

Step drills

10840 Step drills

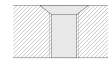
HARTNER

Type
- Countersink angle 90°

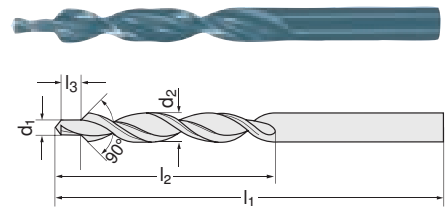
- With straight shank
- Cone envelope grind
- Web-thinned chisel edge and surface treatment

Use
For producing threaded core holes and countersinks in accordance with DIN 336 Part 1. Countersinks for through-holes in accordance with DIN EN 20273.

Quality
HSS ground for steel to 900 N/mm², aluminium alloys, brass, bronze.



10840



for Thread	d ₁ x d ₂ mm	l ₃ mm	l ₂ mm	l ₁ mm	10840	...
M 3	2,5 x 3,4	8,8	39	70		101
M 4	3,3 x 4,5	11,4	47	80		102
M 5	4,2 x 5,5	13,6	57	93		103

for Thread	d ₁ x d ₂ mm	l ₃ mm	l ₂ mm	l ₁ mm	10840	...
M 6	5,0 x 6,6	16,5	63	101		104
M 8	6,8 x 9,0	21,0	81	125		105
M 10	8,5 x 11,0	25,5	94	142		106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti-alloys	GG(G)	plastics
50-60	40-50	30-60	25-28	22-25	20-22	-	-	-	-	-	-	-	-	-	-	20-28	30-40

10850 Step drills

HARTNER

Type
- Countersink angle 90°

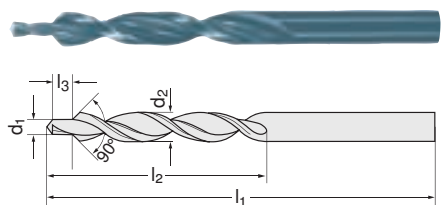
- With straight shank
- Cone envelope grind
- Web-thinned chisel edge and surface treatment

Use
For producing screw through-holes DIN EN 20273, screw-head countersinks shape A medium in accordance with DIN 74 Part 1. Screw countersinks DIN 963 to 966.

Quality
HSS ground for steel to 900 N/mm², aluminium alloys, brass, bronze.



10850



for Thread	d ₁ x d ₂ mm	l ₃ mm	l ₂ mm	l ₁ mm	10850	...
M 3	3,4 x 6,6	9	63	101		101
M 4	4,5 x 9,0	11	81	125		102
M 5	5,5 x 11,0	13	94	142		103
M 6	6,6 x 13,0	15	101	151		105
M 8	9,0 x 17,2	19	130	191		107

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti-alloys	GG(G)	plastics
50-60	40-50	30-60	25-28	22-25	20-22	-	-	-	-	-	-	-	-	-	-	20-28	30-40

10861 - 10862 Step drills

HARTNER

Type
- Countersink angle 180°

- Cone envelope grind
- Web-thinned chisel edge and surface treatment

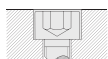
10861
Type
With straight shank.

10862
Type
With Morse taper shank.

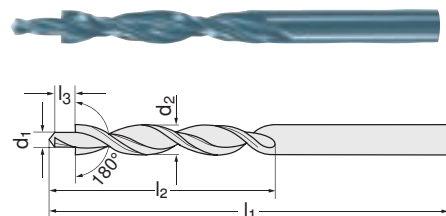
Use
For producing screw through-holes DIN EN 20273, screw-head countersinks shape H, J and K. Version medium in accordance with DIN 74 Part 2. Cheese head screws in accordance with DIN 84, DIN 912, DIN 6912, DIN 7513, DIN 7984.

Quality
HSS ground for steel to 900 N/mm², cast iron, aluminium alloys, brass, bronze.

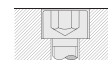
DIN 8376



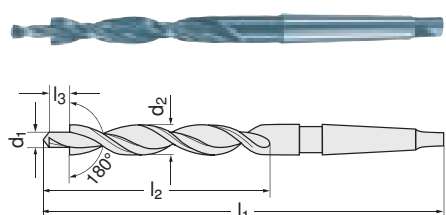
10861



DIN 8377



10862



for Thread	d ₁ x d ₂ mm	l ₃ mm	l ₂ mm	l ₁ mm	Straight shank		Morse taper shank		
					10861	...	10862	...	
M 3	3,4 x 6,0	9	57	93	-		101	-	
M 4	4,5 x 8,0	11	75	117	-		102	-	
M 5	5,5 x 10,0	13	87	133	-		103	-	
M 6	6,6 x 11,0	15	94	142	-		104	-	
M 8	9,0 x 15,0	19	114	169	-		105	-	
M 8	9,0 x 15,0	19	114	212	2	-	-		105
M 10	11,0 x 18,0	23	130	191	-		106	-	
M 10	11,0 x 18,0	23	130	228	2	-	-		106
M 12	13,5 x 20,0	27	140	238	2	-	-		107
M 16	17,5 x 26,0	35	165	286	3	-	-		109
M 20	22,0 x 33,0	43	185	334	4	-	-		111

10866 - 10868

Short step drills

HARTNER

Type

- With straight shank
- Cone envelope grind
- Web-thinned chisel edge

Quality

HSS ground for steel to 900 N/mm², cast iron, aluminium alloys, brass, bronze.

10866

Type

Countersink angle 90°. For threaded core holes DIN 336 Part 1. Countersinks for through-holes DIN EN 20273 medium.

10867

Type

Countersink angle 90°. For screw through-holes DIN EN 20273. Countersinks DIN 74 Part 1 fine, countersunk screws DIN EN ISO 2009 and 2010.

