mimatic® Tool Systems

Symbols

Type designation

Tool shank without clamping surface

Tool shank with Weldon clamping surface

Solid carbide shaft without clamping surface

Solid carbide shaft with Weldon clamping surface

Tool with Conical tool shank


Tool with tighening thread


Cutter with cross groove

Smallest necessary bore-diameter

Maximum cutting depth


Internal coolant supply

Blank inserts must be equipped with a clearance angle!

Inserts without profile, ready for use with clearance angle.


Inserts for guard ring slots

Inserts for O-ring slots

DIN standard

Inserts with chamfered edges

Inserts with chipbreakers from 5 mm cutting width


For chamfering and deburring


Number of inserts (Polygon Cutter)

Thread depth max.


Edge radius


Full radius

Formula for Tool Lengths

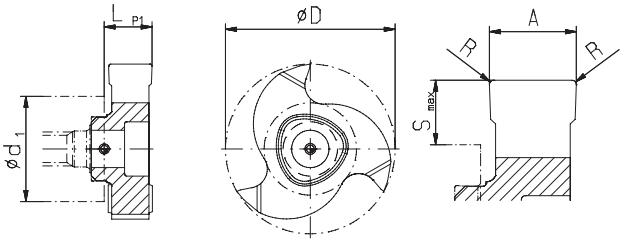
$$L_{WKZ} = L_{GK} + L_1 + L_{P1} (+L_{P2})$$

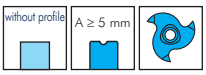
mimatic® Tool Systems

PolyMILL Connectable in accordance with BLUEcompetence » mimatic mi » Driven Tool Holders

Slot Milling

- Insert holder see page 104-106
- Cutting data see page 189





	Type	A mm	A inch	D mm	Rake Angle	R mm	LP1 mm	LP2 mm	S max. mm	Number of teeth	Order No. TINAMATIC	
P12	P1210	0,74	.029	9,6	6°	0,1	3,25	0,1	1,2	3	171915	
	P1210	0,84	.033	9,6	6°	0,1	3,25	0,1	1,2	3	171916	
	P1210	1	.039	9,6	6°	0,1	3,25	0,1	1,2	3	171917	
	P1210	1,2	.047	9,6	6°	0,1	3,25	0,1	1,2	3	171918	
	P1210	1,4	.055	9,6	6°	0,1	3,25	0,1	1,2	3	171919	
	P1210	1,5	.059	9,6	6°	0,1	3,25	0,1	1,2	3	171920	
	P1210	1,575	.062	9,6	6°	0,1	3,25	0,1	1,2	3	173937	
	P1210	1,7	.067	9,6	6°	0,1	3,25	0,1	1,2	3	171921	
	P1210	2	.079	9,6	6°	0,1	3,75	–	1,2	3	171922	
	P1210	2,5	.098	9,6	6°	0,1	3,75	–	1,2	3	171923	
	P1212	1,5	.059	11,7	6°	0,1	3,4	–	2,25	3	171862	
	P1212	2	.079	11,7	6°	0,15	3,4	–	2,25	3	171863	
	P1212	2,5	.098	11,7	6°	0,15	3,4	–	2,25	3	171865	
	P1212	3	.118	11,7	6°	0,15	3,55	–	2,25	3	171866	
	P1212	3,175	.125	11,7	6°	0,15	3,75	–	2,25	3	173938	
P16	P1616	3,5	.138	16	0°	0,15	4,15	–	3,5	3	142531	
	P1616	3,5	.138	16	8°	0,15	4,15	–	3,5	3	142486	
	P1616	3,5	.138	16	12°	0,15	4,15	–	3,5	3	142526	
	P1616	5	.197	16	0°	0,15	5,65	–	3,5	3	142511	
	P1616	5	.197	16	8°	0,15	5,65	–	3,5	3	142541	
	P1616	5	.197	16	12°	0,15	5,65	–	3,5	3	142457	
P25	P2525	4	.157	25	0°	0,15	4,65	–	5,7	3	142556	
	P2525	4	.157	25	8°	0,15	4,65	–	5,7	3	142546	
	P2525	4	.157	25	12°	0,15	4,65	–	5,7	3	142579	
	P2525	5	.197	25	8°	0,15	5,75	–	5,7	3	142538	
	P2525	6	.236	25	8°	0,15	6,90	–	5,7	3	160907	NEW
	P2525	6,35	.250	25	8°	0,15	7,15	–	5,7	3	173939	
	P2525	6,5	.256	25	0°	0,15	7,15	–	5,7	3	142582	
	P2525	6,5	.256	25	8°	0,15	7,15	–	5,7	3	142610	
	P2525	6,5	.256	25	12°	0,15	7,15	–	5,7	3	142574	
	P2525	8	.315	25	0°	0,15	8,65	–	5,7	3	142558	
	P2525	8	.315	25	8°	0,15	8,65	–	5,7	3	142578	
	P2525	8	.315	25	12°	0,15	8,65	–	5,7	3	142588	

