

Frese in Acciaio Sinterizzato

Powder Metal End Mills

038A

Fresa a sgrossare serie corta
Roughing end mill, short version

→ 222

013S

Fresa a sgrossare serie normale
Roughing end mill, regular version

→ 222

013A

Fresa a sgrossare serie normale
Roughing end mill, regular version

→ 223

041A

Fresa a sgrossare e semifinire serie normale
Roughing and semi-finishing end mill, regular version

→ 224

093A

Fresa a sgrossare serie media
Roughing end mill, medium version

→ 225

023A

Fresa a sgrossare serie lunga
Roughing end mill, long version

→ 225

113A

Fresa a finire serie normale
Finishing end mill, regular version

→ 226

118A

Fresa a finire serie normale
Finishing end mill, regular version

→ 226

193A

Fresa a finire serie media
Finishing end mill, medium version

→ 227

123A

Fresa a finire serie lunga
Finishing end mill, long version

→ 227



SIL SERVICE

L'esperienza Silmax dimostra che un utensile correttamente affilato ha un rendimento uguale a quello nuovo.

Silmax experience shows that a properly sharpened tool grants the same performances of a new tool.



Riaffilatura e rigenerazione
Resharpener and Reconditioning



Esecuzione perfetta
Perfect Execution



Rivestimento PVD
PVD Coating



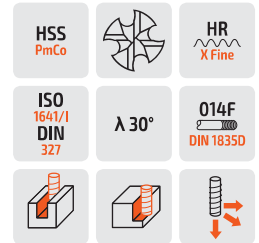
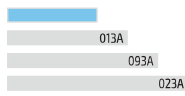
Trattamento 4S
4S Treatment



Consegna rapida
Fast Delivery

038A

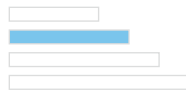
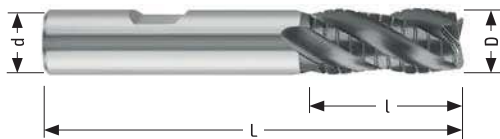
Fresa a sgrossare serie corta
Roughing end mill, short version



D k12	d h6	L	l	Z	Non rivestito Uncoated	Balinit® Alcrona
6,0	6	52	8	4	SIL038A06	NIG038A06
8,0	10	61	11	4	SIL038A08	NIG038A08
10,0	10	63	13	4	SIL038A10	NIG038A10
12,0	12	73	16	4	SIL038A12	NIG038A12
14,0	12	73	16	4	SIL038A14	NIG038A14
16,0	16	79	19	4	SIL038A16	NIG038A16
18,0	16	79	19	4	SIL038A18	NIG038A18
20,0	20	88	22	4	SIL038A20	NIG038A20
25,0	25	102	26	4	SIL038A25	NIG038A25

013S

Fresa a sgrossare serie normale
Roughing end mill, regular version

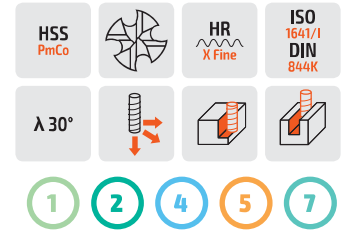
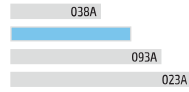


D k12	d h6	L	l	Z	Balinit® Alcrona
5,0	6	57	13	4	NIG013S05
6,0	6	57	13	4	NIG013S06
7,0	10	66	16	4	NIG013S07
8,0	10	69	19	4	NIG013S08
9,0	10	69	19	4	NIG013S09
10,0	10	72	22	4	NIG013S10
11,0	12	79	22	4	NIG013S11
12,0	12	83	26	4	NIG013S12
13,0	12	83	26	4	NIG013S13
14,0	12	83	26	4	NIG013S14
15,0	12	83	26	4	NIG013S15
16,0	16	92	32	4	NIG013S16
17,0	16	92	32	4	NIG013S17
18,0	16	92	32	4	NIG013S18
19,0	16	92	32	4	NIG013S19
20,0	20	104	38	4	NIG013S20
22,0	20	104	38	4	NIG013S22
25,0	25	121	45	4	NIG013S25
28,0	25	121	45	4	NIG013S28
30,0	25	121	45	6	NIG013S30
32,0	32	133	53	6	NIG013S32