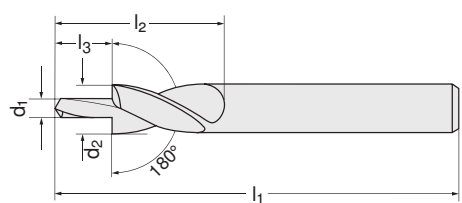
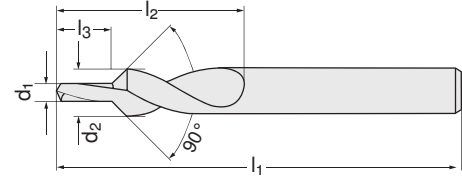
10868

Type

Countersink angle 180°. For screw through-holes DIN EN 20273. Screw-head countersinks, shape H, J, K Part 2 medium. Cheese head screws DIN EN ISO 4762, DIN EN ISO 1207, DIN 6912, DIN 7513, DIN 7984.

for thread	d ₁ x d ₂ mm	l ₃ mm	l ₂ mm	l ₁ mm	HSS 10866		HSS 10867		HSS 10868	
M 3	2,5 x 3,4	8,8	20	52	101					
M 4	3,3 x 4,5	11,4	24	58	102					
M 5	4,2 x 5,5	13,6	28	66	103					
M 6	5,0 x 6,6	16,5	31	70	104					
M 8	6,8 x 9,0	21,0	40	84	105					
M 10	8,5 x 11,0	25,5	47	95	106					
M 12	10,2 x 13,5	30,0	54	107	107					
M 3	3,2 x 6,0	9,0	28	66			101			
M 4	4,3 x 8,0	11,0	37	79			102			
M 5	5,3 x 10,0	13,0	43	89			103			
M 6	6,4 x 11,5	15,0	47	95			104			
M 8	8,4 x 15,0	19,0	56	111			105			
M 10	10,5 x 19,0	23,0	64	127			106			
M 3	3,4 x 6,0	9,0	28	66						101
M 4	4,5 x 8,0	11,0	37	79						102
M 5	5,5 x 10,0	13,0	43	89						103
M 6	6,6 x 11,0	15,0	47	95						104
M 8	9,0 x 15,0	19,0	56	111						105
M 10	11,0 x 18,0	23,0	62	123						106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti-alloys	GG(G)	plastics
50-60	40-50	30-60	25-28	22-25	20-22	-	-	-	-	-	-	-	-	-	-	20-28	30-40



10863 - 10864

Short step drills

ATORN®

Type

- With straight shank
- Right-hand cut
- Diameter tolerance h8

Use

For thread core holes. For economically producing boreholes and countersinkings in one work step.

Quality

Solid carbide/TiAlN-coated.

10863

Type

Countersink angle 90°.

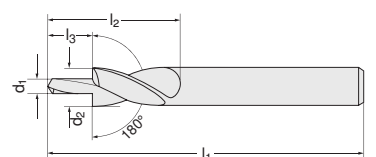
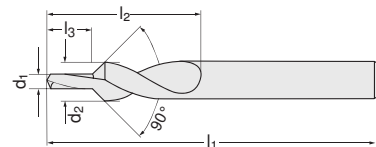
10864

Type

Countersink angle 180°.

Use

For through-holes.



for thread	d ₁ x d ₂ mm	l ₃ mm	l ₂ mm	l ₁ mm	shank Ø mm	90°	
						10863	...
M 3	2,5 x 3,4	8,8	28	66	6,0	101	
M 4	3,3 x 4,5	11,4	28	66	6,0	102	
M 5	4,2 x 5,5	13,6	28	66	6,0	103	
M 6	5,0 x 6,6	16,5	41	79	8,0	104	
M 8	6,8 x 9,0	21,0	47	89	10,0	105	
M 10	8,5 x 11,0	25,5	55	102	12,0	106	
M 12	10,2 x 13,5	30,0	60	107	14,0	107	

for thread	d ₁ x d ₂ mm	l ₃ mm	l ₂ mm	l ₁ mm	shank Ø mm	180°	
						10864	...
M 3	3,4 x 6,0	9	28	64	6,0	101	
M 4	4,5 x 8,0	11	37	79	8,0	102	
M 5	5,5 x 10,0	13	43	89	10,0	103	
M 6	6,6 x 11,0	15	55	102	12,0	104	
M 8	9,0 x 15,0	19	60	115	16,0	105	
M 10	11,0 x 18,0	23	62	123	18,0	106	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti-alloys	GG(G)	plastics
50-75	40-60	20-40	25-45	20-35	20-30	20-25	15-20	10-15	-	-	-	-	10-15	10-15	2-8	20-30	10-30

☞ Sales are restricted to the packaging units mentioned in the catalogue. Purchase orders must be in units.

www.hhw.de
Fax order hotline: +49 6204 739-1217

12105 - 12107 Countersink (deburrer)



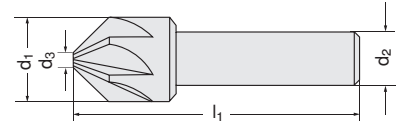
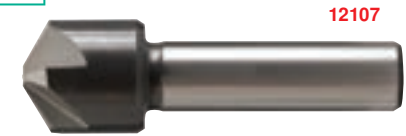
Type
 - Multi-flute
 - Right-hand cut
 - Straight shank (shape A)

Use
 For deburring, chamfering and countersinking the edges of holes when machining standard-duty materials such as: Steel, cast iron, non-ferrous and light metal.

Quality
 HSS.

12105
Type
 DIN 335, countersink angle 90°.

12107
Type
 DIN 347, countersink angle 120°.



				90°	
d ₁	d ₂ h9	l ₁	d ₃	12105	...
mm	mm	mm	mm		
8	8	48	1,5		102
10	8	48	1,8		103
12,5	8	48	2,0		104
16	10	56	3,2		105
20	10	60	5,0		106
25	12	70	7,0		107
31,5	16	75	9,0		108

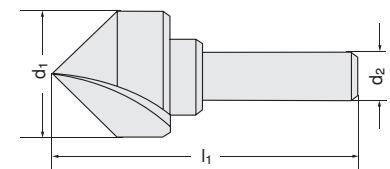
				120°	
d ₁	d ₂ h9	l ₁	d ₃	12107	...
mm	mm	mm	mm		
16	10	53	3,2		101

12115 Countersinks and deburrers



Type
 Countersink angle 90°, single flute, right-hand cut, straight shank (shape A).

Quality
 HSS-E.