mimatic® Tool Systems

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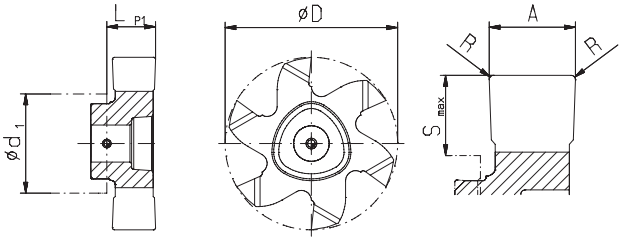
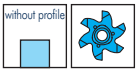
Slot Milling, Straight Toothed

- Insert holder see page 104-106
- Cutting data see page 189





	Type	A mm	A inch	D mm	Rake Angle	R mm	LP1 mm	S max. mm	Number of teeth	Order No. TINAMATIC	
P16	P1616	3,0	.118	16,0	6°	0,15	3,53	3,5	6	142494	
	P1616	3,175	.125	16,0	6°	0,05	3,74	3,5	6	173929	
	P1616	4,0	.157	16,0	6°	0,15	4,65	3,5	6	142565	
	P1616	5,0	.197	16,0	6°	0,15	5,65	3,5	6	142586	
	P1618	1,2	.047	17,7	6°	0,1	4,0	4,0	6	171937	
	P1618	1,4	.055	17,7	6°	0,1	4,0	4,0	6	171938	
	P1618	1,5	.059	17,7	6°	0,1	3,9	4,0	6	171939	
	P1618	1,57	.062	17,7	6°	0,1	3,9	4,0	6	173928	
	P1618	1,7	.067	17,7	6°	0,1	4,0	4,0	6	171940	
	P1618	2,0	.079	17,7	6°	0,1	3,9	4,0	6	171941	
	P1618	2,39	.094	17,7	6°	0,15	4,0	4,0	6	171942	
	P1618	2,5	.098	17,7	6°	0,15	3,9	4,0	6	171943	
P20	P2020	3,0	.118	20,0	6°	0,15	3,65	4,2	6	168673	
	P2020	4,0	.157	20,0	6°	0,15	4,65	4,2	6	168674	
	P2020	5,0	.197	20,0	6°	0,15	5,65	4,2	6	142655	
	P2022	1,4	.055	21,7	6°	0,1	5,0	5,0	6	171956	
	P2022	1,5	.059	21,7	6°	0,1	5,0	5,0	6	171957	
	P2022	1,57	.062	21,7	6°	0,1	5,0	5,0	6	173930	
	P2022	1,7	.067	21,7	6°	0,1	5,0	5,0	6	171958	
	P2022	2,0	.079	21,7	6°	0,1	5,0	5,0	6	171959	
	P2022	2,39	.094	21,7	6°	0,15	5,0	5,0	6	171960	
	P2022	2,5	.098	21,7	6°	0,15	5,0	5,0	6	171961	
	P2022	3,0	.118	21,7	6°	0,15	5,0	5,0	6	171962	
	P2022	3,175	.125	21,7	6°	0,15	5,0	5,0	6	171963	
	P2022	4,0	.157	21,7	6°	0,15	5,0	5,0	6	182370	NEW
	P2022	5,0	.197	21,7	6°	0,15	6,0	5,0	6	187947	NEW
P25	P2526	3,0	.118	26,0	6°	0,15	3,65	6,2	6	142601	
	P2526	3,175	.125	26,0	6°	0,15	3,7	6,2	6	173932	
	P2526	4,0	.157	26,0	6°	0,15	4,65	6,2	6	142677	
	P2526	5,0	.197	26,0	6°	0,15	6,9	6,2	6	142589	
	P2526	6,0	.236	26,0	6°	0,15	7,15	6,2	6	162646	NEW
	P2526	6,35	.250	26,0	6°	0,15	6,95	6,2	6	173931	
	P2526	6,5	.256	26,0	6°	0,15	7,15	6,2	6	142618	
	P2528	1,5	.059	27,7	6°	0,1	4,9	6,8	6	171981	
	P2528	2,0	.079	27,7	6°	0,1	4,9	6,8	6	171982	
	P2528	2,39	.094	27,7	6°	0,15	4,9	6,8	6	171983	
	P2528	2,5	.098	27,7	6°	0,15	4,9	6,8	6	171984	
	P2528	3,0	.118	27,7	6°	0,15	4,9	6,8	6	171985	
	P2528	3,175	.125	27,7	6°	0,15	5,0	6,8	6	171986	

