

005F Frese a " T " a sgrassare

HSS
M42Co8



NRF
F Form

λ 25°
 γ 10°

ISO
3337

DIN
851AB



008F Frese a " T " a sgrassare

HSS
M42Co8



NRF
F Form

λ 25°
 γ 10°

ISO
3337

DIN
851B



Uncoated Alcrona

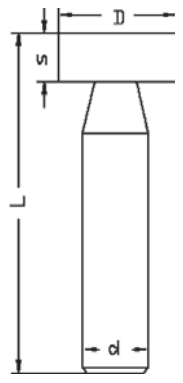
Uncoated Alcrona

D	S	L	d	d3	I2	005F	SIL	NIG	Z	008F	SIL	NIG	Z
k12			h6				€	€			€	€	
12,5	6	57	10	5	7	005F12	51,80	61,00	4				
16	8	62	10	7	10	005F16	57,10	69,90	5				
18	8	70	12	8	13	005F18	65,50	80,50	5				
21	9	74	12	10	16	005F21	73,10	94,20	5				
22	10	82	16	10	16	005F22	80,90	101,80	5				
25	11	82	16	12	17	005F25	92,30	117,90	5				
30	12	90	16	14	22	005F30	126,10	153,30	6				
32	14	90	16	15	22	005F32	133,20	164,00	6				
36	16	108	25	17	27	005F36	171,20	211,80	6				
40	18	108	25	19	27	005F40	187,90	234,40	8				
D	S	L	MK	d3	I2								
18	8	82	1	8	13					008F18	79,30	106,70	5
21	9	98	2	10	16					008F21	89,90	129,10	5
25	11	103	2	12	17					008F25	101,20	199,50	5
30	12	111	2	14	22					008F30	130,30	239,10	6
32	14	111	2	15	22					008F32	136,20	268,10	6
36	16	138	3	17	27					008F36	175,50	317,90	6
40	18	138	3	19	27					008F40	207,60	356,90	8
45	20	141	3	21	30					008F45	236,70	391,80	8
50	22	173	4	25	34					008F50	290,30	459,80	8
56	24	179	4	28	40					008F56	366,40	587,10	10
60	28	188	4	30	43					008F60	427,50	648,00	10



1W5

Frese Woodruff



- HSSE
-
-
- $\lambda 10^\circ$
 $\gamma 10^\circ$
-
- DIN 850B



-
-
-
-
-
-

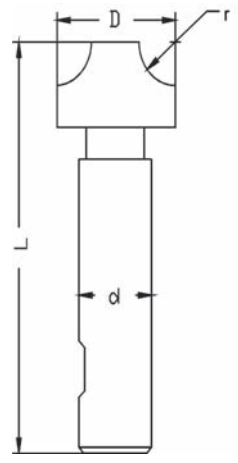
Uncoated

D	S	L	d	1W5	SIL	Z
h12	e8		h8		€	
10,5	2	50	6	1W5102	49,40	6
10,5	2,5	50	6	1W5125	49,40	6
10,5	3	50	6	1W5103	49,40	6
13,5	2	56	10	1W5132	57,10	8
13,5	3	56	10	1W5133	57,10	8
13,5	4	56	10	1W5134	57,10	8
16,5	3	56	10	1W5163	65,50	8
16,5	4	56	10	1W5164	65,50	8
16,5	5	56	10	1W5165	65,50	8
16,5	6	56	10	1W5166	65,50	8
19,5	3	56	10	1W5193	76,80	8
19,5	4	56	10	1W5194	76,80	8
19,5	5	56	10	1W5195	76,80	8
19,5	6	56	10	1W5196	76,80	8
22,5	4	56	10	1W5224	88,00	8
22,5	5	56	10	1W5225	88,00	8
22,5	6	56	10	1W5226	88,00	8
22,5	8	56	10	1W5228	88,00	8
25,5	5	56	10	1W5255	102,30	8
25,5	6	56	10	1W5256	102,30	8
25,5	7	56	10	1W5257	102,30	8
25,5	8	56	10	1W5258	102,30	8

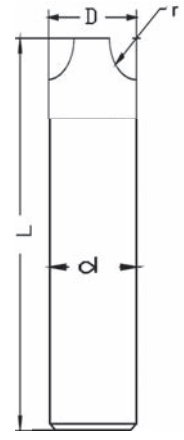


10G

Frese a quarto di cerchio



- HSSE
- Z4/6
- λ 6°
- γ 6°
- DIN 6518B



10G

Frese a quarto di cerchio

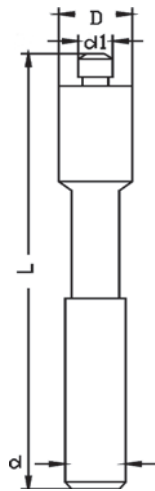
- MGCo
- Z2
- NS
- λ 0°
- Silmax Norm



Uncoated Alcrona

Uncoated Alcrona

				10G								10G	
r	D	L	d	SIL	NIG	r	D	L	d	HM0	HMG		
H11			h6	€	€	±0,02	±0,1		h6	€	€		
1	8	60	10	10G101	63,70	69,80	0,4	3	50	3	10G004	52,00	58,20
1,5	9	60	10	10G115	63,70	69,80	0,5	4	50	4	10G005	47,60	53,80
2	10	60	10	10G102	63,70	69,80	0,6	4	50	4	10G006	47,60	53,80
2,5	11	60	10	10G125	63,70	69,80	0,8	4	50	4	10G008	47,60	53,80
3	12	60	12	10G103	63,70	71,20	1,0	4	50	4	10G101	47,60	53,80
3,5	14	60	12	10G135	67,20	74,80	1,25	6	50	6	10G112	58,60	65,20
4	14	60	12	10G104	67,20	74,80	1,5	6	50	6	10G115	58,60	65,20
4,5	16	60	12	10G145	80,90	88,40	2,0	8	50	8	10G102	71,40	80,00
5	16	60	16	10G205	80,90	91,20	2,5	8	50	8	10G125	71,40	80,00
5,5	20	67	16	10G255	88,60	98,80							
6	20	67	16	10G206	88,60	98,80							
6,5	24	71	16	10G265	106,50	116,80							
7	24	71	16	10G207	106,50	116,80							
7,5	24	71	16	10G275	106,50	116,80							
8	24	71	16	10G208	106,50	116,80							
8,5	28	85	20	10G385	132,70	145,20							
9	28	85	20	10G309	132,70	145,20							
9,5	28	85	20	10G395	132,70	145,20							
10	28	85	20	10G310	132,70	145,20							
10,5	32	90	20	10G315	165,40	181,00							
11	32	90	20	10G311	165,40	181,00							
12	34	90	20	10G312	165,40	181,00							
14	44	100	20	10G414	242,10	257,60							
15	46	100	20	10G415	339,00	354,60							
16	48	100	20	10G516	339,00	354,60							
18	52	112	20	10G618	484,00	504,20							
20	58	112	20	10G620	564,00	584,20							



