1	1,5
3,5	16	3/8	16ER_3.5ISO_FC	1,2	1,7	16IR_3.5ISO_FC	1,2	1,7
3,5	22	1/2	22ER_3.5ISO_FC	1,6	2,3	22IR_3.5ISO_FC	1,6	2,3
4,0	22	1/2	22ER_4.0ISO_FC	1,6	2,3	22IR_4.0ISO_FC	1,6	2,3
4,5	22	1/2	22ER_4.5ISO_FC	1,7	2,4	22IR_4.5ISO_FC	1,6	2,4
5,0	22	1/2	22ER_5.0ISO_FC	1,7	2,5	22IR_5.0ISO_FC	1,6	2,3
5,5	22	1/2	22ER_5.5ISO_FC	1,7	2,6	22IR_5.5ISO_FC	1,6	2,3
5,5	27	5/8	27ER_5.5ISO_FC	1,9	2,7	27IR_5.5ISO_FC	1,6	2,3
6,0	22	1/2	22ER_6.0ISO_FC	1,9	2,7	22IR_6.0ISO_FC	1,6	2,4
6,0	27	5/8	27ER_6.0ISO_FC	2,0	2,9	27IR_6.0ISO_FC	1,8	2,5
WITH SINTERED CHIPBREAKER								
1,0	16	3/8	16ER_1.0ISOCB_FC	0,7	0,7	16IR_1.0ISOCB_FC	0,6	0,7
1,25	16	3/8	16ER_1.25ISOCB_FC	0,8	0,9			
1,5	16	3/8	16ER_1.5ISOCB_FC	0,8	1,0	16IR_1.5ISOCB_FC	0,8	1,0
1,75	16	3/8	16ER_1.75ISOCB_FC	0,9	1,2			
2,0	16	3/8	16ER_2.0ISOCB_FC	1,0	1,3	16IR_2.0ISOCB_FC	1,0	1,3
2,5	16	3/8	16ER_2.5ISOCB_FC	1,1	1,5	16IR_2.5ISOCB_FC	1,1	1,5
3,0	16	3/8	16ER_3.0ISOCB_FC	1,2	1,6	16IR_3.0ISOCB_FC	1,1	1,5

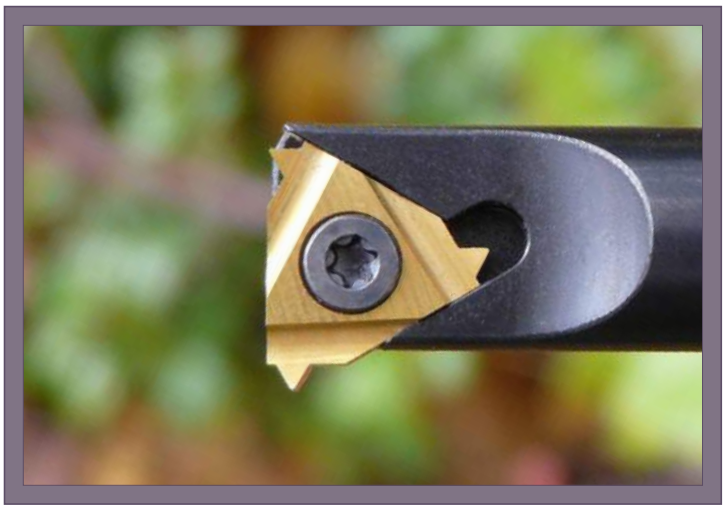
SmiCut STS

UN

UNIFIED

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
32	6	5/32				06IR_32UN_BC	0,8	0,5
32	8	3/16				08IR_32UN_BC	0,6	0,5
32	11	1/4				11IR_32UN_FC	0,6	0,6
32	16	3/8	16ER_32UN_FC	0,6	0,6	16IR_32UN_FC	0,6	0,6
28	6	5/32				06IR_28UN_BC	0,8	0,6
28	8	3/16				08IR_28UN_BC	0,6	0,6
28	11	1/4				11IR_28UN_FC	0,6	0,7
28	16	3/8	16ER_28UN_FC	0,6	0,7	16IR_28UN_FC	0,6	0,7
24	6	5/32				06IR_24UN_BC	0,7	0,6
24	8	3/16				08IR_24UN_BC	0,6	0,6
24	11	1/4				11IR_24UN_FC	0,7	0,8
24	16	3/8	16ER_24UN_FC	0,7	0,8			
20	6	5/32				06IR_20UN_BC	0,6	0,6
20	8	3/16				08IR_20UN_BC	0,6	0,7
20	11	1/4				11IR_20UN_FC	0,8	0,9
20	16	3/8	16ER_20UN_FC	0,8	0,9	16IR_20UN_FC	0,8	0,9
18	6	5/32				06IR_18UN_BC	0,6	0,7
18	11	1/4				11IR_18UN_FC	0,8	1,0
18	16	3/8	16ER_18UN_FC	0,8	1,0			
16	8	3/16				08IR_16UN_BC	0,6	0,7
16	11	1/4				11IR_16UN_FC	0,9	1,1
16	16	3/8	16ER_16UN_FC	0,9	1,1	16IR_16UN_FC	0,9	1,1
14	8	3/16				08IR_14UN_BC	0,6	0,8
14	16	3/8	16ER_14UN_FC	1,0	1,2	16IR_14UN_FC	0,9	1,2
13	16	3/8	16ER_13UN_FC	1,0	1,3			
12	11	1/4				11IR_12UN_FC	0,9	1,1
12	16	3/8	16ER_12UN_FC	1,1	1,4	16IR_12UN_FC	1,1	1,4
11	11	1/4				11IR_11UN_FC	0,8	1,1
11	16	3/8	16ER_11UN_FC	1,1	1,5			
10	16	3/8	16ER_10UN_FC	1,1	1,5	16IR_10UN_FC	1,1	1,5
9	16	3/8	16ER_9UN_FC	1,2	1,7	16IR_9UN_FC	1,2	1,7
8	16	3/8	16ER_8UN_FC	1,2	1,6	16IR_8UN_FC	1,1	1,5
7	22	1/2	22ER_7UN_FC	1,6	2,3	22IR_7UN_FC	1,6	2,3
6	22	1/2	22ER_6UN_FC	1,6	2,3	22IR_6UN_FC	1,6	2,3
5	22	1/2	22ER_5UN_FC	1,7	2,5	22IR_5UN_FC	1,6	2,3
4,5	27	5/8	27ER_4.5UN_FC	1,9	2,7	27IR_4.5UN_FC	1,7	2,4
4	27	5/8	27ER_4UN_FC	2,1	3,0	27IR_4UN_FC	1,8	2,7

- The Part Numbers are for Right Hand Inserts. For Left Hand specify L instead of R. The Price is 10% higher for L.
- All inserts have ground profile and chipbreaker if nothing else is indicated.



60°

PARTIAL PROFILE 60°

Pitch mm	Pitch TPI	L mm	IC inch	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm
0,5-1,25	48-20	6	5/32		06IR_A60_BC	0,6	0,6
0,5-1,5	48-16	8	3/16		08IR_A60_BC	0,6	0,7
0,5-1,5	48-16	11	1/4		11IR_A60_FC	0,8	0,9
0,5-1,5	48-16	16	3/8	16ER_A60_FC	16IR_A60_FC	0,8	0,9
1,75-3,0	14-8	16	3/8	16ER_G60_FC	16IR_G60_FC	1,2	1,7
0,5-3,0	48-8	16	3/8	16ER_AG60_FC	16IR_AG60_FC	1,2	1,7
3,5-5,0	7-5	22	1/2	22ER_N60_FC	22IR_N60_FC	1,7	2,5
5,5-6,0	4,5-4	27	5/8	27ER_Q60_FC	27IR_Q60_FC	2,1	3,1

55°

PARTIAL PROFILE 55°

Pitch mm	Pitch TPI	L mm	IC inch	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm
0,5-1,25	48-20	6	5/32		06IR_A55_BC	0,5	0,6
0,5-1,5	48-16	8	3/16		08IR_A55_BC	0,6	0,7
0,5-1,5	48-16	11	1/4		11IR_A55_FC	0,8	0,9
0,5-1,5	48-16	16	3/8	16ER_A55_FC	16IR_A55_FC	0,8	0,9
1,75-3,0	14-8	16	3/8	16ER_G55_FC	16IR_G55_FC	1,2	1,7
0,5-3,0	48-8	16	3/8	16ER_AG55_FC	16IR_AG55_FC	1,2	1,7
3,5-5,0	7-5	22	1/2	22ER_N55_FC	22IR_N55_FC	1,7	2,5
5,5-6,0	4,5-4	27	5/8	27ER_Q55_FC	27IR_Q55_FC	2,0	2,9

MJ

METRIC

Pitch mm	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
1,0	11	1/4				11IR_1.0MJ_FC	0,6	0,7
1,0	16	3/8	16ER_1.0MJ_FC	0,7	0,7	16IR_1.0MJ_FC	0,6	0,7
1,25	11	1/4				11IR_1.25MJ_FC	0,8	0,8
1,25	16	3/8	16ER_1.25MJ_FC	0,8	0,9	16IR_1.25MJ_FC	0,8	0,9
1,5	11	1/4				11IR_1.5MJ_FC	0,8	1,0
1,5	16	3/8	16ER_1.5MJ_FC	0,8	1,0	16IR_1.5MJ_FC	0,8	1,0
2,0	11	1/4				11IR_2.0MJ_FC	0,8	0,9
2,0	16	3/8	16ER_2.0MJ_FC	1,0	1,3	16IR_2.0MJ_FC	1,0	1,3

UNJ

UNIFIED

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
32	11	1/4				11IR_32UNJ_FC	0,6	0,6
32	16	3/8	16ER_32UNJ_FC	0,6	0,6	16IR_32UNJ_FC	0,6	0,6
28	11	1/4				11IR_28UNJ_FC	0,6	0,7
28	16	3/8	16ER_28UNJ_FC	0,6	0,7	16IR_28UNJ_FC	0,6	0,7
24	11	1/4				11IR_24UNJ_FC	0,7	0,8
24	16	3/8	16ER_24UNJ_FC	0,7	0,8			
20	11	1/4				11IR_20UNJ_FC	0,8	0,9
20	16	3/8	16ER_20UNJ_FC	0,8	0,9	16IR_20UNJ_FC	0,8	0,9
18	11	1/4				11IR_18UNJ_FC	0,8	1,0
18	16	3/8	16ER_18UNJ_FC	0,8	1,0			
16	11	1/4				11IR_16UNJ_FC	0,9	1,1
16	16	3/8	16ER_16UNJ_FC	0,9	1,1	16IR_16UNJ_FC	0,9	1,1
14	16	3/8	16ER_14UNJ_FC	1,0	1,2	16IR_14UNJ_FC	0,9	1,2
13	16	3/8	16ER_13UNJ_FC	1,0	1,3			
12	16	3/8	16ER_12UNJ_FC	1,1	1,4	16IR_12UNJ_FC	1,1	1,4
11	16	3/8	16ER_11UNJ_FC	1,1	1,5			
10	16	3/8	16ER_10UNJ_FC	1,1	1,5	16IR_10UNJ_FC	1,1	1,5
9	16	3/8	16ER_9UNJ_FC	1,2	1,7	16IR_9UNJ_FC	1,2	1,7
8	16	3/8	16ER_8UNJ_FC	1,2	1,6	16IR_8UNJ_FC	1,1	1,5

SmiCut STS

BS/G/Rp WHITWORTH

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
32	16	3/8	16ER_32W_FC	0,6	0,6			
28	6	5/32				06IR_28W_BC	0,6	0,6
28	8	3/16				08IR_28W_BC	0,6	0,6
28	16	3/8	16ER_28W_FC	0,6	0,7			
26	6	5/32				06IR_26W_BC	0,7	0,6
26	16	3/8	16ER_26W_FC	0,7	0,7			
24	16	3/8	16ER_24W_FC	0,7	0,8			
22	06	5/32				06IR_22W_BC	0,6	0,6
22	16	3/8	16ER_22W_FC	0,8	0,9			
20	08	3/16				08IR_20W_BC	0,6	0,7
20	16	3/8	16ER_20W_FC	0,8	0,9	16IR_20W_FC	0,8	0,9
19	8	3/16				08IR_19W_BC	0,6	0,7
19	11	1/4				11IR_19W_FC	0,8	1,0
19	16	3/8	16ER_19W_FC	0,8	1,0	16IR_19W_FC	0,8	1,0
18	08	3/16				08IR_18W_BC	0,6	0,7
18	16	3/8	16ER_18W_FC	0,8	1,0	16IR_18W_FC	0,8	1,0
16	08	3/16				08IR_16W_BC	0,6	0,7
16	16	3/8	16ER_16W_FC	0,9	1,1	16IR_16W_FC	0,9	1,1
14	11	1/4				11IR_14W_FC	0,9	1,1
14	16	3/8	16ER_14W_FC	1,0	1,2	16IR_14W_FC	1,0	1,2
12	11	1/4				11IR_12W_FC	0,1	1,1
12	16	3/8	16ER_12W_FC	1,1	1,4	16IR_12W_FC	1,1	1,4
11	16	3/8	16ER_11W_FC	1,1	1,5	16IR_11W_FC	1,1	1,5
10	16	3/8	16ER_10W_FC	1,1	1,5	16IR_10W_FC	1,1	1,5
9	16	3/8	16ER_9W_FC	1,2	1,7	16IR_9W_FC	1,2	1,7
8	16	3/8	16ER_8W_FC	1,2	1,5	16IR_8W_FC	1,2	1,5
7	22	1/2	22ER_7W_FC	1,6	2,3	22IR_7W_FC	1,6	2,3
6	22	1/2	22ER_6W_FC	1,6	2,3	22IR_6W_FC	1,6	2,3
5	22	1/2	22ER_5W_FC	1,7	2,4	22IR_5W_FC	1,7	2,4
4,5	27	5/8	27ER_4.5W_FC	1,8	2,6	27IR_4.5W_FC	1,8	2,6
4	27	5/8	27ER_4W_FC	2,0	2,9	27IR_4W_FC	2,0	2,9
WITH SINTERED CHIPBREAKER								
19	16	3/8	16ER_19WCB_FC	0,8	1,0			
14	16	3/8	16ER_14WCB_FC	1,0	1,2	16IR_14WCB_FC	1,0	1,2
11	16	3/8	16ER_11WCB_FC	1,1	1,5	16IR_11WCB_FC	1,1	1,5

R/Rc BSPT PIPE THREAD

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
28	6	5/32				06IR_28BSPT_BC	0,7	0,6
28	16	3/8	16ER_28BSPT_FC	0,6	0,6			
19	8	3/16				08IR_19BSPT_BC	0,6	0,6
19	16	3/8	16ER_19BSPT_FC	0,8	0,9			
14	16	3/8	16ER_14BSPT_FC	1,0	1,2	16IR_14BSPT_FC	1,0	1,2
11	16	3/8	16ER_11BSPT_FC	1,1	1,5	16IR_11BSPT_FC	1,1	1,5

- The Part Numbers are for Right Hand Inserts. For Left Hand specify L instead of R. The Price is 10% higher for L.
- All inserts have ground profile and chipbreaker if nothing else is indicated.

NPT

NPT PIPE THREAD

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
27	6	5/32				06IR_27NPT_BC	0,6	0,6
27	8	3/16				08IR_27NPT_BC	0,6	0,6
27	16	3/8	16ER_27NPT_FC	0,7	0,8			
18	8	3/16				08IR_18NPT_BC	0,6	0,6
18	11	1/4				11IR_18NPT_FC	0,8	1,0
18	16	3/8	16ER_18NPT_FC	0,8	1,0			
14	16	3/8	16ER_14NPT_FC	0,9	1,2	16IR_14NPT_FC	0,9	1,2
11,5	16	3/8	16ER_11.5NPT_FC	1,1	1,5	16IR_11.5NPT_FC	1,1	1,5
8	16	3/8	16ER_8NPT_FC	1,3	1,8	16IR_8NPT_FC	1,3	1,8

NPTF

NPTF DRYSEAL PIPE THREAD

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
27	6	5/32				06IR_27NPTF_BC	0,7	0,6
27	8	3/16				08IR_27NPTF_BC	0,6	0,6
27	16	3/8	16ER_27NPTF_FC	0,7	0,7			
18	8	3/16				08IR_18NPTF_BC	0,6	0,6
18	11	1/4				11IR_18NPTF_FC	0,8	1,0
18	16	3/8	16ER_18NPTF_FC	0,8	1,0			
14	16	3/8	16ER_14NPTF_FC	0,9	1,2	16IR_14NPTF_FC	0,9	1,2
11,5	16	3/8	16ER_11.5NPTF_FC	1,1	1,5	16IR_11.5NPTF_FC	1,1	1,5
8	16	3/8	16ER_8NPTF_FC	1,3	1,8	16IR_8NPTF_FC	1,3	1,8

ABUT

AMERICAN BUTTRESS

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
20	11	1/4				11IR_20ABUT_FC	1,0	1,3
16	11	1/4				11IR_16ABUT_FC	1,0	1,5
20	16	3/8	16ER_20ABUT_FC	1,0	1,3	16IR_20ABUT_FC	1,0	1,3
16	16	3/8	16ER_16ABUT_FC	1,0	1,5	16IR_16ABUT_FC	1,0	1,5
12	16	3/8	16ER_12ABUT_FC	1,4	2,0	16IR_12ABUT_FC	1,4	2,0
10	16	3/8	16ER_10ABUT_FC	1,5	2,3	16IR_10ABUT_FC	1,5	2,3
8	22	1/2	22ER_8ABUT_FC	2,1	3,3	22IR_8ABUT_FC	2,1	3,3
6	22	1/2	22ER_6ABUT_FC	2,1	3,4	22IR_6ABUT_FC	2,1	3,4

SG

BUTTRESS (SÄGENGEWINDE) DIN 513/514

Pitch mm	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
2,0	16	3/8	16ER_2.0SG_FC	1,1	1,6	16IR_2.0SG_FC	1,2	1,7
3,0	22	3/8	22ER_3.0SG_FC	1,5	2,4	22IR_3.0SG_FC	1,9	2,9
4,0	22	1/2	22ER_4.0SG_FC	1,9	3,1	22IR_4.0SG_FC	2,3	3,5

PG

STEEL CONDUIT THREAD DIN 40430

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
20	8	3/16				08IR_20PG_BC	0,6	0,7
18	11	1/4				11IR_18PG_FC	0,8	0,9
20	16	3/8	16ER_20PG_FC	0,7	0,8			
18	16	3/8	16ER_18PG_FC	0,8	0,9	16IR_18PG_FC	0,8	0,9
16	16	3/8	16ER_16PG_FC	0,8	1,0	16IR_16PG_FC	0,8	1,0

THREAD TURNING INSERTS

SmiCut STS

TR

TRAPEZ DIN 103

Pitch mm	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
1,5	16	3/8	16ER_1.5TR_FC	1,0	1,1			
2,0	16	3/8	16ER_2.0TR_FC	1,0	1,3	16IR_2.0TR_FC	1,0	1,3
3,0	16	3/8	16ER_3.0TR_FC	1,3	1,5	16IR_3.0TR_FC	1,3	1,5
4,0	22	1/2	22ER_4.0TR_FC	1,8	1,9	22IR_4.0TR_FC	1,8	1,9
5,0	22	1/2	22ER_5.0TR_FC	2,0	2,4	22IR_5.0TR_FC	2,0	2,4
6,0	22	1/2	22ER_6.0TR_FC	2,0	2,4	22IR_6.0TR_FC	2,0	2,4
6,0	27	5/8	27ER_6.0TR_FC	2,3	2,7	27IR_6.0TR_FC	2,3	2,7
7,0	27	5/8	27ER_7.0TR_FC	2,2	2,6	27IR_7.0TR_FC	2,2	2,6

RD

ROUND DIN 405

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
10	16	3/8	16ER_10RD_FC	1,1	1,2	16IR_10RD_FC	1,1	1,2
8	16	3/8	16ER_8RD_FC	1,4	1,3	16IR_8RD_FC	1,4	1,4
6	16	3/8	16ER_6RD_FC	1,5	1,7	16IR_6RD_FC	1,4	1,5
6	22	1/2	22ER_6RD_FC	1,5	1,7	22IR_6RD_FC	1,5	1,7
4	22	1/2	22ER_4RD_FC	2,2	2,3	22IR_4RD_FC	2,2	2,3
4	27	5/8	27ER_4RD_FC	2,2	2,3	27IR_4RD_FC	2,2	2,3

ACME

ACME

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
16	11	1/4				11IR_16ACME_FC	0,9	1,0
16	16	3/8	16ER_16ACME_FC	0,9	1,0	16IR_16ACME_FC	0,9	1,0
14	16	3/8	16ER_14ACME_FC	1,0	1,2	16IR_14ACME_FC	1,0	1,2
12	16	3/8	16ER_12ACME_FC	1,1	1,2	16IR_12ACME_FC	1,1	1,2
10	16	3/8	16ER_10ACME_FC	1,3	1,3	16IR_10ACME_FC	1,3	1,3
8	16	3/8	16ER_8ACME_FC	1,5	1,5	16IR_8ACME_FC	1,5	1,5
6	16	3/8	16ER_6ACME_FC	1,7	1,8	16IR_6ACME_FC	1,7	1,8
6	22	1/2	22ER_6ACME_FC	1,8	2,1	22IR_6ACME_FC	1,8	2,1
5	22	1/2	22ER_5ACME_FC	2,0	2,3	22IR_5ACME_FC	2,0	2,3
4	27	5/8	27ER_4ACME_FC	2,3	2,7	27IR_4ACME_FC	2,3	2,7

STACME

STUB ACME

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
16	16	3/8	16ER_16STACME_FC	1,0	1,0	16IR_16STACME_FC	1,0	1,0
14	16	3/8	16ER_14STACME_FC	1,1	1,1	16IR_14STACME_FC	1,1	1,1
12	16	3/8	16ER_12STACME_FC	1,2	1,2	16IR_12STACME_FC	1,2	1,2
10	16	3/8	16ER_10STACME_FC	1,3	1,3	16IR_10STACME_FC	1,3	1,3
8	16	3/8	16ER_8STACME_FC	1,5	1,5	16IR_8STACME_FC	1,5	1,5
6	16	1/2	16ER_6STACME_FC	1,8	1,8	16IR_6STACME_FC	1,8	1,8
5	22	1/2	22ER_5STACME_FC	2,0	2,3	22IR_5STACME_FC	2,0	2,3
4	27	5/8	27ER_4STACME_FC	2,3	2,4	27IR_4STACME_FC	2,3	2,4
3	27	5/8	27ER_3STACME_FC	2,8	2,9	27IR_3STACME_FC	2,8	2,9

- The Part Numbers are for Right Hand Inserts. For Left Hand specify L instead of R. The Price is 10% higher for L.
- All inserts have ground profile and chipbreaker if nothing else is indicated.

API RD — API ROUND OIL THREAD

Pitch TPI	L mm	IC inch	Taper IPF	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm
10	16	3/8	0,75	16ER_10APIRD_FC	16IR_10APIRD_FC	1,5	1,4
8	16	3/8	0,75	16ER_8APIRD_FC	16IR_8APIRD_FC	1,3	1,6

V-0.040 — V-0.040 OIL THREAD

Pitch TPI	L mm	IC inch	Taper IPF	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm	Connection or Size
5	22	1/2	3	22ER_5API403_FC	22IR_5API403_FC	1,8	2,5	2 3/8 - 4 1/2 REG

V-0.038R — V-0.038R OIL THREAD

Pitch TPI	L mm	IC inch	Taper IPF	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm	Connection or Size
4	27	5/8	2	27ER_4API382_FC	27IR_4API382_FC	2,1	2,8	NC23-NC50
4	27	5/8	3	27ER_4API383_FC	27IR_4API383_FC	2,1	2,8	NC56-NC77

V-0.050 — V-0.050 OIL THREAD

Pitch TPI	L mm		Taper IPF	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm	Connection or Size
4	27	5/8	2	27ER_4API502_FC	27IR_4API502_FC	2,0	3,0	6 5/8 REG
4	27	5/8	3	27ER_4API503_FC	27IR_4API503_FC	2,0	3,0	5 1/2, 7 5/8, 8 5/8 REG

EL — EXTREME - LINE CASING OIL THREAD

Pitch TPI	L mm	IC inch	Taper IPF	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm	Connection or Size
6	22	1/2	1,50	22ER_6EL1.5_FC	22IR_6EL1.5_FC	1,9	1,9	5 - 7 5/8
5	22	1/2	1,25	22ER_5EL1.25_FC	22IR_5EL1.25_FC	2,4	2,3	8 5/8 - 10 3/4

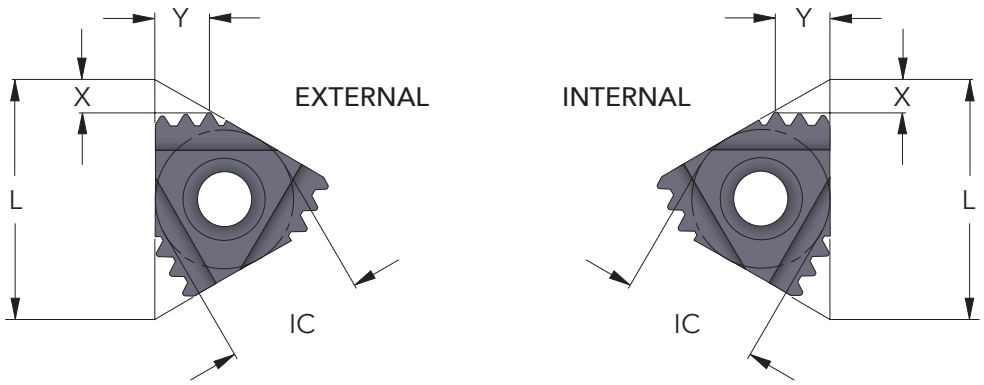
BUT — BUTTRESS CASING OIL THREAD

Pitch TPI	L mm	IC inch	Taper IPF	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm	Connection or Size
5	22	1/2	0,75	22ER_5BUT0.75_FC	22IR_5BUT0.75_FC	2,2	2,4	4 1/2 - 13 3/8
5	22	1/2	1,00	22ER_5BUT1.0_FC	22IR_5BUT1.0_FC	2,3	2,4	16 - 20

- The Part Numbers are for Right Hand Inserts. For Left Hand specify L instead of R. The Price is 10% higher for L.
- All inserts have ground profile and chipbreaker if nothing else is indicated.

THREAD TURNING INSERTS

Triangular Multitooth



M METRIC

Pitch mm	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
1,0	16	3/8	16ER_1.0ISO3M_FC	1,7	2,5	16IR_1.0ISO3M_FC	1,7	2,5
1,5	16	3/8	16ER_1.5ISO2M_FC	1,5	2,3	16IR_1.5ISO2M_FC	1,5	2,3
1,5	22	1/2	22ER_1.5ISO3M_FC	2,3	3,7	22IR_1.5ISO3M_FC	2,3	3,7
2,0	22	1/2	22ER_2.0ISO2M_FC	2,0	3,0	22IR_2.0ISO2M_FC	2,0	3,0
2,0	22	1/2	22ER_2.0ISO3M_FC	3,1	5,0	22IR_2.0ISO3M_FC	3,1	5,0
3,0	27	5/8	27ER_3.0ISO2M_FC	2,9	4,5	27IR_3.0ISO2M_FC	2,9	4,5

UN UNIFIED

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
16	16	3/8	16ER_16UN2M_FC	1,5	2,3	16IR_16UN2M_FC	1,5	2,3
16	16	3/8	22ER_16UN3M_FC	2,5	4,0	22IR_16UN3M_FC	2,5	4,0
12	22	1/2	22ER_12UN2M_FC	2,2	3,4	22IR_12UN2M_FC	2,2	3,4
12	22	1/2	22ER_12UN3M_FC	3,3	5,3	22IR_12UN3M_FC	3,3	5,3
8	27	5/8	27ER_8UN2M_FC	3,1	4,9	27IR_8UN2M_FC	3,1	4,9

G/Rp WHITWORTH PIPE THREAD

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
14	16	3/8	16ER_14W2M_FC	1,7	2,7	16IR_14W2M_FC	1,7	2,7
14	22	1/2	22ER_14W3M_FC	2,8	4,5	22IR_14W3M_FC	2,8	4,5
11	22	1/2	22ER_11W2M_FC	2,3	3,4	22IR_11W2M_FC	2,3	3,4

NPT NPT PIPE THREAD

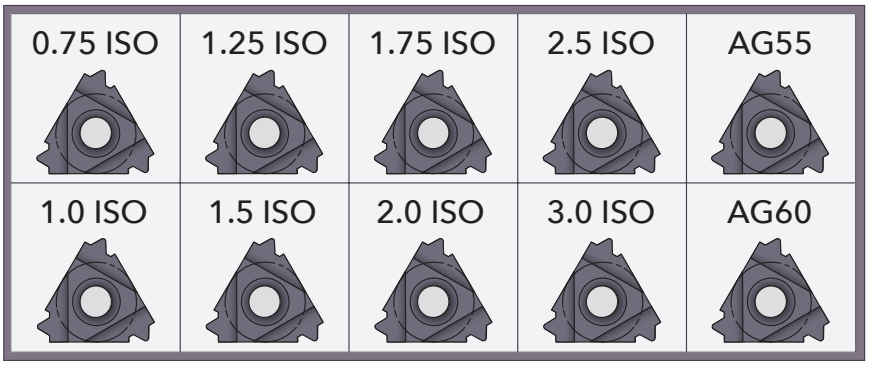
Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
11,5	22	1/2	22ER_11.5NPT2M_FC	2,3	3,5	22IR_11.5NPT2M_FC	2,3	3,5
11,5	27	5/8	27ER_11.5NPT3M_FC	3,3	5,5	27IR_11.5NPT3M_FC	3,3	5,5
8	27	5/8	27ER_8NPT2M_FC	3,1	5,0	27IR_8NPT2M_FC	3,1	5,0

API RD API ROUND OIL THREAD

Pitch TPI	L mm	IC inch	Taper IPF	EXTERNAL Part Number	INTERNAL Part Number	X mm	Y mm
10	22	1/2	0,75	22ER_10APIRD2M_FC	22IR_10APIRD2M_FC	2,4	3,7
10	27	5/8	0,75	27ER_10APIRD3M_FC	27IR_10APIRD3M_FC	3,8	6,2
8	27	5/8	0,75	27ER_8APIRD2M_FC	27IR_8APIRD2M_FC	3,0	4,5

THREAD TURNING INSERTS

Kit with Different Inserts



External Thread Turning Inserts

Part Number 10X16ER_FC					
1 pc. 16ER_0.75ISO_FC	M4,5	MF6-12	1 pc. 16ER_2.0ISO_FC	M14-16	MF18-100
1 pc. 16ER_1.0ISO_FC	M6-7	MF8-30	1 pc. 16ER_2.5ISO_FC	M18-22	
1 pc. 16ER_1.25ISO_FC	M8-9	MF10-12	1 pc. 16ER_3.0ISO_FC	M24-27	MF30-100
1 pc. 16ER_1.5ISO_FC	M10-11	MF12-60	1 pc. 16ER_AG55_FC	P0,5-3,0	
1 pc. 16ER_1.75ISO_FC	M12		1 pc. 16ER_AG60_FC	P0,5-3,0	

Part Number 10X22ER_FC		
2 pcs. 22ER_3.5ISO_FC	M30-33	
2 pcs. 22ER_4.0ISO_FC	M36-39	MF42-100
2 pcs. 22ER_4.5ISO_FC	M42-45	
2 pcs. 22ER_5.0ISO_FC	M48-52	
2 pcs. 22ER_N60_FC	P3,5-5,0	

Internal Thread Turning Inserts

Part Number 10X06IR_Ø5_BC		
2 pcs. 06IR_0.5ISO_BC		MF8
2 pcs. 06IR_0.75ISO_BC		MF7-12
2 pcs. 06IR_1.0ISO_BC	M7	MF8-30
2 pcs. 06IR_1.25ISO_BC	M8-9	MF10-12
2 pcs. 06IR_A60_BC	P0,5-1,25	

Recommended holder: SIR_0005_H06

Part Number 10X08IR_Ø7_BC		
2 pcs. 08IR_1.0ISO_BC		MF10-30
2 pcs. 08IR_1.5ISO_BC	M10-11	MF12-60
2 pcs. 08IR_1.75ISO_BC	M12	
2 pcs. 08IR_28W_BC	G1/8	
2 pcs. 08IR_A60_BC	P0,5-1,5	

Recommended holder: SIR_0007_K08

Part Number 10X11IR_Ø10_FC		
2 pcs. 11IR_1.0ISO_FC		MF14-30
2 pcs. 11IR_1.5ISO_FC		MF14-60
2 pcs. 11IR_2.0ISO_FC	M14-16	MF18-100
2 pcs. 11IR_19W_FC	G1/4-3/8	
2 pcs. 11IR_A60_FC	P0,5-1,5	

Recommended holder: SIR_0010_K11

Part Number 10X16IR_Ø13_FC		
2 pcs. 16IR_1.5ISO_FC		MF18-60
2 pcs. 16IR_2.0ISO_FC		MF18-100
2 pcs. 16IR_2.5ISO_FC	M18-22	
2 pcs. 16IR_3.0ISO_FC	M24-27	MF30-100
2 pcs. 16IR_14W_FC	G1/2-7/8	

Recommended holder: SIR_0013_M16

Part Number 10X16IR_Ø20_FC		
2 pcs. 16IR_1.5ISO_FC		MF27-60
2 pcs. 16IR_2.0ISO_FC		MF27-100
2 pcs. 16IR_3.0ISO_FC	M27	MF30-100
2 pcs. 16IR_11W_FC	G1-6	
2 pcs. 16IR_AG60_FC	P0,5-3,0	

Recommended holder: SIR_0020_P16

Part Number 10X22IR_Ø25_FC		
2 pcs. 22IR_3.5ISO_FC	M30-33	
2 pcs. 22IR_4.0ISO_FC	M36-39	MF42-100
2 pcs. 22IR_4.5ISO_FC	M42-45	
2 pcs. 22IR_5.0ISO_FC	M48-52	
2 pcs. 22IR_N60_FC	P3,5-5,0	

Recommended holder: SIR_0025_R22

THREAD TURNING TOOLHOLDERS

External

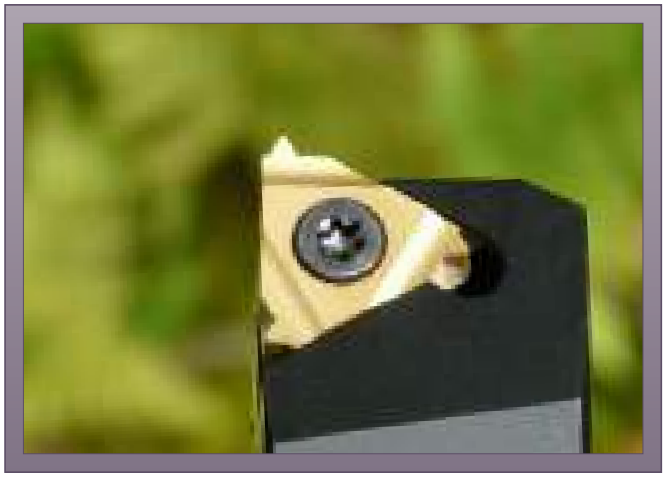


Insert mm	Part Number	B/H mm	L mm	F mm
16	SER_1212_F16	12	80	16
16	SER_1616_H16	16	100	16
16	SER_2020_K16	20	125	20
16	SER_2525_M16	25	150	25
16	SER_3232_P16	32	170	32
22	SER_2525_M22	25	150	25
22	SER_3232_P22	32	170	32
22	SER_4040_R22	40	200	40
27	SER_2525_M27	25	150	32
27	SER_3232_P27	32	170	32
27	SER_4040_R27	40	200	40

Spare Parts

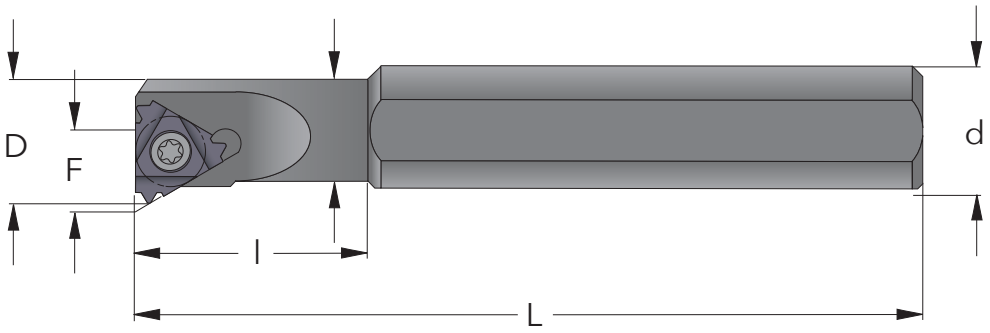
Insert mm	Screw to insert	Torx key	Screw to anvil	Anvil
16	S16	K16	A16	AE16...
22	S22	K22	A22	AE22...
27	S27	K27	A27	AE27...