mimatic® Tool Systems

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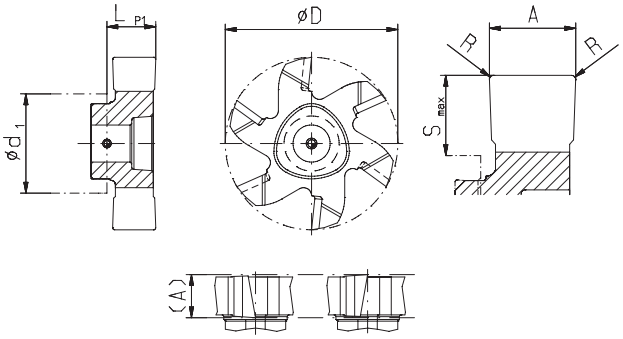
Slot Milling, Cross Toothed

- **Insert holder see page 104-106**
- **Cutting data see page 189**



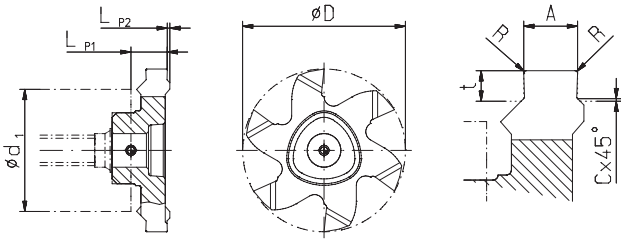
without profile

	Type	A mm	A inch	D mm	Rake Angle	R mm	LP1 mm	S max. mm	Number of teeth	Order No. TINAMATIC
P16	P1616	5,0	.197	16,0	6°	0,15	5,65	3,5	6	171699
P20	P2020	5,0	.197	20,0	6°	0,15	5,65	4,2	6	171700
	P2022	4,0	.157	21,7	6°	0,15	5,0	5,0	6	163659
	P2022	5,0	.197	21,7	6°	0,15	6,0	5,0	6	187948 NEW
P25	P2526	5,0	.197	26,0	6°	0,15	6,9	6,2	6	171701
	P2526	6,5	.256	26,0	6°	0,15	7,15	6,2	6	171702
	P2528	4,0	.157	27,7	6°	0,15	5,9	6,8	6	177186
	P2528	5,0	.197	27,7	6°	0,15	5,9	6,8	6	177187

Further stotting widths on request

Circlip Grooves

- **With chamfered edge**
- **Insert holder see page 104-106**
- **Cutting data see page 189**



