

18012 - 18016 Graver (incision miller)

Design

With pre-sanded profile.

Applications

For machining tempered and chrome-nickel alloyed steels. For engraving letters and copy milling for contours, etc.

18012

Profile A

Quality

HSS-EW 9 Co 10 (10% cobalt).

18016

Profile D 60°

Quality

Cemented carbide K 10.

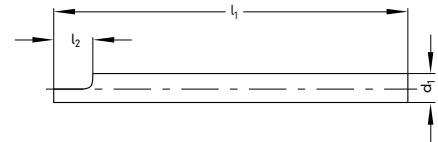
HSS-E

18012



HM K10

18016



Recommended cutting speeds in m/min.

Material	Graver		Reference values for the relief angle
	Steel	Cemented carbide K 10	
Cast iron, steel casting	50–70	60–100	-
Steel up to 900 N/mm ²	40–70	120–160	15°–25°
Steel over 900 N/mm ²	-	50–70	-
Brass, aluminium	200–250	200–400	35°
Plastics (Astralon, Plexiglas, Resopal, etc.)	200–300	200–600	35°
Light metal, copper, gold, silver	200–250	200–400	30°

d ₁ mm	l ₁ mm	l ₂ mm	HSS-E	
			18012	...
2.5	40	6	101	
4	60	10	102	
6	80	14	103	
8	90	16	104	
8	125	16	105	
10	125	18	106	
12	125	18	107	

d ₁ mm	l ₁ mm	l ₂ mm	HM-K10	
			18016	...
3	40	3	103	
4	40	4	104	
4	60	4	105	
6	70	6	107	
8	80	8	108	

18020 High-performance lathe blanks DIN 4964

HSS-E

Design

Round. Fully hardened, face-ground on all sides.

Ready for use immediately after the desired cutting-edge shape has been sanded.

Quality

HSS-1.3207

(EW 9 Co 10, cobalt 10%).

18020



Ø x l mm	HSS-E	
	18020	...
4 x 100	103	
5 x 100	105	
6 x 100	107	
8 x 80	110	
8 x 100	111	
8 x 160	113	
10 x 80	115	

Ø x l mm	HSS-E	
	18020	...
10 x 100	116	
10 x 125	117	
10 x 160	118	
10 x 200	119	
12 x 100	122	
12 x 160	124	
14 x 125	127	

Ø x l mm	HSS-E	
	18020	...
16 x 125	131	
16 x 160	132	
18 x 200	135	
20 x 160	138	
20 x 200	139	

Solid carbide engraver's milling cutters | Solid carbide deburring tools | Solid carbide keyway cutters

16575

Solid carbide engraver's milling cutter 60°



Design

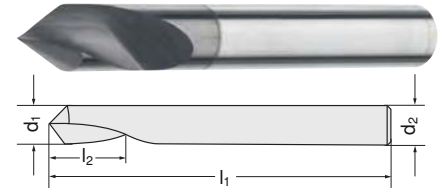
- 1 cutting edge

- With smooth straight shank in accordance with DIN 6535 HA

Applications

For engraving contours.

16575



d ₁ h6 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	16575	...
3.0	10	40	3		101
4.0	10	40	4		102
6.0	10	50	6		103

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 alloy	GG(G)	Plastic
220-240	170-200	140-160	120-140	100-120	80-100	70-80	60-70	50-60	-	-	-	-	60-70	60-70	-	120-140	200-240

16570 - 16571

Solid carbide 90° deburring tool



Design

- Short

- 4-6 cutting edges

- With reinforced straight shank with driving surfaces in accordance with DIN 6535 HB (with Weldon)

- Ø 4 mm with smooth straight shank in accordance with DIN 6535 HA

Note:

Tolerance 90° +/- 2°.

VHM

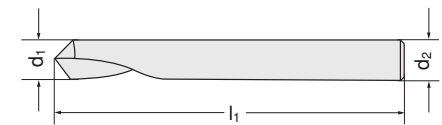


16570

VHM TiAlN



16571



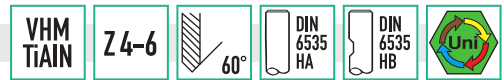
d ₁ h10 mm	l ₁ mm	d ₂ h6 mm	Solid carbide		Solid carbide/TiAlN		
			Z	16570	...	16571	...
4.0	51	4	4			101	101
6.0	64	6	4			102	102
8.0	64	8	5			103	103
10.0	70	10	6			104	104

d ₁ h10 mm	l ₁ mm	d ₂ h6 mm	Z	Solid carbide		Solid carbide/TiAlN	
				16570	...	16571	...
12.0	78	12	6			105	105
16.0	89	16	6			106	106
20.0	104	20	6			107	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 alloy	GG(G)	Plastic
16570																	
140-160	100-120	100-120	90-120	60-80	55-60	50-55	40-50	-	-	-	-	-	50-60	40-50	30-60	60-80	-
16571																	
280-350	200-250	150-180	120-140	110-120	100-110	70-80	60-70	-	-	-	-	-	80-120	60-90	30-60	80-120	-

16573

VHM-Entgrater 60°



Design

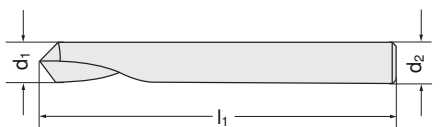
- Short

- 4-6 cutting edges

- With reinforced straight shank with driving surfaces in accordance with DIN 6535 HB (with Weldon)

- Ø 4 mm with smooth straight shank in accordance with DIN 6535 HA

16573



d ₁ h10 mm	l ₁ mm	d ₂ h6 mm	Z	Solid carbide/TiAlN	
				16573	...
4.0	51	4	4		101
6.0	64	6	4		102
8.0	64	8	5		103

d ₁ h10 mm	l ₁ mm	d ₂ h6 mm	Z	Solid carbide/TiAlN	
				16573	...
10.0	70	10	6		104
12.0	78	12	6		105
16.0	89	16	6		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 alloy	GG(G)	Plastic
280-350	200-250	150-180	120-140	110-120	100-110	70-80	60-70	-	-	-	-	-	80-120	60-90	30-60	80-120	-