Notes

013A

Fresa a sgrossare serie normale
Roughing end mill, regular version



D k12	d h6	L	l	Z	Non rivestito Uncoated	Balinit® Alcrona
5,0	6	57	13	4	SIL013A05	NIG013A05
6,0	6	57	13	4	SIL013A06	NIG013A06
7,0	10	66	16	4	SIL013A07	NIG013A07
8,0	10	69	19	4	SIL013A08	NIG013A08
9,0	10	69	19	4	SIL013A09	NIG013A09
10,0	10	72	22	4	SIL013A10	NIG013A10
11,0	12	79	22	4	SIL013A11	NIG013A11
12,0	12	83	26	4	SIL013A12	NIG013A12
13,0	12	83	26	4	SIL013A13	NIG013A13
14,0	12	83	26	4	SIL013A14	NIG013A14
15,0	12	83	26	4	SIL013A15	NIG013A15
16,0	16	92	32	4	SIL013A16	NIG013A16
17,0	16	92	32	4	SIL013A17	NIG013A17
18,0	16	92	32	4	SIL013A18	NIG013A18
19,0	16	92	32	4	SIL013A19	NIG013A19
20,0	20	104	38	4	SIL013A20	NIG013A20
22,0	20	104	38	4	SIL013A22	NIG013A22
25,0	25	121	45	4	SIL013A25	NIG013A25
28,0	25	121	45	6	SIL013A28	NIG013A28
30,0	25	121	45	6	SIL013A30	NIG013A30
32,0	32	133	53	6	SIL013A32	NIG013A32
36,0	32	133	53	6	SIL013A36	NIG013A36
40,0	40	155	63	6	SIL013A40	NIG013A40

221

PM

Frese in Acciaio Sinterizzato
Powder Metal End Mills

231

SGR

Frese a Sgrossare in HSSCo8
Roughing End Mills in HSSCo8

243

FIN

Frese a Finiture in HSSCo8
Finishing End Mills in HSSCo8

267

FRF

Frese Frontali e a Disco
Shell End Mills and Side Milling Cutters

277

ALT

Altre Frese
Other mills

1 Acciaio
Steel

2 Ghise
Cast
Iron

3 Acciai
Temprati
Hardened
Steel

4 Acciaio
Inox
Stainless
Steel

5 Titanio
Titanium

6 Leghe
Leggere
Light
Alloys

7 PH
Duplex

8 Superleghe
Superalloys

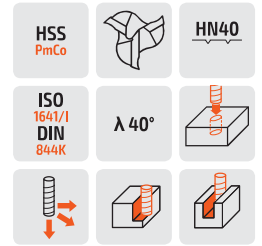
9 Compositi
Composite
Materials

→ 16 Guida alla
lettura
Reading
guide

→ 18 Legenda
Legend

041A

Fresa a sgrossare e semifinire serie normale
Roughing and semi-finishing end mill, regular version

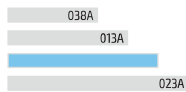


D k12	d h6	L	l	Z	Non rivestito Uncoated	Balinit® Alcrona
4,0	6	55	11	3	SIL041A04	NIG041A04
5,0	6	57	13	3	SIL041A05	NIG041A05
6,0	6	57	13	3	SIL041A06	NIG041A06
7,0	10	66	16	3	SIL041A07	NIG041A07
8,0	10	69	19	3	SIL041A08	NIG041A08
9,0	10	69	19	3	SIL041A09	NIG041A09
10,0	10	72	22	3	SIL041A10	NIG041A10
11,0	12	79	22	3	SIL041A11	NIG041A11
12,0	12	83	26	3	SIL041A12	NIG041A12
14,0	12	83	26	3	SIL041A14	NIG041A14
16,0	16	92	32	3	SIL041A16	NIG041A16
18,0	16	92	32	3	SIL041A18	NIG041A18
20,0	20	104	38	4	SIL041A20	NIG041A20
22,0	20	104	38	4	SIL041A22	NIG041A22
24,0	25	121	45	4	SIL041A24	NIG041A24
25,0	25	121	45	4	SIL041A25	NIG041A25
26,0	25	121	45	4	SIL041A26	NIG041A26
28,0	25	121	45	4	SIL041A28	NIG041A28
30,0	25	121	45	4	SIL041A30	NIG041A30
32,0	32	133	53	4	SIL041A32	NIG041A32
36,0	32	133	53	4	SIL041A36	NIG041A36

Notes

093A

Fresa a sgrossare serie media
Roughing end mill medium version



Material and application icons: HSS PmCo, HR X Fine, Silmax NORM, $\lambda 30^\circ$, and application icons for roughing, finishing, and drilling.

