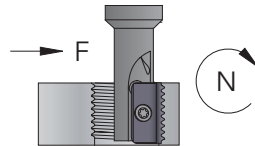
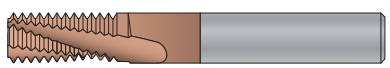
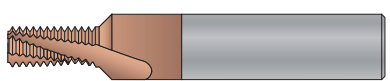
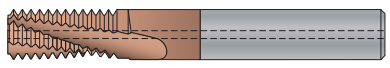
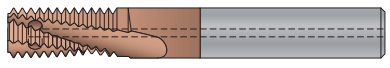
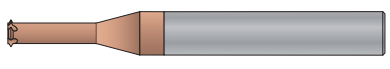
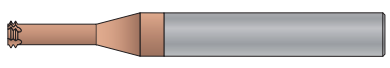


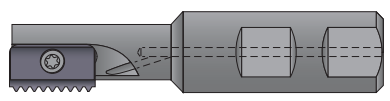
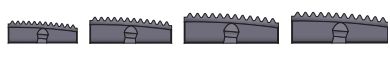
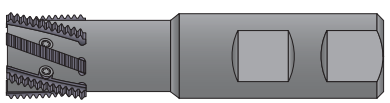


# THREAD MILLING

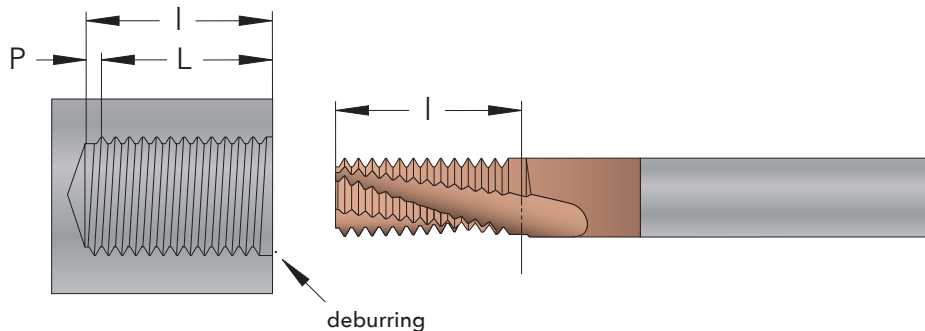
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## ThreadBurr

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 don't use the deburring function. ThreadBurr is standard on all thread mills from SmiCut.

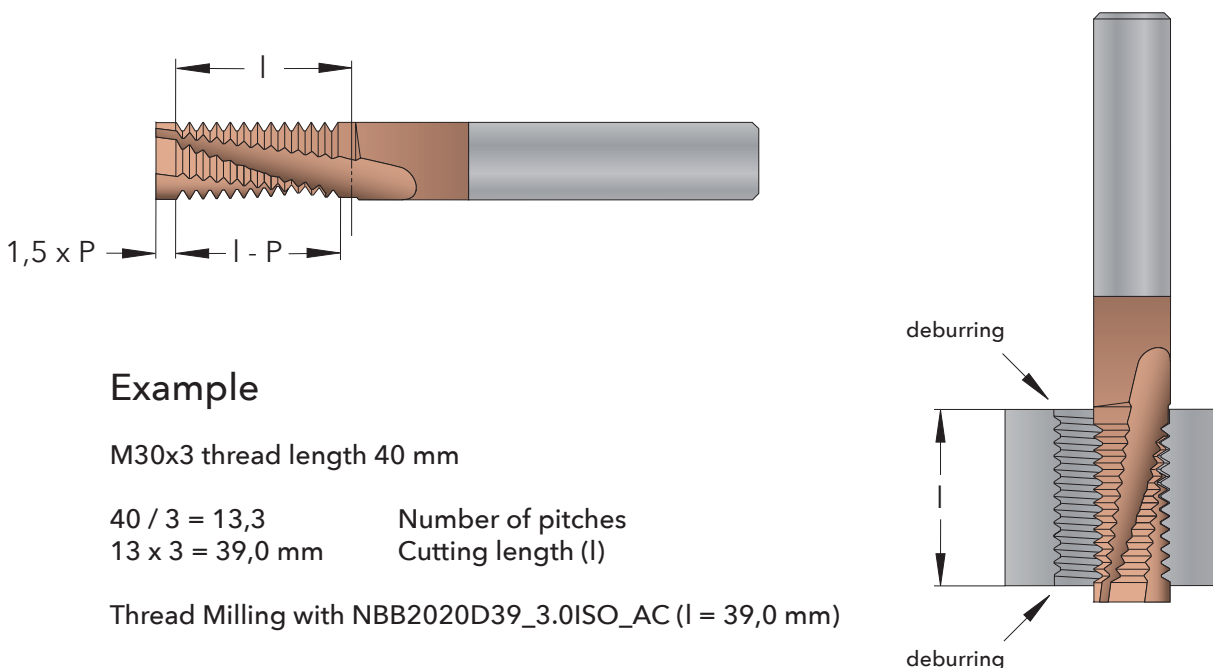


To get a nice entry and a burr free thread you need to start out with going to full depth (l) in to the hole before starting the threading operation. The thread length (L) will be the cutting length (l) minus one pitch (P).

## 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.



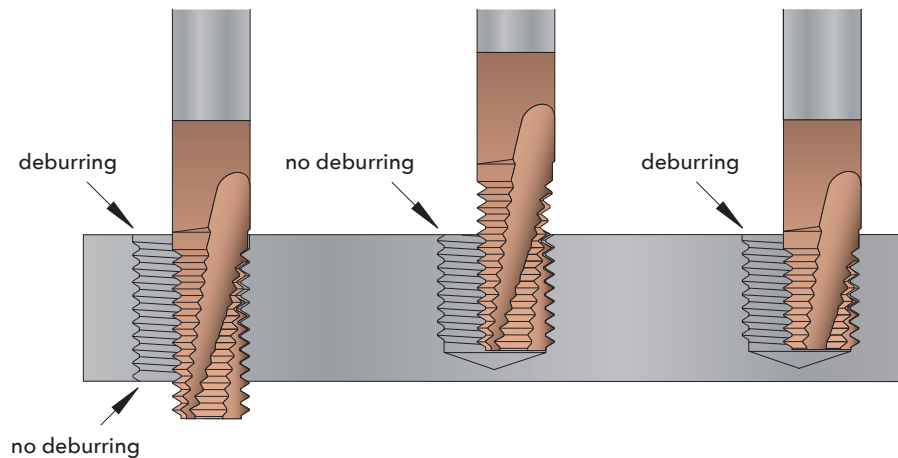
### Example

M30x3 thread length 40 mm

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

Thread Milling with NBB2020D39\_3.0ISO\_AC (l = 39,0 mm)

## ThreadBurr



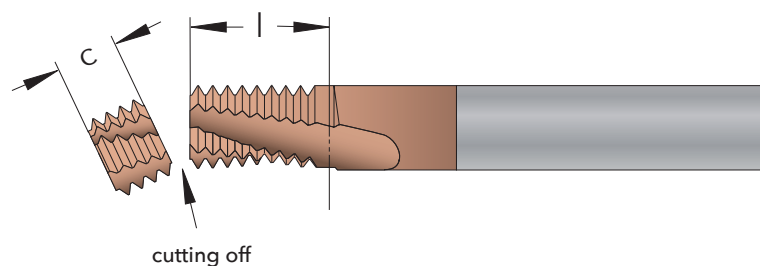
## Through holes

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
$2 \times 1,5 = 3,0$ 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 off the tool when you want to use the deburring function on blind holes and if there is no standard tool with suitable cutting length.

## 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.

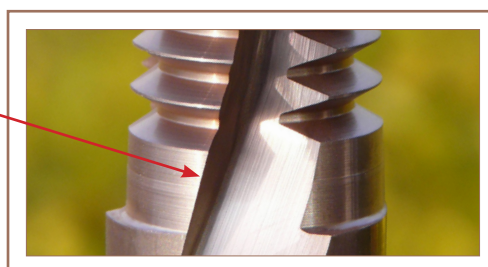
### ■ 10) Shorter machining time

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.

