



Utensili per foratura
e filettatura

a passion for precision





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Foratura semplice ed efficiente

Siamo lieti di presentarvi i nostri utensili per foratura e filettatura riuniti per la prima volta all'interno di un unico chiaro catalogo generale.

Come da tradizione esso contiene anche le condizioni d'impiego dei diversi utensili. I parametri di taglio sono stati ulteriormente ottimizzati grazie agli approfonditi test di ToolSchool, così da consentirvi di utilizzare gli utensili Fraisa in modo semplice, sicuro e altamente efficace.

Punte ad alto rendimento in metallo duro

Il programma completo delle linee top seller XDrill®, Supradrill e Favora® comprende ora anche un vasto assortimento di utensili per foratura adatti alla lavorazione di materiali plastici rinforzati con fibre di carbonio (CFC).

Nella linea Microdrill sono stati inseriti anche utensili dotati di canali di raffreddamento integrati. All'interno del programma sono altresì presenti i miniutensili per foratura fino a dimensioni minime di 0,1 mm.

A pagina 7-152 del catalogo

Maschi per filettatura di precisione in ASR e metallo duro

Realizzare filettature interne con i maschi per filettare è un processo delicato, anche perché si tratta di una delle fasi conclusive nel ciclo di produzione e il pezzo da lavorare ha già acquisito un notevole valore. La sicurezza di processo diventa quindi un aspetto ancora più determinante e può essere garantita attraverso la scelta dell'utensile giusto. Il sistema di codifica messo a punto da Fraisa elimina definitivamente qualsiasi possibile confusione.

A pagina 155-363 del catalogo

Maschi per rullare ad alto rendimento in ASR e metallo duro

La rullatura è un metodo altamente efficace per realizzare filettature interne senza formazione di truciolo e quindi con una maggiore sicurezza di processo. Fraisa offre un'ampia gamma di maschi per rullare adatti all'impiego su alluminio e materiali d'acciaio. Vi consigliamo di considerare questa possibilità in alternativa alle classiche maschiatrici, soprattutto quando si tratta di produzioni su vasta scala.

A pagina 364-393 del catalogo

Frese per filettatura di precisione in metallo duro

Nei moderni centri di lavorazione CNC le frese per filettare sembrano fatte apposta per la realizzazione di filettature interne. L'uso di frese per filettare genera trucioli corti, garantendo così un processo di lavorazione più sicuro. L'offerta notevolmente ampliata di Fraisa comprende frese per filettare, frese a forare e filettare e ora anche turbofilettatrici in metallo duro.

A pagina 394-435 del catalogo

Servizio compreso

Servizio

Gli utensili per foratura vengono riaffilati più volte a seconda dell'impiego previsto. Per il cliente è tuttavia importante poter continuare a operare con i dati originari anche dopo la preparazione dell'utensile.

ToolService di Fraisa fornisce utensili riaffilati ripristinando i dati iniziali dell'utensile, cioè riproducendone la geometria, lo spigolo del tagliente e il rivestimento. In questo modo sarà possibile sfruttare appieno il suo potenziale.

A pagina 451-487 del catalogo

E-shop – 24 ore online con Fraisa

Esiste da metà del 2011 e quasi più nessuno sarebbe pronto a rinunciarvi: nel giro di pochissimo tempo il web shop di Fraisa si è tramutato in una realtà consolidata per i nostri clienti. Non c'è da stupirsi, visto che la sua banca dati è una sofisticata versione online dei già noti e apprezzati cataloghi Fraisa. Tutte le informazioni sugli utensili, così come i parametri di taglio, vengono messe a disposizione in modo chiaro e trasparente. L'e-shop consente principalmente di ordinare i prodotti Fraisa con un semplice click del mouse. Il giorno successivo l'ordine viene consegnato a destinazione grazie all'efficienza del moderno reparto logistico di Fraisa.



I vantaggi Fraisa punto per punto

- Tecnologia di ultimissima generazione
- Qualità eccellente e garanzia «Soddisfatti o rimborsati»
- Elevata disponibilità
- Rapporto prezzo/prestazione imbattibile
- Servizio e assistenza in loco

Sostituisce l'edizione



www.fraisa.com

Utensili per foratura

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






Punte per acciaio, alluminio, acciaio inox e titanio

Punte elicoidali











5xd							
N° B72015		X-Generation X	HM MGX		Rm <1500		11
N° B52015 / B53015		Base-X B	HM MG10		Rm <1100	Inox Stainless	27
N° B52014 / B53014		Base-X B	HM MG10		Rm <1100		45
N° BU42015 / BU43015		Favora® F	HM		Rm <1100	Inox Stainless	55

3xd							
N° B72011		X-Generation X	HM MGX		Rm <1500		65
N° B52111 / B53111		X-Generation X	HM XA		HRC 48 - >60		75
N° B52011 / B53011		Base-X B	HM MG10		Rm <1100	Inox Stainless	81
N° B52010 / B53010		Base-X B	HM MG10		Rm <1100		85

8xd							
N° B72020		X-Generation X	HM MGX		Rm <1300		95
N° B52020 / B53020		Base-X B	HM MG10		Rm <1100		105

Punte per acciaio, alluminio, acciaio inox e titanio





Punte per foratura profonda

15xd								
N° B52915		B Base-X	HM MGD²		Rm <1100			109
20xd								
N° B52920		B Base-X	HM MGD²		Rm <1100			111
25xd								
N° B52925		B Base-X	HM MGD²		Rm <1100			113
30xd								
N° B52930		B Base-X	HM MGD²		Rm <1100			115

Punte per acciaio, alluminio, acciaio inox e titanio

Micropunte



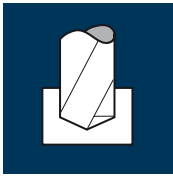
5xd								
N° B57014		X-Generation	X	HM MG10		Rm <1100		117
N° B57015	 new!	X-Generation	X	HM MG10		Rm <1100	Inox Stainless	123

8xd								
N° B57020	 new!	X-Generation	X	HM MG10		Rm <1100		125

Punte a gradini

3xd, per prefori di maschiatura								
N° B52801		Base-X	B	HM		Rm <1100		127

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	180	0.135	21.5	19100	2580	18.0	0.5
3.30	180	0.145	21.1	17360	2515	21.5	0.5
3.50	180	0.155	20.8	16370	2535	24.5	0.5
3.80	180	0.170	30.3	15080	2565	29.0	0.7
4.00	180	0.185	30.0	14325	2650	33.5	0.7
4.20	180	0.200	29.7	13640	2730	38.0	0.7
4.50	180	0.230	29.3	12730	2930	46.5	0.6
4.80	180	0.245	36.8	11935	2925	53.0	0.8
5.00	180	0.255	36.5	11460	2920	57.5	0.8

Acciaio
500 - 850 N/mm²

3.00	160	0.115	21.5	16975	1950	14.0	0.7
3.30	160	0.125	21.1	15435	1930	16.5	0.7
3.50	160	0.135	20.8	14550	1965	19.0	0.6
3.80	160	0.145	30.3	13405	1945	22.0	0.9
4.00	160	0.160	30.0	12730	2035	25.5	0.9
4.20	160	0.170	29.7	12125	2060	28.5	0.9
4.50	160	0.195	29.3	11320	2205	35.0	0.8
4.80	160	0.210	36.8	10610	2230	40.5	1.0
5.00	160	0.215	36.5	10185	2190	43.0	1.0

Acciaio
850 - 1100 N/mm²

3.00	140	0.105	21.5	14855	1560	11.0	0.8
3.30	140	0.115	21.1	13505	1555	13.5	0.8
3.50	140	0.125	20.8	12730	1590	15.5	0.8
3.80	140	0.135	30.3	11725	1585	18.0	1.1
4.00	140	0.145	30.0	11140	1615	20.5	1.1
4.20	140	0.155	29.7	10610	1645	23.0	1.1
4.50	140	0.180	29.3	9905	1785	28.5	1.0
4.80	140	0.190	36.8	9285	1765	32.0	1.3
5.00	140	0.200	36.5	8915	1785	35.0	1.2

Acciaio
1100 - 1300 N/mm²

3.00	100	0.080	21.5	10610	850	6.0	1.5
3.30	100	0.090	21.1	9645	870	7.5	1.5
3.50	100	0.095	20.8	9095	865	8.5	1.4
3.80	100	0.100	30.3	8375	840	9.5	2.2
4.00	100	0.110	30.0	7960	875	11.0	2.1
4.20	100	0.120	29.7	7580	910	12.5	2.0
4.50	100	0.135	29.3	7075	955	15.0	1.8
4.80	100	0.145	36.8	6630	960	17.5	2.3
5.00	100	0.150	36.5	6365	955	19.0	2.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	55	0.060	21.5	5835	350	2.5	3.7
3.30	55	0.070	21.1	5305	370	3.0	3.4
3.50	55	0.070	20.8	5000	350	3.5	3.6
3.80	55	0.080	30.3	4605	370	4.0	4.9
4.00	55	0.085	30.0	4375	370	4.5	4.9
4.20	55	0.090	29.7	4170	375	5.0	4.8
4.50	55	0.105	29.3	3890	410	6.5	4.3
4.80	55	0.110	36.8	3645	400	7.0	5.5
5.00	55	0.115	36.5	3500	405	8.0	5.4

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

3.00	70	0.060	21.5	7425	445	3.0	2.9
3.30	70	0.070	21.1	6750	475	4.0	2.7
3.50	70	0.070	20.8	6365	445	4.5	2.8
3.80	70	0.080	30.3	5865	470	5.5	3.9
4.00	70	0.085	30.0	5570	475	6.0	3.8
4.20	70	0.090	29.7	5305	475	6.5	3.8
4.50	70	0.105	29.3	4950	520	8.5	3.4
4.80	70	0.110	36.8	4640	510	9.0	4.3
5.00	70	0.115	36.5	4455	510	10.0	4.3

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

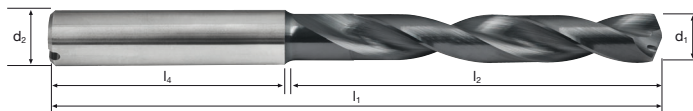
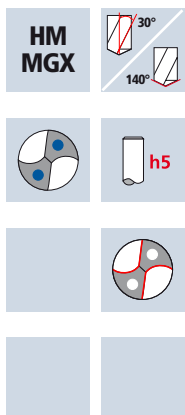
3.00	40	0.060	21.5	4245	255	2.0	5.1
3.30	40	0.070	21.1	3860	270	2.5	4.7
3.50	40	0.070	20.8	3640	255	2.5	4.9
3.80	40	0.080	30.3	3350	270	3.0	6.7
4.00	40	0.085	30.0	3185	270	3.5	6.7
4.20	40	0.090	29.7	3030	275	4.0	6.5
4.50	40	0.105	29.3	2830	295	4.5	6.0
4.80	40	0.110	36.8	2655	290	5.0	7.6
5.00	40	0.115	36.5	2545	295	6.0	7.4

