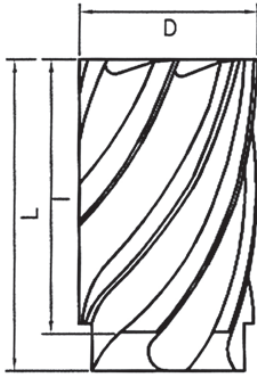




**092F** Frese ETS a sgrassare  
**081F**  
**091F**

**192** Frese ETS a finire  
**181**  
**191**



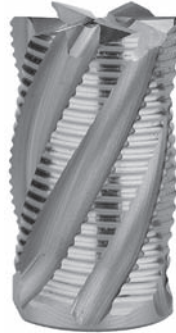
Silmax Norm

HSS  
M42Co8



NRF  
F Form

$\lambda$  30°  
 $\gamma$  10°



HSS  
M42Co8



NS

$\lambda$  30°  
 $\gamma$  12°



Alcrona

Alcrona

D	L	I	Size	Code	NIG	Z	Code	NIG	Z
				Toll.D k12	€		Toll.D k10	€	
<b>CORTA, Short, Kurz, Krótka</b>									
32	41	32	A	092F32	202,00	6	192032	177,30	6
40	46	38	B	092F40	248,10	6	192040	218,90	6
50	53	45	C	092F50	319,60	6	192050	285,90	6
63	61	53	C	092F63	517,90	6	192063	485,90	6
<b>NORMALE, Regular, Normal, Normalna</b>									
32	62	53	A	081F32	228,60	6	181032	192,80	6
40	71	63	B	081F40	260,40	6	181040	229,40	6
50	83	75	C	081F50	407,60	6	181050	326,20	6
63	98	90	C	081F63	607,20	6	181063	568,80	6
<b>LUNGA, Long, Lang, Długa</b>									
32	115	106	A	091F32	287,80	6	191032	274,80	6
40	133	125	B	091F40	395,80	6	191040	310,20	6
50	158	150	C	091F50	604,80	6	191050	530,10	6
63	188	180	C	091F63	836,50	6	191063	738,20	6

	MAX MQL AIR	PARAMETRI DI TAGLIO (Cutting data) Pag.140-158	Steel <800 N/mm <sup>2</sup>	Steel <1000 N/mm <sup>2</sup>	Steel <1300 N/mm <sup>2</sup>	12% Cr
NIG081F	●	●	Vc 67	Vc 61	Vc 46	Vc 29
NIG181	●	●	Vc 67	Vc 61	Vc 46	Vc 29



### 104 Mandrini ETS

Weldon

DIN 1835B



### 104 Mandrini ETS

CM-MK

DIN 228A



### 104 Mandrini ETS

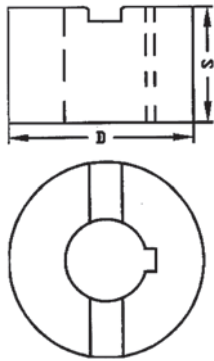
ISO-SK

DIN 69871



D	L	Size		104	HLD	104	HLD	104	HLD	
					€		€		€	
<b>Weldon</b>					104321	120,90				
32	71,0	A	104322		129,10					
32	84,0	B	104401		120,90					
40	84,0	B	104327		155,90					
50	94,0	C								
<b>MK</b>							104003	111,30		
3	93,0	A				104004	142,20			
4	117,0	B				104005	178,50			
5	150,0	C								
<b>SK</b>									104140	361,60
40	109,5	B						104150	411,60	
50	156,9	C								

ETS



ISO 2586  
DIN 1880  
DIN 841

## 080 Frese frontali a sgrossare semifinire

Semifinire  
Semifinishing  
Schrupp-Schlicht  
Półwykończeniowa

HSS  
M42Co8



NF2  
Sil F2

$\lambda$  30°  
 $\gamma$  10°



## 085 Frese frontali a sgrossare

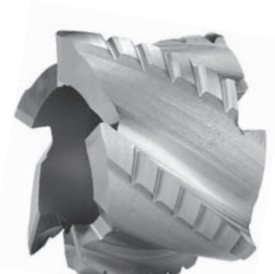
# ALU

HSS  
M42Co8



WF  
Alu Form

$\lambda$  38°  
 $\gamma$  17°



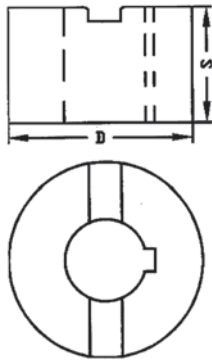
Uncoated Alcrona

Uncoated Alcrona

D	S	Foro	Din	080		Z	085		Z		
				SIL	NIG		SIL	NIG			
k12					€	€		€	€		
40	32	16	1880	080040	130,00	149,00	6	085040	154,00	172,80	5
50	36	22	1880	080050	163,00	187,90	6	085050	195,00	221,30	5
50	50	22	841	080505	203,90	239,10	6				
63	40	27	1880	080063	224,20	264,60	8	085063	266,50	306,60	5
80	45	27	1880	080080	361,60	436,10	10	085080	386,50	461,00	5
100	50	32	1880	080100	575,00	726,70	10	085100	544,10	696,00	6

