New products for machining technicians

NEW Polygon system extension

Milling insert for part-off → Page 15

- Reliable cutting with groove depths up to 11.5 mm in almost all materials
- Longest service lives with maximum process security
- Different diameters with groove width of 1.5 mm available from stock

Thread milling insert partial profile → Page 16

- Extension of the existing 50 882 range to include the thread pitch 3.5 – 6 mm

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NEW MiniMill XL multipurpose milling system

Milling insert → Page 28
Tool holder → Page 33

- Extension of the tried-and-tested MiniMill multipurpose milling system Ø 37 mm by Ø 50 mm
- Reliable cutting with groove depths up to 16.5 mm in almost all materials
- Cross-pitched versions for significantly greater self-cleaning effect with lower chip jamming tendency
- Wide range of groove widths and holders available from stock

---

NEW Shank thread milling cutter type SFSE

→ Page 65–67

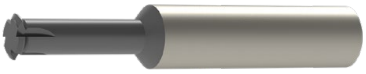
- Multi-row shank thread milling cutter with countersink cutting edge
- Universal application in almost all materials
- 2-in-1 tool: thread milling and countersinking with a single tool
- Maximum reliability and process security
- Unsurpassed price-performance ratio

NEW Shank thread milling cutter type SGF

→ Page 71–74

- Multi-row shank thread milling cutter
- Universal application in almost all materials
- Maximum reliability and process security
- Unsurpassed price-performance ratio

NEW Shank thread milling cutter type HR



→ Page 60

- Single-row shank thread milling cutter with universal application, but with focus on hard machining
- Outstanding solution for high lateral forces during machining → absolutely cylindrical, true-to-gauge and dimensionally accurate threads of the highest quality

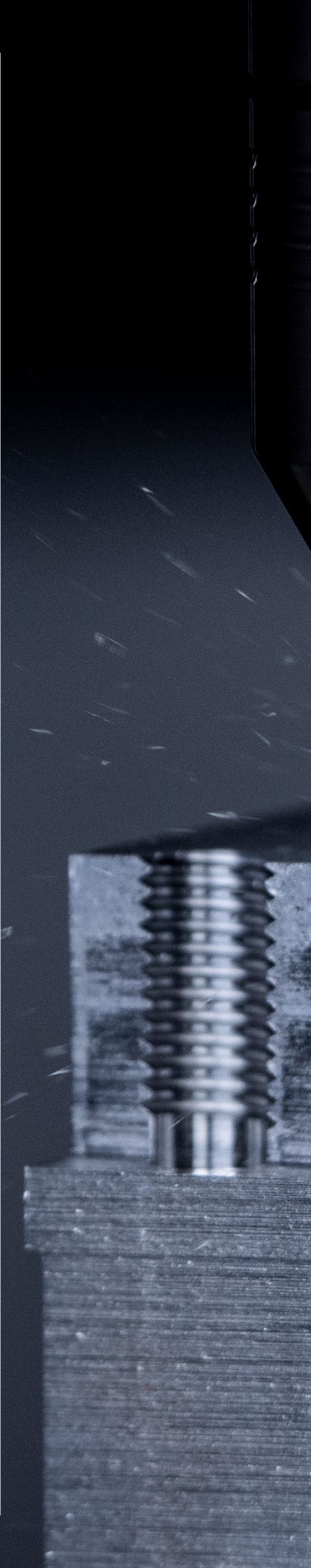


Table of contents

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Version

no drilling required

central internal coolant

Radial thro' coolant

Coolant supply either via the flange or centrally

left-hand cutting

Shank

Plain cylindrical shank

Cylindrical shank with lateral driving face „Weldon“

● = **Main Application**

○ = Extended application

Thread / Flank angle

M Explanation of the types of thread can be found on → **Page 6.**

60° Flank angle 60°

Applications

Circlip Grooves

Full radius slot milling

Slot milling

Multipurpose milling

Chamfering and Deburring

R/L Internal R L

R/L External R L

R/L Internal/External R L

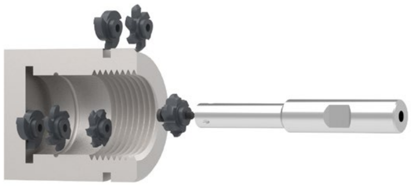
Tool types

System 300	Circular milling cutter with solid carbide insert
Polygon	Circular shank milling cutter with carbide indexable insert (polygon insert seat)
Mini Mill	Circular milling cutter with solid carbide milling insert (with three-rib insert connection)
MWN	Multi-tooth thread milling cutter with carbide indexable inserts (straight insert seat) and Weldon flat
GZD	Multi-tooth thread milling cutter with carbide indexable inserts (angled insert seat) and Weldon flat
GZG	Multi-tooth thread milling cutter with carbide indexable inserts (straight insert seat) and Weldon flat
EAW	Single-row thread milling cutter with carbide indexable inserts and Weldon flat
EWM	Single-row thread milling cutter with carbide indexable insert and SK adapter
BGF	Solid carbide drill thread milling cutter
Micro Mill	Solid Carbide Circular End Milling Cutter
ZBGF	Solid carbide circular drill thread milling cutter
SGF	Thread milling cutter
SFSE	Thread milling cutter with chamfer facet
SFSE Micro	Thread milling cutter for smallest threads
HR	Single-row shank thread milling cutter

Overview Circular and Thread Milling Cutters

Modular Circular Milling Cutters with Carbide Indexable Inserts (ModuSet)

▲ the perfect tool for every application
▲ various holders, depending on overhang
▲ the same threading insert for different pitches and diameters
▲ highest flexibility and stability
▲ in addition to circular thread milling, circular and linear milling operations can also be carried out



1st choice for small batch sizes and large threads

Thread Milling Cutters with Indexable Carbide Inserts (ModuThread)

▲ exchange of the insert for different threads
▲ same threading insert for different diameters

Solid Carbide Thread Milling Cutters (MonoThread)

▲ short machining times, ideal for volume production
▲ one tool for all thread types
▲ one thread milling cutter for different diameters with the same pitch

MicroMill

SGF

ZBGF

BGF

Thread types

M	Metric ISO standard thread
MF	Metric ISO fine thread
G	Whitworth pipe thread
UN	Unified thread
UNC	Unified Standard Thread
UNF	Unified fine thread
BSW	Whitworth thread
BSF	Whitworth fine thread
NPT	American taper pipe thread
Pg	Steel conduit thread
Tr	Trapezoidal thread

Thread milling process description

Thread milling

- Cutting
- Thread production by circular milling in the pitch (helical interpolation)
- Can be used for a wide range of materials up to 60 HRC
- Lower torque than taps and thread formers (no reversing of the spindle necessary)
- Thread machining to the bottom of the hole possible
- High-speed cutting (HSC) can be performed

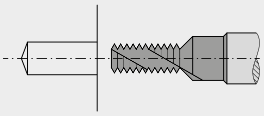
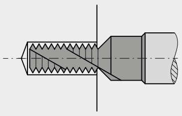
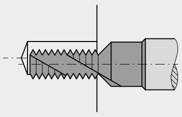
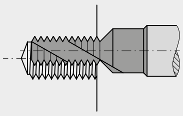
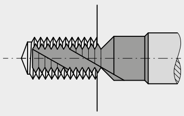
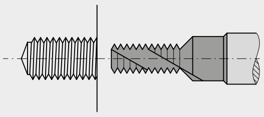
Advantages of thread milling

- Different tolerances can be produced with one tool
- One tool for blind hole and through hole machining
- Outstanding workpiece surfaces and dimensional accuracy guaranteed
- One tool for right and left-hand threads
- Low cutting pressure when machining thin-walled parts
- Precisely repeatable thread depth
- No chip issues and no chip root residues in the finished thread

Added advantages of thread milling cutters with chamfer facet

- Savings in tool change and setup times, resulting in significantly shorter machining times
- Optimisation of magazine assignment in the machine

Process

Positioning above the workpiece	
Entry to start position for thread milling	
Circular approach (milling) in inward circular grinding (90°/180°) at 1/4 pitch	
1x pitch in "Z+" direction	
Outward circular grinding in the centre of the hole (90°/180°)	
Exit to start position	

Climb milling is shown here.
Further information on the milling processes (climb and conventional milling) can be found on → **page 82.**

Description of procedure, thread milling cutters

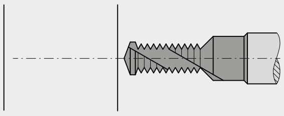
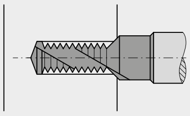
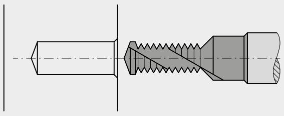
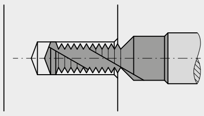
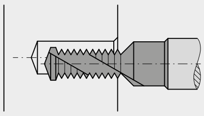
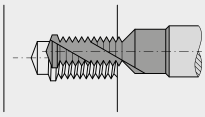
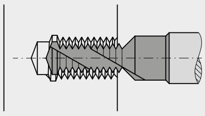
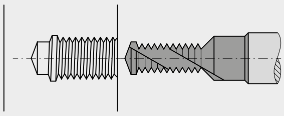
Thread milling

- ▲ Cutting
- ▲ Production of a complete thread – drilling, countersinking and thread milling with just one tool
- ▲ Can be used in different materials (K/N)
- ▲ Prerequisite: CNC-controlled milling machine or machining centre with the helical interpolation function

Advantages

- ▲ Shortest machining times thanks to high cutting speeds and feeds
- ▲ Savings in tool change and setup times, resulting in significantly shorter machining times
- ▲ Optimisation of magazine assignment in the machine
- ▲ Different tolerances can be produced with one tool
- ▲ Outstanding workpiece surfaces and dimensional accuracy guaranteed
- ▲ One tool for blind hole and through hole machining
- ▲ Precisely repeatable thread depth
- ▲ No chip issues and no chip root residues in the finished thread
- ▲ High-speed cutting (HSC) can be performed

Process

Positioning above the workpiece	
Tapping, drilling, countersinking	
Chip removal	
Entry to start position for thread milling	
Circular approach (milling) in inward circular grinding (90°/180°) at 1/4 pitch	
1x pitch in "Z+" direction	
Outward circular grinding in the centre of the hole (90°/180°)	
Exit to start position	

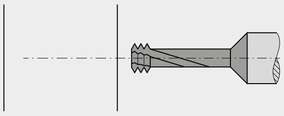
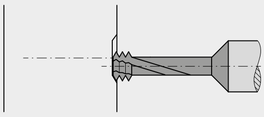
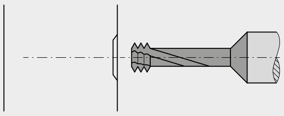
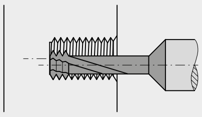
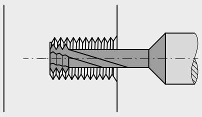
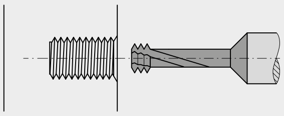
Circular drill thread milling cutter

- ▲ Cutting
- ▲ Production of a complete thread – drilling, countersinking and thread milling with just one tool
- ▲ Can be used in different materials (H/S/O)
- ▲ Prerequisite: CNC-controlled milling machine or machining centre with the helical interpolation function

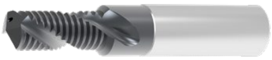
Advantages

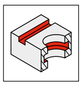
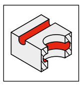
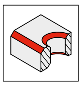
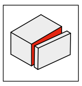
- ▲ Shortest machining times due to simultaneous creation of the tap hole and thread
- ▲ Savings in tool change and setup times, resulting in significantly shorter machining times
- ▲ Optimisation of magazine assignment in the machine
- ▲ Different tolerances can be produced with one tool
- ▲ Outstanding workpiece surfaces and dimensional accuracy guaranteed
- ▲ One tool for blind hole and through hole machining
- ▲ Precisely repeatable thread depth
- ▲ Optimum chip removal and no chip root residues in the finished thread

Process

Positioning above the workpiece	
Chamfering (until countersinking depth is reached)	
Return to the start position above the component	
Circular drill thread milling in helical motion to the required thread depth	
Outward circular grinding in the centre of the hole (90°/180°)	
Exit to start position	

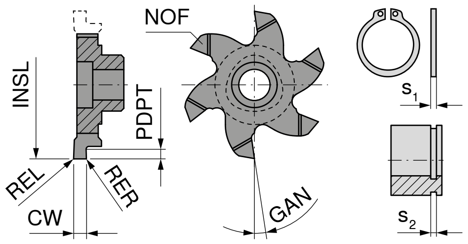
Toolfinder

					from bore diameter in mm
ModuSet	Modular Circular Milling Cutters with Carbide Indexable Inserts	**Polygon**		▲ high power transmission through polygon connection ▲ 3 and 6 edged inserts ▲ stable holders in solid carbide and steel	9,6
		Mini Mill		▲ three interlocking rib location ▲ compatible with popular manufacturer systems ▲ 3 and 6 edged inserts ▲ stable holders in solid carbide and steel	9,8
		System 300		▲ proven circular milling tool ▲ 3 edged inserts	10,6
ModuThread	Thread Milling Cutters with Indexable Carbide Inserts	**MWN**		▲ multi tooth thread milling cutter ▲ double sided inserts ▲ exclusively for thread production ▲ holder for tapered threads	9,0
		GZD		▲ multi tooth drilling and thread milling cutter ▲ for thread milling in solid material ▲ core hole and thread with one tool	14,0
		GZG		▲ multi tooth thread milling cutter ▲ exclusively for thread production	18,5
		EAW		▲ single-row thread milling cutter ▲ inserts with 2 or 4 cutting edges ▲ exclusively for production of the thread ▲ insert holder with cylindrical shank DIN 1835	17,5
		EWM		▲ single-row thread milling cutter ▲ inserts with 4 cutting edges ▲ exclusively for production of the thread ▲ monoblock insert holder with steep taper DIN 69871	43,0
MonoThread	Solid Carbide Thread Milling Cutters	**Micro Mill**		▲ solid carbide circular milling cutter for small diameters	1,25
		BGF		▲ drill thread milling cutter ▲ core hole, countersink, thread and thread undercut with one tool	2,45
		ZBGF		▲ circular drill thread milling cutter ▲ core hole, countersink and thread with one tool	2,3
		SFSE Micro		▲ solid carbide shank thread milling cutter with chamfer facet ▲ just one tool for countersink and thread ▲ specially developed for the smallest threads in hard materials	0,75
		SFSE		▲ solid carbide thread milling cutter with chamfering facet ▲ only one tool for threading and chamfering	3,14
		SGF		▲ solid carbide thread milling cutter without chamfering facet ▲ exclusively for thread production	1,53
		HR		▲ single-row shank thread milling cutter ▲ exclusively for production of the thread ▲ up to 3xD in materials up to 60 HRC	3,14

	Thread / Flank angle								Applications					
	60°	55°	55°	60°	60°	80°	60°	30°						Tool holder
	M **MF**	**G**	**BSW** **BSF**	**UN**	**UNC** **UNF**	**Pg**	**NPT**	**Tr**						
	16+17	18	18		20			19	10+11	12+13	14	14	15	21
	29+30	30							22	23+24 25	24	26	27+28	31–33
	37	38	38						34+35	36		36		39
	40	41		41		42	42							43+44
	45	45												46
	47	48		49		48								50
	51	51		51										52
	53			53										54
	56									55		55		
	57+58													
	59													
	61													
	62+63 65	64 66			67		64 66							
	68+69 71 74	70 72	72		73									
	60													

ModuSet – Milling inserts for circlip grooves without chamfer

Polygon



Ti500

Solid carbide

Size	$s_{2\ H13}$ mm	INSL mm	CW $_{-0,03}$ mm	PDPT mm	REL mm	RER mm	GAN °	s_1 mm	NOF	50 880 ...
6	0,90	9,6	0,98	1,20	0,05	0,05	6	0,80	3	**292**
	1,10	11,7	1,18	1,00	0,05	0,05	6	1,00	3	**294**
	1,30	11,7	1,38	1,00	0,05	0,05	6	1,20	3	**296**
	1,60	11,7	1,68	1,00	0,10	0,10	6	1,50	3	**298**
7	1,10	16,0	1,18	0,90	0,05	0,05	6	1,00	6	**301**
	1,30	16,0	1,38	1,10	0,05	0,05	6	1,20	6	**302**
	1,60	16,0	1,68	1,25	0,10	0,10	6	1,50	6	**304**
	1,85	16,0	1,93	1,25	0,10	0,10	6	1,75	6	**306**
	1,10	17,7	1,18	0,90	0,05	0,05	6	1,00	6	**308**
	1,30	17,7	1,38	1,10	0,05	0,05	6	1,20	6	**309**
	1,60	17,7	1,68	1,25	0,10	0,10	6	1,50	6	**310**
	1,85	17,7	1,93	1,25	0,10	0,10	6	1,75	6	**311**
9	1,10	20,0	1,18	0,90	0,05	0,05	6	1,00	6	**313**
	1,30	20,0	1,38	1,10	0,05	0,05	6	1,20	6	**314**
	1,60	20,0	1,68	1,25	0,10	0,10	6	1,50	6	**315**
	1,85	20,0	1,93	1,25	0,10	0,10	6	1,75	6	**316**
	1,60	21,7	1,68	1,25	0,10	0,10	6	1,50	6	**318**
	1,85	21,7	1,93	1,25	0,10	0,10	6	1,75	6	**319**
	2,15	21,7	2,23	1,75	0,10	0,10	6	2,00	6	**320**
	2,65	21,7	2,73	1,75	0,20	0,20	6	2,50	6	**321**
10	1,30	26,0	1,38	1,10	0,05	0,05	6	1,20	6	**322**
	1,60	26,0	1,68	1,25	0,10	0,10	6	1,50	6	**324**
	1,85	26,0	1,93	1,25	0,10	0,10	6	1,75	6	**326**
	2,15	26,0	2,23	1,75	0,10	0,10	6	2,00	6	**328**
	2,65	26,0	2,73	1,75	0,20	0,20	6	2,20	6	**330**
	3,15	26,0	3,23	2,20	0,20	0,20	6	3,00	6	**332**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

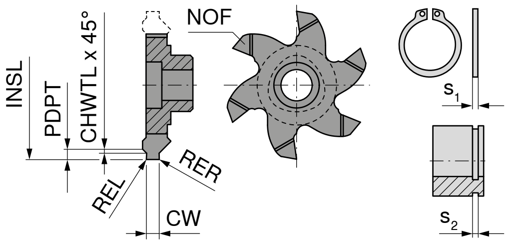
→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling inserts for circlip grooves with chamfer

▲ Both edges chamfered CHWTL x 45°

Polygon



Ti500

Solid carbide

Size	s2 H13 mm	INSL mm	CW -0,03 mm	PDPT mm	REL mm	RER mm	CHWTL mm	s1 mm	NOF	50 879 ...
7	1,10	16,0	1,18	0,50	0,05	0,05	0,10	1,00	6	**292**
	1,30	16,0	1,38	0,85	0,05	0,05	0,15	1,20	6	**302**
	1,60	16,0	1,68	1,00	0,10	0,10	0,15	1,50	6	**304**
	1,85	16,0	1,93	1,25	0,10	0,10	0,20	1,75	6	**306**
9	1,10	20,0	1,18	0,50	0,05	0,05	0,10	1,00	6	**307**
	1,30	20,0	1,38	0,85	0,05	0,05	0,15	1,20	6	**308**
	1,60	20,0	1,68	1,00	0,10	0,10	0,15	1,50	6	**309**
	1,60	21,7	1,68	1,00	0,10	0,10	0,15	1,50	6	**312**
	1,85	20,0	1,93	1,25	0,10	0,10	0,20	1,75	6	**310**
	1,85	21,7	1,93	1,25	0,10	0,10	0,20	1,75	6	**314**
	2,15	21,7	2,23	1,50	0,10	0,10	0,20	2,00	6	**316**
	2,65	21,7	2,73	1,75	0,20	0,20	0,20	2,50	6	**318**
10	1,30	26,0	1,38	0,85	0,05	0,05	0,15	1,20	6	**322**
	1,60	26,0	1,68	1,00	0,10	0,10	0,15	1,50	6	**324**
	1,85	26,0	1,93	1,25	0,10	0,10	0,20	1,75	6	**326**
	2,15	26,0	2,23	1,50	0,10	0,10	0,20	2,00	6	**328**
	2,65	26,0	2,73	1,75	0,20	0,20	0,20	2,50	6	**330**
	3,15	26,0	3,23	1,75	0,20	0,20	0,20	3,00	6	**332**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

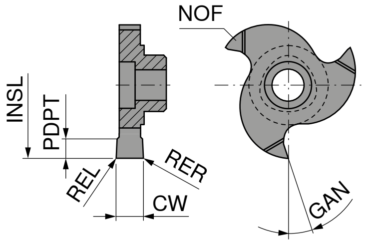
→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling insert without profile

▲ Size 7: from 5.0 mm groove width with ground chip breaker
▲ Size 10: from 6.5 mm groove width with ground chip breaker

Polygon



Ti500

Solid carbide

Size	CW $_{+/-0,02}$ mm	INSL mm	PDPT mm	REL mm	RER mm	GAN °	NOF	50 875 ...
6	1,5	11,7	2,25	0,10	0,10	6	3	**302**
	2,0	11,7	2,25	0,15	0,15	6	3	**304**
	2,5	11,7	2,25	0,15	0,15	6	3	**306**
	3,0	11,7	2,25	0,15	0,15	6	3	**308**
7	3,5	16,0	3,50	0,15	0,15	0	3	**310**
	3,5	16,0	3,50	0,15	0,15	8	3	**312**
	3,5	16,0	3,50	0,15	0,15	12	3	**314**
	5,0	16,0	3,50	0,15	0,15	0	3	**316**
	5,0	16,0	3,50	0,15	0,15	8	3	**318**
	5,0	16,0	3,50	0,15	0,15	12	3	**320**
10	4,0	25,0	5,70	0,15	0,15	0	3	**330**
	4,0	25,0	5,70	0,15	0,15	8	3	**332**
	4,0	25,0	5,70	0,15	0,15	12	3	**334**
	5,0	25,0	5,70	0,15	0,15	8	3	**337**
	6,5	25,0	5,70	0,15	0,15	0	3	**340**
	6,5	25,0	5,70	0,15	0,15	8	3	**342**
	6,5	25,0	5,70	0,15	0,15	12	3	**344**
	8,0	25,0	5,70	0,15	0,15	0	3	**350**
	8,0	25,0	5,70	0,15	0,15	8	3	**352**
	8,0	25,0	5,70	0,15	0,15	12	3	**354**

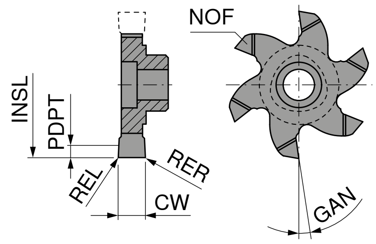
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling insert without profile