Ghisa
(griglia / sferoidale)

3.00	240	0.120	21.5	25465	3055	21.5	0.4
3.30	240	0.135	21.1	23150	3125	26.5	0.4
3.50	240	0.140	20.8	21825	3055	29.5	0.4
3.80	240	0.155	30.3	20105	3115	35.5	0.6
4.00	240	0.165	30.0	19100	3150	39.5	0.6
4.20	240	0.180	29.7	18190	3275	45.5	0.5
4.50	240	0.205	29.3	16975	3480	55.5	0.5
4.80	240	0.220	36.8	15915	3500	63.5	0.6
5.00	240	0.230	36.5	15280	3515	69.0	0.6

Punte elicoidali XDrill®

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-X
						B72015	.0300		B72015
ø Code	d1 m7	d2 h5	l1	l2	l4	€			
.0300	3.0	6	66	28	36	81.00			
.0310	3.1	6	66	28	36	81.00			
.0320	3.2	6	66	28	36	81.00			
.0330	3.3	6	66	28	36	81.00			
.0340	3.4	6	66	28	36	81.00			
.0350	3.5	6	66	28	36	81.00			
.0360	3.6	6	66	28	36	81.00			
.0370	3.7	6	66	28	36	81.00			
.0380	3.8	6	74	36	36	81.00			
.0390	3.9	6	74	36	36	81.00			
.0400	4.0	6	74	36	36	81.00			
.0410	4.1	6	74	36	36	81.00			
.0420	4.2	6	74	36	36	81.00			
.0430	4.3	6	74	36	36	81.00			
.0440	4.4	6	74	36	36	81.00			
.0450	4.5	6	74	36	36	81.00			
.0460	4.6	6	74	36	36	81.00			
.0470	4.7	6	74	36	36	81.00			
.0480	4.8	6	82	44	36	81.00			
.0490	4.9	6	82	44	36	81.00			
.0500	5.0	6	82	44	36	81.00			
.0510	5.1	6	82	44	36	81.00			
.0520	5.2	6	82	44	36	81.00			

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	180	0.280	35.8	10415	2915	69.5	0.7
5.80	180	0.295	35.3	9880	2915	77.0	0.7
6.00	180	0.315	35.0	9550	3010	85.0	0.7
6.20	180	0.335	43.7	9240	3095	93.5	0.8
6.50	180	0.350	43.3	8815	3085	102.5	0.8
6.80	180	0.365	42.8	8425	3075	111.5	0.8
7.00	180	0.380	42.5	8185	3110	119.5	0.8
7.20	180	0.390	42.2	7960	3105	126.5	0.8
7.50	180	0.405	41.8	7640	3095	136.5	0.8

Acciaio
500 - 850 N/mm²

5.50	160	0.240	35.8	9260	2220	52.5	1.0
5.80	160	0.250	35.3	8780	2195	58.0	1.0
6.00	160	0.270	35.0	8490	2290	64.5	0.9
6.20	160	0.285	43.7	8215	2340	70.5	1.1
6.50	160	0.300	43.3	7835	2350	78.0	1.1
6.80	160	0.315	42.8	7490	2360	85.5	1.1
7.00	160	0.325	42.5	7275	2365	91.0	1.1
7.20	160	0.335	42.2	7075	2370	96.5	1.1
7.50	160	0.345	41.8	6790	2345	103.5	1.1

Acciaio
850 - 1100 N/mm²

5.50	140	0.220	35.8	8100	1780	42.5	1.2
5.80	140	0.230	35.3	7685	1770	47.0	1.2
6.00	140	0.250	35.0	7425	1855	52.5	1.1
6.20	140	0.265	43.7	7190	1905	57.5	1.4
6.50	140	0.275	43.3	6855	1885	62.5	1.4
6.80	140	0.290	42.8	6555	1900	69.0	1.4
7.00	140	0.300	42.5	6365	1910	73.5	1.3
7.20	140	0.305	42.2	6190	1890	77.0	1.3
7.50	140	0.320	41.8	5940	1900	84.0	1.3

Acciaio
1100 - 1300 N/mm²

5.50	100	0.165	35.8	5785	955	22.5	2.2
5.80	100	0.175	35.3	5490	960	25.5	2.2
6.00	100	0.190	35.0	5305	1010	28.5	2.1
6.20	100	0.200	43.7	5135	1025	31.0	2.6
6.50	100	0.210	43.3	4895	1030	34.0	2.5
6.80	100	0.220	42.8	4680	1030	37.5	2.5
7.00	100	0.225	42.5	4545	1025	39.5	2.5
7.20	100	0.235	42.2	4420	1040	42.5	2.4
7.50	100	0.245	41.8	4245	1040	46.0	2.4

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	55	0.130	35.8	3185	415	10.0	5.2
5.80	55	0.135	35.3	3020	410	11.0	5.2
6.00	55	0.145	35.0	2920	425	12.0	4.9
6.20	55	0.155	43.7	2825	440	13.5	6.0
6.50	55	0.160	43.3	2695	430	14.5	6.0
6.80	55	0.170	42.8	2575	440	16.0	5.8
7.00	55	0.175	42.5	2500	440	17.0	5.8
7.20	55	0.180	42.2	2430	435	17.5	5.8
7.50	55	0.185	41.8	2335	430	19.0	5.8

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

5.50	70	0.130	35.8	4050	525	12.5	4.1
5.80	70	0.135	35.3	3840	520	13.5	4.1
6.00	70	0.145	35.0	3715	540	15.5	3.9
6.20	70	0.155	43.7	3595	555	17.0	4.7
6.50	70	0.160	43.3	3430	550	18.5	4.7
6.80	70	0.170	42.8	3275	555	20.0	4.6
7.00	70	0.175	42.5	3185	555	21.5	4.6
7.20	70	0.180	42.2	3095	555	22.5	4.6
7.50	70	0.185	41.8	2970	550	24.5	4.6

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

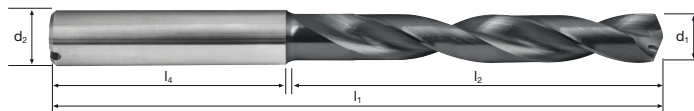
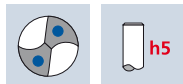
5.50	40	0.130	35.8	2315	300	7.0	7.2
5.80	40	0.135	35.3	2195	295	8.0	7.2
6.00	40	0.145	35.0	2120	305	8.5	6.9
6.20	40	0.155	43.7	2055	320	9.5	8.2
6.50	40	0.160	43.3	1960	315	10.5	8.2
6.80	40	0.170	42.8	1870	320	11.5	8.0
7.00	40	0.175	42.5	1820	320	12.5	8.0
7.20	40	0.180	42.2	1770	320	13.0	7.9
7.50	40	0.185	41.8	1700	315	14.0	8.0

Ghisa
(griglia / sferoidale)

5.50	240	0.255	35.8	13890	3540	84.0	0.6
5.80	240	0.265	35.3	13170	3490	92.0	0.6
6.00	240	0.285	35.0	12730	3630	102.5	0.6
6.20	240	0.305	43.7	12320	3760	113.5	0.7
6.50	240	0.320	43.3	11755	3760	125.0	0.7
6.80	240	0.335	42.8	11235	3765	136.5	0.7
7.00	240	0.345	42.5	10915	3765	145.0	0.7
7.20	240	0.355	42.2	10610	3765	153.5	0.7
7.50	240	0.370	41.8	10185	3770	166.5	0.7

Punte elicoidali XDrill®

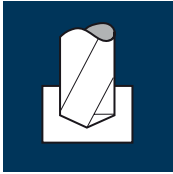
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						DURO-X	
						B72015	
Ø Code	d1 m7	d2 h5	l1	l2	l4	€	
.0530	5.3	6	82	44	36	81.00	
.0540	5.4	6	82	44	36	81.00	
.0550	5.5	6	82	44	36	81.00	
.0560	5.6	6	82	44	36	81.00	
.0570	5.7	6	82	44	36	81.00	
.0580	5.8	6	82	44	36	81.00	
.0590	5.9	6	82	44	36	81.00	
.0600	6.0	6	82	44	36	81.00	
.0610	6.1	8	91	53	36	89.00	
.0620	6.2	8	91	53	36	89.00	
.0630	6.3	8	91	53	36	89.00	
.0640	6.4	8	91	53	36	89.00	
.0650	6.5	8	91	53	36	89.00	
.0660	6.6	8	91	53	36	89.00	
.0670	6.7	8	91	53	36	89.00	
.0680	6.8	8	91	53	36	89.00	
.0690	6.9	8	91	53	36	89.00	
.0700	7.0	8	91	53	36	89.00	
.0710	7.1	8	91	53	36	89.00	
.0720	7.2	8	91	53	36	89.00	
.0730	7.3	8	91	53	36	89.00	
.0740	7.4	8	91	53	36	89.00	
.0750	7.5	8	91	53	36	89.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	180	0.410	41.6	7540	3090	140.0	0.8
8.00	180	0.430	41.0	7160	3080	155.0	0.8
8.20	180	0.445	48.7	6985	3110	164.0	0.9
8.50	180	0.460	48.3	6740	3100	176.0	0.9
8.80	180	0.475	47.8	6510	3090	188.0	0.9
9.00	180	0.485	47.5	6365	3085	196.5	0.9
9.20	180	0.495	47.2	6230	3085	205.0	0.9
9.50	180	0.515	46.8	6030	3105	220.0	0.9
9.80	180	0.530	46.3	5845	3100	234.0	0.9

Acciaio
500 - 850 N/mm²

7.60	160	0.350	41.6	6700	2345	106.5	1.1
8.00	160	0.370	41.0	6365	2355	118.5	1.0
8.20	160	0.380	48.7	6210	2360	124.5	1.2
8.50	160	0.395	48.3	5990	2365	134.0	1.2
8.80	160	0.405	47.8	5785	2345	142.5	1.2
9.00	160	0.415	47.5	5660	2350	149.5	1.2
9.20	160	0.425	47.2	5535	2350	156.0	1.2
9.50	160	0.440	46.8	5360	2360	167.5	1.2
9.80	160	0.455	46.3	5195	2365	178.5	1.2

