


















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

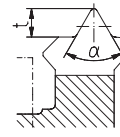
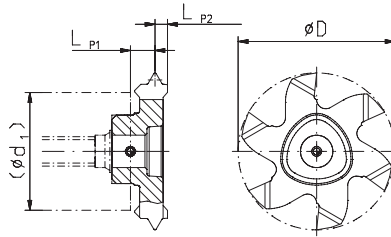
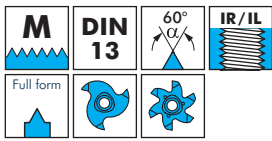
Alpha (α)	Point angle of milling insert	F	Width of trailing chamfer
A	Groove width	HP	Insert height
A ₁	Basic width in the Groove	HS	Slider height (Axial grooving tool)
B _{f6}	Insert holder width of axial grooving tool	L	Length of milling tool
B _{H7}	Groove width of axial grooving tool	L ₁	Clamping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

Formula for Tool Lengths

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

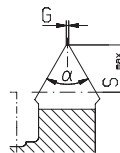
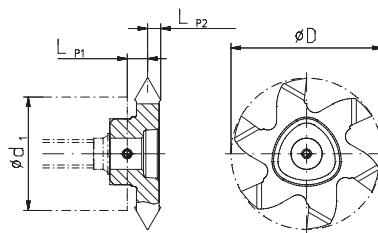
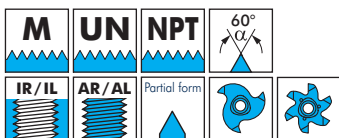
Thread Milling

- Insert holder see page 31-33
- Cutting data see page 189



Typ	Pitch mm	D mm	Lp1 mm	Lp2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210	1,00	9,6	2,65	0,80		3	171875
	P1210	1,50	9,6	2,50	0,95		3	171876
	P1210	1,75	9,6	2,25	1,20	only M12	3	175479
	P1211	2,00	10,5	2,25	1,20	only M14, M16	3	160857
	P1211	2,00	10,5	2,25	1,20		3	171877
P16	P1616	1,00	16,0	2,80	1,03		6	107240
	P1616	1,50	16,0	2,55	1,28		6	142569
	P1616	2,00	16,0	2,05	1,78		6	142570
	P1616	2,50	16,0	2,05	1,78		6	142543
	P1616	2,50	16,0	2,05	0,78	only M20	6	142534
	P1616	3,00	16,0	3,05	1,78		6	142575
P20	P2020	1,50	20,0	2,55	1,28		6	168683
	P2020	2,00	20,0	2,55	1,28		6	168684
	P2020	3,00	20,0	2,15	1,68	only M24	6	168685
P25	P2526	1,50	26,0	1,85	1,98		6	142617
	P2526	2,00	26,0	2,55	1,28		6	142644
	P2526	3,00	26,0	2,95	0,88		6	142599
	P2524	3,50	24,0	2,75	1,08	only M30	6	142671
	P2526	3,50	26,0	2,90	1,93		6	142623
	P2526	4,00	26,0	2,90	1,93		6	142624
	P2526	4,00	26,0	2,65	2,18	only M36	6	169675
	P2526	4,50	26,0	2,65	2,18		6	142638
P2526	5,00	26,0	3,85	3,48	2,887		6	107275

i External thread according to DIN 13 on request

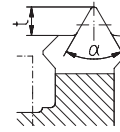
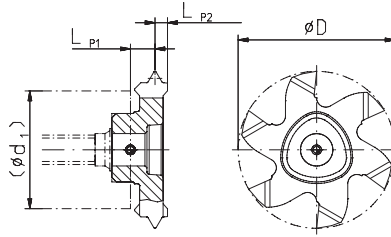
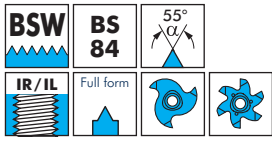


Type	Pitch mm	D mm	Lp1 mm	Lp2 mm	G mm	Number of teeth	Order No. TINAMATIC	
P12	P1212	1-3	11,7	2,125	1,33	0,10	3	171911
P16	P1616	1-4*	16,0	2,70	1,68	0,10	6	142580
	P1616	2,5-4*	16,0	2,70	1,68	0,25	6	142544
P20	P1618	1-3	17,7	2,70	1,05	0,10	6	171954
	P2020	1-3	20,0	2,15	1,68	0,10	6	168686
	P2022	1-2	21,7	4,15	1,00	0,10	6	171972
P25	P2022	2-4	21,7	2,95	1,80	0,15	6	171973
	P2526	1-3	26,0	2,75	2,08	0,10	6	142647
	P2526	2,5-5	26,0	2,65	2,18	0,25	6	142592
	P2526	3,5-6	26,0	3,85	0,70	0,40	6	175936