DIN 471/ 472

	Type	DIN Width H13	D mm	A -0,03 mm	t mm	Cx45° mm	R mm	LP1 mm	LP2 mm	Number of teeth	Order No TINAMATIC
P16	P1616	1,10	16	1,18	0,50	0,10	0,05	3,15	0,675	6	142423
	P1616	1,30	16	1,38	0,85	0,15	0,05	3,15	0,675	6	142528
	P1616	1,60	16	1,68	1,00	0,15	0,1	3,15	0,675	6	142561
	P1616	1,85	16	1,93	1,25	0,20	0,1	3,15	0,675	6	142562
P20	P2020	1,10	20	1,18	0,50	0,10	0,05	3,15	0,675	6	168675
	P2020	1,30	20	1,38	0,85	0,15	0,05	3,15	0,675	6	168676
	P2020	1,60	20	1,68	1,00	0,15	0,1	3,15	0,675	6	168677
	P2020	1,85	20	1,93	1,25	0,20	0,1	3,15	0,675	6	168678
	P2022	1,60	21,7	1,68	1,00	0,15	0,1	4,7	0,45	6	171968
	P2022	1,85	21,7	1,93	1,25	0,20	0,1	4,7	0,45	6	171969
	P2022	2,15	21,7	2,23	1,50	0,20	0,1	4,7	0,45	6	171970
	P2022	2,65	21,7	2,73	1,75	0,20	0,2	4,8	0,35	6	171971
P25	P2526	1,30	26	1,38	0,85	0,15	0,05	3,4	0,425	6	142646
	P2526	1,60	26	1,68	1,00	0,15	0,1	3,4	0,425	6	142660
	P2526	1,85	26	1,93	1,25	0,20	0,1	3,4	0,425	6	142607
	P2526	2,15	26	2,23	1,50	0,20	0,1	3,4	0,425	6	142591
	P2526	2,65	26	2,73	1,75	0,20	0,2	4,25	0,575	6	142597
	P2526	3,15	26	3,23	1,75	0,20	0,2	4,25	0,575	6	142661
	P2526	4,15	26	4,23	2,00	0,20	0,2	6,415	0,560	6	142622 NEW
	P2526	4,15	26	4,23	2,50	0,20	0,2	6,415	0,560	6	160893 NEW

mimatic® Tool Systems

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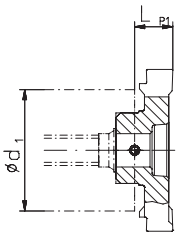
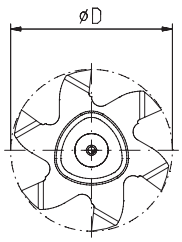
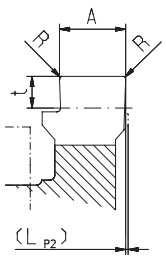
Circlip Grooves

- **Without chamfered edge**
- **Insert holder see page 104-106**
- **Cutting data see page 189**







DIN 471/ 472

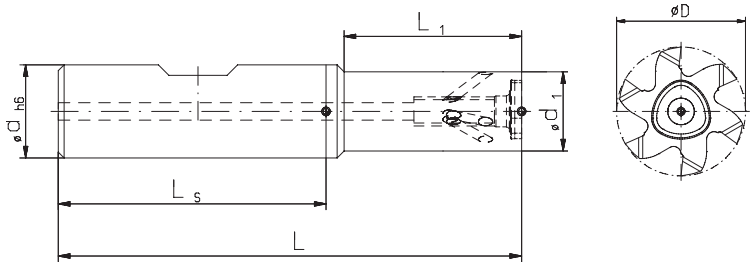
	Type	DIN Width H13	D mm	A -0,03 mm	t mm	R mm	LP1 mm	LP2 mm	Number of teeth	Order No TINAMATIC
P12	P1210	0,90	9,6	0,98	1,20	0,05	3,25	0,1	3	172125
	P1212	1,10	11,7	1,18	0,90	0,05	3,55	–	3	171868
	P1212	1,30	11,7	1,38	1,10	0,05	3,55	–	3	171869
	P1212	1,60	11,7	1,68	1,00	0,1	3,55	–	3	171870
P16	P1616	1,10	16,0	1,18	0,90	0,05	3,45	–	6	142548
	P1616	1,30	16,0	1,38	1,10	0,05	3,45	–	6	142509
	P1616	1,60	16,0	1,68	1,25	0,1	3,45	–	6	142533
	P1616	1,85	16,0	1,93	1,25	0,1	3,45	–	6	142536
	P1618	1,10	17,7	1,18	0,90	0,05	4,0	–	6	171945
	P1618	1,30	17,7	1,38	1,10	0,05	4,0	–	6	171946
	P1618	1,60	17,7	1,68	1,25	0,1	3,9	–	6	171947
	P1618	1,85	17,7	1,93	1,25	0,1	4,0	–	6	171948
P20	P2020	1,10	20,0	1,18	0,90	0,05	3,65	–	6	168679
	P2020	1,30	20,0	1,38	1,10	0,05	3,65	–	6	168680
	P2020	1,60	20,0	1,68	1,25	0,1	3,65	–	6	168681
	P2020	1,85	20,0	1,93	1,25	0,1	3,65	–	6	168682
	P2022	1,60	21,7	1,68	1,25	0,1	5,0	–	6	171964
	P2022	1,85	21,7	1,93	1,25	0,1	5,0	–	6	171965
	P2022	2,15	21,7	2,23	1,75	0,1	5,0	–	6	171966
	P2022	2,65	21,7	2,73	1,75	0,2	5,0	–	6	171967
P25	P2526	1,30	26,0	1,38	1,10	0,05	3,65	–	6	142598
	P2526	1,60	26,0	1,68	1,25	0,1	3,65	–	6	142653
	P2526	1,85	26,0	1,93	1,25	0,1	3,65	–	6	142616
	P2526	2,15	26,0	2,23	1,75	0,1	3,65	–	6	142637
	P2526	2,65	26,0	2,73	1,75	0,2	3,65	–	6	142662
	P2526	3,15	26,0	3,23	2,20	0,2	4,55	–	6	142643
	P2526	4,15	26,0	4,23	2,50	0,2	6,80	–	6	160906 NEW