Polygon



Ti500

Solid carbide

Size	CW $_{+/-0,02}$ mm	INSL mm	PDPT mm	REL mm	RER mm	GAN °	NOF	50 876 ...
7	1,5	17,7	4,0	0,10	0,10	6	6	307
	2,0	17,7	4,0	0,10	0,10	6	6	308
	2,5	17,7	4,0	0,15	0,15	6	6	309
	3,0	16,0	3,5	0,15	0,15	6	6	302
	4,0	16,0	3,5	0,15	0,15	6	6	304
	5,0	16,0	3,5	0,15	0,15	6	6	306
9	1,5	21,7	5,0	0,10	0,10	6	6	314
	2,0	21,7	5,0	0,10	0,10	6	6	315
	2,5	21,7	5,0	0,15	0,15	6	6	316
	3,0	21,7	5,0	0,15	0,15	6	6	317
	3,0	20,0	4,2	0,15	0,15	6	6	311
	4,0	20,0	4,2	0,15	0,15	6	6	312
	5,0	20,0	4,2	0,15	0,15	6	6	313
10	1,5	27,7	6,8	0,10	0,10	6	6	330
	2,0	27,7	6,8	0,10	0,10	6	6	332
	2,5	27,7	6,8	0,15	0,15	6	6	334
	3,0	26,0	6,2	0,15	0,15	6	6	322
	3,0	27,7	6,8	0,15	0,15	6	6	336
	4,0	26,0	6,2	0,15	0,15	6	6	324
	5,0	26,0	6,2	0,15	0,15	6	6	326
	6,5	26,0	6,2	0,15	0,15	6	6	328

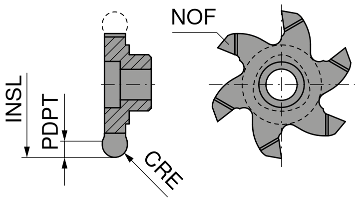
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling inserts for radius milling

Polygon



Ti500

Solid carbide

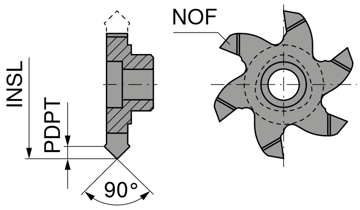
Size	CRE mm	INSL mm	PDPT mm	NOF	50 886 ...
6	1,100	9,6	1,20	3	702
	0,788	11,7	2,25	3	704
	1,100	11,7	2,25	3	708
	1,190	11,7	2,25	3	706
7	0,788	17,7	4,20	6	712
	1,100	17,7	4,20	6	714
9	0,785	21,7	5,00	6	720
	1,000	21,7	5,00	6	722
	1,200	21,7	5,00	6	724
	1,400	21,7	5,00	6	726
	1,500	21,7	5,00	6	728

	50 886 ...
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 80

ModuSet – Milling inserts for chamfering and deburring

Polygon



Ti500

Solid carbide

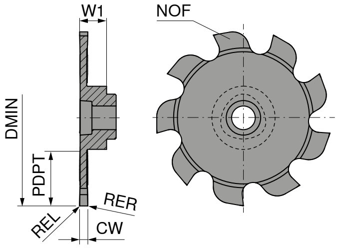
Size	PDPT mm	INSL mm	NOF	50 884 ...
6	1,20	9,6	3	292
	1,50	11,7	3	294
7	1,90	16,0	6	302
	1,30	17,7	6	304
9	1,90	20,0	6	312
	1,95	21,7	6	314
10	2,10	26,0	6	322

	50 884 ...
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 80

ModuSet – Milling insert for part-off

Polygon



NEW

Ti500

Solid carbide

Size	DMIN mm	PDPT mm	CW $_{+0,02}$ mm	REL mm	RER mm	W1 mm	NOF	51 800 ...
6	14	3,40	1,5	0,1	0,1	3,50	6	**14000**
7	22	6,40	1,5	0,1	0,1	3,86	9	**22000**
9	32	10,25	1,5	0,1	0,1	4,91	9	**32000**
10	37	11,50	1,5	0,1	0,1	4,86	9	**37000**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

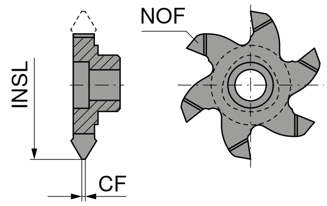
→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Thread milling insert – Partial profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!

Polygon
60°
R/L



Ti500

Solid carbide

50 882 ...

Size	TP mm	INSL mm	CF mm	NOF	50 882 ...
6	1 - 3	11,7	0,10	3	**292**
7	1 - 3	17,7	0,10	6	**306**
	1 - 4	16,0	0,10	6	**302**
	2,5 - 4	16,0	0,25	6	**304**
9	1 - 2	21,7	0,10	6	**314**
	1 - 3	20,0	0,10	6	**312**
	2 - 4	21,7	0,15	6	**316**
10	1 - 3	26,0	0,10	6	**322**
	2,5 - 5	26,0	0,25	6	**324**
	3,5 - 6	26,0	0,40	6	**32600**

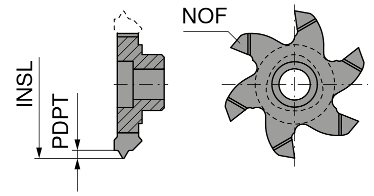
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Thread milling insert – Full profile

Polygon M 60° R/L



Size	TP mm	INSL mm	PDPT mm	NOF	Ti500 Solid carbide 50 881 ...
6	1	9,6	0,572	3	292
	1,5	9,6	0,875	3	293
	2	10,5	1,157	3	296
7	1,5	16,0	0,875	6	302
	2	16,0	1,157	6	304
	2,5	16,0	1,430	6	306
	3	16,0	1,702	6	310
	M20x2,5	16,0	1,430	6	308 1)
9	1,5	20,0	0,875	6	312
	2	20,0	1,157	6	314
	M24x3	20,0	1,702	6	316 1)
10	1,5	26,0	0,875	6	322
	2	26,0	1,157	6	324
	3	26,0	1,702	6	330
	3,5	26,0	1,982	6	332
	4	26,0	2,263	6	334
	4,5	26,0	2,553	6	336
	5	26,0	2,836	6	337
	M30x3,5	24,0	1,982	6	331 1)
	M36x4	26,0	2,263	6	335 1)

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) profile corrected

→ v_c/f_z Page 80

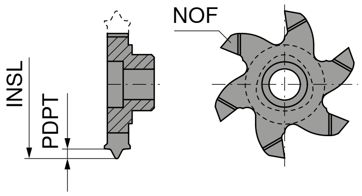
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Thread milling insert – Full profile

▲ 50 883 322 for threads > 1"

Polygon **G** **BSW** **BSF** 55°

R/L



Ti500

Solid carbide

Size	TPI 1/"	TP mm	INSL mm	PDPT mm	NOF	**50 883 ...**
6	19	1,337	9,6	0,871	3	**292**
7	14	1,814	17,7	1,177	6	**308**
	14	1,814	16,0	1,177	6	**304**
	11	2,309	16,0	1,494	6	**302**
	10	2,540	16,0	1,646	6	**306**
9	14	1,814	20,0	1,177	6	**316**
	11	2,309	20,0	1,494	6	**314**
10	11	2,309	26,0	1,494	6	**322**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 80

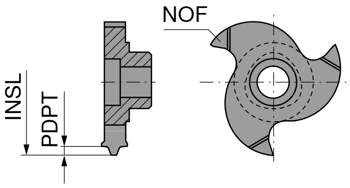
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Thread milling insert – Full profile

▲ DIN 103

Polygon | Tr | 30°

R/L



Ti500

Solid carbide

Size	TP mm	INSL mm	PDPT mm	NOF	Thread	**50 872 ...**
6	2	11,7	1,25	3	Tr 16x2 - Tr 20x2	**292**
	3	11,0	1,75	3	Tr 18x3 - Tr 20x3	**294**
	4	12,0	2,25	3	Tr 20x4	**296** 1)
7	3	14,0	1,75	3	Tr 24x3 - Tr 32x3	**302** 2)
	5	15,3	2,75	3	Tr 28x5 - Tr 36x5	**306** 3)
	5	15,3	2,75	3	Tr 26x5	**304** 3)
	6	16,2	3,50	3	Tr 34x6 - Tr 42x6	**310** 2)
	6	16,2	3,50	3	Tr 30x6 - Tr 32x6	**308** 2)
10	5	25,0	2,75	3	Tr 44x5 - Tr 48x5	**322** 4)
	7	22,0	3,75	3	Tr 38x7 - Tr 42x7	**324** 4)

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 80

1) profile corrected

2) Not suitable for the 50 805 011 and 50 805 010 holders

3) Not suitable for the 50 805 011 and 50 805 010 holders / profile corrected

4) Not suitable for the 50 805 026, 50 805 025 and 50 805 024 holders

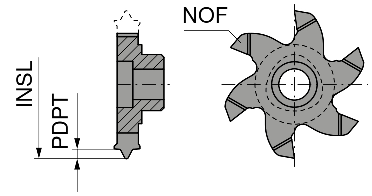
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Thread milling insert – Full profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!

Polygon **UNC** 60°

R/L



Ti500

Solid carbide

Size	TPI 1/"	INSL mm	PDPT mm	NOF	**50 886 ...**
6	12	9,6	1,228	3	**202**
	11	10,5	1,355	3	**204**
	10	11,7	1,485	3	**206**
7	9	16,0	1,577	6	**212**
9	8	18,0	1,809	6	**222**
	7	20,0	2,043	6	**224**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

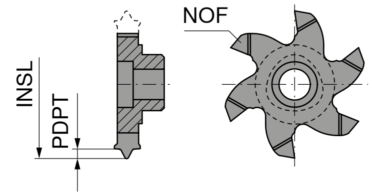
→ v_c/f_z Page 80

ModuSet – Thread milling insert – Full profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!

Polygon **UNF** 60°

R/L



Ti500

Solid carbide

Size	Thread	INSL mm	PDPT mm	NOF	**50 886 ...**
6	1/2 - 20	9,6	0,733	3	**302**
	9/16 - 18	10,5	0,827	3	**304**
	3/4 - 16	11,7	0,945	3	**306**
7	7/8 - 14	17,7	1,071	6	**312**
9	1 - 12	20,0	1,228	6	**322**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 80

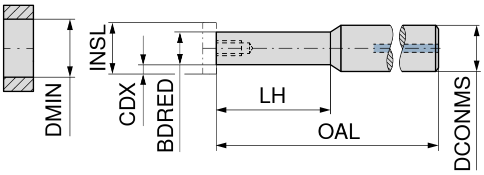
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Circular milling cutter

- ▲ For maximum machining depth, note insert width (CW)
- ▲ Size 6 = for INSL 9.6; 10.5; 11.7; 12
- ▲ Size 7 = for INSL 16; 17.7
- ▲ Size 9 = for INSL 18; 20; 21.7
- ▲ Size 10 = for INSL 24; 25; 26; 27.7
- ▲ Holder available as screw-in variant in the online shop

Scope of supply:
including key

Polygon



HM

HM

Size	LH mm	CDX mm	DCONMS h6 mm	OAL mm	BDRED mm	DMIN mm	torque moment Nm	50 805 ...	50 805 ...
6	20,00	2,25	12	67,5	7,0	12	1,0		050 1)
	20,00	2,25	12	67,5	7,0	12	1,0		051
	20,00	2,25	12	67,5	7,0	12	1,0	052	
	30,00	2,25	12	80,0	7,0	12	1,0		053
	30,00	2,25	12	80,0	7,0	12	1,0	054	
	40,00	2,25	12	100,0	7,0	12	1,0		055
	40,00	2,25	12	100,0	7,0	12	1,0	056	
7	20,90	4,00	12	67,4	9,0	18	1,1		002 1)
	21,00	4,00	12	67,4	9,0	18	1,1		004
	21,00	4,00	12	67,4	9,0	18	1,1	005	
	36,00	4,00	12	82,4	9,0	18	1,1		008
	36,00	4,00	12	82,4	9,0	18	1,1	085	
		4,00	12	122,5	12,0	18	1,1	010	
		4,00	12	82,4	12,0	18	1,1	011	
9	29,75	5,00	16	80,0	11,5	22	3,8		070 1)
	30,00	5,00	16	80,0	11,5	22	3,8		071
	30,00	5,00	16	80,0	11,5	22	3,8	072	
	50,00	5,00	16	100,0	11,5	22	3,8		073
	50,00	5,00	16	100,0	11,5	22	3,8	074	
10	20,50	5,70	16	105,0	15,5	28	5,5	025	
	20,50	6,80	16	149,7	15,5	28	5,5	024	
	20,50	6,80	20	175,4	15,5	28	5,5	026	
	30,40	6,80	16	79,6	13,6	28	5,5		012 1)
	30,50	6,80	16	79,6	13,6	28	5,5	015	
	30,50	6,80	16	79,6	13,6	28	5,5		014
	45,50	6,80	16	94,6	13,6	28	5,5	021	
	45,50	6,80	16	94,6	13,6	28	5,5		020
	60,50	6,80	16	109,6	13,6	28	5,5		022
	60,50	6,80	16	109,6	13,6	28	5,5	023	

1) Steel version

Key D

Clamping screw

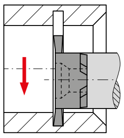
Spare parts

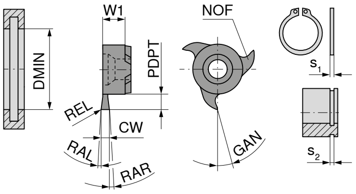
Size	80 950 ...		70 960 ...	
6	T08 - IP	125	M2,5x7	246
7	T08 - IP	125	M3x13	231
9	T15 - IP	128	M4x13	236
10	T20 - IP	129	M5x13,5	243

ModuSet – Milling insert for circlip grooves

Mini Mill

≥ Ø 10 mm





CWX500

Solid carbide

53 006 ...

Size	DMIN mm	$s_{2\ H13}$ mm	CW $_{-0.02}$ mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	s_1 mm	NOF	53 006 ...
10	10	0,70	0,74	1,5	3,50		1	1	15	0,60	3	**070**
	10	0,80	0,84	1,5	3,50		1	1	15	0,70	3	**080**
	10	0,90	0,94	1,5	3,50		1	1	15	0,80	3	**090**
	10	1,10	1,21	1,5	3,50		3	3	15	1,00	3	**110**
	10	1,30	1,41	1,5	3,50	0,10	3	3	15	1,20	3	**130**
	10	1,60	1,71	1,5	3,50	0,10	3	3	15	1,50	3	**160**
	12	1,10	1,21	2,5	3,50		3	3	15	1,00	3	**112**
	12	1,30	1,41	2,5	3,50	0,10	3	3	15	1,20	3	**132**
	12	1,60	1,71	2,5	3,50	0,10	3	3	15	1,50	3	**162**
18	18	0,70	0,74	1,5	5,75		1	1	15	0,60	3	**270**
	18	0,80	0,84	1,7	5,75		1	1	15	0,70	3	**280**
	18	0,90	0,94	1,9	5,75		1	1	15	0,80	3	**290**
	18	1,10	1,21	3,5	5,75		3	3	15	1,00	3	**310**
	18	1,30	1,41	3,5	5,75	0,10	3	3	15	1,20	3	**330**
	18	1,60	1,71	3,5	5,75	0,10	3	3	15	1,50	3	**360**
22	22	0,70	0,74	1,5	5,70		1	1	15	0,60	3	**470**
	22	0,80	0,84	1,7	5,70		1	1	15	0,70	3	**480**
	22	0,90	0,94	1,9	5,70		1	1	15	0,80	3	**490**
	22	1,00	1,04	2,1	5,70		1	1	15	0,90	3	**500**
	22	1,10	1,21	2,5	5,70		1	1	15	1,00	3	**510**
	22	1,30	1,41	4,5	5,70	0,10	3	3	15	1,20	3	**530**
	22	1,60	1,71	4,5	5,70	0,10	3	3	15	1,50	3	**560**
	22	1,85	1,96	4,5	5,70	0,15	3	3	15	1,75	3	**585**
	22	2,15	2,26	4,5	5,70	0,15	3	3	15	2,00	3	**615**
	22	2,65	2,76	4,5	5,70	0,15	3	3	15	2,50	3	**665**
	22	3,15	3,26	4,5	5,70	0,20	3	3	15	3,00	3	**415**
	22	4,15	4,26	4,5	5,70	0,20	3	3	15	4,00	3	**515**
	22	5,15	5,26	4,5	5,70	0,20	3	3	15	5,00	3	**605**

P	●
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K	●
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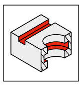
→ v_c/f_z Page 81

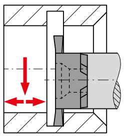
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

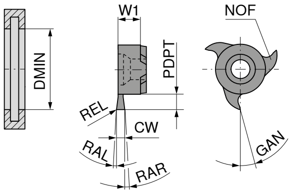
ModuSet – Milling insert for groove milling

Mini Mill

≥ Ø 10 mm







CWX500

Solid carbide

53 007 ...

Size	DMIN mm	CW 0.02 mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	NOF	53 007 ...
10	10	1,0	1,5	3,50	0,1	3	3	15	3	**010**
	10	1,5	1,5	3,50	0,2	3	3	15	3	**015**
	10	2,0	1,5	3,50	0,2	3	3	15	3	**020**
	10	2,5	1,5	3,50	0,2	3	3	15	3	**025**
	12	1,5	2,0	3,50	0,2	3	3	15	6	**114**
	12	1,5	2,5	3,50	0,2	3	3	15	3	**115**
	12	2,0	2,0	3,50	0,2	3	3	15	6	**119**
	12	2,0	2,5	3,50	0,2	3	3	15	3	**120**
	12	2,5	2,5	3,50	0,2	3	3	15	3	**125**
14	14	1,0	2,5	4,50		3	3	15	3	**210**
	14	1,5	2,5	4,50	0,2	3	3	15	3	**215**
	14	2,0	2,5	4,50	0,2	3	3	15	3	**220**
	14	2,5	2,5	4,50	0,2	3	3	15	3	**225**
	16	1,5	3,5	4,50	0,2	3	3	15	3	**315**
	16	2,0	3,5	4,50	0,2	3	3	15	3	**320**
	16	2,5	3,5	4,50	0,2	3	3	15	3	**325**
18	18	1,5	3,5	5,75	0,1	3	3	15	6	**414**
	18	1,5	3,5	5,75	0,2	3	3	15	3	**415**
	18	2,0	3,5	5,75	0,2	3	3	15	3	**420**
	18	2,0	3,5	5,75	0,2	3	3	15	6	**419**
	18	2,5	3,5	5,75	0,2	3	3	15	6	**424**
	18	2,5	3,5	5,75	0,2	3	3	15	3	**425**
	18	3,0	3,5	5,75	0,2	3	3	15	6	**429**
	18	3,0	3,5	5,75	0,2	3	3	15	3	**430**
	18	4,0	3,5	5,75	0,2	3	3	15	3	**440**
22	22	1,0	4,5	6,20	0,1	3	3	15	6	**810**
	22	1,5	4,5	5,70	0,2	3	3	15	3	**515**
	22	1,5	4,5	6,20	0,1	3	3	15	6	**815**
	22	2,0	4,5	6,20	0,2	3	3	15	6	**820**
	22	2,0	4,5	5,70	0,2	3	3	15	3	**520**
	22	2,5	4,5	6,20	0,2	3	3	15	6	**825**
	22	2,5	4,5	5,70	0,2	3	3	15	3	**525**
	22	3,0	4,5	5,70	0,2	3	3	15	3	**530**
	22	3,0	4,5	6,20	0,2	3	3	15	6	**830**
	22	3,5	4,5	5,70	0,2	3	3	15	3	**535**
	22	4,0	4,5	5,70	0,2	3	3	15	3	**540**
	22	4,0	4,5	6,20	0,2	3	3	15	6	**840**
28	25	2,0	5,0	6,50	0,2	3	3	15	3	**620**
	25	2,5	5,0	6,50	0,2	3	3	15	3	**625**
	25	3,0	5,0	6,50	0,2	3	3	15	3	**630**
	25	3,5	5,0	6,50	0,2	3	3	15	3	**635**
	25	4,0	5,0	6,50	0,2	3	3	15	3	**640**
	28	1,0	6,5	6,25	0,1	3	3	15	6	**610**
	28	1,5	6,5	6,25	0,1	3	3	15	6	**615**
	28	1,5	6,5	6,50	0,2	3	3	15	3	**715**
	28	2,0	6,5	6,25	0,2	3	3	15	6	**721**
	28	2,0	6,5	6,50	0,2	3	3	15	3	**720**
	28	2,5	6,5	6,25	0,2	3	3	15	6	**726**
	28	2,5	6,5	6,50	0,2	3	3	15	3	**725**
	28	3,0	6,5	6,50	0,2	3	3	15	3	**730**
	28	3,0	6,5	6,25	0,2	3	3	15	6	**731**
	28	3,5	6,5	6,50	0,2	3	3	15	3	**735**
	28	4,0	6,5	6,25	0,2	3	3	15	6	**741**
	28	4,0	6,5	6,50	0,2	3	3	15	3	**740**
	28	5,0	6,5	6,50	0,2	3	3	15	3	**750**
	28	6,0	6,5	6,50	0,2	3	3	15	3	**760**

P	●
M	●
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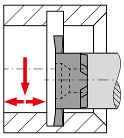
→ v_c/f_z Page 81

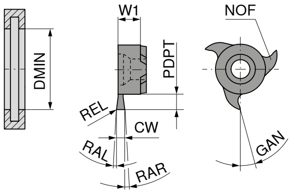
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling insert for groove milling (Specialist for aluminium)

Mini Mill

≥ Ø 32 mm





CWX500

Solid carbide

Size	DMIN mm	CW 0.02 mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	NOF 	53 007 ...
28	32	2,0	8,5	6,5	0,2	3	3	20	3	**920**
	32	2,5	8,5	6,5	0,2	3	3	20	3	**925**
	32	3,0	8,5	6,5	0,2	3	3	20	3	**930**

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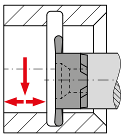
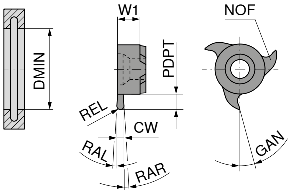
→ v_c/f_z Page 81

ModuSet – Milling insert for groove milling with full radius

Mini Mill

≥ Ø 12 mm





CWX500

Solid carbide

Size	DMIN mm	CW +0,03 mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	NOF	53 008 ...
10	12	2,2	2,5	3,50	1,1	3	3	15	3	**011**
14	16	2,2	3,5	4,60	1,1	3	3	15	3	**111**
18	18	2,2	3,5	5,75	1,1	3	3	15	3	**211**
22	22	1,0	4,5	5,75	0,5	3	3	15	3	**305**
	22	1,6	4,5	5,75	0,8	3	3	15	3	**308**
	22	2,0	4,5	5,75	1,0	3	3	15	3	**310**
	22	2,4	4,5	5,75	1,2	3	3	15	3	**312**
	22	2,8	4,5	5,75	1,4	3	3	15	3	**314**
	22	3,0	4,5	5,75	1,5	3	3	15	3	**315**
	22	4,0	4,5	5,75	2,0	3	3	15	3	**320**
	22	4,4	4,5	5,75	2,2	3	3	15	3	**322**
	22	5,0	4,5	5,75	2,5	3	3	15	3	**325**

P	●
M	●
K	●
N	●
S	○
H	
O	●

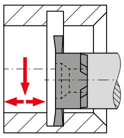
→ v_c/f_z Page 81

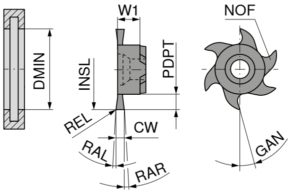
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling insert for groove milling, cross-pitched