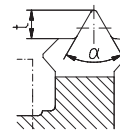
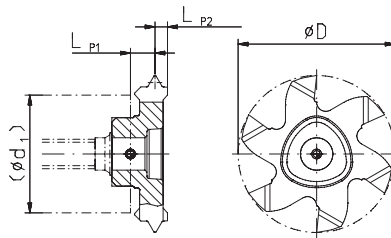
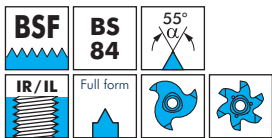
* Not suited for pitch 4,0 mm with the cutters 123588 and 123590

Thread Milling

- Insert holder see page 31-33
- Cutting data see page 189
- Conditional deliverable
- Further sizes on request



Type	Pitch mm	Pitch/°	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210	2,117	12	10	2,25	1,1	1,371 BSW 9/16"	3	162119 NEW
	P1210	2,309	11	10,4	2,15	1,5	1,494 BSW 5/8" + 11/16"	3	160998 NEW
	P1212	2,540	10	11,7	2,2	1,4	1,728 BSW 3/4" + 13/16"	3	160663 NEW
P16	P1616	2,822	9	16	2,1	1,675	1,622 BSW 7/8" + 15/16"	6	160940 NEW
	P1616	3,175	8	16	2,1	1,675	1,83 BSW 1"	6	161053 NEW
	P1616*	3,629	7	16	2,65	2,125	2,098 BSW 1 1/8" + 1 1/4"	6	161166 NEW
	P1616*	4,233	6	16	3,175	2,7	2,455 BSW 1 3/8" + 1 1/2"	6	162371 NEW
P20	P2020	3,629	7	20	2,7	2,225	2,098 BSW 1 1/8" + 1 1/4"	6	160959 NEW
	P2020**	4,233	6	20	3,15	2,675	2,455 BSW 1 3/8" + 1 1/2"	6	161270 NEW
P25	P2524	4,233	6	24	4,4	2,675	2,455 BSW 1 3/8"	6	161466 NEW
	P2524	4,233	6	24	4,4	2,675	2,455 BSW 1 1/2"	6	162615 NEW
	P2524	5,080	5	24	3,9	2,875	2,955 BSW 1 5/8" + 1 3/4"	6	161100 NEW



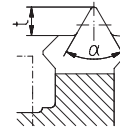
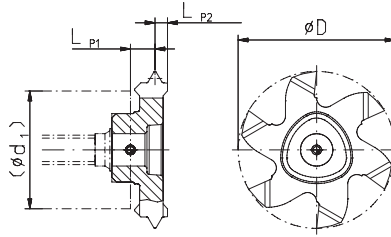
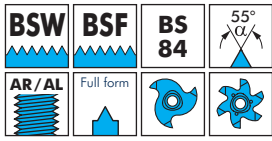
Type	Pitch mm	Pitch/°	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210	1,814	14	9,6	2,25	1,1	1,177 BSF 5/8" + 11/16"	3	160930 NEW
	P1210	2,117	12	10	2,25	1,1	1,371 BSF 3/4" + 13/16"	3	161623 NEW
	P1210	2,309	11	10,4	2,15	1,5	1,494 BSF 7/8"	3	160951 NEW
	P1212	2,540	10	11,7	2,20	1,4	1,728 BSF 1"	3	160663 NEW
P16	P1616	2,822	9	16	2,10	1,675	1,622 BSF 1 1/8" + 1 1/4"	6	160989 NEW
	P1616	3,175	8	16	2,10	1,675	1,83 BSF 1 3/8" - 1 5/8"	6	162077 NEW
	P1616*	3,629	7	16	2,65	2,125	2,098 BSF 1 3/4" + 2"	6	160960 NEW
	P1616*	4,233	6	16	3,175	2,7	2,455 BSF 2 1/4" - 2 3/4"	6	162305 NEW
P20	P2020	3,175	8	20	2,15	1,675	1,83 BSF 1 3/8" - 1 5/8"	6	161089 NEW
	P2020	3,629	7	20	2,7	2,225	2,098 BSF 1 3/4" + 2"	6	161341 NEW
	P2020**	4,233	6	20	3,15	2,675	2,455 BSF 2 1/4" - 2 3/4"	6	160942 NEW
P25	P2524	3,175	8	24	2,1	1,675	1,83 BSF 1 3/8" - 1 5/8"	6	162051 NEW
	P2524	3,629	7	24	2,65	2,175	2,098 BSF 1 3/4" + 2"	6	161436 NEW
	P2524	4,233	6	24	4,4	2,675	2,455 BSF 2 1/4" - 2 3/4"	6	161887 NEW
	P2524	5,080	5	24	3,9	2,875	2,955 BSF 3" - 3 1/4"	6	161250 NEW