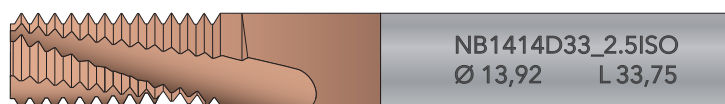
- 1) SmiCut Catalogue
- 2) SmiCut Online Store, [www.smicutstore.se](http://www.smicutstore.se) (see page 8)
- 3) SmiProg Software, [www.smicut.se](http://www.smicut.se) (see page 9)

### 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 marked 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.

### 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](http://www.smicutstore.se) and you will very quickly find suitable tools.

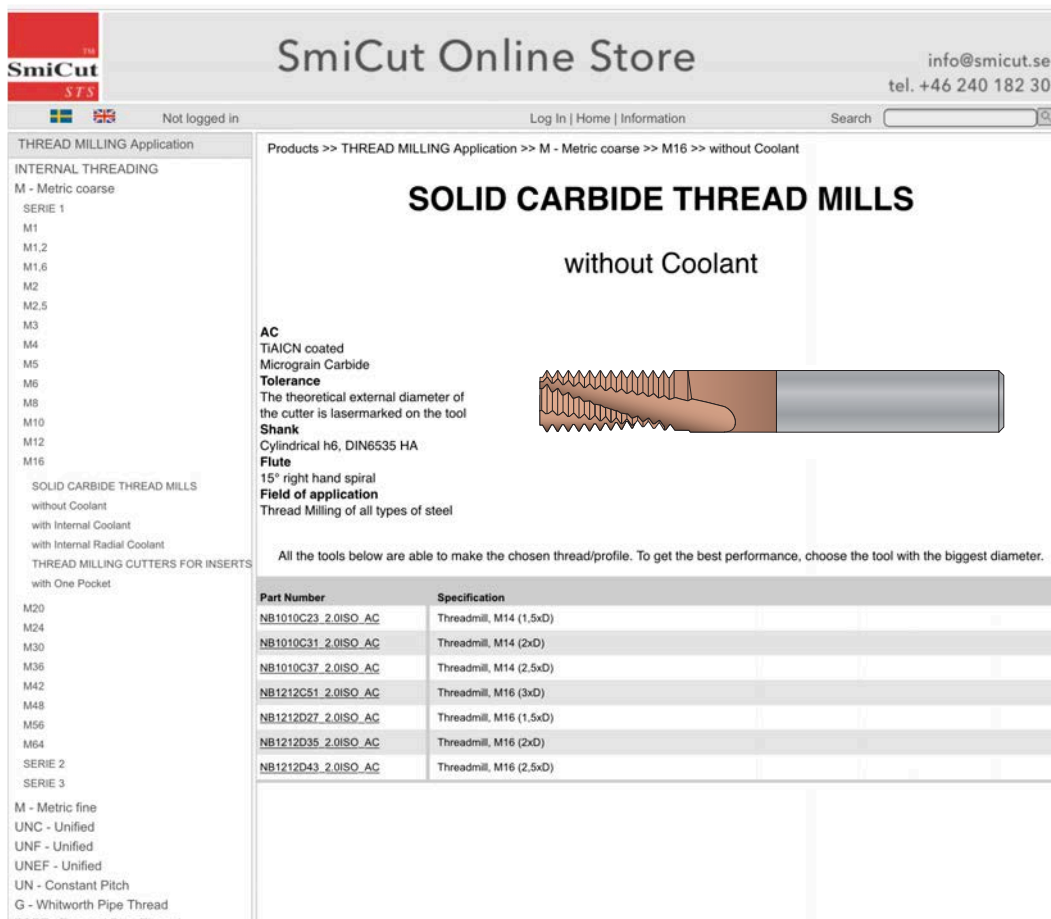
Example: M16 with thread length 32 mm

- 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).



**SmiCut Online Store** info@smicut.se  
tel. +46 240 182 30

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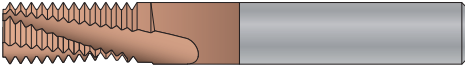
THREAD MILLING Application  
INTERNAL THREADING  
M - Metric coarse  
SERIE 1  
M1  
M1.2  
M1.6  
M2  
M2.5  
M3  
M4  
M5  
M6  
M8  
M10  
M12  
M16  
SOLID CARBIDE THREAD MILLS  
without Coolant  
with Internal Coolant  
with Internal Radial Coolant  
THREAD MILLING CUTTERS FOR INSERTS  
with One Pocket  
M20  
M24  
M30  
M36  
M42  
M48  
M56  
M64  
SERIE 2  
SERIE 3  
M - Metric fine  
UNC - Unified  
UNF - Unified  
UNEF - Unified  
UN - Constant Pitch  
G - Whitworth Pipe Thread  
BPT - Thread Pipe Thread

Products >> THREAD MILLING Application >> M - Metric coarse >> M16 >> without Coolant

### SOLID CARBIDE THREAD MILLS

without 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



All the tools below are able to make the chosen thread/profile. To get the best performance, choose the tool with the biggest diameter.

Part Number	Specification
NB1010C23_2.0ISO_AC	Threadmill, M14 (1.5xD)
NB1010C31_2.0ISO_AC	Threadmill, M14 (2xD)
NB1010C37_2.0ISO_AC	Threadmill, M14 (2.5xD)
NB1212C51_2.0ISO_AC	Threadmill, M16 (3xD)
NB1212D27_2.0ISO_AC	Threadmill, M16 (1.5xD)
NB1212D35_2.0ISO_AC	Threadmill, M16 (2xD)
NB1212D43_2.0ISO_AC	Threadmill, M16 (2.5xD)

## 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 receive 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](http://www.smicut.se)

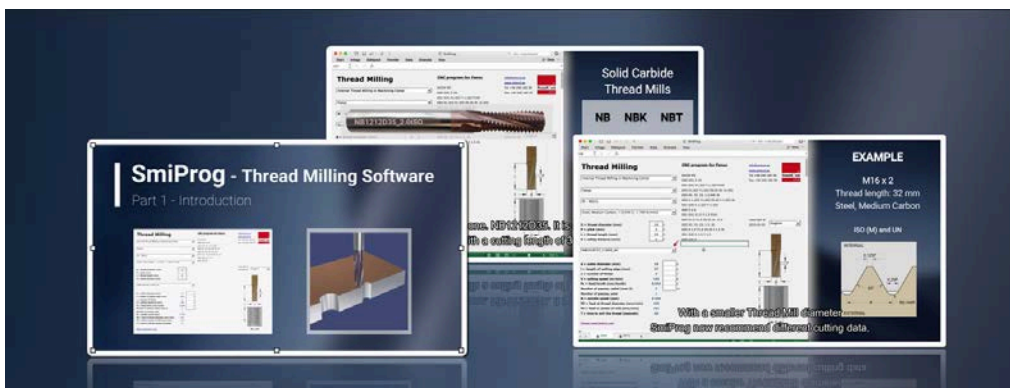
### Choose among these languages

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

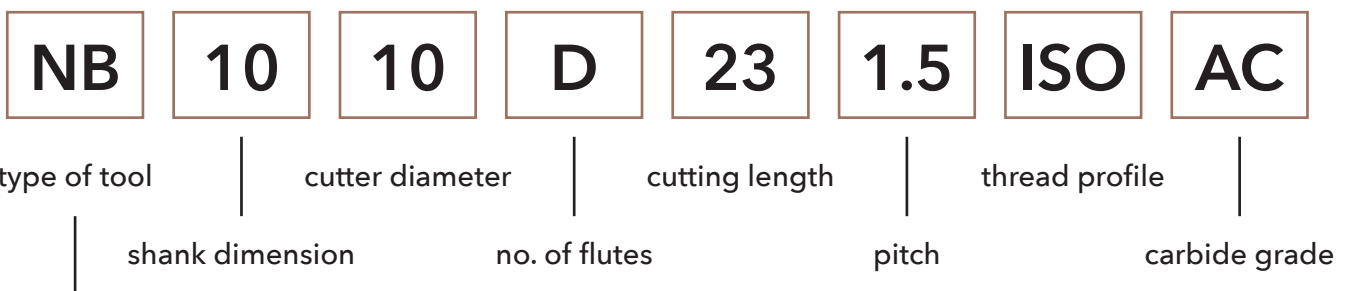
### Tutorial Video Series

Learn how to use SmiProg and our Thread Mills with video tutorials. Following videos are available. More parts will be uploaded in the future.