Acciaio
850 - 1100 N/mm²

7.60	140	0.325	41.6	5865	1905	86.5	1.3
8.00	140	0.340	41.0	5570	1895	95.5	1.3
8.20	140	0.350	48.7	5435	1900	100.5	1.5
8.50	140	0.360	48.3	5245	1890	107.0	1.5
8.80	140	0.375	47.8	5065	1900	115.5	1.5
9.00	140	0.385	47.5	4950	1905	121.0	1.5
9.20	140	0.390	47.2	4845	1890	125.5	1.5
9.50	140	0.405	46.8	4690	1900	134.5	1.5
9.80	140	0.420	46.3	4545	1910	144.0	1.5

Acciaio
1100 - 1300 N/mm²

7.60	100	0.245	41.6	4190	1025	46.5	2.4
8.00	100	0.260	41.0	3980	1035	52.0	2.4
8.20	100	0.265	48.7	3880	1030	54.5	2.8
8.50	100	0.275	48.3	3745	1030	58.5	2.8
8.80	100	0.285	47.8	3615	1030	62.5	2.8
9.00	100	0.290	47.5	3535	1025	65.0	2.8
9.20	100	0.300	47.2	3460	1040	69.0	2.7
9.50	100	0.310	46.8	3350	1040	73.5	2.7
9.80	100	0.320	46.3	3250	1040	78.5	2.7

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	55	0.190	41.6	2305	440	20.0	5.7
8.00	55	0.200	41.0	2190	440	22.0	5.6
8.20	55	0.205	48.7	2135	440	23.0	6.6
8.50	55	0.210	48.3	2060	435	24.5	6.7
8.80	55	0.220	47.8	1990	440	27.0	6.5
9.00	55	0.225	47.5	1945	440	28.0	6.5
9.20	55	0.230	47.2	1905	440	29.0	6.4
9.50	55	0.235	46.8	1845	435	31.0	6.5
9.80	55	0.245	46.3	1785	435	33.0	6.4

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

7.60	70	0.190	41.6	2930	555	25.0	4.5
8.00	70	0.200	41.0	2785	555	28.0	4.4
8.20	70	0.205	48.7	2715	555	29.5	5.3
8.50	70	0.210	48.3	2620	550	31.0	5.3
8.80	70	0.220	47.8	2530	555	34.0	5.2
9.00	70	0.225	47.5	2475	555	35.5	5.1
9.20	70	0.230	47.2	2420	555	37.0	5.1
9.50	70	0.235	46.8	2345	550	39.0	5.1
9.80	70	0.245	46.3	2275	555	42.0	5.0

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

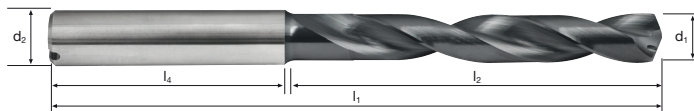
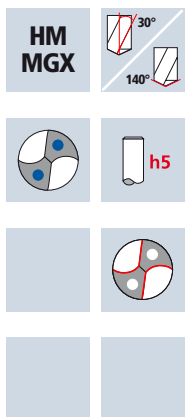
7.60	40	0.190	41.6	1675	320	14.5	7.8
8.00	40	0.200	41.0	1590	320	16.0	7.7
8.20	40	0.205	48.7	1555	320	17.0	9.1
8.50	40	0.210	48.3	1500	315	18.0	9.2
8.80	40	0.220	47.8	1445	320	19.5	9.0
9.00	40	0.225	47.5	1415	320	20.5	8.9
9.20	40	0.230	47.2	1385	320	21.5	8.9
9.50	40	0.235	46.8	1340	315	22.5	8.9
9.80	40	0.245	46.3	1300	320	24.0	8.7

Ghisa
(griglia / sferoidale)

7.60	240	0.375	41.6	10050	3770	171.0	0.7
8.00	240	0.395	41.0	9550	3770	189.5	0.7
8.20	240	0.405	48.7	9315	3775	199.5	0.8
8.50	240	0.415	48.3	8990	3730	211.5	0.8
8.80	240	0.430	47.8	8680	3730	227.0	0.8
9.00	240	0.440	47.5	8490	3735	237.5	0.8
9.20	240	0.450	47.2	8305	3735	248.5	0.8
9.50	240	0.465	46.8	8040	3740	265.0	0.8
9.80	240	0.480	46.3	7795	3740	282.0	0.7

Punte elicoidali XDrill®

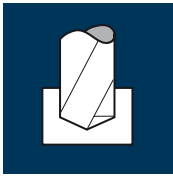
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo B72015		Codice-ø .0760		DURO-X	
Ø Code	d1 m7	d2 h5	l1	l2	l4			€			
.0760	7.6	8	91	53	36			89.00			
.0770	7.7	8	91	53	36			89.00			
.0780	7.8	8	91	53	36			89.00			
.0790	7.9	8	91	53	36			89.00			
.0800	8.0	8	91	53	36			89.00			
.0810	8.1	10	103	61	40			102.00			
.0820	8.2	10	103	61	40			102.00			
.0830	8.3	10	103	61	40			102.00			
.0840	8.4	10	103	61	40			102.00			
.0850	8.5	10	103	61	40			102.00			
.0860	8.6	10	103	61	40			102.00			
.0870	8.7	10	103	61	40			102.00			
.0880	8.8	10	103	61	40			102.00			
.0890	8.9	10	103	61	40			102.00			
.0900	9.0	10	103	61	40			102.00			
.0910	9.1	10	103	61	40			102.00			
.0920	9.2	10	103	61	40			102.00			
.0930	9.3	10	103	61	40			102.00			
.0940	9.4	10	103	61	40			102.00			
.0950	9.5	10	103	61	40			102.00			
.0960	9.6	10	103	61	40			102.00			
.0970	9.7	10	103	61	40			102.00			
.0980	9.8	10	103	61	40			102.00			

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	180	0.540	46.0	5730	3095	243.0	0.9
10.20	180	0.545	55.7	5615	3060	250.0	1.1
10.50	180	0.565	55.3	5455	3080	266.5	1.1
10.80	180	0.575	54.8	5305	3050	279.5	1.1
11.00	180	0.585	54.5	5210	3050	290.0	1.1
11.20	180	0.585	54.2	5115	2990	294.5	1.1
11.50	180	0.590	53.8	4980	2940	305.5	1.1
11.80	180	0.600	53.3	4855	2915	319.0	1.1
12.00	180	0.610	53.0	4775	2915	329.5	1.1

Acciaio
500 - 850 N/mm²

10.00	160	0.465	46.0	5095	2370	186.0	1.2
10.20	160	0.470	55.7	4995	2350	192.0	1.4
10.50	160	0.485	55.3	4850	2350	203.5	1.4
10.80	160	0.495	54.8	4715	2335	214.0	1.4
11.00	160	0.500	54.5	4630	2315	220.0	1.4
11.20	160	0.500	54.2	4545	2275	224.0	1.4
11.50	160	0.505	53.8	4430	2235	232.0	1.4
11.80	160	0.510	53.3	4315	2200	240.5	1.5
12.00	160	0.520	53.0	4245	2205	249.5	1.4

Acciaio
850 - 1100 N/mm²

10.00	140	0.425	46.0	4455	1895	149.0	1.5
10.20	140	0.430	55.7	4370	1880	153.5	1.8
10.50	140	0.445	55.3	4245	1890	163.5	1.8
10.80	140	0.455	54.8	4125	1875	172.0	1.8
11.00	140	0.460	54.5	4050	1865	177.0	1.8
11.20	140	0.465	54.2	3980	1850	182.5	1.8
11.50	140	0.465	53.8	3875	1800	187.0	1.8
11.80	140	0.470	53.3	3775	1775	194.0	1.8
12.00	140	0.480	53.0	3715	1785	202.0	1.8

Acciaio
1100 - 1300 N/mm²

10.00	100	0.325	46.0	3185	1035	81.5	2.7
10.20	100	0.330	55.7	3120	1030	84.0	3.2
10.50	100	0.340	55.3	3030	1030	89.0	3.2
10.80	100	0.345	54.8	2945	1015	93.0	3.2
11.00	100	0.350	54.5	2895	1015	96.5	3.2
11.20	100	0.350	54.2	2840	995	98.0	3.3
11.50	100	0.355	53.8	2770	985	102.5	3.3
11.80	100	0.360	53.3	2700	970	106.0	3.3
12.00	100	0.365	53.0	2655	970	109.5	3.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	55	0.250	46.0	1750	440	34.5	6.3
10.20	55	0.255	55.7	1715	435	35.5	7.7
10.50	55	0.260	55.3	1665	435	37.5	7.6
10.80	55	0.265	54.8	1620	430	39.5	7.6
11.00	55	0.270	54.5	1590	430	41.0	7.6
11.20	55	0.270	54.2	1565	425	42.0	7.7
11.50	55	0.270	53.8	1520	410	42.5	7.9
11.80	55	0.275	53.3	1485	410	45.0	7.8
12.00	55	0.280	53.0	1460	410	46.5	7.8

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

10.00	70	0.250	46.0	2230	560	44.0	4.9
10.20	70	0.255	55.7	2185	555	45.5	6.0
10.50	70	0.260	55.3	2120	550	47.5	6.0
10.80	70	0.265	54.8	2065	545	50.0	6.0
11.00	70	0.270	54.5	2025	545	52.0	6.0
11.20	70	0.270	54.2	1990	535	52.5	6.1
11.50	70	0.270	53.8	1940	525	54.5	6.1
11.80	70	0.275	53.3	1890	520	57.0	6.2
12.00	70	0.280	53.0	1855	520	59.0	6.1

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

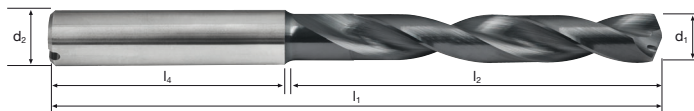
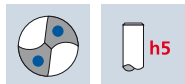
10.00	40	0.250	46.0	1275	320	25.0	8.6
10.20	40	0.255	55.7	1250	320	26.0	10.4
10.50	40	0.260	55.3	1215	315	27.5	10.5
10.80	40	0.265	54.8	1180	315	29.0	10.4
11.00	40	0.270	54.5	1155	310	29.5	10.5
11.20	40	0.270	54.2	1135	305	30.0	10.7
11.50	40	0.270	53.8	1105	300	31.0	10.8
11.80	40	0.275	53.3	1080	295	32.5	10.8
12.00	40	0.280	53.0	1060	295	33.5	10.8

Ghisa
(griglia / sferoidale)