i External thread BSW/BSF see next page

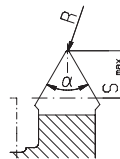
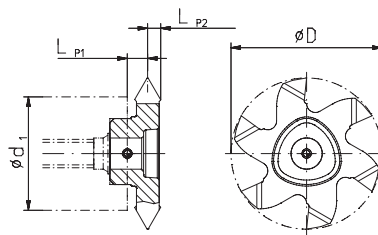
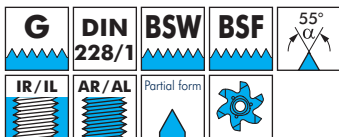
* Not suited for cutters 123588 and 123590
** Not suited for cutter 174314

Thread Milling

- Insert holder see page 31-33
- Cutting data see page 189
- Conditional deliverable
- Further sizes on request



Type	Pitch mm	Pitch/"	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC	
P12	P1210	1,814	14	11,7	2,30	1,1	1,178	BSW/BSF - 14 Gg	3	160943 NEW
	P1210	2,117	12	11,7	2,25	1,4	1,374	BSW/BSF - 12 Gg	3	160967 NEW
	P1210	2,309	11	11,7	2,25	1,4	1,498	BSW/BSF - 11 Gg	3	161112 NEW
	P1212	2,540	10	11,7	2,25	1,4	1,646	BSW/BSF - 10 Gg	3	161184 NEW
P16	P1616	1,814	14	16	2,15	1,675	1,178	BSW/BSF - 14 Gg	6	142576
	P1616	2,117	12	16	2,15	1,675	1,374	BSW/BSF - 12 Gg	6	160947 NEW
	P1616	2,309	11	16	2,75	2,075	1,498	BSW/BSF - 11 Gg	6	142549
	P1616	2,540	10	16	2,15	1,675	1,646	BSW/BSF - 10 Gg	6	167014
	P1616	2,822	9	16	2,15	1,675	1,829	BSW/BSF - 9 Gg	6	160977 NEW
	P1616*	3,175	8	16	2,75	2,075	2,056	BSW/BSF - 8 Gg	6	161744 NEW
	P1616*	3,629	7	16	3,15	2,225	2,348	BSW/BSF - 7 Gg	6	162097 NEW
	P1616*	4,233	6	16	3,15	2,225	2,737	BSW/BSF - 6 Gg	6	162650 NEW
P20	P2020	1,814	14	20	2,10	1,725	1,178	BSW/BSF - 14 Gg	6	168688
	P2020	2,117	12	20	2,10	1,725	1,374	BSW/BSF - 12 Gg	6	160963 NEW
	P2020	2,309	11	20	2,10	1,725	1,498	BSW/BSF - 11 Gg	6	168687
	P2020	2,540	10	20	2,10	1,725	1,646	BSW/BSF - 10 Gg	6	160984 NEW
	P2020	2,822	9	20	2,10	1,725	1,829	BSW/BSF - 9 Gg	6	160997 NEW
	P2020**	3,175	8	20	2,65	2,175	2,056	BSW/BSF - 8 Gg	6	161113 NEW
	P2020**	3,629	7	20	2,65	2,175	2,348	BSW/BSF - 7 Gg	6	161259 NEW
	P2020**	4,233	6	20	3,15	2,675	2,737	BSW/BSF - 6 Gg	6	161325 NEW
P25	P2526	2,309	11	26	2,75	2,075	1,478	BSW/BSF - 11 Gg	6	142600
	P2526	3,175	8	26	2,60	2,175	2,056	BSW/BSF - 8 Gg	6	160949 NEW
	P2526	3,629	7	26	2,60	2,175	2,348	BSW/BSF - 7 Gg	6	160950 NEW
	P2524	4,233	6	24	4,40	2,675	2,737	BSW/BSF - 6 Gg	6	161130 NEW
P2524 ***	5,080	5	24	4,40	2,675	3,281	BSW/BSF - 5 Gg	6	161400 NEW	