- Part 1: Introduction
- Part 2: The Basic Features
- Part 3: ThreadBurr & Correct Diameter



### Code Key



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

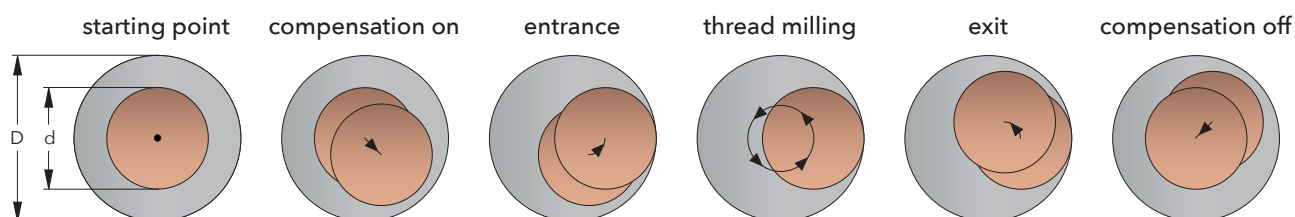
- C = three flute
- D = four flute
- E = five flute
- F = six flute

## Cutting Speed ( $V_c$ ) and Material Factor ( $F_m$ )

MATERIAL		Hardness HB	Tensile Strength N/mm <sup>2</sup>	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





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/mm<sup>2</sup>  
 Thread Milling with NB1616C40\_3.0ISO\_AC  
 $B = 0,54 \times 3 = 1,62$  mm  
 $B/d = 1,62/16 = 0,10$   
 $L/d = 36/16 = 2,25$   
 $F_z = 1,2 \times 0,61 \times 0,067 = 0,049$   
 $n = (160 \times 1000) / (\pi \times 16) = 3183$  rpm  
 $V_{fD} = 0,049 \times 3 \times 3183 = 468$  mm/min  
 $V_{fd} = 468 \times (24-16) / 24 = 156$  mm/min  
 $T = (278 \times 24) / 468 = 14$  seconds

$B = 0,54 \times P$

$F_z = F_m \times F_e \times F_d$

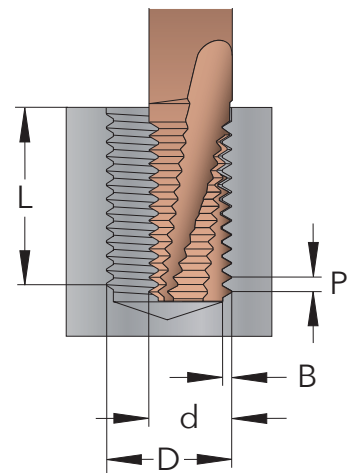
$n = \frac{V_c \times 1000}{\pi \times d}$

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

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

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

- D = thread diameter (mm)
- L = thread length (mm)
- d = cutter diameter (mm)
- B = depth of profile (mm)
- P = pitch (mm)
- z = no. of flutes
- $F_z$  = feed / flute (mm/flute)
- n = spindle speed (rpm)
- $V_c$  = cutting speed (m/min)
- $V_{fD}$  = feed at thread diameter  $\varnothing$  (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.

## ThreadBurr

**AC**

TiAlCN coated  
Micrograin Carbide

**Tolerance**

The theoretical external diameter of the cutter is lasermarked on the tool.

**Shank**

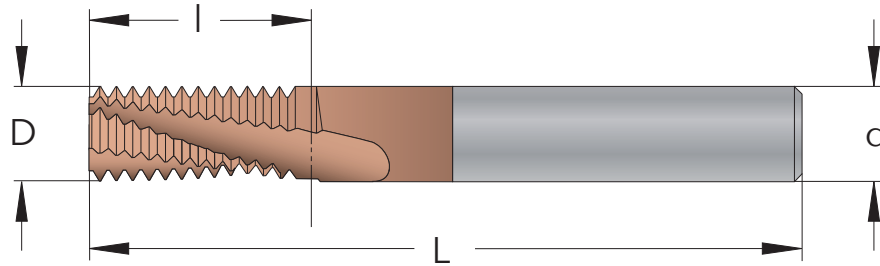
Cylindrical h6, DIN6535 HA

**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	No. of Flutes	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	1,65	3	3,82	50
0,45	M2,2 (2xD)		NB04016C5_0.45ISO_AC	4	1,65	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)	≥ M3,5	NB04023C5_0.5ISO_AC	4	2,3	3	5,25	50
0,5	M3 (2xD)	≥ M3,5	NB04023C6_0.5ISO_AC	4	2,3	3	6,75	50
0,5	M3 (2,5xD)	≥ M3,5	NB04023C8_0.5ISO_AC	4	2,3	3	8,25	50
0,5	M3 (1,5xD)	≥ M3,5	NB06023C5_0.5ISO_AC	6	2,3	3	5,25	63
0,5	M3 (2xD)	≥ M3,5	NB06023C6_0.5ISO_AC	6	2,3	3	6,75	63
0,5	M3 (2,5xD)	≥ M3,5	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)	≥ M5	NB04034C7_0.75ISO_AC	4	3,4	3	7,87	50
0,75	M4,5 (2xD)	≥ M5	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	M6 (1,5xD)	≥ M8	NB06045C10_1.0ISO_AC	6	4,5	3	10,5	63
1	M6 (2xD)	≥ M8	NB06045C13_1.0ISO_AC	6	4,5	3	13,5	63
1	M6 (2,5xD)	≥ M8	NB06045C16_1.0ISO_AC	6	4,5	3	16,5	63
1	M6 (3xD)	≥ M8	NB06045C19_1.0ISO_AC	6	4,5	3	19,5	63
1		≥ M8	NB0606C10_1.0ISO_AC	6	6	3	10,5	63
1		≥ M8	NB0606C13_1.0ISO_AC	6	6	3	13,5	63
1		≥ M10	NB0808D10_1.0ISO_AC	8	8	4	10,5	63
1		≥ M10	NB0808D13_1.0ISO_AC	8	8	4	13,5	63
1		≥ M10	NB0808D17_1.0ISO_AC	8	8	4	17,5	63
1		≥ M12	NB1010E14_1.0ISO_AC	10	10	5	14,5	76
1		≥ M12	NB1010E19_1.0ISO_AC	10	10	5	19,5	76
1		≥ M14	NB1212F15_1.0ISO_AC	12	12	6	15,5	83
1		≥ 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	No. of Flutes	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	NB1212E15_1.5ISO_AC	12	12	5	15,75	83
1,5		≥ M16	NB1212E21_1.5ISO_AC	12	12	5	21,75	83
1,5		≥ M16	NB1212E29_1.5ISO_AC	12	12	5	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	M14 (1,5xD)	≥ M18	NB1010C23_2.0ISO_AC	10	10	3	23	76
2	M14 (2xD)	≥ M18	NB1010C31_2.0ISO_AC	10	10	3	31	100
2	M14 (2,5xD)	≥ M18	NB1010C37_2.0ISO_AC	10	10	3	37	100
2	M16 (1,5xD)	≥ M18	NB1212D27_2.0ISO_AC	12	12	4	27	83
2	M16 (2xD)	≥ M18	NB1212D35_2.0ISO_AC	12	12	4	35	100
2	M16 (2,5xD)	≥ M18	NB1212D43_2.0ISO_AC	12	12	4	43	100
2	M16 (3xD)	≥ M18	NB1212C51_2.0ISO_AC	12	12	3	51	100
2		≥ M20	NB1616E29_2.0ISO_AC	16	16	5	29	89
2		≥ M20	NB1616E39_2.0ISO_AC	16	16	5	39	100
2		≥ M24	NB2020F43_2.0ISO_AC	20	20	6	43	100
2		≥ M24	NB2020F57_2.0ISO_AC	20	20	6	57	120
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	M24 (1,5xD)	≥ M30	NB1616C40_3.0ISO_AC	16	16	3	40,5	100
3	M24 (2xD)	≥ M30	NB1616C52_3.0ISO_AC	16	16	3	52,5	120
3	M24 (2,5xD)	≥ M30	NB1818C64_3.0ISO_AC	18	18	3	64,5	130
3		≥ M30	NB2020D46_3.0ISO_AC	20	20	4	46,5	120
3		≥ M30	NB2020D61_3.0ISO_AC	20	20	4	61,5	150
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
4	M36 (1,5xD)	≥ M42	NB2020C58_4.0ISO_AC	20	20	3	58	150