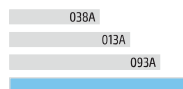
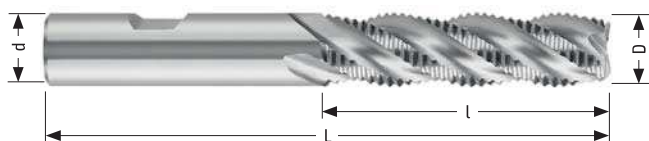
Application icons: 1, 2, 4, 5, 7



D k12	d h6	L	l	Z	Non rivestito Uncoated	Balinit® Alcrona
6,0	6	62	18	4	SIL093A06	NIG093A06
8,0	10	75	25	4	SIL093A08	NIG093A08
10,0	10	83	33	4	SIL093A10	NIG093A10
12,0	12	96	39	4	SIL093A12	NIG093A12
14,0	12	96	39	4	SIL093A14	NIG093A14
16,0	16	105	45	4	SIL093A16	NIG093A16
18,0	16	105	45	4	SIL093A18	NIG093A18
20,0	20	121	55	4	SIL093A20	NIG093A20
22,0	20	121	55	4	SIL093A22	NIG093A22
25,0	25	141	65	4	SIL093A25	NIG093A25

023A

Fresa a sgrossare serie lunga
Roughing end mill long version



Material and application icons: HSS PmCo, HR X Fine, ISO 1641/1 DIN 844L, $\lambda 30^\circ$, and application icons for roughing, finishing, and drilling.

Application icons: 1, 2, 4, 5, 7



D k12	d h6	L	l	Z	Non rivestito Uncoated	Balinit® Alcrona
6,0	6	68	24	4	SIL023A06	NIG023A06
8,0	10	88	38	4	SIL023A08	NIG023A08
10,0	10	95	45	4	SIL023A10	NIG023A10
12,0	12	110	53	4	SIL023A12	NIG023A12
14,0	12	110	53	4	SIL023A14	NIG023A14
16,0	16	123	63	4	SIL023A16	NIG023A16
18,0	16	123	63	4	SIL023A18	NIG023A18
20,0	20	141	75	4	SIL023A20	NIG023A20
22,0	20	141	75	4	SIL023A22	NIG023A22
25,0	25	166	90	4	SIL023A25	NIG023A25
30,0	25	166	90	6	SIL023A30	NIG023A30
32,0	32	186	106	6	SIL023A32	NIG023A32

1 Acciaio
Steel

2 Ghise
Cast
Iron

3 Acciai
Temprati
Hardened
Steel

4 Acciaio
Inox
Stainless
Steel

5 Titanio
Titanium

6 Leghe
Leggere
Light
Alloys

7 PH
Duplex

8 Superleghe
Superalloys

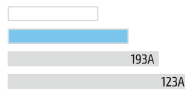
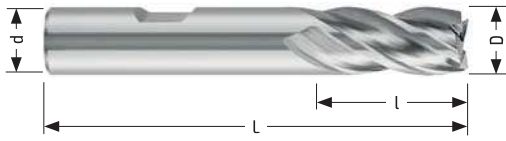
9 Compositi
Composite
Materials

→ 16 Guida alla
lettura
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guide