Mini Mill

≥ Ø 12 mm





CWX500

Solid carbide

Size	DMIN mm	INSL mm	CW $_{+0,02}$ mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	NOF	53 015 ...
10	12	11,7	1,5	2,0	3,5	0,2	3	3	15	6	**114**
	12	11,7	2,0	2,0	3,5	0,2	3	3	15	6	**119**
14	16	15,7	1,5	2,5	4,5	0,2	3	3	15	6	**314**
	16	15,7	2,0	2,5	4,5	0,2	3	3	15	6	**319**
	16	15,7	2,5	2,5	4,5	0,2	3	3	15	6	**324**
18	18	17,7	2,0	4,0	5,8	0,2	3	3	15	6	**419**
	18	17,7	2,5	4,0	5,8	0,2	3	3	15	6	**424**
	18	17,7	3,0	4,0	5,8	0,2	3	3	15	6	**429**
	20	19,7	2,0	5,0	5,8	0,2	3	3	15	6	**469**
	20	19,7	2,5	5,0	5,8	0,2	3	3	15	6	**474**
	20	19,7	3,0	5,0	5,8	0,2	3	3	15	6	**479**
22	22	21,7	2,0	4,5	6,2	0,2	3	3	15	6	**820**
	22	21,7	2,5	4,5	6,2	0,2	3	3	15	6	**825**
	22	21,7	3,0	4,5	6,2	0,2	3	3	15	6	**830**
	22	21,7	4,0	4,5	6,2	0,2	3	3	15	6	**840**
	37	36,7	1,5	12,0	6,2	0,1	3	3	15	6	**865**
	37	36,7	2,0	12,0	6,2	0,2	3	3	15	6	**870**
28	25	24,8	2,5	5,0	6,4	0,2	3	3	15	6	**626**
	25	24,8	3,0	5,0	6,4	0,2	3	3	15	6	**631**
	25	24,8	4,0	5,0	6,4	0,2	3	3	15	6	**641**
	25	24,8	5,0	5,0	6,4	0,2	3	3	15	6	**651**
	25	24,8	6,0	5,0	6,4	0,2	3	3	15	6	**661**
	28	27,7	2,5	6,5	6,2	0,2	3	3	15	6	**726**
	28	27,7	3,0	6,5	6,2	0,2	3	3	15	6	**731**
	28	27,7	4,0	6,5	6,2	0,2	3	3	15	6	**741**
	28	27,7	5,0	6,5	6,2	0,2	3	3	15	6	**751**
	28	27,7	6,0	6,5	6,2	0,2	3	3	15	6	**761**
	35	34,7	2,0	10,0	6,2	0,2	3	3	15	6	**770**
	35	34,7	2,5	10,0	6,2	0,2	3	3	15	6	**775**
	35	34,7	3,0	10,0	6,2	0,2	3	3	15	6	**780**

P	●
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O	●

→ v_c/f_z Page 81

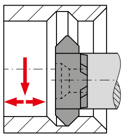
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

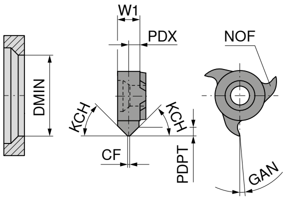
7

ModuSet – Milling insert for groove milling and chamfering

Mini Mill

≥ Ø 10 mm





CWX500

Solid carbide

Size	DMIN mm	CF $_{+0,03}$ mm	PDPT mm	W1 mm	KCH °	PDX mm	GAN °	NOF	**53 009 ...**
10	10	0,2	0,35	3,60	15	1,80	5	6	**015**
	10	0,2	0,45	3,60	20	1,80	5	6	**020**
	10	0,2	0,70	3,60	30	1,80	5	6	**030**
	10	0,2	1,20	3,60	45	1,80	5	6	**045**
	12	1,2	0,80	3,50	45	1,20	5	3	**035**
14	16	1,4	1,20	4,50	45	1,60	5	3	**145**
18	18	2,5	1,40	5,85	45	1,70	5	3	**258**
	18	0,2	2,20	5,75	45	3,00	5	6	**259**
22	22	2,0	1,70	5,85	45	2,00	5	3	**358**
	22	0,2	2,50	6,40	45	3,90	5	6	**463**
	22	3,0	3,00	9,40	45	3,25	5	3	**394** 1)
28	28	0,2	1,90	6,05	45	3,75	5	6	**560**

P	●
M	●
K	●
N	●
S	○
H	
O	●

1) Use clamping screw 73 082 006

→ v_c/f_z Page 81

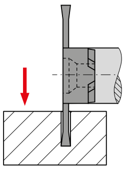
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

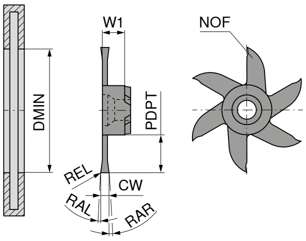
ModuSet – Milling insert for part-off

▲ PDPT = 12,0 mm in combination with holder 53 003 624
▲ reduce feed rate by 50 %

Mini Mill

≥ Ø 37 mm





CWX500

Solid carbide

Size	DMIN mm	CW $_{+0,02}$ mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	NOF	**53 013 ...**
22	37	0,5	12	5,6		3	3	6	**705** 1)
	37	0,6	12	5,7		3	3	6	**706** 1)
	37	0,8	12	6,0		3	3	6	**708** 1)
	37	1,0	12	6,2	0,1	3	3	6	**710**
	37	1,5	12	6,2	0,1	3	3	6	**715**

P	●
M	●
K	●
N	●
S	○
H	
O	●

1) The end face is not ground free to the center

→ v_c/f_z Page 81

ModuSet – Set for cut off

▲ Size 22

Mini Mill

Tool	Designation	Article no.	Bore-Ø mm	Piece	**53 014 ...**
Inserts	Milling inserts for separating	53 013 715	37	2	**990**
Tool holder	Endmill short	53 003 624		1	
Screw	M5 x 12	73 082 005		1	
Tightening Key	T20			1	

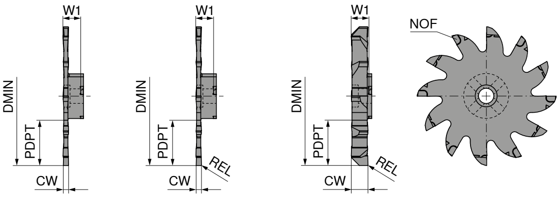
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling insert for slot and multipurpose milling

▲ Interface with four driving slots
▲ CW 1,5 – 6 mm: cross-pitched

Mini Mill

≥ Ø 50 mm



Size	DMIN mm	CW $_{+0,02}$ mm	PDPT mm	W1 mm	REL mm	NOF	NEW CWX500 Solid carbide 53 017 ...	NEW CWX500 Solid carbide 53 017 ...	NEW CWX500 Solid carbide 53 017 ...
50	50	0,5	16,5	6,35		12	**00500**		
	50	1,0	16,5	6,35		12	**01000**		
	50	1,5	16,5	6,35	0,1	12		**01500**	
	50	2,0	16,5	6,35	0,2	12		**02000**	
	50	2,5	16,5	6,35	0,2	12		**02500**	
	50	3,0	16,5	6,35	0,2	12		**03000**	
	50	4,0	16,5	6,35	0,2	12			**04000**
	50	5,0	16,5	6,35	0,2	12			**05000**
	50	6,0	16,5	6,35	0,2	12			**06000**

P	●	●	●
M	●	●	●
K	●	●	●
N	●	●	●
S	○	○	○
H			
O	●	●	●

→ v_c/f_z Page 81

Suitable holders can be found on → **page 33.**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

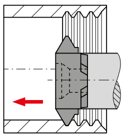
ModuSet – Milling insert for internal thread milling – Partial profile

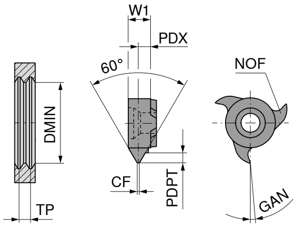
Mini Mill

60°

≥ M12

R/L





CWX500

Solid carbide

Size	Thread_{min}	TP	DMIN	CF	PDPT	W1	PDX	GAN	NOF	53 010 ...
		mm	mm	mm	mm	mm	mm	°		
10	M12	1,0 - 1,75	9,8	0,13	1,02	3,20	2,4	5	6	**017**
	M14	1,0 - 1,75	11,7	0,13	1,08	3,60	2,8	5	3	**010**
	M14	1,0 - 2,0	10,1	0,13	1,25	3,20	2,2	5	6	**021**
	M14	1,0 - 2,0	11,7	0,13	1,25	3,60	2,8	5	3	**020**
	M16	1,5 - 2,75	11,0	0,19	1,67	3,20	2,0	5	6	**027**
	M16	1,5 - 2,75	11,7	0,19	1,67	3,60	2,4	5	3	**015**
	M16	2,0 - 3,0	11,1	0,25	1,78	3,20	1,9	5	6	**029**
	M16	2,0 - 3,0	11,7	0,25	1,78	3,60	2,2	5	3	**030**
14	M18	1,0 - 1,75	15,7	0,12	1,08	4,60	3,8	5	3	**210**
	M18	1,0 - 2,0	15,7	0,12	1,25	4,60	3,5	5	3	**220**
	M20	1,5 - 2,75	15,7	0,18	1,67	4,60	3,5	5	3	**215**
	M22	2,5 - 3,0	15,7	0,31	1,78	4,60	3,4	5	3	**230**
18	M22	1,0 - 1,75	17,7	0,12	1,03	5,85	5,0	5	3	**410**
	M22	1,0 - 2,0	17,7	0,12	1,19	5,85	4,7	5	3	**412**
	M22	1,0 - 2,0	17,7	0,12	1,19	5,85	5,0	5	6	**416**
	M22	1,5 - 2,75	17,7	0,19	1,62	5,85	4,6	5	3	**415**
	M24	2,0 - 3,0	17,7	0,25	1,73	5,85	4,4	5	3	**425**
	M24	2,0 - 3,5	17,7	0,25	2,06	5,85	4,2	5	3	**455**
	M24	2,0 - 3,5	17,7	0,25	2,06	5,85	4,3	5	6	**434**
	M24	2,0 - 3,75	17,7	0,25	2,22	5,85	4,2	5	3	**420**
	M24	2,5 - 5,0	17,7	0,31	2,98	5,85	3,8	5	3	**430**
	M24	3,0 - 5,5	17,7	0,38	3,25	5,85	4,2	5	3	**435**
22	M27	1,0 - 2,0	21,7	0,12	1,19	5,85	4,6	5	3	**610**
	M27	1,0 - 2,0	21,7	0,12	1,19	6,20	5,0	5	6	**710**
	M27	1,5 - 2,75	21,7	0,18	1,62	5,85	4,5	5	3	**615**
	M27	2,0 - 3,75	21,7	0,25	2,22	5,85	4,2	5	3	**620**
	M27	2,5 - 4,5	21,7	0,25	2,70	5,85	3,7	5	3	**655**
	M27	2,0 - 4,5	21,7	0,25	2,70	6,05	4,2	5	6	**755**
	M30	2,5 - 5,0	21,7	0,31	2,98	5,85	3,8	5	3	**630**
	M30	3,5 - 6,0	21,7	0,44	3,52	5,85	3,4	5	3	**640**
	M30	3,5 - 6,5	21,7	0,44	3,84	5,85	3,2	5	3	**645**
28	M33	1,0 - 2,0	27,7	0,12	1,20	6,60	4,5	5	3	**820**
	M33	1,5 - 2,5	27,7	0,18	1,49	6,60	4,3	5	3	**825**
	M33	1,5 - 2,5	27,7	0,19	1,60	6,10	5,0	5	6	**826**
	M36	2,5 - 5,0	27,7	0,38	2,93	6,10	2,3	5	6	**850**
	M36	2,5 - 5,0	27,7	0,37	2,93	6,60	4,0	5	3	**840**
	M39	4,0 - 6,0	27,7	0,62	3,37	6,60	3,6	5	3	**860**

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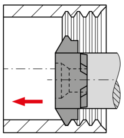
→ v_c/f_z Page 81

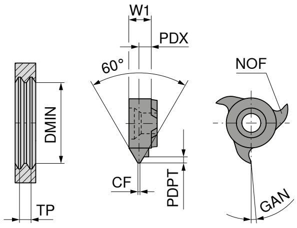
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling insert for internal thread milling – Full profile

Mini Mill | M | 60°

≥ M22 | R/L





CWX500

Solid carbide

Size	Thread$_{min}$	TP mm	DMIN mm	CF mm	PDPT mm	W1 mm	PDX mm	GAN °	NOF	53 011 ...
18	M22	1,50	17,7	0,18	0,81	5,85	4,8	5	3	**415**
	M22	1,75	17,7	0,20	0,95	5,85	4,7	5	3	**417**
	M22	2,00	17,7	0,25	1,08	5,85	4,6	5	3	**420**
	M24	2,50	17,7	0,31	1,35	5,85	4,4	5	3	**425**
	M27	3,00	17,7	0,37	1,62	5,85	4,3	5	3	**430**
	M27	3,50	17,7	0,43	1,89	5,85	4,0	5	3	**435**
22	M24	1,50	21,7	0,19	0,81	5,85	4,8	5	3	**615**
	M24	1,50	21,7	0,19	0,81	6,20	5,3	5	6	**715**
	M27	1,75	21,7	0,22	0,95	6,20	5,2	5	6	**717**
	M27	1,75	21,7	0,22	0,95	5,85	4,7	5	3	**617**
	M27	2,00	21,7	0,25	1,08	6,20	5,0	5	6	**720**
	M27	2,00	21,7	0,25	1,08	5,85	4,6	5	3	**620**
	M30	3,00	21,7	0,37	1,62	5,85	4,3	5	3	**630**
	M30	3,00	21,7	0,37	1,62	6,20	4,8	5	6	**730**
	M30	3,50	21,7	0,43	1,89	5,85	4,0	5	3	**635**
	M33	4,00	21,7	0,50	2,16	5,85	3,9	5	3	**640**
	M33	4,00	21,7	0,50	2,16	6,20	4,4	5	6	**740**
	M33	4,50	21,7	0,56	2,43	5,85	3,7	5	3	**645**

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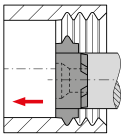
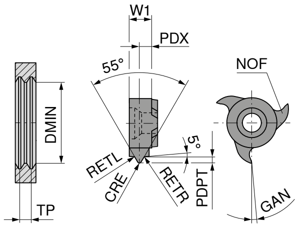
→ v_c/f_z Page 81

ModuSet – Milling insert for internal thread milling – Full profile

Mini Mill | G | 55°

≥ G 3/8" | R/L





CWX500

Solid carbide

Size	Thread$_{min}$	TP mm	DMIN mm	TPI 1/"	W1 mm	PDX mm	PDPT mm	CRE mm	RETL mm	RETR mm	GAN °	NOF	53 012 ...
10	G 3/8"	1,34	11,7	19	3,60	2,5	0,860	0,18	0,18	0,18	5	3	**113**
	G 1/2"	1,81	11,7	14	3,60	2,3	1,160	0,24	0,24	0,24	5	3	**118**
	G 1"	2,31	11,7	11	3,60	2,0	1,480	0,31	0,31	0,31	5	3	**123**
18		1,34	17,7	19	5,85	4,9	0,856	0,18	0,18	0,18	5	3	**219**
	G 3/4"	1,81	17,7	14	5,85	4,6	1,160	0,24	0,24	0,24	5	3	**214**
	G 1"	2,31	17,7	11	5,85	4,4	1,480	0,31	0,31	0,31	5	3	**211**
22	G 1"	2,31	21,7	11	5,85	4,0	1,480	0,31	0,31	0,31	5	3	**311**
		3,17	21,7	8	5,85	3,5	2,030	0,43	0,43	0,43	5	3	**308**
	BSW 1 1/2"	4,23	21,7	6	5,85	3,1	2,710	0,58	0,58	0,58	5	3	**306**

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N	●
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O	●

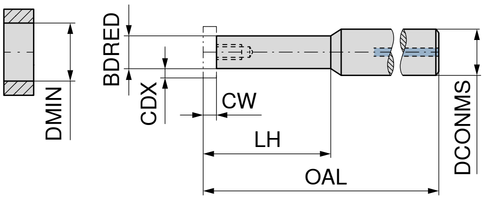
→ v_c/f_z Page 81

ModuSet – Circular milling cutter, extra short

▲ Steel Version

Scope of supply:
including key

Mini Mill



Steel

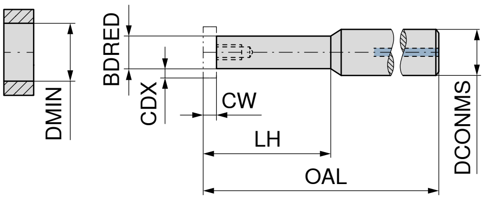
Size	DCONMS $_{h6}$ mm	BDRED mm	OAL mm	LH mm	DMIN mm	CW mm	CDX mm	torque moment Nm	53 004 ...
10	10	6,0	60	15,2	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	015
14	10	8,0	60	17,7	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	217
	13	8,0	70	25,7	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	225
18	10	9,0	60	17,0	17,7	≤5,6	3,5	4,5	417
	13	9,0	70	25,0	17,7	≤5,6	3,5	4,5	425
22	10	11,3	60	10,7	21,7	≤9,15	4,5	7,0	610
	13	11,3	70	25,7	21,7	≤9,15	4	7,0	625
28	13	14,0	70	10,7	27,7	≤10	6,5	7,0	810
	20	14,0	100	35,7	27,7	≤10	6,5	7,0	835

ModuSet – Circular milling cutter, short

▲ Steel Version

Scope of supply:
including key

Mini Mill



Steel

Steel

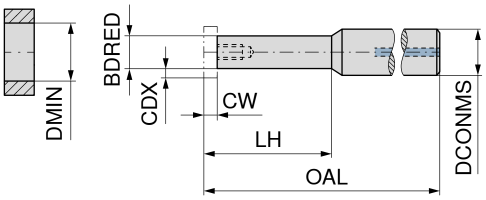
Size	DCONMS $_{h6}$ mm	BDRED mm	OAL mm	LH mm	DMIN mm	CW mm	CDX mm	torque moment Nm	53 002 ...	53 003 ...
10	16	6	80	12,0	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	012	012
14	16	8	80	16,0	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	216	216
18	16	9	80	18,0	17,7	≤5,6	3,5	4,5	418	418
22	16	12	80	24,0	21,7	≤9,15	4,5	7,0	624	624
28	20	14	100	35,7	27,7	≤10	6,5	7,0		835

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Circular milling cutter, vibration-damped

Scope of supply:
including key

Mini Mill



Size	DCONMS h6 mm	BDRED mm	OAL mm	LH mm	DMIN mm	CW mm	CDX mm	torque moment Nm	53 001 ... HM	53 000 ... HM
10	12	6,0	80	21	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	021	021
	12	6,0	90	30	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	030	030
	12	6,0	100	42	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	042	042
	12	7,3	90	30	9,7 / 11,7	≤3,35	0,9 / 1,85	2,0	130	130
	16	7,3	100	25	9,7 / 11,7	≤3,35	0,9 / 1,85	2,0	025	025
14	12	8,0	95	29	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	229	229
	12	8,0	110	42	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	242	242
	12	8,0	120	56	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	256	256
	12	9,5	110	42	13,7 / 15,7	≤4,35	1,65 / 2,7	3,5	342	342
	16	9,5	110	33	13,7 / 15,7	≤4,35	1,65 / 2,7	3,5	233	233
18	12	9,0	100	32	17,7	≤5,6	3,5	4,5	432	432
	12	9,0	100	45	17,7	≤5,6	3,5	4,5	445	445
	12	9,0	120	64	17,7	≤5,6	3,5	4,5	464	464
	16	9,0	93	25	17,7	≤5,6	3,5	4,5	425	425
	16	9,0	100	32	17,7	≤5,6	3,5	4,5	532	532
	16	9,0	110	45	17,7	≤5,6	3,5	4,5	545	545
	16	9,0	130	64	17,7	≤5,6	3,5	4,5	564	564
	16	13,0	110	64	17,7	≤5,6	1,5	4,5	465	465
	16	13,0	130	66	17,7	≤5,6	1,5	4,5	466	466
22	12		100	42	21,7	≤9,15	4,5	7,0	642	642
	12		130	60	21,7	≤9,15	4,5	7,0	660	660
	16	11,5	90	30	21,7	≤9,15	4,5	7,0	630	630
	16	12,0	100	42	21,7	≤9,15	4,5	7,0	742	742
	16	12,0	130	60	21,7	≤9,15	4,5	7,0	760	760
	16	12,0	160	85	21,7	≤9,15	4,5	7,0	685	685
	20	16,0	110	45	21,7	≤9,15	2,5	7,0	645	645
	20	16,0	130	65	21,7	≤9,15	2,5	7,0	665	665
28	16	14,3	100	42	27,7 / 24,8	≤10	6,5 / 5	7,0	842	842
	16	14,3	130	60	27,7 / 24,8	≤10	6,5 / 5	7,0	860	860
	16	14,3	160	85	27,7 / 24,8	≤10	6,5 / 5	7,0	885	885
	20	13,5	104	35	27,7 / 24,8	≤10	6,5 / 5	7,0	835	835
	20	14,3	160	85	27,7 / 24,8	≤10	6,5 / 5	7,0	985	985


Key D


Clamping screw


Clamping screw

Spare parts

Size		80 950 ...		73 082 ...		73 082 ...
10	T08	110			M2,6	002
14	T10	112			M3,5	003
18	T15	113			M4	004
22	T20	114	M5	006	M5	005
28	T20	114			M5	005

Clamping screw 73 082 006 only for insert 53 009 394

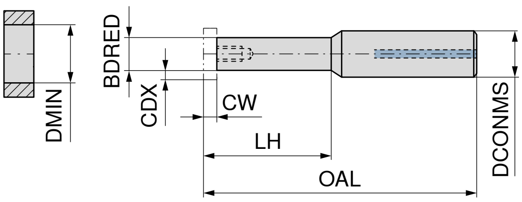
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Circular milling cutter

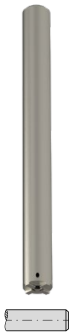
- ▲ Steel and carbide versions
- ▲ Specialised cutting point with four driving slots exclusively for cutting operations in the larger diameter range

Scope of supply:
including key

Mini Mill



NEW



HM

NEW

Steel

Size	DCONMS h6 mm	BDRED mm	OAL mm	LH mm	DMIN mm	CW mm	CDX mm	torque moment Nm	HM 53 016 ...	Steel 53 016 ...
50	16		125	60	50	≤6	16,5	7,0	**06000**	
	16		155	90	50	≤6	16,5	7,0	**09000**	
	16		185	120	50	≤6	16,5	7,0	**12000**	
	20	16	100	32	50	≤6	16,5	7,0		**23200**

Key D

Clamping screw

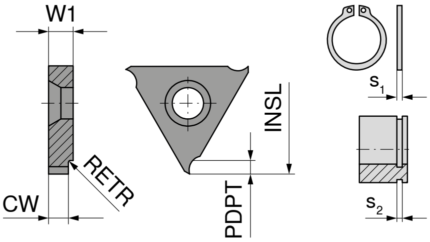
Spare parts

Size		**80 950 ...**		**73 082 ...**
50	T20	**114**	M5	**006**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling inserts for circlip grooves without chamfer

System 300



Ti500

Solid carbide

50 853 ...

