Symbols

Type designation

Steel shaft without clamping surface

Steel shaft with Weldon clamping surface

Solid carbide shaft without clamping surface

Solid carbide shaft with Weldon clamping surface


Cutter with tightening thread

Smallest necessary bore-diameter


Internal coolant supply


Number of inserts

Thread standard

Thread with undercut (Trio-Cut)

for right- and left hand internal thread
<u>for left hand thread</u> modify your NC-program!

for right- and left hand external thread
<u>for left hand thread</u> modify your NC-program!

Full form thread milling

Partial form thread milling

Point angle

Thread standard

Short Descriptions

Alpha (α)	Point angle of milling insert
A	Groove width
A_1	Basic width in the Groove
B_{f6}	Insert holder width of axial grooving tool
B_{H7}	Groove width of axial grooving tool
B_W	Tool width of axial grooving tool
C	Chamfer width
D	Cutting diameter
d_1	Milling body diameter (front)
d_2	Large diameter of milling body
d_{g6}	Fitting face diameter of threaded milling tool
D_{h6}	Shaft diameter of milling body (Arbor)
D_P	Flight circle of insert
D_R	Nominal diameter of concave radius insert
E	Width blank insert
F	Width of trailing chamfer
H_P	Insert height
H_S	Slider height (Axial grooving tool)
L	Lenght of milling tool
L_1	Clamping lenght of milling tool
L_G	Usable thread length at the multi-tooth thread milling
L_{HA}	Holder lenght
L_{P1}	Insert height of milling body – edge
L_{P2}	Insert height of edge – interfering contour
L_{PF}	Lenght of fitting face
L_S	Shaft lenght – clamping lenght (Depth)
M	Thread size
P	Pitch
R	Radius (general / common)

Formula for Tool Lengths

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

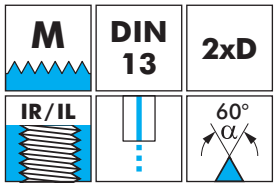
mimatic® Tool Systems

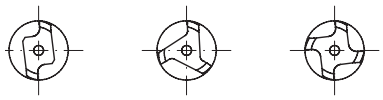
SolidCUT

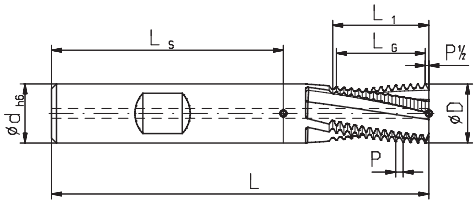
Table of Content

SolidCUT Solid Carbide Circular Thread Milling Cutter

- **Fixed dimension type**
- **Cutting Data see page 188**

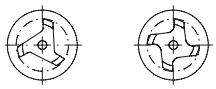






Thread	P mm	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
M3	0,5	2,4	42	7,0	6,5	14	4	2		168192		
M4	0,7	3,15	55	9,8	9,1	14	6	3		168195	168196	168197
M5	0,8	4,0	55	12,0	11,2	15	6	3		168198	168199	168200
M6	1,0	4,8	55	14,0	13	14	6	3		168201	168202	168203
M8	1,25	5,95	60	18,75	17,5	15	6	3	✓	168204	168205	168206
M10	1,5	7,95	70	22,5	21	15	8	3	✓	168207	168208	168209
M12	1,75	9,9	75	28,0	26,25	16	10	4	✓	168210	168211	168212
M14	2,0	11,6	85	32,0	30	16	12	4	✓	168213	168214	168215
M16	2,0	12,0	85	36,0	34	18	12	4	✓	168216	168217	168218
M18	2,5	14,0	90	42,5	40	17	14	4	✓	168219	168220	168221
M20	2,5	16,0	90	42,5	40	17	16	4	✓	168222	168223	168224

- **Chamfer type**
- **Cutting Data see page 188**



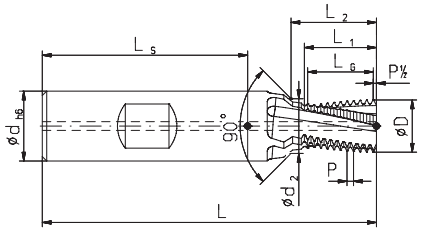
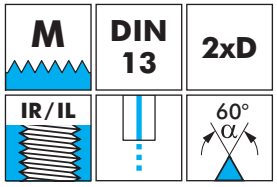
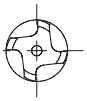