→ 18 Legenda
Legend

113A

Fresa a finire serie normale
Finishing end mill regular version



HSS PmCo
HS
ISO 1641/1 DIN 844K

$\lambda 30^\circ$

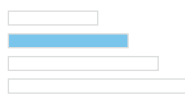
1 2 4 5 7

90°

D k12	d h6	L	l	Z	Non rivestito Uncoated	Balinit® Alcrona
6,0	6	57	13	4	SIL113A06	NIG113A06
7,0	10	66	16	4	SIL113A07	NIG113A07
8,0	10	69	19	4	SIL113A08	NIG113A08
9,0	10	69	19	4	SIL113A09	NIG113A09
10,0	10	72	22	4	SIL113A10	NIG113A10
11,0	12	79	22	4	SIL113A11	NIG113A11
12,0	12	83	26	4	SIL113A12	NIG113A12
13,0	12	83	26	4	SIL113A13	NIG113A13
14,0	12	83	26	4	SIL113A14	NIG113A14
15,0	12	83	26	4	SIL113A15	NIG113A15
16,0	16	92	32	4	SIL113A16	NIG113A16
17,0	16	92	32	4	SIL113A17	NIG113A17
18,0	16	92	32	4	SIL113A18	NIG113A18
19,0	16	92	32	4	SIL113A19	NIG113A19
20,0	20	104	38	4	SIL113A20	NIG113A20
22,0	20	104	38	4	SIL113A22	NIG113A22
25,0	25	121	45	4	SIL113A25	NIG113A25
28,0	25	121	45	6	SIL113A28	NIG113A28
30,0	25	121	45	6	SIL113A30	NIG113A30
32,0	32	133	53	6	SIL113A32	NIG113A32

118A

Fresa a finire serie normale
Finishing end mill regular version



HSS PmCo
HS
ISO 1641/1 DIN 844K

$\lambda 40^\circ$

1 2 4 5 7

90°

D k12	d h6	L	l	Z	Non rivestito Uncoated	Balinit® Alcrona
4,0	6	55	11	4	SIL118A04	NIG118A04
5,0	6	57	13	4	SIL118A05	NIG118A05
6,0	6	57	13	4	SIL118A06	NIG118A06
7,0	10	66	16	4	SIL118A07	NIG118A07
8,0	10	69	19	4	SIL118A08	NIG118A08
9,0	10	69	19	4	SIL118A09	NIG118A09
10,0	10	72	22	4	SIL118A10	NIG118A10
12,0	12	83	26	4	SIL118A12	NIG118A12
14,0	12	83	26	4	SIL118A14	NIG118A14
16,0	16	92	32	4	SIL118A16	NIG118A16
18,0	16	92	32	4	SIL118A18	NIG118A18
20,0	20	104	38	6	SIL118A20	NIG118A20
22,0	20	104	38	6	SIL118A22	NIG118A22
25,0	25	121	45	6	SIL118A25	NIG118A25
28,0	25	121	45	6	SIL118A28	NIG118A28
30,0	25	121	45	6	SIL118A30	NIG118A30
32,0	32	133	53	6	SIL118A32	NIG118A32

193A

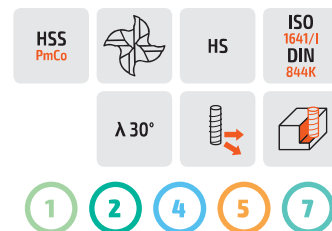
Fresa a finire serie media
Finishing end mill medium version



90°	D	d	L	l	Z	Non rivestito	Balinit®
	k12	h6				Uncoated	Alcrona
	6,0	6	62	18	4	SIL193A06	NIG193A06
	8,0	10	75	25	4	SIL193A08	NIG193A08
	10,0	10	83	33	4	SIL193A10	NIG193A10
	12,0	12	96	39	4	SIL193A12	NIG193A12
	14,0	12	96	39	4	SIL193A14	NIG193A14
	16,0	16	105	45	4	SIL193A16	NIG193A16
	18,0	16	105	45	4	SIL193A18	NIG193A18
	20,0	20	121	55	4	SIL193A20	NIG193A20
	22,0	20	121	55	4	SIL193A22	NIG193A22
	25,0	25	141	65	4	SIL193A25	NIG193A25

123A

Fresa a finire serie lunga
Finishing end mill long version



90°	D	d	L	l	Z	Non rivestito	Balinit®
	k12	h6				Uncoated	Alcrona
	6,0	6	68	24	4	SIL123A06	NIG123A06
	8,0	10	88	38	4	SIL123A08	NIG123A08
	10,0	10	95	45	4	SIL123A10	NIG123A10
	12,0	12	110	53	4	SIL123A12	NIG123A12
	14,0	12	110	53	4	SIL123A14	NIG123A14
	16,0	16	123	63	4	SIL123A16	NIG123A16
	18,0	16	123	63	4	SIL123A18	NIG123A18
	20,0	20	141	75	4	SIL123A20	NIG123A20
	22,0	20	141	75	4	SIL123A22	NIG123A22
	25,0	25	166	90	4	SIL123A25	NIG123A25