## M

## METRIC (external)

Pitch mm	EXTERNAL Part Number	d mm	D mm	No. of Flutes	l mm	L mm
1,0	EB1010E21_1.0ISO_AC	10	10	5	21,5	76
1,5	EB1212E26_1.5ISO_AC	12	12	5	26,25	83
2,0	EB1616E35_2.0ISO_AC	16	16	5	35	100

## UN

## UNIFIED

Pitch TPI	UNC	UNF	INTERNAL Part Number	d mm	D mm	No. of Flutes	l mm	L mm
64		No. 2 (1,5xD)	NB04017C3_64UN_AC	4	1,7	3	3,77	50
64		No. 2 (2xD)	NB04017C5_64UN_AC	4	1,7	3	4,96	50
56	No. 2 (1,5xD)		NB04016C3_56UN_AC	4	1,6	3	3,86	50
56	No. 2 (2xD)		NB04016C5_56UN_AC	4	1,6	3	5,22	50
56		No. 3 (1,5xD)	NB04019C4_56UN_AC	4	1,9	3	4,31	50
56		No. 3 (2xD)	NB04019C5_56UN_AC	4	1,9	3	5,67	50
48	No. 3 (1,5xD)		NB04019C4_48UN_AC	4	1,9	3	4,5	50
48	No. 3 (2xD)		NB04019C5_48UN_AC	4	1,9	3	5,56	50
48		No. 4 (1,5xD)	NB04021C5_48UN_AC	4	2,1	3	5,03	50
48		No. 4 (2xD)	NB04021C6_48UN_AC	4	2,1	3	6,61	50
44		No.5 (1,5xD)	NB04024C5_44UN_AC	4	2,4	3	5,48	50
44		No.5 (2xD)	NB04024C7_44UN_AC	4	2,4	3	7,22	50
40	No. 4 (1,5xD)		NB04021C5_40UN_AC	4	2,1	3	5,4	50
40	No. 4 (2xD)		NB04021C6_40UN_AC	4	2,1	3	6,67	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
40		No.6 (2xD)	NB04026C8_40UN_AC	4	2,6	3	7,94	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)		NB04036C9_24UN_AC	4	3,6	3	9	50
24	No.10 (2xD)		NB04036C11_24UN_AC	4	3,6	3	11,11	50
24	No.10 (2,5xD)		NB04036C13_24UN_AC	4	3,6	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

continue

## UN

## UNIFIED

Pitch TPI	UNC	UNF	INTERNAL Part Number	d mm	D mm	No. of Flutes	l mm	L mm
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
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	No. of Flutes	l mm	L mm
28	G 1/16 - 1/8	XB0606C10_28W_AC	6	6	3	10,43	63
28	G 1/8	XB0808D14_28W_AC	8	8	4	14,06	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	No. of Flutes	l mm	L mm
28	Rc 1/16 - 1/8	XB0606C10_28BSPT_AC	6	6	3	10,43	63
28	Rc 1/8	XB0808D14_28BSPT_AC	8	8	4	14,06	63
19	Rc 1/4 - 3/8	XB0808C15_19BSPT_AC	8	8	3	15,37	63
19	Rc 1/4 - 3/8	XB1010D22_19BSPT_AC	10	10	4	22,06	76
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	No. of Flutes	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	No. of Flutes	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	No. of Flutes	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
18	1/4 - 3/8	XB1010D16_18NPT_AC	10	10	4	16,23	76
14	1/2 - 3/4	XB1212D22_14NPT_AC	12	12	4	22,68	83
14	3/4	XB1616E22_14NPT_AC	16	16	5	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

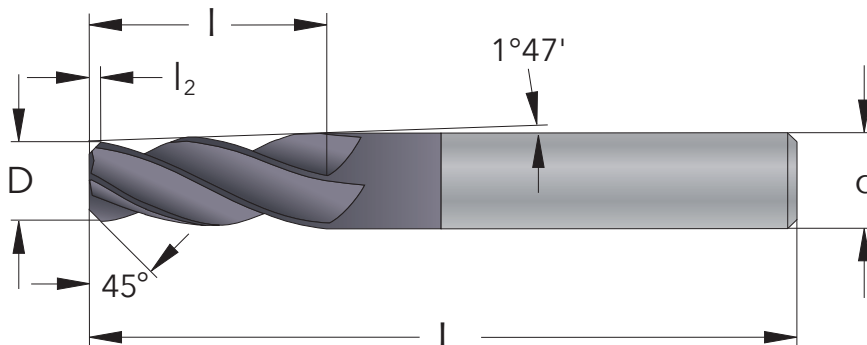
## NPTF

### NPTF DRYSEAL PIPE THREAD

Pitch TPI	Standard	INTERNAL / EXTERNAL Part Number	d mm	D mm	No. of Flutes	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	No. of Flutes	l mm	l <sub>2</sub> 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

## with Chamfer

**AC**

TiAlCN coated  
Micrograin Carbide

**Tolerance**

The theoretical external diameter of the cutter is lasermarked on the tool.

**Shank**

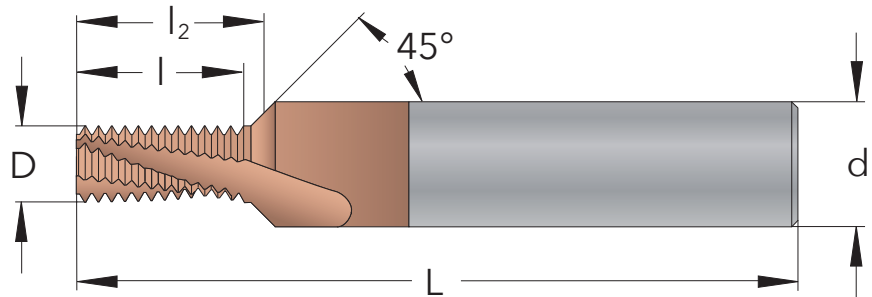
Cylindrical h6, DIN6535 HA

**Flute**

15° right hand spiral

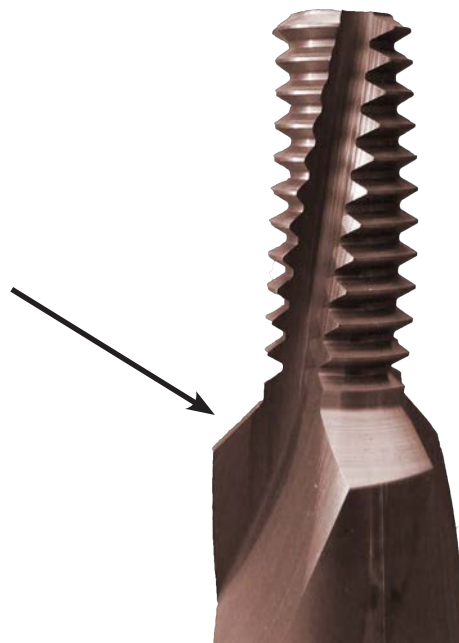
**Field of application**

Thread Milling of all types of steel

**M****METRIC**

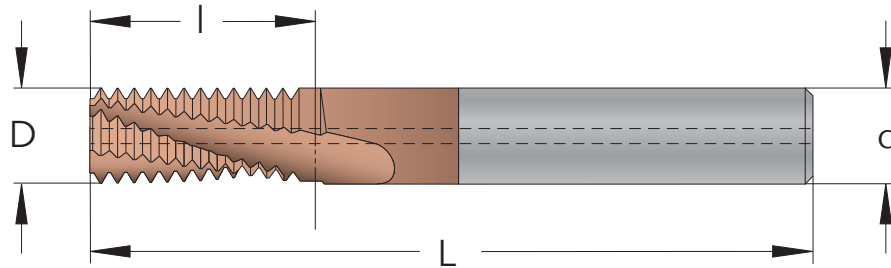
Pitch mm	M coarse	INTERNAL Part Number	d mm	D mm	No. of Flutes	l mm	l <sub>2</sub> mm	L mm
0,5	M3 (1,5xD)	NF06023C5_0.5ISO_AC	6	2,3	3	5,25	5,85	63
0,5	M3 (2xD)	NF06023C6_0.5ISO_AC	6	2,3	3	6,75	7,35	63
0,5	M3 (2,5xD)	NF06023C8_0.5ISO_AC	6	2,3	3	8,25	8,85	63
0,5	M3 (3xD)	NF06023C9_0.5ISO_AC	6	2,3	3	9,75	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