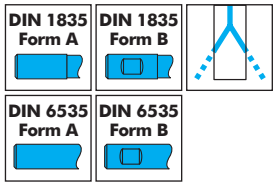
PolyMILL Connectable in accordance with BLUECOMPETENCE » mimatic mi » Driven Tool Holders

mimatic® Tool Systems

Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 100-103
- Cutting data see page 189





Type	Order No.	Form	Bore Ø min. recom-mended	d h6 mm	d1 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver	Spare part No. Screw
P12	123619	B	12	12	7,0	11,7	2,35	67,5	20	Steel	T8 IP 111656	M2,5x7 107596
	100228	B	12	12	7,0	11,7	2,35	67,5	20	Carbide		
	171778	A	12	12	7,0	11,7	2,35	67,5	20	Carbide		
	171780	B	12	12	7,0	11,7	2,35	80	30	Carbide		
	171781	A	12	12	7,0	11,7	2,35	80	30	Carbide		
	171783	B	12	12	7,0	11,7	2,35	100	40	Carbide		
	171784	A	12	12	7,0	11,7	2,35	100	40	Carbide		
P16	123573	B	18	12	9,0	17,7	4,35	67,4	21	Steel	T8 IP 111656	M3x12 143158
	123577	B	18	12	9,0	17,7	4,35	67,4	21	Carbide		
	171787	A	18	12	9,0	17,7	4,35	67,4	21	Carbide		
	123580	B	18	12	9,0	17,7	4,35	82,4	36	Carbide		
	171789	A	18	12	9,0	17,7	4,35	82,4	36	Carbide		
	123584	A	18	12	9,0	17,7	4,35	100	30	Carbide		
	123588	A	18	12	12,0	17,7	2,85	82,4	-	Carbide		
	123590	A	18	12	12,0	17,7	2,85	122,5	-	Carbide		
P20	123615	B	22	16	11,5	21,7	5,1	80	30	Steel	T15 IP 111671	M4x13 107597
	123616	B	22	16	11,5	21,7	5,1	80	30	Carbide		
	171794	A	22	16	11,5	21,7	5,1	80	30	Carbide		
	123617	B	22	16	11,5	21,7	5,1	100	50	Carbide		
	171796	A	22	16	11,5	21,7	5,1	100	50	Carbide		
	174314	A	22	16	15,5	21,7	3,1	105,5	21	Carbide		
P25	123592	B	28	16	13,6	27,7	7,05	79,6	30,5	Steel	T20 IP 111594	M5x13,5 107529
	123598	B	28	16	13,6	27,7	7,05	79,6	30,5	Carbide		
	171855	A	28	16	13,6	27,7	7,05	79,6	30,5	Carbide		
	123600	B	28	16	13,6	27,7	7,05	94,6	45,5	Carbide		
	171857	A	28	16	13,6	27,7	7,05	94,6	45,5	Carbide		
	123603	B	28	16	13,6	27,7	7,05	109,6	60,5	Carbide		
	171859	A	28	16	13,6	27,7	7,05	109,6	60,5	Carbide		
	123609	A	28	16	15,5	27,7	6,1	105	21,5	Carbide		
	123611	A	28	16	15,5	27,7	6,1	149,5	21,5	Carbide		
	123613	A	28	20	15,5	27,7	6,1	178,5	21,5	Carbide		

Screw torques max.

