

mimatic®

Tool Systems

Your Partner For Clever Tooling


















Cutting Tools

2019



Manufacturer of Precision Tools Since 1974

Symbols

	Type designation		Thread standard
	Steel shaft without clamping surface		Thread with undercut (Trio-Cut)
	Steel shaft with Weldon clamping surface		for right- and left hand internal thread for left hand thread modify your NC-program!
	Solid carbide shaft without clamping surface		for right- and left hand external thread for left hand thread modify your NC-program!
	Solid carbide shaft with Weldon clamping surface		Full form thread milling
	Cutter with tightening thread		Partial form thread milling
	Smallest necessary bore-diameter		Point angle
	Internal coolant supply		Thread standard
	Number of inserts		

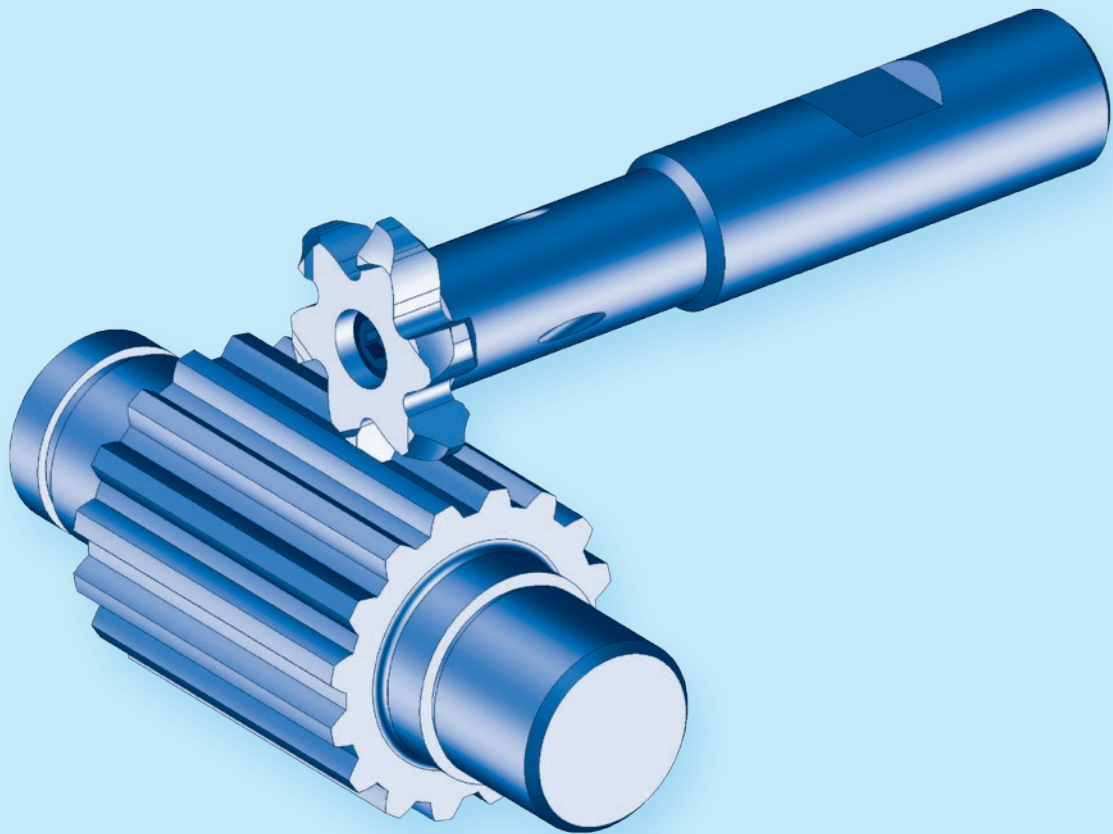
Short Descriptions

Alpha (α)	Point angle of milling insert	F	Width of trailing chamfer
A	Groove width	H _P	Insert height
A ₁	Basic width in the Groove	H _S	Slider height (Axial grooving tool)
B _{f6}	Insert holder width of axial grooving tool	L	Length of milling tool
B _{H7}	Groove width of axial grooving tool	L ₁	Clamping length of milling tool
B _w	Tool width of axial grooving tool	L ₂	Length of step milling head
C	Chamfer width	L _G	Usable thread length at the multi-tooth thread milling
D	Cutting diameter	L _{HA}	Holder length
d ₁	Milling body diameter (front)	L _{P1}	Insert height of milling body – edge
d ₂	Large diameter of milling body	L _{P2}	Insert height of edge – interfering contour
d _{g6}	Fitting face diameter of threaded milling tool	L _{PF}	Length of fitting face
D _{h6}	Shaft diameter of milling body (Arbor)	L _S	Shaft length – clamping length (Depth)
D _P	Flight circle of insert	M	Thread size
D _R	Nominal diameter of concave radius insert	P	Pitch
E	Width blank insert	R	Radius (general / common)

Formula for Tool Lengths

$$L_{WKZ} = L_{GK} + L_1 + L_{P1} (+L_{P2})$$

Gear Milling



Milling

Thread Milling



Extended program

14-75

1

Face Finish Milling

76-81

2

Notch Impact Test

82-87

3

Gear Milling



Extended program

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4

Slot Milling

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Contour and Radius Milling
Chamfering, Deburring



Extended program

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6

Sawing, Slitting

Sawing, Cutting, Slitting



Extended program

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7

Bore Machining

Reaming

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Axial Grooving

Axial Grooving, adjustable

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9

Special Tools

Special- and Combination Tools

164-169

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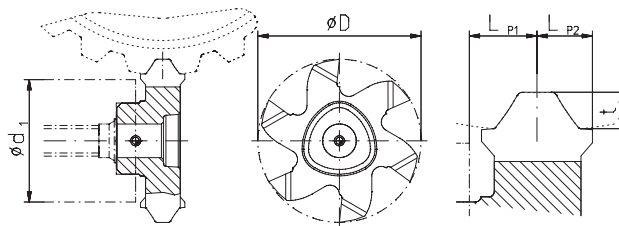
Cutting Data and Technical Information

170-185

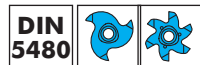
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Gear Milling Inserts

- Insert holder see page 92
- Cutting data see page 173
- Conditional deliverable