- The Part Numbers are for Right Hand Toolholders. For Left Hand specify L instead of R. The Price is 10% higher for L.
- Give Helix Angle for Anvil, ex. AE16+0.5



THREAD TURNING TOOLHOLDERS

Internal



Insert mm	D mm	Part Number	d mm	d1 mm	l mm	L mm	F mm
6	6,3	SIR_0005_H06*	12	5,1	12	100	4,3
8	8	SIR_0007_K08*	16	6,6	18	125	5,3
11	12	SIR_0010_H11*	10	10		100	7,4
11	12	SIR_0010_K11*	16	10	25	125	7,4
11	15	SIR_0013_L11*	16	13	32	140	8,9
16	16	SIR_0013_M16*	16	13	32	150	10,2
16	19	SIR_0016_P16*	20	16	40	170	11,7
16	23	SIR_0020_P16	20	20		170	13,7
16	28	SIR_0025_R16	25	25		200	16,2
16	35	SIR_0032_S16	32	32		250	19,7
16	43	SIR_0040_T16	40	40		300	23,7
22	24	SIR_0020_P22*	20	20		170	15,6
22	29	SIR_0025_R22	25	25		200	18,1
22	36	SIR_0032_S22	32	32		250	21,6
22	44	SIR_0040_T22	40	40		300	25,6
27	39	SIR_0032_S27	32	32		250	22,6
27	45	SIR_0040_T27	40	40		300	26,6
27	55	SIR_0050_U27	50	50		350	31,6
27	65	SIR_0060_V27	60	60		400	36,6

with Carbide Shank and Internal Coolant

Insert mm	D mm	Part Number	d mm	d1 mm	l mm	L mm	F mm
6	6,3	SIR_0005_H06CB*	6	5,1	26	100	4,3
8	8	SIR_0007_K08CB*	8	6,6	31	125	5,3
11	12	SIR_0010_M11CB*	10	10		150	7,4
11	14	SIR_0012_P11CB*	12	12		170	8,4
16	19	SIR_0016_R16CB*	16	16		200	11,7
16	23	SIR_0020_S16CB	20	20		250	13,7
16	28	SIR_0025_S16CB	25	25		250	16,2
22	24	SIR_0020_S22CB*	20	20		250	15,6

Spare Parts

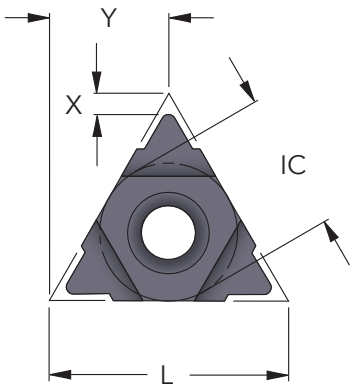
Insert mm	Screw to insert	Torx key	Screw to anvil	Anvil
06	S6	K6		
08	S8	K8		
11	S11	K11		
16	S16	K16	A16	AI16...
22	S22	K22	A22	AI22...
27	S27	K27	A27	AI27...

* Toolholder without anvil

SmiCut STS

THREAD TURNING INSERTS

U-type



M METRIC

Pitch mm	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
2,0	8	3/16				08UI_2.0ISO_BC	0,9	4,0
5,5	22	1/2	22UE_5.5ISO_FC	2,3	11,0	22UI_5.5ISO_FC	2,4	11,0
6,0	22	1/2	22UE_6.0ISO_FC	2,6	11,0	22UI_6.0ISO_FC	2,1	11,0
8,0	27	5/8	27UE_8.0ISO_FC	2,4	13,7	27UI_8.0ISO_FC	2,4	13,7
12,0	33	3/4	33UE_12.0ISO_FC	2,5	16,5	33UI_12.0ISO_FC	3,5	16,9

UN UNIFIED

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
13	8	3/16				08UI_13UN_BC	1,0	4,0
12	8	3/16				08UI_12UN_BC	0,9	4,0
11	8	3/16				08UI_11UN_BC	0,9	4,0
4,5	22	1/2	22UE_4.5UN_FC	2,0	11,0	22UI_4.5UN_FC	2,4	11,0
4	22	1/2	22UE_4UN_FC	2,0	11,0	22UI_4UN_FC	2,4	11,0
3	27	5/8	27UE_3UN_FC	2,5	13,7	27UI_3UN_FC	2,7	13,7
2	33	3/4	33UE_2UN_FC	2,8	16,5	33UI_2UN_FC	3,6	16,9

TR TRAPEZ DIN 103

Pitch mm	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
2,0	8					08UI_2.0TR_BC	0,9	4,0
6,0	22	1/2	22UE_6.0TR_FC	2,0	11,0	22UI_6.0TR_FC	2,0	11,0
7,0	22	1/2	22UE_7.0TR_FC	2,3	11,0	22UI_7.0TR_FC	2,3	11,0
8,0	22	1/2	22UE_8.0TR_FC	2,5	11,0	22UI_8.0TR_FC	2,5	11,0
8,0	27	5/8	27UE_8.0TR_FC	2,5	13,7	27UI_8.0TR_FC	2,5	13,7
9,0	27	5/8	27UE_9.0TR_FC	3,0	13,7	27UI_9.0TR_FC	3,0	13,7
10,0	27	5/8	27UE_10.0TR_FC*	3,2	13,7	27UI_10.0TR_FC*	3,2	13,7
12,0	33	3/4	33UE_12.0TR_FC	3,9	16,9	33UI_12.0TR_FC	3,9	16,9

All inserts have ground profile and chipbreaker.

* Only one cutting edge

SmiCut STS

ACME

ACME

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
14	8	3/16				08UI_14ACME_BC	0,8	4,0
12	8	3/16				08UI_12ACME_BC	0,8	4,0
10	8	3/16				08UI_10ACME_BC	0,8	4,0
4	22	1/2	22UE_4ACME_FC	2,3	11,0	22UI_4ACME_FC	2,3	11,0
3	27	5/8	27UE_3ACME_FC	2,8	13,7	27UI_3ACME_FC	2,8	13,7
2	33	3/4	33UE_2ACME_FC	4,3	16,9	33UI_2ACME_FC	4,3	16,9

STACME

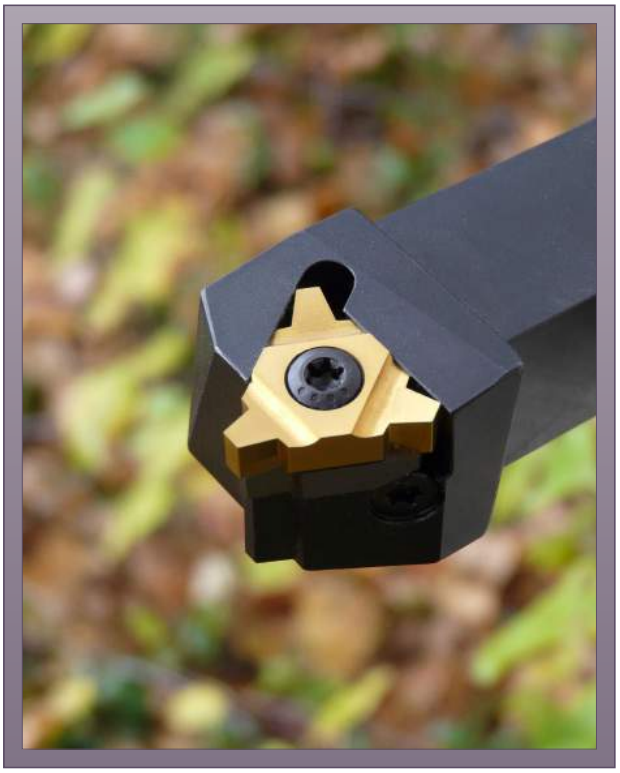
STUB ACME

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
14	8	3/16				08UI_14STACME_BC	0,8	4,0
12	8	3/16				08UI_12STACME_BC	0,9	4,0
10	8	3/16				08UI_10STACME_BC	1,0	4,0
4	22	1/2	22UE_4STACME_FC	2,5	11,0	22UI_4STACME_FC	2,5	11,0
3	22	1/2	22UE_3STACME_FC	3,3	11,0	22UI_3STACME_FC	3,3	11,0
2	33	3/4	33UE_2STACME_FC	5,0	16,9	33UI_2STACME_FC	5,0	16,9

BS/G/Rp

WHITWORTH

Pitch TPI	L mm	IC inch	EXTERNAL Part Number	X mm	Y mm	INTERNAL Part Number	X mm	Y mm
12	8	3/16				08UI_12W_BC	0,9	4,0
4,5	22	1/2	22U_4.5W_FC	2,3	11,0	22U_4.5W_FC	2,3	11,0
4	22	1/2	22U_4W_FC	2,8	11,0	22U_4W_FC	2,8	11,0
3,5	27	5/8	27U_3.5W_FC	2,1	13,7	27U_3.5W_FC	2,1	13,7
3,25	27	5/8	27U_3.25W_FC	2,0	13,7	27U_3.25W_FC	2,0	13,7
3	27	5/8	27U_3W_FC	2,3	13,7	27U_3W_FC	2,3	13,7
2,75	27	5/8	27U_2.75W_FC	2,4	13,7	27U_2.75W_FC	2,4	13,7



THREAD TURNING TOOLHOLDERS

U-type External



Insert mm	Part Number	B/H mm	L mm	F mm
22	SER_2525_M22U	25	150	28
22	SER_3232_P22U	32	170	32
22	SER_4040_R22U	40	200	40
27	SER_2525_M27U	25	150	32
27	SER_3232_P27U	32	170	32
27	SER_4040_R27U	40	200	40
33	SER_2525_M33U*	25	150	32
33	SER_3232_P33U*	32	170	32

Spare Parts

Insert mm	Screw to insert	Torx key	Screw to anvil	Anvil
22	S22	K22	A22	AE22U...
27	S27	K27	A27	AE27U...
33	S33	K33		

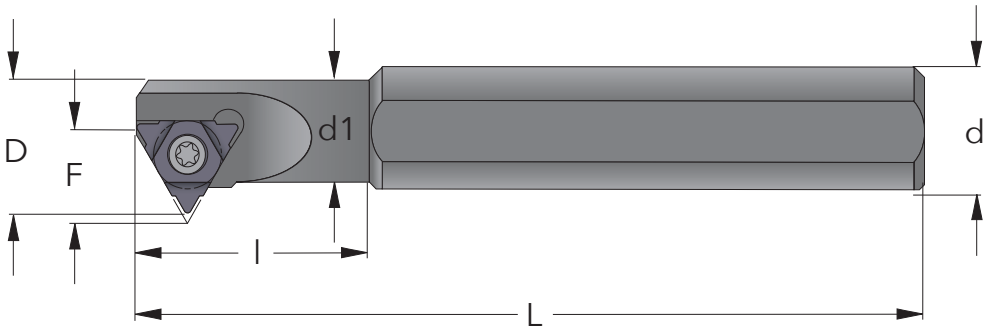
The Part Numbers are for Right Hand Toolholders. For Left Hand specify L instead of R. The Price is 10% higher for L.

Give Helix Angle for Anvil, ex. AE22U+0.5

* Toolholder without anvil

THREAD TURNING TOOLHOLDERS

U-type Internal



Insert mm	D mm	Part Number	d mm	d1 mm	l mm	L mm	F mm
8	9,5	SIR_0008_K08U*	16	7,3	21	125	6,6
22	39	SIR_0032_S22U	32	32	-	250	24,4
22	46	SIR_0040_T22U	40	40	-	300	28,1
27	40	SIR_0032_S27U	32	32	-	250	25,8
27	47	SIR_0040_T27U	40	40	-	300	29,4
27	57	SIR_0050_U27U	50	50	-	350	34,3
27	68	SIR_0060_V27U	60	60	-	400	39,7
33	59	SIR_0050_U33U*	50	50	-	350	37,5

with Carbide Shank and Internal Coolant

Insert mm	D mm	Part Number	d mm	d1 mm	l mm	L mm	F mm
8	9,5	SIR_0008_K08UCB*	8	7,3	35	125	6,6

Spare Parts

Insert mm	Screw to insert	Torx key	Screw to anvil	Anvil
08	S8	K8		
22	S22	K22	A22	AI22U...
27	S27	K27	A27	AI27U...
33	S33	K33		

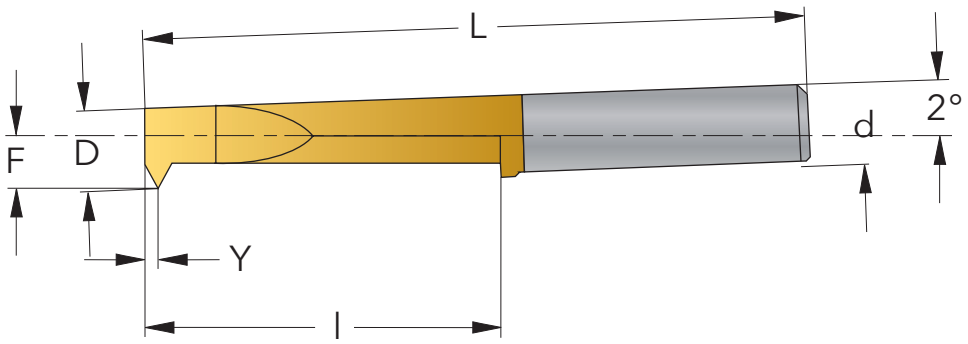
The Part Numbers are for Right Hand Toolholders. For Left Hand specify L instead of R. The Price is 10% higher for L.

Give Helix Angle for Anvil, ex. AI22U+0.5

* Toolholder without anvil

THREAD TURNING INSERTS

Micro



60°

PARTIAL PROFILE 60°

Pitch mm	Pitch TPI	D mm	INTERNAL Part Number	d mm	l mm	L mm	F mm	Y mm
0,2-0,4	80 - 64	0,8	WR308_P60_BC	3	4	24	0,5	0,2
0,2-0,6	80 - 44	1,6	WR316_P60_BC	3	7	24	0,75	0,3
0,2-0,8	80 - 32	2,2	WR322_P60_BC	3	10	24	1,25	0,4
0,2-1,0	80 - 28	3,0	WR330_P60_BC	3	12	24	1,5	0,5
0,25-1,25	80 - 20	4,0	WR440_P60_BC	4	16,5	32	2	0,6
0,25-1,5	80 - 18	5,0	WR550_P60_BC	5	21	40	2,5	0,7
0,25-1,75	80 - 14	6,0	WR660_P60_BC	6	27	48	3	0,8
0,35-2,5	72 - 10	8,0	WR880_P60_BC	8	45	72	4	1,2

55°

PARTIAL PROFILE 55°

Pitch mm	Pitch TPI	D mm	INTERNAL Part Number	d mm	l mm	L mm	F mm	Y mm
0,25-1,25	80 - 20	4,0	WR440_P55_BC	4	16,5	32	2	0,6
0,25-1,75	80 - 18	6,0	WR660_P55_BC	6	27	48	3	0,8

Also available for Grooving and Turning

Minimum Bore Diameter

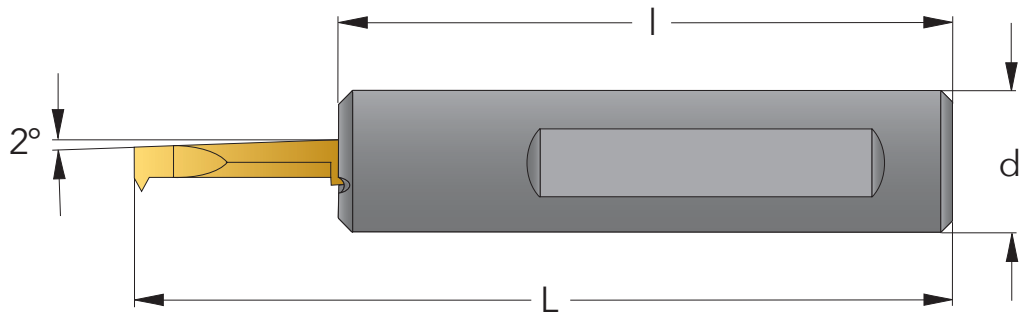
To obtain highest possible stability the threading inserts are ground in an angle of 2°. Therefore the minimum bore diameter is dependent on the thread length according to the table below.

D mm	Thread Lenght (mm) 2	4	6	8	10	12	14	16	18	21	24	27	30	35	40	45
0,8	0,87	0,94														
1,6	1,67	1,74	1,81													
2,2	2,27	2,34	2,41	2,48	2,55											
3,0	3,07	3,14	3,21	3,28	3,35	3,42										
4,0	4,07	4,14	4,21	4,28	4,35	4,42	4,49	4,56								
5,0	5,07	5,14	5,21	5,28	5,35	5,42	5,49	5,56	5,63	5,74						
6,0	6,07	6,14	6,21	6,28	6,35	6,42	6,49	6,56	6,63	6,74	6,84	6,95				
8,0	8,07	8,14	8,21	8,28	8,35	8,42	8,49	8,56	8,63	8,74	8,84	8,95	9,05	9,23	9,40	9,58

Minimum Bore Diameter = D + (thread lenght x 0,035)

THREAD TURNING TOOLHOLDERS

Micro



Insert mm	Part Number	d mm	l mm	L mm
3,0	WRC3N_0012E-2	12	70	82
3,0	WRC3N_0016F-2	16	80	92
3,0	WRC3N_0020H-2	20	100	112
3,0	WRC3N_0022J-2	22	110	122
3,0	WRC3N_0025J-2	25	110	122
4,0	WRC4N_0012E-2	12	75	91,5
4,0	WRC4N_0016F-2	16	85	101,5
4,0	WRC4N_0020H-2	20	105	121,5
4,0	WRC4N_0022J-2	22	115	131,5
4,0	WRC4N_0025J-2	25	115	131,5
5,0	WRC5N_0016G-2	16	90	111
5,0	WRC5N_0020J-2	20	110	131
5,0	WRC5N_0022J-2	22	120	141
5,0	WRC5N_0025J-2	25	120	141
6,0	WRC6N_0016G-2	16	95	121
6,0	WRC6N_0020J-2	20	115	141
6,0	WRC6N_0022K-2	22	125	151
6,0	WRC6N_0025K-2	25	125	151
8,0	WRC8N_0020J-2	20	120	165
8,0	WRC8N_0022K-2	22	130	175
8,0	WRC8N_0025K-2	25	130	175

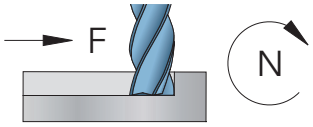
Also available in 3/4" och 1" (for Citizen).



SOLID CARBIDE END MILLS

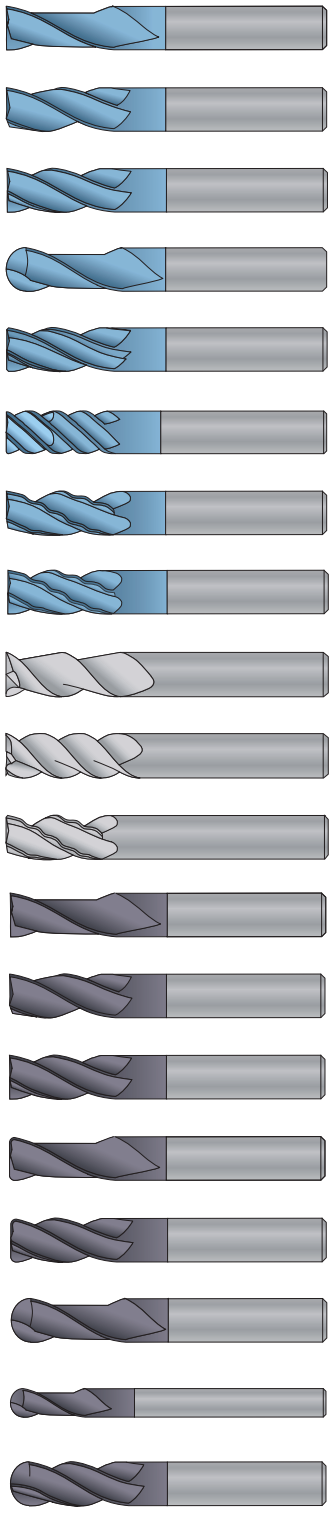
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SOLID CARBIDE END MILLS

LC	M	Two Flute	78
LC	M	Three Flute	79
LC	M	Four Flute	80
LC	R	Two Flute, with Ball Nose	81
LC	MZ	Variable Flute 35° and 38°	82
LC	MV	Slot Side End Mill	83
LC	FW	Wave formed Roughing End Mill, Three Flute	84
LC	FW	Wave formed Roughing End Mill, Four Flute	85
MG	MA	Two Flute, for aluminium	86
MG	MA	Three Flute, for aluminium	87
MG	FWA	Wave formed Roughing End Mill, aluminium	88
FC	M	Two Flute	89
FC	M	Three Flute	90
FC	M	Four Flute	91
FC	M..R	Two Flute, with Corner Radius	92
FC	M..R	Four Flute, with Corner Radius	93
FC	R	Two Flute, with Ball Nose	94
FC	R..L	Two Flute, with Ball Nose, Long Shank	94
FC	R	Four Flute, with Ball Nose	95



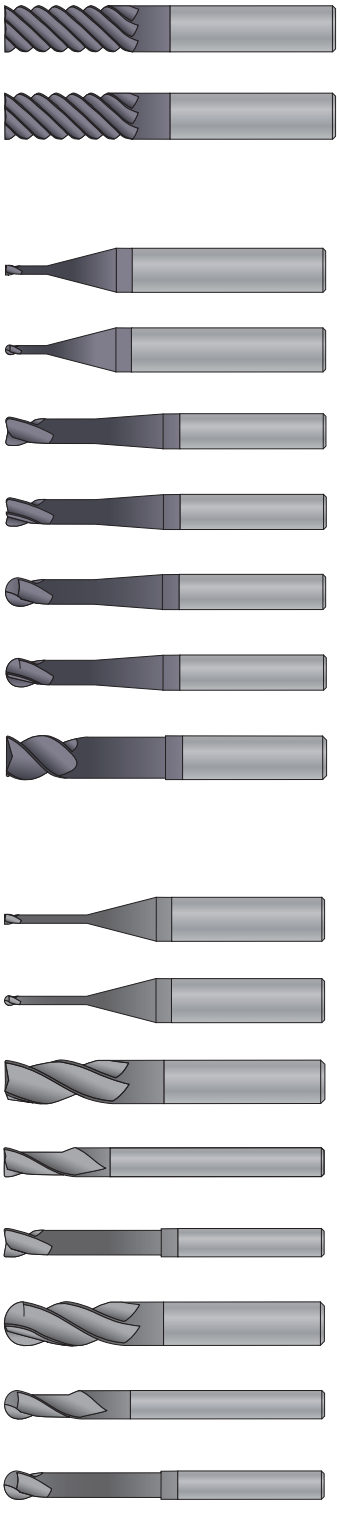
FC	U	High Helix	96
FC	V	High Helix, for Hard Materials	97

MOLD AND DIE END MILLS

FC	MP	Micro, Two Flute	98
FC	RP	Micro, Two Flute, with Ball Nose	100
FC	MH	Two Flute, with Corner Radius	102
FC	MH	Four Flute, with Corner Radius	103
FC	RH	Two Flute, with Ball Nose	104
FC	RH	Four Flute, with Ball Nose	105
FC	TH	Roughing End Mill	107

DIAMOND COATED END MILLS

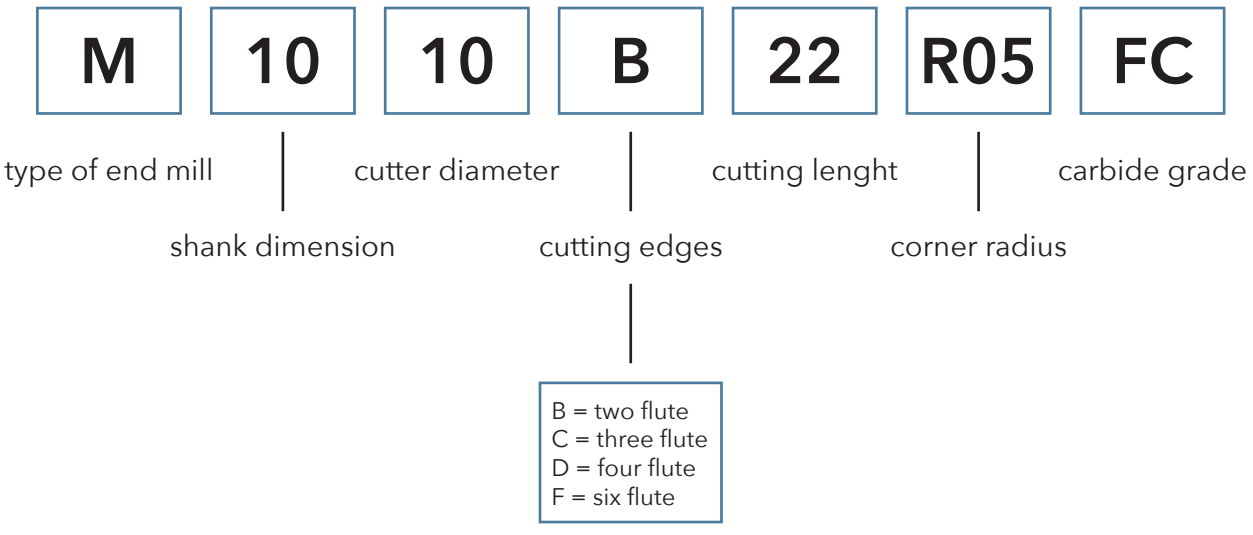
DC	MG	Micro, Two Flute	108
DC	RG	Micro, Two Flute, with Ball Nose	109
DC	MG	Three Flute, with Corner Radius	110
DC	MG..L	Two Flute, with Corner Radius, Long Shank	110
DC	MG	Two/Four Flute, with Corner Radius	111
DC	RG	Three Flute, with Ball Nose	112
DC	RG..L	Two Flute, with Ball Nose, Long Shank	112
DC	RG	Two/Four Flute, with Ball Nose	113



Cutting Speed (V_c) and Material Factor (F_m)

MATERIAL		Hardness HB	Tensile Strenght N/mm²	Cutting Speed (V_c) m/min	Material Factor (F_m)
Steel	Low carbon, C < 0,25%	< 120	< 400	150 - 200	1,2
	Medium carbon, C < 0,55%	< 200	< 700	120 - 170	1,1
	High carbon, C < 0,85%	< 250	< 850	110 - 150	1,0
	Low alloy	< 250	< 850	100 - 140	1,0
	High alloy	< 350	< 1200	70 - 110	0,9
	Hardened, HRC < 45			60 - 100	0,8
	Hardened, HRC < 55			30 - 60	0,7
	Hardened, HRC < 65			20 - 40	0,6
Cast iron	Lamellar graphite	< 150	< 500	130 - 180	1,2
	Lamellar graphite	< 300	< 1000	100 - 150	1,1
	Nodular graphite, malleable	< 200	< 700	100 - 150	1,0
	Nodular graphite, malleable	< 300	< 1000	80 - 120	0,9
Stainless steel	Free machining	< 250	< 850	130 - 180	1,0
	Austenitic	< 250	< 850	90 - 140	0,9
	Ferritic and austenitic	< 300	< 1000	80 - 120	0,8
Titanium	Unalloyed	< 200	< 700	60 - 80	0,8
	Alloyed	< 270	< 900	50 - 70	0,7
	Alloyed	< 350	< 1250	30 - 50	0,6
Nickel	Unalloyed	< 150	< 500	80 - 120	0,8
	Alloyed	< 270	< 900	60 - 80	0,7
	Alloyed	< 350	< 1250	50 - 70	0,6
Copper	Unalloyed	< 100	< 350	150 - 250	1,0
	Brass, bronze	< 200	< 700	130 - 180	1,0
	High strength bronze	< 470	< 1500	60 - 80	0,8
Aluminium	Unalloyed	< 100	< 350	500 - 900	1,4
	Alloyed, Si < 0.5%	< 150	< 500	400 - 800	1,3
	Alloyed, Si < 10%	< 120	< 400	300 - 500	1,2
	Alloyed, Si > 10%	< 120	< 400	200 - 400	1,1
Inconel	718	< 370		50 - 70	0,6
Graphite				300 - 500	1,0

Code Key

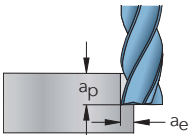


CUTTING DATA

Engagement Factor (F_e)

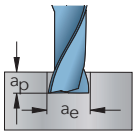
	Side Milling				Slot Milling
	a_e = 0,1 x D	a_e = 0,25 x D	a_e = 0,5 x D	a_e = 0,75 x D	a_e = 1,0 x D
a_p = 0,25 x D	3,5	1,8	1,4	1,2	1,0
a_p = 0,5 x D	3,0	1,5	1,2	0,9	0,7
a_p = 0,75 x D	2,5	1,3	1,0	0,7	0,6
a_p = 1,0 x D	2,0	1,1	0,8	0,6	0,5
a_p = 1,25 x D	1,7	0,9	0,6		
a_p = 1,5 x D	1,4	0,7			
a_p = 2,0 x D	1,2	0,5			
a_p = 2,5 x D	1,0				
a_p = 3,0 x D	0,8				

Side Milling



$$F_z = F_m \times F_e \times F_d$$

Slot Milling



Diameter Factor (F_d)

D	Diameter Factor (F_d)
0,5	0,004
1,0	0,006
2,0	0,009
3,0	0,012
4,0	0,016
5,0	0,022
6,0	0,032
8,0	0,045
10,0	0,056
12,0	0,074
14,0	0,086
16,0	0,098
18,0	0,110
20,0	0,122
25,0	0,135
32,0	0,145
40,0	0,155

D = cutter diameter (mm)
F_z = feed / flute (mm/flute)
n = spindle speed (rpm)
V_c = cutting speed (m/min)
V_f = table feed (mm/min)
z = cutting edges

$$n = \frac{V_c \times 1000}{\pi \times D}$$

$$V_f = F_z \times z \times n$$

Example

Side Milling with M1010D25 LC
Standard Length Four Flute End Mill
Carbon Steel, up to 700 N/mm2
D = 10 mm
ap = 1,0 x D = 10 mm
ae = 0,25 x D = 2,5 mm
Fz = 1,1 x 1,1 x 0,056 = 0,068 mm/flute
n = (130 x 1000) / (π x 10) = 4138 rpm
Vf = 0,068 x 4 x 4138 = 1126 mm/min

Carbide Grades

LC Super Micrograin Carbide with AlCrN coating. Allround Grade with extremely high heat resistance. Use cutting data according to the tables.