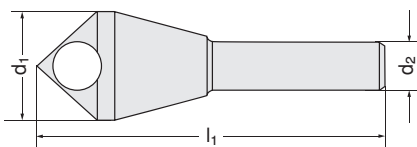
				HSS-E	
Countersink range	d ₁	d ₂	l ₁	12115	...
mm	mm	mm	mm		
1 - 8	8	6	50		102
1 - 10	10	6	50		103
2 - 12	12	8	56		104
2 - 16	16	10	60		105
2 - 20	20	10	63		106
2 - 25	25	10	67		107
3 - 30	30	12	70		108
4 - 40	40	15	92		109
5 - 50	50	15	100		110

12205 - 12207 Countersinking and deburring tools



Type
 Countersink angle 90°, right-hand cut, straight shank.
Use
 For burr-free and chatter-free countersinking and deburring holes for nearly all materials.

12207
Quality
 HSS/TiN-coated.



12205
Quality
 HSS.

Countersink range	d ₁	d ₂	l ₁	HSS		HSS/TiN	
				12205	...	12207	...
mm	mm	mm	mm				
1 - 4	6,35	6,35	45		101		
2 - 5	10	6	46		102		102
5 - 10	14	8	48,5		103		103
10 - 15	21	10	65		104		104
15 - 20	27,5	15	85		105		105
20 - 25	35	15	102		106		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
12205																	
25-40	10-30	25-80	26-30	25-28	18-25	6-10	5-8	2-5	-	-	-	-	4-10	4-10	4-10	9-15	10-60
12207																	
30-80	30-50	30-100	32-36	30-34	22-30	7-12	6-10	3-6	-	-	-	-	5-12	5-12	5-12	10-25	10-60

Countersinks and deburrers

12240 - 12241 Countersinks and deburrers



Type
 - Countersink angle 60°.
 - 3 flutes
 - Right-hand cut
 - Straight shank (shape C)

Use
 For burr and chatter-free countersinking and deburring of steel, cast iron and non-ferrous metals.

Note:
 Best results at low cutting speed and high feed rate.

12240
Quality
 HSS.

12241
Quality
 HSS/TiN-coated.

HSS

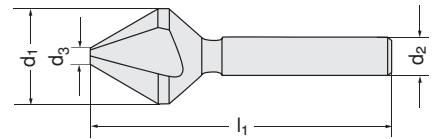


12240

HSS
TiN



12241



d ₁ mm	d ₂ h ₉ mm	l ₁ mm	d ₃ mm	HSS		HSS/TiN	
				12240	...	12241	...
6,3	5	45	1,6	101		101	
8,0	6	50	2,0	102		102	
10,0	6	53	2,5	103		103	
12,5	8	56	3,2	104		104	
16,0	10	63	4,0	105		105	
20,0	10	67	5,0	106		106	
25,0	10	71	6,3	107		107	
31,5	12	76	10,0	108		108	
40,0	15	91	10,0	109		109	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
25-40	10-30	25-80	26-30	25-28	18-25	6-10	-	-	-	-	-	-	-	-	-	9-15	10-60

12242 Countersinks and deburrers



Type
 - Countersink angle 75°
 - 3 flutes
 - Right-hand cut
 - Straight shank (shape C)

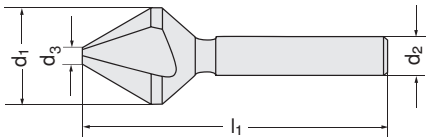
Use
 For burr and chatter-free countersinking and deburring of steel, cast iron and non-ferrous metals.

Quality
 HSS.

HSS



12242



d ₁ mm	d ₂ h ₉ mm	l ₁ mm	d ₃ mm	HSS	
				12242	...
6,3	5	45	1,5	101	
8,3	6	50	2,0	102	
10,4	6	51	2,5	103	
12,4	8	55	3,0	104	
16,5	10	61	3,5	105	
20,5	10	65	4,0	106	
25,0	10	69	5,0	107	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
25-40	10-30	25-80	26-30	25-28	18-25	6-10	-	-	-	-	-	-	-	-	-	9-15	10-60

Info

Countersinks and deburrers DIN 335 C and D

Type
 Countersink angle 90°, with 3 flutes, right-hand cut.

Use
 For burr and chatter-free countersinking, deburring of steel, cast iron and non-ferrous metals.

For countersinking to DIN 74 and 75 page 1, quality grade fine,
 A for countersunk screws DIN 963 and DIN 965, oval head screws DIN 964 and DIN 966, tapping dies DIN 7513 and DIN 7516,
 B for countersunk screws DIN 7991.

Note:
 Best results at low cutting speed and high feed rate.





ATORN®

Use
For counterboring and deburring.

Type
Right-hand cut with straight shank.

contents	quality	set contents	12204	...
4-part	HSS	1 ea. Ø 2,5 / 5-10 / 10-15 / 15-20 mm in plastic cassette		201

contents	quality	set contents	12250	...
6-part	HSS	1 ea. Ø 6,3 / 8,3 / 10,4 / 12,4 / 16,5 / 20,5 mm in plastic cassette		201

contents	quality	set contents	12251	...
6-part	HSS- TiCN + TiN	1 ea. Ø 6,3 / 8,3 / 10,4 / 12,4 / 16,5 / 20,5 mm in metal cassette		101

contents	quality	set contents	12252	...
6-part	HSS extra Long shank	1 ea. Ø 6,3 / 8,3 / 10,4 / 12,4 / 16,5 / 20,5 mm in metal cassette		101

contents	quality	set contents	12254	...
6-part	HSS 1/4 inch Hexagon shank DIN 3126	1 ea. Ø 6,3 / 8,3 / 10,4 / 12,4 / 16,5 / 20,5 mm with adapter, handle, circlip and magnet, drilling paste in plastic cassette		101

contents	quality	set contents	12255	...
6-part	HSS-E	1 ea. Ø 6,3 / 8,3 / 10,4 / 12,4 / 16,5 / 20,5 mm in metal cassette		101

contents	quality	set contents	12259	...
17-part	HSS	1 ea. Ø 4,3 / 5,0 / 6,0 / 6,3 / 7,0 / 8,0 / 8,3 / 10,0 / 10,4 / 11,5 / 12,4 / 15,0 / 16,5 / 19,0 / 20,5 / 23 / 25 mm in metal cassette		101



Countersinks and deburrers | Countersinks for Reversible Cutting Inserts

12265 - 12270 Countersinks and deburrers



Type
Countersink angle 90°, 3 flutes, straight shank (shape C C).

Use
For countersinking to DIN 74 and DIN 75, page 1, quality grade fine.