Splined Shaft Connection

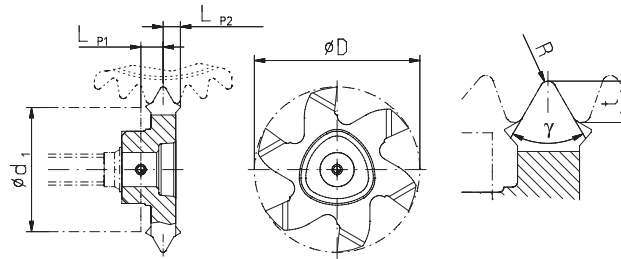


	Typ	Arbor	Module	Angle of action	N. of teeth Arbor	D=0,05 mm	Chip angle	LP1 mm	LP2 mm	t mm	N. of teeth Insert	Order No. TINAMATIC		
P16	P1616	W8	x 0,75	x 30°	x 9	16	6°	2,15	1,675	0,63	6	193023	NEW	
	P1616	W9	x 0,8	x 30°	x 10	15,85	6°	2,05	1,775	0,71	6	184142		
	P1616	W11	x 0,8	x 30°	x 12	15,85	6°	2,05	1,775	0,8	6	174569		
	P1616	W14	x 0,8	x 30°	x 16	16	6°	2,05	1,775	0,8	6	169336		
	P1616	W16	x 0,8	x 30°	x 18	16	6°	2,05	1,775	0,8	6	169090		
	P1616	W18	x 1,0	x 30°	x 16	16	6°	2,15	1,675	0,93	6	192612	NEW	
	P1616	W19	x 0,8	x 30°	x 22	16	6°	2,15	1,675	0,75	6	192691	NEW	
	P1616	W20	x 0,8	x 30°	x 24	16	6°	2,05	1,775	0,8	6	168668		
	P1616	W20	x 1,25	x 30°	x 14	16	6°	2,65	2,175	1,45	6	182361		
	P1616	W20	x 1,5	x 30°	x 12	16	6°	2,65	2,175	1,36	6	190601	NEW	
	P1616	W21	x 1,5	x 30°	x 12	16	6°	2,65	2,175	1,33	6	192610	NEW	
	P1616	W22	x 0,8	x 30°	x 26	16	6°	2,15	1,675	0,77	6	191365	NEW	
	P1616	W24	x 1,25	x 30°	x 18	16	6°	2,55	2,275	1,25	6	169340		
	P1616	W25	x 1,0	x 30°	x 24	16	6°	2,15	1,675	0,95	6	185309		
	P1616	W25	x 2,0	x 30°	x 11	16	8°	4,15	3,30	2,0	3	149415		
	P1616	W28	x 1,25	x 30°	x 21	16	6°	2,15	1,675	1,18	6	192905	NEW	
	P1616	W30	x 1,25	x 30°	x 22	16	6°	2,55	2,275	1,25	6	176246		
	P1616	W31	x 0,8	x 30°	x 37	16	6°	2,15	1,675	0,78	6	189534	NEW	
	P1616	W32	x 1,25	x 30°	x 24	16	6°	2,65	2,175	1,19	6	185305		
	P1616	W35	x 0,8	x 30°	x 42	16	6°	2,15	1,675	0,78	6	188287		
	P1616	W35	x 1,5	x 30°	x 22	16	6°	2,65	2,175	1,43	6	186028		
	P1616	W35	x 2,0	x 30°	x 16	16	6°	3,05	2,775	2,0	6	179140		
	P1616	W40	x 1,0	x 30°	x 38	16	6°	2,08	1,75	0,96	6	187909		
	P1616	W42	x 1,25	x 30°	x 32	16	6°	2,55	2,275	1,25	6	179651		