401 Sedi viti

HSSE



180°

ISO 4205

DIN 373



Uncoated

402 Sedi viti

HSSE



180°

ISO 4205

DIN 373



Uncoated

403 Sedi viti

HSSE



90°

ISO 4206

DIN 1866



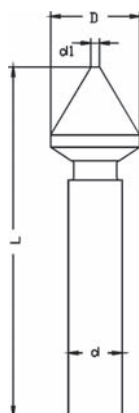
Uncoated

dv	d1	D	L	d	z	401	FSB	402	FSB	403	FSB
	e8	z9		h8			€		€		€
M3	3,2	6	71	6	4	401003	16,10				
M4	4,3	7.4	71	8	4	401004	16,10				
M5	5,3	9.4	80	10	4	401005	18,50				
M6	6,4	10.4	80	10	4	401006	22,10				
M8	8,4	13.5	100	12	4	401008	27,00				
M10	10,5	16.5	100	12	4	401010	34,00				
M12	13	20	100	12	4	401012	40,20				
dv	d1	D	L	Mk	z						
M10	10,5	16.5	145	2	4			402010	46,20		
M12	13	20	150	2	4			402012	58,20		
M14	15	23	160	2	4			402014	64,40		
M16	17	25	165	2	4			402016	75,30		
M18	19	28	175	2	4			402018	98,70		
M20	21	31	200	3	4			402020	108,50		
dv	d1	D	L	d	z						
M3	3,2	6.5	71	6	4					403003	17,30
M4	4,3	8.6	71	8	4					403004	17,30
M5	5,3	10.6	80	10	4					403005	24,50
M6	6,4	12.6	80	10	4					403006	26,20
M8	8,4	16.7	100	12	4					403008	37,90
M10	10,5	20.7	100	12	4					403010	40,50



361 Svasatori

362 Svasatori



HSSE



60°



DIN 333 C



HSSE



90°

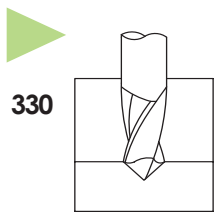
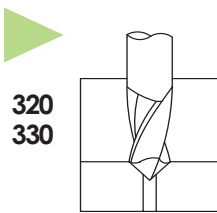
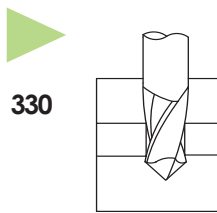
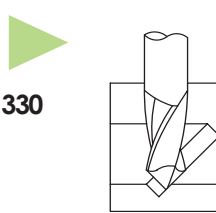
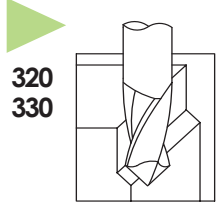
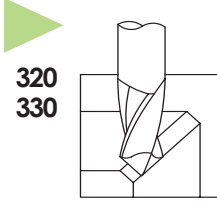
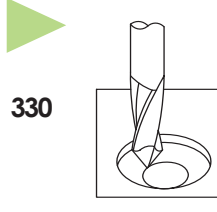
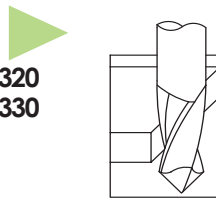


DIN 333 C



PSV

D	d1	d	L	361		Z	362		Z	
				Uncoated PSV	Alcrona NIG		Uncoated PSV	Alcrona NIG		
±0,05		h8		€	€		€	€		
6,3	1,5	5	47	361063	15,60	19,70			3	
8,3	2	6	52	361083	16,90	22,30			3	
10,4	2,5	6	53	361104	16,70	24,30			3	
12,4	3	8	60	361124	20,70	27,30			3	
16,5	4	10	65	361165	23,00	34,50			3	
20,5	4	10	69	361205	33,90	44,70			3	
25,0	5	10	75	361250	46,10	66,00			3	
D	d1	d	L							
4,3	1,3	4	40				362043	16,70	20,90	3
5,3	1,5	4	40				362053	16,70	20,90	3
6,3	2,0	5	45				362063	13,20	18,40	3
7,3	2,0	6	50				362073	12,50	19,60	3
8,3	2,5	6	50				362083	12,50	19,60	3
9,4	3,0	6	50				362094	13,00	20,60	3
10,4	3,0	6	50				362104	13,20	20,70	3
12,4	3,0	8	56				362124	15,70	23,10	3
16,5	4,0	10	60				362165	24,70	30,80	3
20,5	4,0	10	63				362205	29,50	37,90	3
25,0	4,0	10	67				362250	41,80	55,20	3
31,0	4,0	12	71				362310	65,50	93,60	3

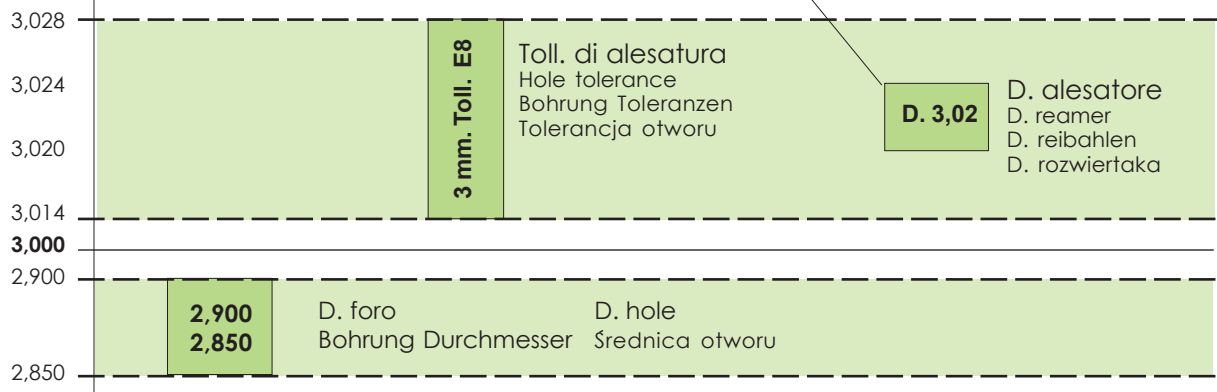
 <p>330</p> <p>Centratūra Centering Zentrierung Nawiercanie</p>	 <p>320 330</p> <p>Smusso Chamfering Fase Fazowani</p>	 <p>330</p> <p>Foratura Drilling Bohrung Wiercenie</p>	 <p>330</p> <p>Cava a V V-Grooving V-Nut Rowki w formie V</p>
 <p>320 330</p> <p>Smusso longitudinale Chamfer longitudinal Längsfase Fazowanie krawędzi</p>	 <p>320 330</p> <p>Smusso longitudinale Chamfer longitudinal Längsfase Fazowanie krawędzi</p>	 <p>330</p> <p>Foratura interpolata Interpolation drilling Interpolierte Bohrung Wiercenie interpolowane</p>	 <p>320 330</p> <p>Contornatura Contouring Umfangsfräsen Frezowanie walcowe</p>