1 Acciaio
Steel

2 Ghise
Cast
Iron

3 Acciai
Temprati
Hardened
Steel

4 Acciaio
Inox
Stainless
Steel

5 Titanio
Titanium

6 Leghe
Leggere
Light
Alloys

7 PH
Duplex

8 Superleghe
Superalloys

9 Compositi
Composite
Materials

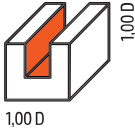
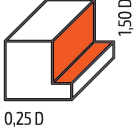
→ 16 Guida alla
lettura
Reading
guide

→ 18 Legenda
Legend

PM - Frese a grossare / PM - Roughing end mills

Parametri di lavoro / Working Parameters

Serie corta (short version) + 20% / Serie media (medium version) -20% / Serie lunga (long version) -40%




Materiali Materials	Diametro Diameter																		
		PMCoS - NIG			SIL F2000 - NIG			PMCoS - SIL			PMCoS - NIG			SIL F2000 - NIG			PMCoS - SIL		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
Acciaio <800 N/mm ² Steel <800 N/mm ²	6,0	0,012	220	4460	0,021	380	4460	0,012	130	2670	0,025	450	4460	0,042	750	4460	0,024	260	2670
	8,0	0,019	250	3340	0,031	420	3340	0,018	140	2000	0,035	470	3340	0,059	790	3340	0,035	280	2000
	10,0	0,029	310	2680	0,049	520	2680	0,028	180	1600	0,045	480	2680	0,076	810	2680	0,044	280	1600
	12,0	0,037	330	2230	0,063	560	2230	0,036	190	1330	0,056	500	2230	0,094	840	2230	0,055	290	1330
	16,0	0,049	330	1670	0,084	560	1670	0,048	190	1000	0,075	500	1670	0,126	840	1670	0,073	290	1000
	20,0	0,063	340	1340	0,104	560	1340	0,063	200	800	0,095	510	1340	0,159	850	1340	0,094	300	800
	25,0	0,077	330	1070	0,131	560	1070	0,074	190	640	0,117	500	1070	0,199	850	1070	0,113	290	640
Acciaio <1000 N/mm ² Steel <1000 N/mm ²	6,0	0,012	190	4030	0,020	290	3660	0,011	110	2410	0,024	380	4030	0,040	580	3660	0,023	220	2410
	8,0	0,018	220	3030	0,030	330	2750	0,018	130	1810	0,033	400	3030	0,056	620	2750	0,032	230	1810
	10,0	0,027	260	2420	0,045	400	2200	0,026	150	1450	0,042	410	2420	0,072	630	2200	0,041	240	1450
	12,0	0,036	290	2020	0,060	440	1830	0,035	170	1210	0,053	430	2020	0,089	650	1830	0,052	250	1210
	16,0	0,048	290	1510	0,080	440	1370	0,047	170	900	0,071	430	1510	0,119	650	1370	0,069	250	900
	20,0	0,060	290	1210	0,100	440	1100	0,059	170	720	0,091	440	1210	0,150	660	1100	0,090	260	720
	25,0	0,075	290	970	0,125	440	880	0,073	170	580	0,113	440	970	0,188	660	880	0,112	260	580
Acciaio <1300 N/mm ² Steel <1300 N/mm ²	6,0	0,011	130	3080	0,018	200	2810	0,010	70	1840	0,021	260	3080	0,036	400	2810	0,020	150	1840
	8,0	0,016	150	2310	0,027	230	2110	0,014	80	1380	0,029	270	2310	0,050	420	2110	0,029	160	1380
	10,0	0,024	180	1850	0,041	280	1690	0,023	100	1110	0,038	280	1850	0,064	430	1690	0,036	160	1110
	12,0	0,032	200	1540	0,053	300	1410	0,030	110	920	0,047	290	1540	0,080	450	1410	0,046	170	920
	16,0	0,043	200	1150	0,071	300	1050	0,043	120	690	0,063	290	1150	0,107	450	1050	0,062	170	690
	20,0	0,054	200	920	0,089	300	840	0,050	110	550	0,082	300	920	0,137	460	840	0,077	170	550
	25,0	0,064	190	740	0,110	300	680	0,063	110	440	0,101	300	740	0,169	460	680	0,097	170	440
Acciaio da stampi Mold Steel	6,0	0,009	70	1910	0,015	110	1800	0,009	40	1140	0,018	140	1910	0,032	230	1800	0,018	80	1140
	8,0	0,014	80	1430	0,024	130	1350	0,012	40	850	0,026	150	1430	0,044	240	1350	0,024	80	850
	10,0	0,022	100	1150	0,037	160	1080	0,022	60	690	0,035	160	1150	0,056	240	1080	0,033	90	690
	12,0	0,029	110	960	0,047	170	900	0,026	60	570	0,042	160	960	0,069	250	900	0,039	90	570
	16,0	0,038	110	720	0,063	170	680	0,035	60	430	0,056	160	720	0,096	260	680	0,052	90	430
	20,0	0,048	110	570	0,079	170	540	0,044	60	340	0,070	160	570	0,120	260	540	0,066	90	340
	25,0	0,060	110	460	0,099	170	430	0,056	60	270	0,087	160	460	0,151	260	430	0,083	90	270