10.00	240	0.490	46.0	7640	3745	294.0	0.7
10.20	240	0.500	55.7	7490	3745	306.0	0.9
10.50	240	0.510	55.3	7275	3710	321.0	0.9
10.80	240	0.525	54.8	7075	3715	340.5	0.9
11.00	240	0.530	54.5	6945	3680	349.5	0.9
11.20	240	0.535	54.2	6820	3650	359.5	0.9
11.50	240	0.535	53.8	6645	3555	369.5	0.9
11.80	240	0.545	53.3	6475	3530	386.0	0.9
12.00	240	0.555	53.0	6365	3535	400.0	0.9

Punte elicoidali XDrill®

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-X
						B72015	.0990		B72015
ø Code	d1 m7	d2 h5	l1	l2	l4	€			
.0990	9.9	10	103	61	40	102.00			
.1000	10.0	10	103	61	40	102.00			
.1010	10.1	12	118	71	45	147.00			
.1020	10.2	12	118	71	45	147.00			
.1030	10.3	12	118	71	45	147.00			
.1040	10.4	12	118	71	45	147.00			
.1050	10.5	12	118	71	45	147.00			
.1060	10.6	12	118	71	45	147.00			
.1070	10.7	12	118	71	45	147.00			
.1080	10.8	12	118	71	45	147.00			
.1090	10.9	12	118	71	45	147.00			
.1100	11.0	12	118	71	45	147.00			
.1110	11.1	12	118	71	45	147.00			
.1120	11.2	12	118	71	45	147.00			
.1130	11.3	12	118	71	45	147.00			
.1140	11.4	12	118	71	45	147.00			
.1150	11.5	12	118	71	45	147.00			
.1160	11.6	12	118	71	45	147.00			
.1170	11.7	12	118	71	45	147.00			
.1180	11.8	12	118	71	45	147.00			
.1190	11.9	12	118	71	45	147.00			
.1200	12.0	12	118	71	45	147.00			

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.20	180	0.620	58.7	4695	2910	340.0	1.2
12.50	180	0.635	58.3	4585	2910	357.0	1.2
12.60	180	0.640	58.1	4545	2910	363.0	1.2
12.80	180	0.650	57.8	4475	2910	374.5	1.2
13.00	180	0.660	57.5	4405	2905	385.5	1.2
13.20	180	0.670	57.2	4340	2910	398.0	1.2
13.50	180	0.675	56.8	4245	2865	410.0	1.2
13.80	180	0.675	56.3	4150	2800	419.0	1.2
14.00	180	0.680	56.0	4095	2785	428.5	1.2

Acciaio
500 - 850 N/mm²

12.20	160	0.530	58.7	4175	2215	259.0	1.6
12.50	160	0.545	58.3	4075	2220	272.5	1.6
12.60	160	0.545	58.1	4040	2200	274.5	1.6
12.80	160	0.555	57.8	3980	2210	284.5	1.6
13.00	160	0.565	57.5	3920	2215	294.0	1.6
13.20	160	0.575	57.2	3860	2220	304.0	1.5
13.50	160	0.580	56.8	3775	2190	313.5	1.6
13.80	160	0.580	56.3	3690	2140	320.0	1.6
14.00	160	0.585	56.0	3640	2130	328.0	1.6

Acciaio
850 - 1100 N/mm²

12.20	140	0.490	58.7	3655	1790	209.0	2.0
12.50	140	0.500	58.3	3565	1785	219.0	2.0
12.60	140	0.505	58.1	3535	1785	222.5	2.0
12.80	140	0.510	57.8	3480	1775	228.5	2.0
13.00	140	0.520	57.5	3430	1785	237.0	1.9
13.20	140	0.530	57.2	3375	1790	245.0	1.9
13.50	140	0.535	56.8	3300	1765	252.5	1.9
13.80	140	0.535	56.3	3230	1730	259.0	2.0
14.00	140	0.540	56.0	3185	1720	265.0	2.0

Acciaio
1100 - 1300 N/mm²

12.20	100	0.370	58.7	2610	965	113.0	3.6
12.50	100	0.380	58.3	2545	965	118.5	3.6
12.60	100	0.385	58.1	2525	970	121.0	3.6
12.80	100	0.390	57.8	2485	970	125.0	3.6
13.00	100	0.395	57.5	2450	970	129.0	3.6
13.20	100	0.400	57.2	2410	965	132.0	3.6
13.50	100	0.405	56.8	2360	955	136.5	3.6
13.80	100	0.405	56.3	2305	935	140.0	3.6
14.00	100	0.410	56.0	2275	935	144.0	3.6

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.20	55	0.285	58.7	1435	410	48.0	8.6
12.50	55	0.290	58.3	1400	405	49.5	8.6
12.60	55	0.295	58.1	1390	410	51.0	8.5
12.80	55	0.300	57.8	1370	410	53.0	8.5
13.00	55	0.305	57.5	1345	410	54.5	8.4
13.20	55	0.310	57.2	1325	410	56.0	8.4
13.50	55	0.310	56.8	1295	400	57.5	8.5
13.80	55	0.310	56.3	1270	395	59.0	8.6
14.00	55	0.315	56.0	1250	395	61.0	8.5

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

12.20	70	0.285	58.7	1825	520	61.0	6.8
12.50	70	0.290	58.3	1785	520	64.0	6.7
12.60	70	0.295	58.1	1770	520	65.0	6.7
12.80	70	0.300	57.8	1740	520	67.0	6.7
13.00	70	0.305	57.5	1715	525	69.5	6.6
13.20	70	0.310	57.2	1690	525	72.0	6.5
13.50	70	0.310	56.8	1650	510	73.0	6.7
13.80	70	0.310	56.3	1615	500	75.0	6.8
14.00	70	0.315	56.0	1590	500	77.0	6.7

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

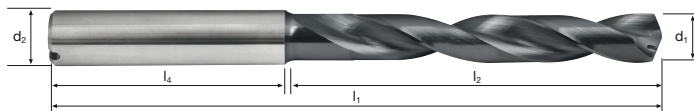
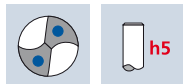
12.20	40	0.285	58.7	1045	300	35.0	11.7
12.50	40	0.290	58.3	1020	295	36.0	11.9
12.60	40	0.295	58.1	1010	300	37.5	11.6
12.80	40	0.300	57.8	995	300	38.5	11.6
13.00	40	0.305	57.5	980	300	40.0	11.5
13.20	40	0.310	57.2	965	300	41.0	11.4
13.50	40	0.310	56.8	945	295	42.0	11.6
13.80	40	0.310	56.3	925	285	42.5	11.9
14.00	40	0.315	56.0	910	285	44.0	11.8

Ghisa
(griglia / sferoidale)

12.20	240	0.560	58.7	6260	3505	409.5	1.0
12.50	240	0.575	58.3	6110	3515	431.5	1.0
12.60	240	0.580	58.1	6065	3520	439.0	1.0
12.80	240	0.590	57.8	5970	3520	453.0	1.0
13.00	240	0.600	57.5	5875	3525	468.0	1.0
13.20	240	0.610	57.2	5785	3530	483.0	1.0
13.50	240	0.615	56.8	5660	3480	498.0	1.0
13.80	240	0.615	56.3	5535	3405	509.5	1.0
14.00	240	0.620	56.0	5455	3380	520.5	1.0

Punte elicoidali XDrill®

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine							Articolo	Codice-ø		DURO-X
							B72015	.1210		B72015
ø Code	d1 m7	d2 h5	l1	l2	l4	€				
.1210	12.1	14	124	77	45	199.00				
.1220	12.2	14	124	77	45	199.00				
.1230	12.3	14	124	77	45	199.00				
.1240	12.4	14	124	77	45	199.00				
.1250	12.5	14	124	77	45	199.00				
.1260	12.6	14	124	77	45	199.00				
.1270	12.7	14	124	77	45	199.00				
.1280	12.8	14	124	77	45	199.00				
.1290	12.9	14	124	77	45	199.00				
.1300	13.0	14	124	77	45	199.00				
.1310	13.1	14	124	77	45	199.00				
.1320	13.2	14	124	77	45	199.00				
.1330	13.3	14	124	77	45	199.00				
.1340	13.4	14	124	77	45	199.00				
.1350	13.5	14	124	77	45	199.00				
.1360	13.6	14	124	77	45	199.00				
.1370	13.7	14	124	77	45	199.00				
.1380	13.8	14	124	77	45	199.00				
.1390	13.9	14	124	77	45	199.00				
.1400	14.0	14	124	77	45	199.00				

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.20	180	0.685	61.7	4035	2765	438.0	1.3
14.50	180	0.690	61.3	3950	2725	450.0	1.3
14.80	180	0.700	60.8	3870	2710	466.0	1.3
15.00	180	0.710	60.5	3820	2710	479.0	1.3
15.20	180	0.720	60.2	3770	2715	492.5	1.3
15.50	180	0.725	59.8	3695	2680	505.5	1.3
15.70	180	0.725	59.5	3650	2645	512.0	1.3
15.80	180	0.730	59.3	3625	2645	518.5	1.3
16.00	180	0.735	59.0	3580	2630	529.0	1.3

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.20	160	0.590	61.7	3585	2115	335.0	1.8
14.50	160	0.590	61.3	3510	2070	342.0	1.8
14.80	160	0.600	60.8	3440	2065	355.0	1.8
15.00	160	0.610	60.5	3395	2070	366.0	1.8
15.20	160	0.615	60.2	3350	2060	374.0	1.8
15.50	160	0.620	59.8	3285	2035	384.0	1.8
15.70	160	0.625	59.5	3245	2030	393.0	1.8
15.80	160	0.625	59.3	3225	2015	395.0	1.8
16.00	160	0.630	59.0	3185	2005	403.0	1.8

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.20	140	0.540	61.7	3140	1695	268.5	2.2
14.50	140	0.545	61.3	3075	1675	276.5	2.2
14.80	140	0.555	60.8	3010	1670	287.5	2.2
15.00	140	0.560	60.5	2970	1665	294.0	2.2
15.20	140	0.570	60.2	2930	1670	303.0	2.2
15.50	140	0.570	59.8	2875	1640	309.5	2.2
15.70	140	0.575	59.5	2840	1635	316.5	2.2
15.80	140	0.580	59.3	2820	1635	320.5	2.2
16.00	140	0.580	59.0	2785	1615	324.5	2.2

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.20	100	0.410	61.7	2240	920	145.5	4.0
14.50	100	0.415	61.3	2195	910	150.5	4.0
14.80	100	0.420	60.8	2150	905	155.5	4.0
15.00	100	0.425	60.5	2120	900	159.0	4.0
15.20	100	0.430	60.2	2095	900	163.5	4.0
15.50	100	0.435	59.8	2055	895	169.0	4.0
15.70	100	0.435	59.5	2025	880	170.5	4.1
15.80	100	0.440	59.3	2015	885	173.5	4.0
16.00	100	0.440	59.0	1990	875	176.0	4.0