MG Uncoated Super Micrograin Carbide. For Aluminium. Use cutting data according to the tables.

FC Micrograin Carbide with TiAlN coating. Allround Grade with high heat resistance. Use cutting data according to the tables.

DC Micrograin Carbide with Diamond coating. For Graphite. Use cutting data according to the tables.

SmiCut STS™

D (mm)	V_c (m/min)																						
	20	25	30	40	50	60	70	80	90	100	110	120	130	140	160	180	200	230	260	300	350	400	450
0,3	21 221	26 526	31 831	42 441	53 052	63 662	74 272	84 883	95 493														
0,4	15 916	19 894	23 873	31 831	39 789	47 747	55 704	63 662	71 620	79 578	87 535	95 493											
0,5	12 732	15 916	19 099	25 465	31 831	38 197	44 563	50 930	57 296	63 662	70 028	76 394	82 761	89 127									
0,6	10 610	13 263	15 916	21 221	26 526	31 831	37 136	42 441	47 747	53 052	58 357	63 662	68 967	74 272	84 883	95 493							
0,7	9 095	11 368	13 642	18 189	22 736	27 284	31 831	36 378	40 926	45 473	50 020	54 567	59 115	63 662	72 757	81 851	90 946						
0,8	7 958	9 947	11 937	15 916	19 894	23 873	27 852	31 831	35 810	39 789	43 768	47 747	51 725	55 704	63 662	71 620	79 578	91 514					
0,9	7 074	8 842	10 610	14 147	17 684	21 221	24 757	28 294	31 831	35 368	38 905	42 441	45 978	49 515	56 588	63 662	70 736	81 346	91 956				
1,0	6 366	7 958	9 549	12 732	15 916	19 099	22 282	25 465	28 648	31 831	35 014	38 197	41 380	44 563	50 930	57 296	63 662	73 211	82 761	95 493			
1,1	5 787	7 234	8 681	11 575	14 469	17 362	20 256	23 150	26 044	28 937	31 831	34 725	37 618	40 512	46 300	52 087	57 875	66 556	75 237	86 812			
1,2	5 305	6 631	7 958	10 610	13 263	15 916	18 568	21 221	23 873	26 526	29 178	31 831	34 484	37 136	42 441	47 747	53 052	61 009	68 967	79 578	92 840		
1,3	4 897	6 121	7 346	9 794	12 243	14 691	17 140	19 588	22 037	24 485	26 934	29 382	31 831	34 280	39 177	44 074	48 971	56 316	63 662	73 456	85 699	97 942	
1,4	4 547	5 684	6 821	9 095	11 368	13 642	15 916	18 189	20 463	22 736	25 010	27 284	29 557	31 831	36 378	40 926	45 473	52 294	59 115	68 209	79 578	90 946	
1,5	4 244	5 305	6 366	8 488	10 610	12 732	14 854	16 977	19 099	21 221	23 343	25 465	27 587	29 709	33 953	38 197	42 441	48 808	55 174	63 662	74 272	84 883	95 493
1,6	3 979	4 974	5 968	7 958	9 947	11 937	13 926	15 916	17 905	19 894	21 884	23 873	25 863	27 852	31 831	35 810	39 789	45 757	51 725	59 683	69 630	79 578	89 525
1,7	3 745	4 681	5 617	7 490	9 362	11 234	13 107	14 979	16 852	18 724	20 597	22 469	24 341	26 214	29 959	33 703	37 448	43 065	48 683	56 172	65 534	74 897	84 259
1,9	3 351	4 188	5 026	6 701	8 377	10 052	11 727	13 403	15 078	16 753	18 428	20 104	21 779	23 454	26 805	30 156	33 506	38 532	43 558	50 259	58 636	67 013	75 389
2,0	3 183	3 979	4 775	6 366	7 958	9 549	11 141	12 732	14 324	15 916	17 507	19 099	20 690	22 282	25 465	28 648	31 831	36 606	41 380	47 747	55 704	63 662	71 620
2,2	2 894	3 617	4 341	5 787	7 234	8 681	10 128	11 575	13 022	14 469	15 916	17 362	18 809	20 256	23 150	26 044	28 937	33 278	37 618	43 406	50 640	57 875	65 109
2,3	2 768	3 460	4 152	5 536	6 920	8 304	9 688	11 072	12 456	13 840	15 224	16 607	17 991	19 375	22 143	24 911	27 679	31 831	35 983	41 519	48 439	55 358	62 278
2,5	2 546	3 183	3 820	5 093	6 366	7 639	8 913	10 186	11 459	12 732	14 006	15 279	16 552	17 825	20 372	22 918	25 465	29 285	33 104	38 197	44 563	50 930	57 296
2,6	2 449	3 061	3 673	4 897	6 121	7 346	8 570	9 794	11 018	12 243	13 467	14 691	15 916	17 140	19 588	22 037	24 485	28 158	31 831	36 728	42 849	48 971	55 092
2,8	2 274	2 842	3 410	4 547	5 684	6 821	7 958	9 095	10 231	11 368	12 505	13 642	14 779	15 916	18 189	20 463	22 736	26 147	29 557	34 105	39 789	45 473	51 157
3,0	2 122	2 653	3 183	4 244	5 305	6 366	7 427	8 488	9 549	10 610	11 671	12 732	13 793	14 854	16 977	19 099	21 221	24 404	27 587	31 831	37 136	42 441	47 747
3,5	1 819	2 274	2 728	3 638	4 547	5 457	6 366	7 276	8 185	9 095	10 004	10 913	11 823	12 732	14 551	16 370	18 189	20 918	23 646	27 284	31 831	36 378	40 926
3,6	1 768	2 210	2 653	3 537	4 421	5 305	6 189	7 074	7 958	8 842	9 726	10 610	11 495	12 379	14 147	15 916	17 684	20 336	22 989	26 526	30 947	35 368	39 789
3,7	1 721	2 151	2 581	3 441	4 301	5 162	6 022	6 882	7 743	8 603	9 463	10 324	11 184	12 044	13 765	15 485	17 206	19 787	22 368	25 809	30 110	34 412	38 713
4,0	1 592	1 989	2 387	3 183	3 979	4 775	5 570	6 366	7 162	7 958	8 754	9 549	10 345	11 141	12 732	14 324	15 916	18 303	20 690	23 873	27 852	31 831	35 810
4,5	1 415	1 768	2 122	2 829	3 537	4 244	4 951	5 659	6 366	7 074	7 781	8 488	9 196	9 903	11 318	12 732	14 147	16 269	18 391	21 221	24 757	28 294	31 831
5,0	1 273	1 592	1 910	2 546	3 183	3 820	4 456	5 093	5 730	6 366	7 003	7 639	8 276	8 913	10 186	11 459	12 732	14 642	16 552	19 099	22 282	25 465	28 648
6,0	1 061	1 326	1 592	2 122	2 653	3 183	3 714	4 244	4 775	5 305	5 836	6 366	6 897	7 427	8 488	9 549	10 610	12 202	13 793	15 916	18 568	21 221	23 873
7,0	909	1 137	1 364	1 819	2 274	2 728	3 183	3 638	4 093	4 547	5 002	5 457	5 911	6 366	7 276	8 185	9 095	10 459	11 823	13 642	15 916	18 189	20 463
8,0	796	995	1 194	1 592	1 989	2 387	2 785	3 183	3 581	3 979	4 377	4 775	5 173	5 570	6 366	7 162	7 958	9 151	10 345	11 937	13 926	15 916	17 905
9,0	707	884	1 061	1 415	1 768	2 122	2 476	2 829	3 183	3 537	3 890	4 244	4 598	4 951	5 659	6 366	7 074	8 135	9 196	10 610	12 379	14 147	15 916
10,0	637	796	955	1 273	1 592	1 910	2 228	2 546	2 865	3 183	3 501	3 820	4 138	4 456	5 093	5 730	6 366	7 321	8 276	9 549	11 141	12 732	14 324
11,0	579	723	868	1 157	1 447	1 736	2 026	2 315	2 604	2 894	3 183	3 472	3 762	4 051	4 630	5 209	5 787	6 656	7 524	8 681	10 128	11 575	13 022
12,0	531	663	796	1 061	1 326	1 592	1 857	2 122	2 387	2 653	2 918	3 183	3 448	3 714	4 244	4 775	5 305	6 101	6 897	7 958	9 284	10 610	11 937
14,0	455	568	682	909	1 137	1 364	1 592	1 819	2 046	2 274	2 501	2 728	2 956	3 183	3 638	4 093	4 547	5 229	5 911	6 821	7 958	9 095	10 231
15,0	424	531	637	849	1 061	1 273	1 485	1 698	1 910	2 122	2 334	2 546	2 759	2 971	3 395	3 820	4 244	4 881	5 517	6 366	7 427	8 488	9 549
16,0	398	497	597	796	995	1 194	1 393	1 592	1 790	1 989	2 188	2 387	2 586	2 785	3 183	3 581	3 979	4 576	5 173	5 968	6 963	7 958	8 952
18,0	354	442	531	707	884	1 061	1 238	1 415	1 592	1 768	1 945	2 122	2 299	2 476	2 829	3 183	3 537	4 067	4 598	5 305	6 189	7 074	7 958
20,0	318	398	477	637	796	955	1 114	1 273	1 432	1 592	1 751	1 910	2 069	2 228	2 546	2 865	3 183	3 661	4 138	4 775	5 570	6 366	7 162
22,0	289	362	434	579	723	868	1 013	1 157	1 302	1 447	1 592	1 736	1 881	2 026	2 315	2 604	2 894	3 328	3 762	4 341	5 064	5 787	6 511
25,0	255	318	382	509	637	764	891	1 019	1 146	1 273	1 401	1 528	1 655	1 783	2 037	2 292	2 546	2 928	3 310	3 820	4 456	5 093	5 730
32,0	199	249	298	398	497	597	696	796	895	995	1 094	1 194	1 293	1 393	1 592	1 790	1 989	2 288	2 586	2 984	3 482	3 979	4 476
40,0	159	199	239	318	398	477	557	637	716	796	875	955	1 035	1 114	1 273	1 432	1 592	1 830	2 069	2 387	2 785	3 183	3 581
50,0	127	159	191	255	318	382	446	509	573	637	700	764	828	891	1 019	1 146	1 273	1 464	1 655	1 910	2 228	2 546	2 865
63,0	101	126	152	202	253	303	354	404	455	505	556	606	657	707	808	909	1 011	1 162	1 314	1 516	1 768	2 021	2 274
80,0	80	99	119	159	199	239	279	318	358	398	438	477	517	557	637	716	796	915	1 035	1 194	1 393	1 592	1 790
100,0	64	80	95	127	159	191	223	255	286	318	350	382	414	446	509	573	637	732	828	955	1 114	1 273	1 432

$$\text{Spindle Speed (rpm)} = \frac{V_c \times 1000}{\pi \times D}$$

Feed (mm/min) = F_z x z x n

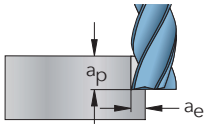
Fz (mm/z)			n (rpm)																			
z2	z3	z4	200	350	500	750	1 000	1 250	1 500	2 000	2 500	3 000	4 000	5 000	6 000	8 000	10 000	15 000	20 000	25 000	30 000	40 000	50 000
0,002	0,001	0,001	1	1	2	3	4	5	6	8	10	12	16	20	24	32	40	60	80	100	120	160	200
0,003	0,002	0,002	1	2	3	5	6	8	9	12	15	18	24	30	36	48	60	90	120	150	180	240	300
0,004	0,003	0,002	2	3	4	6	8	10	12	16	20	24	32	40	48	64	80	120	160	200	240	320	400
0,005	0,003	0,003	2	4	5	8	10	13	15	20	25	30	40	50	60	80	100	150	200	250	300	400	500
0,006	0,004	0,003	2	4	6	9	12	15	18	24	30	36	48	60	72	96	120	180	240	300	360	480	600
0,007	0,005	0,004	3	5	7	11	14	18	21	28	35	42	56	70	84	112	140	210	280	350	420	560	700
0,008	0,005	0,004	3	6	8	12	16	20	24	32	40	48	64	80	96	128	160	240	320	400	480	640	800
0,009	0,006	0,005	4	6	9	14	18	23	27	36	45	54	72	90	108	144	180	270	360	450	540	720	900
0,010	0,007	0,005	4	7	10	15	20	25	30	40	50	60	80	100	120	160	200	300	400	500	600	800	1 000
0,012	0,008	0,006	5	8	12	18	24	30	36	48	60	72	96	120	144	192	240	360	480	600	720	960	1 200
0,014	0,009	0,007	6	10	14	21	28	35	42	56	70	84	112	140	168	224	280	420	560	700	840	1 120	1 400
0,016	0,011	0,008	6	11	16	24	32	40	48	64	80	96	128	160	192	256	320	480	640	800	960	1 280	1 600
0,018	0,012	0,009	7	13	18	27	36	45	54	72	90	108	144	180	216	288	360	540	720	900	1 080	1 440	1 800
0,020	0,013	0,010	8	14	20	30	40	50	60	80	100	120	160	200	240	320	400	600	800	1 000	1 200	1 600	2 000
0,022	0,015	0,011	9	15	22	33	44	55	66	88	110	132	176	220	264	352	440	660	880	1 100	1 320	1 760	2 200
0,024	0,016	0,012	10	17	24	36	48	60	72	96	120	144	192	240	288	384	480	720	960	1 200	1 440	1 920	2 400
0,026	0,017	0,013	10	18	26	39	52	65	78	104	130	156	208	260	312	416	520	780	1 040	1 300	1 560	2 080	2 600
0,028	0,019	0,014	11	20	28	42	56	70	84	112	140	168	224	280	336	448	560	840	1 120	1 400	1 680	2 240	2 800
0,030	0,020	0,015	12	21	30	45	60	75	90	120	150	180	240	300	360	480	600	900	1 200	1 500	1 800	2 400	3 000
0,035	0,023	0,018	14	25	35	53	70	88	105	140	175	210	280	350	420	560	700	1 050	1 400	1 750	2 100	2 800	3 500
0,040	0,027	0,020	16	28	40	60	80	100	120	160	200	240	320	400	480	640	800	1 200	1 600	2 000	2 400	3 200	4 000
0,045	0,030	0,023	18	32	45	68	90	113	135	180	225	270	360	450	540	720	900	1 350	1 800	2 250	2 700	3 600	4 500
0,050	0,033	0,025	20	35	50	75	100	125	150	200	250	300	400	500	600	800	1 000	1 500	2 000	2 500	3 000	4 000	5 000
0,055	0,037	0,028	22	39	55	83	110	138	165	220	275	330	440	550	660	880	1 100	1 650	2 200	2 750	3 300	4 400	5 500
0,060	0,040	0,030	24	42	60	90	120	150	180	240	300	360	480	600	720	960	1 200	1 800	2 400	3 000	3 600	4 800	6 000
0,065	0,043	0,033	26	46	65	98	130	163	195	260	325	390	520	650	780	1 040	1 300	1 950	2 600	3 250	3 900	5 200	6 500
0,070	0,047	0,035	28	49	70	105	140	175	210	280	350	420	560	700	840	1 120	1 400	2 100	2 800	3 500	4 200	5 600	7 000
0,075	0,050	0,038	30	53	75	113	150	188	225	300	375	450	600	750	900	1 200	1 500	2 250	3 000	3 750	4 500	6 000	7 500
0,080	0,053	0,040	32	56	80	120	160	200	240	320	400	480	640	800	960	1 280	1 600	2 400	3 200	4 000	4 800	6 400	8 000
0,090	0,060	0,045	36	63	90	135	180	225	270	360	450	540	720	900	1 080	1 440	1 800	2 700	3 600	4 500	5 400	7 200	9 000
0,100	0,067	0,050	40	70	100	150	200	250	300	400	500	600	800	1 000	1 200	1 600	2 000	3 000	4 000	5 000	6 000	8 000	10 000
0,110	0,073	0,055	44	77	110	165	220	275	330	440	550	660	880	1 100	1 320	1 760	2 200	3 300	4 400	5 500	6 600	8 800	11 000
0,120	0,080	0,060	48	84	120	180	240	300	360	480	600	720	960	1 200	1 440	1 920	2 400	3 600	4 800	6 000	7 200	9 600	12 000
0,130	0,087	0,065	52	91	130	195	260	325	390	520	650	780	1 040	1 300	1 560	2 080	2 600	3 900	5 200	6 500	7 800	10 400	13 000
0,140	0,093	0,070	56	98	140	210	280	350	420	560	700	840	1 120	1 400	1 680	2 240	2 800	4 200	5 600	7 000	8 400	11 200	14 000
0,150	0,100	0,075	60	105	150	225	300	375	450	600	750	900	1 200	1 500	1 800	2 400	3 000	4 500	6 000	7 500	9 000	12 000	15 000
0,160	0,107	0,080	64	112	160	240	320	400	480	640	800	960	1 280	1 600	1 920	2 560	3 200	4 800	6 400	8 000	9 600	12 800	16 000
0,180	0,120	0,090	72	126	180	270	360	450	540	720	900	1 080	1 440	1 800	2 160	2 880	3 600	5 400	7 200	9 000	10 800	14 400	18 000
0,200	0,133	0,100	80	140	200	300	400	500	600	800	1 000	1 200	1 600	2 000	2 400	3 200	4 000	6 000	8 000	10 000	12 000	16 000	20 000
0,220	0,147	0,110	88	154	220	330	440	550	660	880	1 100	1 320	1 760	2 200	2 640	3 520	4 400	6 600	8 800	11 000	13 200	17 600	22 000
0,240	0,160	0,120	96	168	240	360	480	600	720	960	1 200	1 440	1 920	2 400	2 880	3 840	4 800	7 200	9 600	12 000	14 400	19 200	24 000
0,260	0,173	0,130	104	182	260	390	520	650	780	1 040	1 300	1 560	2 080	2 600	3 120	4 160	5 200	7 800	10 400	13 000	15 600	20 800	26 000
0,280	0,187	0,140	112	196	280	420	560	700	840	1 120	1 400	1 680	2 240	2 800	3 360	4 480	5 600	8 400	11 200	14 000	16 800	22 400	28 000
0,300	0,200	0,150	120	210	300	450	600	750	900	1 200	1 500	1 800	2 400	3 000	3 600	4 800	6 000	9 000	12 000	15 000	18 000	24 000	30 000
0,350	0,233	0,175	140	245	350	525	700	875	1 050	1 400	1 750	2 100	2 800	3 500	4 200	5 600	7 000	10 500	14 000	17 500	21 000	28 000	35 000
0,400	0,267	0,200	160	280	400	600	800	1 000	1 200	1 600	2 000	2 400	3 200	4 000	4 800	6 400	8 000	12 000	16 000	20 000	24 000	32 000	40 000
0,450	0,300	0,225	180	315	450	675	900	1 125	1 350	1 800	2 250	2 700	3 600	4 500	5 400	7 200	9 000	13 500	18 000	22 500	27 000	36 000	45 000
0,500	0,333	0,250	200	350	500	750	1 000	1 250	1 500	2 000	2 500	3 000	4 000	5 000	6 000	8 000	10 000	15 000	20 000	25 000	30 000	40 000	50 000
0,550	0,367	0,275	220	385	550	825	1 100	1 375	1 650	2 200	2 750	3 300	4 400	5 500	6 600	8 800	11 000	16 500	22 000	27 500	33 000	44 000	55 000

SmiCut™ STS

SmiCut STS

SIDE MILLING

Roughing



a_e = 0,25 x D
a_p = 1,0 x D

Carbon Steel, up to 700 N/mm²

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	4	0,75	3,00	130	13 793	0,015	801
4,0	4	1,00	4,00	130	10 345	0,019	801
5,0	4	1,25	5,00	130	8 276	0,027	881
6,0	4	1,50	6,00	130	6 897	0,039	1 068
8,0	4	2,00	8,00	130	5 173	0,054	1 127
10,0	4	2,50	10,00	130	4 138	0,068	1 122
12,0	4	3,00	12,00	130	3 448	0,090	1 235
16,0	4	4,00	16,00	130	2 586	0,119	1 227
20,0	4	5,00	20,00	130	2 069	0,148	1 222
25,0	4	6,25	25,00	130	1 655	0,163	1 082

High Alloy Steel / Hardened Steel HRC 30-45

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	4	0,75	3,00	70	7 427	0,011	314
4,0	4	1,00	4,00	70	5 570	0,014	314
5,0	4	1,25	5,00	70	4 456	0,019	345
6,0	4	1,50	6,00	70	3 714	0,028	418
8,0	4	2,00	8,00	70	2 785	0,040	441
10,0	4	2,50	10,00	70	2 228	0,049	439
12,0	4	3,00	12,00	70	1 857	0,065	484
16,0	4	4,00	16,00	70	1 393	0,086	480
20,0	4	5,00	20,00	70	1 114	0,107	478
25,0	4	6,25	25,00	70	891	0,119	424

Cast Iron, Lamellar Graphite, up to 1000 N/mm²

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	4	0,75	3,00	110	11 671	0,015	678
4,0	4	1,00	4,00	110	8 754	0,019	678
5,0	4	1,25	5,00	110	7 003	0,027	746
6,0	4	1,50	6,00	110	5 836	0,039	904
8,0	4	2,00	8,00	110	4 377	0,054	953
10,0	4	2,50	10,00	110	3 501	0,068	949
12,0	4	3,00	12,00	110	2 918	0,090	1 045
16,0	4	4,00	16,00	110	2 188	0,119	1 038
20,0	4	5,00	20,00	110	1 751	0,148	1 034
25,0	4	6,25	25,00	110	1 401	0,163	915

Copper, Unalloyed

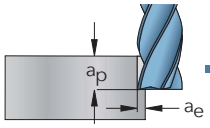
D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	4	0,75	3,00	170	18 038	0,013	952
4,0	4	1,00	4,00	170	13 528	0,018	952
5,0	4	1,25	5,00	170	10 823	0,024	1 048
6,0	4	1,50	6,00	170	9 019	0,035	1 270
8,0	4	2,00	8,00	170	6 764	0,050	1 339
10,0	4	2,50	10,00	170	5 411	0,062	1 333
12,0	4	3,00	12,00	170	4 509	0,081	1 468
16,0	4	4,00	16,00	170	3 382	0,108	1 458
20,0	4	5,00	20,00	170	2 706	0,134	1 452
25,0	4	6,25	25,00	170	2 165	0,149	1 286

Stainless Steel, Austenitic

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	3	0,75	3,00	100	10 610	0,012	504
4,0	3	1,00	4,00	100	7 958	0,016	504
5,0	3	1,25	5,00	100	6 366	0,022	555
6,0	3	1,50	6,00	100	5 305	0,032	672
8,0	3	2,00	8,00	100	3 979	0,045	709
10,0	3	2,50	10,00	100	3 183	0,055	706
12,0	3	3,00	12,00	100	2 653	0,073	777
16,0	3	4,00	16,00	100	1 989	0,097	772
20,0	3	5,00	20,00	100	1 592	0,121	769

Aluminium, up to 10% Si

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	2	0,75	3,00	300	31 831	0,016	2 017
4,0	2	1,00	4,00	300	23 873	0,021	2 017
5,0	2	1,25	5,00	300	19 099	0,029	2 218
6,0	2	1,50	6,00	300	15 916	0,042	2 689
8,0	2	2,00	8,00	300	11 937	0,059	2 836
10,0	2	2,50	10,00	300	9 549	0,074	2 824
12,0	2	3,00	12,00	300	7 958	0,098	3 109
16,0	2	4,00	16,00	300	5 968	0,129	3 088
20,0	2	5,00	20,00	300	4 775	0,161	3 076



SIDE MILLING

Finishing

SmiCut STS

a_e = 0,1 x D
a_p = 1,5 x D

Carbon Steel, up to 700 N/mm²

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	4	0,30	4,50	150	15 916	0,018	1 176
4,0	4	0,40	6,00	150	11 937	0,025	1 176
5,0	4	0,50	7,50	150	9 549	0,034	1 294
6,0	4	0,60	9,00	150	7 958	0,049	1 569
8,0	4	0,80	12,00	150	5 968	0,069	1 654
10,0	4	1,00	15,00	150	4 775	0,086	1 647
	6	1,00	15,00	150	4 775	0,086	2 471
12,0	4	1,20	18,00	150	3 979	0,114	1 814
	6	1,20	18,00	150	3 979	0,114	2 721
16,0	4	1,60	24,00	150	2 984	0,151	1 801
	6	1,60	24,00	150	2 984	0,151	2 702
20,0	4	2,00	30,00	150	2 387	0,188	1 794
	6	2,00	30,00	150	2 387	0,188	2 691
25,0	4	2,50	37,50	150	1 910	0,208	1 588
	6	2,50	37,50	150	1 910	0,208	2 382
32,0	8	3,20	48,00	150	1 492	0,223	2 665
40,0	10	4,00	60,00	150	1 194	0,239	2 849

High Alloy Steel / Hardened Steel HRC 30-45

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	4	0,30	4,50	90	9 549	0,013	513
4,0	4	0,40	6,00	90	7 162	0,018	513
5,0	4	0,50	7,50	90	5 730	0,025	565
6,0	4	0,60	9,00	90	4 775	0,036	684
8,0	4	0,80	12,00	90	3 581	0,050	722
10,0	4	1,00	15,00	90	2 865	0,063	719
	6	1,00	15,00	90	2 865	0,063	1 078
12,0	4	1,20	18,00	90	2 387	0,083	791
	6	1,20	18,00	90	2 387	0,083	1 187
16,0	4	1,60	24,00	90	1 790	0,110	786
	6	1,60	24,00	90	1 790	0,110	1 179
20,0	4	2,00	30,00	90	1 432	0,137	783
	6	2,00	30,00	90	1 432	0,137	1 174
25,0	4	2,50	37,50	90	1 146	0,151	693
	6	2,50	37,50	90	1 146	0,151	1 040
32,0	8	3,20	48,00	90	895	0,162	1 163
40,0	10	4,00	60,00	90	716	0,174	1 243

Cast Iron, Lamellar Graphite, up to 1000 N/mm²

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
6,0	6	0,60	9,00	130	6 897	0,049	2 039
8,0	6	0,80	12,00	130	5 173	0,069	2 151
10,0	6	1,00	15,00	130	4 138	0,086	2 141
12,0	6	1,20	18,00	130	3 448	0,114	2 358
16,0	6	1,60	24,00	130	2 586	0,151	2 342
20,0	6	2,00	30,00	130	2 069	0,188	2 332
25,0	8	2,50	37,50	130	1 655	0,208	2 753
32,0	8	3,20	48,00	130	1 293	0,223	2 310
40,0	10	4,00	60,00	130	1 035	0,239	2 469

Copper, Unalloyed

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
4,0	4	0,40	6,00	200	15 916	0,022	1 426
5,0	4	0,50	7,50	200	12 732	0,031	1 569
6,0	4	0,60	9,00	200	10 610	0,045	1 901
8,0	4	0,80	12,00	200	7 958	0,063	2 005
10,0	4	1,00	15,00	200	6 366	0,078	1 996
12,0	4	1,20	18,00	200	5 305	0,104	2 198
16,0	4	1,60	24,00	200	3 979	0,137	2 184
20,0	4	2,00	30,00	200	3 183	0,171	2 175
25,0	4	2,50	37,50	200	2 546	0,189	1 925

Hardened Steel HRC 45-55

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
6,0	6	0,60	9,00	45	2 387	0,031	449
8,0	6	0,80	12,00	45	1 790	0,044	474
10,0	6	1,00	15,00	45	1 432	0,055	472
12,0	6	1,20	18,00	45	1 194	0,073	519
16,0	6	1,60	24,00	45	895	0,096	516
20,0	6	2,00	30,00	45	716	0,120	514
25,0	8	2,50	37,50	45	573	0,132	606
32,0	8	3,20	48,00	45	448	0,142	509
40,0	10	4,00	60,00	45	358	0,152	544

Hardened Steel HRC 55-65

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
6,0	6	0,60	9,00	30	1 592	0,027	257
8,0	6	0,80	12,00	30	1 194	0,038	271
10,0	6	1,00	15,00	30	955	0,047	270
12,0	6	1,20	18,00	30	796	0,062	297
16,0	6	1,60	24,00	30	597	0,082	295
20,0	6	2,00	30,00	30	477	0,102	294
25,0	8	2,50	37,50	30	382	0,113	347
32,0	8	3,20	48,00	30	298	0,122	291
40,0	10	4,00	60,00	30	239	0,130	311

Stainless Steel, Austenitic

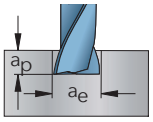
D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	3	0,30	4,50	120	12 732	0,015	578
4,0	3	0,40	6,00	120	9 549	0,020	578
5,0	3	0,50	7,50	120	7 639	0,028	635
6,0	3	0,60	9,00	120	6 366	0,040	770
8,0	3	0,80	12,00	120	4 775	0,057	812
10,0	3	1,00	15,00	120	3 820	0,071	809
12,0	3	1,20	18,00	120	3 183	0,093	890
16,0	3	1,60	24,00	120	2 387	0,123	884
20,0	3	2,00	30,00	120	1 910	0,154	881

Aluminium, up to 10% Si

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	2	0,30	4,50	350	37 136	0,020	1 497
4,0	2	0,40	6,00	350	27 852	0,027	1 497
5,0	2	0,50	7,50	350	22 282	0,037	1 647
6,0	2	0,60	9,00	350	18 568	0,054	1 996
8,0	2	0,80	12,00	350	13 926	0,076	2 106
10,0	2	1,00	15,00	350	11 141	0,094	2 096
12,0	2	1,20	18,00	350	9 284	0,124	2 308
16,0	2	1,60	24,00	350	6 963	0,165	2 293
20,0	2	2,00	30,00	350	5 570	0,205	2 283

SmiCut STS

SLOT MILLING



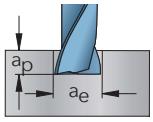
a_e = 1,0 x D
a_p = 0,5 x D

Carbon Steel, up to 700 N/mm²

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,5	2	0,50	0,25	130	82 761	0,003	510
1,0	2	1,00	0,50	130	41 380	0,005	382
	3	1,00	0,50	130	41 380	0,005	574
1,5	2	1,50	0,75	130	27 587	0,006	319
	3	1,50	0,75	130	27 587	0,006	478
2,0	2	2,00	1,00	130	20 690	0,007	287
	3	2,00	1,00	130	20 690	0,007	430
2,5	2	2,50	1,25	130	16 552	0,008	268
	3	2,50	1,25	130	16 552	0,008	401
3,0	2	3,00	1,50	130	13 793	0,009	255
	3	3,00	1,50	130	13 793	0,009	382
4,0	2	4,00	2,00	130	10 345	0,012	255
	3	4,00	2,00	130	10 345	0,012	382
5,0	2	5,00	2,50	130	8 276	0,017	280
	3	5,00	2,50	130	8 276	0,017	421
6,0	2	6,00	3,00	130	6 897	0,025	340
	3	6,00	3,00	130	6 897	0,025	510
8,0	2	8,00	4,00	130	5 173	0,035	358
	3	8,00	4,00	130	5 173	0,035	538
10,0	2	10,00	5,00	130	4 138	0,043	357
	3	10,00	5,00	130	4 138	0,043	535
12,0	2	12,00	6,00	130	3 448	0,057	393
	3	12,00	6,00	130	3 448	0,057	589
14,0	2	14,00	7,00	130	2 956	0,066	391
	3	14,00	7,00	130	2 956	0,066	587
16,0	2	16,00	8,00	130	2 586	0,075	390
	3	16,00	8,00	130	2 586	0,075	585
18,0	2	18,00	9,00	130	2 299	0,085	389
	3	18,00	9,00	130	2 299	0,085	584
20,0	2	20,00	10,00	130	2 069	0,094	389
	3	20,00	10,00	130	2 069	0,094	583
25,0	2	25,00	12,50	130	1 655	0,104	344
	3	25,00	12,50	130	1 655	0,104	516

