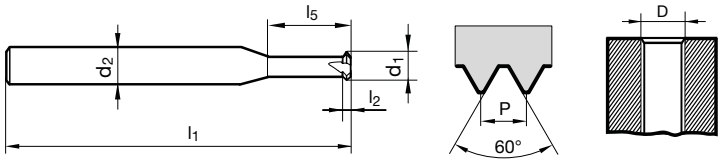
Micro-thread milling cutters

3xD

P	•
M	•
K	•
N	•
S	•
H	

Cutting data page 60

Tool material	**Solid carbide**
Surface	C
Type	MTM1 SP
Internal cooling	
Shank form	HA



Company std. Article no. **4225**

D	P max.	d1	d2	l1	l2	l5	Z	Code no.	Availability
	mm	mm	mm	mm	mm	mm			
M1.4 - M1.8	0.350	1.050	3.000	39.000	0.400	3.800	3	1.800	●
M2 - M2.4	0.400	1.500	3.000	39.000	0.400	7.000	3	2.400	●
M2.5 - M3	0.500	2.000	3.000	39.000	0.500	9.000	4	3.000	●
M3.5 - M4.5	0.750	2.800	6.000	58.000	0.800	14.000	4	4.500	●
M5 - M7	1.000	4.000	6.000	58.000	1.000	19.000	4	7.000	●
M8 - M10	1.500	6.400	8.000	64.000	1.500	24.000	5	10.000	●

Thread milling cutters w/o countersinking step
Type TM SP

Machine example

Coating:	TiCN	Tool material:	Steel
Thread:	M12	Cutting speed:	100 m/min
Pitch:	1.75 mm	Feed per tooth:	0.08 mm
Thread depth:	24 mm / 2 x D	Cutting time:	2.7 s

Programming example:

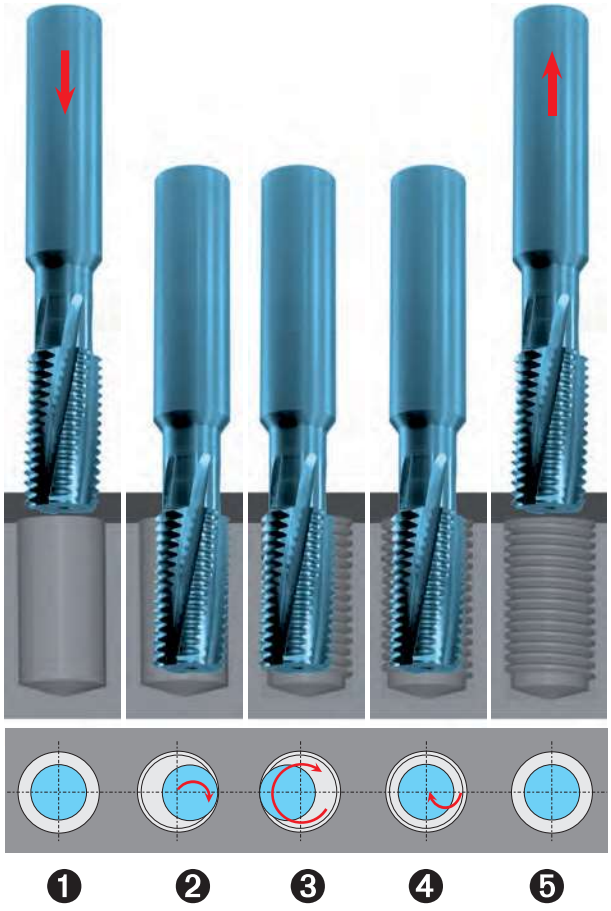
	CNC Code:	Plain text
	N10 M6T1	Tool call
	N20 G90 G54 G00 X0.000Y0.000	Work offset
❶	N30 Z2.000 S3199 M3 D1	Positioning centered on start position above tapping size hole and spindle speed call-up
	N40 G00 Z-21.725	Rapid movement to thread milling start position centered in tapping size hole
	N50 G91	Switch to incremental
	N60 G42 G01 X0.000Y4.975 F1000	Cutter radius compensation on
❷	N70 G02 X0.000Y-10.975 I0.000 J-5.488 Z-0.263 F87	180° entry cycle to profile depth, start thread milling process
❸	N80 G02 X0.000Y0.000 I0.000 J6.000 Z-1.750 F175	360° thread milling cycle with axial movement of the thread pitch in Z-direction
❹	N90 G02 X0.000Y10.975 I0.000 J5.488 Z-0.263 F350	180° withdrawal cycle to the thread center, end of thread milling
	N100 G40 G01 X0.000Y-4.975 F1000	Cutter radius compensation off
	N110 G90	Switch to absolute
❺	N120 G80 G53 G00 Z2.000	Withdrawal from hole to start position centered above tapping size hole
	N130 M30 M95	End