Figure 1:
Chamfer on the shank





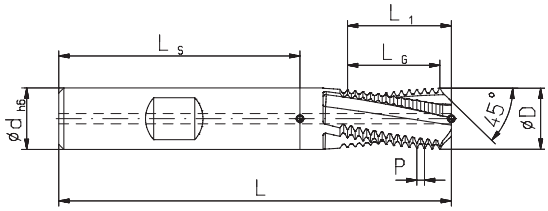


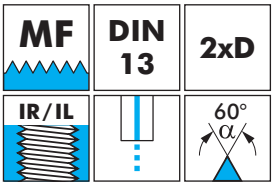
Figure 2:
Chamfer on the face

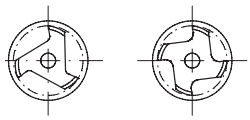
Thread	P mm	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB
M4	0,7	3,15	55	9,80	11,03	9,1	14	6	4,3	3		1	186833 NEW	186834 NEW
M5	0,8	4,00	62	12,70	13,35	11,2	15	8	5,3	3		1	171556	171565
M6	1,0	4,80	62	14,00	15,55	13	14	8	6,3	3		1	171557	171566
M8	1,25	6,50	74	18,75	20,60	17,5	15	10	8,3	3	✓	1	171558	171567
M10	1,5	7,95	80	22,50	24,80	21	15	10	10,3	3	✓	1	171559	171568
M12	1,75	9,90	90	28,00	30,60	26,25	16	14	12,3	4	✓	1	171560	171569
M14	2,0	11,60	100	32,00	34,85	30	16	16	14,3	4	✓	1	171561	171570
M16	2,0	11,95	90	37,60		34	18	12		4	✓	2	171562	171571
M18	2,5	13,95	110	37,50	41,40	40	17	20	18,3	4	✓	1	171563	171572
M20	2,5	15,95	100	44,00		40	17	16		4	✓	2	171564	171573

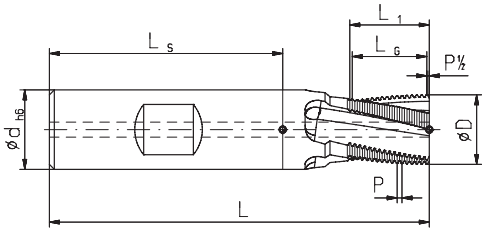
mimatic® Tool Systems

SolidCUT Solid Carbide Circular Thread Milling Cutter

- **Fixed dimension type**
- **Cutting Data see page 188**

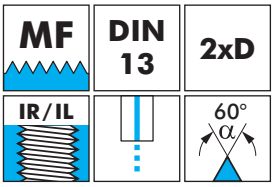


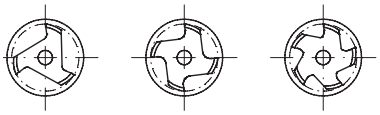


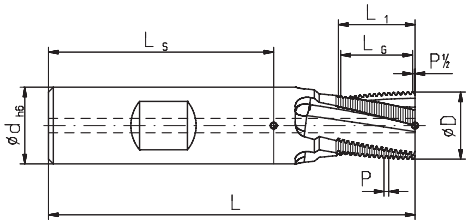


Thread	P mm	D ±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
M5x0,5	0,5	4,0	55	11,5	11	23	6	3		168225	168226	168227
M6x0,75	0,75	4,8	55	14,25	13,5	19	6	3		168228	168229	168230
M8x1	1,0	5,95	60	19,0	18	19	6	3	✓	168231	168232	168233
M10x1,25	1,25	7,95	70	21,5	20	17	8	3	✓	168234	168235	168236
M12x1	1,0	9,9	75	27,0	26	27	10	4	✓	168237	168238	168239
M12x1,25	1,25	9,9	75	27,5	26,25	22	10	4	✓	168240	168241	168242
M12x1,5	1,5	9,9	75	27,0	25,5	18	10	4	✓	168243	168244	168245
M14x1	1,0	11,6	85	31,0	30	31	12	4	✓	168246	168247	168248
M14x1,5	1,5	11,6	85	31,5	30	21	12	4	✓	168249	168250	168251
M16x1,5	1,5	11,95	85	34,5	33	23	12	4	✓	168252	168253	168254
M18x1,5	1,5	13,95	90	42,0	40,5	28	14	4	✓	168255	168256	168257
M20x1,5	1,5	15,95	90	42,0	40,5	28	16	4	✓	168258	168259	168260