Notes

PM - Frese a finire / PM - Finishing end mills

Parametri di lavoro / Working Parameters

Serie Corta (Short Version) + 20% / Serie Media (Medium Version) -20% / Serie Lunga (Long Version) -40%

Materiali Materials	Diametro Diameter												
		113A NIG			113A SIL			118A NIG			118A SIL		
Acciaio <800 N/mm ² Steel <800 N/mm ²	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,020	330	4460	0,018	190	2670	0,020	330	4460	0,018	190	2670
	8,0	0,040	500	3340	0,036	290	2000	0,040	500	3340	0,036	290	2000
	10,0	0,050	540	2680	0,045	290	1600	0,050	540	2680	0,045	190	1600
	12,0	0,060	540	2230	0,054	290	1330	0,060	540	2230	0,054	290	1330
	16,0	0,080	540	1670	0,072	290	1000	0,080	540	1670	0,072	290	1000
	20,0	0,100	550	1340	0,090	290	800	0,070	550	1340	0,063	300	800
	25,0	0,130	540	1070	0,117	300	640	0,080	540	1070	0,072	280	640
Acciaio <1000 N/mm ² Steel <1000 N/mm ²	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,020	290	4030	0,018	190	2670	0,020	290	4030	0,018	190	2670
	8,0	0,040	430	3030	0,036	290	2000	0,040	430	3030	0,036	290	2000
	10,0	0,050	460	2420	0,045	290	1600	0,050	460	2420	0,045	290	1600
	12,0	0,060	460	2020	0,054	290	1330	0,060	460	2020	0,054	290	1330
	16,0	0,080	470	1510	0,072	290	1000	0,080	470	1510	0,072	290	1000
	20,0	0,100	470	1210	0,090	290	800	0,060	470	1210	0,054	260	800
	25,0	0,120	460	970	0,108	280	640	0,080	460	970	0,072	280	640
Acciaio <1300 N/mm ² Steel <1300 N/mm ²	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,020	200	3080	0,018	190	2670	0,020	200	3080	0,018	190	2670
	8,0	0,030	290	2310	0,027	220	2000	0,030	290	2310	0,027	220	2000
	10,0	0,040	310	1850	0,036	230	1600	0,040	310	1850	0,036	230	1600
	12,0	0,050	310	1540	0,045	240	1330	0,050	310	1540	0,045	240	1330
	16,0	0,070	320	1150	0,063	250	1000	0,070	320	1150	0,063	250	1000
	20,0	0,090	320	920	0,081	260	800	0,060	320	920	0,054	260	800
	25,0	0,100	310	740	0,090	230	640	0,070	310	740	0,063	240	640
Acciaio da stampi Mold Steel	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,010	110	1910	0,009	100	2670	0,010	110	1910	0,009	100	2670
	8,0	0,030	160	1430	0,027	220	2000	0,030	160	1430	0,027	220	2000
	10,0	0,040	170	1150	0,036	230	1600	0,040	170	1150	0,036	230	1600
	12,0	0,040	170	960	0,036	190	1330	0,040	170	960	0,036	190	1330
	16,0	0,060	180	720	0,054	220	1000	0,060	180	720	0,054	220	1000
	20,0	0,080	180	570	0,072	230	800	0,050	180	570	0,045	220	800
	25,0	0,090	170	460	0,081	210	640	0,060	170	460	0,054	210	640

Notes