107596	T08 IP	1,0 Nm
143158	T08 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

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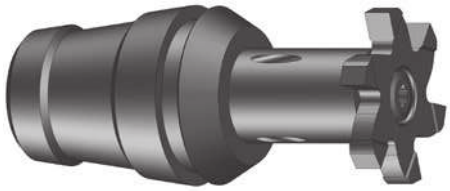
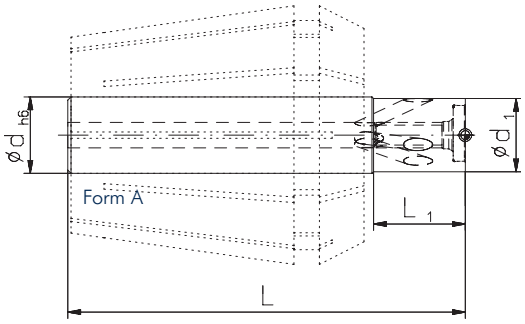
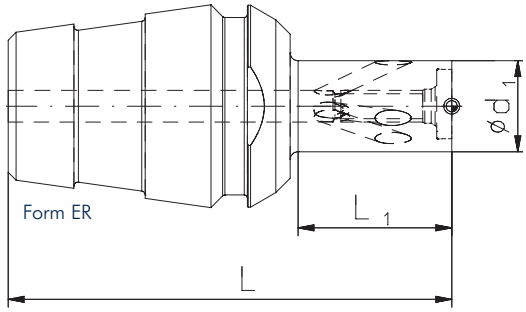
mimatic® Tool Systems

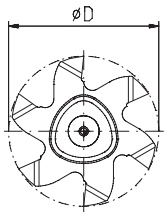
Circular Milling Tools for Driven Toolholders

- **Inserts see page 100-103**
- **Cutting data see page 189**









5

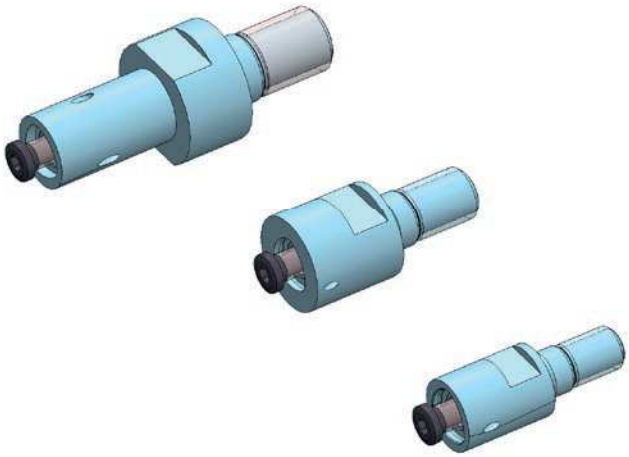
Type	Order No.	Form	Bore ∅ min. recom-mended	d h6 mm	d1 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	Shaft	Spare part No. Screw-driver	Spare part No. Screw
P12	177170	A	12	10	7,0	11,7	2,35	54	8	Steel	T8 IP 111656	M2,5x7 107596
	177172	ER 16	12		7,0	11,7	2,35	37,5	8	Steel		
	177173	ER 20	12		7,0	11,7	2,35	47	13	Steel		
P16	177174	A	18	10	9,0	17,7	4,35	60	11	Steel	T8 IP 111656	M3x12 143158
	177176	ER 16	18		9,0	17,7	4,35	41,4	11	Steel		
	177177	ER 20	18		9,0	17,7	4,35	51	16	Steel		
P20	177178	A	22	12	11,5	21,7	5,1	62,4	14,4	Steel	T15 IP 111671	M4x13 107597
	177180	ER 20	22		11,5	21,7	5,1	49,5	14,5	Steel		
	177181	ER 25	22		11,5	21,7	5,1	56	19,4	Steel		
P25	177182	A	28	16	13,6	27,7	7,05	69,6	20,4	Steel	T20 IP 111594	M5x13,5 107529
	177184	ER 25	28		13,6	27,7	7,05	56	19,4	Steel		
	177185	ER 32	28		13,6	27,7	7,05	73	30,4	Steel		

Screw torques max.