	P1616	W45	x 1,25	x 30°	x 34	16	6°	2,65	2,175	1,21	6	160731	NEW	
	P1616	W50	x 1,0	x 30°	x 48	16	6°	2,65	2,175	0,88	6	160993	NEW	
	P1616	W50	x 2,0	x 30°	x 24	16	6°	3,05	2,775	2,0	6	169687		
	P1616	W52	x 1,25	x 30°	x 40	16	6°	2,65	2,175	1,21	6	185304		
	P1616	W55	x 1,0	x 30°	x 54	16	6°	2,08	1,75	0,97	6	187910		
	P25	P2526	W18	x 1,0	x 30°	x 16	26	6°	2,15	1,675	0,93	6	161670	NEW
		P2526	W21	x 1,5	x 30°	x 12	26	6°	2,65	2,175	1,33	6	161669	NEW
		P2526	W22	x 2,0	x 30°	x 9	26	6°	3,90	3,425	1,69	6	190309	NEW
P2526		W25	x 1,25	x 30°	x 18	26	6°	2,65	2,175	1,28	6	189691	NEW	
P2526		W30	x 2,0	x 30°	x 13	26	6°	3,90	3,425	1,76	6	187574		
P2526		W32	x 2,0	x 30°	x 14	26	6°	3,90	3,425	1,8	6	192784	NEW	
P2526		W38	x 2,0	x 30°	x 18	26	6°	3,90	3,425	2,21	6	189692	NEW	
P2526		W40	x 2,0	x 30°	x 18	26	6°	3,90	3,425	1,86	6	187575		
P2526		W45	x 2,0	x 30°	x 21	26	6°	3,90	3,425	1,9	6	187576		
P2526		W50	x 2,0	x 30°	x 24	26	6°	3,85	3,475	2,0	6	169786		
P2526		W55	x 2,0	x 30°	x 26	26	6°	4,40	2,675	1,92	6	189521	NEW	
P2526		W65	x 2,0	x 30°	x 31	26	6°	4,40	2,675	1,93	6	193313	NEW	
P2526		W70	x 1,5	x 30°	x 45	26	6°	2,65	2,175	1,46	6	191807	NEW	
P2526		W70	x 2,5	x 30°	x 26	26	6°	3,90	3,425	2,39	6	192220	NEW	
P2526		W72	x 2,0	x 30°	x 34	26	6°	3,85	3,475	1,92	6	160321		
P2526		W80	x 2,5	x 30°	x 30	26	6°	3,85	3,475	2,39	6	160323		
P2526		W90	x 2,0	x 30°	x 44	26	6°	3,85	3,475	1,94	6	160322		
P2526		W90	x 2,5	x 30°	x 34	26	6°	3,90	3,425	2,42	6	191806	NEW	
P2526		W90	x 3,0	x 30°	x 28	25	8°	4,60	4,10	2,89	3	189851	NEW	
P2526		W95	x 3,0	x 30°	x 30	25	8°	4,60	4,10	2,90	3	189852	NEW	
P2526		W100	x 3,0	x 30°	x 32	26	6°	3,90	3,425	2,91	6	192039	NEW	
P2526		W130	x 3,0	x 30°	x 42	26	6°	3,90	3,425	2,93	6	188629	NEW	