## ThreadBurr with Internal Coolant

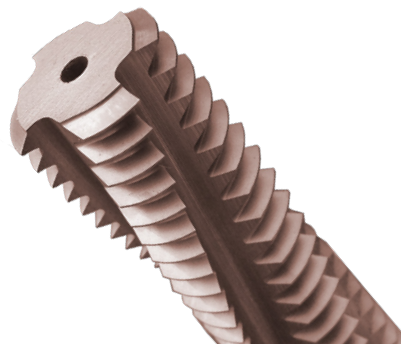
**AC**  
 TiAlCN coated  
 Micrograin Carbide  
**Tolerance**  
 The theoretical external diameter of the cutter is lasermarked on the tool.  
**Shank**  
 Cylindrical h6, DIN6535 HA  
**Flute**  
 15° right hand spiral  
**Field of application**  
 Thread Milling of all types of steel



### M METRIC

Pitch mm	M coarse	M fine	INTERNAL Part Number	d mm	D mm	No. of Flutes	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	NBK1212E29_1.5ISO_AC	12	12	5	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**

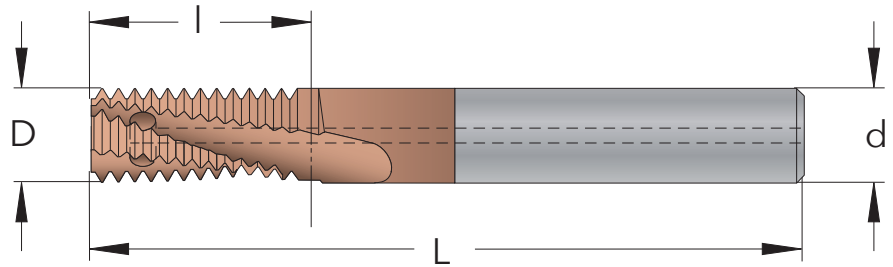
Cylindrical h6, DIN6535 HA

**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	No. of Flutes	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	NBT1212E29_1.5ISO_AC	12	12	5	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	No. of Flutes	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



## with One Tooth

**AC / LC**

TiAlCN / AlCrN coated  
Micrograin Carbide

**Tolerance**

D 0,3 - 6,0 +0 / -0,020  
D 7,0 - 12,0 +0 / -0,030

**Shank**

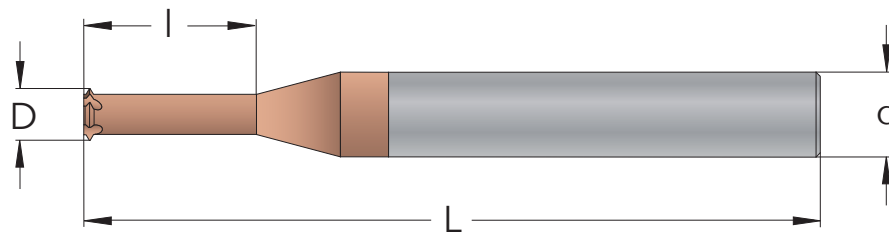
Cylindrical h6, DIN6535 HA

**Flute**

15° right hand spiral

**Field of application**

Thread Milling of all types of steel



## 60°

### PARTIAL PROFILE 60°

M coarse	M pitch mm	UNC	UNF	UN pitch TPI	INTERNAL Part Number	d mm	D mm	No. of Flutes	l mm	L mm
M0,5 (2xD)	0,125		No. 0000	160	NS03003C1.3_P60_LC	3	0,37	3	1,3	39
M0,6 (2xD)	0,15				NS03004C1.5_P60_LC	3	0,44	3	1,5	39
M0,8 (2xD)	0,2		No. 000	120	NS03005C2.0_P60_LC	3	0,58	3	2	39
M0,8 (3xD)	0,2		No. 000	120	NS03005C2.7_P60_LC	3	0,58	3	2,7	39
M1 (2xD)	0,2 - 0,25				NS03007C2.5_P60_LC	3	0,72	3	2,5	39
M1 (3xD)	0,2 - 0,25				NS03007C3.2_P60_LC	3	0,72	3	3,2	39
M1,2 (2xD)	0,2 - 0,25		No. 00	95	NS03009C2.9_P60_LC	3	0,92	3	2,9	39
M1,2 (3xD)	0,2 - 0,25		No. 00	95	NS03009C3.9_P60_LC	3	0,92	3	3,9	39
M1,4 (2xD)	0,2 - 0,3				NS03010C3.3_P60_LC	3	1,06	3	3,3	39
M1,4 (3xD)	0,2 - 0,3				NS03010C4.4_P60_LC	3	1,06	3	4,4	39
M1,6 (2xD)	0,2 - 0,35		No. 0	80	NS03012D3.6_P60_LC	3	1,2	4	3,6	39
M1,6 (3xD)	0,2 - 0,35		No. 0	80	NS03012D5.1_P60_LC	3	1,2	4	5,1	39
M1,8 (2xD)	0,35 - 0,4	No. 1	No. 1	64 - 72	NS03014D4.2_P60_LC	3	1,4	4	4,2	39
M1,8 (3xD)	0,35 - 0,4	No. 1	No. 1	64 - 72	NS03014D5.6_P60_LC	3	1,4	4	5,6	39
M2 (2xD)	0,4		No. 2	64	NS03015D4.6_P60_LC	3	1,55	4	4,6	39
M2 (3xD)	0,4		No. 2	64	NS03015D6.2_P60_LC	3	1,55	4	6,2	39
M2 (2xD)	0,35 - 0,4		No. 2	64	NS04015D4_P60_AC	4	1,5	4	4,4	50
M2 (3xD)	0,35 - 0,4		No. 2	64	NS04015D6_P60_AC	4	1,5	4	6,4	50
M2,2 (2xD)	0,45	No. 2		56	NS04016D5_P60_AC	4	1,65	4	5	50
M2,2 (3xD)	0,45	No. 2		56	NS04016D7_P60_AC	4	1,65	4	7,1	50
M2,5 (2xD)	0,45 - 0,5	No. 3	No. 3 - 4	56 - 48	NS04019D5_P60_AC	4	1,9	4	5,5	50
M2,5 (3xD)	0,45 - 0,5	No. 3	No. 3 - 4	56 - 48	NS04019D8_P60_AC	4	1,9	4	8	50
		No. 4		40	NS04021D6_P60_AC	4	2,1	4	6,4	50
		No. 4		40	NS04021D9_P60_AC	4	2,1	4	9,2	50
M3 (2xD)	0,5 - 0,6	No. 5	No. 5	44 - 40	NS04023D6_P60_AC	4	2,3	4	6,5	50
M3 (3xD)	0,5 - 0,6	No. 5	No. 5	44 - 40	NS04023D9_P60_AC	4	2,3	4	9,5	50
M3,5 (2xD)	0,5 - 0,75	No. 6	No. 6	40 - 32	NS04026D7_P60_AC	4	2,6	4	7,6	50
M3,5 (3xD)	0,5 - 0,75	No. 6	No. 6	40 - 32	NS04026D11_P60_AC	4	2,6	4	11,1	50
M4 (2xD)	0,7 - 0,75	No. 8	No. 8	36 - 32	NS0403D9_P60_AC	4	3	4	9	50
M4 (3xD)	0,7 - 0,75	No. 8	No. 8	36 - 32	NS0403D13_P60_AC	4	3	4	13	50
M4,5 (2xD)	0,75 - 1,0	No. 10	No. 10	32 - 24	NS04036D10_P60_AC	4	3,6	4	10	50
M4,5 (3xD)	0,75 - 1,0	No. 10	No. 10	32 - 24	NS04036D14_P60_AC	4	3,6	4	14,3	50
M5 (2xD)	0,75 - 1,0	No. 12	No. 12 - 1/4	32 - 24	NS0404D11_P60_AC	4	4	4	11	50
M5 (3xD)	0,75 - 1,0	No. 12	No. 12 - 1/4	32 - 24	NS0404D16_P60_AC	4	4	4	16	50
M6 (2xD)	1,0 - 1,25	1/4	5/16 - 3/8	24 - 20	NS06045D13_P60_AC	6	4,5	4	13	63
M6 (3xD)	1,0 - 1,25	1/4	5/16 - 3/8	24 - 20	NS06045D19_P60_AC	6	4,5	4	19	76
M8 (2xD)	1,25	5/16	7/16 - 1/2	20 - 18	NS0606E17_P60_AC	6	6	5	17,3	63
M8 (3xD)	1,25	5/16	7/16 - 1/2	20 - 18	NS0606E25_P60_AC	6	6	5	25,3	76
M10 (2xD)	1,5	3/8	9/16 - 3/4	18 - 16	NS08075E22_P60_AC	8	7,5	5	22	63
M10 (3xD)	1,5	3/8	9/16 - 3/4	18 - 16	NS08075E32_P60_AC	8	7,5	5	32	76
M12 (2xD)	1,75	7/16 - 1/2	7/8	14 - 13	NS1009E26_P60_AC	10	9	5	26	76
M12 (3xD)	1,75	7/16 - 1/2	7/8	14 - 13	NS1009E38_P60_AC	10	9	5	38	100
M14 (2xD)	2,0	9/16	≥ 1	12	NS1010E30_P60_AC	10	10	5	30	76
M14 (3xD)	2,0	9/16	≥ 1	12	NS1010E44_P60_AC	10	10	5	44	100
M16 (2xD)	2,0	5/8	≥ 1	12 - 11	NS1212F34_P60_AC	12	12	6	34	83
M16 (3xD)	2,0	5/8	≥ 1	12 - 11	NS1212F50_P60_AC	12	12	6	50	100