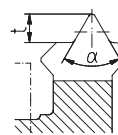
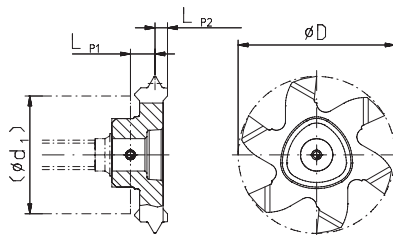
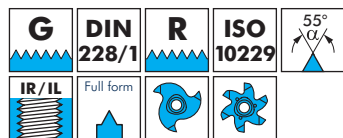
Type	Pitch mm	Pitch/"	D mm	LP1 mm	LP2 mm	r mm	S max. mm	Number of teeth	Order No. TINAMATIC	
P16	P1616	1,814-3,175	14-8	16	2,75	1,625	0,35	2,5	6	173906
P25	P2526	3,175-6,35	8-4	26	2,65	2,175	0,6	2,8	6	177427

i Taper pipe thread BSPT according to BS.84 on request

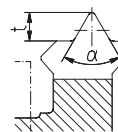
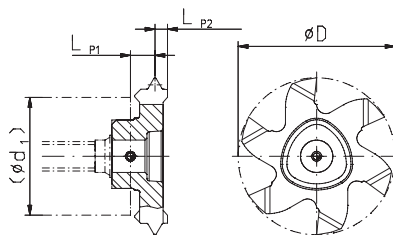
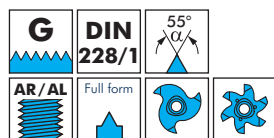
* Not suited for cutters 123588 and 123590
 ** Not suited for cutter 174314
 *** Not suited for cutter 123613

Thread Milling

- Insert holder see page 31-33
- Cutting data see page 189
- Conditional deliverable
- Further sizes on request



Type	Pitch mm	Pitch/"	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210	1,337	19	9,6	2,25	1,2	G 1/4"	3	160952 NEW
	P1210	1,337	19	9,6	2,25	1,2	G 3/8"	3	171912
	P1212	1,814	14	11,7	2,25	1,2	G 1/2" - G 7/8"	3	160970 NEW
	P1212	2,309	11	11,7	2,15	1,5	G 1" - G 6"	3	160996 NEW
P16	P1616	1,814	14	16	2,15	1,675	G 1/2" - G 5/8"	6	160620 NEW
	P1616	1,814	14	16	2,15	1,675	G 3/4" - G 7/8"	6	142576
	P1616	2,309	11	16	2,75	2,075	G 1" - G 6"	6	142549
P20	P2020	1,814	14	20	3,95	1,725	G 3/4" - G 7/8"	6	168688
	P2020	2,309	11	20	3,95	1,725	G 1" - G 6"	6	168687
P25	P2526	2,309	11	26	2,75	2,075	G 1" - G 1 1/4"	6	160980 NEW
	P2526	2,309	11	26	2,75	2,075	G 1 1/2" - G 6"	6	142600

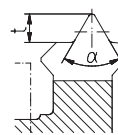
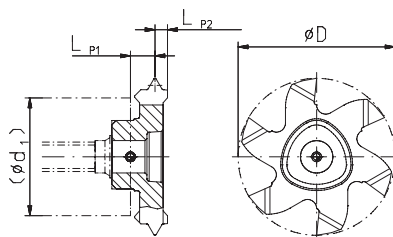
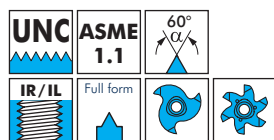


Type	Pitch mm	Pitch/"	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210	1,337	19	9,6	2,25	1,2	G 1/4" - G 3/8"	3	171912
	P1212	1,814	14	11,7	2,3	1,1	G 1/2" - G 7/8"	3	160943 NEW
	P1212	2,309	11	11,7	2,25	1,2	G 1" - G 6"	3	161112 NEW
P16	P1616	1,814	14	16	2,15	1,675	G 1/2" - G 7/8"	6	142576
	P1616	2,309	11	16	2,75	2,075	G 1" - G 6"	6	142549
	P1618	1,814	14	17,7	3,15	0,95	G 1/2" - G 7/8"	6	171949
P20	P2020	1,814	14	20	3,95	1,725	G 1/2" - G 7/8"	6	168688
	P2020	2,309	11	20	3,95	1,725	G 1" - G 6"	6	168687
P25	P2526	2,309	11	26	2,75	2,075	G 1" - G 6"	6	142600

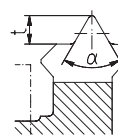
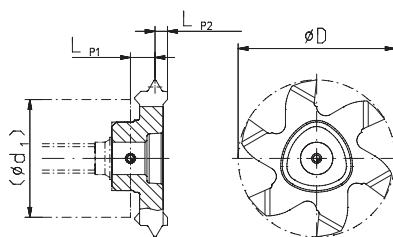
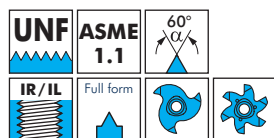
i Taper pipe thread Rp according to ISO 10229 on request