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.20	55	0.315	61.7	1235	390	62.0	9.5
14.50	55	0.320	61.3	1205	385	63.5	9.6
14.80	55	0.325	60.8	1185	385	66.0	9.5
15.00	55	0.330	60.5	1165	385	68.0	9.4
15.20	55	0.330	60.2	1150	380	69.0	9.5
15.50	55	0.335	59.8	1130	380	71.5	9.4
15.70	55	0.335	59.5	1115	375	72.5	9.5
15.80	55	0.340	59.3	1110	375	73.5	9.5
16.00	55	0.340	59.0	1095	370	74.5	9.6

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.20	70	0.315	61.7	1570	495	78.5	7.5
14.50	70	0.320	61.3	1535	490	81.0	7.5
14.80	70	0.325	60.8	1505	490	84.5	7.4
15.00	70	0.330	60.5	1485	490	86.5	7.4
15.20	70	0.330	60.2	1465	485	88.0	7.4
15.50	70	0.335	59.8	1440	480	90.5	7.5
15.70	70	0.335	59.5	1420	475	92.0	7.5
15.80	70	0.340	59.3	1410	480	94.0	7.4
16.00	70	0.340	59.0	1395	475	95.5	7.5

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

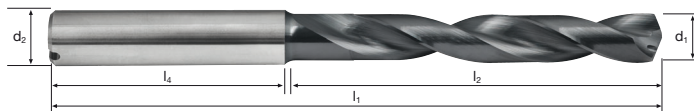
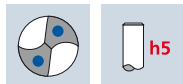
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.20	40	0.315	61.7	895	280	44.5	13.2
14.50	40	0.320	61.3	880	280	46.0	13.1
14.80	40	0.325	60.8	860	280	48.0	13.0
15.00	40	0.330	60.5	850	280	49.5	13.0
15.20	40	0.330	60.2	840	275	50.0	13.1
15.50	40	0.335	59.8	820	275	52.0	13.0
15.70	40	0.335	59.5	810	270	52.5	13.2
15.80	40	0.340	59.3	805	275	54.0	12.9
16.00	40	0.340	59.0	795	270	54.5	13.1

Ghisa
(griglia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.20	240	0.625	61.7	5380	3365	533.0	1.1
14.50	240	0.630	61.3	5270	3320	548.0	1.1
14.80	240	0.635	60.8	5160	3275	563.5	1.1
15.00	240	0.645	60.5	5095	3285	580.5	1.1
15.20	240	0.655	60.2	5025	3290	597.0	1.1
15.50	240	0.660	59.8	4930	3255	614.0	1.1
15.70	240	0.660	59.5	4865	3210	621.5	1.1
15.80	240	0.665	59.3	4835	3215	630.5	1.1
16.00	240	0.670	59.0	4775	3200	643.5	1.1

Punte elicoidali XDrill®

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine B72015 .1410							DURO-X	
Ø Code	d1 m7	d2 h5	l1	l2	l4		B72015	
							€	
.1410	14.1	16	133	83	48		240.00	
.1420	14.2	16	133	83	48		240.00	
.1430	14.3	16	133	83	48		240.00	
.1440	14.4	16	133	83	48		240.00	
.1450	14.5	16	133	83	48		240.00	
.1460	14.6	16	133	83	48		240.00	
.1470	14.7	16	133	83	48		240.00	
.1480	14.8	16	133	83	48		240.00	
.1490	14.9	16	133	83	48		240.00	
.1500	15.0	16	133	83	48		240.00	
.1510	15.1	16	133	83	48		240.00	
.1520	15.2	16	133	83	48		240.00	
.1530	15.3	16	133	83	48		240.00	
.1540	15.4	16	133	83	48		240.00	
.1550	15.5	16	133	83	48		240.00	
.1560	15.6	16	133	83	48		240.00	
.1570	15.7	16	133	83	48		240.00	
.1580	15.8	16	133	83	48		240.00	
.1590	15.9	16	133	83	48		240.00	
.1600	16.0	16	133	83	48		240.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
16.20	180	0.740	68.7	3535	2615	539.0	1.6
16.40	180	0.750	68.4	3495	2620	553.5	1.6
16.50	180	0.755	68.3	3470	2620	560.0	1.6
16.80	180	0.755	67.8	3410	2575	571.0	1.6
17.00	180	0.760	67.5	3370	2560	581.0	1.6
17.20	180	0.765	67.2	3330	2545	591.5	1.6
17.50	180	0.770	66.8	3275	2520	606.0	1.6
17.70	180	0.775	66.5	3235	2505	616.5	1.6
18.00	180	0.780	66.0	3185	2485	632.5	1.6

Acciaio
500 - 850 N/mm²

16.20	160	0.635	68.7	3145	1995	411.0	2.1
16.40	160	0.640	68.4	3105	1985	419.5	2.1
16.50	160	0.645	68.3	3085	1990	425.5	2.1
16.80	160	0.650	67.8	3030	1970	436.5	2.1
17.00	160	0.650	67.5	2995	1945	441.5	2.1
17.20	160	0.655	67.2	2960	1940	451.0	2.1
17.50	160	0.660	66.8	2910	1920	462.0	2.1
17.70	160	0.660	66.5	2875	1900	467.5	2.1
18.00	160	0.670	66.0	2830	1895	482.0	2.1

Acciaio
850 - 1100 N/mm²

16.20	140	0.585	68.7	2750	1610	332.0	2.6
16.40	140	0.590	68.4	2715	1600	338.0	2.6
16.50	140	0.595	68.3	2700	1605	343.0	2.6
16.80	140	0.595	67.8	2655	1580	350.0	2.6
17.00	140	0.600	67.5	2620	1570	356.5	2.6
17.20	140	0.600	67.2	2590	1555	361.5	2.6
17.50	140	0.610	66.8	2545	1550	373.0	2.6
17.70	140	0.610	66.5	2520	1535	377.5	2.6
18.00	140	0.615	66.0	2475	1520	387.0	2.6

Acciaio
1100 - 1300 N/mm²

16.20	100	0.445	68.7	1965	875	180.5	4.7
16.40	100	0.450	68.4	1940	875	185.0	4.7
16.50	100	0.450	68.3	1930	870	186.0	4.7
16.80	100	0.455	67.8	1895	860	190.5	4.7
17.00	100	0.455	67.5	1870	850	193.0	4.8
17.20	100	0.460	67.2	1850	850	197.5	4.7
17.50	100	0.460	66.8	1820	835	201.0	4.8
17.70	100	0.465	66.5	1800	835	205.5	4.8
18.00	100	0.470	66.0	1770	830	211.0	4.8

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
16.20	55	0.340	68.7	1080	365	75.0	11.3
16.40	55	0.345	68.4	1070	370	78.0	11.1
16.50	55	0.350	68.3	1060	370	79.0	11.1
16.80	55	0.350	67.8	1040	365	81.0	11.1
17.00	55	0.350	67.5	1030	360	81.5	11.3
17.20	55	0.350	67.2	1020	355	82.5	11.4
17.50	55	0.355	66.8	1000	355	85.5	11.3
17.70	55	0.355	66.5	990	350	86.0	11.4
18.00	55	0.360	66.0	975	350	89.0	11.3

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

16.20	70	0.340	68.7	1375	470	97.0	8.8
16.40	70	0.345	68.4	1360	470	99.5	8.7
16.50	70	0.350	68.3	1350	475	101.5	8.6
16.80	70	0.350	67.8	1325	465	103.0	8.7
17.00	70	0.350	67.5	1310	460	104.5	8.8
17.20	70	0.350	67.2	1295	455	105.5	8.9
17.50	70	0.355	66.8	1275	455	109.5	8.8
17.70	70	0.355	66.5	1260	445	109.5	9.0
18.00	70	0.360	66.0	1240	445	113.0	8.9

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

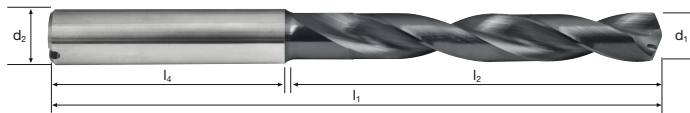
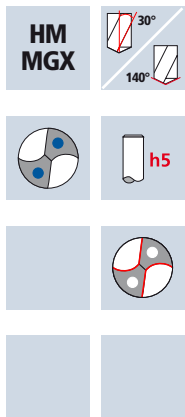
16.20	40	0.340	68.7	785	265	54.5	15.6
16.40	40	0.345	68.4	775	265	56.0	15.5
16.50	40	0.350	68.3	770	270	57.5	15.2
16.80	40	0.350	67.8	760	265	58.5	15.4
17.00	40	0.350	67.5	750	265	60.0	15.3
17.20	40	0.350	67.2	740	260	60.5	15.5
17.50	40	0.355	66.8	730	260	62.5	15.4
17.70	40	0.355	66.5	720	255	62.5	15.6
18.00	40	0.360	66.0	705	255	65.0	15.5

Ghisa
(griglia / sferoidale)

16.20	240	0.675	68.7	4715	3185	656.5	1.3
16.40	240	0.680	68.4	4660	3170	669.5	1.3
16.50	240	0.685	68.3	4630	3170	678.0	1.3
16.80	240	0.685	67.8	4545	3115	690.5	1.3
17.00	240	0.690	67.5	4495	3100	703.5	1.3
17.20	240	0.695	67.2	4440	3085	717.0	1.3
17.50	240	0.700	66.8	4365	3055	735.0	1.3
17.70	240	0.705	66.5	4315	3040	748.0	1.3
18.00	240	0.710	66.0	4245	3015	767.0	1.3

Punte elicoidali XDrill®

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine							DURO-X	
Articolo							B72015	
Codice-ø							€	
Ø Code	d1 m7	d2 h5	l1	l2	l4			
.1610	16.1	18	143	93	48	322.00		
.1620	16.2	18	143	93	48	322.00		
.1630	16.3	18	143	93	48	322.00		
.1640	16.4	18	143	93	48	322.00		
.1650	16.5	18	143	93	48	322.00		
.1660	16.6	18	143	93	48	322.00		
.1670	16.7	18	143	93	48	322.00		
.1680	16.8	18	143	93	48	322.00		
.1690	16.9	18	143	93	48	322.00		
.1700	17.0	18	143	93	48	322.00		
.1710	17.1	18	143	93	48	322.00		
.1720	17.2	18	143	93	48	322.00		
.1730	17.3	18	143	93	48	322.00		
.1740	17.4	18	143	93	48	322.00		
.1750	17.5	18	143	93	48	322.00		
.1760	17.6	18	143	93	48	322.00		
.1770	17.7	18	143	93	48	322.00		
.1780	17.8	18	143	93	48	322.00		
.1790	17.9	18	143	93	48	322.00		
.1800	18.0	18	143	93	48	322.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
18.50	180	0.785	73.3	3095	2430	653.0	1.8
18.70	180	0.785	73.0	3065	2405	660.5	1.8
19.00	180	0.790	72.5	3015	2380	675.0	1.8
19.20	180	0.795	72.2	2985	2375	687.5	1.8
19.30	180	0.800	72.0	2970	2375	695.0	1.8
19.50	180	0.805	71.8	2940	2365	706.5	1.8
19.70	180	0.810	71.5	2910	2355	718.0	1.8
19.80	180	0.810	71.3	2895	2345	722.0	1.8
20.00	180	0.820	71.0	2865	2350	738.5	1.8