- **Universal type**
- **Cutting Data see page 188**







Thread from	P mm	D ±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
> M10	0,5	7,95	70	12	11,5	24	8	3	✓	170779	170780	170781
> M11	0,75	7,95	70	12	11,25	16	8	3	✓	170782	170783	170784
> M12	1,0	9,95	75	16	15	16	10	4	✓	170785	170786	170787
> M14	1,0	11,95	85	20	19	20	12	4	✓	170791	170792	170793
> M18	1,0	15,95	90	25	24	25	16	5	✓	170800	170801	170802
> M22	1,0	19,95	110	32	31	32	20	5	✓	170812	170813	170814
> M14	1,5	9,95	75	16	15	11	10	4	✓	170788	170789	170790
> M16	1,5	11,95	85	20	19,5	14	12	4	✓	170794	170795	170796
> M20	1,5	15,95	90	25	24	17	16	5	✓	170803	170804	170805
> M24	1,5	19,95	110	32	31,5	22	20	5	✓	170815	170816	170817
> M16	2,0	11,95	85	20	18	10	12	4	✓	170797	170798	170799
> M20	2,0	15,95	90	25	24	13	16	5	✓	170806	170807	170808
> M24	2,0	19,95	110	32	30	16	20	5	✓	170818	170819	170820
> M24	3,0	15,95	90	25	24	9	16	5	✓	170809	170810	170811
> M27	3,0	19,95	110	32	30	11	20	5	✓	170821	170822	170823

SolidCUT Solid Carbide Circular Thread Milling Cutter

- **Universal type**
- **Cutting Data see page 188**

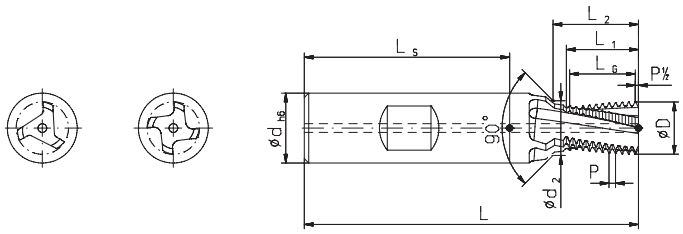
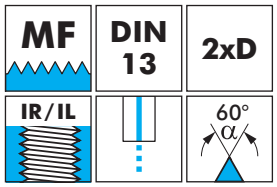


Figure 1:
Chamfer on the shank



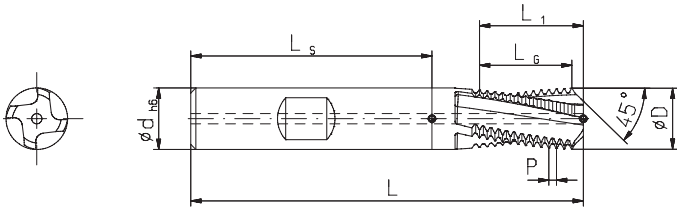
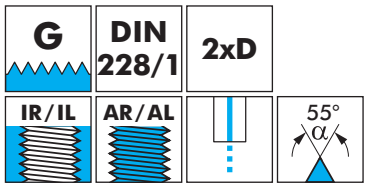
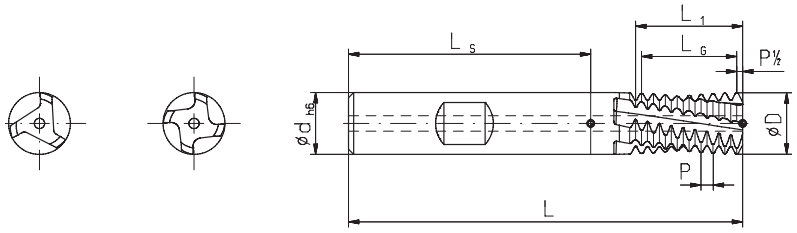