Thread Milling

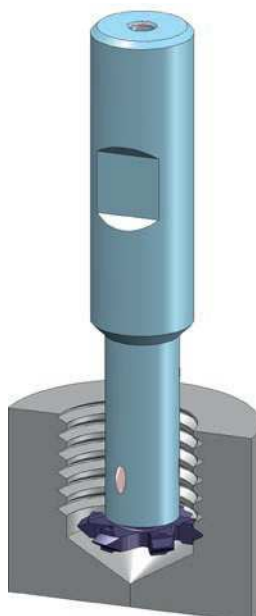
- Insert holder see page 31-33
- Cutting data see page 189



Type	Pitch mm	Pitch /"	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210	2,117	12	10	2,25	1,2	UNC 12	3	171883
	P1211	2,309	11	10,5	2,13	1,52	UNC 11	3	171880
	P1212	2,540	10	11,7	2,13	1,52	UNC 10	3	171879
P16	P1616	2,822	9	16	2,05	1,775	UNC 9	6	172148
	P2018	3,175	8	18	2,65	2,175	UNC 8	6	172149
P20	P2020**	3,629	7	20	2,65	2,175	UNC 7	6	172150
	P2524	4,233	6	24	4,05	3,275	UNC 6	6	172151
P25	P2526	5,080	5	26	3,85	3,475	UNC 5	6	172152
	P2526***	5,644	4,5	26	3,85	3,475	UNC 4 1/2	6	172153



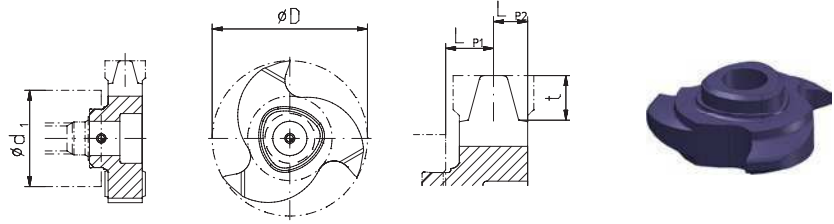
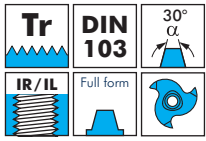
Type	Pitch mm	Pitch /"	D mm	LP1 mm	LP2 mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210	1,270	20	9,6	2,5	0,95	UNF 1/2-20	3	171884
	P1211	1,411	18	10,5	2,5	0,95	UNF 9/16-18	3	171885
	P1212	1,588	16	11,7	2,5	0,95	UNF 3/4-16	3	171900
P16	P1618	1,814	14	17,7	3,15	0,95	UNF 7/8-14	6	171950
P20	P2020	2,117	12	20	2,15	1,675	UNF 1-12	6	171951



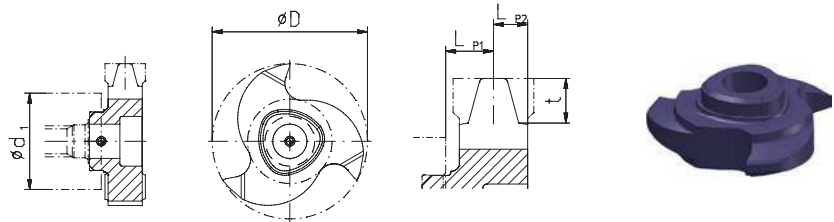
** Not suited for cutter 174314
*** Not suited for cutter 123613

Thread Milling

- Insert holder see page 31-33
- Cutting data see page 189
- Article conditioned on stock



Typ	Pitch mm	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC	
P12	P1212	2,00	11,7	2,5	1,1	1,25	Tr 16x2 - Tr 20x2	6°	3	177717 NEW
	P1211	3,00	11,0	2,23	1,42	1,75	Tr 18x3 - Tr 20x3	6°	3	160862 NEW
	P1212	4,00	12,0	2,15	1,5	2,25	Tr 20x4	6°	3	160308 NEW
P16	P1614*	3,00	14,0	2,3	1,5	1,75	TR 24x3 - Tr 32x3	8°	3	162630 NEW
	P1615*	5,00	15,0	3,15	2,1	2,75	Tr 26x5	8°	3	166213 NEW
	P1615*	5,00	15,0	3,15	2,1	2,75	Tr 28x5	8°	3	150365 NEW
	P1616*	6,00	16,2	4,27	3,0	3,25	Tr 30x6 - Tr 32x6	8°	3	182498 NEW
P25	P1616*	6,00	16,2	4,22	3,03	3,25	Tr 34x6 - Tr 42x6	8°	3	161736 NEW
	P2525	5,00	25,0	3,2	2,37	2,75	Tr 44x5 - Tr 48x5	8°	3	160872 NEW
	P2522***	7,00	22,0	4,0	2,65	3,75	Tr 38x7 - Tr 42x7	8°	3	162648 NEW
	P2522***	7,00	22,0	4,0	2,65	3,75	Tr 44x7	8°	3	161111 NEW
	P2525***	8,00	25,0	4,75	3,4	4,25	Tr 46x8 - Tr 48x8	8°	3	162257 NEW
	P2525***	8,00	25,0	5,03	3,13	4,25	Tr 50x8 - Tr 52x8	8°	3	110966 NEW
	P2525***	9,00	25,0	4,73	3,42	4,75	Tr 55x9 - Tr 60x9	8°	3	160869 NEW
P2525***	10,00	25,0	4,65	3,5	5,25	Tr 65x10 - Tr 80x10	8°	3	167236 NEW	