Size	$s_{2\ H13}$ mm	INSL mm	W1 mm	CW $_{-0,03}$ mm	PDPT mm	RETR mm	s_1 mm	50 853 ...
03	0,90	10,6	2,34	0,98	0,70	0,3	0,80	**302**
	1,10	10,6	2,34	1,18	0,90	0,3	1,00	**304**
	1,30	10,6	2,34	1,38	1,10	0,3	1,20	**306**
	1,60	10,6	2,34	1,68	1,25	0,3	1,50	**308**
	1,85	10,6	2,34	1,93	1,25	0,3	1,75	**310**
02	0,90	17,5	3,50	0,98	0,70	0,3	0,80	**312**
	1,10	17,5	3,50	1,18	0,90	0,3	1,00	**314**
	1,30	17,5	3,50	1,38	1,10	0,3	1,20	**316**
	1,60	17,5	3,50	1,68	1,25	0,3	1,50	**318**
	1,85	17,5	3,50	1,93	1,25	0,3	1,75	**320**
	2,15	17,5	3,50	2,23	1,75	0,3	2,00	**322**
	2,65	17,5	3,50	2,73	1,75	0,3	2,50	**324**
	3,15	17,5	3,50	3,23	2,20	0,3	3,00	**326**
01	0,90	23,0	4,00	0,98	0,70	0,3	0,80	**328**
	1,10	23,0	4,00	1,18	0,90	0,3	1,00	**330**
	1,30	23,0	4,00	1,38	1,10	0,3	1,20	**332**
	1,60	23,0	4,00	1,68	1,25	0,3	1,50	**334**
	1,85	23,0	4,00	1,93	1,25	0,3	1,75	**336**
	2,15	23,0	4,00	2,23	1,75	0,3	2,00	**338**
	2,65	23,0	4,00	2,73	1,75	0,3	2,50	**340**
	3,15	23,0	4,00	3,23	2,20	0,3	3,00	**342**

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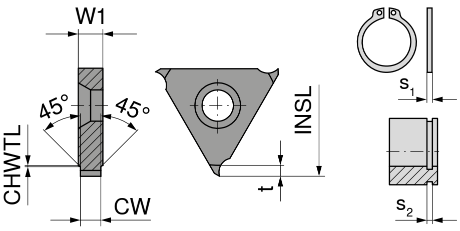
→ v_c/f_z Page 80

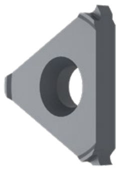
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling inserts for circlip grooves with chamfer

System 300



Ti500



Solid carbide

Size	$s_{2\ H13}$ mm	INSL mm	W1 mm	CW $_{-0,03}$ mm	t mm	CHWTL mm	s_1 mm	**50 852 ...**
03	1,10	10,6	2,34	1,18	0,50	0,10	1,00	**302**
02	1,10	17,5	3,50	1,18	0,50	0,10	1,00	**312**
	1,30	17,5	3,50	1,38	0,85	0,15	1,20	**314**
	1,60	17,5	3,50	1,68	1,00	0,15	1,50	**316**
	1,85	17,5	3,50	1,93	1,25	0,20	1,75	**317**
	2,15	17,5	3,50	2,23	1,50	0,20	2,00	**318**
	2,65	17,5	3,50	2,73	1,50	0,20	2,50	**319**
01	1,10	23,0	4,00	1,18	0,50	0,10	1,00	**320**
	1,30	23,0	4,00	1,38	0,70	0,15	1,20	**321**
	1,30	23,0	4,00	1,38	0,85	0,15	1,20	**322**
	1,60	23,0	4,00	1,68	1,00	0,15	1,50	**324**
	1,60	23,0	4,00	1,68	0,85	0,15	1,50	**323**
	1,85	23,0	4,00	1,93	1,25	0,20	1,75	**325**
	2,15	23,0	4,00	2,23	1,50	0,20	2,00	**326**
	2,65	23,0	4,00	2,73	1,75	0,20	2,50	**328**
	2,65	23,0	4,00	2,73	1,50	0,20	2,50	**327**
	3,15	23,0	4,00	3,32	1,75	0,20	3,00	**329**

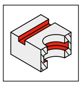
P	●
M	●
K	●
N	●
S	●
H	○
O	●

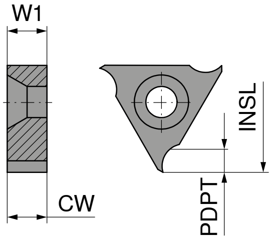
→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Milling inserts without profile, ground ready-for-use

System 300





Ti500

Solid carbide

Size	CW +0,02 mm	PDPT mm	INSL mm	W1 mm	50 851 ...
03	2,34	1,60	10,6	2,34	304
	3,00	1,60	10,6	3,00	306
02	3,50	2,60	17,5	3,50	312
	5,00	2,60	17,5	5,00	314
	6,00	2,60	17,5	6,00	316
01	4,00	3,45	23,0	4,00	322 1)
	6,50	3,45	23,0	6,50	324 1)

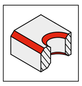
	50 851 ...
P	●
M	●
K	●
N	●
S	●
H	○
O	●

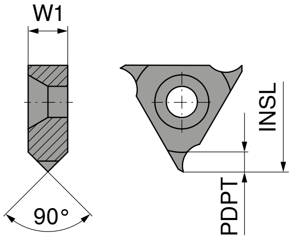
1) with circular milling cutter 50 800 090 PDPT = 3.0 mm

→ v_c/f_z Page 80

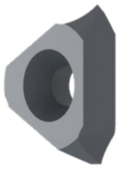
ModuSet – Milling inserts for chamfering and deburring

System 300





Ti500



Solid carbide

Size	PDPT mm	INSL mm	W1 mm	50 857 ...
03	1,50	10,6	3,0	304
02	2,50	17,5	5,0	314
01	3,25	23,0	6,5	322 1)

	50 857 ...
P	●
M	●
K	●
N	●
S	●
H	○
O	●

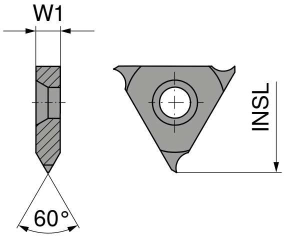
1) with circular milling cutter 50 800 090 PDPT = 3.0 mm

→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuSet – Thread milling insert – Partial profile

System 300



Ti500

Solid carbide

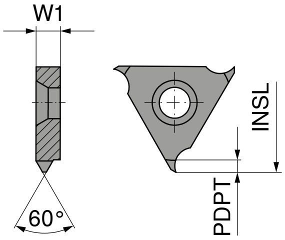
Size	TP mm	INSL mm	W1 mm	50 855 ...
02	1 - 3,5	17,5	3,5	314
01	1 - 4,0	23,0	4,0	324

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c/f_z Page 80

ModuSet – Thread milling insert – Full profile

System 300 **M** **MF**



Ti500

Solid carbide

Size	TP mm	INSL mm	W1 mm	PDPT mm	50 859 ...
03	1,0	10,6	2,34	0,578	304
	1,5	10,6	2,34	0,864	308
	2,0	10,6	2,34	1,159	310
02	1,0	17,5	3,50	0,578	311
	1,5	17,5	3,50	0,864	312
	2,0	17,5	3,50	1,159	314
	2,5	16,0	3,50	1,444	317 1)
	2,5	17,5	3,50	1,444	316
	3,0	17,5	3,50	1,728	318
01	1,0	23,0	4,00	0,578	320
	1,5	23,0	4,00	0,864	322
	2,0	23,0	4,00	1,159	324
	2,5	23,0	4,00	1,444	326
	3,0	23,0	4,00	1,728	328
	3,5	23,0	4,00	2,023	330
	4,0	23,0	4,00	2,308	332
	4,5	23,0	6,50	2,602	334
	5,0	23,0	6,50	2,887	336
	6,0	23,0	6,50	3,467	338 2)

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c/f_z Page 80

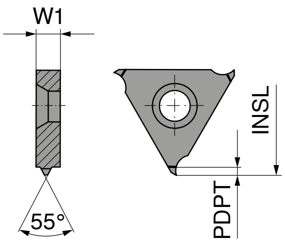
1) M20x2,5 – profile corrected

2) with circular milling cutter 50 800 090 PDPT = 3.0 mm

ModuSet – Thread milling insert – Full profile

System 300 | **G** | **BSW** | **BSF** | 55°

R/L



Ti500

Solid carbide

Size	TP mm	TPI 1/"	INSL mm	W1 mm	PDPT mm	50 858 ...
02	1,814	14	17,5	3,5	1,162	**314**
	2,309	11	17,5	3,5	1,494	**312**
01	2,309	11	23,0	4,0	1,494	**322**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c/f_z Page 80

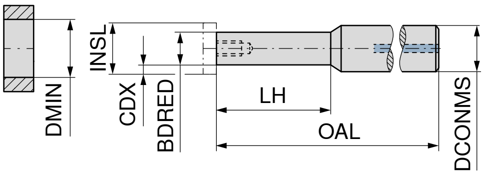
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

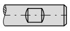
ModuSet – Circular milling cutter

▲ Size refers to milling inserts

Scope of supply:
including key

System 300





Size	INSL mm	CDX mm	LH mm	DCONMS h6 mm	OAL mm	BDRED mm	DMIN mm	torque moment Nm	50 800 ...
03	10,6	1,60	17,2	10	57,20	7,4	11	0,9	020 1)
	10,6	1,60	34,2	10	74,20	7,4	11	0,9	025 2)
02	17,5	2,60	28,7	12	74,05	12,0	20	3,8	030
	17,5	2,60	63,7	12	108,70	12,0	20	3,8	045 2)
01	23,0	3,45	38,5	16	87,00	16,1	25	5,5	050
	23,0	3,45	67,5	16	116,00	16,1	25	5,5	070
	23,0	3,00	88,5	16	137,00	17,0	25	5,5	090 2)

1) Without Through Coolant
2) Carbide version

Key D

Clamping screw

Spare parts

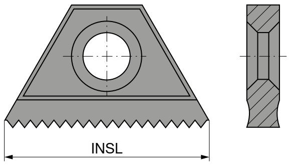
Size	Key D	80 950 ...	Clamping screw	70 960 ...
03	T06 - IP	123	M2x9	232
02	T15 - IP	128	M4x12,3	233
01	T20 - IP	129	M5x15	234

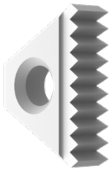
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

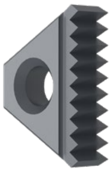
ModuThread – Thread milling insert

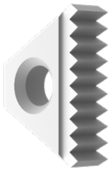
▲ Can be used on both sides (except for INSL 10.4)

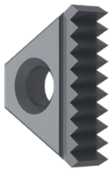
MWN | M | MF | 60°











INSL mm	TP mm	R/L Solid carbide **50 890 ...**	R/L TiAlN Solid carbide **50 890 ...**	R/L Solid carbide **50 891 ...**	R/L TiAlN Solid carbide **50 891 ...**
10,4	0,50	**100**			
	0,75	**101**			
	1,00	**102**	**302**		
	1,25	**103**			
	1,50	**104**	**304**		
11,0	0,50	**120**			
	0,75	**121**			
	1,00	**122**	**322**		
	1,25	**123**			
	1,50	**124**	**324**		
16,0	0,50	**140**			
	0,75	**141**			
	1,00	**142**	**342**	**142**	**342**
	1,25	**143**		**143**	
	1,50	**144**	**344**	**144**	**344**
	1,75	**145**		**145**	
	2,00	**146**	**346**	**146**	**346**
27,0	1,00	**162**	**362**	**162**	**362**
	1,25	**163**		**163**	
	1,50	**164**	**364**	**164**	**364**
	1,75	**165**			
	2,00	**166**	**366**	**166**	**366**
	2,50	**167**		**167**	
	3,00	**168**	**368**	**168**	**368**
	3,50	**169**		**169**	
	4,00	**170**		**170**	
P		●	●	●	●
M		○	●	○	●
K		●	●	●	●
N		●	●	●	●
S					
H					
O		●	○	●	○

→ v_c/f_z Page 79

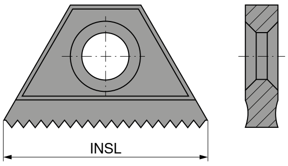
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Thread milling insert

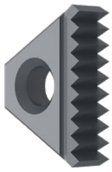
▲ Can be used on both sides (except for INSL 10.4)

MWN G 55°

R/L



TiAlN



Solid carbide

INSL mm	TPI 1/"	TP mm	50 895 ...
10,4	19	1,337	300
16,0	14	1,814	342
	11	2,309	344
27,0	11	2,309	366

P	●
M	●
K	●
N	●
S	
H	
O	○

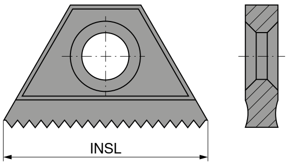
→ v_c/f_z Page 79

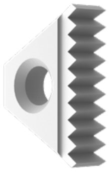
ModuThread – Thread milling insert

▲ Can be used on both sides (except for INSL 10.4)

MWN UN 60°

R/L





Solid carbide

INSL mm	TPI 1/"	TP mm	50 892 ...
10,4	20	1,270	100
	18	1,411	102
16,0	16	1,588	144
	12	2,117	146
27,0	12	2,117	166
	8	3,175	168

P	●
M	○
K	●
N	●
S	
H	
O	●

→ v_c/f_z Page 79

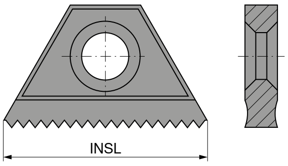
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

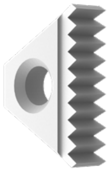
ModuThread – Thread milling insert

▲ double sided

MWN Pg 80°

R/L





Solid carbide

INSL mm	TPI 1/"	TP mm	50 896 ...
16	18	1,411	**142**
	16	1,588	**144**

P	●
M	○
K	●
N	●
S	
H	
O	●

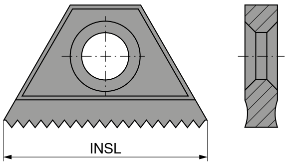
→ v_c/f_z Page 79

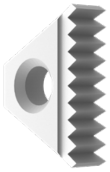
ModuThread – Thread milling insert

▲ double sided

MWN NPT 60°

R/L





Solid carbide

INSL mm	TPI 1/"	TP mm	50 897 ...
16	14,0	1,814	**142**
	11,5	2,209	**144**
27	11,5	2,209	**164**
	8,0	3,175	**166**

P	●
M	○
K	●
N	●
S	
H	
O	●

→ v_c/f_z Page 79

Note! Thread milling inserts are marked R (right-hand thread) and L (left-hand thread). The standard tool holder cannot be used to produce a left-hand thread! Tool holder for left-hand thread available on special request.

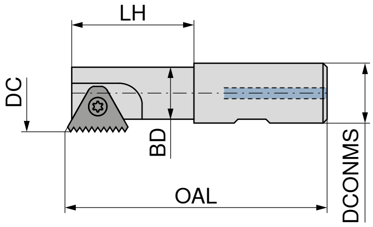
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Circular milling cutter

▲ INSL refers to milling inserts

Scope of supply:
includes key

MWN **M** **MF** **G**
Pg **UN**



INSL mm	BD mm	LH mm	DCONMS mm	OAL mm	DC mm	torque moment Nm	50 843 ...
10,4	6,8	12	12	69	9,0	0,9	**101**
	6,8	17	20	84	9,0	0,9	**102**
11,0	8,9	12	12	70	11,5	1,2	**111**
	8,9	20	20	85	11,5	1,2	**112**
16,0	13,6	22	16	90	17,0	2,5	**161**
	16,6	43	20	95	20,0	2,5	**162**
	18,6	25	25	125	22,0	2,5	**163**
27,0	24,0	52	25	110	30,0	9,0	**271**
	31,0	58	32	120	37,0	9,0	**273**
	24,0	92	25	150	30,0	9,0	**272**
	31,0	98	32	160	37,0	9,0	**274**

Pilot hole diameter for circular end mill 50 843 ...

	TP in mm									
BD	0,5 mm 48 G/"	0,75 mm 32 G/"	1,0 mm 24 G/"	1,25 mm 20 G/"	1,5 mm 16 G/"	2,0 mm 12 G/"	2,5 mm 10 G/"	3,0 mm 8 G/"	3,5 mm 7 G/"	4,0 mm 6 G/"
6,8	9,5	10	10,7	11,4	12					
8,9	12	12,5	13,2	13,9	14,5					
13,6	17,6	18,2	19	19,6	20	21				
16,6	20,7	21,4	22	22,6	23	24				
18,6	22,7	23,4	24	24,6	25	26				
24,0	30,7	31,4	32	32,8	33,5	34,6	36,6	39	42	45
31,0	38	38,6	39,5	40,4	41	42	44	46,5	49	52

Key D

Clamping screw

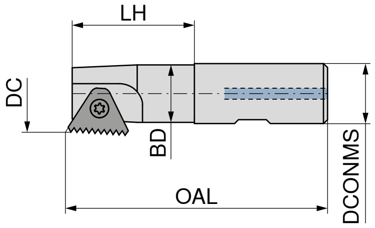
Spare parts **INSL**		**80 950 ...**		**70 950 ...**
10,4	T07	**109**	M2,2x5,0	**200**
11	T08	**110**	M2,6x6,5	**201**
16	T10	**112**	UNC5-40 x 8	**202**
27	T25	**115**	M5x15	**203**

ModuThread – Circular milling cutter

▲ INSL refers to milling inserts

Scope of supply:
includes key

MWN **NPT**



INSL mm	BD mm	Thread	LH mm	DCONMS h6 mm	OAL mm	DC mm	torque moment Nm	50 844 ...
16	12,5	NPT 1/2	22	16	90	15,5	2,5	**161**
	15,0	NPT 3/4 - 1 1/4	23	20	85	19,0	2,5	**162**
27	24,0	NPT 1 1/2 - 2	52	25	110	30,0	9,0	**271**
	31,0	NPT > 2	58	32	120	37,0	9,0	**272**

Key D

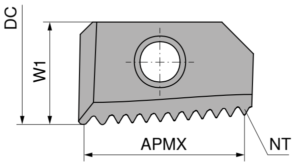
Clamping screw

Spare parts **INSL**		**80 950 ...**		**70 950 ...**
16	T10	**112**	UNC5-40 x 8	**202**
27	T25	**115**	M5x15	**203**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Thread milling insert

GZD | M | MF | 60°



Ti500

Solid carbide

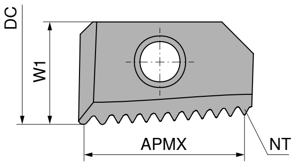
DC mm	TP mm	W1 mm	APMX mm	NT	50 863 ...
12	1,0	7,5	12,0	13	**300**
	1,5	7,5	10,5	8	**302**
17	1,0	11,0	16,0	17	**310**
	1,5	11,0	16,5	12	**312**
	2,0	11,0	16,0	9	**314**
20	1,0	7,5	12,0	13	**320**
	1,5	7,5	10,5	8	**322**
25	1,0	11,0	16,0	17	**330**
	1,5	11,0	16,5	12	**332**
	2,0	11,0	16,0	9	**334**

P	●
M	●
K	●
N	●
S	
H	
O	

→ v_c/f_z Page 79

ModuThread – Thread milling insert

GZD | G | 55°



Ti500

Solid carbide

DC mm	TPI 1/"	W1 mm	APMX mm	NT	50 864 ...
12	14	7,5	9,07	6	**300**
17	14	11,0	16,33	10	**312** 1)
	14	11,0	16,33	10	**314** 2)
	11	11,0	16,16	8	**310**
25	14	11,0	16,33	10	**332**
	11	11,0	16,16	8	**330**

P	●
M	●
K	●
N	●
S	
H	
O	

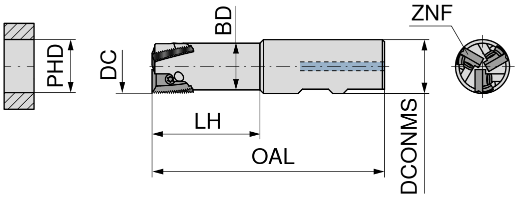
1) Thread: 5/8 – 3/4 – 7/8
2) 1/2" Profile corrected

→ v_c/f_z Page 79

ModuThread – Circular milling cutter

Scope of supply:
includes key

GZD



DC mm	LH mm	DCONMS h6 mm	OAL mm	BD mm	ZNF	PHD mm	torque moment Nm	50 842 ...
12	18	16	74,0	9,4	1	14	1,1	**121**
17	30	16	79,0	13,7	1	19	3,8	**171**
20	32	20	83,0	17,5	3	22	1,1	**201**
25	50	25	107,6	21,7	3	26	3,8	**251**
	85	25	142,6	21,7	3	26	3,8	**252** 1)

1) Heavy metal version with mounted head


Key D

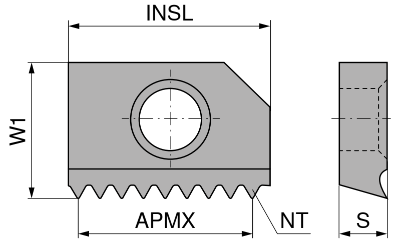

Clamping screw

Spare parts **DC**		80 950 ...		70 960 ...
12	T08 - IP	**125**	M2,5x6,5	**244**
17	T15 - IP	**128**	M4x7,5	**245**
20	T08 - IP	**125**	M2,5x6,5	**244**
25	T15 - IP	**128**	M4x7,5	**245**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Thread milling insert

GZG **M** **MF** 60°



INSL mm	TP mm	W1 mm	APMX mm	S mm	NT	R/L Ti500 Solid carbide **50 887 ...**	R/L Ti500 Solid carbide **50 885 ...**
14,5	0,50	10,0	13,50	3,18	28		**350**
	0,75	10,0	13,50	3,18	19		**352**
	1,00	10,0	13,00	3,18	14	**304**	**354**
	1,25	10,0	12,50	3,18	11		**356**
	1,50	10,0	12,00	3,18	9	**308**	**358**
	1,75	10,0	12,25	3,18	8		**360**
	2,00	10,0	12,00	3,18	7	**312**	**362**
	2,50	10,0	10,00	3,18	5		**364**
	2,50	10,0	10,00	3,18	5		**366** 1)
15,0	3,00	10,5	12,00	3,18	5		**370** 2)
	3,50	10,5	10,50	3,18	4		**372** 2)
21,0	1,00	10,0	19,00	3,18	20		**380**
	1,50	10,0	19,50	3,18	14		**382**
	1,50	10,0	18,00	3,18	13	**320**	
	2,00	10,0	18,00	3,18	10		**384**
26,0	1,50	15,0	24,00	5,00	17		**390**
	2,00	15,0	24,00	5,00	13		**392**
	3,00	15,0	21,00	5,00	8		**396**
	3,50	15,0	20,00	5,00	7		**398**
	4,00	15,0	20,00	5,00	6		**400**

P	●	●
M	●	●
K	●	●
N	●	●
S		
H		
O		

1) M20x2,5 – profile corrected
2) Without chamfer

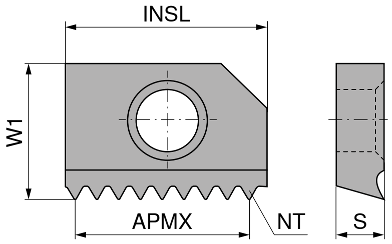
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Thread milling insert

GZG G 55°

R/L



Ti500

Solid carbide

INSL mm	TPI 1/"	TP mm	W1 mm	APMX mm	S mm	NT	50 888 ...
14,5	18	1,411	10	11,28	3,18	9	310
	16	1,587	10	11,11	3,18	8	312
	14	1,814	10	12,69	3,18	8	314
	12	2,116	10	10,58	3,18	6	316
	11	2,309	10	11,54	3,18	6	318
21,0	14	1,814	10	18,14	3,18	11	320
	11	2,309	10	18,47	3,18	9	322
26,0	11	2,309	15	23,09	5,00	11	330