Figure 2:
Chamfer on the face

Thread	P mm	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	Order No. TINAMATIC DIN 6535 Form HB
M8x1	1,0	5,95	74	19	21	18	19	10	8,3	3	✓	1	171574	172376
M10x1	1,0	8,0	80	22	23,95	21	22	12	10,3	3	✓	1	171575	172377
M10x1,25	1,25	7,95	80	22,5	24,6	21,25	18	12	10,3	3	✓	1	171576	172378
M12x1	1,0	9,9	90	27	29	26	27	14	12,3	4	✓	1	171577	172379
M12x1,25	1,25	9,9	90	27,5	29,6	26,25	22	14	12,3	4	✓	1	171578	172380
M12x1,5	1,5	9,9	90	27	29,25	25,5	18	14	12,3	4	✓	1	171579	172381
M14x1	1,0	11,6	100	31	33,15	30	31	16	14,3	4	✓	1	171580	172382
M14x1,5	1,5	11,6	100	31,5	33,9	30	21	16	14,3	4	✓	1	171581	172383
M16x1,5	1,5	11,95	90	36,05		33	23	12		4	✓	2	171582	172384
M18x1,5	1,5	14,0	110	39	42,2	37,5	26	20	18,3	4	✓	1	171583	172385
M20x1,5	1,5	15,95	100	45,05		42	29	16		4	✓	2	171584	172386

- **Fixed dimension type**
- **Cutting Data see page 188**



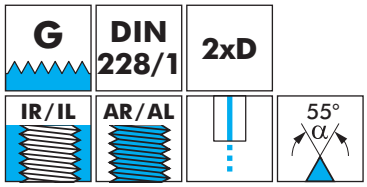


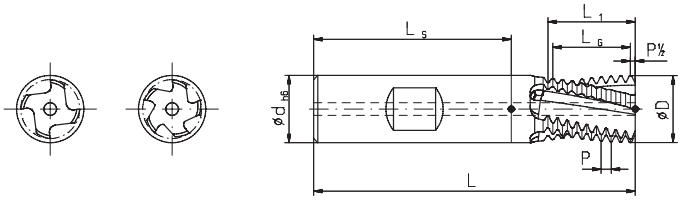
Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	Order No. TINAMATIC DIN 6535 Form HB	Order No. TINAMATIC DIN 6535 Form HE
G 1/8"	0,907	28	7,95	70	20,8	20,86	24	8	3	✓	168371	168372	168373
G 1/4"	1,337	19	9,9	75	28,0	26,74	21	10	4	✓	168374	168375	168376
G 3/8"	1,337	19	13,95	90	41,45	40,11	31	14	4	✓	168377	168378	168379
G 1/2"	1,814	14	15,95	90	43,5	41,72	24	16	4	✓	168380	168381	168382

mimatic® Tool Systems

SolidCUT Solid Carbide Circular Thread Milling Cutter

- **Universal type**
- **Cutting Data see page 188**





Thread from	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	Order No. TINAMATIC DIN 6535 Form HB
G 1/4 - 3/8"	1,337	19	9,95	75	16,0	14,71	12	10	4	✓	186224	187865
G 1/2 - 7/8"	1,814	14	15,95	90	25,4	23,58	14	16	5	✓	186225	187866
> G 1"	2,309	11	19,95	110	32,3	30,02	14	20	5	✓	183759	177967

- **Chamfer type**
- **Cutting Data see page 188**

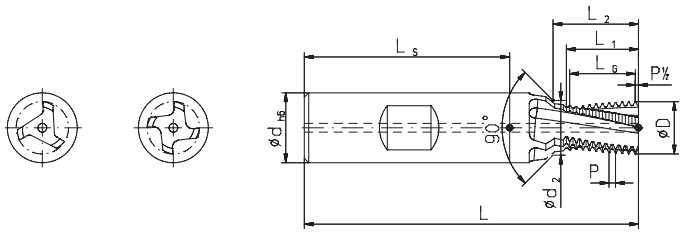
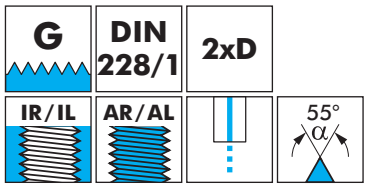