Vc 55-100 m/min	D	fz	D	fz	D	fz
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">Steel ≤500 N/mm²</div> <div style="border: 1px solid black; padding: 2px;">Steel 500-800 N/mm²</div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> </div>	3-4 mm	0,050	3-4 mm	0,050	3-4 mm	0,008
	5-6 mm	0,080	5-6 mm	0,080	5-6 mm	0,014
	8-10 mm	0,140	8-10 mm	0,140	8-10 mm	0,025
	12 mm	0,200	12 mm	0,190	12 mm	0,040
Vc 40-60 m/min	D	fz	D	fz	D	fz
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">Steel 780-980 N/mm²</div> <div style="border: 1px solid black; padding: 2px;">Steel 1020-1270 N/mm²</div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> </div>	3-4 mm	0,045	3-4 mm	0,004	3-4 mm	0,008
	5-6 mm	0,070	5-6 mm	0,006	5-6 mm	0,013
	8-10 mm	0,120	8-10 mm	0,012	8-10 mm	0,025
	12 mm	0,180	12 mm	0,016	12 mm	0,040
Vc 30-40 m/min	D	fz	D	fz	D	fz
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">Inox 12% Cr</div> <div style="border: 1px solid black; padding: 2px;">Inconel</div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> </div>	3-4 mm	0,040	3-4 mm	0,003	3-4 mm	0,008
	5-6 mm	0,060	5-6 mm	0,005	5-6 mm	0,013
	8-10 mm	0,110	8-10 mm	0,010	8-10 mm	0,025
	12 mm	0,160	12 mm	0,013	12 mm	0,035
Vc 70-160 m/min	D	fz	D	fz	D	fz
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">Copper & alloys</div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> </div>	3-4 mm	0,100	3-4 mm	0,008	3-4 mm	0,010
	5-6 mm	0,150	5-6 mm	0,010	5-6 mm	0,015
	8-10 mm	0,250	8-10 mm	0,017	8-10 mm	0,030
	12 mm	0,300	12 mm	0,020	12 mm	0,045
Vc 210 m/min	D	fz	D	fz	D	fz
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">Alu & alloys</div> <div style="border: 1px solid black; padding: 2px;">Plastics</div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> </div>	3-4 mm	0,050	3-4 mm	0,008	3-4 mm	0,008
	5-6 mm	0,090	5-6 mm	0,013	5-6 mm	0,013
	8-10 mm	0,160	8-10 mm	0,023	8-10 mm	0,030
	12 mm	0,200	12 mm	0,030	12 mm	0,045

SCelta DELL'ALEsATORE Reamer choice, Reibahlen Auswahl, Wybór rozwiertaka

Toll.	D. 2 mm	D. 3 mm	D. 4 mm	D. 5 mm	D. 6 mm	D. 8 mm	D. 10 mm	D. 12 mm
D10	2,04	3,04	4,05	5,06	6,06	8,07	10,08	12,10
E8	2,02	3,02	4,03	5,03	6,03	8,03	10,03	12,04
E9	2,03	3,03	4,04	5,04	6,04	8,05	10,05	12,06
F7	2,01	3,01	4,01	5,01	6,01	8,02	10,02	12,02
F8	2,01	3,01	4,02	5,02	6,02	8,02	10,02	12,03
G7	-	-	-	-	-	8,01	10,01	12,01
H6	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00
H7	-	-	-	-	-	-	-	-
H8	-	-	4,01	5,01	6,01	8,01	10,01	12,01
H9	2,01	3,01	4,02	5,02	6,02	8,02	10,02	12,03
M7	1,99	2,99	3,99	4,99	5,99	7,99	9,99	11,99
N7	1,99	2,99	3,99	4,99	5,99	7,98	9,98	11,98
P7	1,99	2,99	3,98	4,98	5,98	7,98	9,98	11,97
R7	1,98	2,98	3,98	4,98	5,98	7,98	9,98	11,97

Example



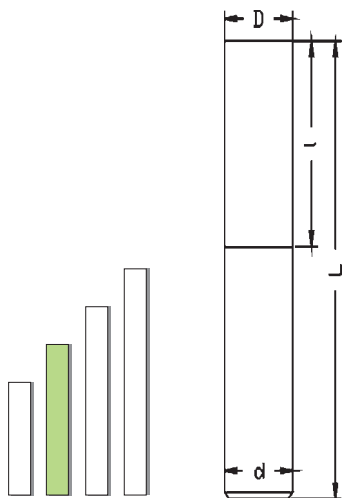
Suggerimenti per lavorare,

Suggested for machining, Empfehlungen für die Bearbeitung, Zalecenia do obróbki

VC m/min	25-40	20-25	12-18	10-15	7-12	6-10	25-30	40-60	35-40	
	Steel < 500 N/mm ²	Steel 500-800 N/mm ²	Steel 780-980 N/mm ²	Steel 1020-1270 N/mm ²	Inox 12% Cr	Inconel	Copper & alloys	Alu & alloys	Brass	
f/giro	D. 2 mm	0,15	0,10	0,08	0,08	0,07	0,07	0,12	0,15	0,20
	D. 6 mm	0,15	0,12	0,10	0,09	0,08	0,10	0,18	0,18	0,22
	D. 10 mm	0,25	0,18	0,15	0,14	0,12	0,12	0,20	0,25	0,30
	D. 16 mm	0,25	0,18	0,20	0,18	0,15	0,15	0,25	0,30	0,35