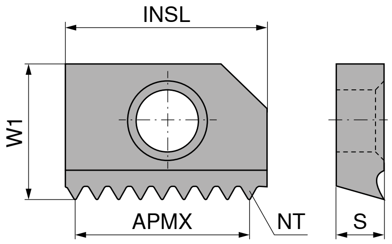
P	●
M	●
K	●
N	●
S	
H	
O	

→ v_c/f_z Page 79

ModuThread – Thread milling insert

GZG Pg 80°

R/L



Ti500

Solid carbide

INSL mm	TPI 1/"	TP mm	W1 mm	APMX mm	S mm	NT	50 894 ...
14,5	18	1,411	10	12,69	3,18	10	302
	16	1,587	10	11,11	3,18	8	304

P	●
M	●
K	●
N	●
S	
H	
O	

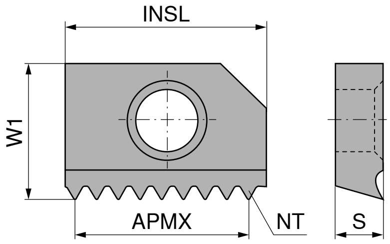
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Thread milling insert

GZG UN 60°

R/L



Ti500

Solid carbide

INSL mm	TPI 1/"	TP mm	W1 mm	APMX mm	S mm	NT	50 889 ...
14,5	18	1,411	10	12,69	3,18	10	**310**
	16	1,587	10	12,70	3,18	9	**312**
21,0	16	1,587	10	19,05	3,18	13	**320**
	14	1,814	10	18,14	3,18	11	**322**
	12	2,116	10	18,04	3,18	10	**324**

P	●
M	●
K	●
N	●
S	
H	
O	

→ v_c/f_z Page 79

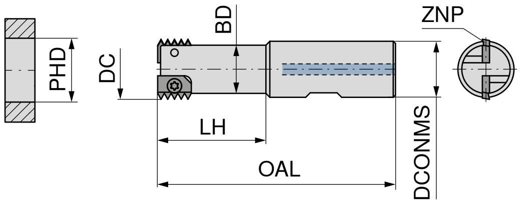
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Circular milling cutter

▲ INSL refers to milling inserts

Scope of supply:
includes key

GZG



INSL mm	DC mm	LH mm	DCONMS h6 mm	OAL mm	BD mm	ZNP	PHD mm	torque moment Nm	50 841 ...
14,5	16	30,0	16	78	12,7	1	18,5	3,8	**016**
	16	50,0	16	98	12,7	1	18,5	3,8	**017** 1)
	20	60,0	20	110	16,8	1	23,0	3,8	**020**
	25	48,2	25	106	21,5	2	30,0	3,8	**025**
	25	92,2	25	150	21,5	2	30,0	3,8	**026** 1)
15,0	18	30,0	16	79	12,7	1	20,0	3,8	**218**
	22	60,0	20	110	16,8	1	26,0	3,8	**222**
	27	48,2	25	106	21,5	2	32,0	3,8	**227**
21,0	16	31,3	20	85	12,7	1	18,5	3,8	**316**
	22	32,8	25	92	18,7	1	26,0	3,8	**322**
	22	62,8	25	122	18,7	1	26,0	3,8	**323** 1)
	28	38,3	32	102	24,7	2	35,0	3,8	**328**
	28	78,3	32	142	24,5	2	35,0	3,8	**327** 1)
26,0	25	48,5	25	107	20,0	1	30,0	3,8	**125**

1) Heavy metal version

Key D

Clamping screw

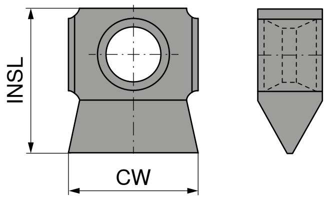
Spare parts for Article no.		80 950 ...		70 960 ...
50 841 016	T15 - IP	**128**	M4x6,9	**237**
50 841 017	T15 - IP	**128**	M4x6,9	**237**
50 841 020	T15 - IP	**128**	M4x7,5	**245**
50 841 025	T15 - IP	**128**	M4x8	**242**
50 841 026	T15 - IP	**128**	M4x8	**242**
50 841 218	T15 - IP	**128**	M4x6,9	**237**
50 841 222	T15 - IP	**128**	M4x6,9	**237**
50 841 227	T15 - IP	**128**	M4x8	**242**
50 841 316	T15 - IP	**128**	M4x6,9	**237**
50 841 322	T15 - IP	**128**	M4x6,9	**237**
50 841 323	T15 - IP	**128**	M4x8	**242**
50 841 328	T15 - IP	**128**	M4x8	**242**
50 841 327	T15 - IP	**128**	M4x8	**242**
50 841 125	T15 - IP	**128**	M4x11,5	**241**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Thread milling insert – partial profile

EAW | M | UN | 60°

R/L



TiN

Solid carbide

DC **mm**	TP mm	TPI 1/"	CW mm	INSL mm	**50 867 ...**
16,5	1,5 - 3,0	16 - 10	5	7,0	**115**
18	2,5 - 3,5	10 - 7	5	7,8	**225**

G | 55°

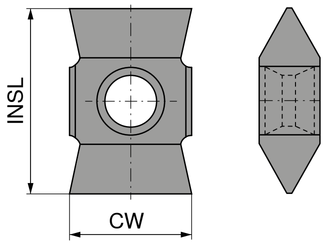
Solid carbide

DC **mm**	TP mm	TPI 1/"	CW mm	INSL mm	**50 868 ...**
16,5	1,814	14	5	7	**114**

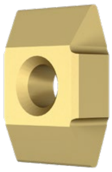
ModuThread – Thread milling insert – partial profile

EAW | M | UN | 60°

R/L



TiN



Solid carbide

DC **mm**	TP mm	TPI 1/"	CW mm	INSL mm	**50 860 ...**
23,85	1,5 - 2,5	16 - 10	6,35	9,52	**315**
23,85	2,5 - 4,0	10 - 6	6,35	9,52	**325**
32,85	1,5 - 2,5	16 - 10	8,50	13,50	**415**
32,85	2,5 - 5,5	10 - 4,5	8,50	13,50	**425**

G | 55°

Solid carbide

DC **mm**	TP mm	TPI 1/"	CW mm	INSL mm	**50 861 ...**
23,85	2,309	11	6,35	9,52	**311**
32,85	2,309	11	8,50	13,50	**411**

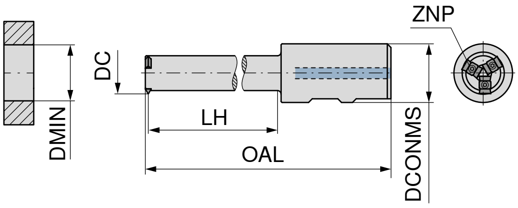
P	●
M	●
K	●
N	●
S	●
H	○
O	○

→ v_c/f_z Page 79

ModuThread – Circular milling cutter

Scope of supply:
including key

EAW



DC mm	DMIN mm	TP mm	TPI 1/"	LH mm	DCONMS h6 mm	OAL mm	ZNP	torque moment Nm	50 848 ...
16,5 / 18,0	17,5 / 19,0	1,5 - 3,5	16 - 10	60	20	114	2	0,9	**020**
23,85	25,5	1,5 - 4,0	24 - 6	90	32	154	3	0,9	**030**
32,85	35,0	1,5 - 5,5	16 - 4,5	115	32	179	3	2,5	**040**


Key D


Clamping screw

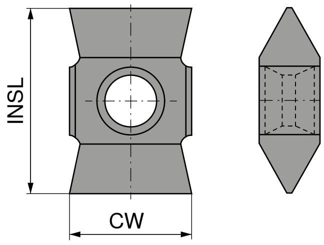
Spare parts **for Article no.**	80 950 ...		70 950 ...	
50 848 020	T07 - IP	**124**	M2,5x8,5	**739**
50 848 030	T07 - IP	**124**	M2,5x8,5	**739**
50 848 040	T09 - IP	**126**	M3x11	**740**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

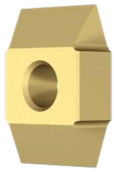
ModuThread – Thread milling insert – partial profile

EWM **M** **UN** 60°

R/L



TiN



Solid carbide

DC **mm**	TP mm	TPI 1/"	CW mm	INSL mm	**50 870 ...**
40,25	1,5 - 3,0	16 - 9	9,5	15,50	**515**
40,25	3,0 - 6,0	9 - 4	9,5	15,50	**530**
52,55 / 66,55	1,5 - 3,0	16 - 9	12,5	19,00	**615**
52,55 / 66,55	3,0 - 6,0	9 - 4	12,5	19,00	**630**
92	6,0 - 8,0	4	14,3	28,58	**760**

P	●
M	●
K	●
N	●
S	●
H	○
O	○

→ v_c/f_z Page 79

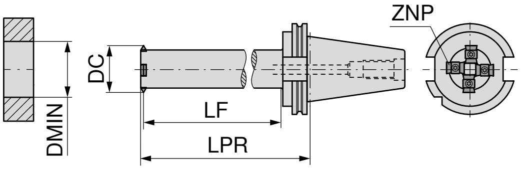
7

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

ModuThread – Circular milling cutter

Scope of supply:
including key

EWM



DIN 69871

DC mm	DMIN mm	TP mm	TPI 1/"	LF mm	LPR mm	Adapter	ZNP	torque moment Nm	50 849 ...
40,25	43,0	1,5 - 6,0	16 - 4,0	145	178,7	SK 50	4	5,5	**148**
40,25	43,0	1,5 - 6,0	16 - 4,0	145	178,7	SK 40	4	5,5	**048**
52,55	56,0	1,5 - 6,0	16 - 4,0	195	229,2	SK 50	4	8,0	**164**
66,55	70,5	1,5 - 6,0	16 - 4,0	260	296,2	SK 50	7	8,0	**080**
92,00	100,0	6,0 - 8,0	4,0	360	395,0	SK 50	7	8,0	**115**

Key D

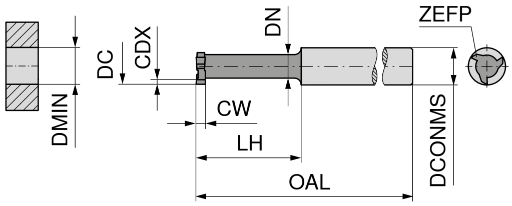
Clamping screw

Spare parts DC	Key D	80 950 ...	Clamping screw	70 950 ...
40,25	T15 - IP	**128**	M4x13	**741**
52,55 - 92	T20 - IP	**129**	M5x15	**742**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Solid Carbide Circular End Milling Cutter

Micro Mill



CWX500

Solid carbide

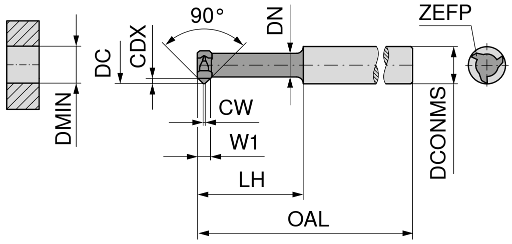
DC mm	CW $_{\pm 0,02}$ mm	CDX mm	LH mm	OAL mm	DN mm	DCONMS $_{h6}$ mm	ZEFP	DMIN mm	53 050 ...
5,8	0,7	0,8	15,2	58	3,8	6	3	6	070
	0,8	0,8	15,2	58	3,8	6	3	6	080
	0,9	0,8	15,2	58	3,8	6	3	6	090
	1,0	0,8	15,2	58	3,8	6	3	6	100
	1,5	0,8	15,2	58	3,8	6	3	6	150
7,8	0,7	1,2	25,4	68	5,0	8	3	8	170
	0,8	1,2	25,4	68	5,0	8	3	8	180
	0,9	1,2	25,4	68	5,0	8	3	8	190
	1,0	1,2	25,4	68	5,0	8	3	8	200
	1,5	1,2	25,4	68	5,0	8	3	8	250
	2,0	1,2	25,4	68	5,0	8	3	8	300

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 81

MonoThread – Solid Carbide Circular End Milling Cutter

Micro Mill



CWX500

Solid carbide

DC mm	W1 mm	CW mm	CDX mm	LH mm	OAL mm	DN mm	DCONMS $_{h6}$ mm	ZEFP	DMIN mm	53 051 ...
5,8	2	0,2	0,8	15	58	4,2	6	3	6	010
	2	0,2	0,8	25	68	4,2	6	3	6	020
7,8	2	0,2	1,2	25	68	5,0	8	3	8	110
	2	0,2	1,2	35	78	5,0	8	3	8	120

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 81

MonoThread – Solid Carbide Circular Thread Milling Cutter – Full profile

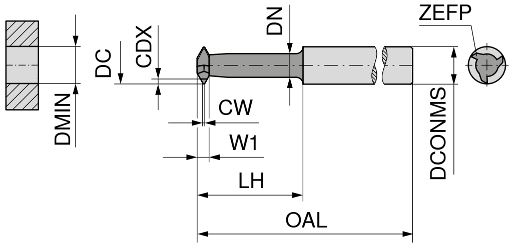
▲ Profile corrected

Micro Mill

M

60°

R/L



CWX500

Solid carbide

DC mm	Thread	TP mm	W1 mm	CW mm	CDX mm	LH mm	OAL mm	DN mm	DCONMS $_{h6}$ mm	ZEFP	DMIN mm	53 052 ...
1,18	M1,6	0,35	0,40	0,04	0,19	4,0	32	0,64	3	3	1,38	**160**
1,38	M1,8	0,35	0,50	0,04	0,19	5,0	32	0,70	3	3	1,58	**180**
1,50	M2	0,40	0,56	0,05	0,22	5,0	32	0,90	3	4	1,70	**200**
1,95	M2,5	0,45	0,60	0,06	0,25	6,0	32	1,15	3	4	2,15	**250**
2,40	M3	0,50	0,60	0,06	0,27	7,0	32	1,60	3	4	2,60	**300**
2,80	M3,5	0,60	0,74	0,08	0,33	8,0	32	1,80	3	4	3,00	**350**
3,10	M4	0,70	0,82	0,09	0,38	9,0	44	1,98	5	4	3,30	**400**
3,60	M5	0,80	0,98	0,10	0,43	10,0	44	2,20	5	4	3,80	**500**
4,10	M6	1,00	0,98	0,13	0,54	12,2	44	2,70	5	4	4,30	**600**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

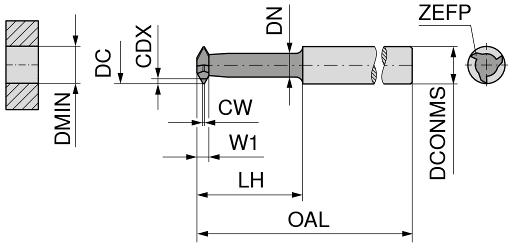
→ v_c/f_z Page 81

MonoThread – Solid Carbide Circular Thread Milling Cutter – Partial profile

Micro Mill

60°

R/L



CWX500

Solid carbide

DC mm	TP mm	W1 mm	CW mm	CDX mm	LH mm	OAL mm	DN mm	DCONMS $_{h6}$ mm	ZEFP	DMIN mm	53 053 ...
5,8	0,5 - 1,5	2	0,06	0,91	15,2	58	3,5	6	3	6	**010**
7,8	0,5 - 1,5	2	0,06	0,91	25,4	68	5,5	8	3	8	**110**
7,8	1,0 - 2,0	2	0,12	1,19	25,4	68	5,0	8	3	8	**120**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

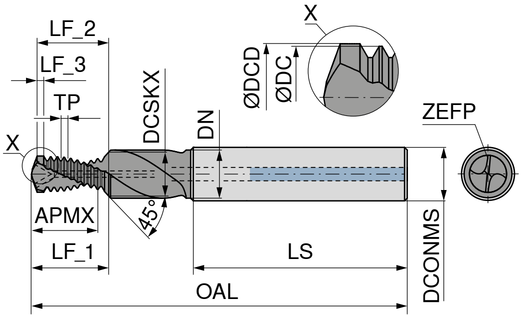
→ v_c/f_z Page 81

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Drill thread milling cutter with chamfer facet

▲ Profile corrected

BGF | M | 60°
≤ 2xD | R/L



Ti601

Solid carbide

Solid carbide

DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCD mm	DCSKX mm	DN mm	LF_1 mm	LF_2 mm	LF_3 mm	ZEFP	50 869 ...	50 854 ...
2,45	M3	88901001000013	0,50	49	5,8	36	6	2,5	3,3	4,5	6,8	6,4	0,5	2	**03000**[1]	
2,45	M3	88906001000013	0,50	49	5,8	36	6	2,5	3,3	4,5	6,8	6,4	0,5	2		**03000**[1]
3,24	M4	88941001000015	0,70	49	7,3	36	6	3,3	4,3	4,5	9,4	8,9	0,7	2	**04000**	
3,24	M4	88935001000015	0,70	49	7,3	36	6	3,3	4,3	4,5	9,4	8,9	0,7	2		**04000**
4,10	M5	88941001000017	0,80	55	9,2	36	6	4,2	5,3	5,5	11,7	11,0	0,8	2	**05000**	
4,10	M5	88935001000017	0,80	55	9,2	36	6	4,2	5,3	5,5	11,7	11,0	0,8	2		**05000**
4,85	M6	88941001000018	1,00	62	11,4	36	8	5,0	6,3	6,6	14,5	13,7	1,0	2	**06000**	
4,85	M6	88935001000018	1,00	62	11,4	36	8	5,0	6,3	6,6	14,5	13,7	1,0	2		**06000**
6,45	M8	88941001000020	1,25	74	14,2	40	10	6,8	8,3	9,0	18,2	17,1	1,3	2	**08000**	
6,45	M8	88935001000020	1,25	74	14,2	40	10	6,8	8,3	9,0	18,2	17,1	1,3	2		**08000**
8,08	M10	88941001000022	1,50	79	18,5	45	12	8,5	10,3	11,0	23,4	22,1	1,5	2	**10000**	
8,08	M10	88935001000022	1,50	79	18,5	45	12	8,5	10,3	11,0	23,4	22,1	1,5	2		**10000**
9,74	M12	88941001000024	1,75	89	21,6	45	14	10,3	12,3	13,5	27,1	25,5	1,5	2	**12000**	
9,74	M12	88935001000024	1,75	89	21,6	45	14	10,3	12,3	13,5	27,1	25,5	1,5	2		**12000**
11,35	M14	88941001000025	2,00	102	26,6	48	16	12,0	14,3	15,5	32,8	30,9	1,5	2	**14000**	
11,35	M14	88935001000025	2,00	102	26,6	48	16	12,0	14,3	15,5	32,8	30,9	1,5	2		**14000**
13,28	M16	88941001000026	2,00	102	30,6	48	18	14,0	16,3	17,5	37,1	35,0	1,5	2	**16000**	
13,28	M16	88935001000026	2,00	102	30,6	48	18	14,0	16,3	17,5	37,1	35,0	1,5	2		**16000**

1) Without Through Coolant

≤ 2xD | MF | 60°

DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCD mm	DCSKX mm	DN mm	LF_1 mm	LF_2 mm	LF_3 mm	ZEFP	50 869 ...	50 854 ...
6,79	M8x1	88935002000070	1,0	74	15,40	40	10	7,0	8,3	9,0	18,8	17,7	1,0	2		**08100**
6,79	M8x1	88941002000070	1,0	74	15,40	40	10	7,0	8,3	9,0	18,8	17,7	1,0	2	**08100**	
8,75	M10x1	88941002000094	1,0	79	19,40	45	12	9,0	10,3	11,0	23,2	21,8	1,0	2	**10100**	
8,75	M10x1	88935002000094	1,0	79	19,40	45	12	9,0	10,3	11,0	23,2	21,8	1,0	2		**10100**
10,74	M12x1	88935002000111	1,0	89	22,40	45	14	11,0	12,3	13,5	26,4	24,8	1,0	2		**12100**
10,06	M12x1,5	88935002000113	1,5	89	23,01	45	14	10,5	12,3	13,5	28,2	26,6	1,5	2		**12200**
10,06	M12x1,5	88941002000113	1,5	89	23,01	45	14	10,5	12,3	13,5	28,2	26,6	1,5	2	**12200**	

	50 869 ...	50 854 ...
P		
M		
K	○	●
N	●	○
S		
H		
O	●	○

→ v_c/f_z Page 76

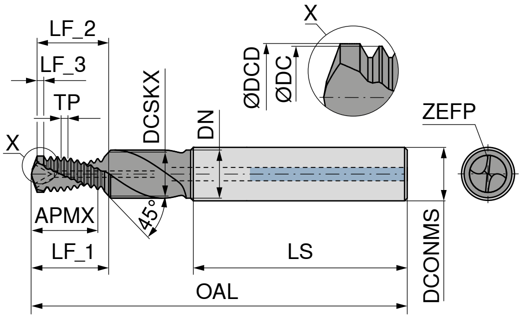
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Drill thread milling cutter with chamfer facet

▲ Profile corrected

BGF **M** 60°

≤ 2,5xD R/L



Ti601

Solid carbide

Solid carbide

DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCD mm	DCSKX mm	DN mm	LF_1 mm	LF_2 mm	LF_3 mm	ZEFP	50 898 ...	50 862 ...
4,10	M5	88961001000017	0,80	55	11,57	36	6	4,2	5,3	5,5	14,1	13,4	0,8	2	**05000**[1]	
4,85	M6	88961001000018	1,00	62	13,40	36	8	5,0	6,3	6,6	16,5	15,7	1,0	2	**06000**	
4,85	M6	88956001000018	1,00	62	13,40	36	8	5,0	6,3	6,6	16,5	15,7	1,0	2		**06000**
6,45	M8	88961001000020	1,25	74	19,20	40	10	6,8	8,3	9,0	23,2	22,1	1,3	2	**08000**	
6,45	M8	88956001000020	1,25	74	19,20	40	10	6,8	8,3	9,0	23,2	22,1	1,3	2		**08000**
8,08	M10	88961001000022	1,50	79	23,00	45	12	8,5	10,3	11,0	27,9	26,6	1,5	2	**10000**	
8,08	M10	88956001000022	1,50	79	23,00	45	12	8,5	10,3	11,0	27,9	26,6	1,5	2		**10000**
9,74	M12	88961001000024	1,75	89	28,60	45	14	10,3	12,3	13,5	34,1	32,5	1,5	2	**12000**	
9,74	M12	88956001000024	1,75	89	28,60	45	14	10,3	12,3	13,5	34,1	32,5	1,5	2		**12000**

	50 898 ...	50 862 ...
P		
M		
K	○	●
N	●	○
S		
H		
O	●	○

1) Not ex-stock

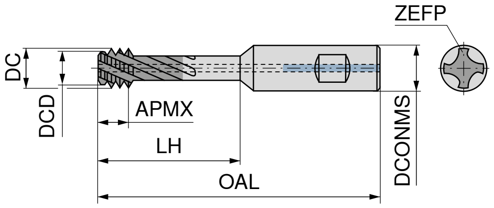
→ v_c/f_z Page 76

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Circular Thread Milling Cutter

▲ Note: left-hand cutting (M04)
▲ Profile corrected

ZBGF
M
60°
≤ 2xD
R/L
45–65 HRC



TiCN

Solid carbide

DC mm	Thread	TP mm	APMX mm	LH mm	DCONMS $_{h6}$ mm	DCD mm	OAL mm	ZEFP	50 840 ...
2,3	M3x0,5	0,50	2,0	7,0	6	2,10	51	4	**030** 1)
3,0	M4x0,7	0,70	2,8	9,4	6	2,60	51	4	**040** 1)
3,8	M5x0,8	0,80	3,2	11,6	6	3,40	51	4	**050** 1)
4,6	M6x1 - M7x1	1,00	4,0	14,0	8	4,10	60	4	**060** 1)
6,2	M8x1,25 - M10x1,25	1,25	5,0	19,0	10	5,60	71	4	**080**
7,8	M10x1,5 - M12x1,5	1,50	6,0	25,0	10	7,00	76	4	**100**
9,2	M12x1,75	1,75	7,0	31,0	12	8,30	86	4	**120**
11,1	M14x2 - M16x2	2,00	8,0	36,0	16	10,04	98	4	**140**

P	
M	
K	
N	
S	○
H	●
O	○

1) Without Through Coolant

→ v_c/f_z Page 76

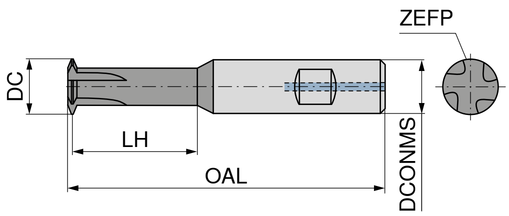
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

Caution: left-hand cutting (M04) → spindle rotation left!