High Alloy Steel / Hardened Steel HRC 30-45

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,5	2	0,50	0,25	70	44 563	0,002	200
1,0	2	1,00	0,50	70	22 282	0,003	150
	3	1,00	0,50	70	22 282	0,003	225
1,5	2	1,50	0,75	70	14 854	0,004	125
	3	1,50	0,75	70	14 854	0,004	187
2,0	2	2,00	1,00	70	11 141	0,005	112
	3	2,00	1,00	70	11 141	0,005	168
2,5	2	2,50	1,25	70	8 913	0,006	105
	3	2,50	1,25	70	8 913	0,006	157
3,0	2	3,00	1,50	70	7 427	0,007	100
	3	3,00	1,50	70	7 427	0,007	150
4,0	2	4,00	2,00	70	5 570	0,009	100
	3	4,00	2,00	70	5 570	0,009	150
5,0	2	5,00	2,50	70	4 456	0,012	110
	3	5,00	2,50	70	4 456	0,012	165
6,0	2	6,00	3,00	70	3 714	0,018	133
	3	6,00	3,00	70	3 714	0,018	200
8,0	2	8,00	4,00	70	2 785	0,025	140
	3	8,00	4,00	70	2 785	0,025	211
10,0	2	10,00	5,00	70	2 228	0,031	140
	3	10,00	5,00	70	2 228	0,031	210
12,0	2	12,00	6,00	70	1 857	0,041	154
	3	12,00	6,00	70	1 857	0,041	231
14,0	2	14,00	7,00	70	1 592	0,048	153
	3	14,00	7,00	70	1 592	0,048	230
16,0	2	16,00	8,00	70	1 393	0,055	153
	3	16,00	8,00	70	1 393	0,055	229
18,0	2	18,00	9,00	70	1 238	0,062	153
	3	18,00	9,00	70	1 238	0,062	229
20,0	2	20,00	10,00	70	1 114	0,068	152
	3	20,00	10,00	70	1 114	0,068	228
25,0	2	25,00	12,50	70	891	0,076	135
	3	25,00	12,50	70	891	0,076	202



SLOT MILLING

SmiCut STS

a_e = 1,0 x D
a_p = 0,5 x D

Cast Iron, Lamellar Graphite, up to 1000 N/mm²

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,5	2	0,50	0,25	110	70 028	0,003	431
1,0	2	1,00	0,50	110	35 014	0,005	324
	3	1,00	0,50	110	35 014	0,005	485
1,5	2	1,50	0,75	110	23 343	0,006	270
	3	1,50	0,75	110	23 343	0,006	404
2,0	2	2,00	1,00	110	17 507	0,007	243
	3	2,00	1,00	110	17 507	0,007	364
2,5	2	2,50	1,25	110	14 006	0,008	226
	3	2,50	1,25	110	14 006	0,008	340
3,0	2	3,00	1,50	110	11 671	0,009	216
	3	3,00	1,50	110	11 671	0,009	324
4,0	2	4,00	2,00	110	8 754	0,012	216
	3	4,00	2,00	110	8 754	0,012	324
5,0	2	5,00	2,50	110	7 003	0,017	237
	3	5,00	2,50	110	7 003	0,017	356
6,0	2	6,00	3,00	110	5 836	0,025	288
	3	6,00	3,00	110	5 836	0,025	431
8,0	2	8,00	4,00	110	4 377	0,035	303
	3	8,00	4,00	110	4 377	0,035	455
10,0	2	10,00	5,00	110	3 501	0,043	302
	3	10,00	5,00	110	3 501	0,043	453
12,0	2	12,00	6,00	110	2 918	0,057	333
	3	12,00	6,00	110	2 918	0,057	499
14,0	2	14,00	7,00	110	2 501	0,066	331
	3	14,00	7,00	110	2 501	0,066	497
16,0	2	16,00	8,00	110	2 188	0,075	330
	3	16,00	8,00	110	2 188	0,075	495
18,0	2	18,00	9,00	110	1 945	0,085	330
	3	18,00	9,00	110	1 945	0,085	494
20,0	2	20,00	10,00	110	1 751	0,094	329
	3	20,00	10,00	110	1 751	0,094	493
25,0	2	25,00	12,50	110	1 401	0,104	291
	3	25,00	12,50	110	1 401	0,104	437

Copper, Unalloyed

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,5	2	0,50	0,25	170	108 225	0,003	606
1,0	2	1,00	0,50	170	54 113	0,004	455
	3	1,00	0,50	170	54 113	0,004	682
1,5	2	1,50	0,75	170	36 075	0,005	379
	3	1,50	0,75	170	36 075	0,005	568
2,0	2	2,00	1,00	170	27 056	0,006	341
	3	2,00	1,00	170	27 056	0,006	511
2,5	2	2,50	1,25	170	21 645	0,007	318
	3	2,50	1,25	170	21 645	0,007	477
3,0	2	3,00	1,50	170	18 038	0,008	303
	3	3,00	1,50	170	18 038	0,008	455
4,0	2	4,00	2,00	170	13 528	0,011	303
	3	4,00	2,00	170	13 528	0,011	455
5,0	2	5,00	2,50	170	10 823	0,015	333
	3	5,00	2,50	170	10 823	0,015	500
6,0	2	6,00	3,00	170	9 019	0,022	404
	3	6,00	3,00	170	9 019	0,022	606
8,0	2	8,00	4,00	170	6 764	0,032	426
	3	8,00	4,00	170	6 764	0,032	639
10,0	2	10,00	5,00	170	5 411	0,039	424
	3	10,00	5,00	170	5 411	0,039	636
12,0	2	12,00	6,00	170	4 509	0,052	467
	3	12,00	6,00	170	4 509	0,052	701
14,0	2	14,00	7,00	170	3 865	0,060	465
	3	14,00	7,00	170	3 865	0,060	698
16,0	2	16,00	8,00	170	3 382	0,069	464
	3	16,00	8,00	170	3 382	0,069	696
18,0	2	18,00	9,00	170	3 006	0,077	463
	3	18,00	9,00	170	3 006	0,077	694
20,0	2	20,00	10,00	170	2 706	0,085	462
	3	20,00	10,00	170	2 706	0,085	693
25,0	2	25,00	12,50	170	2 165	0,095	409
	3	25,00	12,50	170	2 165	0,095	614

Stainless Steel, Austenitic

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	3	3,00	1,50	100	10 610	0,008	241
4,0	3	4,00	2,00	100	7 958	0,010	241
5,0	3	5,00	2,50	100	6 366	0,014	265
6,0	3	6,00	3,00	100	5 305	0,020	321
8,0	3	8,00	4,00	100	3 979	0,028	338
10,0	3	10,00	5,00	100	3 183	0,035	337
12,0	3	12,00	6,00	100	2 653	0,047	371
16,0	3	16,00	8,00	100	1 989	0,062	368
20,0	3	20,00	10,00	100	1 592	0,077	367

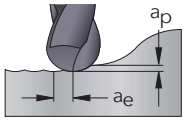
Aluminium, up to 10% Si

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
3,0	2	3,00	1,50	300	31 831	0,010	963
4,0	2	4,00	2,00	300	23 873	0,013	963
5,0	2	5,00	2,50	300	19 099	0,018	1 059
6,0	2	6,00	3,00	300	15 916	0,027	1 283
8,0	2	8,00	4,00	300	11 937	0,038	1 354
10,0	2	10,00	5,00	300	9 549	0,047	1 348
12,0	2	12,00	6,00	300	7 958	0,062	1 484
16,0	2	16,00	8,00	300	5 968	0,082	1 474
20,0	2	20,00	10,00	300	4 775	0,102	1 468

SmiCut STS

HIGH SPEED CUTTING

Roughing



ae = 0,3 x D
ap = 0,1 x D

High Alloy Steel / Hardened Steel HRC 30-45

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,3	2	0,09	0,03	47	50 000	0,005	500
0,4	2	0,12	0,04	63	50 000	0,007	700
0,5	2	0,15	0,05	79	50 000	0,009	900
0,6	2	0,18	0,06	94	50 000	0,010	1 000
0,7	2	0,21	0,07	110	50 000	0,012	1 200
0,8	2	0,24	0,08	126	50 000	0,014	1 400
1,0	2	0,30	0,10	157	50 000	0,018	1 800
1,2	2	0,36	0,12	188	50 000	0,021	2 100
1,5	2	0,45	0,15	236	50 000	0,027	2 700
2,0	2	0,60	0,20	300	47 747	0,035	3 342
2,5	2	0,75	0,25	300	38 197	0,047	3 591
3,0	2	0,90	0,30	300	31 831	0,064	4 074
4,0	2	1,20	0,40	300	23 873	0,082	3 915
5,0	2	1,50	0,50	300	19 099	0,102	3 896
6,0	2	1,80	0,60	300	15 916	0,121	3 852
8,0	2	2,40	0,80	300	11 937	0,138	3 295
10,0	2	3,00	1,00	300	9 549	0,152	2 903
12,0	2	3,60	1,20	300	7 958	0,163	2 594
16,0	2	4,80	1,60	300	5 968	0,181	2 161

Hardened Steel HRC 45-55

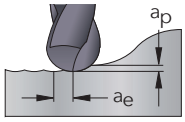
D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,3	2	0,09	0,03	47	50 000	0,004	440
0,4	2	0,12	0,04	63	50 000	0,006	616
0,5	2	0,15	0,05	79	50 000	0,008	792
0,6	2	0,18	0,06	94	50 000	0,009	880
0,7	2	0,21	0,07	110	50 000	0,011	1 056
0,8	2	0,24	0,08	126	50 000	0,012	1 232
1,0	2	0,30	0,10	157	50 000	0,016	1 584
1,2	2	0,36	0,12	188	50 000	0,018	1 848
1,5	2	0,45	0,15	236	50 000	0,024	2 376
2,0	2	0,60	0,20	250	39 789	0,031	2 451
2,5	2	0,75	0,25	250	31 831	0,041	2 633
3,0	2	0,90	0,30	250	26 526	0,056	2 988
4,0	2	1,20	0,40	250	19 894	0,072	2 871
5,0	2	1,50	0,50	250	15 916	0,090	2 857
6,0	2	1,80	0,60	250	13 263	0,106	2 824
8,0	2	2,40	0,80	250	9 947	0,121	2 416
10,0	2	3,00	1,00	250	7 958	0,134	2 129
12,0	2	3,60	1,20	250	6 631	0,143	1 902
16,0	2	4,80	1,60	250	4 974	0,159	1 584

Hardened Steel HRC 55-65

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,3	2	0,09	0,03	47	50 000	0,004	410
0,4	2	0,12	0,04	63	50 000	0,006	574
0,5	2	0,15	0,05	79	50 000	0,007	738
0,6	2	0,18	0,06	94	50 000	0,008	820
0,7	2	0,21	0,07	110	50 000	0,010	984
0,8	2	0,24	0,08	126	50 000	0,011	1 148
1,0	2	0,30	0,10	157	50 000	0,015	1 476
1,2	2	0,36	0,12	188	50 000	0,017	1 722
1,5	2	0,45	0,15	200	42 441	0,022	1 879
2,0	2	0,60	0,20	200	31 831	0,029	1 827
2,5	2	0,75	0,25	200	25 465	0,039	1 963
3,0	2	0,90	0,30	200	21 221	0,052	2 227
4,0	2	1,20	0,40	200	15 916	0,067	2 140
5,0	2	1,50	0,50	200	12 732	0,084	2 130
6,0	2	1,80	0,60	200	10 610	0,099	2 106
8,0	2	2,40	0,80	200	7 958	0,113	1 801
10,0	2	3,00	1,00	200	6 366	0,125	1 587
12,0	2	3,60	1,20	200	5 305	0,134	1 418
16,0	2	4,80	1,60	200	3 979	0,148	1 181

Graphite

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,3	2	0,09	0,03	47	50 000	0,006	625
0,4	2	0,12	0,04	63	50 000	0,009	875
0,5	2	0,15	0,05	79	50 000	0,011	1 125
0,6	2	0,18	0,06	94	50 000	0,013	1 250
0,7	2	0,21	0,07	110	50 000	0,015	1 500
0,8	2	0,24	0,08	126	50 000	0,018	1 750
1,0	2	0,30	0,10	157	50 000	0,023	2 250
1,2	2	0,36	0,12	188	50 000	0,026	2 625
1,5	2	0,45	0,15	236	50 000	0,034	3 375
2,0	2	0,60	0,20	314	50 000	0,044	4 375
2,5	2	0,75	0,25	393	50 000	0,059	5 875
3,0	2	0,90	0,30	400	42 441	0,080	6 791
4,0	2	1,20	0,40	400	31 831	0,103	6 525
5,0	2	1,50	0,50	400	25 465	0,128	6 494
6,0	2	1,80	0,60	400	21 221	0,151	6 419
8,0	2	2,40	0,80	400	15 916	0,173	5 491
10,0	2	3,00	1,00	400	12 732	0,190	4 838
12,0	2	3,60	1,20	400	10 610	0,204	4 324
16,0	2	4,80	1,60	400	7 958	0,226	3 601



HIGH SPEED CUTTING

Finishing

SmiCut STS

ae = 0,05 x D
ap = 0,05 x D

High Alloy Steel / Hardened Steel HRC 30-45

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,3	2	0,02	0,02	47	50 000	0,006	600
0,4	2	0,02	0,02	63	50 000	0,008	840
0,5	2	0,03	0,03	79	50 000	0,011	1 080
0,6	2	0,03	0,03	94	50 000	0,012	1 200
0,7	2	0,04	0,04	110	50 000	0,014	1 440
0,8	2	0,04	0,04	126	50 000	0,017	1 680
1,0	2	0,05	0,05	157	50 000	0,022	2 160
1,2	2	0,06	0,06	188	50 000	0,025	2 520
1,5	2	0,08	0,08	236	50 000	0,032	3 240
2,0	2	0,10	0,10	314	50 000	0,042	4 200
2,5	2	0,13	0,13	350	44 563	0,056	5 027
3,0	2	0,15	0,15	350	37 136	0,077	5 704
4,0	2	0,20	0,20	350	27 852	0,098	5 481
5,0	2	0,25	0,25	350	22 282	0,122	5 455
6,0	2	0,30	0,30	350	18 568	0,145	5 392
8,0	2	0,40	0,40	350	13 926	0,166	4 612
10,0	2	0,50	0,50	350	11 141	0,182	4 064
12,0	2	0,60	0,60	350	9 284	0,196	3 632
16,0	2	0,80	0,80	350	6 963	0,217	3 025

Hardened Steel HRC 45-55

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,3	2	0,02	0,02	47	50 000	0,005	528
0,4	2	0,02	0,02	63	50 000	0,007	739
0,5	2	0,03	0,03	79	50 000	0,010	950
0,6	2	0,03	0,03	94	50 000	0,011	1 056
0,7	2	0,04	0,04	110	50 000	0,013	1 267
0,8	2	0,04	0,04	126	50 000	0,015	1 478
1,0	2	0,05	0,05	157	50 000	0,019	1 901
1,2	2	0,06	0,06	188	50 000	0,022	2 218
1,5	2	0,08	0,08	236	50 000	0,029	2 851
2,0	2	0,10	0,10	300	47 747	0,037	3 529
2,5	2	0,13	0,13	300	38 197	0,050	3 792
3,0	2	0,15	0,15	300	31 831	0,068	4 303
4,0	2	0,20	0,20	300	23 873	0,087	4 134
5,0	2	0,25	0,25	300	19 099	0,108	4 114
6,0	2	0,30	0,30	300	15 916	0,128	4 067
8,0	2	0,40	0,40	300	11 937	0,146	3 479
10,0	2	0,50	0,50	300	9 549	0,161	3 066
12,0	2	0,60	0,60	300	7 958	0,172	2 740
16,0	2	0,80	0,80	300	5 968	0,191	2 282

Hardened Steel HRC 55-65

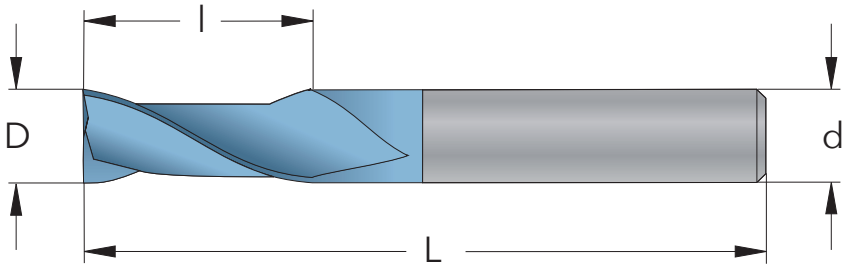
D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,3	2	0,02	0,02	47	50 000	0,005	492
0,4	2	0,02	0,02	63	50 000	0,007	689
0,5	2	0,03	0,03	79	50 000	0,009	886
0,6	2	0,03	0,03	94	50 000	0,010	984
0,7	2	0,04	0,04	110	50 000	0,012	1 181
0,8	2	0,04	0,04	126	50 000	0,014	1 378
1,0	2	0,05	0,05	157	50 000	0,018	1 771
1,2	2	0,06	0,06	188	50 000	0,021	2 066
1,5	2	0,08	0,08	236	50 000	0,027	2 657
2,0	2	0,10	0,10	250	39 789	0,034	2 741
2,5	2	0,13	0,13	250	31 831	0,046	2 944
3,0	2	0,15	0,15	250	26 526	0,063	3 341
4,0	2	0,20	0,20	250	19 894	0,081	3 210
5,0	2	0,25	0,25	250	15 916	0,100	3 195
6,0	2	0,30	0,30	250	13 263	0,119	3 158
8,0	2	0,40	0,40	250	9 947	0,136	2 701
10,0	2	0,50	0,50	250	7 958	0,150	2 380
12,0	2	0,60	0,60	250	6 631	0,160	2 127
16,0	2	0,80	0,80	250	4 974	0,178	1 772

Graphite

D	z	a_e	a_p	V_c	n	F_z	V_f
mm		mm	mm	m/min	rpm	mm/z	mm/min
0,3	2	0,02	0,02	47	50 000	0,008	750
0,4	2	0,02	0,02	63	50 000	0,011	1 050
0,5	2	0,03	0,03	79	50 000	0,014	1 350
0,6	2	0,03	0,03	94	50 000	0,015	1 500
0,7	2	0,04	0,04	110	50 000	0,018	1 800
0,8	2	0,04	0,04	126	50 000	0,021	2 100
1,0	2	0,05	0,05	157	50 000	0,027	2 700
1,2	2	0,06	0,06	188	50 000	0,032	3 150
1,5	2	0,08	0,08	236	50 000	0,041	4 050
2,0	2	0,10	0,10	314	50 000	0,053	5 250
2,5	2	0,13	0,13	393	50 000	0,071	7 050
3,0	2	0,15	0,15	450	47 747	0,096	9 167
4,0	2	0,20	0,20	450	35 810	0,123	8 809
5,0	2	0,25	0,25	450	28 648	0,153	8 766
6,0	2	0,30	0,30	450	23 873	0,182	8 666
8,0	2	0,40	0,40	450	17 905	0,207	7 413
10,0	2	0,50	0,50	450	14 324	0,228	6 532
12,0	2	0,60	0,60	450	11 937	0,245	5 837
16,0	2	0,80	0,80	450	8 952	0,272	4 861

Two Flute

LC
AlCrN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 5,0 +0 / -0,020
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
35° right hand spiral, center cutting
Field of application
All types of steel up to HRC55



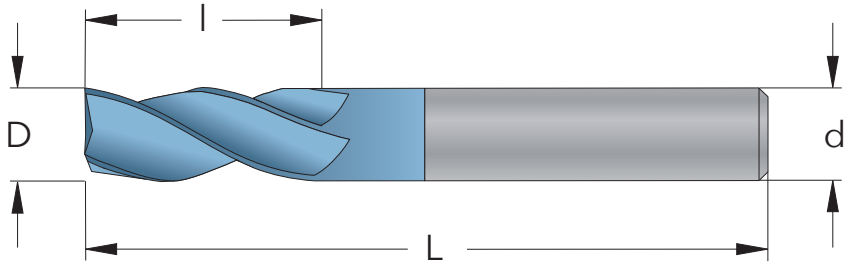
D mm	d mm	Part Number	l mm	L mm	Cutting edges
1,0	4	M0401B3_LC	3	50	2
1,5	4	M04015B4_LC	4	50	2
2,0	4	M0402B6_LC	6	50	2
2,5	4	M04025B8_LC	8	50	2
3,0	4	M0403B8_LC	8	50	2
3,0	6	M0603B8_LC	8	57	2
4,0	4	M0404B11_LC	11	50	2
4,0	6	M0604B11_LC	11	57	2
5,0	6	M0605B13_LC	13	57	2
6,0	6	M0606B16_LC	16	57	2
8,0	8	M0808B20_LC	20	63	2
10,0	10	M1010B25_LC	25	72	2
12,0	12	M1212B30_LC	30	83	2



SOLID CARBIDE END MILLS

Three Flute

LC
AlCrN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 5,0 +0 / -0,020
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
35° right hand spiral, center cutting
Field of application
All types of steel up to HRC55

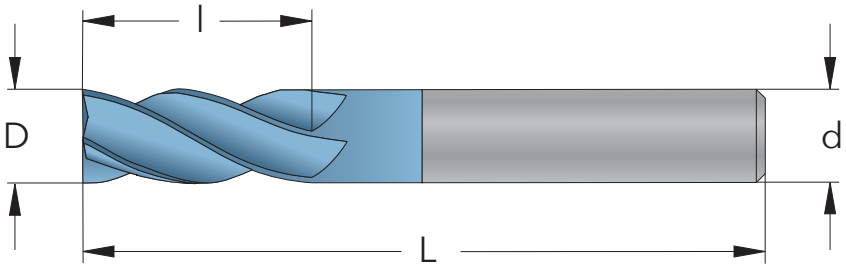


D mm	d mm	Part Number	l mm	L mm	Cutting edges
1,0	4	M0401C3_LC	3	50	3
1,5	4	M04015C4_LC	4	50	3
2,0	4	M0402C6_LC	6	50	3
2,5	4	M04025C8_LC	8	50	3
3,0	4	M0403C8_LC	8	50	3
3,0	6	M0603C8_LC	8	57	3
4,0	4	M0404C11_LC	11	50	3
4,0	6	M0604C11_LC	11	57	3
5,0	6	M0605C13_LC	13	57	3
6,0	6	M0606C10_LC	10	50	3
6,0	6	M0606C16_LC	16	57	3
8,0	8	M0808C12_LC	12	57	3
8,0	8	M0808C20_LC	20	63	3
10,0	10	M1010C15_LC	15	63	3
10,0	10	M1010C25_LC	25	72	3
12,0	12	M1212C18_LC	18	72	3
12,0	12	M1212C30_LC	30	83	3



Four Flute

LC
AlCrN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 5,0 +0 / -0,020
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
D 16,0 - 20,0 +0 / -0,040
Shank
Cylindrical h6, DIN6535 HA
Flute
35° right hand spiral, center cutting
Field of application
All types of steel up to HRC55



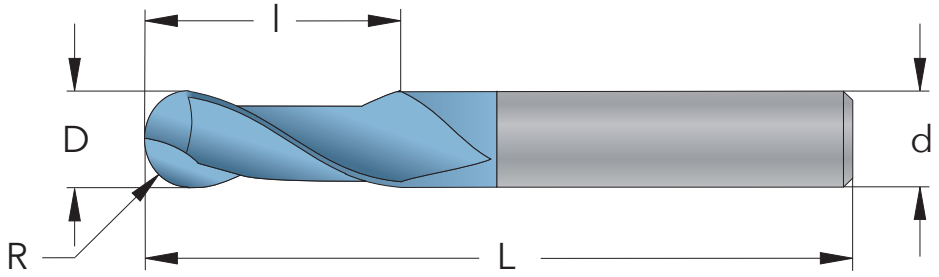
D mm	d mm	Part Number	l mm	L mm	Cutting edges
2,0	4	M0402D6_LC	6	50	4
3,0	4	M0403D8_LC	8	50	4
3,0	6	M0603D8_LC	8	57	4
4,0	4	M0404D11_LC	11	50	4
4,0	6	M0604D11_LC	11	57	4
5,0	6	M0605D13_LC	13	57	4
6,0	6	M0606D10_LC	10	50	4
6,0	6	M0606D16_LC	16	57	4
6,0	6	M0606D26_LC	26	72	4
7,0	8	M0807D18_LC	18	63	4
8,0	8	M0808D12_LC	12	57	4
8,0	8	M0808D20_LC	20	63	4
8,0	8	M0808D32_LC	32	83	4
10,0	10	M1010D15_LC	15	63	4
10,0	10	M1010D25_LC	25	72	4
10,0	10	M1010D40_LC	40	92	4
12,0	12	M1212D18_LC	18	72	4
12,0	12	M1212D30_LC	30	83	4
12,0	12	M1212D48_LC	48	100	4
16,0	16	M1616D34_LC	34	92	4
20,0	20	M2020D40_LC	40	100	4



SOLID CARBIDE END MILLS

Two Flute, with Ball Nose

LC
AlCrN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 5,0 +0 / -0,020
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
35° right hand spiral, center cutting
Field of application
All types of steel up to HRC55

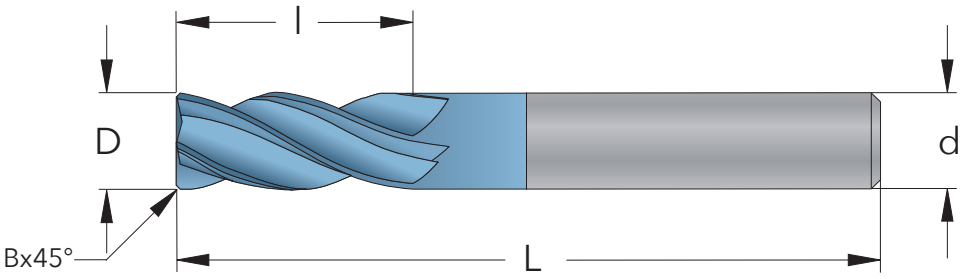


D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
1,0	4	0,5	R0401B2_LC	2	50	2
1,5	4	0,75	R04015B3_LC	3	50	2
2,0	4	1,0	R0402B4_LC	4	50	2
2,5	4	1,25	R04025B5_LC	5	50	2
3,0	4	1,5	R0403B6_LC	6	50	2
3,0	6	1,5	R0603B6_LC	6	57	2
4,0	4	2,0	R0404B8_LC	8	50	2
4,0	6	2,0	R0604B8_LC	8	57	2
5,0	6	2,5	R0605B10_LC	10	57	2
6,0	6	3,0	R0606B12_LC	12	57	2
8,0	8	4,0	R0808B16_LC	16	63	2
10,0	10	5,0	R1010B20_LC	20	72	2
12,0	12	6,0	R1212B24_LC	24	83	2



Variable Flute 35° and 38°

LC
AlCrN coated
Super Micrograin Carbide
Tolerance
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
35° and 38° right hand spiral, center cutting
Field of application
All types of steel up to HRC55



D mm	d mm	B mm	Part Number	l mm	L mm	Cutting edges
6,0	6	0,2	MZ0606D16_LC	16	57	4
8,0	8	0,25	MZ0808D20_LC	20	63	4
10,0	10	0,3	MZ1010D25_LC	25	72	4
12,0	12	0,3	MZ1212D30_LC	30	83	4

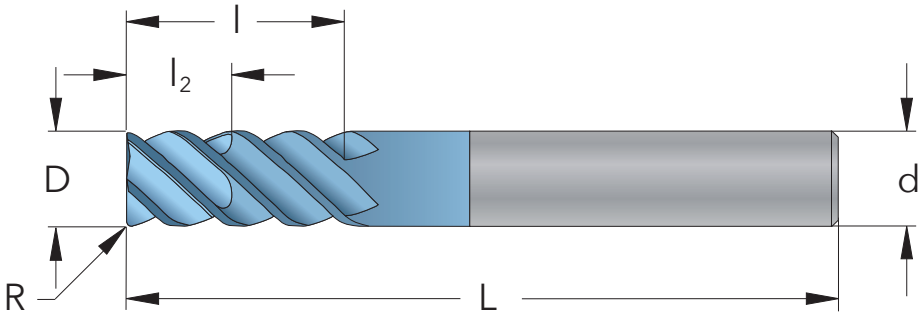


Less vibrations with two different angles

SOLID CARBIDE END MILLS

Slot Side End Mill

LC
AlCrN coated
Super Micrograin Carbide
Tolerance
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
50° right hand spiral, center cutting
Field of application
All types of steel up to HRC55



D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	Cutting edges
6,0	6	0,4	MV0606D16_LC	16	6	57	4
8,0	8	0,5	MV0808D20_LC	20	8	63	4
10,0	10	0,6	MV1010D25_LC	25	10	72	4
12,0	12	0,6	MV1212D30_LC	30	12	83	4

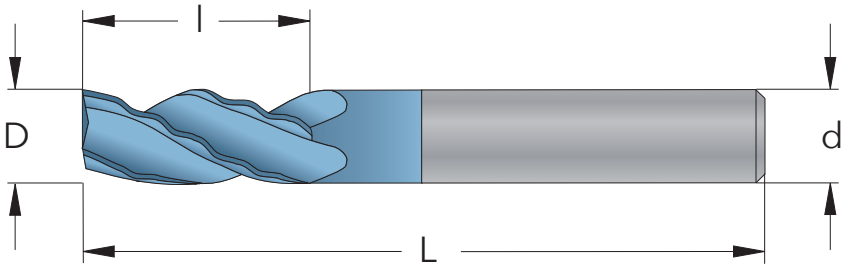


Deep flute for slot milling

Shallow flute results in stronger tools for side milling

Wave formed, Roughing, Three Flute

LC
AlCrN coated
Super Micrograin Carbide
Tolerance
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
35° right hand spiral, center cutting
Field of application
All types of steel up to HRC55



D mm	d mm	Part Number	l mm	L mm	Cutting edges
6,0	6	FW0606C16_LC	16	57	3
8,0	8	FW0808C20_LC	20	63	3
10,0	10	FW1010C25_LC	25	72	3
12,0	12	FW1212C30_LC	30	83	3

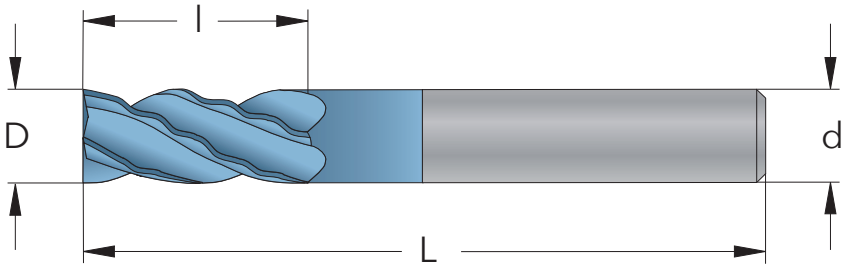


SOLID CARBIDE END MILLS

Wave formed, Roughing, Four Flute

SmiCut STS

LC
AlCrN coated
Super Micrograin Carbide
Tolerance
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
35° right hand spiral, center cutting
Field of application
All types of steel up to HRC55



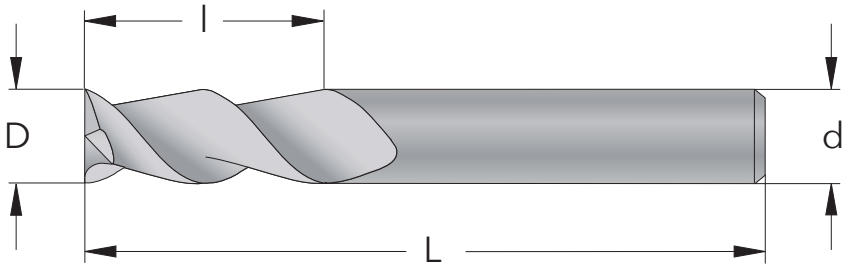
D mm	d mm	Part Number	l mm	L mm	Cutting edges
6,0	6	FW0606D16_LC	16	57	4
8,0	8	FW0808D20_LC	20	63	4
10,0	10	FW1010D25_LC	25	72	4
12,0	12	FW1212D30_LC	30	83	4



Wave formed cutting edge gives high productivity

Two Flute, for aluminium

MG
Uncoated
Super Micrograin Carbide
Tolerance
D 1,0 - 5,0 +0 / -0,020
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
45° right hand spiral, center cutting
Field of application
Aluminium

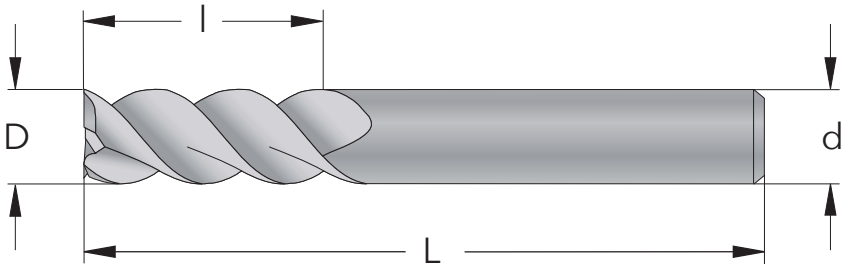


D mm	d mm	Part Number	l mm	L mm	Cutting edges
2,0	6	MA0602B6_MG	6	57	2
3,0	6	MA0603B8_MG	8	57	2
4,0	6	MA0604B11_MG	11	57	2
5,0	6	MA0605B13_MG	13	57	2
6,0	6	MA0606B16_MG	16	57	2
8,0	8	MA0808B20_MG	20	63	2
10,0	10	MA1010B25_MG	25	72	2
12,0	12	MA1212B30_MG	30	83	2