## with One Tooth

M

METRIC

Pitch mm	M coarse	M fine	INTERNAL Part Number	d mm	D mm	No. of Flutes	l mm	L mm
0,25	M1 (2xD)	≥ M1,4	NS03007C2_0.25ISO_LC	3	0,72	3	2,5	39
0,25	M1 (3xD)	≥ M1,4	NS03007C3_0.25ISO_LC	3	0,72	3	3,5	39
0,25	M1,2 (2xD)	≥ M1,4	NS03009C2_0.25ISO_LC	3	0,92	3	2,9	39
0,25	M1,2 (3xD)	≥ M1,4	NS03009C3_0.25ISO_LC	3	0,92	3	3,9	39
0,3	M1,4 (2xD)		NS03010C3_0.3ISO_LC	3	1,06	3	3,3	39
0,3	M1,4 (3xD)		NS03010C4_0.3ISO_LC	3	1,06	3	4,4	39
0,35	M1,6 (2xD)	≥ M2	NS03012D3_0.35ISO_LC	3	1,2	4	3,6	39
0,35	M1,6 (3xD)	≥ M2	NS03012D5_0.35ISO_LC	3	1,2	4	5,1	39
0,35	M1,8 (2xD)	≥ M2	NS03014D4_0.35ISO_LC	3	1,4	4	4,2	39
0,35	M1,8 (3xD)	≥ M2	NS03014D5_0.35ISO_LC	3	1,4	4	5,6	39
0,4	M2 (2xD)		NS03015D4_0.4ISO_LC	3	1,55	4	4,7	39
0,4	M2 (3xD)		NS03015D6_0.4ISO_LC	3	1,55	4	6,2	39

## with Two Teeth

AC

TiAlCN coated

Micrograin Carbide

**Tolerance**

The theoretical external diameter of the cutter is lasermarked on the tool.

**Shank**

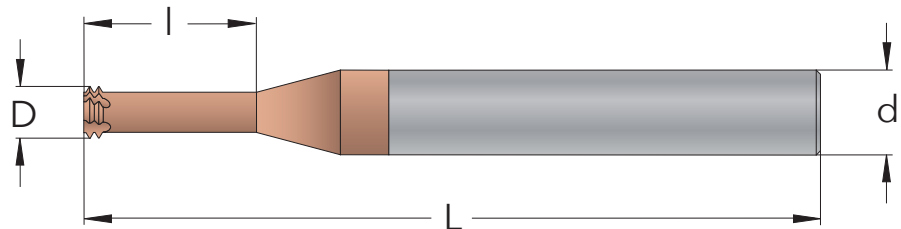
Cylindrical h6, DIN6535 HA

**Flute**

15° right hand spiral

**Field of application**

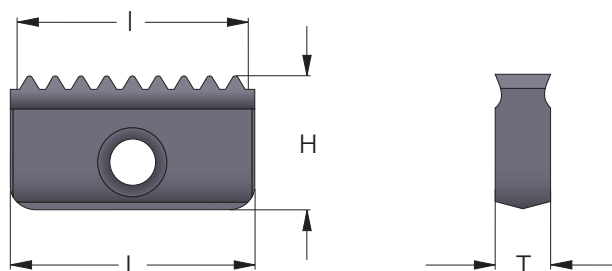
Thread Milling of all types of steel



M

METRIC

Pitch mm	M coarse	M fine	INTERNAL Part Number	d mm	D mm	No. of Flutes	l mm	L mm
0,4	M2 (2xD)		NM04015D4_0.4ISO_AC	4	1,5	4	4,4	50
0,4	M2 (3xD)		NM04015D6_0.4ISO_AC	4	1,5	4	6,4	50
0,45	M2,2 (2xD)		NM04016D5_0.45ISO_AC	4	1,65	4	5,0	50
0,45	M2,2 (3xD)		NM04016D7_0.45ISO_AC	4	1,65	4	7,1	50
0,45	M2,5 (2xD)		NM04019D5_0.45ISO_AC	4	1,9	4	5,5	50
0,45	M2,5 (3xD)		NM04019D8_0.45ISO_AC	4	1,9	4	8	50
0,5	M3 (2xD)	≥ M3,5	NM04023E6_0.5ISO_AC	4	2,3	5	6,5	50
0,5	M3 (3xD)	≥ M3,5	NM04023E9_0.5ISO_AC	4	2,3	5	9,5	50
0,6	M3,5 (2xD)		NM04026E7_0.6ISO_AC	4	2,6	5	7,6	50
0,6	M3,5 (3xD)		NM04026E11_0.6ISO_AC	4	2,6	5	11,1	50
0,7	M4 (2xD)		NM0403E9_0.7ISO_AC	4	3	5	9	50
0,7	M4 (3xD)		NM0403E13_0.7ISO_AC	4	3	5	13	50
0,75	M4,5 (2xD)	≥ M5	NM04034E10_0.75ISO_AC	4	3,4	5	10	50
0,75	M4,5 (3xD)	≥ M5	NM04034E14_0.75ISO_AC	4	3,4	5	14,3	50
0,8	M5 (2xD)		NM04038E11_0.8ISO_AC	4	3,8	5	11	50
0,8	M5 (3xD)		NM04038E16_0.8ISO_AC	4	3,8	5	16	50
1,0	M6 (2xD)	≥ M8	NM06045E13_1.0ISO_AC	6	4,5	5	13	63
1,0	M6 (3xD)	≥ M8	NM06045E19_1.0ISO_AC	6	4,5	5	19	76
1,25	M8 (2xD)	≥ M10	NM0606E17_1.25ISO_AC	6	6	5	17,3	63
1,25	M8 (3xD)	≥ M10	NM0606E25_1.25ISO_AC	6	6	5	25,3	76
1,5	M10 (2xD)	≥ M12	NM08075E22_1.5ISO_AC	8	7,5	5	22	63
1,5	M10 (3xD)	≥ M12	NM08075E32_1.5ISO_AC	8	7,5	5	32	76
1,75	M12 (2xD)		NM1009E26_1.75ISO_AC	10	9	5	26	76
1,75	M12 (3xD)		NM1009E38_1.75ISO_AC	10	9	5	38	100
2,0	M14 (2xD)	≥ M18	NM1010E30_2.0ISO_AC	10	10	5	30	76
2,0	M14 (3xD)	≥ M18	NM1010E44_2.0ISO_AC	10	10	5	44	100
2,0	M16 (2xD)	≥ M18	NM1212F34_2.0ISO_AC	12	12	6	34	83
2,0	M16 (3xD)	≥ M18	NM1212F50_2.0ISO_AC	12	12	6	50	100



## M METRIC

Pitch mm	M coarse	M fine	INTERNAL Part Number	I 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	I 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	I 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	I 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

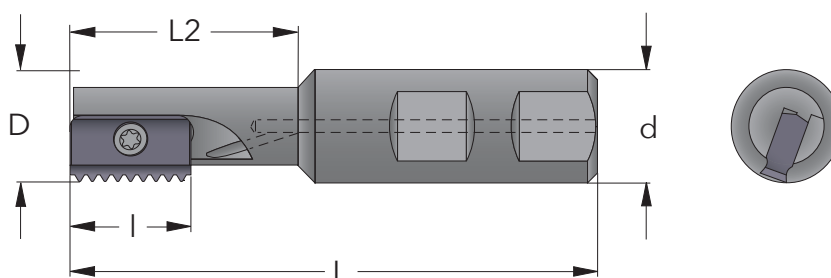
## NPTF DRYSEAL PIPE THREAD

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.