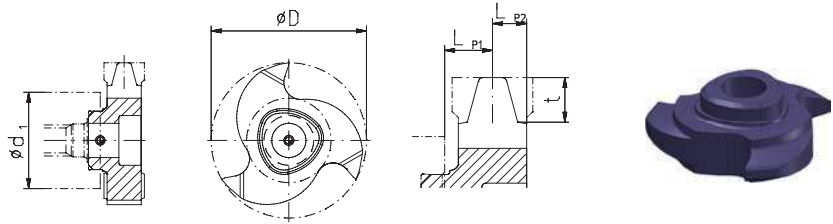
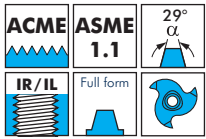


Typ	Pitch mm	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC
P12	P1212	1,50	11,7		0,90		6°	3	On request NEW
	P1212	2,00	11,7		1,25		6°	3	On request NEW
	P1211	3,00	11,7		1,75		6°	3	On request NEW
	P1212	4,00	11,7		2,25		6°	3	On request NEW
P16	P1616*	3,00	16,0		1,75		8° / 6°	3 / 6	On request NEW
	P1616*	4,00	16,0		2,25		8° / 6°	3 / 6	On request NEW
	P1616*	5,00	16,0		2,75		8° / 6°	3 / 6	On request NEW
	P1616*	6,00	16,0		3,25		8° / 6°	3 / 6	On request NEW
P25	P2525	4,00	25 / 26		2,25		8° / 6°	3 / 6	On request NEW
	P2525***	5,00	25 / 26		2,75		8° / 6°	3 / 6	On request NEW
	P2525***	6,00	25 / 26		3,75		8° / 6°	3 / 6	On request NEW
	P2525***	7,00	25 / 26		3,75		8° / 6°	3 / 6	On request NEW
	P2525***	8,00	25 / 26		4,25		8° / 6°	3 / 6	On request NEW
	P2525***	9,00	25 / 26		4,75		8° / 6°	3 / 6	On request NEW
P2525***	10,00	25 / 26		5,25		8° / 6°	3 / 6	On request NEW	

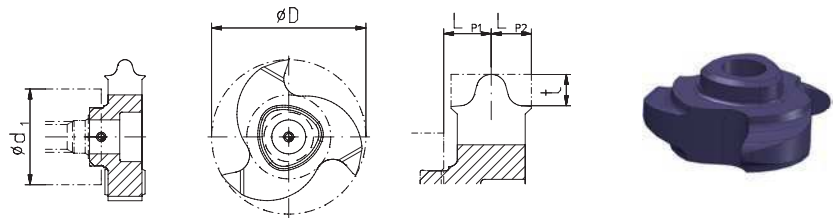
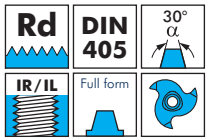
* Not suited for cutters 123588 and 123590
 *** Not suited for cutters 123613, 123609 and 123611

Thread Milling

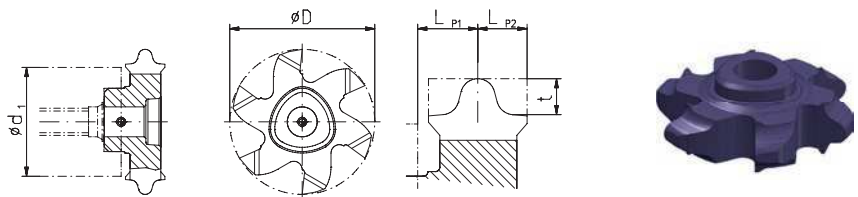
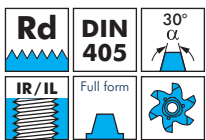
- Insert holder see page 31-33
- Cutting data see page 189
- Conditional deliverable
- Further sizes on request