107596	T8 IP	1,0 Nm
143158	T8 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

Changing Inserts

Clamp cutter before changing insert. Loosen insert screw. Remove used insert and clean the insert pocket before clamping new insert.
Please use the appropriate TIP hex key for the tighening of the inserts and consider the screw tightening torques in the tables.



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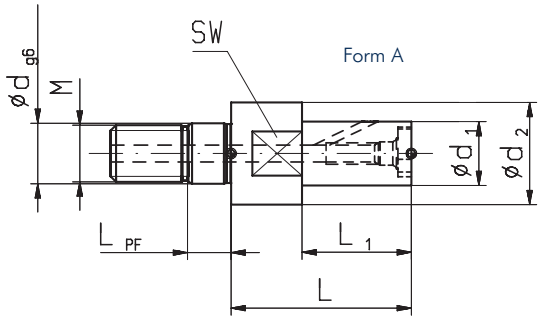
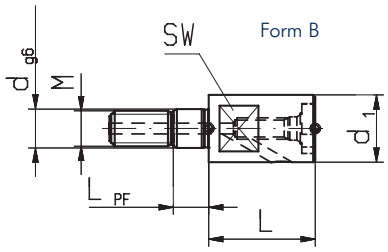
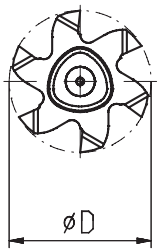
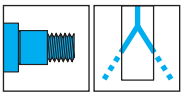
Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 100-103
- Cutting data see page 189









Please adapt cutting data to overhangs length

Type	Order No.	Form	Bore Ø min. recommended mm	d1 mm	d2 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	M	dg6 mm	LPF mm	Spare part No. Screwdriver	Spare part No. Screw
P12***	177676	B	12	9,5	–	11,7	1,1	13,5	–	M5	5,5	5,0	111656	107596
P16	123586	A	18	9,0	14,4	17,7	4,35	29,5	19,5	M8	8,5	5,5	111656	143158
P16**	177683	B	18	9,5	–	17,7	4,1	18,5	–	M5	5,5	5,0	111656	143158
P16***	177698	B	18	11,0	–	17,7	3,35	18,5	–	M6	6,5	5,0	111656	143158
P20	123618	A	22	11,5	18,0	21,7	5,1	35,0	25,0	M10	10,5	5,5	111671	107597
P20**	177734	B	22	11,5	–	21,7	5,1	20,5	–	M6	6,5	5,0	111671	107597
P20***	177735	B	22	13,5	–	21,7	4,1	20,5	–	M8	8,5	5,5	111671	107597
P25	123605	A	27	13,6	22,5	27,7	7,05	42,5	29,5	M12	12,5	5,5	111594	107529
P25**	177747	B	27	13,6	–	27,7	7,05	22,6	–	M8	8,5	5,5	111594	107529
P25***	177767	B	27	18,0	–	27,7	4,85	22,6	–	M10	10,5	5,5	111594	107529

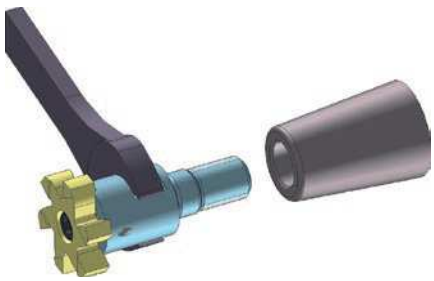
** Slim design for thread milling
*** Reinforced design

Screw torques max.

107596	T8 IP	1,0 Nm
143158	T8 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

Assembling Instructions

- **Recommended tightening torque for screw-in circular milling body**



Thread size (M)	Wrench size mm	Tightening torque Nm
M5	7	8
M6	9	10
M8	11	25
M10	15	40
M12	19	60