MonoThread – Thread Milling Cutter

▲ Available on request from M3

HR
M
60°
≤ 3xD
R/L
46–60 HRC



DC mm	Thread	TP mm	LH mm	DCONMS h6 mm	OAL mm	ZEFP	NEW TiCN Solid carbide 50 546 ...	NEW TiCN Solid carbide 50 547 ...
3,14	M4	0,70	9	6	55	3	**04000**	**04000**
3,95	M5	0,80	11	6	55	3	**05000**	**05000**
4,68	M6 - M7	1,00	16	8	60	3	**06000**	**06000**
6,22	M8 - M9	1,25	22	10	71	4	**08000**	**08000**
7,79	M10 - M12	1,50	26	10	76	4	**10000**	**10000**
9,38	M12	1,75	27	12	86	4	**12000**	**12000**

	50 546 ...	50 547 ...
P	○	○
M	○	○
K	○	○
N	○	○
S	○	○
H	●	●
O	○	○

→ v_c/f_z Page 76

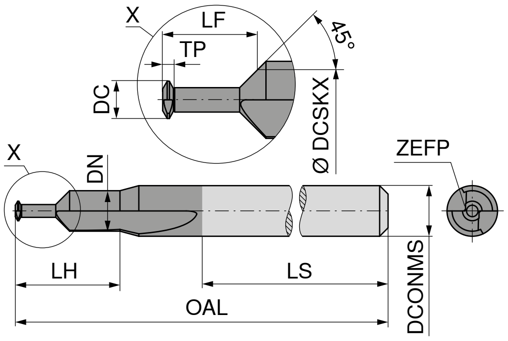
Other dimensions are available on request.

MonoThread – Shank thread milling cutter with shank-end countersink

▲ Note: left-hand cutting
▲ Profile corrected

SFSE Micro | **M** | 60°

≤ 1,5xD | **46–60 HRC**



Ti602

Solid carbide

50 804 ...

DC **mm**	Thread	KOMET no.	TP mm	OAL mm	DN mm	LS mm	LH mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	**50 804 ...**
0,75	M1	88977001000001	0,25	40	1,8	28	5,2	3	1,5	2,1	2	**01000**
1,10	M1,4	88977001000004	0,30	40	2,0	28	5,7	3	1,7	2,6	2	**01400**
1,25	M1,6	88977001000005	0,35	40	2,4	28	6,0	3	2,1	3,1	2	**01600**
1,60	M2	88977001000008	0,40	40	3,0	28		3	2,6	3,7	2	**02000**
1,75	M2,2	88977001000009	0,45	40	3,0	28		3	2,5	3,9	2	**02200**
2,05	M2,5	88977001000011	0,45	40	3,0	28		3	2,9	4,5	2	**02500**

P	○
M	○
K	
N	○
S	○
H	●
O	

→ v_c/f_z Page 78

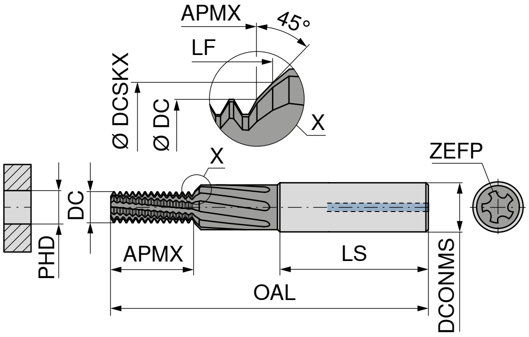
Caution: left-hand cutting (M04) → spindle rotation left!

MonoThread – Thread Milling Cutter with Chamfer Facet

▲ Profile corrected

SFSE | M | 60°

≤ 2xD | R/L



AlCrN

Solid carbide

50 806 ...

DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	
3,14	M4	88296001000015	0,70	49	8,0	36	6	4,3	8,6	5	3,3	**04000**
3,95	M5	88296001000017	0,80	55	9,9	36	6	5,3	10,6	5	4,2	**05000**
4,68	M6	88296001000018	1,00	62	12,3	36	8	6,3	13,2	6	5,0	**06000**
6,22	M8	88296001000020	1,25	74	16,6	40	10	8,3	17,8	7	6,8	**08000**
7,79	M10	88296001000022	1,50	79	19,9	45	12	10,3	21,3	7	8,5	**10000**
9,38	M12	88296001000024	1,75	89	24,9	45	14	12,3	26,6	7	10,2	**12000**
10,92	M14	88296001000025	2,00	102	28,5	48	16	14,3	30,4	7	12,0	**14000**
12,83	M16	88296001000026	2,00	102	32,4	48	18	16,3	34,4	8	14,0	**16000**

≤ 2xD | MF | 60°

50 807 ...

DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	
3,95	M5x0,5	88296002000037	0,50	55	10,2	36	6	5,3	10,8	5	4,5	**05100**
4,68	M6x0,75	88296002000048	0,75	62	12,2	36	8	6,3	13,0	5	5,2	**06200**
6,22	M8x1	88296002000070	1,00	74	16,2	40	10	8,3	17,3	6	7,0	**08300**
7,79	M10x1	88296002000094	1,00	79	20,1	45	12	10,3	21,5	7	9,0	**10300**
9,38	M12x1	88296002000111	1,00	89	24,0	45	14	12,3	25,6	7	11,0	**12300**
9,38	M12x1,5	88296002000113	1,50	89	24,3	45	14	12,3	25,9	7	10,5	**12500**
10,92	M14x1,5	88296002000131	1,50	102	28,7	48	16	14,3	30,6	7	12,5	**14500**
12,82	M16X1,5	88296002000147	1,50	102	31,7	48	18	16,3	33,6	8	14,5	**16500**

P	●
M	●
K	●
N	
S	●
H	
O	

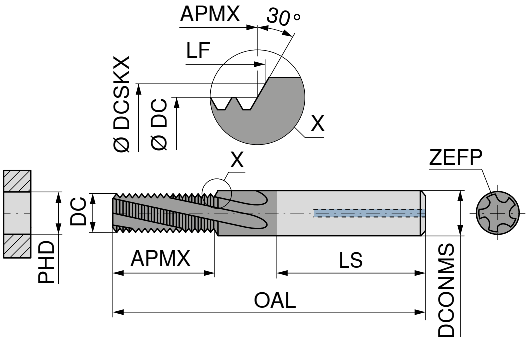
→ v_c/f_z Page 78

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread Milling Cutter with Chamfer Facet

▲ Profile corrected

SFSE
M
60°
≤ 2xD
R/L



TiAlN

Solid carbide

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	50 811 ...
4,0	M5	0,80	62	11	36	8	5,3	11,16	3	4,2	**050**
4,7	M6	1,00	62	13	36	8	6,3	13,93	3	5,0	**060**
6,5	M8	1,25	74	18	40	10	8,3	18,62	3	6,8	**080**
8,0	M10	1,50	74	22	40	10			3	8,5	**100** 1)
10,0	M12	1,75	90	26	45	14	12,3	26,47	4	10,2	**120**
12,5	M16	2,00	100	35	48	16			4	14,0	**160** 2)

1) Without chamfer

2) Chamfer section at the front of the tool

≤ 2xD
MF
60°

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	50 816 ...
6,5	M8x1	1,00	74	18	40	10	8,3	18,00	3	7,0	**082**
8,0	M10x1	1,00	74	22	40	10			3	9,0	**102** 1)
8,0	M10x1,25	1,25	74	22	40	10			3	8,8	**103** 1)
10,0	M12x1,25	1,25	90	26	45	14	12,3	26,61	4	10,8	**123**
10,0	M12x1,5	1,50	90	26	45	14	12,3	27,30	4	10,5	**124**
11,0	M14x1	1,00	100	31	48	16	14,3	32,70	4	13,0	**142**
11,0	M14x1,5	1,50	100	31	48	16	14,3	32,08	4	12,5	**144**
12,5	M16x1,5	1,50	100	35	48	16			4	14,5	**164** 2)

P	●
M	●
K	●
N	●
S	●
H	
O	●

1) Without chamfer

2) Chamfer section at the front of the tool

→ v_c/f_z Page 77

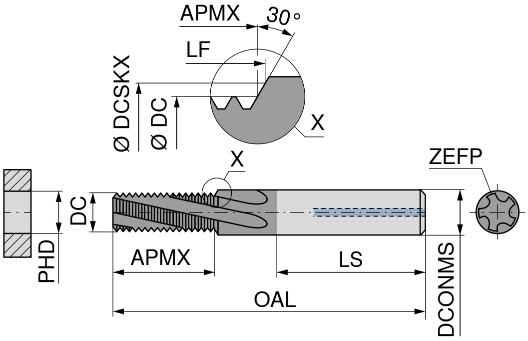
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread Milling Cutter with Chamfer Facet

▲ Profile corrected

SFSE **G** 55°

≤ 2xD R/L



TiAlN

Solid carbide

50 818 ...

DC	Thread	TP	OAL	APMX	LS	DCONMS $_{h6}$	DCSKX	LF	ZEFP	PHD	
mm		mm	mm	mm	mm	mm	mm	mm		mm	
7,6	G 1/8-28	0,907	80	20	45	12	10,0	20,97	3	8,80	**018**
11,0	G 1/4-19	1,337	100	27	48	16	13,5	28,39	4	11,80	**014**
13,0	G 3/8-19	1,337	100	34	48	16			4	15,25	**038** 1)
16,0	G1/2-14	1,814	110	44	50	20			5	19,00	**012** 1)

1) Chamfer section at the front of the tool

≤ 2xD **NPT** 60° **1 : 16**

50 819 ...

DC	Thread	TP	OAL	APMX	LS	DCONMS $_{h6}$	ZEFP	PHD	
mm		mm	mm	mm	mm	mm		mm	
5,8	NPT 1/16-27	0,941	62	10	36	8	3	6,15	**116** 1)
7,6	NPT 1/8-27	0,941	74	10	40	10	3	8,50	**018** 1)
10,1	NPT 1/4-18	1,411	90	15	45	14	3	11,10	**014** 1)
16,0	NPT 1/2-14	1,814	110	19	50	20	5	17,90	**012** 1)

P	●
M	●
K	●
N	●
S	●
H	
O	●

1) Without chamfer

→ v_c/f_z Page 77

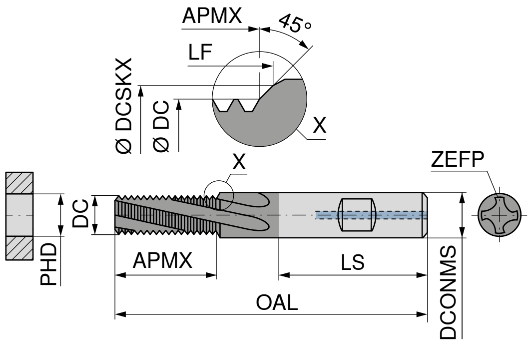
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread milling cutter with chamfer facet

- ▲ Profile-corrected
- ▲ Hard machining to Ø DC = 4 mm possible
- ▲ Chamfer section at end of shank

SFSE **M** 60°

≤ 2xD R/L



NEW

Ti500

Solid carbide

DC mm	Thread	TP mm	OAL mm	LS mm	APMX mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	54 815 ...
4,00	M5	0,80	62	36	12,3	8	5,3	12,98	3	4,20	**05000**1)
4,80	M6	1,00	62	36	14,4	8	6,3	15,18	3	5,00	**06000**1)
6,50	M8	1,25	74	40	19,0	10	8,3	20,19	3	6,80	**08000**
7,95	M10	1,50	80	45	23,0	12	10,3	24,25	3	8,50	**10000**
9,90	M12	1,75	90	45	28,6	14	12,3	29,94	4	10,25	**12000**
11,60	M14	2,00	100	48	32,6	16	14,3	34,20	4	12,00	**14000**
11,95	M16	2,00	90	45	36,6	12			4	14,00	**16000**2)
13,95	M18	2,50	110	50	38,0	20	18,3	40,50	4	15,50	**18000**
15,95	M20	2,50	100	48	43,3	16			4	17,50	**20000**2)

1) Without Through Coolant

2) Chamfer section at the front of the tool

≤ 2xD **MF** 60°

NEW

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	54 816 ...
6,0	M8x1	1,00	74	19,2	40	10	8,3	20,41	3	7,0	**08000**
8,0	M10x1	1,00	80	22,2	45	12	10,3	23,41	3	9,0	**10000**
8,0	M10x1,25	1,25	80	22,8	45	12	10,3	24,09	3	8,8	**10100**
9,9	M12x1	1,00	90	27,2	45	14	12,3	28,42	4	11,0	**12000**
9,9	M12x1,25	1,25	90	27,8	45	14	12,3	29,10	4	10,8	**12100**
9,9	M12x1,5	1,50	90	27,5	45	14	12,3	28,77	4	10,5	**12200**
11,6	M14x1	1,00	100	31,0	48	16	14,3	32,51	4	13,0	**14000**
11,6	M14x1,5	1,50	100	32,0	48	16	14,3	33,35	4	12,5	**14100**
12,0	M16x1,5	1,50	90	35,0	45	12			4	14,5	**16000**1)
14,0	M18x1,5	1,50	110	39,0	50	20	18,3	41,30	4	16,5	**18000**
16,0	M20x1,5	1,50	100	44,0	48	16			4	18,5	**20000**1)

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) Chamfer section at the front of the tool

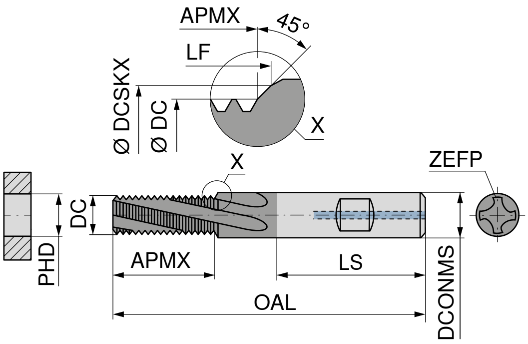
→ v_c/f_z Page 77

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread milling cutter with chamfer facet

▲ Profile-corrected
▲ Hard machining to Ø DC = 4 mm possible
▲ Chamfer section at end of shank

SFSE G 55°
≤ 2xD R/L



NEW
Ti500

Solid carbide

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	54 817 ...
6,00	G 1/16-28	0,907	74	16,5	40	10	8,02	17,54	3	6,80	**11600**
7,95	G 1/8-28	0,907	80	22,0	45	12	10,03	23,00	3	8,80	**01800**
9,90	G 1/4-19	1,337	100	28,0	48	16	13,46	29,98	4	11,80	**01400**
13,95	G 3/8-19	1,337	90	36,5	45	14			4	15,25	**03800**[1]
15,95	G 1/2-14	1,814	100	46,0	48	16			5	19,00	**01200**[1]
17,95	G 5/8-14	1,814	110	49,5	48	18			5	21,00	**05800**[1]

1) Chamfer section at the front of the tool

≤ 2xD NPT 60° 1:16

NEW

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	ZEFP	PHD mm	54 820 ...
10,1	NPT 1/4-18	1,411	90	16,0	45	14	3	11,1	**01400**[1]
12,8	NPT 3/8-18	1,411	90	16,0	48	16	4	14,5	**03800**[1]
16,0	NPT 1/2-14	1,814	110	20,5	50	20	5	17,9	**01200**[1]
18,5	NPT 3/4-14	1,814	110	20,5	50	20	5	23,2	**03400**[1]

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) Chamfer section at the front of the tool

→ v_c/f_z Page 77

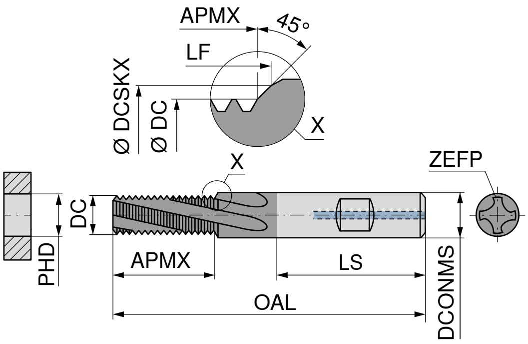
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread milling cutter with chamfer facet

- ▲ Profile-corrected
- ▲ Hard machining to Ø DC = 4 mm possible
- ▲ Chamfer section at end of shank

SFSE | UNC | 60°

≤ 2xD | R/L



NEW

Ti500

Solid carbide

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	54 818 ...
4,80	UNC 1/4-20	1,270	62	14,4	36	8	6,65	15,43	3	5,1	**01400**[1]
5,95	UNC 5/16-18	1,411	74	20,2	40	10	8,24	21,44	3	6,6	**51600**
7,60	UNC 3/8-16	1,588	80	24,3	45	12	9,83	25,62	3	8,0	**03800**
7,95	UNC 7/16-14	1,814	90	24,0	45	14	11,41	25,86	3	9,4	**71600**
9,90	UNC 1/2-13	1,954	90	29,8	45	14	13,00	31,59	4	10,8	**01200**
11,80	UNC 9/16-12	2,117	100	34,5	48	16	14,59	36,19	4	12,2	**91600**
12,70	UNC 5/8-11	2,309	90	37,7	45	14			4	13,5	**05800**[2]
15,20	UNC 3/4-10	2,540	110	41,2	50	20	19,35	43,63	5	16,5	**03400**

1) Without Through Coolant

2) Chamfer section at the front of the tool

≤ 2xD | UNF | 60°

NEW

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	54 819 ...
4,80	UNF 1/4-28	0,907	62	14,7	36	8	6,65	15,72	3	5,5	**01400**[1]
5,95	UNF 5/16-24	1,058	74	19,3	40	10	8,24	20,48	3	6,9	**51600**
8,00	UNF 3/8-24	1,058	80	22,5	45	12	9,83	23,54	3	8,5	**03800**
7,95	UNF 7/16-20	1,270	90	23,0	45	14	11,41	24,76	3	9,9	**71600**
9,90	UNF 1/2-20	1,270	90	28,0	45	14	13,00	29,75	4	11,5	**01200**
12,00	UNF 9/16-18	1,411	100	31,4	48	16	15,59	32,81	4	12,9	**91600**
13,50	UNF 5/8-18	1,411	90	35,7	45	14			4	14,5	**05800**[2]
17,00	UNF 3/4-16	1,588	110	40,2	50	20	19,35	41,53	5	17,5	**03400**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) Without Through Coolant

2) Chamfer section at the front of the tool

→ v_c/f_z Page 77

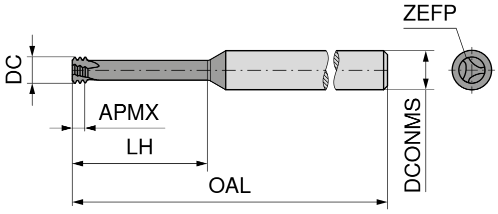
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Circular shank thread milling cutter

▲ Available on request from M1
▲ Profile corrected

SGF M 60°
≤ 3xD R/L

Ti600



Solid carbide

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS h6 mm	ZEFP	50 802 ...
1,53	M2	0,40	39	0,80	6,0	3	3	**02000**
2,37	M3	0,50	58	1,35	9,5	6	3	**03000**
3,10	M4	0,70	58	1,95	12,5	6	3	**04000**
3,80	M5	0,80	58	2,30	16,0	6	3	**05000**
4,65	M6	1,00	58	2,70	20,0	6	3	**06000**
6,00	M8	1,25	58	3,20	24,0	6	3	**08000**
7,80	M10	1,50	64	3,80	31,5	8	3	**10000**
9,00	M12	1,75	73	4,55	37,8	10	3	**12000**

≤ 4xD M 60°

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS h6 mm	ZEFP	50 803 ...
1,53	M2	0,40	39	1,00	10,4	3	3	**02000**
2,40	M3	0,50	39	1,30	12,5	3	3	**03000**
3,10	M4	0,70	58	1,80	16,7	6	3	**04000**
4,00	M5	0,80	58	2,10	20,8	6	3	**05000**
4,80	M6	1,00	58	2,55	25,0	6	3	**06000**
6,40	M8	1,25	64	3,15	33,5	8	3	**08000**
8,00	M10	1,50	76	3,85	41,5	8	3	**10000**

P	●
M	●
K	●
N	●
S	●
H	
O	●

→ v_c/f_z Page 78

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

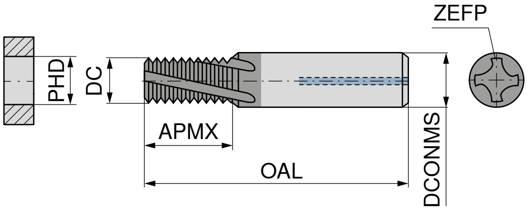
MonoThread – Thread Milling Cutter

▲ Available on request: M30, M36, M42, M48, M56, M64
▲ Profile corrected

SGF **M** 60°

≤ 2xD R/L

TiAlN



Solid carbide

50 825 ...

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	
2,40	M3	0,50	6	4	42	3	2,5	**030** 1)
3,15	M4	0,70	8	6	55	3	3,3	**040**
4,00	M5	0,80	10	6	55	3	4,2	**050**
4,80	M6	1,00	12	6	55	3	5,0	**060**
6,00	M8	1,25	16	6	63	3	6,8	**080**
8,00	M10	1,50	20	8	70	3	8,5	**100**
9,90	M12	1,75	24	10	80	4	10,2	**120**
11,60	M14	2,00	28	12	90	4	12,0	**140**
12,00	M16	2,00	32	12	90	4	14,0	**160**
14,00	M18	2,50	36	14	90	4	15,5	**180**
14,00	M20	2,50	40	14	90	4	17,5	**200**
14,00	M22	2,50	44	14	95	4	19,5	**220**

1) Without Through Coolant

≤ 2xD **MF** 60°

50 826 ...