SHELL

	MAX MQL AIR	PARAMETRI DI TAGLIO (Cutting data)	Steel <800 N/mm <sup>2</sup>	Steel <1000 N/mm <sup>2</sup>	Steel <1300 N/mm <sup>2</sup>	12% Cr	Alu & alloys < 6% Si
NIG080	●	●	Vc 67	Vc 61	Vc 46	Vc 29	--
NIG085	●	●	--	--	--	--	Vc 179



ISO 2586  
DIN 1880

## 080A Frese frontali a sgrossare in Powder Metal

HSS  
PMCoS



NRF  
F Form

$\lambda$  30°  
 $\gamma$  8°



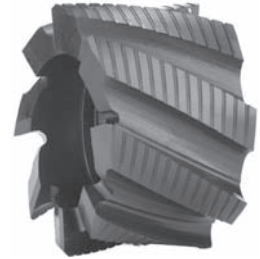
## 080S Frese frontali a sgrossare SILF2000

HSS  
PMCoS



HPC  
SIL F2000

$\lambda$  30°  
 $\gamma$  10°



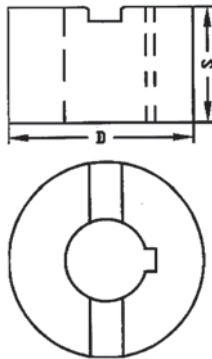
Uncoated Alcrona

Alcrona

D	S	Foro	Din	080A		Z	080S		Z	
				SIL	NIG		NIG	Z		
k12					€	€		€		
40	32	16	1880	08A040	167,70	187,00	6	08S040	197,10	6
50	36	22	1880	08A050	230,80	256,90	8	08S050	271,80	6
63	40	27	1880	08A063	338,30	378,70	8	08S063	400,50	8
80	45	27	1880	08A080	473,40	546,80	10	08S080	577,40	10
100	50	32	1880	08A100	726,10	843,90	10	08S100	896,60	10

SHELL

MAX MQL AIR	PARAMETRI DI TAGLIO (Cutting data)	Steel <800 N/mm <sup>2</sup>		Steel <1000 N/mm <sup>2</sup>	Steel <1300 N/mm <sup>2</sup>	12% Cr	Alu & alloys < 6% Si
		Vc 84	Vc 84	Vc 76	Vc 58	Vc 36	--
NIG080A	● ●	Vc 84	Vc 84	Vc 76	Vc 58	Vc 36	--
NIG080S	● ●	Vc 84	Vc 84	Vc 69	Vc 53	Vc 34	--



ISO 2586  
DIN 1880  
DIN 841

## 080B Frese frontali a sgrossare

## 080F Frese frontali a sgrossare

HSS  
M42Co8

NRB  
B Form

$\lambda 30^\circ$   
 $\gamma 12^\circ$



HSS  
M42Co8

NRF  
F Form

$\lambda 30^\circ$   
 $\gamma 12^\circ$



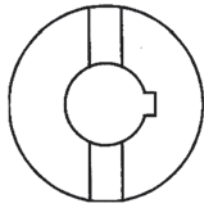
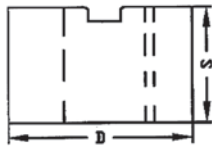
Uncoated Alcrona

Uncoated Alcrona

D	S	Foro	Din	080B		z	080F		z
				SIL	NIG		SIL	NIG	
k12				€	€		€	€	
40	32	16	1880	08B040	120,20 139,10	6	08F040	120,20 139,10	6
40	40	16	841				08F404	174,30 209,50	6
50	36	22	1880	08B050	163,20 189,70	6	08F050	158,20 184,70	6
50	50	22	841	08B505	203,90 239,10	6	08F505	203,90 239,10	6
60	60	27	841	08B606	287,30 343,20	8	08F606	287,30 343,20	8
63	40	27	1880	08B063	224,20 264,60	8	08F063	224,20 264,60	8
75	75	27	841	08B757	473,40 624,30	10	08F757	473,40 624,30	10
80	45	27	1880	08B080	361,60 435,60	10	08F080	361,60 435,60	10
100	50	32	1880	08B100	575,00 726,70	10	08F100	575,00 726,70	10
125	56	40	1880	08B125	776,60 981,20	12	08F125	776,60 981,20	12
160	63	50	1880	08B160	1409,20 1709,70	14			