Acciaio
500 - 850 N/mm²

18.50	160	0.670	73.3	2755	1845	496.0	2.4
18.70	160	0.675	73.0	2725	1840	505.5	2.4
19.00	160	0.680	72.5	2680	1820	516.0	2.4
19.20	160	0.680	72.2	2655	1805	522.5	2.4
19.30	160	0.685	72.0	2640	1810	529.5	2.4
19.50	160	0.690	71.8	2610	1800	537.5	2.4
19.70	160	0.690	71.5	2585	1785	544.0	2.4
19.80	160	0.695	71.3	2570	1785	549.5	2.4
20.00	160	0.705	71.0	2545	1795	564.0	2.4

Acciaio
850 - 1100 N/mm²

18.50	140	0.620	73.3	2410	1495	402.0	2.9
18.70	140	0.620	73.0	2385	1480	406.5	3.0
19.00	140	0.625	72.5	2345	1465	415.5	3.0
19.20	140	0.625	72.2	2320	1450	420.0	3.0
19.30	140	0.630	72.0	2310	1455	425.5	3.0
19.50	140	0.635	71.8	2285	1450	433.0	3.0
19.70	140	0.640	71.5	2260	1445	440.5	3.0
19.80	140	0.640	71.3	2250	1440	443.5	3.0
20.00	140	0.645	71.0	2230	1440	452.5	3.0

Acciaio
1100 - 1300 N/mm²

18.50	100	0.470	73.3	1720	810	217.5	5.4
18.70	100	0.470	73.0	1700	800	219.5	5.5
19.00	100	0.475	72.5	1675	795	225.5	5.5
19.20	100	0.475	72.2	1660	790	228.5	5.5
19.30	100	0.480	72.0	1650	790	231.0	5.5
19.50	100	0.485	71.8	1630	790	236.0	5.5
19.70	100	0.485	71.5	1615	785	239.5	5.5
19.80	100	0.485	71.3	1610	780	240.0	5.5
20.00	100	0.490	71.0	1590	780	245.0	5.5

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
18.50	55	0.360	73.3	945	340	91.5	12.9
18.70	55	0.360	73.0	935	335	92.0	13.1
19.00	55	0.365	72.5	920	335	95.0	13.0
19.20	55	0.365	72.2	910	330	95.5	13.1
19.30	55	0.370	72.0	905	335	98.0	12.9
19.50	55	0.370	71.8	900	335	100.0	12.9
19.70	55	0.375	71.5	890	335	102.0	12.8
19.80	55	0.375	71.3	885	330	101.5	13.0
20.00	55	0.380	71.0	875	335	105.0	12.7

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

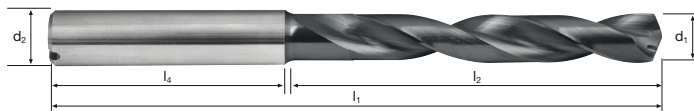
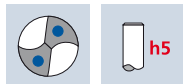
18.50	70	0.360	73.3	1205	435	117.0	10.1
18.70	70	0.360	73.0	1190	430	118.0	10.2
19.00	70	0.365	72.5	1175	430	122.0	10.1
19.20	70	0.365	72.2	1160	425	123.0	10.2
19.30	70	0.370	72.0	1155	425	124.5	10.2
19.50	70	0.370	71.8	1145	425	127.0	10.1
19.70	70	0.375	71.5	1130	425	129.5	10.1
19.80	70	0.375	71.3	1125	420	129.5	10.2
20.00	70	0.380	71.0	1115	425	133.5	10.0

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

18.50	40	0.360	73.3	690	250	67.0	17.6
18.70	40	0.360	73.0	680	245	67.5	17.9
19.00	40	0.365	72.5	670	245	69.5	17.8
19.20	40	0.365	72.2	665	245	71.0	17.7
19.30	40	0.370	72.0	660	245	71.5	17.6
19.50	40	0.370	71.8	655	240	71.5	17.9
19.70	40	0.375	71.5	645	240	73.0	17.9
19.80	40	0.375	71.3	645	240	74.0	17.8
20.00	40	0.380	71.0	635	240	75.5	17.8

Ghisa
(griglia / sferoidale)

18.50	240	0.710	73.3	4130	2930	787.5	1.5
18.70	240	0.715	73.0	4085	2920	802.0	1.5
19.00	240	0.720	72.5	4020	2895	821.0	1.5
19.20	240	0.720	72.2	3980	2865	829.5	1.5
19.30	240	0.725	72.0	3960	2870	839.5	1.5
19.50	240	0.735	71.8	3920	2880	860.0	1.5
19.70	240	0.735	71.5	3880	2850	868.5	1.5
19.80	240	0.740	71.3	3860	2855	879.0	1.5
20.00	240	0.745	71.0	3820	2845	894.0	1.5



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)
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Ø Code	d1 m7	d2 h5	l1	l2	l4	€	DURO-X
							B72015
Esempio: N° Ordine	Articolo		Codice-Ø				
	B72015		.1850				
.1850	18.5	20	153	101	50	378.00	
.1870	18.7	20	153	101	50	378.00	
.1900	19.0	20	153	101	50	378.00	
.1910	19.1	20	153	101	50	378.00	
.1920	19.2	20	153	101	50	378.00	
.1930	19.3	20	153	101	50	378.00	
.1950	19.5	20	153	101	50	378.00	
.1970	19.7	20	153	101	50	378.00	
.1980	19.8	20	153	101	50	378.00	
.2000	20.0	20	153	101	50	378.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	160	0.065	22.3	20370	1325	6.5	1.0
2.60	160	0.070	22.1	19590	1370	7.5	1.0
2.80	160	0.075	21.8	18190	1365	8.5	1.0
2.90	160	0.075	21.6	17560	1315	8.5	1.0
3.00	160	0.080	21.5	16975	1360	9.5	0.9
3.30	160	0.085	21.1	15435	1310	11.0	1.0
3.50	160	0.090	20.8	14550	1310	12.5	1.0
3.75	160	0.100	20.4	13580	1360	15.0	0.9
3.80	160	0.100	30.3	13405	1340	15.0	1.4

Acciaio
500 - 850 N/mm²

2.50	120	0.065	22.3	15280	995	5.0	1.3
2.60	120	0.070	22.1	14690	1030	5.5	1.3
2.80	120	0.075	21.8	13640	1025	6.5	1.3
2.90	120	0.075	21.6	13170	990	6.5	1.3
3.00	120	0.080	21.5	12730	1020	7.0	1.3
3.30	120	0.085	21.1	11575	985	8.5	1.3
3.50	120	0.090	20.8	10915	980	9.5	1.3
3.75	120	0.100	20.4	10185	1020	11.5	1.2
3.80	120	0.100	30.3	10050	1005	11.5	1.8

Acciaio
850 - 1100 N/mm²

2.50	100	0.050	22.3	12730	635	3.0	2.1
2.60	100	0.050	22.1	12245	610	3.0	2.2
2.80	100	0.055	21.8	11370	625	4.0	2.1
2.90	100	0.060	21.6	10975	660	4.5	2.0
3.00	100	0.060	21.5	10610	635	4.5	2.0
3.30	100	0.065	21.1	9645	625	5.5	2.0
3.50	100	0.070	20.8	9095	635	6.0	2.0
3.75	100	0.075	20.4	8490	635	7.0	1.9
3.80	100	0.075	30.3	8375	630	7.0	2.9

Acciaio
1100 - 1300 N/mm²

2.50	65	0.040	22.3	8275	330	1.5	4.1
2.60	65	0.045	22.1	7960	360	2.0	3.7
2.80	65	0.045	21.8	7390	335	2.0	3.9
2.90	65	0.050	21.6	7135	355	2.5	3.7
3.00	65	0.050	21.5	6895	345	2.5	3.7
3.30	65	0.055	21.1	6270	345	3.0	3.7
3.50	65	0.060	20.8	5910	355	3.5	3.5
3.75	65	0.065	20.4	5515	360	4.0	3.4
3.80	65	0.065	30.3	5445	355	4.0	5.1

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	35	0.035	22.3	4455	155	1.0	8.6
2.60	35	0.035	22.1	4285	150	1.0	8.8
2.80	35	0.035	21.8	3980	140	1.0	9.3
2.90	35	0.040	21.6	3840	155	1.0	8.4
3.00	35	0.040	21.5	3715	150	1.0	8.6
3.30	35	0.045	21.1	3375	150	1.5	8.4
3.50	35	0.045	20.8	3185	145	1.5	8.6
3.75	35	0.050	20.4	2970	150	1.5	8.2
3.80	35	0.050	30.3	2930	145	1.5	12.5

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

2.50	60	0.040	22.3	7640	305	1.5	4.4
2.60	60	0.040	22.1	7345	295	1.5	4.5
2.80	60	0.045	21.8	6820	305	2.0	4.3
2.90	60	0.045	21.6	6585	295	2.0	4.4
3.00	60	0.045	21.5	6365	285	2.0	4.5
3.30	60	0.050	21.1	5785	290	2.5	4.4
3.50	60	0.055	20.8	5455	300	3.0	4.2
3.75	60	0.060	20.4	5095	305	3.5	4.0
3.80	60	0.060	30.3	5025	300	3.5	6.1

Ghisa
(grigia / sferoidale)