PolyMILL

Gear Milling Inserts

- Insert holder see page 92
- Cutting data see page 173
- Conditional deliverable

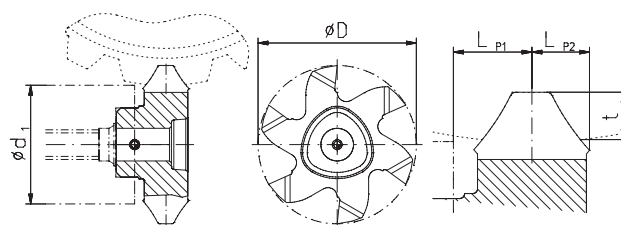


Spline



Typ	Arbor	R mm	Grp angle γ	N. of teeth Arbor	D ^{-0,05} mm	Chip angle	LP1 mm	LP2 mm	t mm	N. of teeth Insert	Order No. TINAMATIC
P16	P1616 12 x 14	0,09	60°	31	16	6°	2,15	1,675	0,892	6	191837 NEW
P25	P2526 26 x 30	0,3	60°	35	26	6°	2,15	1,675	1,638	6	171358
	P2526 40 x 44	0,4	60°	38	26	6°	2,15	1,675	1,94	6	171359

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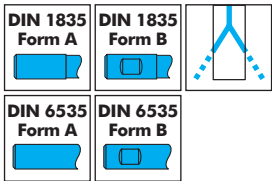
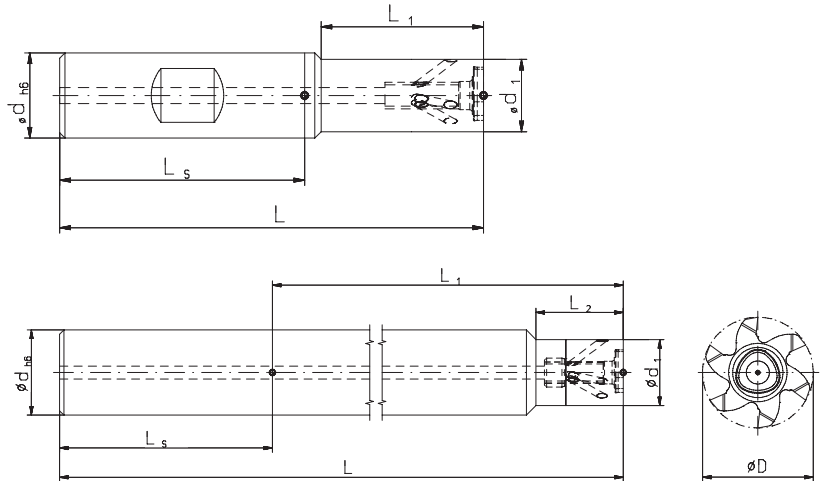
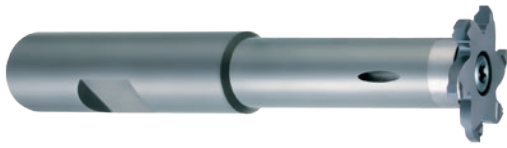
Splined Shaft Profile