Figure 1:
Chamfer on the shank



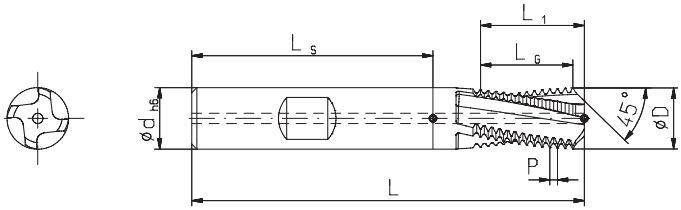
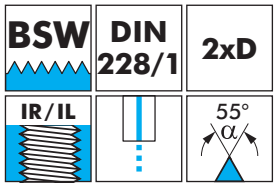


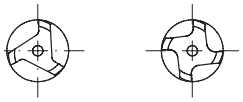
Figure 2:
Chamfer on the face

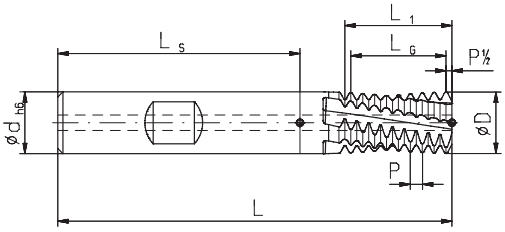
Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Fig.	Order No. TINAMATIC DIN 6535 Form HA	Order No. TINAMATIC DIN 6535 Form HB
G 1/16"	0,907	28	6	74	16,3	18,1	15,42	18	10	8,0	3	1	171585	172387
G 1/8"	0,907	28	7,95	80	21,8	23,5	20,86	24	12	10,0	3	1	171586	172388
G 1/4"	1,337	19	9,9	100	28,0	30,8	26,74	21	16	13,5	4	1	171587	172389
G 3/8"	1,337	19	13,95	90	37,5		34,76	27	14		4	2	171588	172390
G 1/2"	1,814	14	15,95	100	46,75		43,54	25	16		4	2	171589	172391
G 5/8"	1,814	14	17,95	110	41,0		47,16	27	18		4	2	171590	172392

SolidCUT Solid Carbide Circular Thread Milling Cutter

- **Fixed dimension type**
- **Cutting Data see page 188**

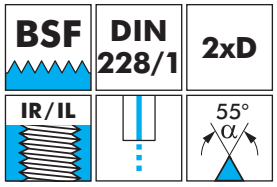


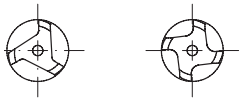


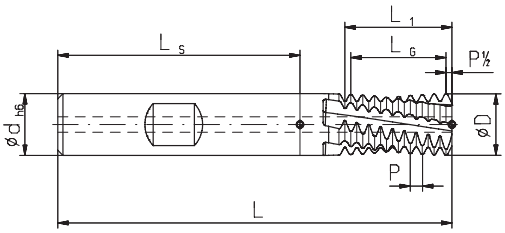


Thread	P mm	Pitch/"	D ±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
5/16"	1,411	18	6,0	60	19,75	18,34	14	6	3	✓	168383	168384	168385
3/8"	1,588	16	5,95	60	20,60	19,06	13	6	3	✓	168386	168387	168388
7/16"	1,814	14	7,95	70	23,60	21,77	13	8	3	✓	168389	168390	168391
1/2"	2,117	12	7,95	70	23,30	21,17	11	8	3	✓	168392	168393	168394
5/8"	2,309	11	9,90	75	30,00	27,71	13	10	4	✓	168395	168396	168397