503 Alesatori



MGCo

212-B



Uncoated Alcrona

D	d	l	L	503	HM0	HMG	Z
					€	€	
0,95-1,05	D	7	33	503...	64,70	69,60	4
1,06-1,55	D	10	40	503...	62,80	67,10	4
1,56-2,36	D	11	50	503...	60,40	64,70	4
2,37-3,44	D	15	57	503...	58,60	62,80	4
3,45-3,75	3,5	18	70	503...	58,60	62,80	6
3,76-4,02	4	19	75	503...	62,80	67,10	6
4,03-4,25	4	19	80	503...	62,80	67,10	6
4,26-4,52	4,5	21	80	503...	62,80	67,10	6
4,53-4,75	5	21	86	503...	62,80	67,10	6
4,76-5,02	5	23	86	503...	68,90	74,40	6
5,03-5,52	5,5	26	93	503...	74,40	83,00	6
5,53-6,00	6	26	93	503...	74,40	83,00	6
6,01-6,52	6	28	100	503...	74,40	83,00	6
6,53-6,70	6	28	100	503...	74,40	83,00	6
6,71-7,02	7	31	109	503...	106,20	115,20	6
7,03-7,50	7	31	109	503...	106,20	115,20	6
7,51-8,02	8	33	117	503...	106,20	115,20	6
8,03-8,50	8	33	117	503...	106,20	115,20	6
8,51-9,02	9	36	125	503...	129,90	140,90	6
9,03-9,50	9	36	125	503...	129,90	140,90	6
9,51-10,02	10	38	133	503...	166,50	178,70	6
10,03-10,60	10	38	133	503...	166,50	178,70	6
10,61-11,47	10	41	142	503...	166,50	178,70	6
11,48-12,02	12	44	150	503...	175,70	188,60	6
12,03-12,47	12	44	151	503...	175,70	188,60	6

D. > 0,95 ≤ 3,00 Toll. D 0 + 0,003
 D. > 3,01 ≤ 6,00 Toll. D 0 + 0,004
 D. > 6,01 ≤ 12,47 Toll. D 0 + 0,005

ALR



351 Punte a centrare

HSSE

Form A

60°

DIN 333A



351 Punte a centrare

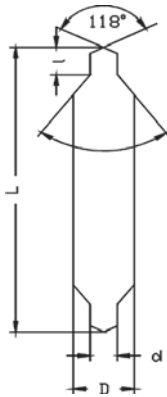
MGCo

Form A

λ 0°

60°

DIN 333A



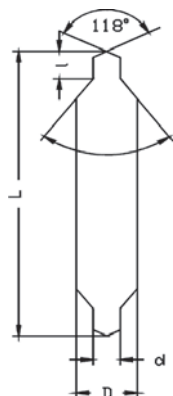
D	d	L	l	351	Uncoated		Alcrona	
					PCC	€	NIG	€
h8	k12				€	€		
3,15	1	31	1,3-1,6	351100	5,90	9,90		
3,15	1,25	31	1,6-1,9	351125	5,90	9,90		
4	1,6	35	2,0-2,4	351160	5,90	9,90		
5	2	40	2,5-2,9	351200	6,60	11,30		
6,3	2,5	45	3,1-3,6	351250	7,20	12,60		
8	3,15	50	3,9-4,4	351315	8,30	15,40		
10	4	55	5,0-5,6	351400	10,70	17,80		
12,5	5	63	6,3-6,9	351500	17,90	26,60		
16	6,3	71	8,0-8,6	351630	25,90	42,70		

PCC



353

Punte a centrare con paracentro



- HSSE
- Form B
- 120° / 60°
- DIN 333B



350

Punte a centrare

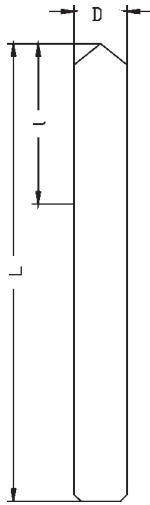
- HSSE
- Form A
- 60°



D	d	L	l	k	353	Uncoated	Alcrona	350	Uncoated	Alcrona
						PCC	NIG		PCC	NIG
h8	k12					€	€		€	€
5	1,50	40	2,0-2,4	3,00	353150	11,30	15,40			
6	2,00	45	2,5-2,9	4,00	353200	12,70	16,80			
8	2,50	50	3,1-3,6	5,50	353250	14,70	20,20			
10	3,00	55	3,9-4,4	7,00	353300	17,70	24,60			
10	4,00	55	5,0-5,6	8,00	353400	17,70	25,00			
12	5,00	63	6,3-6,9	9,00	353500	24,90	33,30			
18	6,00	77	8,0-8,6	12,00	353600	46,80	59,80			

Serie Lunga, Long, Lang, Dlunga

D	d	L	l							
h8	k12									
4	1	100	1,3-1,6					350100	20,60	29,00
5	1,5	100	2,0-2,4					350150	20,30	29,00
6	2	100	2,5-2,9					350200	20,30	29,50
8	2,5	100	3,1-3,6					350250	20,30	32,00
8	3	100	3,9-4,4					350300	20,30	32,00
10	4	100	5,0-5,6					350400	20,30	34,90



357 Punte a centrare

- HSSE
- NC
- ISO 10898
- λ 20°
- 90°



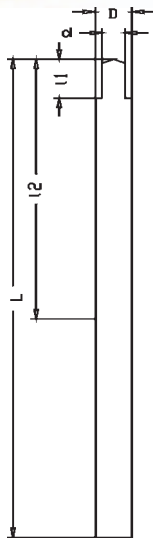
357 Punte a centrare

- MG Co10
- NC
- Silmax Norm
- λ 20°
- 90°



				Uncoated		Alcrona					
				357				357			
D	L	I		PCC	NIG	HMO	HMG				
h7				€	€	€	€				
3	50	10		357003	13,00	15,40					
4	52	12		357004	13,00	16,60					
5	60	15		357005	15,00	18,40					
6	66	20		357006	15,00	19,00					
8	79	25		357008	19,60	25,50					
10	89	25		357010	21,50	30,90					
12	102	30		357012	25,00	34,40					
14	115	35		357014	35,60	47,30					
16	115	35		357016	37,30	48,00					
20	131	40		357020	66,00	83,50					
D	d	L	I								
h6	h6										
3	3	45	10			357003	33,00	36,60			
4	4	50	12			357004	34,80	39,00			
5	5	50	15			357005	37,30	41,50			
6	6	50	18			357006	39,70	43,90			
8	8	64	23			357008	51,20	57,30			
10	10	67	24			357010	72,60	82,40			
12	12	74	24			357012	104,80	113,40			
16	16	92	32			357160	176,00	190,00			