Typ	Nominal profile width	Module	Angle of action	N. of teeth Arbor	D ^{-0,05} mm	Chip angle	LP1 mm	LP2 mm	t mm	N. of teeth Insert	Order No. TINAMATIC
P16	P1616 B15 x 12	1,6	30°	8	16	6°	3,15	2,675	1,32	6	169337
	P1616 B17 x 14	1,6	30°	9	16	6°	3,15	2,675	1,33	6	169111
	P1616 B20 x 17	1,6	30°	12	16	6°	3,15	2,50	1,42	6	169101
	P1616 B25 x 22	1,6	30°	14	16	6°	3,15	2,53	1,54	6	169107
	P1616 B40 x 36	1,9	30°	20	16	6°	3,175	2,65	1,91	6	186842
P25	P2526 B35 x 31	1,75	30°	18	26	6°	3,85	3,475	2,0	6	178172
	P2526 B38 x 34	1,9	30°	19	26	6°	4,4	2,675	1,91	6	186398
	P2526 B45 x 41	2,0	30°	22	26	6°	3,85	3,475	1,91	6	179212
	P2526 B50 x 45	2,0	30°	24	26	6°	3,90	3,425	2,35	6	192242 NEW
	P2526 B55 x 50	2,0	30°	26	26	6°	3,85	3,475	2,75	6	173903
	P2526 B58 x 53	2,0	30°	27	26	6°	3,90	3,425	2,64	6	189652 NEW
	P2526 B68 x 62	2,1	30°	31	26	6°	4,40	2,675	2,81	6	192093 NEW
	P2526 B70 x 64	2,1	30°	32	26	6°	3,90	3,425	2,81	6	189848 NEW
	P2526 B80 x 74	2,1	30°	36	26	6°	3,90	3,425	2,82	6	189005 NEW

Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 90-91
- Cutting data see page 173
- More cutters see page 28-29



Type	Order No.	Form	d _{h6} mm	d ₁ mm	D _{max.} mm	S _{max.} (D-d ₁)/2 mm	L mm	L ₁ mm	Shaft	Spare part No.	
										Screw-driver*	Screw*
P16	123573	B	12	9,0	17,7	4,35	67,4	21	Steel	T8 IP 111656	M3x12 143158
	123577	B	12	9,0	17,7	4,35	67,4	21	Carbide		
	171787	A	12	9,0	17,7	4,35	67,4	21	Carbide		
	123580	B	12	9,0	17,7	4,35	82,4	36	Carbide		
	171789	A	12	9,0	17,7	4,35	82,4	36	Carbide		
	123584	A	12	9,0	17,7	4,35	100	30	Carbide		
	123588	A	12	12,0	17,7	2,85	82,4	-	Carbide		
123590	A	12	12,0	17,7	2,85	122,5	-	Carbide			
P25	123592	B	16	13,6	27,7	7,05	79,6	30,5	Steel		
	123598	B	16	13,6	27,7	7,05	79,6	30,5	Carbide		
	171855	A	16	13,6	27,7	7,05	79,6	30,5	Carbide		
	123600	B	16	13,6	27,7	7,05	94,6	45,5	Carbide		
	171857	A	16	13,6	27,7	7,05	94,6	45,5	Carbide	T20 IP 111594	M5x13,5 107529
	123603	B	16	13,6	27,7	7,05	109,6	60,5	Carbide		
	171859	A	16	13,6	27,7	7,05	109,6	60,5	Carbide		
	123609	A	16	15,5	27,7	6,1	105	21,5	Carbide		
	123611	A	16	15,5	27,7	6,1	149,5	21,5	Carbide		
123613	A	20	15,5	27,7	6,1	175,45	21,5	Carbide			