Typ	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC
P16	P1616	5,08	5	16	3,02	2,23	1"-5Gg - 1 1/8"-5Gg	8°	3	182614 NEW
	P1616	6,35	4	16	4,04	3,21	1 1/4"-4Gg - 1 1/2"-4Gg	8°	3	172556 NEW
P25	P2524	6,35	4	24	3,9	2,75	1 3/4"-4Gg - 2"-4Gg	8°	3	162654 NEW
	P2525	8,467	3	25	4,65	3,5	2 1/4"-3Gg - 2 3/4"-3Gg	8°	3	161935 NEW



Typ	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC	
P16	P1613	3,175	8	13	3,15	2,1	Rd20x1/8	8°	3	174442 NEW	
	P1614	3,175	8	14	3,15	2,1	Rd22x1/8	8°	3	161424 NEW	
	P1616	3,175	8	15	2,4	1,9	Rd24x1/8 - Rd26x1/8	8°	3	161156 NEW	
	P1616	3,175	8	16	2,4	1,9	Rd28x1/8 - Rd32x1/8	8°	3	174421 NEW	
	P1616	3,175	8	16	2,4	1,9	Rd34x1/8 - Rd38x1/8	8°	3	162544 NEW	
	P1616*	4,233	6	16	3,15	2,575	2,117	Rd40x1/6 - Rd55x1/6	8°	3	160954 NEW
	P1616*	4,233	6	16	3,15	2,575	2,117	Rd58x1/6 - Rd80x1/6	8°	3	161067 NEW
	P1616*	4,233	6	16	3,15	2,575	2,117	Rd82x1/6 - Rd100x1/6	8°	3	161110 NEW
P1616*	6,35	4	16	4,15	3,125	3,175	Rd105x1/4 - Rd200x1/4	8°	3	160995 NEW	



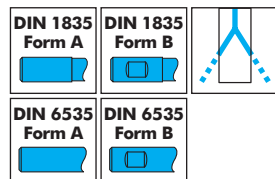
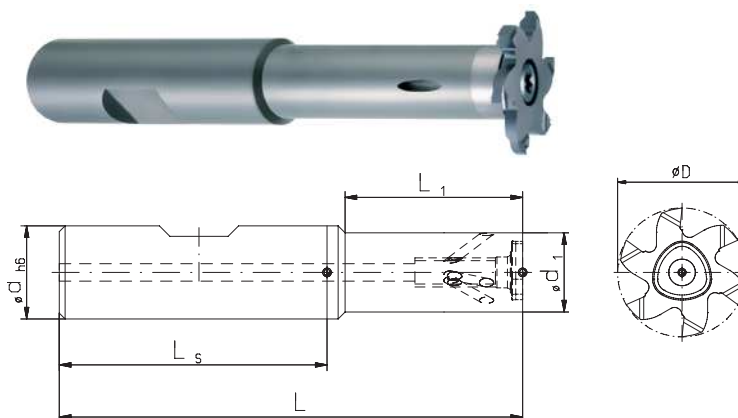
Typ	Pitch mm	Pitch / "	D mm	LP1 mm	LP2 mm	t mm	Thread	Chip angle	Number of teeth	Order No. TINAMATIC
P16	P1616	3,175	8	16	2,65	2	Rd 28x1/8	6°	6	175137 NEW
P25	P2526	4,233	6	26	3,85	3,4	Rd 65x1/6	6°	6	172430 NEW
	P2526	6,35	4	26	3,85	3,4	Rd 105x1/4 - Rd 120x1/4	6°	6	168288 NEW

i Knuckle thread acc. to DIN 20400 on request

* Not suited for cutters 123588 and 123590

Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 24-30
- Cutting data see page 189



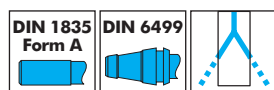
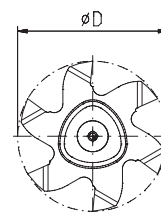
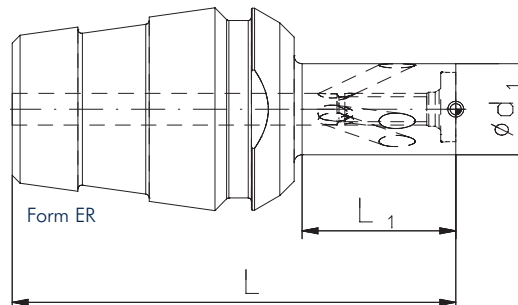
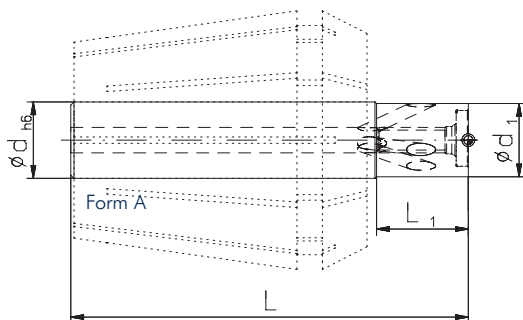
Type	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	Dmax. mm	Smax. (D-d1)/2 mm	L mm	L1 mm	Shaft	Spare part No.	
											Screw-driver	Screw
P12	123619	B	12	12	7,0	11,7	2,35	67,5	20	Steel	T8 IP 111656	M2,5x7 107596
	100228	B	12	12	7,0	11,7	2,35	67,5	20	Carbide		
	171778	A	12	12	7,0	11,7	2,35	67,5	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		
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