Three Flute, for aluminium

MG
Uncoated
Super Micrograin Carbide
Tolerance
D 1,0 - 5,0 +0 / -0,020
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
50° right hand spiral, center cutting
Field of application
Aluminium



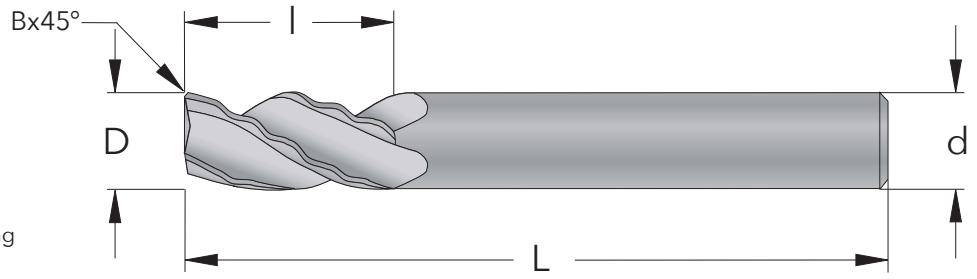
D mm	d mm	Part Number	l mm	L mm	Cutting edges
2,0	6	MA0602C6_MG	6	57	3
3,0	6	MA0603C8_MG	8	57	3
4,0	6	MA0604C11_MG	11	57	3
5,0	6	MA0605C13_MG	13	57	3
6,0	6	MA0606C16_MG	16	57	3
8,0	8	MA0808C20_MG	20	63	3
10,0	10	MA1010C25_MG	25	72	3
12,0	12	MA1212C30_MG	30	83	3



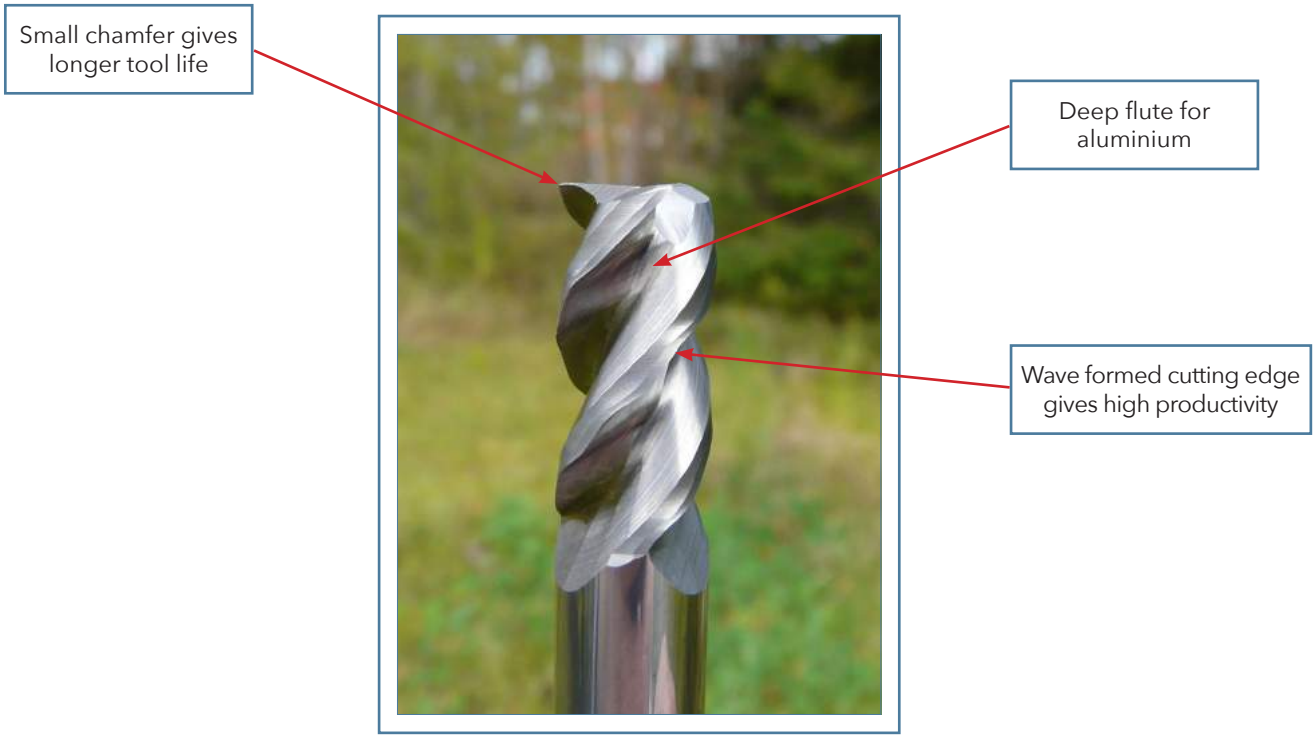
SOLID CARBIDE END MILLS *Uncoated*

Wave formed, Roughing, for aluminium

MG
Uncoated
Super Micrograin Carbide
Tolerance
D 6,0 - 7,0 +0 / -0,025
D 8,0 - 9,0 +0 / -0,030
D 10,0 - 12,0 +0 / -0,035
Shank
Cylindrical h6, DIN6535 HA
Flute
45° right hand spiral, center cutting
Field of application
Aluminium



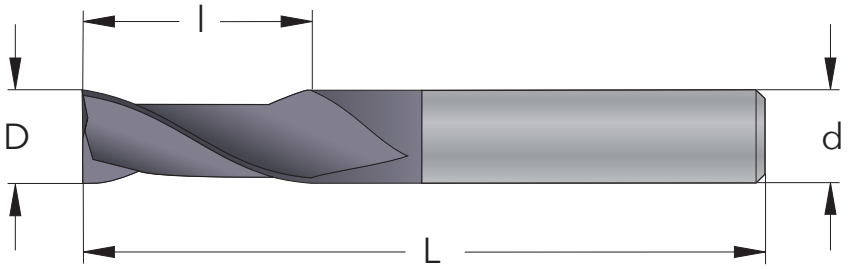
D mm	d mm	B mm	Part Number	l mm	L mm	Cutting edges
6,0	6	0,2	FWA0606C16_MG	16	57	3
8,0	8	0,25	FWA0808C20_MG	20	63	3
10,0	10	0,3	FWA1010C25_MG	25	72	3
12,0	12	0,3	FWA1212C30_MG	30	83	3



SOLID CARBIDE END MILLS

Two Flute

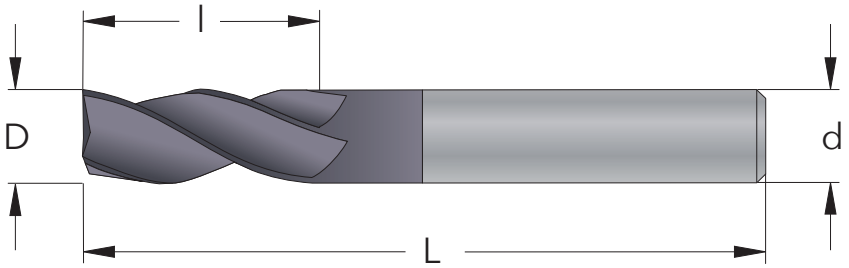
FC
TiAlN coated
Micrograin Carbide
Tolerance
D 1,0 - 25,0 +0 / -0,050
Shank
Cylindrical med h6 Tolerance
Flute
30° right hand spiral, center cutting
Field of application
All types of steel



D mm	d mm	Part Number	l mm	L mm	Cutting edges
1,0	3	M0301B3_FC	3	38	2
1,5	3	M03015B5_FC	5	38	2
2,0	3	M0302B6_FC	6	38	2
2,5	3	M03025B7_FC	7	38	2
3,0	3	M0303B12_FC	12	38	2
3,0	3	M0303B25_FC	25	65	2
3,5	4	M04035B12_FC	12	50	2
4,0	4	M0404B14_FC	14	50	2
4,0	4	M0404B25_FC	25	65	2
4,5	5	M05045B14_FC	14	50	2
5,0	5	M0505B16_FC	16	50	2
5,0	5	M0505B25_FC	25	75	2
6,0	6	M0606B19_FC	19	63	2
6,0	6	M0606B25_FC	25	75	2
6,0	6	M0606B38_FC	38	100	2
7,0	8	M0807B19_FC	19	63	2
8,0	8	M0808B19_FC	19	63	2
8,0	8	M0808B25_FC	25	75	2
8,0	8	M0808B38_FC	38	100	2
9,0	10	M1009B22_FC	22	70	2
10,0	10	M1010B22_FC	22	70	2
10,0	10	M1010B38_FC	38	100	2
12,0	12	M1212B25_FC	25	75	2
12,0	12	M1212B50_FC	50	100	2
12,0	12	M1212B75_FC	75	150	2
14,0	14	M1414B30_FC	30	88	2
14,0	14	M1414B75_FC	75	150	2
16,0	16	M1616B32_FC	32	88	2
16,0	16	M1616B75_FC	75	150	2
18,0	18	M1818B36_FC	36	100	2
20,0	20	M2020B38_FC	38	100	2
20,0	20	M2020B75_FC	75	150	2
25,0	25	M2525B38_FC	38	100	2
25,0	25	M2525B75_FC	75	150	2

Three Flute

FC
TiAlN coated
Micrograin Carbide
Tolerance
D 1,0 - 25,0 +0 / -0,050
Shank
Cylindrical med h6 Tolerance
Flute
30° right hand spiral, center cutting
Field of application
All types of steel

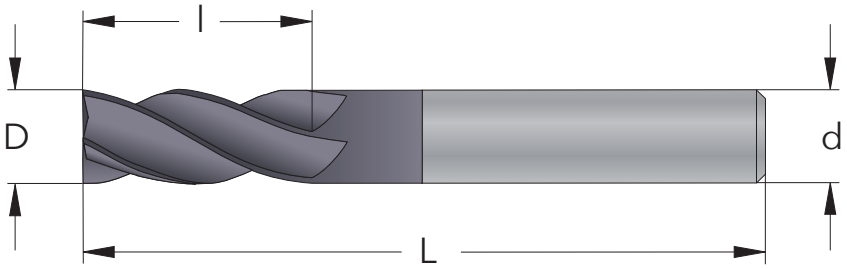


D mm	d mm	Part Number	l mm	L mm	Cutting edges
1,0	3	M0301C3_FC	3	38	3
1,5	3	M03015C5_FC	5	38	3
2,0	3	M0302C6_FC	6	38	3
2,5	3	M03025C7_FC	7	38	3
3,0	3	M0303C12_FC	12	38	3
3,0	3	M0303C25_FC	25	65	3
3,5	4	M04035C12_FC	12	50	3
4,0	4	M0404C14_FC	14	50	3
4,0	4	M0404C25_FC	25	65	3
4,5	5	M05045C14_FC	14	50	3
5,0	5	M0505C16_FC	16	50	3
5,0	5	M0505C25_FC	25	75	3
6,0	6	M0606C19_FC	19	63	3
6,0	6	M0606C25_FC	25	75	3
7,0	8	M0807C19_FC	19	63	3
8,0	8	M0808C19_FC	19	63	3
8,0	8	M0808C25_FC	25	75	3
9,0	10	M1009C22_FC	22	70	3
10,0	10	M1010C22_FC	22	70	3
10,0	10	M1010C38_FC	38	100	3
12,0	12	M1212C25_FC	25	75	3
12,0	12	M1212C50_FC	50	100	3
14,0	14	M1414C30_FC	30	88	3
16,0	16	M1616C32_FC	32	88	3
16,0	16	M1616C75_FC	75	150	3
18,0	18	M1818C36_FC	36	100	3
20,0	20	M2020C38_FC	38	100	3
20,0	20	M2020C75_FC	75	150	3
25,0	25	M2525C38_FC	38	100	3
25,0	25	M2525C75_FC	75	150	3

SOLID CARBIDE END MILLS

Four Flute

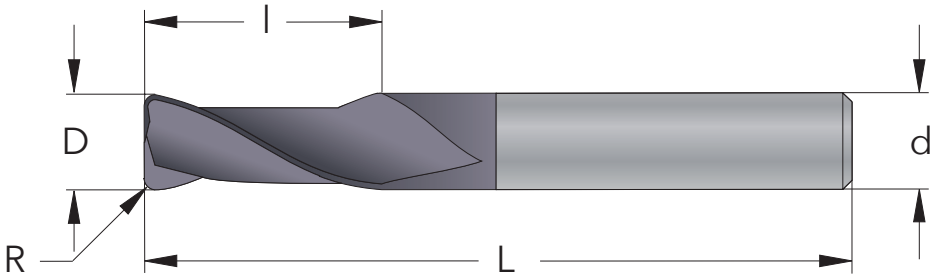
FC
TiAlN coated
Micrograin Carbide
Tolerance
D 1,0 - 25,0 +0 / -0,050
Shank
Cylindrical med h6 Tolerance
Flute
30° right hand spiral, center cutting
Field of application
All types of steel



D mm	d mm	Part Number	l mm	L mm	Cutting edges
1,0	3	M0301D3_FC	3	38	4
1,5	3	M03015D5_FC	5	38	4
2,0	3	M0302D6_FC	6	38	4
2,5	3	M03025D7_FC	7	38	4
3,0	3	M0303D12_FC	12	38	4
3,0	3	M0303D25_FC	25	65	4
3,5	4	M04035D12_FC	12	50	4
4,0	4	M0404D14_FC	14	50	4
4,0	4	M0404D25_FC	25	65	4
4,5	5	M05045D14_FC	14	50	4
5,0	5	M0505D16_FC	16	50	4
5,0	5	M0505D25_FC	25	75	4
6,0	6	M0606D19_FC	19	63	4
6,0	6	M0606D25_FC	25	75	4
6,0	6	M0606D38_FC	38	100	4
7,0	8	M0807D19_FC	19	63	4
8,0	8	M0808D19_FC	19	63	4
8,0	8	M0808D25_FC	25	75	4
8,0	8	M0808D38_FC	38	100	4
9,0	10	M1009D22_FC	22	70	4
10,0	10	M1010D22_FC	22	70	4
10,0	10	M1010D38_FC	38	100	4
12,0	12	M1212D25_FC	25	75	4
12,0	12	M1212D50_FC	50	100	4
12,0	12	M1212D75_FC	75	150	4
14,0	14	M1414D30_FC	30	88	4
14,0	14	M1414D75_FC	75	150	4
16,0	16	M1616D32_FC	32	88	4
16,0	16	M1616D75_FC	75	150	4
18,0	18	M1818D36_FC	36	100	4
20,0	20	M2020D38_FC	38	100	4
20,0	20	M2020D75_FC	75	150	4
25,0	25	M2525D38_FC	38	100	4
25,0	25	M2525D75_FC	75	150	4

Two Flute, with Corner Radius

FC
TiAlN coated
Micrograin Carbide
Tolerance
D 4,0 - 20,0 +0 / -0,050
Shank
Cylindrical med h6 Tolerance
Flute
30° right hand spiral, center cutting
Field of application
All types of steel

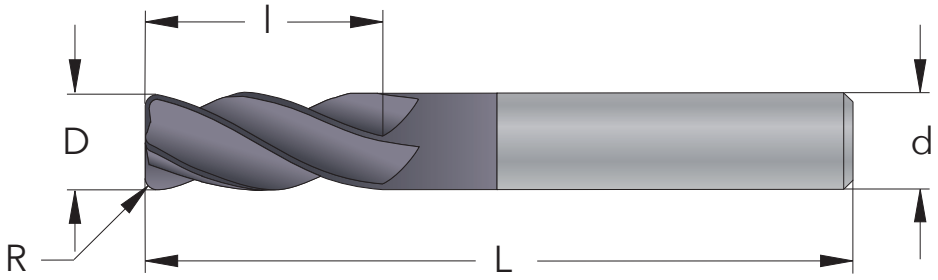


D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
4,0	4	0,25	M0404B14R025_FC	14	50	2
4,0	4	0,50	M0404B14R05_FC	14	50	2
4,0	4	0,75	M0404B14R075_FC	14	50	2
4,0	4	1,00	M0404B14R10_FC	14	50	2
6,0	6	0,25	M0606B19R025_FC	19	63	2
6,0	6	0,50	M0606B19R05_FC	19	63	2
6,0	6	0,75	M0606B19R075_FC	19	63	2
6,0	6	1,00	M0606B19R10_FC	19	63	2
6,0	6	1,25	M0606B19R125_FC	19	63	2
6,0	6	1,50	M0606B19R15_FC	19	63	2
8,0	8	0,50	M0808B19R05_FC	19	63	2
8,0	8	0,75	M0808B19R075_FC	19	63	2
8,0	8	1,00	M0808B19R10_FC	19	63	2
8,0	8	1,25	M0808B19R125_FC	19	63	2
8,0	8	1,50	M0808B19R15_FC	19	63	2
8,0	8	2,00	M0808B19R20_FC	19	63	2
10,0	10	0,50	M1010B22R05_FC	22	70	2
10,0	10	0,75	M1010B22R075_FC	22	70	2
10,0	10	1,00	M1010B22R10_FC	22	70	2
10,0	10	1,50	M1010B22R15_FC	22	70	2
10,0	10	2,00	M1010B22R20_FC	22	70	2
10,0	10	3,00	M1010B22R30_FC	22	70	2
12,0	12	0,50	M1212B25R05_FC	25	75	2
12,0	12	0,75	M1212B25R075_FC	25	75	2
12,0	12	1,00	M1212B25R10_FC	25	75	2
12,0	12	1,50	M1212B25R15_FC	25	75	2
12,0	12	2,00	M1212B25R20_FC	25	75	2
12,0	12	3,00	M1212B25R30_FC	25	75	2
16,0	16	0,50	M1616B32R05_FC	32	88	2
16,0	16	0,75	M1616B32R075_FC	32	88	2
16,0	16	1,00	M1616B32R10_FC	32	88	2
16,0	16	1,50	M1616B32R15_FC	32	88	2
16,0	16	2,00	M1616B32R20_FC	32	88	2
16,0	16	3,00	M1616B32R30_FC	32	88	2
20,0	20	0,50	M2020B38R05_FC	38	100	2
20,0	20	0,75	M2020B38R075_FC	38	100	2
20,0	20	1,00	M2020B38R10_FC	38	100	2
20,0	20	1,50	M2020B38R15_FC	38	100	2
20,0	20	2,00	M2020B38R20_FC	38	100	2
20,0	20	3,00	M2020B38R30_FC	38	100	2

SOLID CARBIDE END MILLS

Four Flute, with Corner Radius

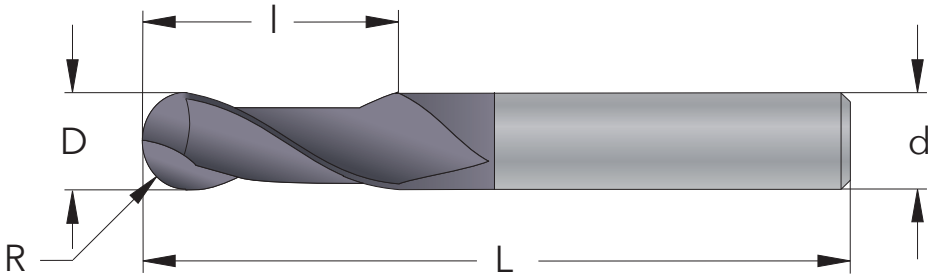
FC
TiAlN coated
Micrograin Carbide
Tolerance
D 4,0 - 20,0 +0 / -0,050
Shank
Cylindrical med h6 Tolerance
Flute
30° right hand spiral, center cutting
Field of application
All types of steel



D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
4,0	4	0,25	M0404D14R025_FC	14	50	4
4,0	4	0,50	M0404D14R05_FC	14	50	4
4,0	4	0,75	M0404D14R075_FC	14	50	4
4,0	4	1,00	M0404D14R10_FC	14	50	4
6,0	6	0,25	M0606D19R025_FC	19	63	4
6,0	6	0,50	M0606D19R05_FC	19	63	4
6,0	6	0,75	M0606D19R075_FC	19	63	4
6,0	6	1,00	M0606D19R10_FC	19	63	4
6,0	6	1,25	M0606D19R125_FC	19	63	4
6,0	6	1,50	M0606D19R15_FC	19	63	4
8,0	8	0,50	M0808D19R05_FC	19	63	4
8,0	8	0,75	M0808D19R075_FC	19	63	4
8,0	8	1,00	M0808D19R10_FC	19	63	4
8,0	8	1,25	M0808D19R125_FC	19	63	4
8,0	8	1,50	M0808D19R15_FC	19	63	4
8,0	8	2,00	M0808D19R20_FC	19	63	4
10,0	10	0,50	M1010D22R05_FC	22	70	4
10,0	10	0,75	M1010D22R075_FC	22	70	4
10,0	10	1,00	M1010D22R10_FC	22	70	4
10,0	10	1,50	M1010D22R15_FC	22	70	4
10,0	10	2,00	M1010D22R20_FC	22	70	4
10,0	10	3,00	M1010D22R30_FC	22	70	4
12,0	12	0,50	M1212D25R05_FC	25	75	4
12,0	12	0,75	M1212D25R075_FC	25	75	4
12,0	12	1,00	M1212D25R10_FC	25	75	4
12,0	12	1,50	M1212D25R15_FC	25	75	4
12,0	12	2,00	M1212D25R20_FC	25	75	4
12,0	12	3,00	M1212D25R30_FC	25	75	4
16,0	16	0,50	M1616D32R05_FC	32	88	4
16,0	16	0,75	M1616D32R075_FC	32	88	4
16,0	16	1,00	M1616D32R10_FC	32	88	4
16,0	16	1,50	M1616D32R15_FC	32	88	4
16,0	16	2,00	M1616D32R20_FC	32	88	4
16,0	16	3,00	M1616D32R30_FC	32	88	4
20,0	20	0,50	M2020D38R05_FC	38	100	4
20,0	20	0,75	M2020D38R075_FC	38	100	4
20,0	20	1,00	M2020D38R10_FC	38	100	4
20,0	20	1,50	M2020D38R15_FC	38	100	4
20,0	20	2,00	M2020D38R20_FC	38	100	4
20,0	20	3,00	M2020D38R30_FC	38	100	4

Two Flute, with Ball Nose

FC
TiAlN coated
Micrograin Carbide
Tolerance
D 1,0 - 25,0 +0 / -0,050
Shank
Cylindrical med h6 Tolerance
Flute
30° right hand spiral
Field of application
All types of steel



D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
1,0	3	0,50	R0301B3_FC	3	38	2
1,5	3	0,75	R03015B5_FC	5	38	2
2,0	3	1,00	R0302B6_FC	6	38	2
2,5	3	1,25	R03025B7_FC	7	38	2
3,0	3	1,50	R0303B12_FC	12	38	2
3,0	3	1,50	R0303B25_FC	25	65	2
4,0	4	2,00	R0404B14_FC	14	50	2
4,0	4	2,00	R0404B25_FC	25	65	2
5,0	5	2,50	R0505B16_FC	16	50	2
5,0	5	2,50	R0505B25_FC	25	75	2
6,0	6	3,00	R0606B19_FC	19	63	2
6,0	6	3,00	R0606B25_FC	25	75	2
6,0	6	3,00	R0606B38_FC	38	100	2
8,0	8	4,00	R0808B19_FC	19	63	2
8,0	8	4,00	R0808B25_FC	25	75	2
8,0	8	4,00	R0808B38_FC	38	100	2
10,0	10	5,00	R1010B22_FC	22	70	2
10,0	10	5,00	R1010B38_FC	38	100	2
12,0	12	6,00	R1212B25_FC	25	75	2
12,0	12	6,00	R1212B50_FC	50	100	2
12,0	12	6,00	R1212B75_FC	75	150	2
14,0	14	7,00	R1414B30_FC	30	88	2
16,0	16	8,00	R1616B32_FC	32	88	2
16,0	16	8,00	R1616B75_FC	75	150	2
18,0	18	9,00	R1818B36_FC	36	100	2
20,0	20	10,0	R2020B38_FC	38	100	2
20,0	20	10,0	R2020B75_FC	75	150	2
25,0	25	12,5	R2525B75_FC	75	150	2

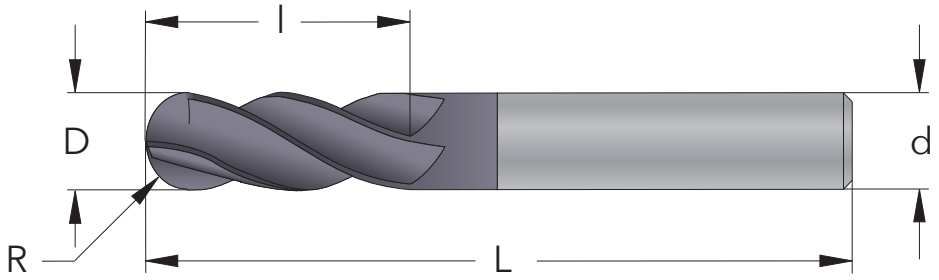
with Long Shank

D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
2,0	2	1,0	R0202B10L100_FC	10	100	2
3,0	3	1,5	R0303B12L100_FC	12	100	2
4,0	4	2,0	R0404B15L120_FC	15	120	2
5,0	5	2,5	R0505B15L150_FC	15	150	2
6,0	6	3,0	R0606B20L150_FC	20	150	2
8,0	8	4,0	R0808B20L180_FC	20	180	2
10,0	10	5,0	R1010B25L200_FC	25	200	2
12,0	12	6,0	R1212B30L200_FC	30	200	2

SOLID CARBIDE END MILLS

Four Flute, with Ball Nose

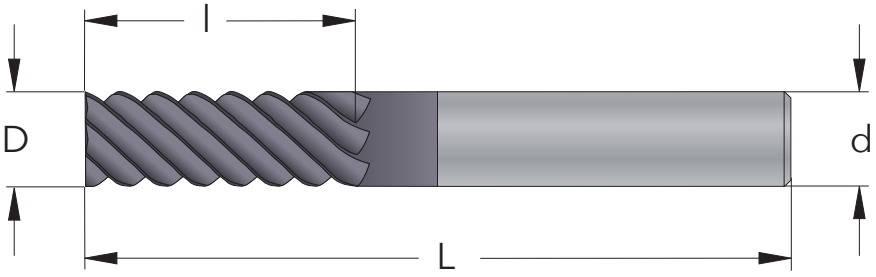
FC
TiAlN coated
Micrograin Carbide
Tolerance
D 1,0 - 25,0 +0 / -0,050
Shank
Cylindrical med h6 Tolerance
Flute
30° right hand spiral
Field of application
All types of steel



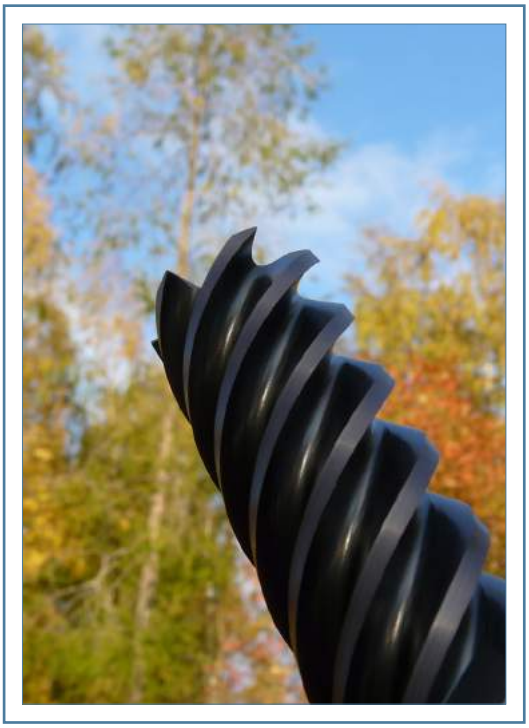
D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
1,0	3	0,50	R0301D3_FC	3	38	4
1,5	3	0,75	R03015D5_FC	5	38	4
2,0	3	1,00	R0302D6_FC	6	38	4
2,5	3	1,25	R03025D7_FC	7	38	4
3,0	3	1,50	R0303D12_FC	12	38	4
3,0	3	1,50	R0303D25_FC	25	65	4
4,0	4	2,00	R0404D14_FC	14	50	4
4,0	4	2,00	R0404D25_FC	25	65	4
5,0	5	2,50	R0505D16_FC	16	50	4
5,0	5	2,50	R0505D25_FC	25	75	4
6,0	6	3,00	R0606D19_FC	19	63	4
6,0	6	3,00	R0606D25_FC	25	75	4
6,0	6	3,00	R0606D38_FC	38	100	4
8,0	8	4,00	R0808D19_FC	19	63	4
8,0	8	4,00	R0808D25_FC	25	75	4
8,0	8	4,00	R0808D38_FC	38	100	4
10,0	10	5,00	R1010D22_FC	22	70	4
10,0	10	5,00	R1010D38_FC	38	100	4
12,0	12	6,00	R1212D25_FC	25	75	4
12,0	12	6,00	R1212D50_FC	50	100	4
12,0	12	6,00	R1212D75_FC	75	150	4
14,0	14	7,00	R1414D30_FC	30	88	4
16,0	16	8,00	R1616D32_FC	32	88	4
16,0	16	8,00	R1616D75_FC	75	150	4
18,0	18	9,00	R1818D36_FC	36	100	4
20,0	20	10,0	R2020D38_FC	38	100	4
20,0	20	10,0	R2020D75_FC	75	150	4
25,0	25	12,5	R2525D75_FC	75	150	4

High Helix

FC
TiAlN coated
Micrograin Carbide
Tolerance
D 10,0 - 32,0 +0 / -0,050
Shank
Cylindrical h6, DIN6535 HA
Flute
50° right hand spiral
Field of application
All types of steel



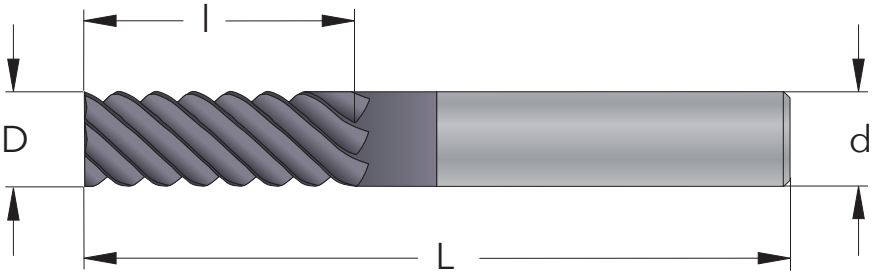
D mm	d mm	Part Number	l mm	L mm	Cutting edges
10,0	10	U1010F25_FC	25	76	6
12,0	12	U1212F30_FC	30	100	6
16,0	16	U1616F40_FC	40	100	6
20,0	20	U2020F45_FC	45	120	6
25,0	25	U2525F60_FC	60	130	6



SOLID CARBIDE END MILLS

High Helix, for Hard Materials

FC
TiAlN coated
Micrograin Carbide
Tolerance
D 6,0 - 32,0 +0 / -0,050
Shank
Cylindrical h6, DIN6535 HA
Flute
50° right hand spiral
Negative cutting angle
Field of application
Hard materials up to HRC 65

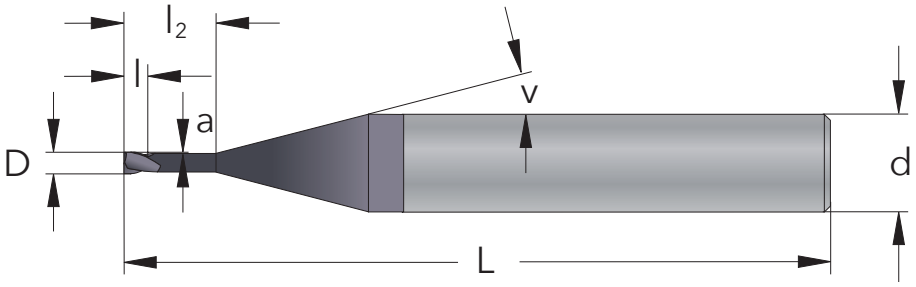


D mm	d mm	Part Number	l mm	L mm	Cutting edges
6,0	6	V0606F15_FC	15	63	6
8,0	8	V0808F20_FC	20	76	6
10,0	10	V1010F25_FC	25	76	6
12,0	12	V1212F30_FC	30	100	6
16,0	16	V1616F40_FC	40	100	6
20,0	20	V2020F45_FC	45	120	6
25,0	25	V2525H60_FC	60	130	8



Micro, Two Flute

FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D 0,3 - 3,0 -0,002 / -0,012
Shank
Cylindrical h5, DIN6535 HA
Flute
30° right hand spiral, center cutting
Field of application
High speed cutting in steel