PCC



301 Punte a gradino

HSS



DIN 8376



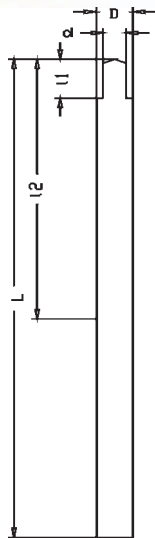
180°



Uncoated

File	d	D	l1	l2	L	301	UTP								
D	h9	h8					€								
M3	3,4	6,0	9	57	93	301003	19,10								
M3	3,2	5,9	6	52	88	301031	19,10								
M3	3,2	5,9	11	57	93	301032	19,10								
M4	4,5	8,0	11	75	117	301004	24,40								
M4	4,3	7,4	6	56	98	301041	24,40								
M4	4,3	7,4	13	63	105	301042	24,40								
M5	5,5	10,0	13	87	133	301005	25,60								
M5	5,3	9,4	6	65	110	301051	25,60								
M5	5,3	9,4	16	75	120	301052	25,60								
M6	6,6	11,0	15	94	142	301006	28,00								
M6	6,4	10,4	10	83	133	301061	28,00								
M6	6,4	10,4	20	83	133	301062	28,00								
*M8	9,0	15,0	19	114	169	301008	45,90								
M8	8,4	13,5	13	100	160	301081	45,90								
M8	8,4	13,5	23	100	160	301082	45,90								
*M10	11,0	18,0	23	130	191	301010	73,10								
*M10	10,5	16,5	15	105	176	301101	73,10								
*M10	10,5	16,5	25	115	186	301102	73,10								
* gambo D. 13,5															

UTP



302 Punte a gradino

HSS



DIN 8377



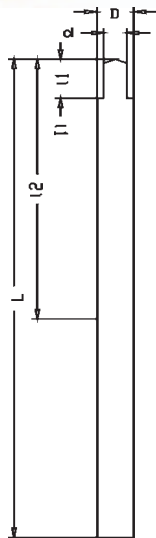
180°



Uncoated

File	d	D	l1	l2	L	Mk	302	UTP							
D	h9	h8						€							
M5	5,5	10	13	87	168	1	302005	41,50							
M5	5,3	9,4	6	77	157	1	302051	41,50							
M5	5,3	9,4	16	87	168	1	302052	41,50							
M6	6,6	11	15	94	175	1	302006	42,70							
M6	6,4	10,4	10	84	165	1	302061	42,70							
M6	6,4	10,4	20	94	175	1	302062	42,70							
M8	9,0	15	19	114	212	2	302008	73,00							
M8	9,0	15	10	105	203	2	302080	73,00							
M8	8,4	13,5	13	104	189	1	302081	73,00							
M8	8,4	13,5	23	114	199	1	302082	73,00							
M10	11,0	18	23	130	228	2	302010	76,00							
M10	11,0	18	13	120	218	2	302100	76,00							
M10	10,5	16,5	15	120	218	2	302101	76,00							
M10	10,5	16,5	25	130	228	2	302102	76,00							
M12	14,0	20	27	140	238	2	302012	88,00							
M12	14,0	20	17	130	228	2	302120	88,00							
M12	13,0	19	17	130	228	2	302121	88,00							
M12	13,0	19	27	140	238	2	302122	88,00							
M14	16,0	24	31	160	281	3	302014	113,30							
M14	16,0	24	21	150	271	3	302140	113,30							
M14	15,0	23	21	150	271	3	302141	113,30							
M14	15,0	23	31	160	281	3	302142	113,30							
M16	18,0	26	35	165	286	3	302016	137,60							
M16	18,0	26	25	155	276	3	302160	146,80							
M16	17,0	25	25	155	276	3	302161	131,90							
M16	17,0	25	35	165	286	3	302162	131,90							
M18	20,0	30	39	175	296	3	302018	178,30							
M18	20,0	30	29	165	286	3	302180	190,80							
M18	19,0	28	29	165	286	3	302181	178,30							
M18	19,0	28	39	175	296	3	302182	178,30							
M20	22,0	33	43	185	334	4	302020	231,50							
M20	22,0	33	33	175	324	4	302200	231,50							
M20	21,0	31	33	175	300	3	302201	205,20							
M20	21,0	31	43	185	310	3	302202	205,20							

UTP



311 Punte a gradino

- HSS
- DIN 8374
- 90°



312 Punte a gradino

- HSS
- DIN 8375
- 90°

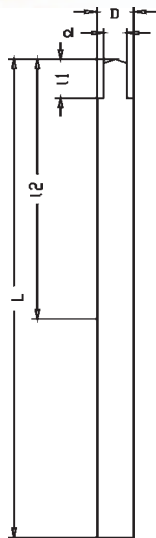


Uncoated

Uncoated

						311	UTP			312	UTP		
Fil	d	D	I1	I2	L								
D	h9	h8				311	UTP	€		312	UTP	€	
M3	3,4	6,6	9	63	101	311003	20,10						
M3	3,2	6,3	11	52	90	311032	19,00						
M4	4,5	9	11	81	125	311004	25,60						
M4	4,3	8,3	13	63	105	311042	24,40						
M5	5,5	11	13	94	142	311005	30,10						
M5	5,3	10,4	16	83	133	311052	29,00						
M6	6,6	13	15	101	151	311006	45,70						
M6	6,4	12,4	20	90	142	311062	43,70						
*M8	9	17,2	19	130	191	311008	73,10						
*M8	8,4	16,5	23	115	186	311082	71,20						
* gambo D. 13,5													
Fil	d	D	I1	I2	L	Mk							
D	h9	h8											
M5	5,5	11	13	94	175	1			312005	55,10			
M5	5,3	10,4	16	84	168	1			312052	55,10			
M6	6,6	13	15	101	182	1			312006	60,10			
M6	6,4	12,4	20	95	182	1			312062	60,10			
M8	9	17,2	19	130	228	2			312008	82,40			
M8	8,4	16,5	23	120	223	2			312082	82,40			
M10	11	21,5	23	150	248	2			312010	104,00			
M10	10,5	20,5	25	135	240	2			312102	104,00			
M12	13	25	28	155	281	3			312122	122,00			
M14	15	28	31	165	291	3			312142	165,00			

UTP



321

Punte a gradino per fori da filettare

- HSS
- DIN 8378
- 90°



322

Punte a gradino per fori da filettare

- HSS
- DIN 8379
- 90°



Uncoated

Uncoated

File	d	D	I1	I2	L	Mk	321	UTP			322	UTP		
D	h9	h8						€				€		
M3	2,5	3,4	9,0	39	70		321003	17,30						
M4	3,3	4,5	11,0	47	80		321004	17,30						
M5	4,2	5,5	14,0	57	93		321005	17,80						
M6	5	6,6	16,0	63	101		321006	19,10						
M8	6,8	9	21,0	81	125		321008	24,50						
M8	6,8	9	21,0	81	162	1					322008	41,50		
M10	8,5	11	25,0	94	142		321010	29,20			322010	52,30		
M10	8,5	11	25,0	94	175	1					322012	73,00		
M12	10,2	14	30,0	108	189	1								
*M12	10,2	14	30,0	108	160		321012	47,90						
M14	12	16	34,0	120	218	2					322014	76,00		
M16	14	18	38,0	130	228	2					322016	78,20		
M18	15,5	20	43,0	140	238	2					322018	101,00		
M20	17,5	22	47,0	150	248	2					322020	110,50		
* gambo D. 13,5														

UTP



400 LIME ROTATIVE

SCelta DELL'UTENSILE.