Circular Milling Tools for Driven Toolholders

- Inserts see page 24-30
- Cutting data see page 189



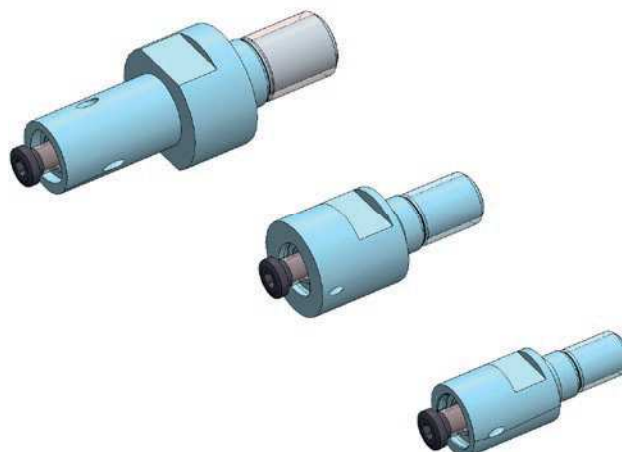
Type	Order No.	Form	Bore \varnothing min. recommended	dh6 mm	d1 mm	D max. mm	S max. (D-d1)/2 mm	L mm	L1 mm	Shaft	Spare part No.	
											Screw-driver	Screw
P12	177170	A	12	10	7,0	11,7	2,35	54	8	Steel	T8 IP 111656	M2,5x7 107596
	177172	ER 16	12		7,0	11,7	2,35	37,5	8	Steel		
	177173	ER 20	12		7,0	11,7	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

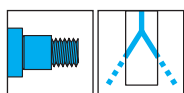
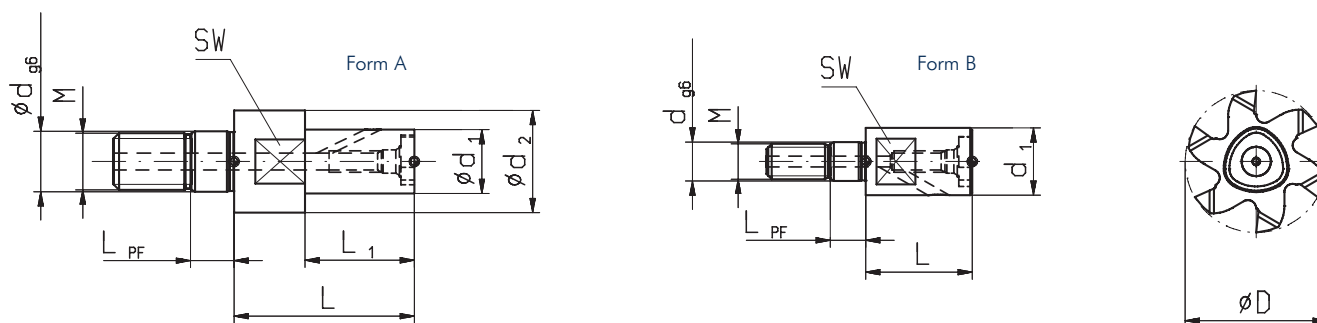
Changing Inserts

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 tightening of the inserts and consider the screw tightening torques in the tables.



Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 24-30
- Cutting data see page 189



Please adapt cutting data to overhangs length

Type	Order No.	Form	Bore \varnothing min. recommended	d1 mm	d2 mm	Dmax. mm	$S_{max.} (D-d_1)/2$ mm	L mm	L1 mm	M	dg6 mm	LPF mm	Spare part No.	
													Screwdriver	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

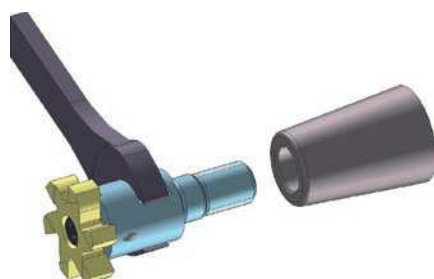
** Slim design for thread milling
*** Reinforced design

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