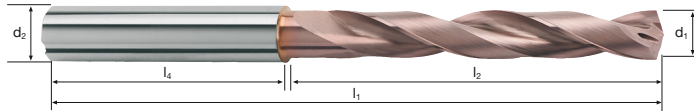
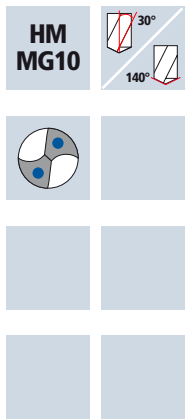
2.50	200	0.070	22.3	25465	1785	9.0	0.7
2.60	200	0.075	22.1	24485	1835	9.5	0.7
2.80	200	0.080	21.8	22735	1820	11.0	0.7
2.90	200	0.085	21.6	21950	1865	12.5	0.7
3.00	200	0.085	21.5	21220	1805	13.0	0.7
3.30	200	0.095	21.1	19290	1835	15.5	0.7
3.50	200	0.100	20.8	18190	1820	17.5	0.7
3.75	200	0.105	20.4	16975	1780	19.5	0.7
3.80	200	0.110	30.3	16755	1845	21.0	1.0

Alluminio malleabile
Si < 6%

2.50	250	0.055	22.3	31830	1750	8.5	0.8
2.60	250	0.060	22.1	30605	1835	9.5	0.7
2.80	250	0.060	21.8	28420	1705	10.5	0.8
2.90	250	0.065	21.6	27440	1785	12.0	0.7
3.00	250	0.065	21.5	26525	1725	12.0	0.7
3.30	250	0.075	21.1	24115	1810	15.5	0.7
3.50	250	0.080	20.8	22735	1820	17.5	0.7
3.75	250	0.085	20.4	21220	1805	20.0	0.7
3.80	250	0.085	30.3	20940	1780	20.0	1.0

Punte elicoidali Supradrill N

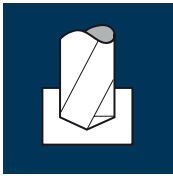
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		U-4XD	
							B52015		.0250			
ø Code	d1 m7	d2 h6	l1	l2	l4			€				
.0250*	2.50	6	66	28	36			47.60				
.0255*	2.55	6	66	28	36			47.60				
.0260*	2.60	6	66	28	36			47.60				
.0265*	2.65	6	66	28	36			47.60				
.0270*	2.70	6	66	28	36			47.60				
.0280*	2.80	6	66	28	36			47.60				
.0285*	2.85	6	66	28	36			47.60				
.0290*	2.90	6	66	28	36			47.60				
.0295*	2.95	6	66	28	36			47.60				
.0300	3.00	6	66	28	36			72.00				
.0305	3.05	6	66	26	36			72.00				
.0310	3.10	6	66	28	36			72.00				
.0315	3.15	6	66	28	36			72.00				
.0320	3.20	6	66	28	36			72.00				
.0330	3.30	6	66	28	36			72.00				
.0340	3.40	6	66	28	36			72.00				
.0350	3.50	6	66	28	36			72.00				
.0360	3.60	6	66	28	36			72.00				
.0370	3.70	6	66	28	36			72.00				
.0375	3.75	6	66	28	36			72.00				
.0380	3.80	6	74	36	36			72.00				
.0385	3.85	6	74	36	36			72.00				
* senza adduzione interna refrigerante												

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	160	0.105	30.0	12730	1335	17.0	1.3
4.20	160	0.110	29.7	12125	1335	18.5	1.3
4.40	160	0.115	29.4	11575	1330	20.0	1.3
4.50	160	0.120	29.3	11320	1360	21.5	1.3
4.80	160	0.125	36.8	10610	1325	24.0	1.7
5.00	160	0.130	36.5	10185	1325	26.0	1.7
5.20	160	0.135	36.2	9795	1320	28.0	1.6
5.30	160	0.140	36.0	9610	1345	29.5	1.6
5.50	160	0.145	35.8	9260	1345	32.0	1.6

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	120	0.105	30.0	9550	1005	12.5	1.8
4.20	120	0.110	29.7	9095	1000	14.0	1.8
4.40	120	0.115	29.4	8680	1000	15.0	1.8
4.50	120	0.120	29.3	8490	1020	16.0	1.7
4.80	120	0.125	36.8	7960	995	18.0	2.2
5.00	120	0.130	36.5	7640	995	19.5	2.2
5.20	120	0.135	36.2	7345	990	21.0	2.2
5.30	120	0.140	36.0	7205	1010	22.5	2.1
5.50	120	0.145	35.8	6945	1005	24.0	2.1

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	100	0.080	30.0	7960	635	8.0	2.8
4.20	100	0.085	29.7	7580	645	9.0	2.8
4.40	100	0.090	29.4	7235	650	10.0	2.7
4.50	100	0.090	29.3	7075	635	10.0	2.8
4.80	100	0.095	36.8	6630	630	11.5	3.5
5.00	100	0.100	36.5	6365	635	12.5	3.4
5.20	100	0.105	36.2	6120	645	13.5	3.4
5.30	100	0.105	36.0	6005	630	14.0	3.4
5.50	100	0.110	35.8	5785	635	15.0	3.4

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	65	0.065	30.0	5175	335	4.0	5.4
4.20	65	0.070	29.7	4925	345	5.0	5.2
4.40	65	0.075	29.4	4700	355	5.5	5.0
4.50	65	0.075	29.3	4600	345	5.5	5.1
4.80	65	0.080	36.8	4310	345	6.0	6.4
5.00	65	0.085	36.5	4140	350	7.0	6.3
5.20	65	0.085	36.2	3980	340	7.0	6.4
5.30	65	0.090	36.0	3905	350	7.5	6.2
5.50	65	0.090	35.8	3760	340	8.0	6.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	35	0.055	30.0	2785	155	2.0	11.6
4.20	35	0.055	29.7	2655	145	2.0	12.3
4.40	35	0.060	29.4	2530	150	2.5	11.8
4.50	35	0.060	29.3	2475	150	2.5	11.7
4.80	35	0.065	36.8	2320	150	2.5	14.7
5.00	35	0.065	36.5	2230	145	3.0	15.1
5.20	35	0.070	36.2	2140	150	3.0	14.5
5.30	35	0.070	36.0	2100	145	3.0	14.9
5.50	35	0.075	35.8	2025	150	3.5	14.3

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	60	0.060	30.0	4775	285	3.5	6.3
4.20	60	0.065	29.7	4545	295	4.0	6.0
4.40	60	0.070	29.4	4340	305	4.5	5.8
4.50	60	0.070	29.3	4245	295	4.5	6.0
4.80	60	0.075	36.8	3980	300	5.5	7.4
5.00	60	0.075	36.5	3820	285	5.5	7.7
5.20	60	0.080	36.2	3675	295	6.5	7.4
5.30	60	0.080	36.0	3605	290	6.5	7.4
5.50	60	0.085	35.8	3470	295	7.0	7.3

Ghisa
(grigia / sferoidale)

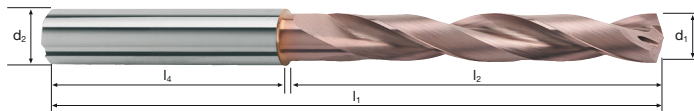
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	200	0.115	30.0	15915	1830	23.0	1.0
4.20	200	0.120	29.7	15160	1820	25.0	1.0
4.40	200	0.125	29.4	14470	1810	27.5	1.0
4.50	200	0.130	29.3	14145	1840	29.5	1.0
4.80	200	0.135	36.8	13265	1790	32.5	1.2
5.00	200	0.145	36.5	12730	1845	36.0	1.2
5.20	200	0.150	36.2	12245	1835	39.0	1.2
5.30	200	0.150	36.0	12010	1800	39.5	1.2
5.50	200	0.155	35.8	11575	1795	42.5	1.2

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	250	0.090	30.0	19895	1790	22.5	1.0
4.20	250	0.095	29.7	18945	1800	25.0	1.0
4.40	250	0.100	29.4	18085	1810	27.5	1.0
4.50	250	0.100	29.3	17685	1770	28.0	1.0
4.80	250	0.105	36.8	16580	1740	31.5	1.3
5.00	250	0.110	36.5	15915	1750	34.5	1.3
5.20	250	0.115	36.2	15305	1760	37.5	1.2
5.30	250	0.120	36.0	15015	1800	39.5	1.2
5.50	250	0.120	35.8	14470	1735	41.0	1.2

Punte elicoidali Supradrill N

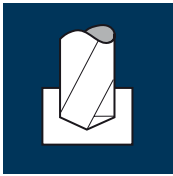
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine							U-4XD	
Articolo							B52015	
Codice-ø							B53015	
ø Code	d1 m7	d2 h6	l1	l2	l4	€		
.0390	3.90	6	74	36	36	72.00		
.0400	4.00	6	74	36	36	72.00		
.0410	4.10	6	74	36	36	72.00		
.0420	4.20	6	74	36	36	72.00		
.0430	4.30	6	74	36	36	72.00		
.0440	4.40	6	74	36	36	72.00		
.0445	4.45	6	74	36	36	72.00		
.0450	4.50	6	74	36	36	72.00		
.0460	4.60	6	74	36	36	72.00		
.0470	4.70	6	74	36	36	72.00		
.0480	4.80	6	82	44	36	72.00		
.0490	4.90	6	82	44	36	72.00		
.0495	4.95	6	82	44	36	72.00		
.0500	5.00	6	82	44	36	72.00		
.0505	5.05	6	82	44	36	72.00		
.0510	5.10	6	82	44	36	72.00		
.0520	5.20	6	82	44	36	72.00		
.0525	5.25	6	82	44	36	72.00		
.0530	5.30	6	82	44	36	72.00		
.0540	5.40	6	82	44	36	72.00		
.0550	5.50	6	82	44	36	72.00		
.0560	5.60	6	82	44	36	72.00		
.0565	5.65	6	82	44	36	72.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.80	160	0.155	35.3	8780	1360	36.0	1.6
6.00	160	0.160	35.0	8490	1360	38.5	1.5
6.20	160	0.165	43.7	8215	1355	41.0	1.9
6.50	160	0.170	43.3	7835	1330	44.0	2.0
6.80	160	0.180	42.8	7490	1350	49.0	1.9
7.00	160	0.185	42.5	7275	1345	52.0	1.9
7.20	160	0.190	42.2	7075	1345	55.0	1.9
7.40	160	0.195	41.9	6880	1340	57.5	1.9
7.50	160	0.195	41.8	6790	1325	58.5	1.9

Acciaio
500 - 850 N/mm²

5.80	120	0.155	35.3	6585	1020	27.0	2.1
6.00	120	0.160	35.0	6365	1020	29.0	2.1
6.20	120	0.165	43.7	6160	1015	30.5	2.6
6.50	120	0.170	43.3	5875	1000	33.0	2.6
6.80	120	0.180	42.8	5615	1010	36.5	2.5
7.00	120	0.185	42.5	5455	1010	39.0	2.5
7.20	120	0.190	42.2	5305	1010	41.0	2.5
7.40	120	0.195	41.9	5160	1005	43.0	2.5
7.50	120	0.195	41.8	5095	995	44.0	2.5