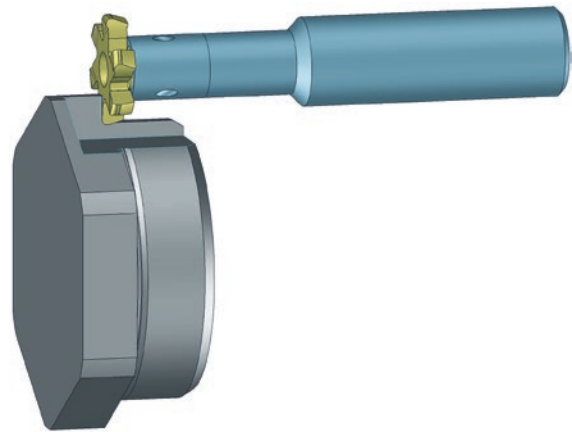
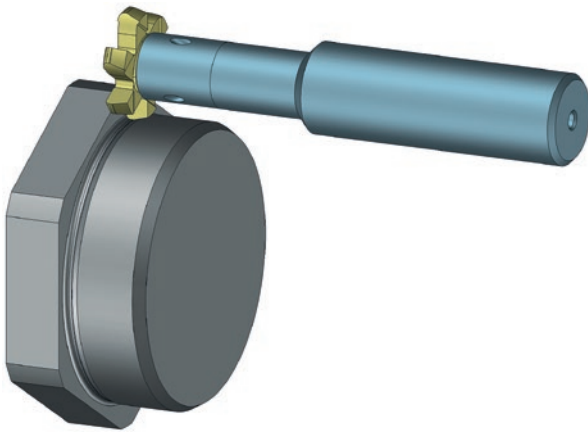
Screw torques max.
143158 T08 IP 1,1 Nm
107529 T20 IP 5,5 Nm

* Screwdriver and clamping screw included in delivery

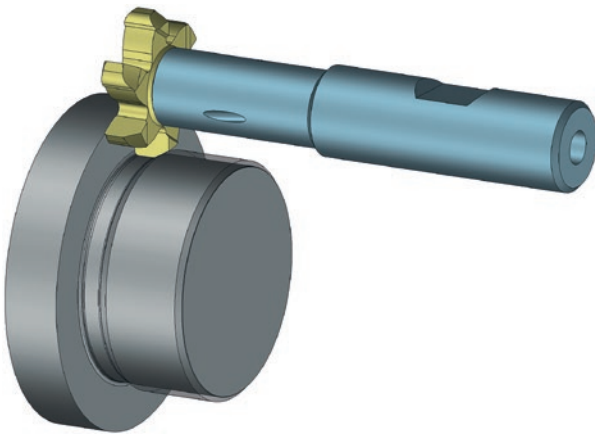
PolyMILL

Milling of Special Contours with PolyMILL Inserts

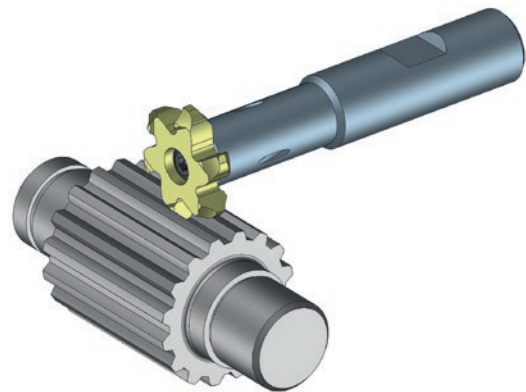
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Milling an undercut according to DIN 509 Form E