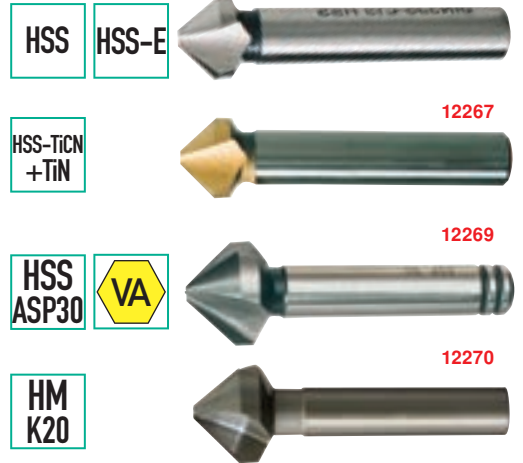
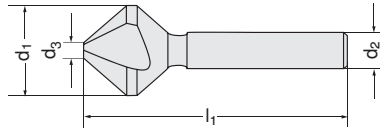
12265
Quality
HSS.

12266
Quality
HSS-E.

12267
Quality
HSS/TiCN + TiN-coated.

12269
Use
For stainless steel.
Quality
HSS powder steel, ASP 30.

12270
Type
6,3 - 8,3 mm solid carbide, above carbide-tipped.
Quality
Carbide quality, K 20.



12265-12269			12270		HSS		HSS-E		HSS/TiCN+TiN				HSS/ASP30		HM/K 20	
d ₁	d ₂	l ₁	d ₃	d ₃	12265	...	12266	...	12267	...	12269	...	12270	...		
mm	mm	mm	mm	mm												
4,3	4	40	1,3	-	101											
5,0	4	40	1,5	-	102					102						
6,0	5	45	1,5	-	103					103						
6,3	5	45	1,5	2,2	104		104		104		104		104	104		
7,0	6	50	1,8	-	105											
7,3	6	50	1,8	-	106					106						
8,0	6	50	2,0	-	107					107						
8,3	6	50	2,0	2,8	108		108		108		108		108	108		
9,4	6	50	2,2	-	109											
10,0	6	50	2,5	-	110					110						
10,4	6	50	2,5	3,5	111		111		111		111		111	111		
11,5	8	56	2,8	-	112					112						
12,4	8	56	2,8	4,0	113		113		113		113		113	113		
15,0	10	60	3,2	-	114		114		114		114		114	114		
16,5	10	60	3,2	5,0	115		115		115		115		115	115		
19,0	10	63	3,5	-	116					116						
20,5	10	63	3,5	7,0	117		117		117		117		117	117		
23,0	10	67	3,8	-	118					118						
25,0	10	67	3,8	9,0	119		119		119		119		119	119		
31,0	12	71	4,2	10,0	120		120		120		120		120	120		
40,0	15	80	10,0	-	121		121		121		121		121	121		

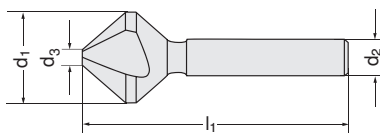
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
12265 + 12266																	
25-40	10-30	25-80	26-30	25-28	18-25	6-10	5-8	2-5	-	-	-	-	4-10	4-10	4-10	9-15	10-60
12267 + 12269																	
30-80	30-50	30-100	32-36	30-34	22-30	7-12	6-10	3-6	-	-	-	-	5-12	5-12	5-12	10-25	10-60
12270																	
55-180	25-70	60-140	55-75	50-65	40-55	13-22	10-18	8-15	6-14	6-14	-	-	10-22	10-22	10-22	20-45	20-65

12260 Countersinks and deburrers



Type
With extended straight shank (shape C), 100 mm long. 3 cutting blades.

Use
For countersinking to DIN 74 and DIN 75, page 1, quality grade fine.



HSS				HSS			
d ₁	d ₂	l ₁	d ₃	d ₁	d ₂	l ₁	d ₃
mm	mm	mm	mm	mm	mm	mm	mm
6,3	5	100	1,5	16,5	10	115	3,2
8,3	6	112	2,0	20,5	10	119	3,5
10,4	8	112	2,5	25,0	10	122	3,8
12,4	8	113	2,8				

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
25-40	10-30	25-80	26-30	25-28	18-25	6-10	5-8	2-5	-	-	-	-	4-10	4-10	4-10	9-15	10-60



12271

Countersink and deburrer bits



Type

Countersink angle 90°, 3 flutes, ground, countersink head in compliance with DIN 335 C with 1/4 inch hexagon shank, ground, in compliance with DIN 3126.

Quality

HSS.

Nominal Ø mm	overall length mm	for counter sinking	12271	...
6,3	31	M 3		101
8,3	31	M 4		102
10,4	34	M 5		103

Nominal Ø mm	overall length mm	for counter sinking	HSS 12271	...
12,4	35	M 6		104
16,5	40	M 8		105
20,5	41	M 10		106



12271

12272

Countersinks and deburrers



Type

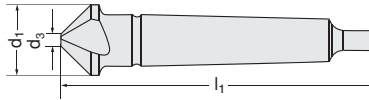
- Countersink angle 90°
- With 3 flutes
- Morse taper shank (shape D).

Quality

HSS.

Note:

Further dimensions available on request.



12272

d ₁ mm	d ₃ mm	l ₁ mm	MT mm	HSS 12272	...
15,0	3,2	85	1		101
20,5	3,5	100	2		102
25,0	3,8	106	2		103
30,0	4,2	112	2		104
31,0	4,2	112	2		105
34,0	4,5	118	2		106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
25-40	10-30	25-80	26-30	25-28	18-25	6-10	5-8	2-5	-	-	-	-	4-10	4-10	4-10	9-15	10-60

12274

Countersinks and deburrers



Type

With plastic handle, countersink angle 90°, with 3 flutes, right-hand cut.

Quality

HSS.

Ø mm	HSS 12274	...
12,5		101
15,0		110
16,5		102

Ø mm	HSS 12274	...
20,5		103
25,0		104



12274

12310 - 12313

Countersinks for Reversible Cutting Inserts



12310

Type

- Countersink angle 90°
- Right-hand cut
- Straight shank
- For mounting 2 carbide reversing tips, each with 3 flutes, clearance angle 8°

Scope of supply:

- Including clamp screws
- Without carbide reversing tips

Use

For screw head countersinks (countersinking in compliance with DIN 74 page 1, shape A, fine).