- **Fixed dimension type**
- **Cutting Data see page 188**







Thread	P mm	Pitch/"	D ±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
5/16"	1,155	22	5,95	60	19,6	18,48	17	6	3	✓	168398	168399	168400
3/8"	1,270	20	5,95	60	19,0	17,78	15	6	3	✓	168401	168402	168403
7/16"	1,411	18	7,95	70	22,6	21,17	16	8	3	✓	168404	168405	168406
1/2"	1,588	16	7,95	70	23,8	22,23	15	8	3	✓	168407	168408	168409
5/8"	1,814	14	9,90	75	29,0	27,21	16	10	4	✓	168410	168411	168412

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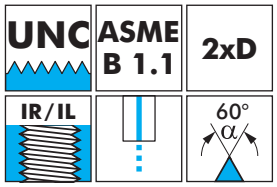
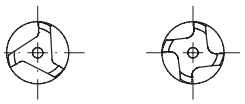
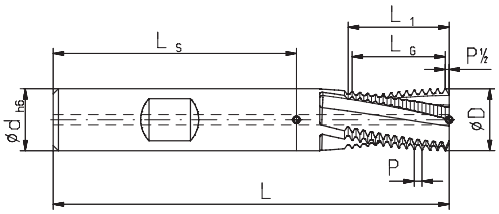
SolidCUT Solid Carbide Circular Thread Milling Cutter

- **Fixed dimension type**
- **Cutting Data see page 188**







Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
1/4"-20	1,270	20	4,8	55	14	12,7	11	6	3		168413	168414	168415
5/16"-18	1,411	18	5,95	60	19,7	18,34	14	6	3	✓	168416	168417	168418
3/8"-16	1,588	16	7,95	70	23,8	22,23	15	8	3	✓	168419	168420	168421
7/16"-14	1,814	14	7,95	70	23,6	21,77	13	8	3	✓	168422	168423	168424
1/2"-13	1,954	13	9,9	75	29,3	27,36	15	10	4	✓	168425	168426	168427

- **Chamfer type**
- **Cutting Data see page 188**

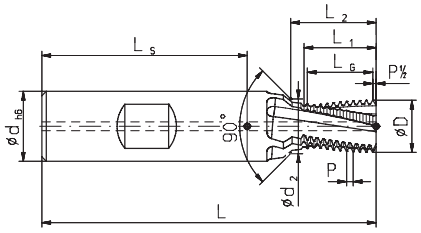
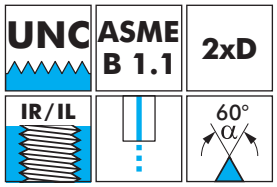
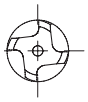


Figure 1:
Chamfer on the shank





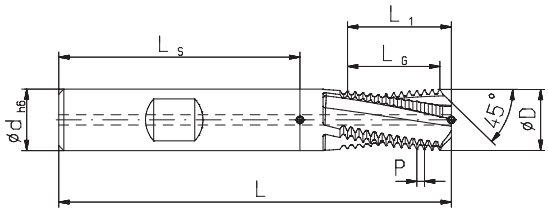
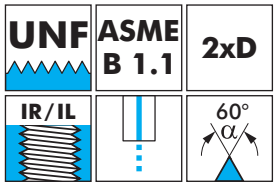


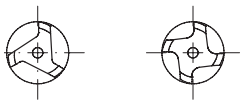
Figure 2:
Chamfer on the face

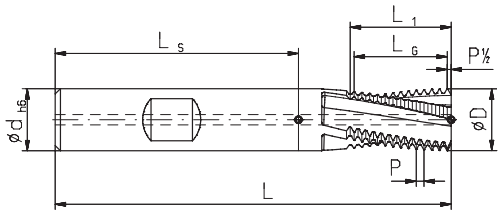
Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB
1/4"-20	1,270	20	4,8	62	14,0	15,73	12,7	11	8	6,65	3		1	171591	172393
5/16"-18	1,411	18	5,95	74	19,7	21,9	18,34	14	10	8,25	3	✓	1	171592	172394
3/8"-16	1,588	16	7,95	80	23,8	25,85	22,23	15	12	9,83	3	✓	1	171593	172395
7/16"-14	1,814	14	7,95	90	23,6	26,5	21,77	13	14	11,43	3	✓	1	171594	172396
1/2"-13	1,954	13	9,9	90	29,3	32,1	27,36	15	14	13	4	✓	1	171595	172397
9/16"-12	2,117	12	11,8	100	33,9	36,6	31,76	16	16	14,61	4	✓	1	171596	172398
5/8"-11	2,309	11	12,7	90	38,4		34,63	16	14		4	✓	2	171597	172399
3/4"-10	2,540	10	15,2	110	40,6	44,3	38,1	16	20	19,35	5	✓	1	171598	172400