Tool choice, Werkzeugwahl, Wybór narzędzia

CUTS	DOUBLE CUT (0)	ALU CUT (A)	SINGLE CUT (S)	DIAMOND CUT (D)
Aluminium, Soft Alloys		●		
Bronze, Brass, Copper	●			
Carbon	●		●	●
Cast Iron	●		●	
Malleable Iron	●		●	
Magnesium Alloys	●	●	●	
Masonite				●
Plastics	●	●		
Hard Rubber		●		
Steel Carbon	●		●	
Steel Alloy ≤ 52 HRC	●		●	
Steel Alloy ≤ 58 HRC	●			●
Steel, 12% Cr	●		●	
Steel Stainless	●		●	●
Steel Weldments	●		●	
Titanium Alloys	●		●	●
Zinc Alloys			●	

Suggerimenti per lavorare,

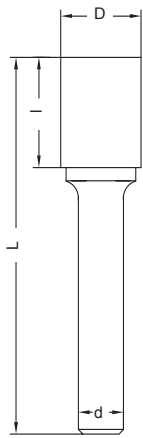
Suggested for machining, Empfehlungen für die Bearbeitung, Zalecenia do obróbki

<div style="border: 1px solid black; padding: 5px; display: inline-block;">Steel ≤ 980 N/mm²</div> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	D	n	n
		min	max
	6 mm	45.000	60.000
	8 mm	35.000	50.000
	10 mm	30.000	40.000
	12 mm	22.000	30.000
<div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #d9ead3;">Steel 1020-1270 N/mm²</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #f1c40f;">Copper & alloys</div> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	D	n	n
		min	max
	6 mm	30.000	60.000
	8 mm	24.000	50.000
	10 mm	19.000	40.000
	12 mm	15.000	30.000
<div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #d9ead3;">Inox 12% Cr</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #d9ead3;">Hardened ≤ 52 HRC</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #d9ead3;">Hardened ≤ 58 HRC</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #f1c40f;">Ceramics</div> <input type="checkbox"/>	D	n	n
		min	max
	6 mm	15.000	45.000
	8 mm	12.000	35.000
	10 mm	10.000	30.000
	12 mm	7.000	22.000
<div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #f1c40f;">Alu & alloys</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #f1c40f;">Plastics</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #f1c40f;">Zn Zink</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #f1c40f;">Glass Fibre</div> <input type="checkbox"/>	D	n	n
		min	max
	6 mm	22.000	70.000
	8 mm	18.000	60.000
	10 mm	15.000	50.000
	12 mm	11.000	38.000
	16 mm	9.000	30.000

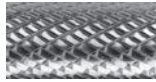


401 Lime cilindriche

405 Lime cilindriche testa affilata



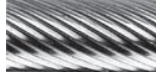
Double Cut (0)



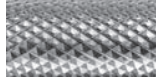
Alu Cut (A)



Single Cut (S)



Diamond (D)



MG
Co10

ZYA

DIN
8033



MG
Co10

ZYA(S)

DIN
8033



Uncoated Alcrona

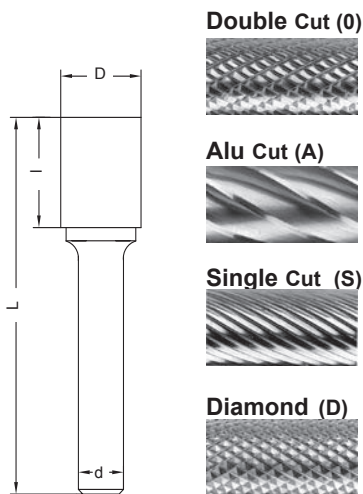
Uncoated Alcrona

D	d	L	l	401		405			
				Uncoated HMO	Alcrona HMG	Uncoated HMO	Alcrona HMG		
±0,1	h7			€	€	€	€		
Double Cut (0)									
6	6	50	18	4016060	19,00	23,30	4056060	20,60	25,10
8	6	63	18	4016080	23,10	28,90	4056080	25,40	31,20
10	6	65	20	4016100	26,10	33,20	4056100	28,90	36,00
12	6	70	25	4016120	33,80	42,20	4056120	37,10	45,50
16	8	70	25	4018160	49,30	60,70	4058160	54,40	65,80
Alu Cut (A)									
6				401606A	19,00	23,30	405606A	20,60	25,10
8				401608A	23,10	28,90	405608A	25,40	31,20
10				401610A	26,10	33,20	405610A	28,90	36,00
12				401612A	33,80	42,20	405612A	37,10	45,50
16				401816A	49,30	60,70	405816A	54,40	65,80
Single Cut (S)									
6				401606S	17,30	21,60	405606S	19,00	23,30
8				401608S	20,90	26,60	405608S	23,10	28,90
10				401610S	23,70	31,00	405610S	26,10	33,20
12				401612S	30,60	39,10	405612S	33,80	42,20
16				401816S	44,80	56,10	405816S	49,30	60,70
Diamond Cut (D)									
6				401606D	22,40	26,70	405606D	24,10	28,40
8				401608D	25,30	31,10	405608D	27,60	33,40
10				401610D	28,30	35,50	405610D	31,20	38,40
12				401612D	36,90	45,30	405612D	40,50	49,00
16				401816D	53,90	65,20	405816D	59,00	70,40