12312

Spare Clamping Screws

Use

For countersink for reversible cutting inserts cat.-no. 12310.

12313

Carbide reversible cutting inserts

Type

3 cutting blades, clearance angle 8°.

Use

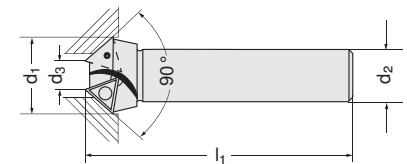
For countersink for reversible cutting inserts cat.-no. 12310.

Quality

PVD coating (P25).



12310



12313

Type	d ₁ mm	d ₂ mm	d ₃ H13 mm	Cutting insert size	Torx Plus screw	Countersink 12310	...	spare screw 12312	...	reversible carbide tip 12313	...
KWS-M 10	19	16	7,0	W30 14660.338425	S/M 2,6 x 6,2 - 8 IP/T8		101		101		101
KWS-M 14	26	16	11,0	W30 14720.048425	S/M 2,6 x 6,2 - 8 IP/T8		103		101		103
KWS-M 16	30	20	12,0	W30 26720.0560	S/M 3,5 x 7,3 - 10 IP/T10		104		102		105
KWS-M 18	34	20	16,0	W30 26720.0560	S/M 3,5 x 7,3 - 10 IP/T10		105		102		105

Countersinks | Counterbores | Spot facing cutters

12405

Countersinks (screw head cutters, spot facing cutters)



12405



Type

Countersink angle 90°, right-hand cut, right-hand helix. Straight shank and fixed pilot.

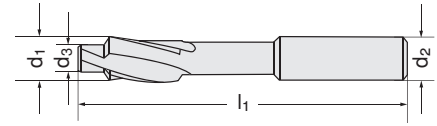
Use

For countersinking in compliance with DIN 74, page 1. For countersinking of countersunk screws DIN 963 and DIN 965, oval head screws DIN 964 and DIN 966, tapping dies F and G in compliance with DIN 7513, tapping dies D and E in compliance with DIN 7516.

Quality HSS.

Note:

Fixed pilot: $D =$ through hole.
Sunk hole: $m =$ quality grade medium,
 $f =$ quality grade fine.



for countersinking		d ₁ z9	d ₃ e8	l ₁	d ₂ h9	HSS	...
Thread	accuracy grade	mm	mm	mm	mm	12405	
M 3	Dm	6,6	3,4	71	5,0	209	
M 3	Df	6,0	3,2	71	5,0	211	
M 4	Dm	9,0	4,5	80	8,0	213	
M 4	Df	8,0	4,3	80	8,0	215	
M 5	Dm	11,0	5,5	80	8,0	217	
M 5	Df	10,0	5,3	80	8,0	219	

for countersinking		d ₁ z9	d ₃ e8	l ₁	d ₂ h9	HSS	...
Thread	accuracy grade	mm	mm	mm	mm	12405	
M 6	Dm	13,0	6,6	100	12,5	221	
M 6	Df	11,5	6,4	80	8,0	223	
M 8	Dm	17,2	9,0	100	12,5	225	
M 8	Df	15,0	8,4	100	12,5	227	
M 10	Dm	21,5	11,0	100	12,5	229	
M 10	Df	19,0	10,5	100	12,5	231	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
20-30	15-25	15-30	15-20	12-18	8-15	-	-	-	-	-	-	-	-	-	-	10-18	20-30

12410

Sets of Counterbores



12410



Type

6-part. with 1 ea. countersink for M 3 / M 4 / M 5 / M 6 / M 8 and M 10, in plastic case. Right-hand cut, right-hand helix, straight shank and fixed pilot.

Use

For countersinking in compliance with DIN 74, page 2. Counter bores for cheese head screws DIN 84 and Allen screws DIN 912 and DIN 6912.

Quality HSS.

12410 201

Type KM-6

Use

For core hole.

12410 202

Type DM-6

Use

For through holes, quality grade medium.

12410 203

Type DF-6

Use

For through holes, quality grade fine.

Type	HSS	...
	12410	
KM-6	201	
DM-6	202	
DF-6	203	



12411

Counterbores



12411



Type

Similar to DIN 373, right-hand cut, right-hand helix, straight shank and fixed pilot.

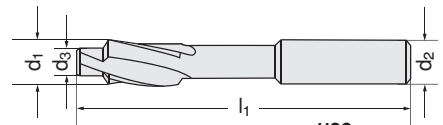
Use

For countersinking in compliance with DIN 74, page 2. Counter bores for cheese head screws DIN 84 and Allen screws DIN 912 and DIN 6912.

Quality HSS.

Note:

Fixed pilot: $D =$ through hole,
 $K =$ core hole
Sunk hole: $m =$ quality grade medium,
 $f =$ quality grade fine.



for countersinking		d ₁ z9	d ₃ e8	l ₁	d ₂ h9	HSS	...
Thread	accuracy grade	mm	mm	mm	mm	12411	
M 3	Dm	6,5	3,4	71	5,0	099	
M 3	Df	6,5	3,2	71	5,0	100	
M 3	Dm	6,a0	3,4	71	5,0	101	
M 3	Df	6,0	3,2	71	5,0	102	
M 3	K	6,0	2,5	71	5,0	103	
M 4	Dm	8,0	4,5	71	5,0	107	
M 4	Df	8,0	4,3	71	5,0	108	
M 4	K	8,0	3,3	71	5,0	109	
M 5	Dm	10,0	5,5	80	8,0	110	
M 5	Df	10,0	5,3	80	8,0	111	
M 5	K	10,0	4,2	80	8,0	112	
M 6	Dm	11,0	6,6	80	8,0	113	

for countersinking		d ₁ z9	d ₃ e8	l ₁	d ₂ h9	HSS	...
Thread	accuracy grade	mm	mm	mm	mm	12411	
M 6	Df	11,0	6,4	80	8,0	114	
M 6	K	11,0	5,0	80	8,0	115	
M 8	Dm	15,0	9,0	100	12,5	116	
M 8	Df	15,0	8,4	100	12,5	117	
M 8	K	15,0	6,8	100	12,5	118	
M 10	Dm	18,0	11,0	100	12,5	119	
M 10	Df	18,0	10,5	100	12,5	120	
M 10	K	18,0	8,5	100	12,5	121	
M 12	Dm	20,0	13,5	100	12,5	122	
M 12	Df	20,0	13,0	100	12,5	123	
M 12	K	20,0	10,2	100	12,5	124	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
20-30	15-25	15-30	15-20	12-18	8-15	-	-	-	-	-	-	-	-	-	-	10-18	20-30





Type

Similar to DIN 373, right-hand cut, right-hand helix, Morse taper shank and fixed pilot.