D mm	d mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
0,1	6	MP06001B0.2_FC	0,15	0,15	64		10	2
0,2	6	MP06002B0.3_FC	0,3	0,3	64		10	2
0,3	6	MP06003B0.5_FC	0,5	0,5	64		11	2
0,3	6	MP06003B0.6_FC	0,5	1,5	64	0,010	11	2
0,3	6	MP06003B0.7_FC	0,5	3,0	64	0,010	12	2
0,4	6	MP06004B0.7_FC	0,6	0,6	64		11	2
0,4	6	MP06004B0.8_FC	0,6	2,0	64	0,010	11	2
0,4	6	MP06004B0.9_FC	0,6	4,0	64	0,010	13	2
0,5	6	MP06005B0.9_FC	0,8	0,8	64		11	2
0,5	6	MP06005B1_FC	0,8	3,0	64	0,015	12	2
0,5	6	MP06005B1.1_FC	0,8	6,0	64	0,015	15	2
0,5	6	MP06005B1.2_FC	0,8	8,0	64	0,015	15	2
0,5	6	MP06005B1.3_FC	0,8	10,0	64	0,015	15	2
0,6	6	MP06006B1.1_FC	0,9	0,9	64		10	2
0,6	6	MP06006B1.15_FC	0,9	2,0	64	0,025	11	2
0,6	6	MP06006B1.2_FC	0,9	4,0	64	0,025	13	2
0,6	6	MP06006B1.3_FC	0,9	6,0	64	0,025	15	2
0,6	6	MP06006B1.4_FC	0,9	8,0	64	0,025	15	2
0,6	6	MP06006B1.5__FC	0,9	10,0	64	0,025	15	2
0,8	6	MP06008B1.5_FC	1,2	1,2	64		10	2
0,8	6	MP06008B1.55_FC	1,2	2,5	64	0,025	11	2
0,8	6	MP06008B1.6_FC	1,2	5,0	64	0,025	13	2
0,8	6	MP06008B1.7_FC	1,2	8,0	64	0,025	15	2
0,8	6	MP06008B1.8_FC	1,2	10,0	64	0,025	15	2
1,0	6	MP0601B1.9_FC	1,5	1,5	64		10	2
1,0	6	MP0601B1.95_FC	1,5	4,0	64	0,025	12	2
1,0	6	MP0601B2_FC	1,5	6,0	64	0,025	14	2
1,0	6	MP0601B2.1_FC	1,5	10,0	64	0,025	15	2
1,0	6	MP0601B2.2_FC	1,5	15,0	64	0,025	15	2
1,0	6	MP0601B2.3_FC	1,5	20,0	64	0,025	15	2
1,0	6	MP0601B2.4_FC	1,5	25,0	64	0,025	15	2
1,2	6	MP06012B2.3_FC	1,8	1,8	64		10	2
1,2	6	MP06012B2.34_FC	1,8	4,0	64	0,025	11	2
1,2	6	MP06012B2.37_FC	1,8	6,0	64	0,025	14	2
1,2	6	MP06012B2.4_FC	1,8	8,0	64	0,025	15	2
1,2	6	MP06012B2.5_FC	1,8	12,0	64	0,025	15	2
1,2	6	MP06012B2.6_FC	1,8	16,0	64	0,025	15	2
1,5	6	MP06015B2.9_FC	2,3	2,3	64		10	2
1,5	6	MP06015B2.95_FC	2,3	6,0	64	0,025	13	2
1,5	6	MP06015B3_FC	2,3	10,0	64	0,025	15	2
1,5	6	MP06015B3.1_FC	2,3	15,0	64	0,025	15	2
1,5	6	MP06015B3.2_FC	2,3	20,0	64	0,025	15	2
1,5	6	MP06015B3.3_FC	2,3	25,0	64	0,025	15	2
2,0	6	MP0602B2.9_FC	3,0	3,0	64		9	2
2,0	6	MP0602B2.95_FC	3,0	6,0	64	0,05	11	2

Micro, Two Flute

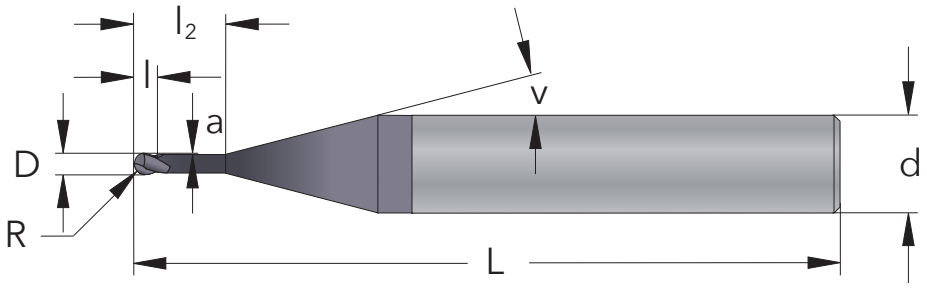
D mm	d mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
2,0	6	MP0602B3_FC	3,0	10,0	64	0,05	15	2
2,0	6	MP0602B3.1_FC	3,0	16,0	64	0,05	15	2
2,0	6	MP0602B3.2_FC	3,0	20,0	64	0,05	15	2
2,0	6	MP0602B3.3_FC	3,0	25,0	64	0,05	15	2
2,0	6	MP0602B3.4_FC	3,0	30,0	64	0,05	15	2
2,5	6	MP06025B2.9_FC	3,0	3,0	64		8	2
2,5	6	MP06025B2.95_FC	3,0	6,0	64	0,05	10	2
2,5	6	MP06025B3_FC	3,0	10,0	64	0,05	15	2
2,5	6	MP06025B3.1_FC	3,0	16,0	64	0,05	15	2
2,5	6	MP06025B3.2_FC	3,0	20,0	64	0,05	15	2
2,5	6	MP06025B3.3_FC	3,0	25,0	64	0,05	15	2
3,0	6	MP0603B2.9_FC	3,0	3,0	64		7	2
3,0	6	MP0603B2.95_FC	3,0	6,0	64	0,05	9	2
3,0	6	MP0603B3_FC	3,0	10,0	64	0,05	14	2
3,0	6	MP0603B3.1_FC	3,0	16,0	64	0,05	15	2
3,0	6	MP0603B3.2_FC	3,0	20,0	64	0,05	15	2
3,0	6	MP0603B3.3_FC	3,0	25,0	64	0,05	15	2
3,0	6	MP0603B3.4_FC	3,0	30,0	64	0,05	15	2

Micro End Mills are available with Corner Radius. The price is 10% higher.



Micro, Two Flute, with Ball Nose

FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D 0,3 - 3,0 -0,002 / -0,012
Shank
Cylindrical h5, DIN6535 HA
Flute
30° right hand spiral
Field of application
High speed cutting in steel



D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
0,2	6	0,10	RP06002B0.3_FC	0,3	0,3	64		10	2
0,3	6	0,15	RP06003B0.5_FC	0,5	0,5	64		11	2
0,3	6	0,15	RP06003B0.6_FC	0,5	1,5	64	0,010	11	2
0,3	6	0,15	RP06003B0.7_FC	0,5	3,0	64	0,010	12	2
0,4	6	0,2	RP06004B0.7_FC	0,6	0,6	64		11	2
0,4	6	0,2	RP06004B0.8_FC	0,6	2,0	64	0,010	11	2
0,4	6	0,2	RP06004B0.9_FC	0,6	4,0	64	0,010	13	2
0,5	6	0,25	RP06005B0.9_FC	0,8	0,8	64		11	2
0,5	6	0,25	RP06005B1_FC	0,8	3,0	64	0,015	12	2
0,5	6	0,25	RP06005B1.1_FC	0,8	6,0	64	0,015	15	2
0,5	6	0,25	RP06005B1.2_FC	0,8	8,0	64	0,015	15	2
0,5	6	0,25	RP06005B1.3_FC	0,8	10,0	64	0,015	15	2
0,6	6	0,3	RP06006B1.1_FC	0,9	0,9	64		10	2
0,6	6	0,3	RP06006B1.15_FC	0,9	2,0	64	0,025	11	2
0,6	6	0,3	RP06006B1.2_FC	0,9	4,0	64	0,025	13	2
0,6	6	0,3	RP06006B1.3_FC	0,9	6,0	64	0,025	15	2
0,6	6	0,3	RP06006B1.4_FC	0,9	8,0	64	0,025	15	2
0,6	6	0,3	RP06006B1.5_FC	0,9	10,0	64	0,025	15	2
0,8	6	0,4	RP06008B1.5_FC	1,2	1,2	64		10	2
0,8	6	0,4	RP06008B1.55_FC	1,2	2,5	64	0,025	11	2
0,8	6	0,4	RP06008B1.6_FC	1,2	5,0	64	0,025	13	2
0,8	6	0,4	RP06008B1.7_FC	1,2	8,0	64	0,025	15	2
0,8	6	0,4	RP06008B1.8_FC	1,2	10,0	64	0,025	15	2
1,0	6	0,5	RP0601B1.9_FC	1,5	1,5	64		10	2
1,0	6	0,5	RP0601B1.95_FC	1,5	4,0	64	0,025	12	2
1,0	6	0,5	RP0601B2_FC	1,5	6,0	64	0,025	14	2
1,0	6	0,5	RP0601B2.1_FC	1,5	10,0	64	0,025	15	2
1,0	6	0,5	RP0601B2.2_FC	1,5	15,0	64	0,025	15	2
1,0	6	0,5	RP0601B2.3_FC	1,5	20,0	64	0,025	15	2
1,0	6	0,5	RP0601B2.4_FC	1,5	25,0	64	0,025	15	2
1,2	6	0,6	RP06012B2.3_FC	1,8	1,8	64		10	2
1,2	6	0,6	RP06012B2.34_FC	1,8	4,0	64	0,025	11	2
1,2	6	0,6	RP06012B2.37_FC	1,8	6,0	64	0,025	14	2
1,2	6	0,6	RP06012B2.4_FC	1,8	8,0	64	0,025	15	2
1,2	6	0,6	RP06012B2.5_FC	1,8	12,0	64	0,025	15	2
1,2	6	0,6	RP06012B2.6_FC	1,8	16,0	64	0,025	15	2
1,5	6	0,75	RP06015B2.9_FC	2,3	2,3	64		10	2
1,5	6	0,75	RP06015B2.95_FC	2,3	6,0	64	0,025	13	2
1,5	6	0,75	RP06015B3_FC	2,3	10,0	64	0,025	15	2
1,5	6	0,75	RP06015B3.1_FC	2,3	15,0	64	0,025	15	2
1,5	6	0,75	RP06015B3.2_FC	2,3	20,0	64	0,025	15	2
1,5	6	0,75	RP06015B3.3_FC	2,3	25,0	64	0,025	15	2
2,0	6	1,0	RP0602B2.9_FC	3,0	3,0	64		9	2
2,0	6	1,0	RP0602B2.95_FC	3,0	6,0	64	0,05	11	2
2,0	6	1,0	RP0602B3_FC	3,0	10,0	64	0,05	15	2

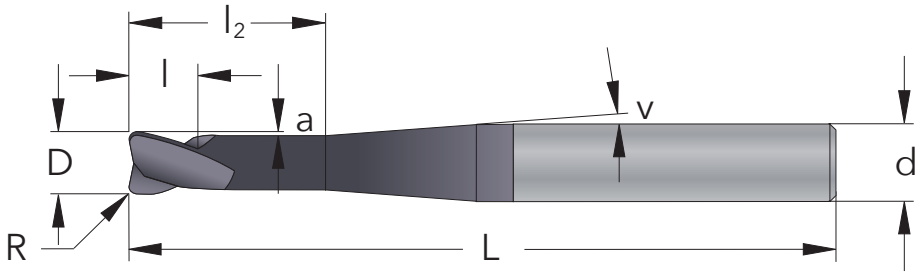
Micro, Two Flute, with Ball Nose

D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
2,0	6	1,0	RP0602B3.1_FC	3,0	16,0	64	0,05	15	2
2,0	6	1,0	RP0602B3.2_FC	3,0	20,0	64	0,05	15	2
2,0	6	1,0	RP0602B3.3_FC	3,0	25,0	64	0,05	15	2
2,0	6	1,0	RP0602B3.4_FC	3,0	30,0	64	0,05	15	2
2,5	6	1,25	RP06025B2.9_FC	3,0	3,0	64		8	2
2,5	6	1,25	RP06025B2.95_FC	3,0	6,0	64	0,05	10	2
2,5	6	1,25	RP06025B3_FC	3,0	10,0	64	0,05	15	2
2,5	6	1,25	RP06025B3.1_FC	3,0	16,0	64	0,05	15	2
2,5	6	1,25	RP06025B3.2_FC	3,0	20,0	64	0,05	15	2
2,5	6	1,25	RP06025B3.3_FC	3,0	25,0	64	0,05	15	2
3,0	6	1,5	RP0603B2.9_FC	3,0	3,0	64		7	2
3,0	6	1,5	RP0603B2.95_FC	3,0	6,0	64	0,05	9	2
3,0	6	1,5	RP0603B3_FC	3,0	10,0	64	0,05	14	2
3,0	6	1,5	RP0603B3.1_FC	3,0	16,0	64	0,05	15	2
3,0	6	1,5	RP0603B3.2_FC	3,0	20,0	64	0,05	15	2
3,0	6	1,5	RP0603B3.3_FC	3,0	25,0	64	0,05	15	2
3,0	6	1,5	RP0603B3.4_FC	3,0	30,0	64	0,05	15	2



Two Flute, with Corner Radius

FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
30° right hand spiral, center cutting
Field of application
High speed cutting in steel



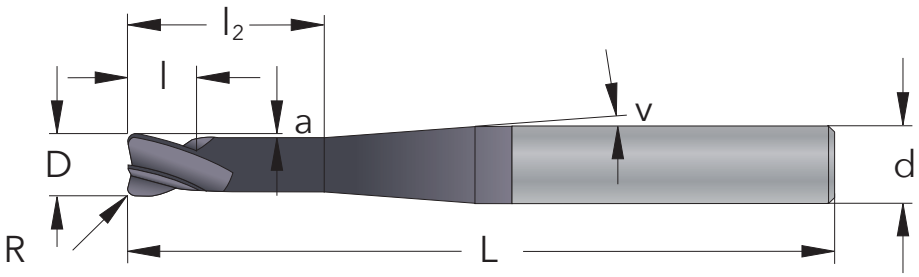
D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
1,5	6	0,3	MH06015B2R03L64_FC	2	5	64	0,05	7,0	2
1,5	6	0,3	MH06015B2.1R03L64_FC	2	10	64	0,05	9,0	2
2,0	6	0,5	MH0602B3R05L64_FC	3	5	64	0,05	6,0	2
2,0	6	0,5	MH0602B3.1R05L64_FC	3	10	64	0,05	8,0	2
2,0	6	0,5	MH0602B3R05L78_FC	3	15	78	0,05	5,0	2
3,0	6	0,5	MH0603B4R05L64_FC	4	7	64	0,05	5,0	2
3,0	6	0,5	MH0603B4R05L78_FC	4	15	78	0,05	4,0	2
4,0	6	0,5	MH0604B5R05L64_FC	5	8	64	0,1	4,0	2
4,0	6	0,5	MH0604B5R05L78_FC	5	15	78	0,1	2,5	2
4,0	6	1,0	MH0604B5R10L64_FC	5	8	64	0,1	4,0	2
4,0	6	1,0	MH0604B5R10L78_FC	5	15	78	0,1	2,5	2
5,0	6	0,5	MH0605B5R05L64_FC	5	10	64	0,15	2,5	2
5,0	6	0,5	MH0605B5R05L78_FC	5	20	78	0,15	2,0	2
5,0	6	1,0	MH0605B5R10L64_FC	5	10	64	0,15	2,5	2
5,0	6	1,0	MH0605B5R10L78_FC	5	20	78	0,15	2,0	2
6,0	6	0,5	MH0606B6R05L64_FC	6	25	64	0,2		2
6,0	6	0,5	MH0606B6R05L78_FC	6	35	78	0,2		2
6,0	8	0,5	MH0806B6R05L100_FC	6	25	100	0,2	2,0	2
6,0	6	1,0	MH0606B6R10L64_FC	6	25	64	0,2		2
6,0	6	1,0	MH0606B6R10L78_FC	6	35	78	0,2		2
6,0	8	1,0	MH0806B6R10L100_FC	6	25	100	0,2		2
6,0	6	1,5	MH0606B6R15L64_FC	6	25	64	0,2		2
6,0	6	1,5	MH0606B6R15L78_FC	6	35	78	0,2		2
6,0	8	1,5	MH0806B6R15L100_FC	6	25	100	0,2	2,0	2
8,0	8	0,5	MH0808B8R05L64_FC	8	25	64	0,3		2
8,0	8	0,5	MH0808B8R05L78_FC	8	25	78	0,3		2
8,0	8	1,0	MH0808B8R10L64_FC	8	25	64	0,3		2
8,0	8	1,0	MH0808B8R10L78_FC	8	35	78	0,3		2
8,0	8	1,0	MH0808B8R10L100_FC	8	50	100	0,3		2
8,0	8	2,0	MH0808B8R20L64_FC	8	25	64	0,3		2
8,0	8	2,0	MH0808B8R20L78_FC	8	35	78	0,3		2
8,0	8	2,0	MH0808B8R20L100_FC	8	50	100	0,3		2
8,0	10	1,0	MH1008B8R10L120_FC	8	30	120	0,3	1,5	2
8,0	10	2,0	MH1008B8R20L120_FC	8	30	120	0,3	1,5	2
10,0	10	0,5	MH1010B10R05L78_FC	10	35	78	0,3		2
10,0	10	1,0	MH1010B10R10L100_FC	10	55	100	0,3		2
10,0	10	2,0	MH1010B10R20L78_FC	10	35	78	0,3		2
10,0	10	2,0	MH1010B10R20L100_FC	10	55	100	0,3		2
10,0	12	2,0	MH1210B10R20L120_FC	10	30	120	0,3	1,5	2
12,0	12	0,5	MH1212B12R05L78_FC	12	35	78	0,3		2
12,0	12	1,0	MH1212B12R10L100_FC	12	55	100	0,3		2
12,0	12	2,0	MH1212B12R20L78_FC	12	35	78	0,3		2
12,0	12	2,0	MH1212B12R20L100_FC	12	55	100	0,3		2
12,0	16	2,0	MH1612B12R20L120_FC	12	40	120	0,3	4,5	2
16,0	16	3,5	MH1616B20R35L100_FC	20	50	100	0,3		2
16,0	16	3,5	MH1616B20R35L150_FC	20	100	150	0,3		2

MOLD AND DIE END MILLS

Four Flute, with Corner Radius

SmiCut STS

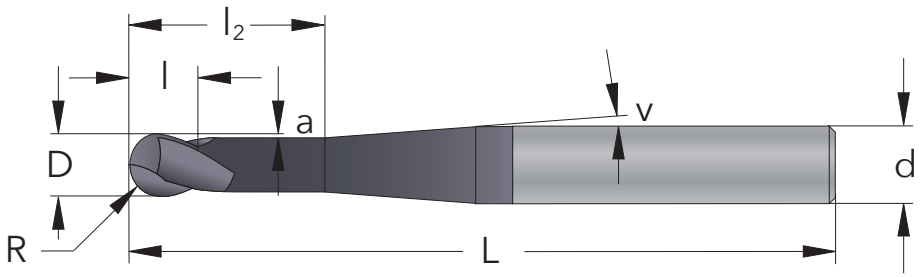
FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
30° right hand spiral, center cutting
Field of application
High speed cutting in steel



D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
6,0	6	0,5	MH0606D6R05L64_FC	6	25	64	0,2		4
6,0	6	0,5	MH0606D6R05L78_FC	6	35	78	0,2		4
6,0	6	1,0	MH0606D6R10L64_FC	6	25	64	0,2		4
6,0	6	1,5	MH0606D6R15L64_FC	6	25	64	0,2		4
6,0	6	1,5	MH0606D6R15L78_FC	6	35	78	0,2		4
6,0	8	0,5	MH0806D6R05L100_FC	6	25	100	0,2	2,0	4
6,0	8	1,5	MH0806D6R15L100_FC	6	25	100	0,2	2,0	4
8,0	8	0,5	MH0808D8R05L64_FC	8	25	64	0,3		4
8,0	8	0,5	MH0808D8R05L78_FC	8	25	78	0,3		4
8,0	8	1,0	MH0808D8R10L64_FC	8	25	64	0,3		4
8,0	8	1,0	MH0808D8R10L78_FC	8	35	78	0,3		4
8,0	8	1,0	MH0808D8R10L100_FC	8	50	100	0,3		4
8,0	8	2,0	MH0808D8R20L64_FC	8	25	64	0,3		4
8,0	8	2,0	MH0808D8R20L78_FC	8	35	78	0,3		4
8,0	8	2,0	MH0808D8R20L100_FC	8	50	100	0,3		4
8,0	10	1,0	MH1008D8R10L120_FC	8	30	120	0,3	1,5	4
8,0	10	2,0	MH1008D8R20L120_FC	8	30	120	0,3	1,5	4
10,0	10	0,5	MH1010D10R05L78_FC	10	35	78	0,3		4
10,0	10	1,0	MH1010D10R10L100_FC	10	55	100	0,3		4
10,0	10	2,0	MH1010D10R20L78_FC	10	35	78	0,3		4
10,0	10	2,0	MH1010D10R20L100_FC	10	55	100	0,3		4
10,0	12	2,0	MH1210D10R20L120_FC	10	30	120	0,3	1,5	4
12,0	12	0,5	MH1212D12R05L78_FC	12	35	78	0,3		4
12,0	12	1,0	MH1212D12R10L100_FC	12	55	100	0,3		4
12,0	12	2,0	MH1212D12R20L78_FC	12	35	78	0,3		4
12,0	12	2,0	MH1212D12R20L100_FC	12	55	100	0,3		4
12,0	16	2,0	MH1612D12R20L120_FC	12	40	120	0,3	4,5	4
16,0	16	3,5	MH1616D20R35L100_FC	20	50	100	0,3		4
16,0	16	3,5	MH1616D20R35L150_FC	20	100	150	0,3		4

Two Flute, with Ball Nose

FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
30° right hand spiral
Field of application
High speed cutting in steel

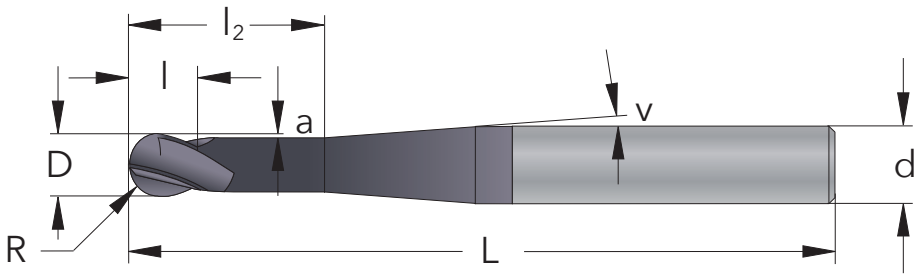


D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
1,0	6	0,5	RH0601B2L64_FC	2	4	64	0,05	7,0	2
1,5	6	0,75	RH06015B2L64_FC	2	4	64	0,05	6,5	2
2,0	6	1,0	RH0602B3L64_FC	3	5	64	0,05	6,0	2
2,0	6	1,0	RH0602B3L78_FC	3	15	78	0,05	5,0	2
3,0	6	1,5	RH0603B4L64_FC	4	7	64	0,05	5,0	2
3,0	6	1,5	RH0603B4L78_FC	4	15	78	0,05	4,0	2
4,0	6	2,0	RH0604B5L64_FC	5	8	64	0,1	4,0	2
4,0	6	2,0	RH0604B5L78_FC	5	15	78	0,1	2,5	2
5,0	6	2,5	RH0605B5L64_FC	5	10	64	0,15	2,5	2
5,0	6	2,5	RH0605B5L78_FC	5	20	78	0,15	2,0	2
6,0	6	3,0	RH0606B6L64_FC	6	25	64	0,2		2
6,0	6	3,0	RH0606B6L78_FC	6	35	78	0,2		2
6,0	8	3,0	RH0806B6L100_FC	6	25	100	0,2	2,0	2
6,0	8	3,0	RH0806B6L150_FC	6	15	150	0,2	1,5	2
8,0	8	4,0	RH0808B8L64_FC	8	25	64	0,3		2
8,0	8	4,0	RH0808B8L78_FC	8	35	78	0,3		2
8,0	8	4,0	RH0808B8L100_FC	8	50	100	0,3		2
8,0	10	4,0	RH1008B8L120_FC	8	30	120	0,3	1,5	2
8,0	10	4,0	RH1008B8L150_FC	8	20	150	0,3	1,5	2
10,0	10	5,0	RH1010B10L78_FC	10	35	78	0,3		2
10,0	10	5,0	RH1010B10L100_FC	10	55	100	0,3		2
10,0	12	5,0	RH1210B10L100_FC	10	30	100	0,3	3,5	2
10,0	12	5,0	RH1210B10L120_FC	10	30	120	0,3	1,5	2
10,0	12	5,0	RH1210B10L150_FC	10	25	150	0,3	1,5	2
12,0	12	6,0	RH1212B12L78_FC	12	35	78	0,3		2
12,0	12	6,0	RH1212B12L100_FC	12	55	100	0,3		2
12,0	16	6,0	RH1612B12L120_FC	12	40	120	0,3	4,5	2
12,0	16	6,0	RH1612B12L150_FC	12	30	150	0,3	2,0	2
16,0	16	8,0	RH1616B20L100_FC	20	50	100	0,3		2
16,0	16	8,0	RH1616B20L150_FC	20	100	150	0,3		2

MOLD AND DIE END MILLS

Four Flute, with Ball Nose

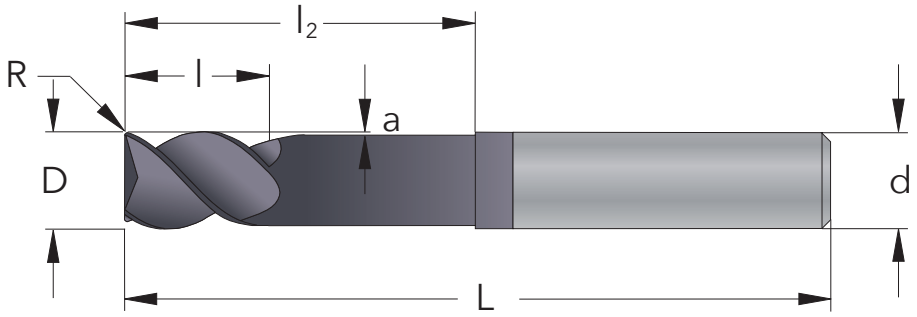
FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
30° right hand spiral
Field of application
High speed cutting in steel



D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
6,0	6	3,0	RH0606D6L64_FC	6	25	64	0,2		4
6,0	6	3,0	RH0606D6L78_FC	6	35	78	0,2		4
6,0	8	3,0	RH0806D6L100_FC	6	25	100	0,2	2,0	4
8,0	8	4,0	RH0808D8L64_FC	8	25	64	0,3		4
8,0	8	4,0	RH0808D8L78_FC	8	35	78	0,3		4
8,0	8	4,0	RH0808D8L100_FC	8	50	100	0,3		4
8,0	10	4,0	RH1008D8L120_FC	8	30	120	0,3	1,5	4
10,0	10	5,0	RH1010D10L78_FC	10	35	78	0,3		4
10,0	10	5,0	RH1010D10L100_FC	10	55	100	0,3		4
10,0	12	5,0	RH1210D10L120_FC	10	30	120	0,3	1,5	4
12,0	12	6,0	RH1212D12L78_FC	12	35	78	0,3		4
12,0	12	6,0	RH1212D12L100_FC	12	55	100	0,3		4
12,0	16	6,0	RH1612D12L120_FC	12	40	120	0,3	4,5	4
16,0	16	8,0	RH1616D20L100_FC	20	50	100	0,3		4
16,0	16	8,0	RH1616D20L150_FC	20	100	150	0,3		4

Roughing End Mill

FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
45° right hand spiral, center cutting
Field of application
High speed cutting in steel

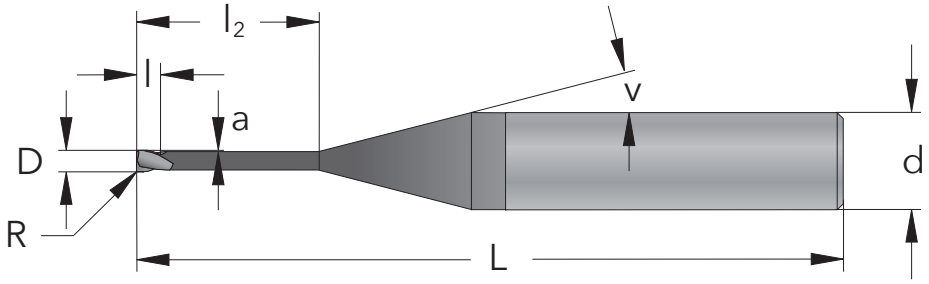


D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	Cutting edges
2,0	3	0,2	TH0302C3_FC	3	10	39	0,05	3
3,0	3	0,2	TH0303C4_FC	4	10	39	0,05	3
4,0	6	0,2	TH0604C5_FC	5	12	64	0,1	3
5,0	6	0,2	TH0605C6_FC	6	14	64	0,15	3
6,0	6	0,3	TH0606C7_FC	7	16	64	0,2	3
8,0	8	0,5	TH0808C9_FC	9	20	64	0,3	3
10,0	10	0,5	TH1010C12_FC	12	25	70	0,3	3
12,0	12	0,5	TH1212C15_FC	15	30	78	0,3	3
16,0	16	0,5	TH1616C18_FC	18	38	89	0,3	3



Micro, Two Flute

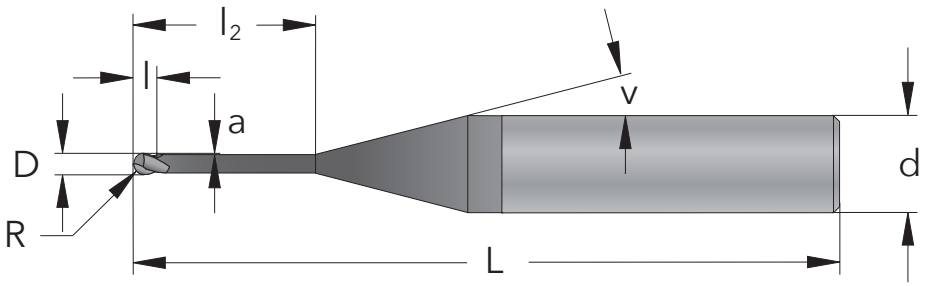
DC
Diamond coated
Micrograin Carbide
Tolerance
D 0,3 - 3,0 -0,002 / -0,012
Shank
Cylindrical h5, DIN6535 HA
Flute
40° right hand spiral
Center cutting
Field of application
Graphite



D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
0,3	6	0,05	MG06003B1_DC	1,0	1,0	64		7	2
0,3	6	0,05	MG06003B1.4_DC	1,5	2,5	64	0,01	7	2
0,3	6	0,05	MG06003B1.5_DC	1,5	5,0	64	0,01	8	2
0,4	6	0,05	MG06004B1_DC	1,0	1,0	64		7	2
0,4	6	0,05	MG06004B1.4_DC	1,5	2,5	64	0,01	7	2
0,4	6	0,05	MG06004B1.5_DC	1,5	5,0	64	0,01	8	2
0,5	6	0,05	MG06005B1.3_DC	1,5	1,5	64		7	2
0,5	6	0,05	MG06005B1.4_DC	1,5	3,5	64	0,01	7	2
0,5	6	0,05	MG06005B1.5_DC	1,5	7,0	64	0,01	9	2
0,5	6	0,05	MG06005B1.6_DC	1,5	10,0	64	0,01	10	2
0,6	6	0,05	MG06006B1.8_DC	1,5	1,5	64		6	2
0,6	6	0,05	MG06006B1.9_DC	2,0	3,5	64	0,025	7	2
0,6	6	0,05	MG06006B2_DC	2,0	7,0	64	0,025	9	2
0,6	6	0,05	MG06006B2.1_DC	2,0	10,0	64	0,025	10	2
0,8	6	0,05	MG06008B1.8_DC	2,0	2,0,	64		6	2
0,8	6	0,05	MG06008B1.9_DC	2,0	5,0	64	0,025	8	2
0,8	6	0,05	MG06008B1.95_DC	2,0	7,5	64	0,025	9	2
0,8	6	0,05	MG06008B2_DC	2,0	10,0	64	0,025	10	2
0,8	6	0,05	MG06008B2.1_DC	2,0	15,0	64	0,025	14	2
1,0	6	0,05	MG0601B2.5_DC	2,5	2,5	64		6	2
1,0	6	0,05	MG0601B2.9_DC	3,0	5,0	64	0,025	7	2
1,0	6	0,05	MG0601B2.95_DC	3,0	7,5	64	0,025	8	2
1,0	6	0,05	MG0601B3_DC	3,0	10,0	64	0,025	10	2
1,0	6	0,05	MG0601B3.1_DC	3,0	15,0	64	0,025	13	2
1,2	6	0,05	MG06012B2.9_DC	3,0	5,0	64	0,025	7	2
1,2	6	0,05	MG06012B3_DC	3,0	10,0	64	0,025	9	2
1,5	6	0,05	MG06015B2.9_DC	3,0	5,0	64	0,025	7	2
1,5	6	0,05	MG06015B2.95_DC	3,0	7,5	64	0,025	8	2
1,5	6	0,05	MG06015B3_DC	3,0	10,0	64	0,025	9	2
1,5	6	0,05	MG06015B3.1_DC	3,0	15,0	64	0,025	12	2
1,5	6	0,05	MG06015B3.2_DC	3,0	20,0	64	0,025	15	2