410 Lime cilindriche testa sferica

420 Lime coniche 14° testa sferica



MG
Co10

WRC

DIN
8033



MG
Co10

KEL

DIN
8033

14°
K

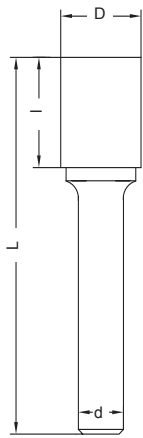


D	d	L	I	K	410		420	
					Uncoated HMO	Alcrona HMG	Uncoated HMO	Alcrona HMG
±0,1	h7				€	€	€	€
Double Cut (0)								
6	6	50	18		4106060	21,30	25,60	
8	6	63	18		4106080	26,10	31,90	
10	6	65	20		4106100	30,00	37,10	
12	6	70	25		4106120	40,50	49,00	
16	8	70	25		4108160	56,20	67,60	
6	6	50	20	1,0				4206060 21,30 25,60
8	6	69	24	1,3				4206080 28,90 34,60
10	6	73	28	2,0				4206100 35,50 42,80
12	6	75	30	2,6				4206120 42,40 50,90
16	8	83	38	4,0				4208160 67,10 78,50
Alu Cut (A)								
6					410606A	21,30	25,60	420606A 21,30 25,60
8					410608A	26,10	31,90	420608A 28,90 34,60
10					410610A	30,00	37,10	420610A 35,50 42,80
12					410612A	40,50	49,00	420612A 42,40 50,90
16					410816A	56,20	67,60	420816A 67,10 78,50
Single Cut (S)								
6					410606S	19,50	23,90	420606S 19,50 23,90
8					410608S	23,60	29,40	420608S 26,20 32,00
10					410610S	27,20	34,30	420610S 32,30 39,50
12					410612S	37,00	45,40	420612S 38,70 47,10
16					410816S	51,00	62,30	420816S 60,80 72,10
Diamond Cut (D)								
6					410606D	23,00	27,30	420606D 25,30 29,60
8					410608D	28,30	34,10	420608D 31,50 29,60
10					410610D	32,80	39,90	420610D 38,80 46,00
12					410612D	44,20	52,70	420612D 46,40 54,90
16					410816D	61,30	72,70	420816D 72,80 84,10

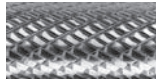


430 Lime a ogiva testa sferica

440 Lime a ogiva



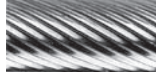
Double Cut (0)



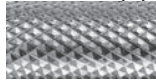
Alu Cut (A)



Single Cut (S)



Diamond (D)



MG
Co10

RBF

DIN
8033



MG
Co10

SPG

DIN
8033

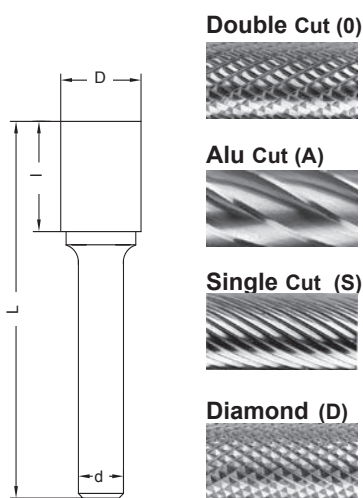


D	d	L	l	430		440			
				Uncoated	Alcrona	Uncoated	Alcrona		
±0,1	h7			HMO	HMG	HMO	HMG		
				€	€	€	€		
Double Cut (0)									
6	6	50	18	4306060	24,60	29,10	4406060	23,50	27,90
8	6	61	16	4306080	25,30	31,10	4406080	23,20	29,00
10	6	65	20	4306100	29,30	36,40	4406100	28,90	36,00
12	6	70	25	4306120	35,30	43,80	4406120	34,00	42,40
16	8	73	28	4308160	52,80	64,10	4408160	51,70	62,90
Alu Cut (A)									
6				430606A	24,60	29,10	440606A	23,50	27,90
8				430608A	25,30	31,10	440608A	23,20	29,00
10				430610A	29,30	36,40	440610A	28,90	36,00
12				430612A	35,30	43,80	440612A	34,00	42,40
16				430816A	52,80	64,10	440816A	51,70	62,90
Single Cut (S)									
6				430606S	22,40	26,70	440606S	21,90	26,20
8				430608S	23,00	28,70	440608S	21,00	26,90
10				430610S	26,60	33,80	440610S	26,20	33,30
12				430612S	32,10	40,70	440612S	30,90	39,30
16				430816S	47,60	58,90	440816S	47,00	58,30
Diamond Cut (D)									
6				430606D	27,00	31,30	440606D	25,90	30,20
8				430608D	27,50	33,30	440608D	25,30	31,10
10				430610D	31,90	39,10	440610D	31,30	38,50
12				430612D	38,50	47,00	440612D	37,00	45,40
16				430816D	57,30	68,70	440816D	56,20	67,60



450 Lime coniche

460 Lime ovali



MG
Co10

SKM

DIN
8033

α



MG
Co10

TRE

DIN
8033

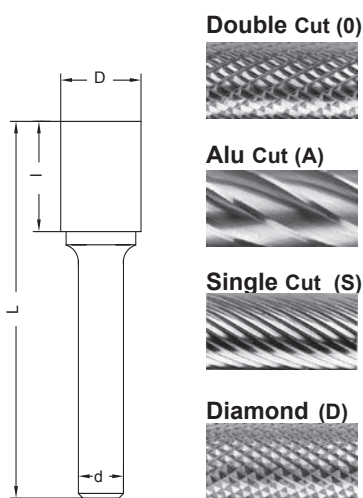


D	d	L	l	α	450		460	
					Uncoated HMO	Alcrona HMG	Uncoated HMO	Alcrona HMG
$\pm 0,1$	h7				€	€	€	€
Double Cut (0)								
6	6	50	18	16	4506060	20,10	24,40	
8	6	60	15	26	4506080	18,10	23,90	
10	6	63	18	28	4506100	21,40	28,50	
12	6	65	20	30	4506120	29,20	37,60	
16	8	67	22	38	4508160	43,50	54,90	
6	6	50	9					4606060 22,40 26,70
8	6	59	14					4606080 24,00 29,80
10	6	61	16					4606100 27,40 34,60
12	6	66	21					4606120 34,30 42,80
16	8	70	25					4608160 51,70 62,90
Alu Cut (A)								
6					450606A	20,10	24,40	460606A 22,40 26,70
8					450608A	18,10	23,90	460608A 24,00 29,80
10					450610A	21,40	28,50	460610A 27,40 34,60
12					450612A	29,20	37,60	460612A 34,30 42,80
16					450816A	43,50	54,90	460816A 51,70 62,90
Single Cut (S)								
6					450606S	18,40	22,70	460606S 20,60 25,10
8					450608S	16,30	22,10	460608S 21,90 27,60
10					450610S	19,50	26,60	460610S 25,00 32,10
12					450612S	26,50	35,00	460612S 31,20 39,70
16					450816S	39,50	50,90	460816S 47,00 58,30
Diamond Cut (D)								
6					450606D	21,90	26,20	460606D 24,60 29,10
8					450608D	19,50	25,30	460608D 26,20 32,00
10					450610D	23,30	30,40	460610D 30,00 37,10
12					450612D	31,80	40,30	460612D 37,40 45,90
16					450816D	47,00	58,30	460816D 56,80 68,10