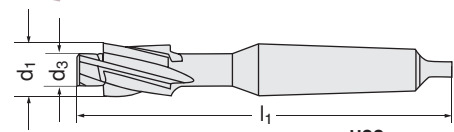
Use

For countersinking in compliance with DIN 74, page 2. Counter bores for cheese head screws DIN 84 and Allen screws DIN 912 and DIN 6912.

Quality HSS.

Note:

Fixed pilot:
D = through hole.
Sunk hole: m = quality grade medium,
f = quality grade fine.



HSS						
for thread	countersinking accuracy grade	d ₁ z9 mm	l ₁ mm	d3 e8 mm	MT	12421 ...
M 10	Dm	18,0	150	11,0	2	101
M 10	Df	18,0	150	10,5	2	102
M 12	Dm	20,0	150	13,5	2	104
M 12	Df	20,0	150	13,0	2	105
M 14	Dm	24,0	160	15,5	2	107
M 14	Df	24,0	160	15,0	2	108

HSS						
for thread	countersinking accuracy grade	d ₁ z9 mm	l ₁ mm	d3 e8 mm	MT	12421 ...
M 16	Dm	26,0	190	17,5	3	110
M 16	Df	26,0	190	17,0	3	111
M 18	Dm	30,0	190	20,0	3	113
M 18	Df	30,0	190	19,0	3	114
M 20	Df	33,0	190	21,0	3	117

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
20-30	15-25	15-30	15-20	12-18	8-15	-	-	-	-	-	-	-	-	-	-	10-18	20-30

12503 - 12504

Spot facing cutters



Type

3-flute, with short-taper fastening for mounting in holder cat.-no. 12540 - 12541, for interchangeable fixed pilots cat.-nr. 12506 - 12507, type A.

Use

For machinery steel, soft grey cast iron, medium-hard non-ferrous metals etc.

Note:

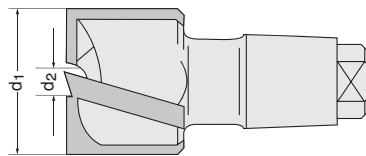
The interchangeable fixed pilots make it possible for the spot facing cutters to be individually assembled. They can therefore be used for countersinking in compliance with DIN 74 and old DIN 75.

12503 Quality HSS.

12504 Quality HM-soldered (K10 - K35).



12503



12504

d ₁ mm	size	d ₂ mm	for holder size	HSS		Carbide quality	
				12503	...	12504	...
5,0	A 00	1,7	H 0	203			
6,0	A 01	2,0	H 0	207			
6,5	A 01	2,0	H 0	210			
7,0	A 02	2,5	H 0	212			
7,4	A 02	2,5	H 0	213			
7,5	A 02	2,5	H 0	214			
8,0	A 02	2,5	H 0	215			
8,5	A 02	2,5	H 0	218			
9,0	A 1	3,0	H, HB 1	219		219	
9,5	A 1	3,0	H, HB 1	221			
10,0	A 1	3,0	H, HB 1	222		222	
10,4	A 1	3,0	H, HB 1	223			
10,5	A 1	3,0	H, HB 1	224		224	
11,0	A 1	3,0	H, HB 1	225		225	
11,5	A 1	3,0	H, HB 1	226		226	
12,0	A 1	3,0	H, HB 1	227		227	
12,5	A 1	3,0	H, HB 1	228		228	
13,0	A 1	3,0	H, HB 1	290		229	
15,0	A 1	3,0	H, HB 1	291		291	
16,0	A 2	4,0	H, HB 2	235		235	
16,5	A 2	4,0	H, HB 2	236			
17,0	A 2	4,0	H, HB 2	237		237	
17,5	A 2	4,0	H, HB 2	238		238	
18,0	A 3	5,0	H, HB 3	239		239	
18,5	A 3	5,0	H, HB 3	240			

d ₁ mm	size	d ₂ mm	for holder size	HSS		Carbide quality	
				12503	...	12504	...
19,0	A 3	5,0	H, HB 3	241		241	
20,0	A 3	5,0	H, HB 3	243		243	
20,5	A 3	5,0	H, HB 3			244	
21,0	A 3	5,0	H, HB 3	245		245	
22,0	A 3	5,0	H, HB 3	247		247	
22,5	A 3	5,0	H, HB 3	248			
23,0	A 4	6,0	H, HB 4	249		249	
24,0	A 4	6,0	H, HB 4	251		251	
25,0	A 4	6,0	H, HB 4	252		252	
26,0	A 4	6,0	H, HB 4	254		254	
27,0	A 4	6,0	H, HB 4	255			
28,0	A 4	6,0	H, HB 4	256		256	
29,0	A 4	6,0	H, HB 4	257			
30,0	A 4	6,0	H, HB 4	259		259	
32,0	A 4	6,0	H, HB 4	261		261	
33,0	A 4	6,0	H, HB 4	262		262	
34,0	A 5	8,0	H, HB 5	263		263	
35,0	A 5	8,0	H, HB 5	264		264	
36,0	A 5	8,0	H, HB 5	265		265	
38,0	A 5	8,0	H, HB 5	267			
40,0	A 5	8,0	H, HB 5	269		269	
41,0	A 5	8,0	H, HB 5			270	
42,0	A 5	8,0	H, HB 5	271		271	
45,0	A 5	8,0	H, HB 5	274		274	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	plastics.
12503	70-100	50-70	-	23-27	20-23	17-20	12-17	12-15	8-12	-	-	-	-	12-14	10-12	-	-
12504	100-150	60-110	-	60-90	50-60	30-50	22-30	20-25	15-22	-	-	-	-	30-50	20-40	-	10-18



Fixed pilots | Normal holder | Hand reamers

12506 - 12507 Fixed Pilots

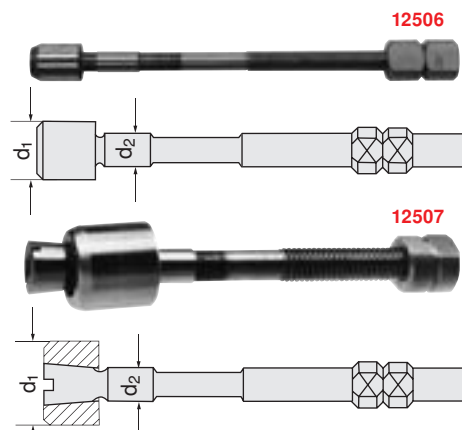


Type
Slides along longitudinal and mounted to allow slight rotation.