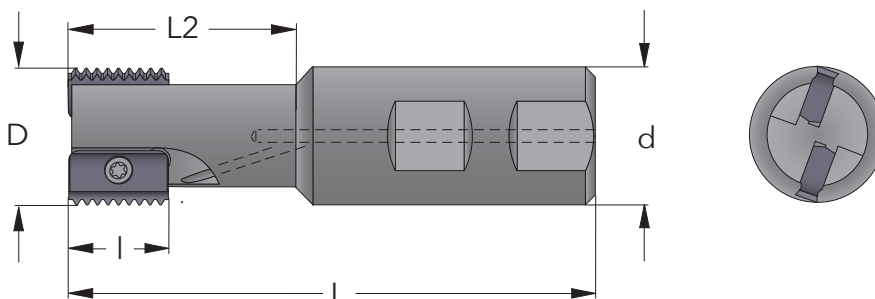
# THREAD MILLING CUTTERS

## Shank Toolholders with One Pocket



D mm	d mm	Part Number	l mm	L2 mm	L mm	No. of Inserts
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

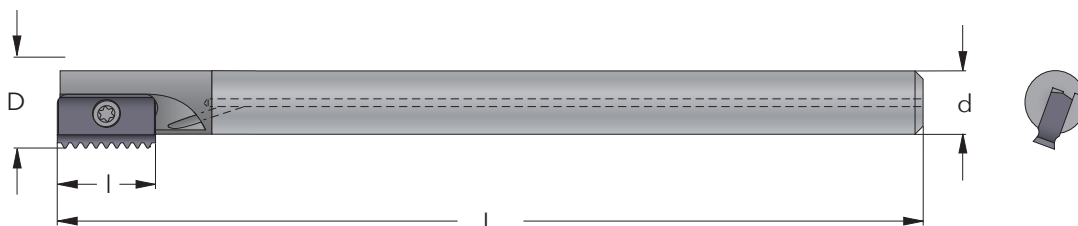
## Shank Toolholders with Two Pockets



D mm	d mm	Part Number	l mm	L2 mm	L mm	No. of Inserts
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

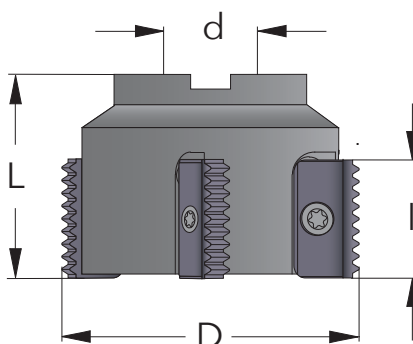
# THREAD MILLING CUTTERS

## Shank Toolholders in Carbide



D mm	d mm	Part Number	l mm	L mm	No. of Inserts
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

## Face Mill Cutters

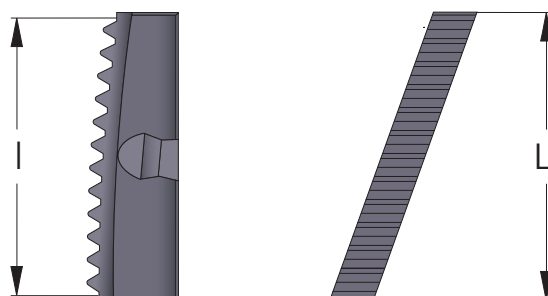


D mm	d mm	Part Number	l mm	L mm	No. of Inserts
63	22	SR0063C21-5	21	50	5
63	22	SR0063C30-4	30	50	4
80	27	SR0080D30-4	30	55	4
100	32	SR0100D30-4	30	60	4
80	27	SR0080D40-4	40	65	4
100	32	SR0100E40-4	40	70	4

## 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



## 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 <sup>1</sup> / <sub>4</sub> - 2	H32X_11.5NPT_FC	30,92	32	1
11,5	2	H45X_11.5NPT_FC	35,34	37	1
8	2 <sup>1</sup> / <sub>2</sub>	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 <sup>1</sup> / <sub>4</sub> - 2	H32X_11.5NPTF_FC	30,92	32	1

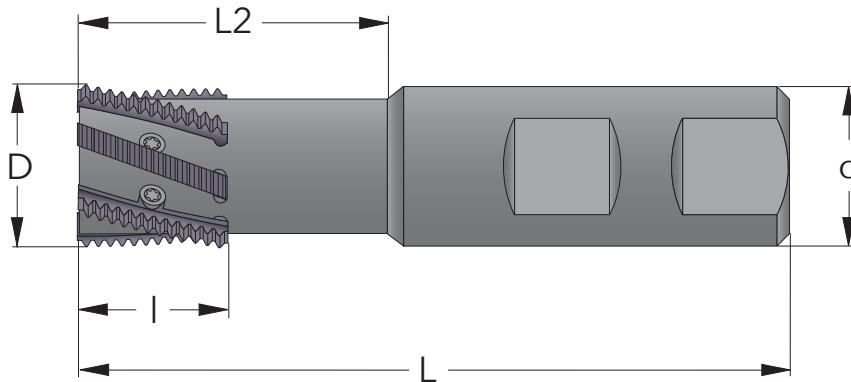
## UN

## UNIFIED

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

# THREAD MILLING CUTTERS

## Spiral Fluted Shank Toolholders

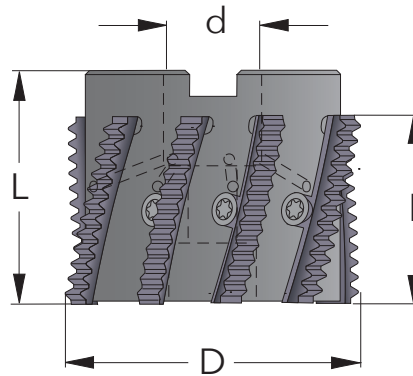


D mm	d mm	Part Number	l mm	L2 mm	L mm	No. of Inserts
23	25	SRH23-2	27	50	110	2
23	25	SRH23M-2	27	75	150	2
32	32	SRH32-5	32	60	130	5
32	32	SRH32P-5	32	90	180	5
45	32	SRH45-6	37	-	130	6



# THREAD MILLING CUTTERS

## Spiral Fluted Face Mill Cutters



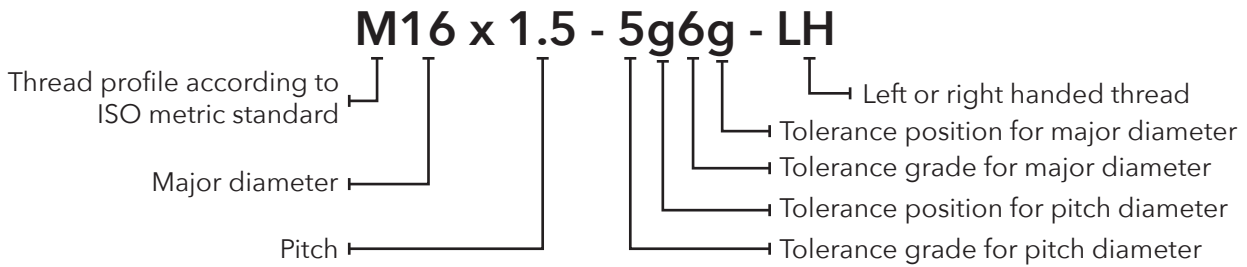
D mm	d mm	Part Number	l mm	L mm	No. of Inserts
32	16	SRH32-5M	32	52	5
45	22	SRH45-6M	37	60	6
63	22	SRH63-9	38	50	9

### Spare Parts

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



## Metric



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.