Micro, Two Flute, with Ball Nose

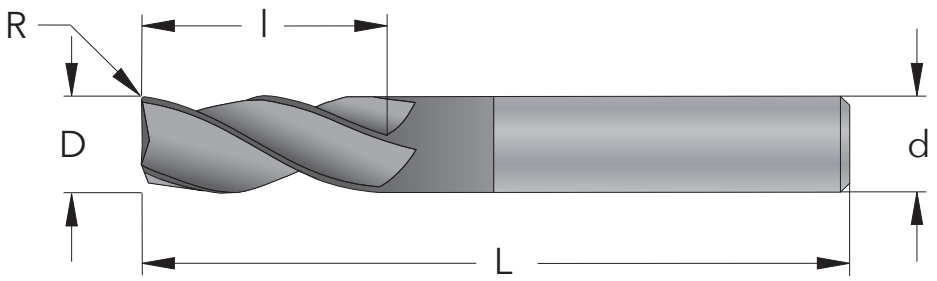
DC
Diamond coated
Micrograin Carbide
Tolerance
D 0,3 - 3,0 -0,002 / -0,012
Shank
Cylindrical h5, DIN6535 HA
Flute
40° right hand spiral
Field of application
Graphite



D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	v °	Cutting edges
0,3	6	0,15	RG06003B1_DC	1,0	1,0	64		7	2
0,3	6	0,15	RG06003B1.4_DC	1,5	2,5	64	0,01	7	2
0,3	6	0,15	RG06003B1.5_DC	1,5	5,0	64	0,01	8	2
0,4	6	0,2	RG06004B1_DC	1,0	1,0	64		7	2
0,4	6	0,2	RG06004B1.4_DC	1,5	2,5	64	0,01	7	2
0,4	6	0,2	RG06004B1.5_DC	1,5	5,0	64	0,01	8	2
0,5	6	0,25	RG06005B1.3_DC	1,5	1,5	64		7	2
0,5	6	0,25	RG06005B1.4_DC	1,5	3,5	64	0,01	7	2
0,5	6	0,25	RG06005B1.5_DC	1,5	7,0	64	0,01	9	2
0,5	6	0,25	RG06005B1.6_DC	1,5	10,0	64	0,01	10	2
0,6	6	0,3	RG06006B1.8_DC	1,5	1,5	64		6	2
0,6	6	0,3	RG06006B1.9_DC	2,0	3,5	64	0,025	7	2
0,6	6	0,3	RG06006B2_DC	2,0	7,0	64	0,025	9	2
0,6	6	0,3	RG06006B2.1_DC	2,0	10,0	64	0,025	10	2
0,8	6	0,4	RG06008B1.8_DC	2,0	2,0,	64		6	2
0,8	6	0,4	RG06008B1.9_DC	2,0	5,0	64	0,025	8	2
0,8	6	0,4	RG06008B1.95_DC	2,0	7,5	64	0,025	9	2
0,8	6	0,4	RG06008B2_DC	2,0	10,0	64	0,025	10	2
0,8	6	0,4	RG06008B2.1_DC	2,0	15,0	64	0,025	14	2
1,0	6	0,5	RG0601B2.5_DC	2,5	2,5	64		6	2
1,0	6	0,5	RG0601B2.9_DC	3,0	5,0	64	0,025	7	2
1,0	6	0,5	RG0601B2.95_DC	3,0	7,5	64	0,025	8	2
1,0	6	0,5	RG0601B3_DC	3,0	10,0	64	0,025	10	2
1,0	6	0,5	RG0601B3.1_DC	3,0	15,0	64	0,025	13	2
1,2	6	0,6	RG06012B2.9_DC	3,0	5,0	64	0,025	7	2
1,2	6	0,6	RG06012B3_DC	3,0	10,0	64	0,025	9	2
1,5	6	0,75	RG06015B2.9_DC	3,0	5,0	64	0,025	7	2
1,5	6	0,75	RG06015B2.95_DC	3,0	7,5	64	0,025	8	2
1,5	6	0,75	RG06015B3_DC	3,0	10,0	64	0,025	9	2
1,5	6	0,75	RG06015B3.1_DC	3,0	15,0	64	0,025	12	2
1,5	6	0,75	RG06015B3.2_DC	3,0	20,0	64	0,025	15	2

Three Flute, with Corner Radius

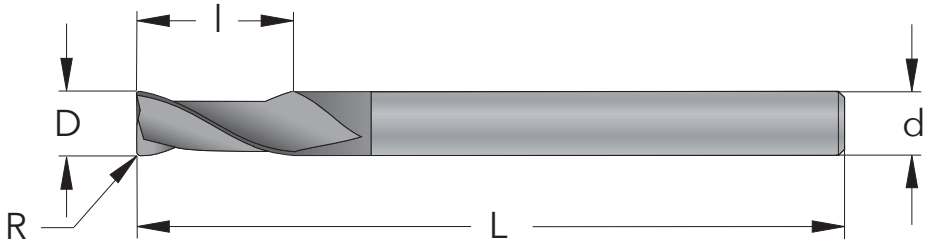
DC
Diamond coated
Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
40° right hand spiral, center cutting
Field of application
Graphite



D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
2,0	3	0,1	MG0302C10_DC	10	50	3
3,0	3	0,1	MG0303C10_DC	10	50	3
4,0	4	0,2	MG0404C15_DC	15	60	3
5,0	5	0,2	MG0505C20_DC	20	60	3
6,0	6	0,3	MG0606C30_DC	30	78	3
8,0	8	0,3	MG0808C30_DC	30	78	3
10,0	10	0,3	MG1010C30_DC	30	78	3
12,0	12	0,3	MG1212C30_DC	30	89	3

Two Flute, with Corner Radius, Long Shank

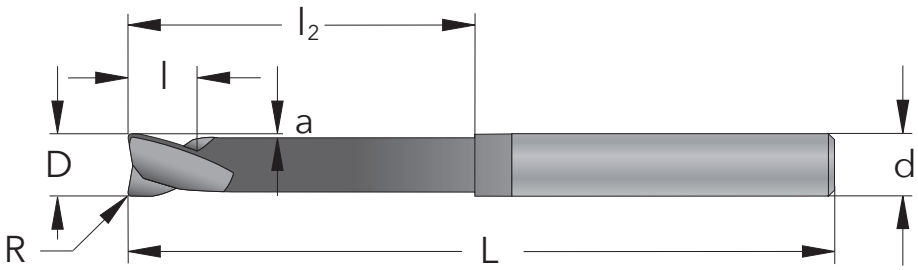
DC
Diamond coated
Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
40° right hand spiral, center cutting
Field of application
Graphite



D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
4,0	4	0,3	MG0404B10L100_DC	10	100	2
5,0	5	0,5	MG0505B13L100_DC	13	100	2
6,0	6	0,5	MG0606B42L100_DC	42	100	2
6,0	6	0,5	MG0606B26L150_DC	26	150	2
8,0	8	0,5	MG0808B41L150_DC	41	150	2
10,0	10	0,5	MG1010B42L150_DC	42	150	2

Two/Four Flute, with Corner Radius

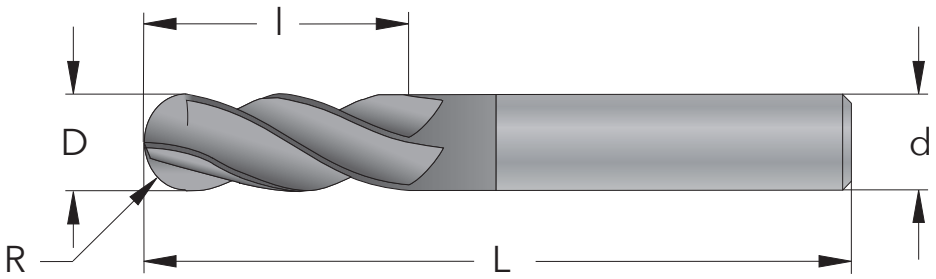
DC
Diamond coated
Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
40° right hand spiral, center cutting
Field of application
Graphite



D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	Cutting edges
2,0	3	0,1	MG0302B3_DC	3	10	50	0,1	2
3,0	6	0,1	MG0603B4_DC	4	10	50	0,1	2
4,0	6	0,2	MG0604D4_DC	4	10	50	0,1	4
5,0	6	0,2	MG0605D5_DC	5	10	50	0,15	4
6,0	6	0,3	MG0606D6_DC	6	10	50	0,2	4
8,0	8	0,3	MG0808D8_DC	8	15	64	0,3	4
10,0	10	0,3	MG1010D10_DC	10	20	78	0,3	4
12,0	12	0,3	MG1212D10_DC	10	20	78	0,3	4

Three Flute, with Ball Nose

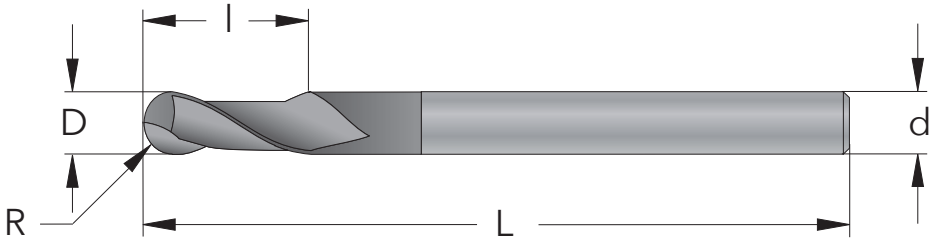
DC
Diamond coated
Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
40° right hand spiral
Field of application
Graphite



D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
2,0	3	1,0	RG0302C10_DC	10	50	3
3,0	3	1,5	RG0303C10_DC	10	50	3
4,0	4	2,0	RG0404C15_DC	15	60	3
5,0	5	2,5	RG0505C20_DC	20	60	3
6,0	6	3,0	RG0606C30_DC	30	78	3
8,0	8	4,0	RG0808C30_DC	30	78	3
10,0	10	5,0	RG1010C30_DC	30	78	3
12,0	12	6,0	RG1212C30_DC	30	89	3

Two Flute, with Ball Nose, Long Shank

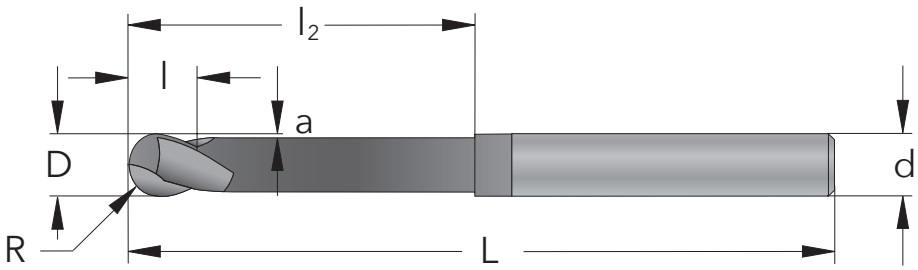
DC
Diamond coated
Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
40° right hand spiral
Field of application
Graphite



D mm	d mm	R mm	Part Number	l mm	L mm	Cutting edges
2,0	3	1,0	RG0302B6L100_DC	6	100	2
3,0	3	1,5	RG0303B16L100_DC	16	100	2
4,0	4	2,0	RG0404B16L100_DC	16	100	2
6,0	6	3,0	RG0606B42L100_DC	42	100	2
6,0	6	3,0	RG0606B42L150_DC	42	150	2
8,0	8	4,0	RG0808B42L100_DC	42	100	2
8,0	8	4,0	RG0808B42L150_DC	42	150	2
10,0	10	5,0	RG1010B45L150_DC	45	150	2

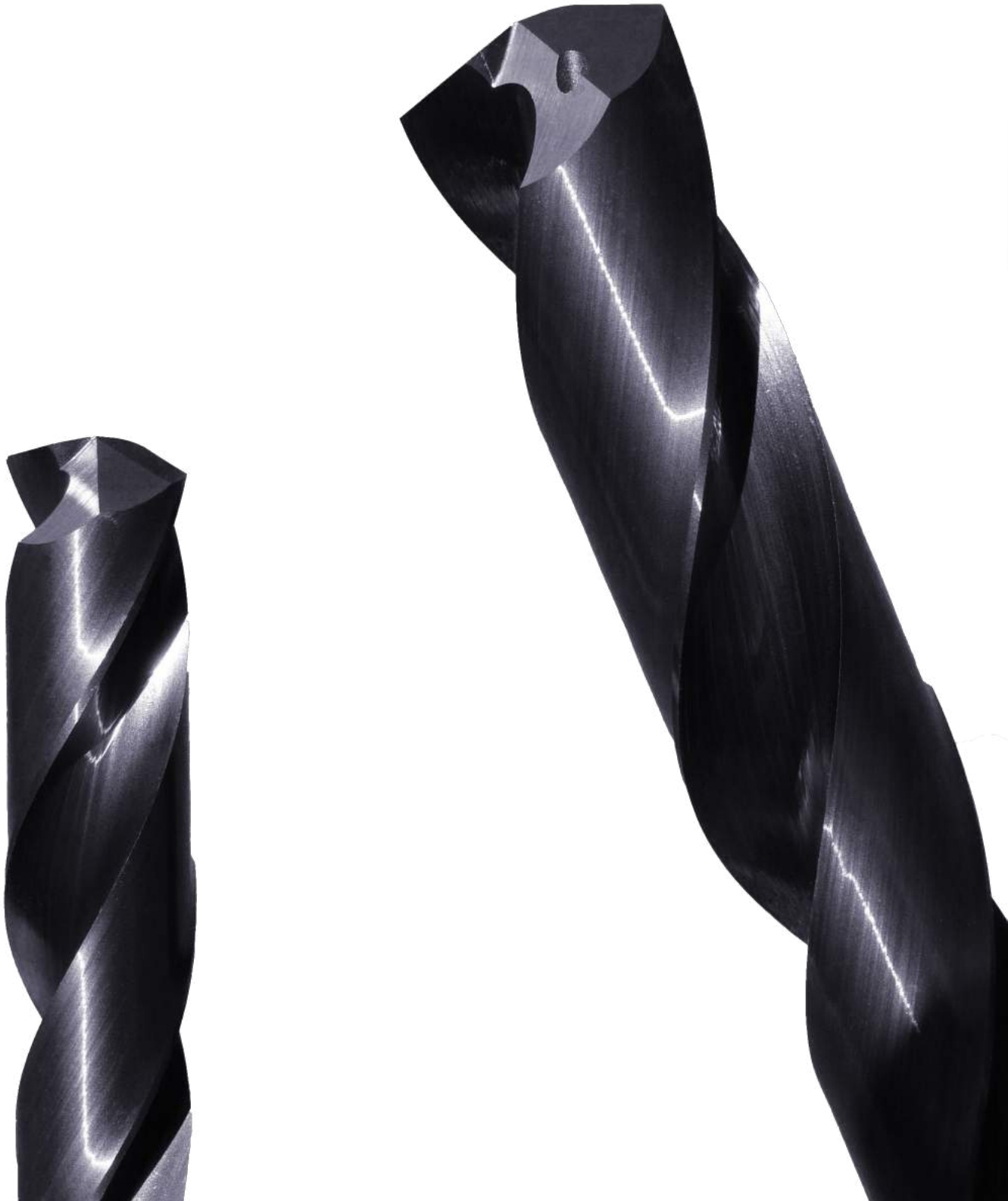
Two/Four Flute, with Ball Nose

DC
Diamond coated
Micrograin Carbide
Tolerance
D 1,0 - 3,0 -0,002 / -0,012
D 4,0 - 6,0 -0,004 / -0,016
D 7,0 - 10,0 -0,005 / -0,020
D 11,0 - 18,0 -0,006 / -0,024
Shank
Cylindrical h5, DIN6535 HA
Flute
40° right hand spiral
Field of application
Graphite



D mm	d mm	R mm	Part Number	l mm	l_2 mm	L mm	a mm	Cutting edges
2,0	3	1,0	RG0302B3_DC	3	10	50	0,1	2
3,0	6	1,5	RG0603B4_DC	4	10	50	0,1	2
4,0	6	2,0	RG0604D4_DC	4	10	50	0,1	4
5,0	6	2,5	RG0605D5_DC	5	10	50	0,15	4
6,0	6	3,0	RG0606D6_DC	6	10	50	0,2	4
8,0	8	4,0	RG0808D8_DC	8	15	64	0,3	4
10,0	10	5,0	RG1010D10_DC	10	20	78	0,3	4
12,0	12	6,0	RG1212D10_DC	10	20	78	0,3	4

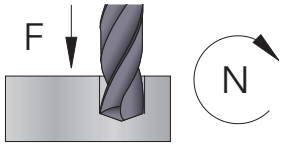
SmiCut™
STS

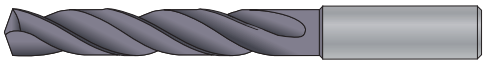


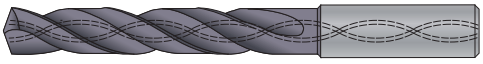
SOLID CARBIDE DRILLS

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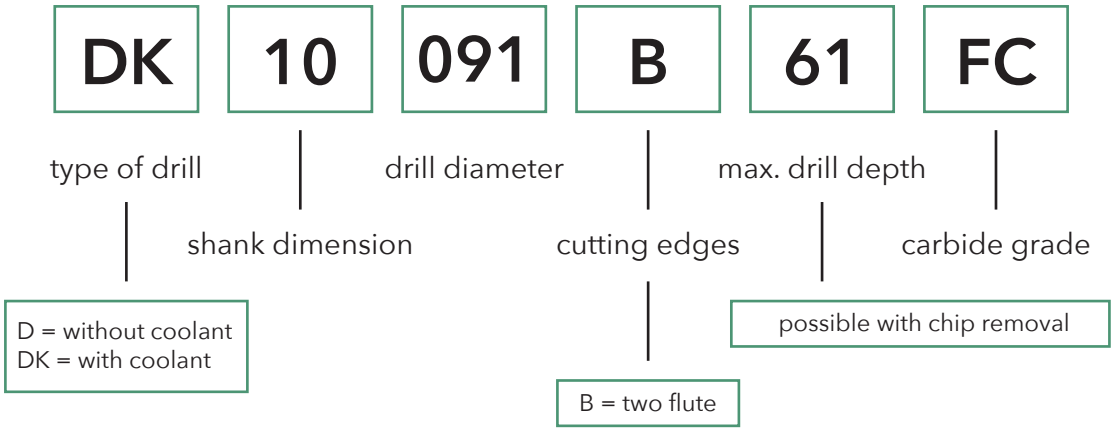


Cutting Speed (V_c) and Material Factor (F_m)

MATERIAL		Hardness HB	Tensile Strenght N/mm²	Cutting Speed (V_c) m/min	Material Factor (F_m)
Steel	Low carbon, C < 0,25%	< 120	< 400	80 - 120	1,2
	Medium carbon, C < 0,55%	< 200	< 700	70 - 110	1,1
	High carbon, C < 0,85%	< 250	< 850	60 - 100	1,0
	Low alloy	< 250	< 850	60 - 100	1,0
	High alloy	< 350	< 1200	40 - 60	0,9
	Hardened, HRC < 45			30 - 50	0,8
	Hardened, HRC < 55			20 - 30	0,7
	Hardened, HRC < 65			15 - 25	0,6
Cast iron	Lamellar graphite	< 150	< 500	70 - 110	1,2
	Lamellar graphite	< 300	< 1000	60 - 100	1,1
	Nodular graphite, malleable	< 200	< 700	50 - 80	1,0
	Nodular graphite, malleable	< 300	< 1000	40 - 70	0,9
Stainless steel	Free machining	< 250	< 850	40 - 55	1,0
	Austenitic	< 250	< 850	30 - 45	0,9
	Ferritic and austenitic	< 300	< 1000	25 - 40	0,8
Titanium	Unalloyed	< 200	< 700	35 - 50	0,8
	Alloyed	< 270	< 900	25 - 40	0,7
	Alloyed	< 350	< 1250	20 - 35	0,6
Nickel	Unalloyed	< 150	< 500	40 - 55	0,8
	Alloyed	< 270	< 900	25 - 35	0,7
	Alloyed	< 350	< 1250	20 - 30	0,6
Copper	Unalloyed	< 100	< 350	80 - 160	1,0
	Brass, bronze	< 200	< 700	70 - 150	1,0
	High strength bronze	< 470	< 1500	50 - 70	0,8
Aluminium	Unalloyed	< 100	< 350	200 - 300	1,4
	Alloyed, Si < 0.5%	< 150	< 500	150 - 250	1,3
	Alloyed, Si < 10%	< 120	< 400	100 - 200	1,2
	Alloyed, Si > 10%	< 120	< 400	80 - 160	1,1
Inconel	718	< 370		20 - 30	0,6
Graphite				100 - 200	1,0

20% higher cutting speed is recommended for drill with internal coolant.

Code Key



CUTTING DATA

Diameter Factor (F_d)

D	Diameter Factor (F_d)		
	3xD	5xD	8xD
3,0	0,12	0,10	0,08
4,0	0,14	0,11	0,10
5,0	0,17	0,14	0,12
6,0	0,20	0,16	0,14
8,0	0,26	0,21	0,18
10,0	0,34	0,27	0,24
12,0	0,38	0,30	0,27
14,0	0,41	0,33	0,29
16,0	0,44	0,35	0,31
18,0	0,46	0,37	0,32
20,0	0,50	0,40	0,35

Example

Drilling with D10100B47 FC (3xD)
Carbon Steel, up to 700 N/mm2
D = 10,0 mm
F_n = 1,1 x 0,34 = 0,37 mm/r
n = (90 x 1000) / (π x 10) = 2865 rpm
V_f = 0,37 x 2865 = 1060 mm/min

$$F_n = F_m \times F_d$$

$$n = \frac{V_c \times 1000}{\pi \times D}$$

D = drill diameter (mm)
F_n = feed / rev. (mm/r)
n = spindle speed (rpm)
V_c = cutting speed (m/min)
V_f = table feed (mm/min)

$$V_f = F_n \times n$$

Carbide Grades

FC

Super Micrograin Carbide with TiAlN coating.
Allround Grade with high heat resistance.
Use cutting data according to the tables.

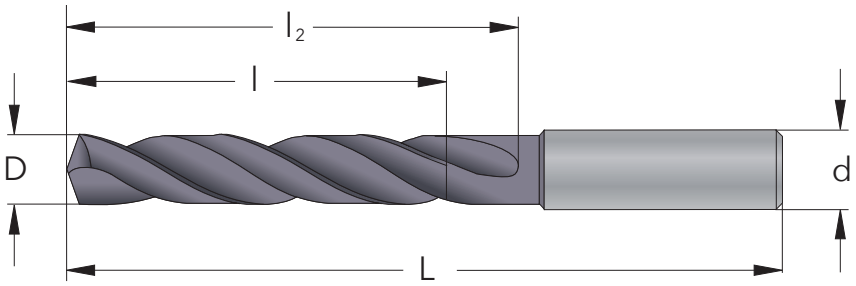
SmiCut STS

SOLID CARBIDE DRILLS

TiAlN

3xD, 5xD

DIN 6537
FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D m7
Shank
Cylindricalt h6, DIN 6535 HA
Flute
30° right hand spiral
140° point angle
Field of application
All types of steel



D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
3,0	6	D06030B20_FC	3xD	14	20	62
3,0	6	D06030B28_FC	5xD	23	28	66
3,1	6	D06031B20_FC	3xD	14	20	62
3,1	6	D06031B28_FC	5xD	23	28	66
3,2	6	D06032B20_FC	3xD	14	20	62
3,2	6	D06032B28_FC	5xD	23	28	66
3,3	6	D06033B20_FC	3xD	14	20	62
3,3	6	D06033B28_FC	5xD	23	28	66
3,4	6	D06034B20_FC	3xD	14	20	62
3,4	6	D06034B28_FC	5xD	23	28	66
3,5	6	D06035B20_FC	3xD	14	20	62
3,5	6	D06035B28_FC	5xD	23	28	66
3,6	6	D06036B20_FC	3xD	14	20	62
3,6	6	D06036B28_FC	5xD	23	28	66
3,7	6	D06037B20_FC	3xD	14	20	62
3,7	6	D06037B28_FC	5xD	23	28	66
3,8	6	D06038B24_FC	3xD	17	24	66
3,8	6	D06038B36_FC	5xD	29	36	74
3,9	6	D06039B24_FC	3xD	17	24	66
3,9	6	D06039B36_FC	5xD	29	36	74
4,0	6	D06040B24_FC	3xD	17	24	66
4,0	6	D06040B36_FC	5xD	29	36	74
4,1	6	D06041B24_FC	3xD	17	24	66
4,1	6	D06041B36_FC	5xD	29	36	74
4,2	6	D06042B24_FC	3xD	17	24	66
4,2	6	D06042B36_FC	5xD	29	36	74
4,3	6	D06043B24_FC	3xD	17	24	66
4,3	6	D06043B36_FC	5xD	29	36	74
4,4	6	D06044B24_FC	3xD	17	24	66
4,4	6	D06044B36_FC	5xD	29	36	74
4,5	6	D06045B24_FC	3xD	17	24	66
4,5	6	D06045B36_FC	5xD	29	36	74
4,6	6	D06046B24_FC	3xD	17	24	66
4,6	6	D06046B36_FC	5xD	29	36	74
4,7	6	D06047B24_FC	3xD	17	24	66
4,7	6	D06047B36_FC	5xD	29	36	74
4,8	6	D06048B28_FC	3xD	20	28	66
4,8	6	D06048B44_FC	5xD	35	44	82
4,9	6	D06049B28_FC	3xD	20	28	66
4,9	6	D06049B44_FC	5xD	35	44	82
5,0	6	D06050B28_FC	3xD	20	28	66
5,0	6	D06050B44_FC	5xD	35	44	82
5,1	6	D06051B28_FC	3xD	20	28	66
5,1	6	D06051B44_FC	5xD	35	44	82
5,2	6	D06052B28_FC	3xD	20	28	66
5,2	6	D06052B44_FC	5xD	35	44	82
5,3	6	D06053B28_FC	3xD	20	28	66

SOLID CARBIDE DRILLS

3xD, 5xD

SmiCut STS

D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
5,3	6	D06053B44_FC	5xD	35	44	82
5,4	6	D06054B28_FC	3xD	20	28	66
5,4	6	D06054B44_FC	5xD	35	44	82
5,5	6	D06055B28_FC	3xD	20	28	66
5,5	6	D06055B44_FC	5xD	35	44	82
5,6	6	D06056B28_FC	3xD	20	28	66
5,6	6	D06056B44_FC	5xD	35	44	82
5,7	6	D06057B28_FC	3xD	20	28	66
5,7	6	D06057B44_FC	5xD	35	44	82
5,8	6	D06058B28_FC	3xD	20	28	66
5,8	6	D06058B44_FC	5xD	35	44	82
5,9	6	D06059B28_FC	3xD	20	28	66
5,9	6	D06059B44_FC	5xD	35	44	82
6,0	6	D06060B28_FC	3xD	20	28	66
6,0	6	D06060B44_FC	5xD	35	44	82
6,1	8	D08061B34_FC	3xD	24	34	79
6,1	8	D08061B53_FC	5xD	43	53	91
6,2	8	D08062B34_FC	3xD	24	34	79
6,2	8	D08062B53_FC	5xD	43	53	91
6,3	8	D08063B34_FC	3xD	24	34	79
6,3	8	D08063B53_FC	5xD	43	53	91
6,4	8	D08064B34_FC	3xD	24	34	79
6,4	8	D08064B53_FC	5xD	43	53	91
6,5	8	D08065B34_FC	3xD	24	34	79
6,5	8	D08065B53_FC	5xD	43	53	91
6,6	8	D08066B34_FC	3xD	24	34	79
6,6	8	D08066B53_FC	5xD	43	53	91
6,7	8	D08067B34_FC	3xD	24	34	79
6,7	8	D08067B53_FC	5xD	43	53	91
6,8	8	D08068B34_FC	3xD	24	34	79
6,8	8	D08068B53_FC	5xD	43	53	91
6,9	8	D08069B34_FC	3xD	24	34	79
6,9	8	D08069B53_FC	5xD	43	53	91
7,0	8	D08070B34_FC	3xD	24	34	79
7,0	8	D08070B53_FC	5xD	43	53	91
7,1	8	D08071B41_FC	3xD	29	41	79
7,1	8	D08071B53_FC	5xD	43	53	91
7,2	8	D08072B41_FC	3xD	29	41	79
7,2	8	D08072B53_FC	5xD	43	53	91
7,3	8	D08073B41_FC	3xD	29	41	79
7,3	8	D08073B53_FC	5xD	43	53	91
7,4	8	D08074B41_FC	3xD	29	41	79
7,4	8	D08074B53_FC	5xD	43	53	91
7,5	8	D08075B41_FC	3xD	29	41	79
7,5	8	D08075B53_FC	5xD	43	53	91
7,6	8	D08076B41_FC	3xD	29	41	79
7,6	8	D08076B53_FC	5xD	43	53	91
7,7	8	D08077B41_FC	3xD	29	41	79
7,7	8	D08077B53_FC	5xD	43	53	91
7,8	8	D08078B41_FC	3xD	29	41	79
7,8	8	D08078B53_FC	5xD	43	53	91
7,9	8	D08079B41_FC	3xD	29	41	79
7,9	8	D08079B53_FC	5xD	43	53	91
8,0	8	D08080B41_FC	3xD	29	41	79
8,0	8	D08080B53_FC	5xD	43	53	91
8,1	10	D10081B47_FC	3xD	35	47	89
8,1	10	D10081B61_FC	5xD	49	61	103
8,2	10	D10082B47_FC	3xD	35	47	89
8,2	10	D10082B61_FC	5xD	49	61	103
8,3	10	D10083B47_FC	3xD	35	47	89
8,3	10	D10083B61_FC	5xD	49	61	103

SmiCut STS

SOLID CARBIDE DRILLS

TiAlN

3xD, 5xD

D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
8,4	10	D10084B47_FC	3xD	35	47	89
8,4	10	D10084B61_FC	5xD	49	61	103
8,5	10	D10085B47_FC	3xD	35	47	89
8,5	10	D10085B61_FC	5xD	49	61	103
8,6	10	D10086B47_FC	3xD	35	47	89
8,6	10	D10086B61_FC	5xD	49	61	103
8,7	10	D10087B47_FC	3xD	35	47	89
8,7	10	D10087B61_FC	5xD	49	61	103
8,8	10	D10088B47_FC	3xD	35	47	89
8,8	10	D10088B61_FC	5xD	49	61	103
8,9	10	D10089B47_FC	3xD	35	47	89
8,9	10	D10089B61_FC	5xD	49	61	103
9,0	10	D10090B47_FC	3xD	35	47	89
9,0	10	D10090B61_FC	5xD	49	61	103
9,1	10	D10091B47_FC	3xD	35	47	89
9,1	10	D10091B61_FC	5xD	49	61	103
9,2	10	D10092B47_FC	3xD	35	47	89
9,2	10	D10092B61_FC	5xD	49	61	103
9,3	10	D10093B47_FC	3xD	35	47	89
9,3	10	D10093B61_FC	5xD	49	61	103
9,4	10	D10094B47_FC	3xD	35	47	89
9,4	10	D10094B61_FC	5xD	49	61	103
9,5	10	D10095B47_FC	3xD	35	47	89
9,5	10	D10095B61_FC	5xD	49	61	103
9,6	10	D10096B47_FC	3xD	35	47	89
9,6	10	D10096B61_FC	5xD	49	61	103
9,7	10	D10097B47_FC	3xD	35	47	89
9,7	10	D10097B61_FC	5xD	49	61	103
9,8	10	D10098B47_FC	3xD	35	47	89
9,8	10	D10098B61_FC	5xD	49	61	103
9,9	10	D10099B47_FC	3xD	35	47	89
9,9	10	D10099B61_FC	5xD	49	61	103
10,0	10	D10100B47_FC	3xD	35	47	89
10,0	10	D10100B61_FC	5xD	49	61	103
10,1	12	D12101B55_FC	3xD	40	55	102
10,1	12	D12101B71_FC	5xD	56	71	118
10,2	12	D12102B55_FC	3xD	40	55	102
10,2	12	D12102B71_FC	5xD	56	71	118
10,3	12	D12103B55_FC	3xD	40	55	102
10,3	12	D12103B71_FC	5xD	56	71	118
10,4	12	D12104B55_FC	3xD	40	55	102
10,4	12	D12104B71_FC	5xD	56	71	118
10,5	12	D12105B55_FC	3xD	40	55	102
10,5	12	D12105B71_FC	5xD	56	71	118
10,6	12	D12106B55_FC	3xD	40	55	102
10,6	12	D12106B71_FC	5xD	56	71	118
10,7	12	D12107B55_FC	3xD	40	55	102
10,7	12	D12107B71_FC	5xD	56	71	118
10,8	12	D12108B55_FC	3xD	40	55	102
10,8	12	D12108B71_FC	5xD	56	71	118
10,9	12	D12109B55_FC	3xD	40	55	102
10,9	12	D12109B71_FC	5xD	56	71	118
11,0	12	D12110B55_FC	3xD	40	55	102
11,0	12	D12110B71_FC	5xD	56	71	118
11,1	12	D12111B55_FC	3xD	40	55	102
11,1	12	D12111B71_FC	5xD	56	71	118
11,2	12	D12112B55_FC	3xD	40	55	102
11,2	12	D12112B71_FC	5xD	56	71	118
11,3	12	D12113B55_FC	3xD	40	55	102
11,3	12	D12113B71_FC	5xD	56	71	118
11,4	12	D12114B55_FC	3xD	40	55	102