Note:
Exchangeable within the same countersink size.
Therefore a large number of combinations is possible. Insert protection washer between the blade and the pilot only when using carbide countersinks.

12506
Type
One-part, assembly with nut and washer (size 00, 01 and 02 non-rotatable, mounted in countersink with lateral screw).

12507
Type
Two-part, guide bushings with locking screw, assembly with nut and washer.



One-part				
d ₁ mm	for countersink size	d ₂ mm	12506	...
2,0	A 00	1,7	301	
2,4	A 01	2,0	305	
2,5	A 01	2,0	308	
3,0	A 00	1,7	319	
3,0	A 01	2,0	320	
3,0	A 02	2,5	321	
3,2	A 01	2,0	322	
3,2	A 1	3,0	324	
3,4	A 01	2,0	325	
4,0	A 02	2,5	337	
4,0	A 2	4,0	336	
4,2	A 2	4,0	339	

One-part				
d ₁ mm	for countersink size	d ₂ mm	12506	...
4,5	A 2	4,0	340	
4,5	A 1	3,0	342	
5,0	A 02	2,5	343	
5,0	A 1	3,0	344	
5,3	A 1	3,0	346	
5,5	A 1	3,0	349	
6,0	A 1	3,0	351	
6,2	A 1	3,0	380	
6,4	A 1	3,0	353	
6,5	A 1	3,0	355	
6,6	A 1	3,0	357	
6,8	A 1	3,0	358	

One-part				
d ₁ mm	for countersink size	d ₂ mm	12506	...
7,0	A 1	3,0	360	
8,0	A 1	3,0	381	
8,5	A 1	3,0	382	
8,5	A 3	5,0	365	
9,0	A 3	5,0	366	
10,0	A 3	5,0	368	
10,5	A 3	5,0	369	
10,5	A 4	6,0	370	
11,0	A 4	6,0	372	
12,0	A 4	6,0	374	
13,0	A 4	6,0	376	

Two-part				
d ₁ mm	for countersink size	d ₂ mm	12507	...
11,0	A 3	5,0	371	
12,0	A 3	5,0	373	
13,0	A 3	5,0	375	
14,0	A 3	5,0	377	
15,0	A 4	6,0	379	

Two-part				
d ₁ mm	for countersink size	d ₂ mm	12507	...
16,0	A 4	6,0	380	
17,0	A 4	6,0	381	
18,0	A 4	6,0	382	
19,0	A 4	6,0	383	
20,0	A 4	6,0	385	

Two-part				
d ₁ mm	for countersink size	d ₂ mm	12507	...
20,0	A 5	8,0	386	
21,0	A 5	8,0	388	
22,0	A 4	6,0	389	
22,0	A 5	8,0	390	
25,0	A 5	8,0	393	

12540 - 12542 Normal holder



12540 - 12541

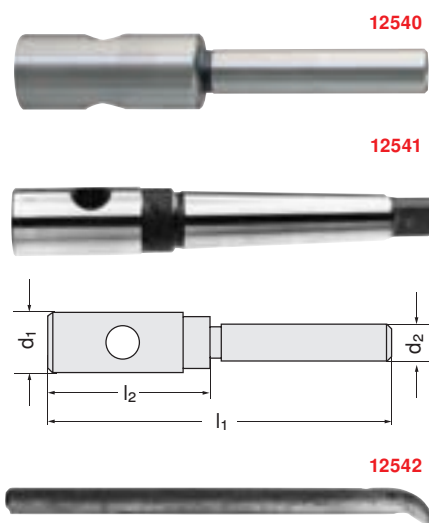
Type
Made of case-hardened steel and polished, short model (can also be used as a grinding pencil holder).

Use
For mounting spot facing cutters cat.-no. 12503 and 12504.

12540
With straight shank.

12541
With Morse taper shank.

12542
Drift key
For cat.-no. 12540 and 12541.

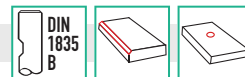


Size	l ₁ mm	l ₂ mm	d ₁ mm	d ₂ mm	shank	Straight	
						12540	...
H 0	59	24	9,0	6	str.	101	
H 1	76	36	12,5	8	str.	102	
H 2	91	41	17,0	10	str.	103	
H 3	109	49	21,0	12	str.	104	
H 4	112	52	28,0	14	str.	105	
H 5	125	65	32,0	16	str.	106	

Size	l ₁ mm	l ₂ mm	d ₁ mm	shank	MK		Drift key	
					12541	...	12542	...
H 1	104	42	12,5	MK 1	202		102	
H 2	109	47	17,0	MK 1	203		103	
H 3	132	57	21,0	MK 2	204		104	
H 4	135	60	28,0	MK 2	205		105	
H 5	168	74	32,0	MK 3	206		106	

17526

Countersink Milling Cutters



ATORN®

Type

- Adjustable 10° - 80°
- Straight shank with driving face in compliance with DIN 1835 B
- With an interchangeable box for each of the indexable inserts TCMT16T3... and SCMT1204...

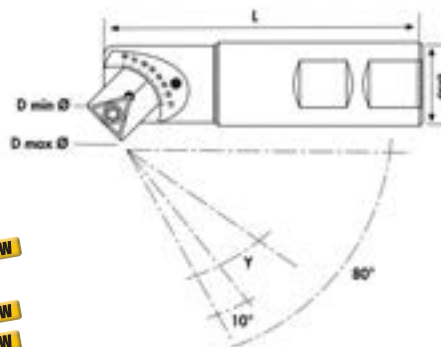
Scope of supply:

Countersink milling cutter with clamping screw and key, **without** indexable inserts.

Use

For chamfering, deburring, and countersinking. Stable, quiet operation.