Universal thread milling cutter
Type TMU SP - 1 milling cycle

Machine example

Coating:	bright
Thread:	M24
Pitch:	1.5 mm
Thread depth:	24 mm / M16x1.5

Tool material:	Cast Aluminum
Cutting speed:	220 m/min
Feed per tooth:	0.15 mm
Cutting time:	1.7 s



Programming example:

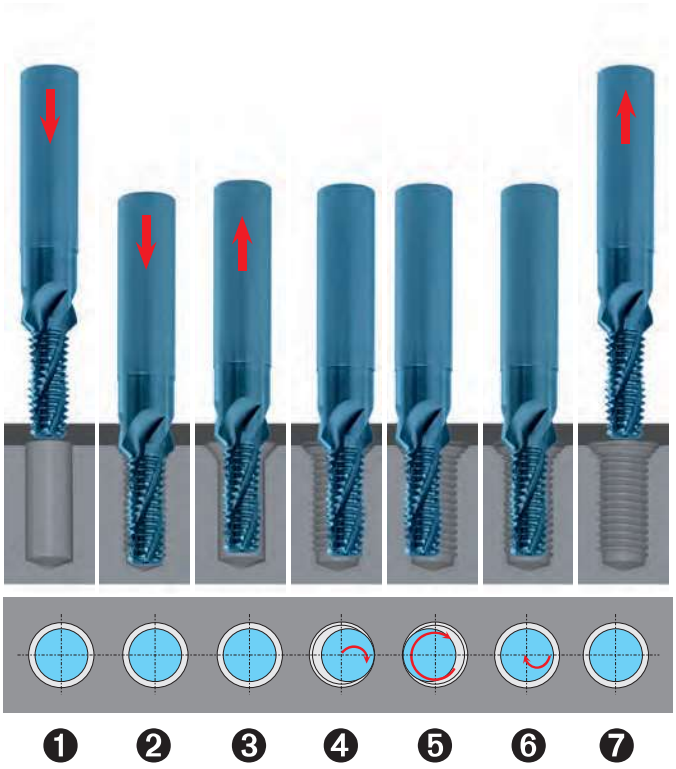
	CNC Code:	Plain text
	N10 M6T1	Tool call
	N20 G90 G54 G00 X0.000Y0.000	Work offset
❶	N30 Z2.000 S3199 M3 D1	Positioning centered on start position above tapping size hole and spindle speed call-up
	N40 G00 Z-21.725	Rapid movement to thread milling start position centered in tapping size hole
	N50 G91	Switch to incremental
	N60 G42 G01 X0.000Y4.975 F1000	Cutter radius compensation on
❷	N70 G02 X0.000Y-10.975 I0.000 J-5.488 Z-0.263 F87	180° entry cycle, start of thread milling
❸	N80 G02 X0.000Y0.000 I0.000 J6.000 Z-1.750 F175	360° thread milling cycle with axial movement of the thread pitch in Z-direction
❹	N90 G02 X0.000Y10.975 I0.000 J5.488 Z-0.263 F350	180° withdrawal cycle to the thread center, end of thread milling
	N100 G40 G01 X0.000Y-4.975 F1000	Cutter radius compensation off
	N110 G90	Switch to absolute
❺	N120 G80 G53 G00 Z2.000	Withdrawal from hole to start position centered above tapping size hole
	N130 M30 M95	End

Thread milling cutters with countersinking step
Type TMC SP

Machine example

Coating:	TiCN
Thread:	M16
Pitch:	1.5 mm
Thread depth:	40 mm / M16x1.5

Tool material:	5120 Alloyed Steel
Cutting speed:	100 m/min
Feed per tooth:	0.06 mm
Cutting time:	6.4 s



Programming example:

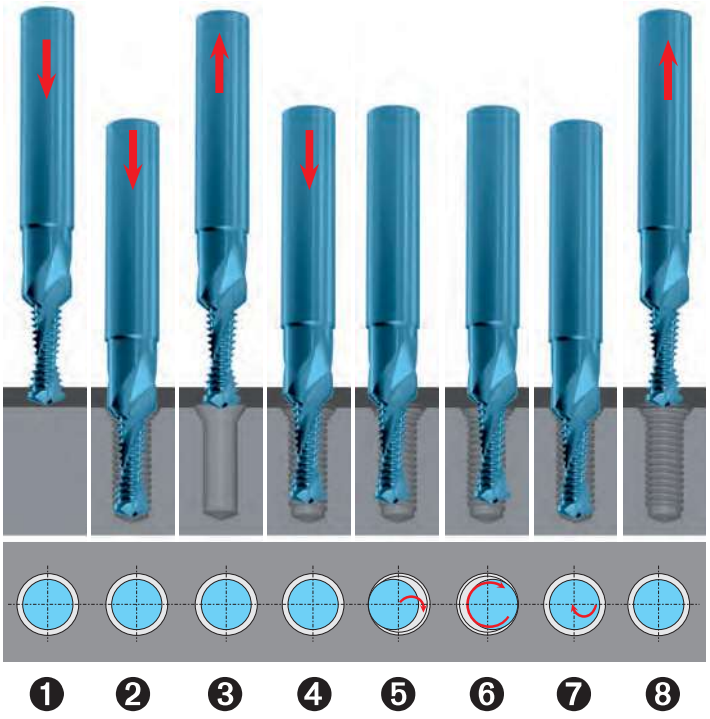
	CNC Code:	Plain text
	N10 M6T1	Tool call
	N20 G90 G54 G00 X0.000Y0.000	Work offset
❶	N30 Z2.000 S497 M3 D1	Positioning centered on start position above tapping size hole and spindle speed call-up
	N40 G00 X0.000Y0.000 Z-41.300	Rapid movement to countersinking start position
❷	N50 G01 X0.000Y0.000 Z-43.200 F119	Countersinking of 90° chamfer
❸	N60 G00 Z-38.050 S2487	Rapid movement to thread milling start position centered in tapping size hole
	N70 G91	Switch to incremental
	N80 G42 G01 X0.000Y6.400 F1000	Cutter radius compensation on
❹	N90 G02 X0.000Y-14.400 I0.000 J-7.200 Z-0.225 F60	180° entry cycle, start of thread milling
❺	N100 G02 X0.000Y0.000 I0.000 J8.000 Z-1.500 F119	360° thread milling cycle with axial movement of the thread pitch in Z-direction
❻	N110 G02 X0.000Y14.400 I0.000 J7.200 Z-0.225 F239	180° withdrawal cycle to the thread center, end of thread milling
	N120 G40 G01 X0.000Y-6.400 F1000	Cutter radius compensation off
	N130 G90	Switch to absolute
❼	N140 G80 G53 G00 Z2.000	Withdrawal from hole to start position centered above tapping size hole
	N150 M30 M95	End

Drill/thread milling cutter
Type DTMC SP

Machine example

Coating:	bright
Thread:	M8
Pitch:	1.25 mm
Thread depth:	16 mm / 2 x D

Tool material:	Cast Iron
Cutting speed:	100 m/min
Feed per tooth:	0.06 mm
Cutting time:	5.3 s



Programming example:

	CNC Code:	Plain text
	N10 M6 T1	Tool call
	N20 G90 G54 G00 X0.000 Y0.000	Work offset
❶	N30 Z2.000 S5013 M3 D1	Positioning centered on start position above tapping size hole and spindle speed call-up
	N40 G01 X0.000 Y0.000 Z-1.000 F251	Centering at half the feed rate
❷	N50 X0.000 Y0.000 Z-19.825 F501	Drilling the tapping size hole and countersinking 90° chamfer
❸	N60 G00 X0.000 Y0.000 Z0.000 S5013	Withdrawal of tool from the hole for pecking
❹	N70 Z-14.375	Rapid movement to thread milling start position centered in tapping size hole
	N80 G91	Switch to incremental
	N90 G42 G01 X0.000 Y3.175 F1000	Cutter radius compensation on
❺	N100 G02 X0.000 Y-7.175 I0.000 J-3.588 Z-0.188 F62	180° entry cycle, start of thread milling
❻	N110 G02 X0.000 Y0.000 I0.000 J4.000 Z-1.250 F124	360° thread milling cycle with axial movement of the thread pitch in Z-direction
❼	N120 G02 X0.000 Y7.175 I0.000 J3.588 Z-0.188 F248	180° withdrawal cycle to the thread center, end of thread milling
	N130 G40 G01 X0.000 Y-3.175 F1000	Cutter radius compensation off
	N140 G90	Switch to absolute
❽	N150 G80 G53 G00 Z2.000	Withdrawal from hole to start position centered above tapping size hole
	N160 M30 M95	End

Available free of charge at www.guhring.com:

CNC THREAD MILL PROGRAM GENERATOR

You enter the information - it writes the program.

At www.GUHRING.com, under the Technical tab