SOLID CARBIDE DRILLS

3xD, 5xD

SmiCut STS

D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
11,4	12	D12114B71_FC	5xD	56	71	118
11,5	12	D12115B55_FC	3xD	40	55	102
11,5	12	D12115B71_FC	5xD	56	71	118
11,6	12	D12116B55_FC	3xD	40	55	102
11,6	12	D12116B71_FC	5xD	56	71	118
11,7	12	D12117B55_FC	3xD	40	55	102
11,7	12	D12117B71_FC	5xD	56	71	118
11,8	12	D12118B55_FC	3xD	40	55	102
11,8	12	D12118B71_FC	5xD	56	71	118
11,9	12	D12119B55_FC	3xD	40	55	102
11,9	12	D12119B71_FC	5xD	56	71	118
12,0	12	D12120B55_FC	3xD	40	55	102
12,0	12	D12120B71_FC	5xD	56	71	118
12,5	14	D14125B60_FC	3xD	43	60	107
12,5	14	D14125B77_FC	5xD	60	77	124
13,0	14	D14130B60_FC	3xD	43	60	107
13,0	14	D14130B77_FC	5xD	60	77	124
13,5	14	D14135B60_FC	3xD	43	60	107
13,5	14	D14135B77_FC	5xD	60	77	124
14,0	14	D14140B60_FC	3xD	43	60	107
14,0	14	D14140B77_FC	5xD	60	77	124
14,5	16	D16145B65_FC	3xD	45	65	115
14,5	16	D16145B83_FC	5xD	63	83	133
15,0	16	D16150B65_FC	3xD	45	65	115
15,0	16	D16150B83_FC	5xD	63	83	133
15,5	16	D16155B65_FC	3xD	45	65	115
15,5	16	D16155B83_FC	5xD	63	83	133
16,0	16	D16160B65_FC	3xD	45	65	115
16,0	16	D16160B83_FC	5xD	63	83	133
16,5	18	D18165B73_FC	3xD	51	73	123
16,5	18	D18165B93_FC	5xD	71	93	143
17,0	18	D18170B73_FC	3xD	51	73	123
17,0	18	D18170B93_FC	5xD	71	93	143
17,5	18	D18175B73_FC	3xD	51	73	123
17,5	18	D18175B93_FC	5xD	71	93	143
18,0	18	D18180B73_FC	3xD	51	73	123
18,0	18	D18180B93_FC	5xD	71	93	143
18,5	20	D20185B79_FC	3xD	55	79	131
18,5	20	D20185B101_FC	5xD	77	101	153
19,0	20	D20190B79_FC	3xD	55	79	131
19,0	20	D20190B101_FC	5xD	77	101	153
19,5	20	D20195B79_FC	3xD	55	79	131
19,5	20	D20195B101_FC	5xD	77	101	153
20,0	20	D20200B79_FC	3xD	55	79	131
20,0	20	D20200B101_FC	5xD	77	101	153

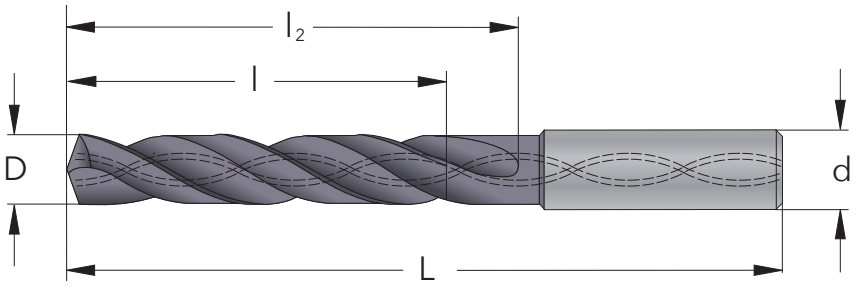
SmiCut STS

SOLID CARBIDE DRILLS

TiAlN

with Internal Coolant, 3xD, 5xD, 8xD

DIN 6537
FC
TiAlN coated
Super Micrograin Carbide
Tolerance
D m7
Shank
Cylindricalt h6, DIN 6535 HA
Flute
30° right hand spiral
140° point angle
Field of application
All types of steel



D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
3,0	6	DK06030B20_FC	3xD	14	20	62
3,0	6	DK06030B28_FC	5xD	23	28	66
3,0	6	DK06030B50_FC	8xD	38	50	95
3,1	6	DK06031B20_FC	3xD	14	20	62
3,1	6	DK06031B28_FC	5xD	23	28	66
3,2	6	DK06032B20_FC	3xD	14	20	62
3,2	6	DK06032B28_FC	5xD	23	28	66
3,3	6	DK06033B20_FC	3xD	14	20	62
3,3	6	DK06033B28_FC	5xD	23	28	66
3,4	6	DK06034B20_FC	3xD	14	20	62
3,4	6	DK06034B28_FC	5xD	23	28	66
3,5	6	DK06035B20_FC	3xD	14	20	62
3,5	6	DK06035B28_FC	5xD	23	28	66
3,5	6	DK06035B50_FC	8xD	38	50	95
3,6	6	DK06036B20_FC	3xD	14	20	62
3,6	6	DK06036B28_FC	5xD	23	28	66
3,7	6	DK06037B20_FC	3xD	14	20	62
3,7	6	DK06037B28_FC	5xD	23	28	66
3,8	6	DK06038B24_FC	3xD	17	24	66
3,8	6	DK06038B36_FC	5xD	29	36	74
3,9	6	DK06039B24_FC	3xD	17	24	66
3,9	6	DK06039B36_FC	5xD	29	36	74
4,0	6	DK06040B24_FC	3xD	17	24	66
4,0	6	DK06040B36_FC	5xD	29	36	74
4,0	6	DK06040B50_FC	8xD	38	50	95
4,1	6	DK06041B24_FC	3xD	17	24	66
4,1	6	DK06041B36_FC	5xD	29	36	74
4,2	6	DK06042B24_FC	3xD	17	24	66
4,2	6	DK06042B36_FC	5xD	29	36	74
4,3	6	DK06043B24_FC	3xD	17	24	66
4,3	6	DK06043B36_FC	5xD	29	36	74
4,4	6	DK06044B24_FC	3xD	17	24	66
4,4	6	DK06044B36_FC	5xD	29	36	74
4,5	6	DK06045B24_FC	3xD	17	24	66
4,5	6	DK06045B36_FC	5xD	29	36	74
4,5	6	DK06045B50_FC	8xD	38	50	95
4,6	6	DK06046B24_FC	3xD	17	24	66
4,6	6	DK06046B36_FC	5xD	29	36	74
4,7	6	DK06047B24_FC	3xD	17	24	66
4,7	6	DK06047B36_FC	5xD	29	36	74
4,8	6	DK06048B28_FC	3xD	20	28	66
4,8	6	DK06048B44_FC	5xD	35	44	82
4,9	6	DK06049B28_FC	3xD	20	28	66
4,9	6	DK06049B44_FC	5xD	35	44	82
5,0	6	DK06050B28_FC	3xD	20	28	66
5,0	6	DK06050B44_FC	5xD	35	44	82
5,0	6	DK06050B50_FC	8xD	38	50	95

SOLID CARBIDE DRILLS

with Internal Coolant, 3xD, 5xD, 8xD

SmiCut STS

D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
5,1	6	DK06051B28_FC	3xD	20	28	66
5,1	6	DK06051B44_FC	5xD	35	44	82
5,2	6	DK06052B28_FC	3xD	20	28	66
5,2	6	DK06052B44_FC	5xD	35	44	82
5,3	6	DK06053B28_FC	3xD	20	28	66
5,3	6	DK06053B44_FC	5xD	35	44	82
5,4	6	DK06054B28_FC	3xD	20	28	66
5,4	6	DK06054B44_FC	5xD	35	44	82
5,5	6	DK06055B28_FC	3xD	20	28	66
5,5	6	DK06055B44_FC	5xD	35	44	82
5,5	6	DK06055B50_FC	8xD	38	50	95
5,6	6	DK06056B28_FC	3xD	20	28	66
5,6	6	DK06056B44_FC	5xD	35	44	82
5,7	6	DK06057B28_FC	3xD	20	28	66
5,7	6	DK06057B44_FC	5xD	35	44	82
5,8	6	DK06058B28_FC	3xD	20	28	66
5,8	6	DK06058B44_FC	5xD	35	44	82
5,9	6	DK06059B28_FC	3xD	20	28	66
5,9	6	DK06059B44_FC	5xD	35	44	82
6,0	6	DK06060B28_FC	3xD	20	28	66
6,0	6	DK06060B44_FC	5xD	35	44	82
6,0	6	DK06060B50_FC	8xD	38	50	95
6,1	8	DK08061B34_FC	3xD	24	34	79
6,1	8	DK08061B53_FC	5xD	43	53	91
6,2	8	DK08062B34_FC	3xD	24	34	79
6,2	8	DK08062B53_FC	5xD	43	53	91
6,3	8	DK08063B34_FC	3xD	24	34	79
6,3	8	DK08063B53_FC	5xD	43	53	91
6,4	8	DK08064B34_FC	3xD	24	34	79
6,4	8	DK08064B53_FC	5xD	43	53	91
6,5	8	DK08065B34_FC	3xD	24	34	79
6,5	8	DK08065B53_FC	5xD	43	53	91
6,5	8	DK08065B66_FC	8xD	50	66	114
6,6	8	DK08066B34_FC	3xD	24	34	79
6,6	8	DK08066B53_FC	5xD	43	53	91
6,7	8	DK08067B34_FC	3xD	24	34	79
6,7	8	DK08067B53_FC	5xD	43	53	91
6,8	8	DK08068B34_FC	3xD	24	34	79
6,8	8	DK08068B53_FC	5xD	43	53	91
6,9	8	DK08069B34_FC	3xD	24	34	79
6,9	8	DK08069B53_FC	5xD	43	53	91
7,0	8	DK08070B34_FC	3xD	24	34	79
7,0	8	DK08070B53_FC	5xD	43	53	91
7,0	8	DK08070B76_FC	8xD	60	76	114
7,1	8	DK08071B41_FC	3xD	29	41	79
7,1	8	DK08071B53_FC	5xD	43	53	91
7,2	8	DK08072B41_FC	3xD	29	41	79
7,2	8	DK08072B53_FC	5xD	43	53	91
7,3	8	DK08073B41_FC	3xD	29	41	79
7,3	8	DK08073B53_FC	5xD	43	53	91
7,4	8	DK08074B41_FC	3xD	29	41	79
7,4	8	DK08074B53_FC	5xD	43	53	91
7,5	8	DK08075B41_FC	3xD	29	41	79
7,5	8	DK08075B53_FC	5xD	43	53	91
7,5	8	DK08075B76_FC	8xD	60	76	114
7,6	8	DK08076B41_FC	3xD	29	41	79
7,6	8	DK08076B53_FC	5xD	43	53	91
7,7	8	DK08077B41_FC	3xD	29	41	79
7,7	8	DK08077B53_FC	5xD	43	53	91
7,8	8	DK08078B41_FC	3xD	29	41	79
7,8	8	DK08078B53_FC	5xD	43	53	91

SmiCut STS

SOLID CARBIDE DRILLS

TiAlN

with Internal Coolant, 3xD, 5xD, 8xD

D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
7,9	8	DK08079B41_FC	3xD	29	41	79
7,9	8	DK08079B53_FC	5xD	43	53	91
8,0	8	DK08080B41_FC	3xD	29	41	79
8,0	8	DK08080B53_FC	5xD	43	53	91
8,0	8	DK08080B76_FC	8xD	60	76	114
8,1	10	DK10081B47_FC	3xD	35	47	89
8,1	10	DK10081B61_FC	5xD	49	61	103
8,2	10	DK10082B47_FC	3xD	35	47	89
8,2	10	DK10082B61_FC	5xD	49	61	103
8,3	10	DK10083B47_FC	3xD	35	47	89
8,3	10	DK10083B61_FC	5xD	49	61	103
8,4	10	DK10084B47_FC	3xD	35	47	89
8,4	10	DK10084B61_FC	5xD	49	61	103
8,5	10	DK10085B47_FC	3xD	35	47	89
8,5	10	DK10085B61_FC	5xD	49	61	103
8,5	10	DK10085B87_FC	8xD	68	87	142
8,6	10	DK10086B47_FC	3xD	35	47	89
8,6	10	DK10086B61_FC	5xD	49	61	103
8,7	10	DK10087B47_FC	3xD	35	47	89
8,7	10	DK10087B61_FC	5xD	49	61	103
8,8	10	DK10088B47_FC	3xD	35	47	89
8,8	10	DK10088B61_FC	5xD	49	61	103
8,9	10	DK10089B47_FC	3xD	35	47	89
8,9	10	DK10089B61_FC	5xD	49	61	103
9,0	10	DK10090B47_FC	3xD	35	47	89
9,0	10	DK10090B61_FC	5xD	49	61	103
9,0	10	DK10090B87_FC	8xD	68	87	142
9,1	10	DK10091B47_FC	3xD	35	47	89
9,1	10	DK10091B61_FC	5xD	49	61	103
9,2	10	DK10092B47_FC	3xD	35	47	89
9,2	10	DK10092B61_FC	5xD	49	61	103
9,3	10	DK10093B47_FC	3xD	35	47	89
9,3	10	DK10093B61_FC	5xD	49	61	103
9,4	10	DK10094B47_FC	3xD	35	47	89
9,4	10	DK10094B61_FC	5xD	49	61	103
9,5	10	DK10095B47_FC	3xD	35	47	89
9,5	10	DK10095B61_FC	5xD	49	61	103
9,5	10	DK10095B95_FC	8xD	76	95	142
9,6	10	DK10096B47_FC	3xD	35	47	89
9,6	10	DK10096B61_FC	5xD	49	61	103
9,7	10	DK10097B47_FC	3xD	35	47	89
9,7	10	DK10097B61_FC	5xD	49	61	103
9,8	10	DK10098B47_FC	3xD	35	47	89
9,8	10	DK10098B61_FC	5xD	49	61	103
9,9	10	DK10099B47_FC	3xD	35	47	89
9,9	10	DK10099B61_FC	5xD	49	61	103
10,0	10	DK10100B47_FC	3xD	35	47	89
10,0	10	DK10100B61_FC	5xD	49	61	103
10,0	10	DK10100B95_FC	8xD	76	95	142
10,1	12	DK12101B55_FC	3xD	40	55	102
10,1	12	DK12101B71_FC	5xD	56	71	118
10,2	12	DK12102B55_FC	3xD	40	55	102
10,2	12	DK12102B71_FC	5xD	56	71	118
10,3	12	DK12103B55_FC	3xD	40	55	102
10,3	12	DK12103B71_FC	5xD	56	71	118
10,4	12	DK12104B55_FC	3xD	40	55	102
10,4	12	DK12104B71_FC	5xD	56	71	118
10,5	12	DK12105B55_FC	3xD	40	55	102
10,5	12	DK12105B71_FC	5xD	56	71	118
10,5	12	DK12105B106_FC	8xD	82	106	162
10,6	12	DK12106B55_FC	3xD	40	55	102

SOLID CARBIDE DRILLS

with Internal Coolant, 3xD, 5xD, 8xD

SmiCut STS

D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
10,6	12	DK12106B71_FC	5xD	56	71	118
10,7	12	DK12107B55_FC	3xD	40	55	102
10,7	12	DK12107B71_FC	5xD	56	71	118
10,8	12	DK12108B55_FC	3xD	40	55	102
10,8	12	DK12108B71_FC	5xD	56	71	118
10,9	12	DK12109B55_FC	3xD	40	55	102
10,9	12	DK12109B71_FC	5xD	56	71	118
11,0	12	DK12110B55_FC	3xD	40	55	102
11,0	12	DK12110B71_FC	5xD	56	71	118
11,0	12	DK12110B106_FC	8xD	82	106	162
11,1	12	DK12111B55_FC	3xD	40	55	102
11,1	12	DK12111B71_FC	5xD	56	71	118
11,2	12	DK12112B55_FC	3xD	40	55	102
11,2	12	DK12112B71_FC	5xD	56	71	118
11,3	12	DK12113B55_FC	3xD	40	55	102
11,3	12	DK12113B71_FC	5xD	56	71	118
11,4	12	DK12114B55_FC	3xD	40	55	102
11,4	12	DK12114B71_FC	5xD	56	71	118
11,5	12	DK12115B55_FC	3xD	40	55	102
11,5	12	DK12115B71_FC	5xD	56	71	118
11,5	12	DK12115B114_FC	8xD	90	114	162
11,6	12	DK12116B55_FC	3xD	40	55	102
11,6	12	DK12116B71_FC	5xD	56	71	118
11,7	12	DK12117B55_FC	3xD	40	55	102
11,7	12	DK12117B71_FC	5xD	56	71	118
11,8	12	DK12118B55_FC	3xD	40	55	102
11,8	12	DK12118B71_FC	5xD	56	71	118
11,9	12	DK12119B55_FC	3xD	40	55	102
11,9	12	DK12119B71_FC	5xD	56	71	118
12,0	12	DK12120B55_FC	3xD	40	55	102
12,0	12	DK12120B71_FC	5xD	56	71	118
12,0	12	DK12120B114_FC	8xD	90	114	162
12,5	14	DK14125B60_FC	3xD	43	60	107
12,5	14	DK14125B77_FC	5xD	60	77	124
12,5	14	DK14125B133_FC	8xD	125	133	182
13,0	14	DK14130B60_FC	3xD	43	60	107
13,0	14	DK14130B77_FC	5xD	60	77	124
13,0	14	DK14130B133_FC	8xD	125	133	182
13,5	14	DK14135B60_FC	3xD	43	60	107
13,5	14	DK14135B77_FC	5xD	60	77	124
13,5	14	DK14135B133_FC	8xD	125	133	182
14,0	14	DK14140B60_FC	3xD	43	60	107
14,0	14	DK14140B77_FC	5xD	60	77	124
14,0	14	DK14140B133_FC	8xD	125	133	182
14,5	16	DK16145B65_FC	3xD	45	65	115
14,5	16	DK16145B83_FC	5xD	63	83	133
14,5	16	DK16145B152_FC	8xD	138	152	204
15,0	16	DK16150B65_FC	3xD	45	65	115
15,0	16	DK16150B83_FC	5xD	63	83	133
15,0	16	DK16150B152_FC	8xD	138	152	204
15,5	16	DK16155B65_FC	3xD	45	65	115
15,5	16	DK16155B83_FC	5xD	63	83	133
15,5	16	DK16155B152_FC	8xD	138	152	204
16,0	16	DK16160B65_FC	3xD	45	65	115
16,0	16	DK16160B83_FC	5xD	63	83	133
16,0	16	DK16160B152_FC	8xD	138	152	204
16,5	18	DK18165B73_FC	3xD	51	73	123
16,5	18	DK18165B93_FC	5xD	71	93	143
17,0	18	DK18170B73_FC	3xD	51	73	123
17,0	18	DK18170B93_FC	5xD	71	93	143
17,5	18	DK18175B73_FC	3xD	51	73	123

SmiCut STS

SOLID CARBIDE DRILLS

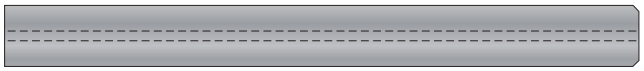
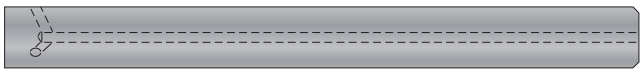
TiAlN

with Internal Coolant, 3xD, 5xD, 8xD

D mm	d mm	Part Number	Type	l mm	l_2 mm	L mm
17,5	18	DK18175B93_FC	5xD	71	93	143
18,0	18	DK18180B73_FC	3xD	51	73	123
18,0	18	DK18180B93_FC	5xD	71	93	143
18,5	20	DK20185B79_FC	3xD	55	79	131
18,5	20	DK20185B101_FC	5xD	77	101	153
19,0	20	DK20190B79_FC	3xD	55	79	131
19,0	20	DK20190B101_FC	5xD	77	101	153
19,5	20	DK20195B79_FC	3xD	55	79	131
19,5	20	DK20195B101_FC	5xD	77	101	153
20,0	20	DK20200B79_FC	3xD	55	79	131
20,0	20	DK20200B101_FC	5xD	77	101	153



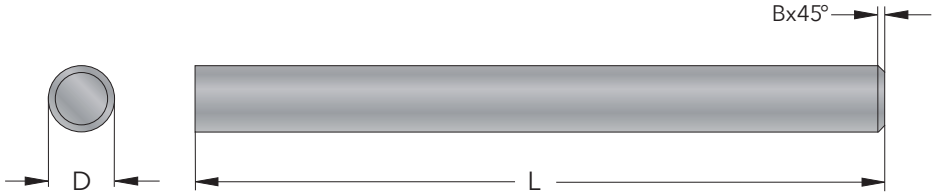
CARBIDE RODS
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Carbide Rods	124	
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Carbide Rods with Internal Radial Coolant	125	

CARBIDE RODS

Round Blanks

KXF
Micrograin Carbide
0,7µ, 10% Cobalt
Tolerance
h6, ground and polished

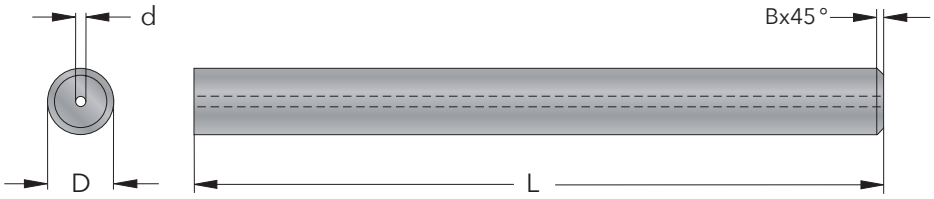


D mm	L mm	B mm	Part Number
3,0	39	0,3	Ø3X39_KXF
3,0	100	0,3	Ø3X100_KXF
3,0	320	0,3	Ø3X320_KXF
4,0	50	0,4	Ø4X50_KXF
4,0	100	0,4	Ø4X100_KXF
4,0	320	0,4	Ø4X320_KXF
5,0	100	0,4	Ø5X100_KXF
5,0	320	0,4	Ø5X320_KXF
6,0	63	0,4	Ø6X63_KXF
6,0	76	0,4	Ø6X76_KXF
6,0	100	0,4	Ø6X100_KXF
6,0	320	0,4	Ø6X320_KXF
8,0	63	0,5	Ø8X63_KXF
8,0	76	0,5	Ø8X76_KXF
8,0	100	0,5	Ø8X100_KXF
8,0	320	0,5	Ø8X320_KXF
10,0	76	0,5	Ø10X76_KXF
10,0	100	0,5	Ø10X100_KXF
10,0	320	0,5	Ø10X320_KXF
12,0	83	0,5	Ø12X83_KXF
12,0	100	0,5	Ø12X100_KXF
12,0	320	0,5	Ø12X320_KXF
14,0	89	0,8	Ø14X89_KXF
14,0	100	0,8	Ø14X100_KXF
14,0	320	0,8	Ø14X320_KXF
16,0	89	0,8	Ø16X89_KXF
16,0	100	0,8	Ø16X100_KXF
16,0	120	0,8	Ø16X120_KXF
16,0	320	0,8	Ø16X320_KXF
18,0	100	0,8	Ø18X100_KXF
18,0	130	0,8	Ø18X130_KXF
18,0	320	0,8	Ø18X320_KXF
20,0	100	1,0	Ø20X100_KXF
20,0	120	1,0	Ø20X120_KXF
20,0	150	1,0	Ø20X150_KXF
20,0	320	1,0	Ø20X320_KXF
25,0	100	1,0	Ø25X100_KXF
25,0	120	1,0	Ø25X120_KXF
25,0	130	1,0	Ø25X130_KXF
25,0	150	1,0	Ø25X150_KXF
25,0	320	1,0	Ø25X320_KXF
32,0	150	1,0	Ø32X150_KXF
32,0	320	1,0	Ø32X320_KXF
40,0	170	1,0	Ø40X170_KXF

CARBIDE RODS

with Internal Coolant

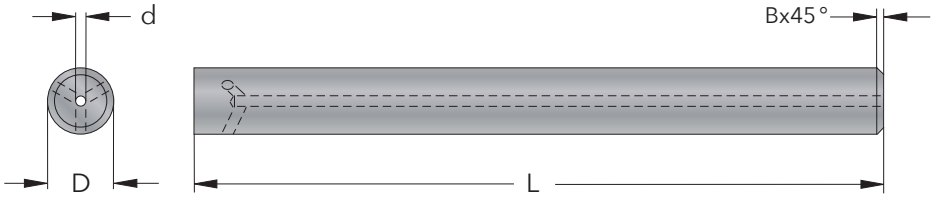
KXF
Micrograin Carbide
0,7µ, 10% Cobalt
Tolerance
h6, ground and polished



D mm	L mm	d mm	B mm	Part Number
4	50	0,6	0,4	Ø4X50Ø0.6_KXF
6	63	1	0,4	Ø6X63Ø1_KXF
8	76	1,3	0,5	Ø8X76Ø1.3_KXF
10	100	2	0,5	Ø10X100Ø2_KXF
12	100	2	0,5	Ø12X100Ø2_KXF
14	100	2	0,8	Ø14X100Ø2_KXF
16	120	3	0,8	Ø16X120Ø3_KXF
20	150	3	1,0	Ø20X150Ø3_KXF

with Internal Radial Coolant

KXF
Micrograin Carbide
0,7µ, 10% Cobalt
Tolerance
h6, ground and polished



D mm	L mm	d mm	No. of holes	B mm	Part Number
6	76	1	3	0,5	Ø6X76Ø1C_KXF
8	76	1,2	3	1,0	Ø8X76Ø1.2C_KXF
8	76	1,2	4	1,0	Ø8X76Ø1.2D_KXF
10	100	1,2	3	1,0	Ø10X100Ø1.2C_KXF
10	100	1,2	4	1,0	Ø10X100Ø1.2D_KXF
12	100	1,5	4	1,0	Ø12X100Ø1.5D_KXF
16	100	1,5	4	1,5	Ø16X100Ø1.5D_KXF
16	100	1,5	5	1,5	Ø16X100Ø1.5E_KXF

SmiCut supply rectangular carbide rods

THREAD DESIGNATIONS

Metric

M

M16 x 1.5 - 5g6g - LH

- Thread profile according to ISO metric standard
- Major diameter
- Pitch
- Tolerance grade for pitch diameter
- Tolerance position for pitch diameter
- Tolerance grade for major diameter
- Tolerance position for major diameter
- Left or right handed thread

All types and tolerance classes can be produced with ISO metric thread turning and thread milling tools.

For coarse threads, the pitch is not written as it is determined of the diameter, for example M16 instead of M16 x 2.

If the tolerance grade and position is the same for pitch and major diameter, it is written only once, for example 6h instead of 6h6h. Small letter for external threads and capital letter for internal threads. If no tolerance class is written, it means that the tolerance is 6H/6g. Slash between tolerances provide information about the internal and external thread.

It is not necessary to write RH for right hand thread as almost all threads are right handed.

M16 is a simplified writing of M16 x 2 - 6H/6g - RH.

Thread Profile Depth	
external	0,613 x pitch
internal	0,541 x pitch

Major diameter mm			Pitch mm
Serie 1	Serie 2	Serie 3	
M1			0,25
	M1,1		0,25
M1,2			0,25
	M1,4		0,3
M1,6			0,35
	M1,8		0,35
M2			0,4
	M2,2		0,45
M2,5			0,45
M3			0,5
	M3,5		0,6
M4			0,7
	M4,5		0,75
M5			0,8
M6			1
		M7	1
M8			1,25
		M9	1,25
M10			1,5
		M11	1,5
M12			1,75
	M14		2
M16			2
	M18		2,5
M20			2,5
	M22		2,5
M24			3
	M27		3
M30			3,5
	M33		3,5
M36			4
	M39		4
M42			4,5
	M45		4,5
M48			5
	M52		5
M56			5,5
	M60		5,5
M64			6
	M68		6

UN THREAD DESIGNATIONS

Unified

SmiCut STS

1/4 - 20 UNC - 2A - LH

- Major diameter in inches
- Pitch in threads per inch (TPI)
- Thread profile according to ISO inch standard, UN unified
- Coarse, fine or extra fine pitch
- Tolerance class
- External or internal thread
- Left or right handed thread

All types and tolerance classes can be produced with UN unified thread turning and thread milling tools.

When the thread is smaller than 1/4", the diameter is given with a number from No. 0 to No. 12 (No. # x 0.013" + 0.060").

Mostly, the pitch is not written as it is determined of the diameter for UNC, UNF and UNEF threads.

If no tolerance class is written, it means that the tolerance is 2A for external threads and 2B for internal.

It is not necessary to write RH for right hand thread as almost all threads are right handed.

1/4 - UNC is a simplified writing of 1/4 - 20 UNC - 2A/2B - RH.

UNC	thread with coarse pitch
UNF	thread with fine pitch
UNEF	thread with extra fine pitch
UN	thread with constant pitch

	external	internal
Loose tolerance	1A	1B
Medium tolerance	2A	2B
Tight tolerance	3A	3B

Thread Profile Depth

external	15,581 / TPI
internal	13,748 / TPI

Thread	Diameter mm	Pitch TPI UNC	UNF	UNEF
No. 0	1,524	80	-	-
No. 1	1,854	64	72	-
No. 2	2,184	56	64	-
No. 3	2,515	48	56	-
No. 4	2,845	40	48	-
No. 5	3,175	40	44	-
No. 6	3,505	32	40	-
No. 8	4,166	32	36	-
No. 10	4,826	24	32	-
No. 12	5,486	24	28	32
1/4	6,350	20	28	32
5/16	7,937	18	24	32
3/8	9,525	16	24	32
7/16	11,112	14	20	28
1/2	12,700	13	20	28
9/16	14,287	12	18	24
5/8	15,875	11	18	24
3/4	19,050	10	16	20
7/8	22,225	9	14	20
1	25,400	8	12	20
1 1/16	26,988	-	-	18
1 1/8	28,575	7	12	18
1 3/16	30,162	-	-	18
1 1/4	31,750	7	12	18
1 5/16	33,338	-	-	18
1 3/8	34,925	6	12	18
1 7/16	36,512	-	-	18
1 1/2	38,100	6	12	18
1 9/16	39,688	-	-	18
1 5/8	41,275	-	-	18
1 11/16	42,862	-	-	18
1 3/4	44,450	5	-	-
2	50,800	4 1/2	-	-
2 1/4	57,150	4 1/2	-	-
2 1/2	63,500	4	-	-
2 3/4	69,850	4	-	-
3	76,200	4	-	-
3 1/4	82,550	4	-	-
3 1/2	88,900	4	-	-
3 3/4	95,250	4	-	-
4	101,600	4	-	-

THREAD DESIGNATIONS

British Standard Pipe Thread

G/R

G 1/2 A - LH

- G - Cylindrical pipe thread, ISO 228/1
- R - Conical pipe thread, ISO 7/1
- Pipe diameter, not thread diameter
- Tolerance class for external thread
- Left or right handed thread

G - Whitworth / BSPP (P=parallel) Pipe Thread

All types and tolerance classes can be produced with W (Whitworth) thread turning and thread milling tools.

	external	internal
Loose tolerance	A	only one
Tight tolerance	B	class

To get a pressure tight-joint you need a seal ring between the shoulder of the external thread and the face of the internal thread.

R - Whitworth / BSPT (T=tapered) Pipe Thread

All types and tolerance classes of conical threads can be produced with BSPT threading tools.

Rp	Internal cylindrical pipe thread
Rc	Internal conical pipe thread
R	External conical pipe thread

As the thread is conical it will be almost a pressure tight-joint, but to improve the sealing effect you need to use a thread seal tape.

Pitch is not written as it is determined of the diameter.

It is not necessary to write RH for right hand thread as almost all threads are right handed.

Thread Profile Depth	
external	16,256 / TPI
internal	16,256 / TPI

Thread	Pipe diameter	Pitch TPI
1/16	7,723	28
1/8	9,728	28
1/4	13,157	19
3/8	16,662	19
1/2	20,955	14
5/8*	22,911	14
3/4	26,441	14
7/8*	30,201	14
1	33,249	11
1 1/8*	37,897	11
1 1/4	41,910	11
1 1/2	47,803	11
1 3/4*	53,746	11
2	59,614	11
2 1/4*	65,710	11
2 1/2	75,184	11
2 3/4*	81,534	11
3	87,884	11
3 1/2*	100,330	11
4	113,030	11
4 1/2*	125,730	11
5	138,430	11
5 1/2*	151,130	11
6	163,830	11

*This dimension is only for G