17526

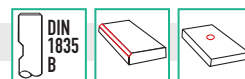


Y	TCMT D min Ø mm	TCMT D max Ø mm	SCMT D min Ø mm	SCMT D max Ø mm
10°	5	32	7.5	30.0
20°	6	33	10.0	32.0
30°	7	34	13.0	32.5
40°	10	33	16.5	33.5
45°	11	33	17.5	33.5
50°	13	32	19.0	33.5
60°	16	31	22.0	33.5
70°	19	29	24.5	33.5
80°	23	27	27.0	31.0

D h6 mm	L mm	17526	...
20	100	100	NEW
25	100	101	
25	150	102	NEW
25	200	103	NEW

17527

Angled cutters 30° / 45° / 60°



ATORN®

Type

Countersink angles 30°, 45°, 60°, straight shank in compliance with DIN 1835 B, right-hand cut. Without indexable inserts.

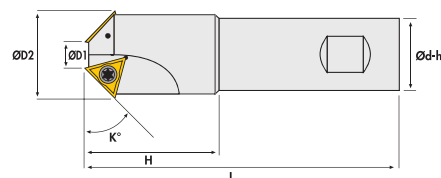
Use

For countersinking for screw heads and deburring of bores and slotted holes.

Note:

Indexable inserts see cat. no. 17856.

17527



K°	Ø D2 mm	Ø D1 mm	Ø d h6 mm	H mm	Z	L mm	Indexable inserts	17527	...
30	32,0	6,0	25	38	2	95	TCMT 16T3	100	
45	16,0	1,2	12	20	1	70	TCMT 1102	101	
45	21,0	6,2	20	35	2	90	TCMT 1102	102	
45	32,5	10,4	25	42	2	95	TCMT 16T3	103	
60	16,0	5,4	12	20	1	70	TCMT 1102	104	
60	26,0	15,8	20	35	2	90	TCMT 1102	105	
60	35,0	20,0	25	39	2	95	TCMT 16T3	106	

Spare parts

For indexable inserts size	Clamping screw	L mm	TORX® size IP	Clamping screws	Wrench
TCMT 1102	M 2,5 x 0,45	6,3	8	17528 101	51932 404
TCMT 16T3	M 4,0 x 0,7	8	15	17528 102	51932 407

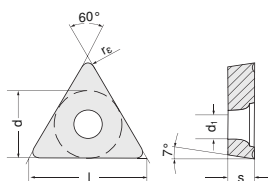
17856

Indexable milling inserts TCMT

HW

Type

- Three-edge
- Positive 7°
- With sintered-in chip deflection step



17856

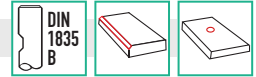


PM
H 42
TiN

ISO designation	l mm	d mm	d ₁ mm	s mm	r	...
TCMT 110202	11,0	6,35	2,80	2,38	0,20	10 pcs. 101
TCMT 16T304	16,5	9,52	4,40	3,97	0,40	10 pcs. 102

17529

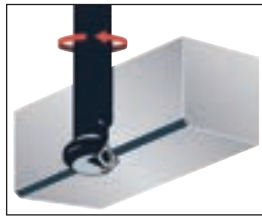
Angled cutters 45°



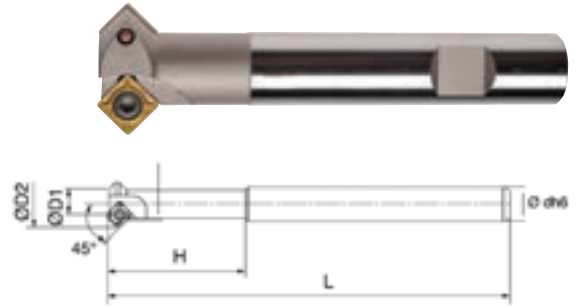
ATORN®

Type
Angled cutters 45° with Weldon shank.
Use
For chamfer milling starting at Ø 4 mm.

Note:
Indexable inserts see cat. no. 18578 ff.



17529 (Z2+3)



45° ØD2 mm	ØD1 mm	L mm	H mm	Ød h6 mm	Z mm	Indexable inserts	17529	...
10,0	4	80	28	12	1	SCMT 0602		101
20,0	11	80	33	12	2	SCMT 0602		102
23,7	12	100	37	20	1	SCMT 09T3		103
28,8	16	100	31	16	2	SCMT 09T3		104
42,3	30	100	32	20	3	SCMT 09T3		105
23,7	12 L	200	37	20	1	SCMT 09T3		106
28,8	16 L	200	32	16	2	SCMT 09T3		107
42,3	30 L	200	32	20	3	SCMT 09T3		108

Spare parts				Clamping screws	Wrench
For indexable inserts size	Clamping screw	L mm	TORX® size IP	17528	51932
SCMT 0602	M 2,5 x 0,45	6,3	8		404
SCMT 09T3	M 4,0 x 0,7	8	15		407

17536 - 17857

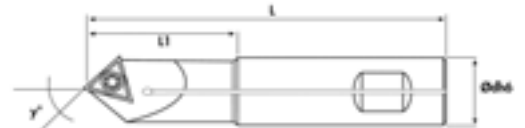
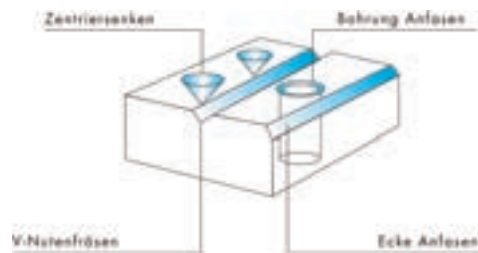
Milling cutter for bevelling and centring



ATORN®

Type
- Indexable insert holder
- Point angle 45°
- With coolant bore
- Without indexable inserts

Use
For NC spot drilling, milling, V-groove milling, engraving.



17536

d1 h6 mm	L mm	L1 mm	y°	Z	D min. mm	D max. mm	17536	...
20	115	40	45	1	0.2	20		101
20	150	60	45	1	0.2	20		102
20	200	80	45	1	0.2	20		103

Indexable Inserts and Spare Parts

Use
Carbide type
Coating

ISO designation
TCMX 16T3 ZR 10 pcs.



17857

P M K
H 42
TiN
17857

size	TORX® size	Clamping screw	Screwdriver
	T	17761	52529
M 4 x 8	15		406