Milling a thread undercut according to DIN 76



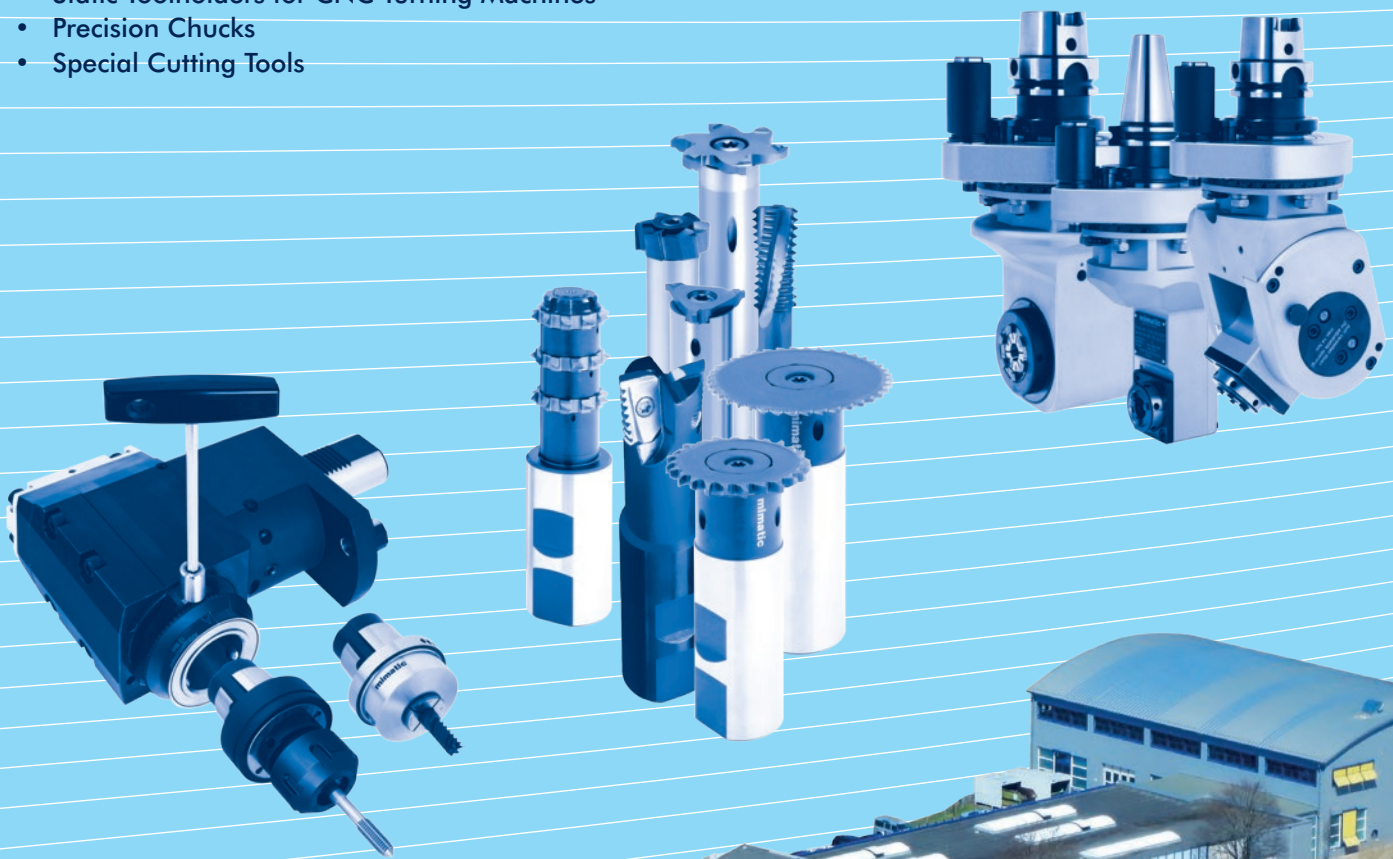
Milling a spindle with splines according to DIN 5480

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Tool Systems

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- Circular- and Thread Milling Tools
- RPK-Reamers with Polygonal Interface
- Driven Toolholders for CNC Machining Centers
- Driven Toolholders for CNC Turning Machines
- Multi-Spindle Technology
- Modular Quick Change Toolholders mimatic® mi
- Static Toolholders for CNC Turning Machines
- Precision Chucks
- Special Cutting Tools



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