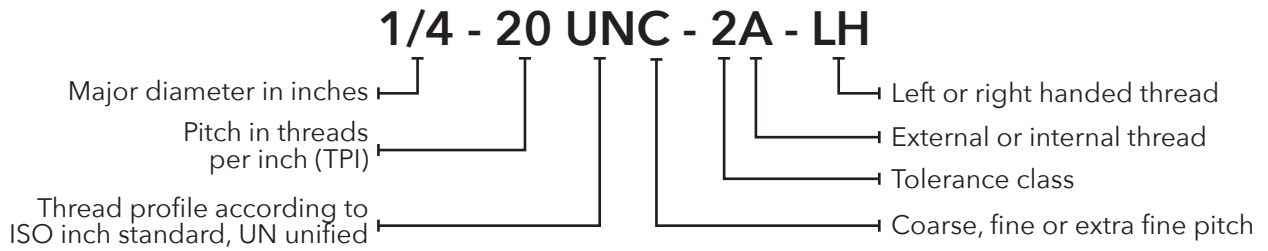
If the tolerance grade and position is the same for pitch and major diameter, it is written only once, for example 6h instead of 6h6h. Small letter for external threads and capital letter for internal threads. If no tolerance class is written, it means that the tolerance is 6H/6g. Slash between tolerances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

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

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



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 1/2 A - LH



### 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.

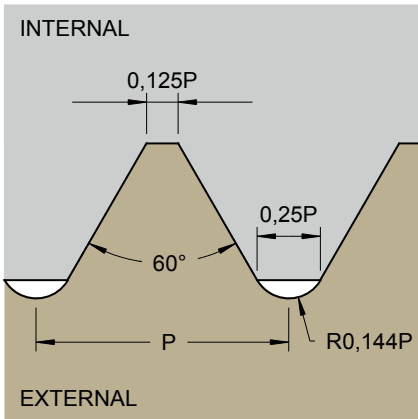
Thread Profile Depth	
external	16,256 / TPI
internal	16,256 / TPI

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

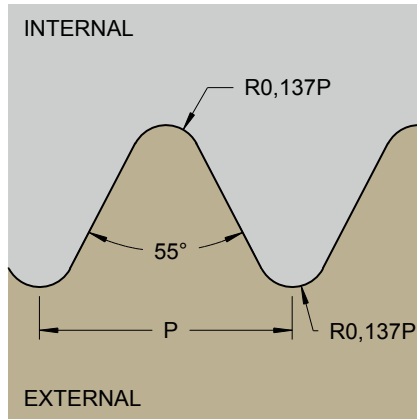
\*This dimension is only for G

# Common Thread Profiles

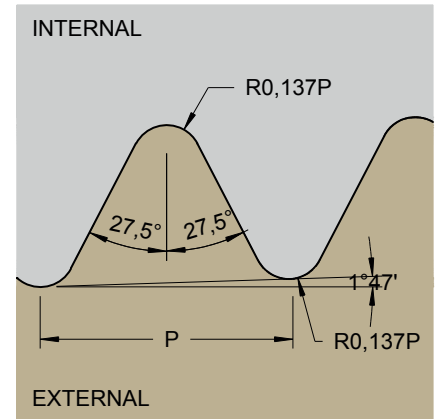
## ISO (M) and UN



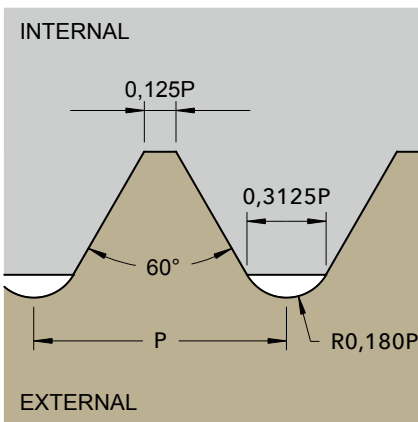
## Whitworth (W)



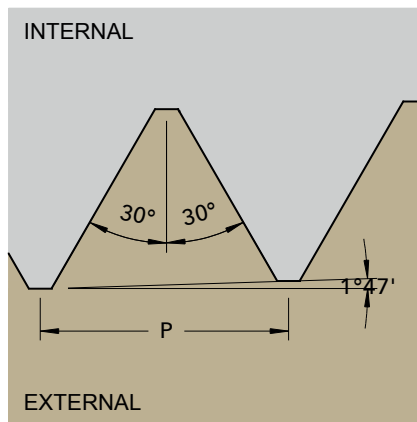
## BSPT



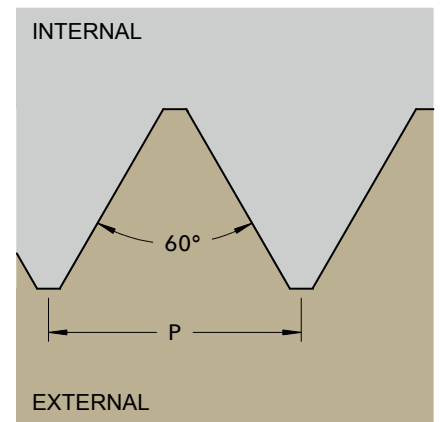
## MJ and UNJ



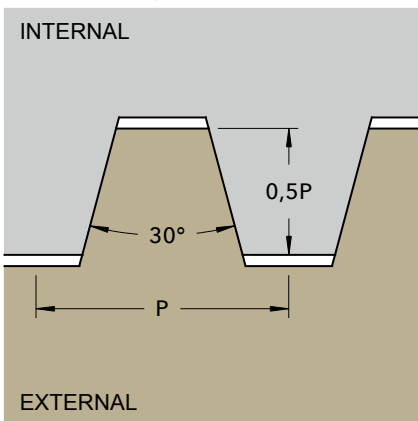
## NPT and NPTF



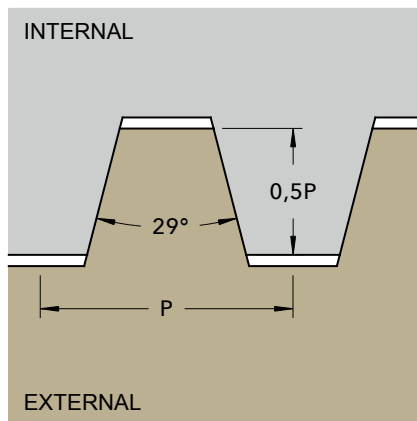
## NPSF



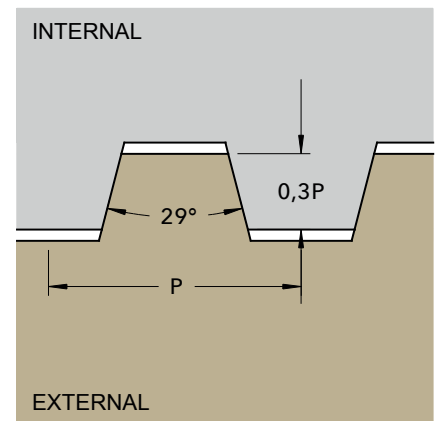
## Trapez DIN 103



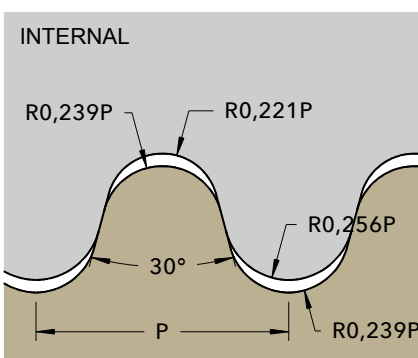
## ACME



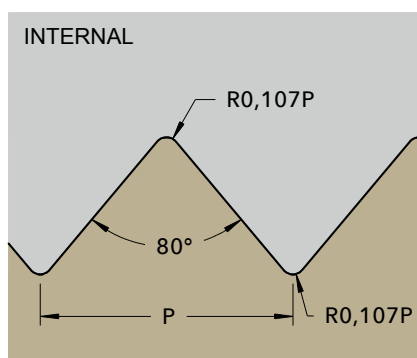
## STUB ACME



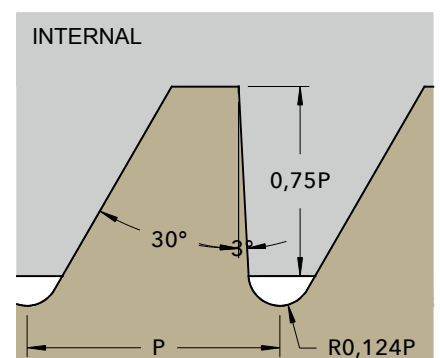
## Round DIN 405



## PG DIN 40430



## SG DIN 513





Schmidt Tool Systems - The Master of Threading



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