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	
3,35	M4x0,5	0,50	8	6	55	3	3,5	**040**
4,20	M5x0,5	0,50	10	6	55	3	4,5	**050**
5,00	M6x0,75	0,75	12	6	55	3	5,2	**061**
6,00	M8x0,75	0,75	16	6	63	3	7,2	**081**
6,00	M8x1	1,00	16	6	63	3	7,0	**082**
8,00	M10x1	1,00	20	8	70	3	9,0	**102**
10,00	M12x1	1,00	24	10	80	4	11,0	**122**
10,00	M12x1,5	1,50	24	10	80	4	10,5	**124**
10,00	M14x1,5	1,50	28	10	80	4	12,5	**144**
12,00	M16x1,5	1,50	32	12	90	4	14,5	**164**
14,00	M18x1,5	1,50	36	14	90	4	16,5	**184**
14,00	M20x1,5	1,50	40	14	90	4	18,5	**204**
14,00	M22x1,5	1,50	44	14	95	4	20,5	**224**
16,00	M24x1,5	1,50	36	16	90	5	22,5	**244**

P	●
M	●
K	●
N	●
S	●
H	
O	●

→ v_c/f_z Page 77

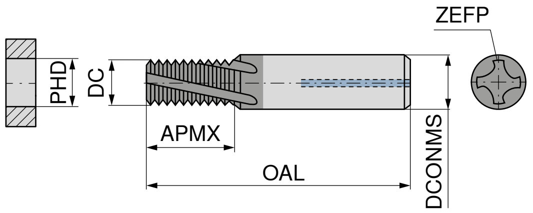
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread Milling Cutter

▲ Profile corrected

SGF **G** 55°

≤ 2xD R/L



TiAlN

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	50 827 ... TiAlN
8	G 1/8-28	0,907	19,5	8	70	3	8,80	**018**
11	G 1/4-19	1,337	26,5	12	90	4	11,80	**014**
12	G 3/8-19	1,337	33,0	12	90	4	15,25	**038**
14	G 1/2-14	1,814	42,0	14	95	4	19,00	**012**
16	G 3/4-14	1,814	34,0	16	90	5	24,50	**034**
16	G 5/8-14	1,814	34,0	16	90	5	21,00	**058**
16	G 1-11	2,309	33,0	16	90	5	30,75	**100**

P	●
M	●
K	●
N	●
S	●
H	
O	●

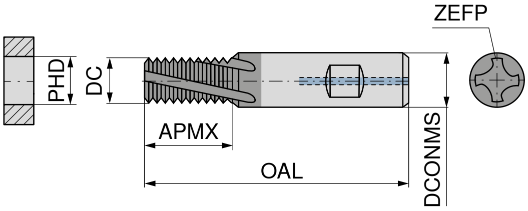
→ v_c/f_z Page 77

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread milling cutter

▲ Profile corrected
▲ Hard machining to Ø DC = 4 mm possible

SGF **M** 60°
≤ 2xD R/L



NEW
Ti500

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	54 821 ...
2,40	M3	0,50	7,0	4	42	2	2,50	**03000 1)**
3,15	M4	0,70	10,0	6	55	3	3,30	**04000 2)**
4,00	M5	0,80	12,2	6	55	3	4,20	**05000 2)**
4,80	M6	1,00	14,3	6	55	3	5,00	**06000 2)**
6,00	M8	1,25	19,0	6	60	3	6,75	**08000**
8,00	M10	1,50	23,0	8	70	3	8,50	**10000**
9,90	M12	1,75	28,6	10	75	4	10,25	**12000**
11,60	M14	2,00	32,6	12	85	4	12,00	**14000**
12,00	M16	2,00	36,6	12	85	4	14,00	**16000**
14,00	M18	2,50	43,3	14	90	4	15,50	**18000**
16,00	M20	2,50	43,3	16	90	4	17,50	**20000**

1) DIN 6535 HA Shank / Without Through Coolant
2) Without Through Coolant

≤ 2xD **MF** 60°

NEW

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	54 822 ...
4,0	M 5x0,5	0,50	11,6	6	55	3	4,50	**05000 1)**
4,8	M 6x0,75	0,75	14,5	6	55	3	5,25	**06000 1)**
6,0	M 8x1	1,00	19,3	6	60	3	7,00	**08000**
8,0	M 10x1,25	1,25	21,6	8	70	3	8,75	**10000**
9,9	M 12x1	1,00	27,3	10	75	4	11,00	**12000**
9,9	M 12x1,25	1,25	27,9	10	75	4	10,75	**12100**
9,9	M 12x1,5	1,50	27,5	10	75	4	10,50	**12200**
11,6	M 14x1	1,00	31,3	12	85	4	13,00	**14000**
11,6	M 14x1,5	1,50	32,0	12	85	4	12,50	**14100**
12,0	M 16x1,5	1,50	35,0	12	85	4	14,50	**16000**
14,0	M 18x1,5	1,50	42,5	14	90	4	16,50	**18000**
16,0	M 20x1,5	1,50	42,5	16	90	4	18,50	**20000**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) DIN 6535 HA Shank / Without Through Coolant

→ v_c/f_z Page 77

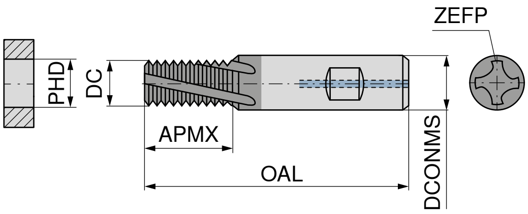
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread milling cutter

- ▲ Profile corrected
- ▲ Hard machining to Ø DC = 4 mm possible

SGF G 55°

≤ 2xD R/L



NEW

Ti500

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	54 823 ...
8,0	G 1/8-28	0,907	22,0	8	70	3	8,80	**01800**
9,9	G 1/4-19	1,337	28,5	10	75	4	11,80	**01400**
14,0	G 3/8-19	1,337	42,0	14	90	4	15,25	**03800**
16,0	G 1/2-14	1,814	44,0	16	90	4	19,00	**01200**

≤ 2xD BSW 55°

NEW

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	54 824 ...
6,0	BSW 5/16 - 18	1,411	20,0	6	60	3	6,50	**51600**
6,0	BSW 3/8 - 16	1,588	21,0	6	60	3	7,90	**03800**
8,0	BSW 7/16 - 14	1,814	24,0	8	70	3	9,25	**71600**
8,0	BSW 1/2 - 12	2,117	24,0	8	70	3	10,50	**01200**
9,9	BSW 5/8 - 11	2,309	30,5	10	75	4	13,50	**05800**

≤ 2xD BSF 55°

NEW

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	54 825 ...
6,0	BSF 5/16 - 22	1,155	20,0	6	60	3	6,8	**51600**
6,0	BSF 3/8 - 20	1,270	19,4	6	60	3	8,3	**03800**
8,0	BSF 7/16 - 18	1,411	23,0	8	70	3	9,7	**71600**
8,0	BSF 1/2 - 16	1,588	24,2	8	70	3	11,1	**01200**
9,9	BSF 5/8 - 14	1,814	29,5	10	75	4	14,0	**05800**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 77

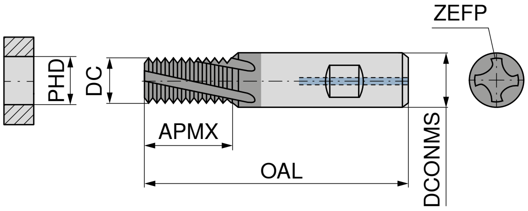
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread milling cutter

▲ Profile corrected

SGF | UNC | 60°

≤ 2xD | R/L



NEW

Ti500

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	54 826 ...
4,80	UNC 1/4-20	1,270	14,4	6	55	3	5,1	**01400** 1)
6,00	UNC 5/16-18	1,411	20,2	6	60	3	6,6	**51600**
7,60	UNC 3/8-16	1,588	24,3	8	70	3	8,0	**03800**
7,95	UNC 7/16-14	1,814	24,0	8	70	3	9,4	**71600**
9,90	UNC 1/2-13	1,954	29,0	10	75	4	10,8	**01200**

1) DIN 6535 HA Shank / Without Through Coolant

≤ 2xD | UNF | 60°

NEW

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	54 827 ...
4,8	UNF 1/4-28	0,907	14,8	6	55	3	5,5	**01400** 1)
6,0	UNF 5/16-24	1,058	19,3	6	60	3	6,9	**51600**
8,0	UNF 3/8-24	1,058	22,5	8	70	3	8,5	**03800**
8,0	UNF 7/16-20	1,270	23,2	8	70	3	9,9	**71600**
9,9	UNF 1/2-20	1,270	28,3	10	75	4	11,5	**01200**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) Without Through Coolant

→ v_c/f_z Page 77

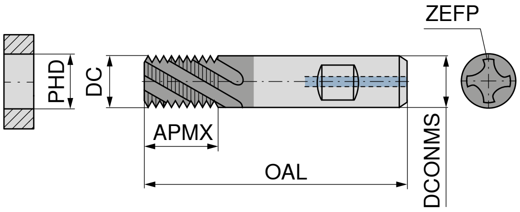
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

MonoThread – Thread milling cutter

▲ Intra-dimensional, pitch-dependent

SGF **M** **MF** 60°

≤ 2xD R/L



NEW

Ti500

Solid carbide

54 828 ...

DC **mm**	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	**54 828 ...**
8	0,50	12,0	8	70	3	10	**00800**
8	0,75	12,0	8	70	3	11	**08000**
10	1,00	16,0	10	75	4	14	**10000**
10	1,50	16,5	10	75	4	14	**10100**
12	1,00	20,0	12	85	4	16	**12000**
12	1,50	21,0	12	85	4	16	**12100**
12	2,00	20,0	12	85	4	18	**12200**
16	1,00	25,0	16	90	5	22	**16000**
16	1,50	25,5	16	90	5	22	**16100**
16	2,00	26,0	16	90	5	22	**16200**
16	3,00	27,0	16	90	5	24	**16400**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 77

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 82+83.**

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm^2* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm^2 / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm^2 / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm^2 / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm^2 / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm^2 / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm^2 / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm^2 / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm^2 / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm^2 / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm^2 / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm^2 / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm^2 / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm^2 / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm^2 / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm^2 / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm^2 / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm^2 / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm^2 / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm^2 / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm^2 / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm^2 / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm^2 / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm^2 / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm^2 / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm^2 / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm^2 / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm^2 / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm^2 / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm^2 / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm^2 / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm^2 / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm^2 / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm^2 / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm^2 / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm^2	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm^2 / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm^2 / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm^2				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm^2				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm^2				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm^2				
		O.3.1	Graphite						

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* Tensile strength

Cutting data standard values

Index	50 854 ..., 50 862 ..., 50 869 ..., 50 898 ...						50 840 ...				50 546 ..., 50 547...		
	BGF		Feed rate Drilling		Feed rate Thread milling		ZBGF	TiCN Solid carbide			HR	TiCN Solid carbide	
	Ti601	uncoated	≤ Ø 6	≤ Ø 12	≤ Ø 6	≤ Ø 12		Ø 3–5	Ø 6–10	Ø 12–16		< Ø 10	> Ø 10
	v_c (m/min)		f (mm/rev)		f_z (mm/tooth)		v_c (m/min)	f_z (mm/tooth)			v_c (m/min)	f_z (mm/tooth)	
P.1.1											100	0,025	0,05
P.1.2											100	0,025	0,05
P.1.3											100	0,025	0,05
P.1.4											80	0,015	0,035
P.1.5											80	0,015	0,035
P.2.1											100	0,025	0,05
P.2.2											80	0,015	0,035
P.2.3											80	0,015	0,035
P.2.4											80	0,015	0,035
P.3.1											100	0,025	0,05
P.3.2											80	0,015	0,035
P.3.3											80	0,02	0,04
P.4.1											80	0,02	0,04
P.4.2											80	0,02	0,04
M.1.1											80	0,02	0,04
M.2.1											80	0,02	0,04
M.3.1											80	0,02	0,04
K.1.1	**80–120**	50–80	0,10–0,15	0,15–0,22	0,02–0,05	0,05–0,10					120	0,03	0,09
K.1.2	**80–120**	50–80	0,10–0,15	0,15–0,22	0,02–0,05	0,05–0,10					120	0,03	0,09
K.2.1											100	0,02	0,05
K.2.2											100	0,02	0,05
K.3.1											100	0,02	0,05
K.3.2											100	0,02	0,05
N.1.1	100–400	**100–400**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
N.1.2	100–400	**100–400**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
N.2.1	100–300		0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
N.2.2	100–400	**100–400**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					250	0,05	0,1
N.2.3	100–160		0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					250	0,05	0,1
N.3.1	100–300	**100–300**	0,10–0,30	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
N.3.2											350	0,05	0,1
N.3.3											350	0,05	0,1
N.4.1	100–400	**100–400**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
S.1.1											40	0,02	0,05
S.1.2							80	0,01	0,03	0,03	20	0,02	0,05
S.2.1							60	0,01	0,02	0,02	20	0,02	0,05
S.2.2							60	0,01	0,02	0,02			
S.2.3							60	0,01	0,02	0,02			
S.3.1											100	0,02	0,05
S.3.2							80	0,01	0,03	0,03	80	0,02	0,05
S.3.3							60	0,01	0,02	0,02	80	0,02	0,05
H.1.1							**80**	0,01	0,03	0,03	**40**	0,008	0,017
H.1.2							**60**	0,01	0,02	0,02	**25**	0,005	0,012
H.1.3							**40**	0,005	0,01	0,01			
H.1.4													
H.2.1							**100**	0,03	0,04	0,04	**60**	0,02	0,04
H.3.1							**60**	0,01	0,02	0,02	**25**	0,005	0,012
O.1.1	60–100	**60–100**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					120	0,04	0,1
O.1.2											120	0,04	0,1
O.2.1											80	0,04	0,1
O.2.2											80	0,04	0,1
O.3.1							180	0,04	0,05	0,08	130	0,04	0,1

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	54 815 ..., 54 816 ..., 54 817 ..., 54 818 ..., 54 819 ..., 54 820 ... / 54 821 ..., 54 822 ..., 54 823 ..., 54 824 ..., 54 825 ..., 54 826 ..., 54 827 ..., 54 828 ...				50 811 ..., 50 816 ..., 50 818 ..., 50 819 ... / 50 825 ..., 50 826 ..., 50 827 ...			
	SFSE SGF	Ti500 Solid carbide			SFSE SGF	TiAlN Solid carbide		
		Ø 2,4 – 6,0	Ø 6,0 – 10,0	Ø 10,0 – 20,0		Ø 2,4 – 6,0	Ø 6,0 – 10,0	Ø 10,0 – 20,0
	v_c (m/min)	f_z (mm/tooth)			v_c (m/min)	f_z (mm/tooth)		
P.1.1	150	0,01–0,04	0,04–0,06	0,08–0,15	150	0,04	0,06	0,10
P.1.2	120	0,01–0,04	0,04–0,06	0,08–0,15	130	0,04	0,06	0,10
P.1.3	120	0,007–0,03	0,03–0,05	0,05–0,10	110	0,04	0,06	0,10
P.1.4	120	0,007–0,03	0,03–0,05	0,05–0,10	110	0,03	0,05	0,07
P.1.5	100	0,006–0,02	0,02–0,04	0,04–0,06	100	0,03	0,05	0,07
P.2.1	120	0,007–0,04	0,04–0,06	0,08–0,15	120	0,04	0,06	0,10
P.2.2	100	0,007–0,03	0,03–0,05	0,05–0,10	110	0,03	0,05	0,07
P.2.3	80	0,006–0,02	0,02–0,04	0,04–0,06	100	0,03	0,05	0,07
P.2.4	70	0,006–0,02	0,02–0,04	0,04–0,06	80	0,02	0,04	0,06
P.3.1	80	0,01–0,03	0,03–0,05	0,06–0,12	80	0,04	0,06	0,10
P.3.2	70	0,006–0,02	0,02–0,04	0,04–0,06	70	0,03	0,05	0,07
P.3.3	60	0,006–0,02	0,02–0,04	0,04–0,06	60	0,02	0,04	0,06
P.4.1	60	0,006–0,02	0,02–0,04	0,04–0,06	80	0,04	0,06	0,10
P.4.2	60	0,006–0,02	0,02–0,04	0,04–0,06	70	0,04	0,06	0,10
M.1.1	100	0,008–0,03	0,03–0,05	0,05–0,10	70	0,02	0,04	0,06
M.2.1	100	0,008–0,03	0,03–0,05	0,05–0,10	50	0,01	0,03	0,05
M.3.1	100	0,008–0,03	0,03–0,05	0,05–0,10	50	0,01	0,03	0,05
K.1.1	120	0,01–0,04	0,04–0,06	0,08–0,15	150	0,05	0,07	0,12
K.1.2	100	0,007–0,03	0,03–0,05	0,05–0,10	130	0,05	0,07	0,12
K.2.1	120	0,01–0,04	0,04–0,06	0,08–0,15	130	0,03	0,05	0,07
K.2.2	100	0,007–0,03	0,03–0,05	0,05–0,10	110	0,03	0,05	0,07
K.3.1	130	0,01–0,04	0,04–0,06	0,08–0,15	120	0,04	0,06	0,10
K.3.2	100	0,007–0,03	0,03–0,05	0,05–0,10	100	0,04	0,06	0,10
N.1.1	400	0,03–0,06	0,08–0,12	0,14–0,20	210	0,06	0,085	0,15
N.1.2	400	0,03–0,06	0,08–0,12	0,14–0,20	180	0,05	0,07	0,12
N.2.1	300	0,03–0,06	0,08–0,12	0,14–0,20	130	0,05	0,07	0,12
N.2.2	300	0,03–0,06	0,08–0,12	0,14–0,20	130	0,05	0,07	0,12
N.2.3	200	0,03–0,06	0,08–0,12	0,14–0,20	120	0,05	0,07	0,12
N.3.1	160	0,03–0,06	0,08–0,12	0,14–0,20	180	0,06	0,085	0,15
N.3.2	160	0,03–0,06	0,08–0,12	0,14–0,20	180	0,06	0,085	0,15
N.3.3	160	0,03–0,06	0,08–0,12	0,14–0,20	130	0,06	0,085	0,15
N.4.1	300	0,03–0,06	0,08–0,12	0,14–0,20	150	0,06	0,085	0,15
S.1.1	80	0,008–0,03	0,03–0,05	0,05–0,10	60	0,01	0,03	0,05
S.1.2	60	0,006–0,02	0,02–0,04	0,04–0,06				
S.2.1	40	0,006–0,02	0,02–0,04	0,04–0,06				
S.2.2	40	0,006–0,02	0,02–0,04	0,04–0,06				
S.2.3	40	0,006–0,02	0,02–0,04	0,04–0,06				
S.3.1	100	0,01–0,03	0,03–0,05	0,06–0,12	70	0,01	0,03	0,05
S.3.2	80	0,006–0,02	0,02–0,04	0,04–0,06				
S.3.3	60	0,006–0,02	0,02–0,04	0,04–0,06				
H.1.1	50	0,003–0,006	0,008–0,012	0,014–0,02				
H.1.2	40		0,006–0,01	0,01–0,015				
H.1.3								
H.1.4								
H.2.1	60		0,006–0,01	0,01–0,015				
H.3.1	40		0,006–0,01	0,01–0,015				
O.1.1	100	0,02–0,06	0,06–0,10	0,12–0,20	240	0,08	0,10	0,16
O.1.2	100	0,02–0,06	0,06–0,10	0,12–0,20	240	0,08	0,10	0,16
O.2.1	80	0,01–0,04	0,04–0,06	0,08–0,15	130	0,03	0,05	0,07
O.2.2	80	0,01–0,04	0,04–0,06	0,08–0,15	130	0,03	0,05	0,07
O.3.1	200	0,01–0,04	0,04–0,06	0,08–0,15	110	0,03	0,05	0,07

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	50 802 ..., 50 803 ...					50 806 ..., 50 807 ...				50 804 ...	
	SGF	Ti600 Solid carbide				SFSE	AlCrN Solid carbide			SFSE Micro	Ti602 Solid carbide
		Ø 1–2	Ø 3–5	Ø 6–8	Ø 9–12		Ø 3–5	Ø 6–10	Ø 10–13		Ø 0,7–2,1
	v_c (m/min)	f_z (mm/tooth)				v_c (m/min)	f_z (mm/tooth)			v_c (m/min)	f_z (mm/tooth)
P.1.1	110	0,05	0,09	0,14	0,16	100–140	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.1.2	110	0,05	0,09	0,14	0,16	100–120	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.1.3	110	0,05	0,09	0,14	0,16	80–100	0,015–0,02	0,03–0,05	0,03–0,07	20–40	0,01–0,02
P.1.4	110	0,05	0,09	0,14	0,16	80–100	0,015–0,02	0,02–0,04	0,03–0,05	20–40	0,01–0,02
P.1.5	110	0,05	0,09	0,14	0,16	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.2.1	80	0,04	0,08	0,12	0,14	100–120	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.2.2	80	0,04	0,08	0,12	0,14	80–100	0,015–0,03	0,02–0,05	0,03–0,07	20–40	0,01–0,02
P.2.3	80	0,04	0,08	0,12	0,14	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.2.4	80	0,04	0,08	0,12	0,14	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.3.1	60	0,04	0,08	0,12	0,14	100–120	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.3.2	60	0,04	0,08	0,12	0,14	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.3.3	60	0,04	0,08	0,12	0,14	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.4.1	60	0,04	0,08	0,12	0,14	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.4.2	80	0,04	0,08	0,12	0,14	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
M.1.1	80	0,04	0,05	0,07	0,10	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–30	0,01–0,02
M.2.1	80	0,04	0,05	0,07	0,10	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–30	0,01–0,02
M.3.1	80	0,04	0,05	0,07	0,10	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–30	0,01–0,02
K.1.1	50	0,05	0,09	0,14	0,16	100–120	0,02–0,04	0,04–0,08	0,06–0,10		
K.1.2	50	0,05	0,09	0,14	0,16	100–120	0,02–0,04	0,04–0,08	0,06–0,10		
K.2.1	50	0,05	0,09	0,14	0,16	100–120	0,02–0,04	0,04–0,08	0,06–0,10		
K.2.2	50	0,05	0,09	0,14	0,16	80–100	0,02–0,04	0,04–0,08	0,06–0,10		
K.3.1	50	0,05	0,09	0,14	0,16	80–100	0,02–0,04	0,04–0,08	0,06–0,08		
K.3.2	50	0,05	0,09	0,14	0,16	80–100	0,02–0,04	0,04–0,08	0,06–0,08		
N.1.1	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.1.2	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.2.1	120	0,04	0,05	0,07	0,10					30–50	0,02–0,03
N.2.2	100	0,04	0,05	0,07	0,10					30–50	0,02–0,03
N.2.3	100	0,04	0,05	0,07	0,10					30–50	0,02–0,03
N.3.1	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.3.2	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.3.3	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.4.1	110	0,04	0,05	0,07	0,10					30–50	0,02–0,03
S.1.1	30	0,03	0,04	0,06	0,07					20–30	0,01–0,02
S.1.2	30	0,03	0,04	0,06	0,07					20–30	0,01–0,02
S.2.1	30	0,03	0,04	0,06	0,07					20–30	0,01–0,02
S.2.2	30	0,03	0,04	0,06	0,07					20–30	0,01–0,015
S.2.3	30	0,03	0,04	0,06	0,07					20–30	0,01–0,015
S.3.1	30	0,03	0,04	0,06	0,07	60–80	0,015–0,02	0,02–0,03	0,03–0,04	20–30	0,01–0,02
S.3.2	30	0,03	0,04	0,06	0,07	60–80	0,01–0,015	0,015–0,02	0,025–0,035	20–30	0,01–0,015
S.3.3	30	0,03	0,04	0,06	0,07					20–30	0,01–0,015
H.1.1										20–30	0,01–0,015
H.1.2										20–30	0,01–0,015
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1	150	0,06	0,12	0,19	0,19						
O.1.2	150	0,06	0,12	0,19	0,19						
O.2.1	150	0,06	0,12	0,19	0,19						
O.2.2	150	0,06	0,12	0,19	0,19						
O.3.1	100	0,05	0,09	0,14	0,14						