SolidCUT Solid Carbide Circular Thread Milling Cutter

- **Fixed dimension type**
- **Cutting Data see page 188**







Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
1/4"-28	0,907	28	4,8	55	14,5	13,61	16	6	3		168428	168429	168430
5/16"-24	1,058	24	5,95	60	19,0	17,99	18	6	3	✓	168431	168432	168433
3/8"-24	1,058	24	7,95	70	22,2	21,16	21	8	3	✓	168434	168435	168436
7/16"-20	1,270	20	7,95	70	22,8	21,59	18	8	3	✓	168437	168438	168439
1/2"-20	1,270	20	9,9	75	27,9	26,67	22	10	4	✓	168440	168441	168442

- **Chamfer type**
- **Cutting Data see page 188**

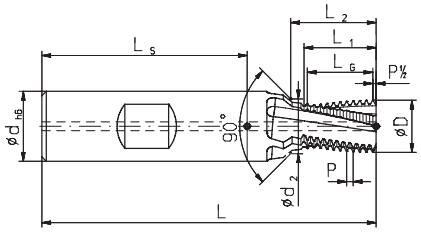
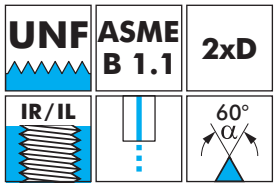
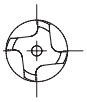


Figure 1:
Chamfer on the shank





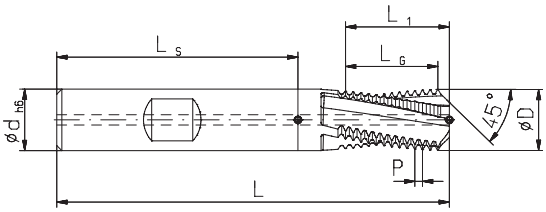


Figure 2:
Chamfer on the face

Thread	P mm	Pitch/"	D±0,02 mm	L mm	L1 mm	L2 mm	LG mm	Number of teeth	d h6 mm	d2 mm	Number of edges	Internal coolant	Fig.	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB
1/4"-28	0,907	28	4,8	62	14,5	16,2	13,61	16	8	6,65	3		1	171599	172401
5/16"-24	1,058	24	5,95	74	19,0	21	17,99	18	10	8,25	3	✓	1	171600	172402
3/8"-24	1,058	24	7,6	80	22,2	23	21,16	21	12	9,83	3	✓	1	171601	172403
7/16"-20	1,270	20	7,95	90	22,8	25,5	21,59	18	14	11,4	3	✓	1	171602	172404
1/2"-20	1,270	20	9,9	90	27,9	30,43	26,67	22	14	13	4	✓	1	171603	172405
9/16"-18	1,411	18	12	100	31,0	33,35	29,63	22	16	14,61	4	✓	1	171604	172406
5/8"-18	1,411	18	13,5	90	36,8		33,86	25	14		4	✓	2	171605	172407
3/4"-16	1,588	16	17	110	39,7	42	38,11	25	20	19,35	5	✓	1	171606	172408

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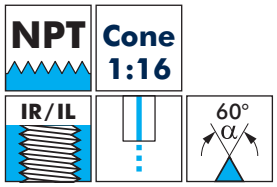
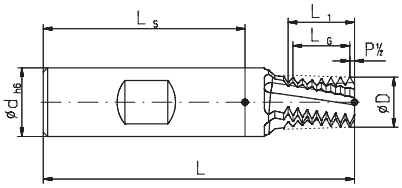
SolidCUT Solid Carbide Circular Thread Milling Cutter

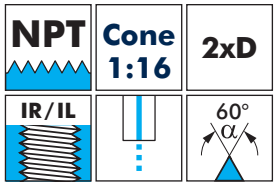
- **Fixed dimension type**
- **Cutting Data see page 188**