470 Lime coniche 90°

475 Lime coniche 60°



MG
Co10

KSK

DIN
8033

90°



MG
Co10

KSJ

DIN
8033

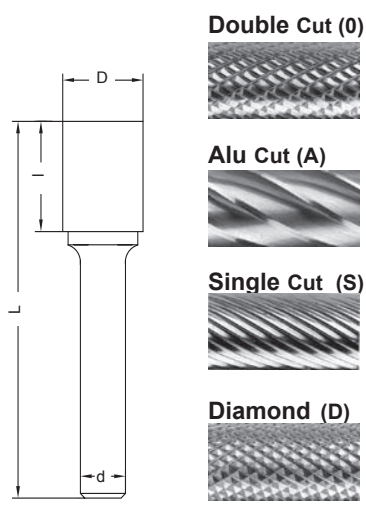
60°



D	d	L	l	470		475	
				Uncoated HMO	Alcrona HMG	Uncoated HMO	Alcrona HMG
±0,1	h7			€	€	€	€
Double Cut (0)							
6	6	52	3	4706060	18,30	22,60	
10	6	54	5	4706100	19,40	26,50	
16	6	59	8	4706160	27,10	38,40	
6	6	52	5				4756060 19,20 23,50
10	6	57	8,5				4756100 21,40 28,50
16	6	64	13,8				4756160 31,10 42,40
Alu Cut (A)							
6				470606A	18,30	22,60	475606A 19,20 23,50
10				470610A	19,40	26,50	475610A 21,40 28,50
16				470616A	27,10	38,40	475616A 31,10 42,40
Single Cut (S)							
6				470606S	16,50	20,90	475606S 17,40 21,80
10				470610S	17,80	25,00	475610S 19,40 26,50
16				470616S	24,60	36,00	475616S 28,30 39,70
Diamond Cut (D)							
6				470606D	19,10	23,40	475606D 20,10 24,40
10				470610D	20,40	27,60	475610D 22,50 29,60
16				470616D	28,30	39,70	475616D 32,80 44,10



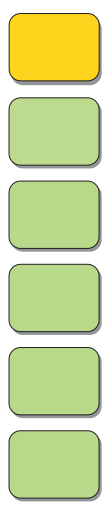
480 Lime sferiche



**MG
Co10**

KUD

**DIN
8033**



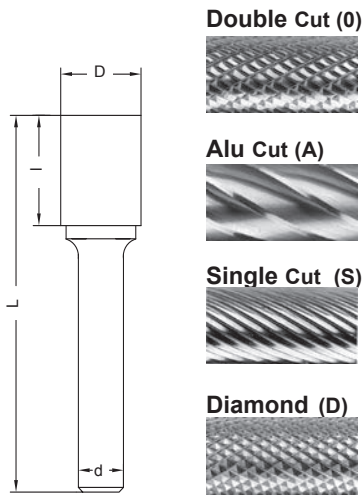
D	d	L	l	480	Uncoated	Alcrona						
					HMO	HMG						
±0,1	h7				€	€						
Double Cut (0)												
6	6	50	5	4806060	21,90	26,20						
8	6	52	7	4806080	19,70	25,50						
10	6	54	9	4806100	23,20	30,30						
12	6	56	11	4806120	28,00	36,50						
16	8	60	15	4808160	41,20	52,60						
Alu Cut (A)												
6				480606A	21,90	26,20						
8				480608A	19,70	25,50						
10				480610A	23,20	30,30						
12				480612A	28,00	36,50						
16				480816A	41,20	52,60						
Single Cut (S)												
6				480606S	20,10	24,40						
8				480608S	18,10	23,90						
10				480610S	21,20	28,30						
12				480612S	25,50	34,00						
16				480816S	37,40	48,80						
Diamond Cut (D)												
6				480606D	24,10	28,40						
8				480608D	21,50	27,30						
10				480610D	25,40	32,50						
12				480612D	30,50	39,00						
16				480816D	43,20	54,60						

LIME



490 Lime coniche

495 Lime coniche testa affilata



MG
Co10

WKN



DIN
8033



MG
Co10

WKN
(S)



DIN
8033



Uncoated Alcrona

Uncoated Alcrona

D	d	L	l	α	490		495			
					Uncoated HMO	Alcrona HMG	Uncoated HMO	Alcrona HMG		
± 0,1	h7				€	€	€	€		
Double Cut (0)										
6	6	50	6	15	4906060	20,50	25,00	4956060	22,60	27,00
8	6	53	8	15	4906080	19,10	24,90	4956080	20,90	26,60
10	6	55	10	15	4906100	23,50	30,80	4956100	25,90	33,00
12	6	57	12	15	4906120	27,50	36,00	4956120	30,30	38,80
Alu Cut (A)										
6					490606A	20,50	25,00	495606A	22,60	27,00
8					490608A	19,10	24,90	495608A	20,90	26,60
10					490610A	23,50	30,80	495610A	25,90	34,00
12					490612A	27,50	36,00	495612A	30,30	38,80
Single Cut (S)										
6					490606S	18,70	23,10	495606S	20,50	25,00
8					490608S	17,30	23,10	495608S	19,10	24,90
10					490610S	21,50	28,60	495610S	23,50	30,80
12					490612S	25,10	33,50	495612S	27,50	36,00
Diamond Cut (D)										
6					490606D	21,60	26,00	495606D	23,70	28,10
8					490608D	20,10	25,90	495608D	22,00	27,70
10					490610D	24,60	31,90	495610D	27,20	34,30
12					490612D	29,00	37,40	495612D	31,80	40,30



HMM Barrette



MG
Co10



HMM Barrette



MG
Co10



D		L			HMM	D		L			HMM
h7					€	h7					€
3	50			050030	2,50	12	75			075120	25,80
3	100			100030	5,00	12	100			100120	34,40
3	160			160030	9,70	12	150			150120	51,60
4	50			050040	3,10	14	85			085140	39,00
4	100			100040	6,20	14	100			100140	46,00
4	160			160040	11,40	14	150			150140	68,90
5	50			050050	4,10	16	92			092160	52,80
5	100			100050	8,20	16	110			110160	63,10
5	160			160050	14,30	16	150			150160	86,00
6	57			057060	5,45	18	92			092180	64,30
6	100			100060	10,90	18	110			110180	76,90
6	160			160060	18,10	18	150			150180	104,80
7	60			060070	6,60	20	110			110200	96,70
7	100			100070	13,20	20	150			150200	131,80
7	160			160070	21,40						
8	63			063080	8,45						
8	100			100080	16,90						
8	160			160080	27,00						
9	67			067090	10,10						
9	100			100090	20,20						
9	160			160090	32,60						
10	72			072100	12,10						
10	100			100100	24,10						
10	160			160100	38,60						