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	50 890 ..., 50 891 ..., 50 892 ..., 50 896 ..., 50 897 ...		50 890 ..., 50 891 ..., 50 895 ...		50 863 ..., 50 864 ... / 50 885 ..., 50 887 ..., 50 888 ..., 50 889 ..., 50 894 ...			50 860 ..., 50 861 ..., 50 867 ..., 50 868 ... / 50 870 ...		
	MWN	uncoated Solid carbide	MWN	TiAlN Solid carbide	GZD GZG	Ti500 Solid carbide			EAW	EWM
						Ø 12–17	Ø 20–26			
	v_c (m/min)	f_z (mm/tooth)	v_c (m/min)	f_z (mm/tooth)	v_c (m/min)	f_z (mm/tooth)		v_c (m/min)	f_z (mm/tooth)	
P.1.1	85	0,10	170	0,10	220	0,10–0,30	0,05–0,30	280	0,20	0,20
P.1.2	75	0,10	150	0,10	220	0,10–0,30	0,05–0,30	240	0,20	0,20
P.1.3	65	0,10	130	0,10	190	0,10–0,30	0,05–0,30	200	0,20	0,20
P.1.4	65	0,07	130	0,07	160	0,10–0,30	0,05–0,30	200	0,15	0,15
P.1.5	60	0,07	120	0,07	160	0,10–0,30	0,05–0,30	180	0,15	0,15
P.2.1	70	0,10	140	0,10	150	0,10–0,30	0,05–0,30	220	0,20	0,20
P.2.2	65	0,07	130	0,07	120	0,10–0,30	0,05–0,30	200	0,15	0,15
P.2.3	60	0,07	120	0,07	100	0,10–0,30	0,05–0,30	180	0,15	0,15
P.2.4	45	0,06	90	0,06	90	0,10–0,30	0,05–0,30	150	0,12	0,12
P.3.1	45	0,10	90	0,10	100	0,10–0,20	0,05–0,20	150	0,20	0,20
P.3.2	40	0,07	80	0,07	90	0,10–0,20	0,05–0,20	130	0,10	0,10
P.3.3	35	0,06	70	0,06	80	0,10–0,20	0,05–0,20	110	0,10	0,10
P.4.1	45	0,10	90	0,10	70	0,10–0,20	0,05–0,20	150	0,20	0,20
P.4.2	40	0,10	80	0,10	60	0,10–0,20	0,05–0,20	130	0,20	0,20
M.1.1	40	0,06	80	0,06	130	0,10–0,30	0,05–0,30	130	0,10	0,10
M.2.1	30	0,05	60	0,05	120	0,10–0,30	0,05–0,30	90	0,08	0,08
M.3.1	30	0,05	60	0,05	120	0,10–0,30	0,05–0,30	90	0,08	0,08
K.1.1	85	0,12	170	0,12	140	0,10–0,30	0,05–0,30	280	0,25	0,25
K.1.2	75	0,12	150	0,12	100	0,10–0,30	0,05–0,30	240	0,25	0,25
K.2.1	75	0,07	150	0,07	140	0,10–0,30	0,05–0,30	240	0,15	0,15
K.2.2	65	0,07	130	0,07	120	0,10–0,30	0,05–0,30	200	0,15	0,15
K.3.1	70	0,10	140	0,10	140	0,10–0,30	0,05–0,30	220	0,20	0,20
K.3.2	60	0,10	120	0,10	100	0,10–0,30	0,05–0,30	190	0,20	0,20
N.1.1	120	0,15	240	0,15	700	0,10–0,40	0,05–0,40	390	0,30	0,30
N.1.2	105	0,12	210	0,12	400	0,10–0,40	0,05–0,40	330	0,25	0,25
N.2.1	75	0,12	150	0,12	400	0,10–0,40	0,05–0,40	240	0,25	0,25
N.2.2	75	0,12	150	0,12	300	0,10–0,40	0,05–0,40	240	0,25	0,25
N.2.3	70	0,12	140	0,12	200	0,10–0,40	0,05–0,40	220	0,25	0,25
N.3.1	105	0,15	210	0,15	160	0,10–0,40	0,05–0,40	330	0,30	0,30
N.3.2	105	0,15	210	0,15	160	0,10–0,40	0,05–0,40	330	0,30	0,30
N.3.3	75	0,15	150	0,15	160	0,10–0,40	0,05–0,40	240	0,30	0,30
N.4.1	85	0,15	170	0,15	160	0,10–0,40	0,05–0,40	280	0,30	0,30
S.1.1								110	0,10	0,10
S.1.2								90	0,07	0,07
S.2.1								70	0,05	0,05
S.2.2								70	0,05	0,05
S.2.3								70	0,05	0,05
S.3.1								130	0,10	0,10
S.3.2								90	0,07	0,07
S.3.3								70	0,05	0,05
H.1.1								80	0,05	0,05
H.1.2								60	0,04	0,04
H.1.3										
H.1.4										
H.2.1								80	0,05	0,05
H.3.1								60	0,04	0,04
O.1.1	140	0,16								
O.1.2	140	0,16								
O.2.1	75	0,07								
O.2.2	75	0,07								
O.3.1			130	0,07				200	0,14	0,14

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	50 872 ..., 50 875 ..., 50 876 ..., 50 879 ..., 50 880 ..., 50 881 ..., 50 882 ..., 50 883 ..., 50 884 ..., 50 886 ...		51 800 ...	50 851 ..., 50 852 ..., 50 853 ..., 50 855 ..., 50 857 ..., 50 858 ..., 50 859 ...	
	Polygon		Multipurpose milling	System 300	
	v_c (m/min)	f_z (mm/tooth)	f_z (mm/tooth)	v_c (m/min)	f_z (mm/tooth)
P.1.1	**220**	0,05–0,25	0,03–0,10	**220**	0,05–0,15
P.1.2	**220**	0,05–0,25	0,03–0,10	**220**	0,05–0,15
P.1.3	**190**	0,05–0,25	0,03–0,10	**190**	0,05–0,15
P.1.4	**160**	0,05–0,25	0,03–0,09	**160**	0,05–0,15
P.1.5	**160**	0,05–0,25	0,03–0,09	**160**	0,05–0,15
P.2.1	**150**	0,05–0,25	0,03–0,10	**150**	0,05–0,15
P.2.2	**120**	0,05–0,25	0,03–0,09	**120**	0,05–0,15
P.2.3	**100**	0,05–0,25	0,03–0,09	**100**	0,05–0,15
P.2.4	**90**	0,05–0,25	0,03–0,09	**90**	0,05–0,15
P.3.1	**100**	0,05–0,20	0,03–0,10	**100**	0,05–0,12
P.3.2	**90**	0,05–0,20	0,03–0,08	**90**	0,05–0,12
P.3.3	**80**	0,05–0,20	0,03–0,08	**80**	0,05–0,12
P.4.1	**70**	0,05–0,20	0,03–0,08	**70**	0,05–0,12
P.4.2	**60**	0,05–0,20	0,03–0,08	**60**	0,05–0,12
M.1.1	**130**	0,05–0,25	0,03–0,08	**130**	0,05–0,15
M.2.1	**120**	0,05–0,25	0,03–0,08	**120**	0,05–0,15
M.3.1	**120**	0,05–0,25	0,03–0,08	**120**	0,05–0,15
K.1.1	**140**	0,05–0,25	0,03–0,11	**140**	0,05–0,15
K.1.2	**100**	0,05–0,25	0,03–0,10	**100**	0,05–0,15
K.2.1	**140**	0,05–0,25	0,03–0,11	**140**	0,05–0,15
K.2.2	**120**	0,05–0,25	0,03–0,10	**120**	0,05–0,15
K.3.1	**140**	0,05–0,25	0,03–0,11	**140**	0,05–0,15
K.3.2	**100**	0,05–0,25	0,03–0,10	**100**	0,05–0,15
N.1.1	**700**	0,15–0,40	0,04–0,15	**700**	0,10–0,25
N.1.2	**400**	0,15–0,40	0,04–0,15	**400**	0,10–0,25
N.2.1	**400**	0,15–0,40	0,04–0,15	**400**	0,10–0,25
N.2.2	**300**	0,15–0,40	0,04–0,15	**300**	0,10–0,25
N.2.3	**200**	0,15–0,40	0,04–0,15	**200**	0,10–0,25
N.3.1	**160**	0,15–0,40	0,04–0,15	**160**	0,10–0,25
N.3.2	**160**	0,15–0,40	0,04–0,15	**160**	0,10–0,25
N.3.3	**160**	0,15–0,40	0,04–0,15	**160**	0,10–0,25
N.4.1	**160**	0,15–0,40	0,04–0,15	**160**	0,10–0,25
S.1.1	**100**	0,01–0,15	0,01–0,11	**100**	0,01–0,12
S.1.2	**80**	0,01–0,15	0,01–0,11	**80**	0,01–0,12
S.2.1	**60**	0,01–0,15	0,01–0,11	**60**	0,01–0,12
S.2.2	**40**	0,01–0,15	0,01–0,11	**40**	0,01–0,12
S.2.3	**40**	0,01–0,15	0,01–0,11	**40**	0,01–0,12
S.3.1	**100**	0,01–0,15	0,01–0,11	**100**	0,01–0,12
S.3.2	**80**	0,01–0,15	0,01–0,11	**80**	0,01–0,12
S.3.3	**60**	0,01–0,15	0,01–0,11	**60**	0,01–0,12
H.1.1	**60**	0,01–0,10	0,01–0,06	60	0,01–0,10
H.1.2	**50**	0,01–0,10	0,01–0,06	50	0,01–0,10
H.1.3	**40**	0,01–0,10	0,01–0,06	40	0,01–0,10
H.1.4	**30**	0,01–0,10	0,01–0,06	30	0,01–0,10
H.2.1	**60**	0,01–0,10	0,01–0,06	60	0,01–0,10
H.3.1	**50**	0,01–0,10	0,01–0,06	50	0,01–0,10
O.1.1	**180**	0,05–0,25	0,04–0,15	**180**	0,05–0,15
O.1.2	**220**	0,05–0,25	0,04–0,15	**220**	0,05–0,15
O.2.1	**120**	0,05–0,25	0,04–0,15	**120**	0,05–0,15
O.2.2	**120**	0,05–0,25	0,04–0,15	**120**	0,05–0,15
O.3.1	**800**	0,05–0,25	0,04–0,15	**800**	0,05–0,15

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

	53 006 ..., 53 007 ..., 53 008 ..., 53 009 ..., 53 010 ..., 53 011 ..., 53 012 ..., 53 013 ..., 53 015 ..., 53 016 ..., 53 017 ...				53 050 ..., 53 051 ..., 53 052 ..., 53 053 ...	
	Mini Mill	hole (Circular milling)	Thread (Thread milling)	Parting (multipurpose milling)	**Micro Mill**	
Index	**v_c (m/min)**	**f_z (mm/tooth)**			**v_c (m/min)**	**f_z (mm/tooth)**
P.1.1	**120** (80–200)	0,03–0,10	0,05–0,20	0,015–0,05	**70** (40–120)	0,01–0,05
P.1.2	**110** (70–190)	0,03–0,10	0,05–0,20	0,015–0,05	**60** (40–110)	0,01–0,05
P.1.3	**90** (60–150)	0,03–0,10	0,05–0,20	0,015–0,05	**50** (30–80)	0,01–0,05
P.1.4	**90** (60–150)	0,03–0,08	0,05–0,18	0,015–0,04	**50** (30–80)	0,01–0,05
P.1.5	**70** (50–120)	0,03–0,08	0,05–0,18	0,015–0,04	**40** (30–70)	0,01–0,05
P.2.1	**90** (60–150)	0,03–0,10	0,05–0,20	0,015–0,05	**50** (30–80)	0,01–0,05
P.2.2	**70** (50–120)	0,03–0,08	0,05–0,18	0,015–0,04	**40** (30–70)	0,01–0,05
P.2.3	**60** (40–110)	0,02–0,07	0,05–0,16	0,015–0,035	**40** (20–70)	0,01–0,05
P.2.4	**60** (40–100)	0,03–0,07	0,05–0,16	0,015–0,035	**30** (20–60)	0,01–0,04
P.3.1	**60** (40–100)	0,03–0,10	0,05–0,20	0,015–0,05	**30** (20–60)	0,01–0,05
P.3.2	**50** (30–80)	0,02–0,07	0,05–0,16	0,015–0,035	**30** (20–50)	0,01–0,04
P.3.3	**30** (20–60)	0,02–0,07	0,05–0,16	0,015–0,035	**20** (10–40)	0,005–0,03
P.4.1	**80** (50–130)	0,03–0,08	0,05–0,18	0,015–0,04	**40** (30–70)	0,01–0,05
P.4.2	**60** (40–110)	0,02–0,07	0,05–0,16	0,015–0,035	**40** (20–70)	0,01–0,05
M.1.1	**90** (60–150)	0,02–0,07	0,05–0,16	0,015–0,035	**50** (30–80)	0,01–0,03
M.2.1	**60** (40–110)	0,02–0,07	0,05–0,16	0,015–0,035	**40** (20–70)	0,01–0,03
M.3.1	**50** (30–90)	0,02–0,07	0,05–0,16	0,015–0,035	**30** (20–50)	0,01–0,03
K.1.1	**110** (70–190)	0,03–0,10	0,05–0,20	0,015–0,05	**60** (40–110)	0,008–0,06
K.1.2	**80** (50–140)	0,03–0,10	0,05–0,20	0,015–0,05	**50** (30–80)	0,008–0,06
K.2.1	**70** (50–120)	0,03–0,10	0,05–0,20	0,015–0,05	**40** (30–70)	0,008–0,06
K.2.2	**60** (40–100)	0,03–0,10	0,05–0,20	0,015–0,05	**30** (20–60)	0,008–0,06
K.3.1	**110** (70–190)	0,03–0,10	0,05–0,20	0,015–0,05	**60** (40–110)	0,008–0,06
K.3.2	**90** (60–160)	0,03–0,10	0,05–0,20	0,015–0,05	**50** (30–90)	0,008–0,06
N.1.1	**230** (150–390)	0,04–0,15	0,06–0,25	0,02–0,075	**150** (90–260)	0,01–0,06
N.1.2	**220** (140–370)	0,04–0,15	0,06–0,25	0,02–0,075	**140** (90–240)	0,01–0,06
N.2.1	**190** (120–320)	0,04–0,15	0,06–0,25	0,02–0,075	**120** (70–210)	0,01–0,06
N.2.2	**160** (110–270)	0,04–0,15	0,06–0,25	0,02–0,075	**100** (60–180)	0,01–0,06
N.2.3	**90** (60–160)	0,04–0,15	0,06–0,25	0,02–0,075	**60** (40–110)	0,01–0,06
N.3.1	**170** (110–280)	0,04–0,15	0,06–0,25	0,02–0,075	**110** (70–180)	0,01–0,06
N.3.2	**140** (90–240)	0,04–0,15	0,06–0,25	0,02–0,075	**80** (50–150)	0,01–0,06
N.3.3	**120** (80–210)	0,04–0,15	0,06–0,25	0,02–0,075	**80** (50–140)	0,01–0,06
N.4.1	**170** (110–280)	0,04–0,15	0,06–0,25	0,02–0,075	**70** (40–120)	0,01–0,06
S.1.1	60 (40–100)	0,04–0,15	0,06–0,25	0,02–0,075	**30** (20–50)	0,01–0,06
S.1.2	40 (30–70)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–30)	0,01–0,06
S.2.1	60 (40–100)	0,04–0,15	0,06–0,25	0,02–0,075	**30** (20–50)	0,01–0,06
S.2.2	50 (30–80)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–40)	0,01–0,06
S.2.3	30 (20–60)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–30)	0,01–0,06
S.3.1	60 (40–100)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–40)	0,01–0,06
S.3.2	30 (20–60)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–30)	0,01–0,06
S.3.3	30 (20–50)	0,04–0,15	0,06–0,25	0,02–0,075	**10** (10–20)	0,01–0,06
H.1.1	50 (30–90)	0,02–0,06	0,04–0,14	0,02–0,037	**20** (10–40)	0,005–0,03
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1	40 (30–70)	0,02–0,10		0,015–0,05	**20** (10–40)	0,005–0,03
O.1.1	**180** (120–310)	0,04–0,15	0,06–0,25	0,02–0,037	**80** (50–130)	0,02–0,09
O.1.2	**170** (110–280)	0,04–0,15	0,06–0,25	0,02–0,037	**70** (40–120)	0,02–0,09
O.2.1	**140** (90–230)	0,04–0,15	0,06–0,25	0,02–0,037	**50** (30–100)	0,02–0,09
O.2.2	**100** (70–170)	0,04–0,15	0,06–0,25	0,02–0,037	**40** (30–70)	0,02–0,09
O.3.1	**140** (90–230)	0,005–0,05	0,06–0,25	0,0025–0,025	**60** (40–110)	0,02–0,09

ℹ The cutting data depend extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced, inside the bracket, according to the application conditions.

Milling Procedures

Climb milling

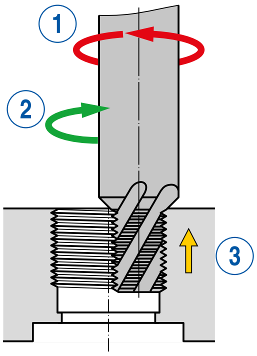
Characteristics:

① Tool rotation direction „right“

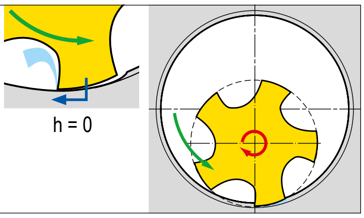
② Toolpath counter clockwise

③ Feed direction „outwards“

▶ Right hand thread



When climb milling, the chip thickness at the end of cut is always 0 (h=0)



Conventional milling

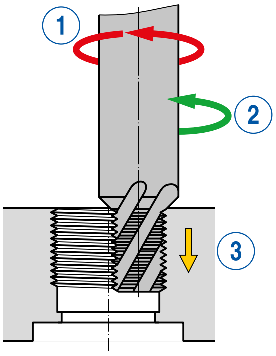
Characteristics:

① Tool rotation direction „right“

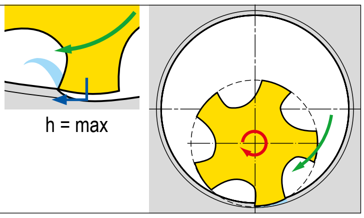
② Toolpath clockwise

③ Feed direction „inwards“

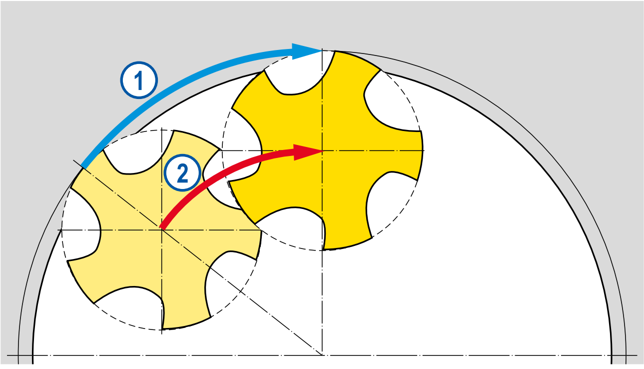
▶ Right hand thread



When conventional milling, the chip thickness at the end of cut is always at maximum (h=max)

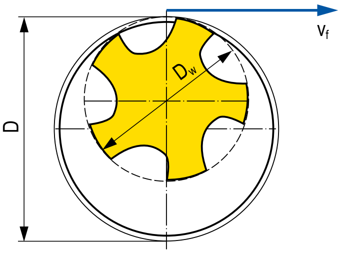


Feed rate calculation



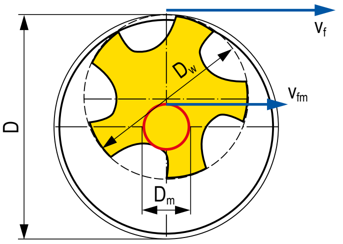
D_w = Effective diameter in mm
n = RPM in min^{-1}
f_z = Feed per tooth in mm
z = Number of cutting edges (radial)
D = Nominal thread diameter = external profile diameter in mm
D_m = Centre path diameter (D-D_W) in mm

① Peripheral feedrate v_f



$$v_f = n \times f_z \times z \quad \text{mm/min.}$$

② Centerline feedrate v_{fm}



$$v_{fm} = \frac{v_f \times (D - D_w)}{D} \quad \text{mm/min.}$$

Tips for the User

With thread milling there are two different programme possibilities with the feed motion of the tool.

On the one hand the machine controls the feed at the diameter of the tool, on the other hand the feed control is the tool center line.
In order to ascertain which method the machine control uses, the following method should be employed:

- ▲ Enter the thread milling routine into the control.
- ▲ Enter a safety margin into the program, so that the tool runs in air.
- ▲ Run the program through and check the operating time.
- ▲ Compare the actual time with the calculated theoretical time.

If the time is longer than the calculated time the feed is controlling the tool center line.
If the time is shorter than the calculated time the feed is controlling the diameter of the tool.

Numeric calculation of cutting data for thread milling

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

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

$$v_f = f_z \times z \times n$$

$$n = \frac{v_f}{f_z \times z}$$

$$f_z = \frac{v_f}{z \times n}$$

Milling – external contour

$$v_{fm} = \frac{v_f \times (D + d)}{D}$$

$$v_f = \frac{D \times v_{fm}}{(D + d)}$$

Milling – internal contour

$$v_{fm} = \frac{v_f \times (D - d)}{D}$$

$$v_f = \frac{D \times v_{fm}}{(D - d)}$$

Helical plunging

$$U_{arc} = 0{,}25 \times v_{fm}$$

Ramping in the arc

$$U_{arc} = v_{fm}$$

n rev./min. = rpm
v_c m/min = Cutting speed
d mm = Tool diameter
D mm = Nominal thread-Ø
v_f mm/min. = Feed rate at the diameter

v_{fm} mm/min. = Feed rate at the centre
U_{arc} mm/min. = programmed ramping feed rate
f_z mm = Feed per tooth
z Piece = number of cutting edges of the cutter

Correction values for the internal thread milling

The milling radius correction which is entered into the machine control, can be calculated as follows:

half the cutter Ø – 0.05 x pitch P

Example:
M30x3
Cutter-Ø:
20 mm

$$\frac{Ø20}{2} - (0{,}05 \times 3) = \underline{\underline{9{,}85\ \text{mm}}}$$

9,85 mm is the milling radius to be entered into the machine control

Coatings

AlCrN
- ▲ High-performance AlCrN multilayer coating
- ▲ max.application temperature: > 1100 °C

CWX 500
- ▲ Carbide, TiAlN-coated
- ▲ The universal carbide grade for almost all materials

TiAlN
- ▲ TiAlN multilayer coating
- ▲ Maximum application temperature: 900 °C

TiCN
- ▲ TiCN multilayer coating
- ▲ Maximum application temperature: 450 °C

TiN
- ▲ TiN coating
- ▲ Maximum application temperature: 450 °C

Ti 500
- ▲ TiAlN-coating
- ▲ Maximum application temperature: 500 °C

Ti 600
- ▲ TiAlN multilayer coating
- ▲ Maximum application temperature: 650 °C

Ti 601
- ▲ High-performance TiAlN multilayer coating
- ▲ Maximum application temperature: 900 °C

Ti 602
- ▲ TiCN multilayer coating
- ▲ Maximum application temperature: 400 °C