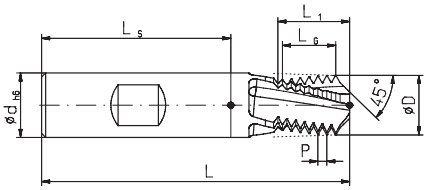




Thread	P mm	Pitch/"	D ±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
1/16"	0,941	27	5,8	70	11,3	10,35	12	8	3	✓	170752	170753	170754
1/8"	0,941	27	7,6	75	11,3	10,35	12	10	3	✓	170755	170756	170757
1/4"	1,411	18	10,1	90	15,5	14,11	11	14	3	✓	170758	170759	170760
3/8"	1,411	18	12,8	90	16,7	14,11	11	16	4	✓	170761	170762	170763
1/2"	1,814	14	16,0	110	21,35	18,14	11	20	5	✓	170764	170765	170766
3/4"	1,814	14	18,5	110	19,95	18,14	11	20	5	✓	170767	170768	170769

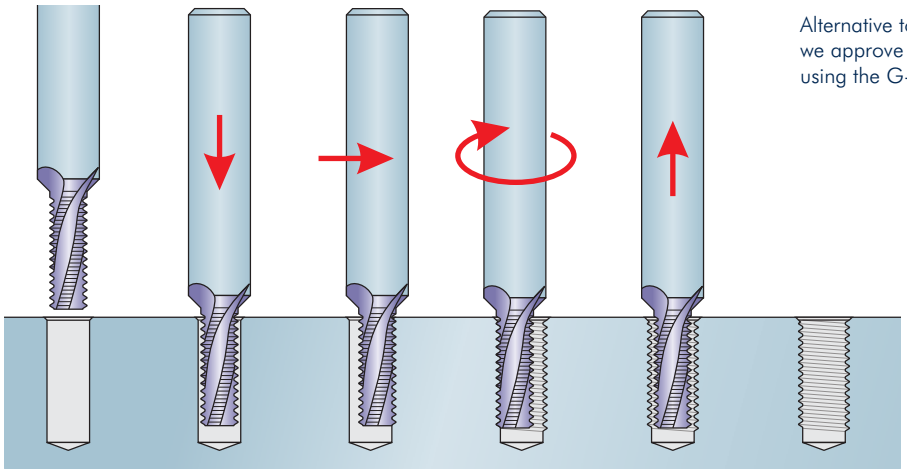
- **Chamfer type**
- **Cutting Data see page 188**





Thread	P mm	Pitch/"	D ±0,02 mm	L mm	L1 mm	LG mm	Number of teeth	d h6 mm	Number of edges	Internal coolant	Order No. TINAMATIC DIN 6535 Form HA	DIN 6535 Form HB
1/4"	1,411	18	10,1	90	18,2	14,11	11	14	3	✓	171609	172411
3/8"	1,411	18	12,8	90	18,2	14,11	11	16	4	✓	171610	172412
1/2"	1,814	14	16,0	110	22,8	18,14	11	20	5	✓	171611	172413
3/4"	1,814	14	18,5	110	23,0	18,14	11	20	5	✓	171612	172414

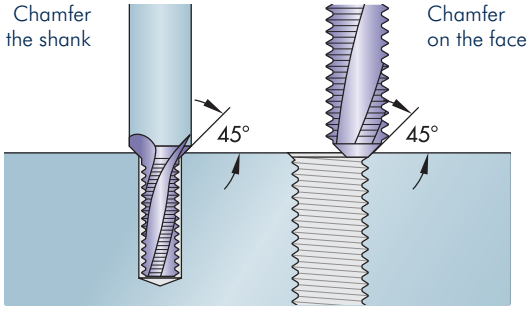
Machining Sequence



Starting position | Insertion on thread depth | Radial setting to nominal thread diameter (Start-up loop) | Circular thread milling | Radial back-setting to bore center and reverse stroke (Move out loop) | Thread is ready

Alternative to the radial infeed we approve In- and Outloops by using the G-functions.

Types with chamfer



More information to circular thread milling see page 197