SHELL

	MAX MQL AIR	PARAMETRI DI TAGLIO (Cutting data)	Steel <800 N/mm <sup>2</sup>	Steel <1000 N/mm <sup>2</sup>	Steel <1300 N/mm <sup>2</sup>	12% Cr	Alu & alloys <6% Si
NIG08B	●	●	Vc 67	Vc 61	Vc 46	Vc 29	--
NIG08F	●	●	Vc 67	Vc 61	Vc 46	Vc 29	--



ISO 2586  
DIN 1880  
DIN 841

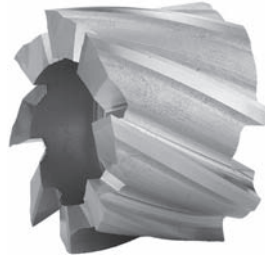
## 180A Frese frontali a finire in Powder Metal

HSS  
PMCoF



HS

$\lambda$  30°  
 $\gamma$  10°



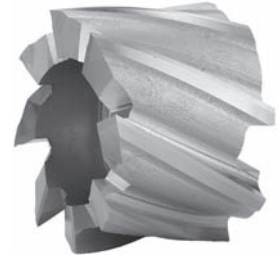
## 180 Frese frontali a finire in Powder Metal

HSS  
M42Co8



NS

$\lambda$  30°  
 $\gamma$  12°



Uncoated Alcrona

Uncoated Alcrona

D	S	Foro	Din	180A		Z	180		Z		
				SIL	NIG		SIL	NIG			
k10				€	€		€	€			
40	32	16	1880	18A040	173,10	190,80	8	180040	113,10	132,70	6
40	40	16	841					180404	145,00	180,50	6
50	36	22	1880	18A050	227,20	253,30	8	180050	147,60	174,00	8
50	50	22	841					180505	193,90	229,10	8
60	60	27	841					180606	261,10	317,20	8
63	40	27	1880	18A063	353,80	394,20	10	180063	213,00	253,90	8
75	75	27	841					180757	405,00	555,70	8
80	45	27	1880	18A080	523,90	597,10	10	180080	324,10	398,30	10
100	50	32	1880	18A100	803,40	953,90	10	180100	512,00	663,90	10
125	56	40	1880					180125	657,70	862,80	12
160	63	50	1880					180160	1413,20	1714,70	14

SHELL

	MAX MQL AIR	PARAMETRI DI TAGLIO (Cutting data) Pag.158	Steel <800 N/mm <sup>2</sup>	Steel <1000 N/mm <sup>2</sup>	Steel <1300 N/mm <sup>2</sup>	12% Cr	Alu & alloys < 6% Si
NIG18A	●		Vc 84	Vc 76	Vc 58	Vc 36	--
NIG180	●		Vc 67	Vc 61	Vc 46	Vc 29	--



# 185 Frese frontali a finire

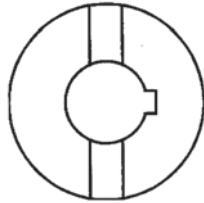
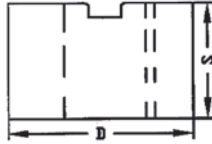
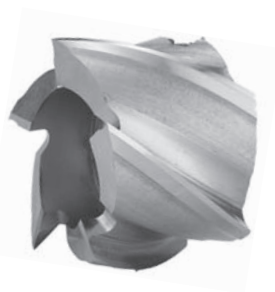
## ALU

HSS  
M42Co8



W

$\lambda$  38°  
 $\gamma$  17°



ISO 2586  
DIN 1880

Uncoated Aclrona

D	S	Foro	Din	185	SIL	NIG	Z				
k10					€	€					
40	32	16	1880	185040	140,30	159,20	5				
50	36	22	1880	185050	175,50	201,80	5				
63	40	27	1880	185063	233,80	274,60	5				
80	45	27	1880	185080	350,20	424,90	5				
100	50	32	1880	185100	507,30	659,30	6				

SHELL

MAX MQL AIR Pag. 251		PARAMETRI DI TAGLIO (Cutting data) Pag. 158	Steel <800 N/mm <sup>2</sup>	Steel <1000 N/mm <sup>2</sup>	Steel <1300 N/mm <sup>2</sup>	12% Cr	Alu & alloys < 6% Si
NIG185	● ●		--	--	--	--	Vc 179