Acciaio
850 - 1100 N/mm²

5.80	100	0.115	35.3	5490	630	16.5	3.4
6.00	100	0.120	35.0	5305	635	18.0	3.3
6.20	100	0.125	43.7	5135	640	19.5	4.1
6.50	100	0.130	43.3	4895	635	21.0	4.1
6.80	100	0.135	42.8	4680	630	23.0	4.1
7.00	100	0.140	42.5	4545	635	24.5	4.0
7.20	100	0.145	42.2	4420	640	26.0	4.0
7.40	100	0.150	41.9	4300	645	27.5	3.9
7.50	100	0.150	41.8	4245	635	28.0	3.9

Acciaio
1100 - 1300 N/mm²

5.80	65	0.095	35.3	3565	340	9.0	6.2
6.00	65	0.100	35.0	3450	345	10.0	6.1
6.20	65	0.105	43.7	3335	350	10.5	7.5
6.50	65	0.110	43.3	3185	350	11.5	7.4
6.80	65	0.115	42.8	3045	350	12.5	7.3
7.00	65	0.115	42.5	2955	340	13.0	7.5
7.20	65	0.120	42.2	2875	345	14.0	7.3
7.40	65	0.125	41.9	2795	350	15.0	7.2
7.50	65	0.125	41.8	2760	345	15.0	7.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.80	35	0.075	35.3	1920	145	4.0	14.6
6.00	35	0.080	35.0	1855	150	4.0	14.0
6.20	35	0.085	43.7	1795	155	4.5	16.9
6.50	35	0.085	43.3	1715	145	5.0	17.9
6.80	35	0.090	42.8	1640	150	5.5	17.1
7.00	35	0.095	42.5	1590	150	6.0	17.0
7.20	35	0.095	42.2	1545	145	6.0	17.5
7.40	35	0.100	41.9	1505	150	6.5	16.8
7.50	35	0.100	41.8	1485	150	6.5	16.7

Acciaio per lavorazione a freddo (12% Cr) fortemente legati [1.2379]
Acciaio inossidabile [Cr-Ni/1.4301]

5.80	60	0.090	35.3	3295	295	8.0	7.2
6.00	60	0.090	35.0	3185	285	8.0	7.4
6.20	60	0.095	43.7	3080	295	9.0	8.9
6.50	60	0.100	43.3	2940	295	10.0	8.8
6.80	60	0.105	42.8	2810	295	10.5	8.7
7.00	60	0.110	42.5	2730	300	11.5	8.5
7.20	60	0.110	42.2	2655	290	12.0	8.7
7.40	60	0.115	41.9	2580	295	12.5	8.5
7.50	60	0.115	41.8	2545	295	13.0	8.5

Ghisa (grigia / sferoidale)

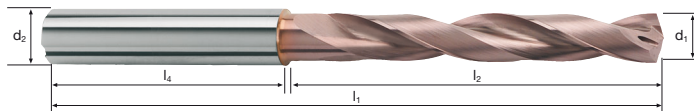
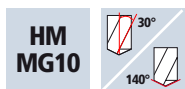
5.80	200	0.165	35.3	10975	1810	48.0	1.2
6.00	200	0.170	35.0	10610	1805	51.0	1.2
6.20	200	0.175	43.7	10270	1795	54.0	1.5
6.50	200	0.185	43.3	9795	1810	60.0	1.4
6.80	200	0.195	42.8	9360	1825	66.5	1.4
7.00	200	0.200	42.5	9095	1820	70.0	1.4
7.20	200	0.205	42.2	8840	1810	73.5	1.4
7.40	200	0.210	41.9	8605	1805	77.5	1.4
7.50	200	0.215	41.8	8490	1825	80.5	1.4

Alluminio malleabile
Si < 6%

5.80	250	0.130	35.3	13720	1785	47.0	1.2
6.00	250	0.135	35.0	13265	1790	50.5	1.2
6.20	250	0.140	43.7	12835	1795	54.0	1.5
6.50	250	0.145	43.3	12245	1775	59.0	1.5
6.80	250	0.150	42.8	11705	1755	63.5	1.5
7.00	250	0.155	42.5	11370	1760	67.5	1.4
7.20	250	0.160	42.2	11050	1770	72.0	1.4
7.40	250	0.165	41.9	10755	1775	76.5	1.4
7.50	250	0.165	41.8	10610	1750	77.5	1.4

Punte elicoidali Supradrill N

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		U-4XD	
							B52015		.0570			
ø Code	d1 m7	d2 h6	l1	l2	l4			€				
.0570	5.70	6	82	44	36			72.00				
.0575	5.75	6	82	44	36			72.00				
.0580	5.80	6	82	44	36			72.00				
.0590	5.90	6	82	44	36			72.00				
.0600	6.00	6	82	44	36			72.00				
.0610	6.10	8	91	53	36			80.00				
.0620	6.20	8	91	53	36			80.00				
.0630	6.30	8	91	53	36			80.00				
.0640	6.40	8	91	53	36			80.00				
.0650	6.50	8	91	53	36			80.00				
.0660	6.60	8	91	53	36			80.00				
.0670	6.70	8	91	53	36			80.00				
.0680	6.80	8	91	53	36			80.00				
.0690	6.90	8	91	53	36			80.00				
.0700	7.00	8	91	53	36			80.00				
.0710	7.10	8	91	53	36			80.00				
.0720	7.20	8	91	53	36			80.00				
.0725	7.25	8	91	53	36			80.00				
.0730	7.30	8	91	53	36			80.00				
.0740	7.40	8	91	53	36			80.00				
.0745	7.45	8	91	53	36			80.00				
.0750	7.50	8	91	53	36			80.00				
.0755	7.55	8	91	53	36			80.00				

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	160	0.200	41.6	6700	1340	61.0	1.9
7.80	160	0.205	41.3	6530	1340	64.0	1.8
8.00	160	0.210	41.0	6365	1335	67.0	1.8
8.20	160	0.215	48.7	6210	1335	70.5	2.2
8.50	160	0.225	48.3	5990	1350	76.5	2.1
8.80	160	0.230	47.8	5785	1330	81.0	2.2
9.00	160	0.235	47.5	5660	1330	84.5	2.1
9.20	160	0.240	47.2	5535	1330	88.5	2.1
9.40	160	0.245	46.9	5420	1330	92.5	2.1

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	120	0.200	41.6	5025	1005	45.5	2.5
7.80	120	0.205	41.3	4895	1005	48.0	2.5
8.00	120	0.210	41.0	4775	1005	50.5	2.4
8.20	120	0.215	48.7	4660	1000	53.0	2.9
8.50	120	0.225	48.3	4495	1010	57.5	2.9
8.80	120	0.230	47.8	4340	1000	61.0	2.9
9.00	120	0.235	47.5	4245	1000	63.5	2.9
9.20	120	0.240	47.2	4150	995	66.0	2.8
9.40	120	0.245	46.9	4065	995	69.0	2.8

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	100	0.150	41.6	4190	630	28.5	4.0
7.80	100	0.155	41.3	4080	630	30.0	3.9
8.00	100	0.160	41.0	3980	635	32.0	3.9
8.20	100	0.165	48.7	3880	640	34.0	4.6
8.50	100	0.170	48.3	3745	635	36.0	4.6
8.80	100	0.175	47.8	3615	635	38.5	4.5
9.00	100	0.180	47.5	3535	635	40.5	4.5
9.20	100	0.185	47.2	3460	640	42.5	4.4
9.40	100	0.190	46.9	3385	645	45.0	4.4

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	65	0.125	41.6	2720	340	15.5	7.3
7.80	65	0.130	41.3	2655	345	16.5	7.2
8.00	65	0.135	41.0	2585	350	17.5	7.0
8.20	65	0.135	48.7	2525	340	18.0	8.6
8.50	65	0.140	48.3	2435	340	19.5	8.5
8.80	65	0.145	47.8	2350	340	20.5	8.4
9.00	65	0.150	47.5	2300	345	22.0	8.3
9.20	65	0.155	47.2	2250	350	23.5	8.1
9.40	65	0.155	46.9	2200	340	23.5	8.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	35	0.100	41.6	1465	145	6.5	17.2
7.80	35	0.105	41.3	1430	150	7.0	16.5
8.00	35	0.105	41.0	1395	145	7.5	17.0
8.20	35	0.110	48.7	1360	150	8.0	19.5
8.50	35	0.115	48.3	1310	150	8.5	19.3
8.80	35	0.115	47.8	1265	145	9.0	19.8
9.00	35	0.120	47.5	1240	150	9.5	19.0
9.20	35	0.125	47.2	1210	150	10.0	18.9
9.40	35	0.125	46.9	1185	150	10.5	18.8

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	60	0.115	41.6	2515	290	13.0	8.6
7.80	60	0.120	41.3	2450	295	14.0	8.4
8.00	60	0.125	41.0	2385	300	15.0	8.2
8.20	60	0.125	48.7	2330	290	15.5	10.1
8.50	60	0.130	48.3	2245	290	16.5	10.0
8.80	60	0.135	47.8	2170	295	18.0	9.7
9.00	60	0.140	47.5	2120	295	19.0	9.7
9.20	60	0.140	47.2	2075	290	19.5	9.8
9.40	60	0.145	46.9	2030	295	20.5	9.5

Ghisa
(grigia / sferoidale)

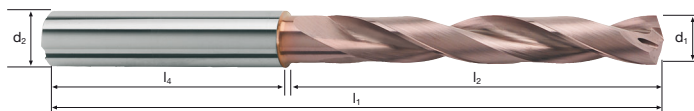
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	200	0.215	41.6	8375	1800	81.5	1.4
7.80	200	0.225	41.3	8160	1835	87.5	1.4
8.00	200	0.230	41.0	7960	1830	92.0	1.3
8.20	200	0.235	48.7	7765	1825	96.5	1.6
8.50	200	0.245	48.3	7490	1835	104.0	1.6
8.80	200	0.250	47.8	7235	1810	110.0	1.6
9.00	200	0.255	47.5	7075	1805	115.0	1.6
9.20	200	0.265	47.2	6920	1835	122.0	1.5
9.40	200	0.270	46.9	6775	1830	127.0	1.5

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	250	0.170	41.6	10470	1780	80.5	1.4
7.80	250	0.175	41.3	10200	1785	85.5	1.4
8.00	250	0.180	41.0	9945	1790	90.0	1.4
8.20	250	0.180	48.7	9705	1745	92.0	1.7
8.50	250	0.190	48.3	9360	1780	101.0	1.6
8.80	250	0.195	47.8	9045	1765	107.5	1.6
9.00	250	0.200	47.5	8840	1770	112.5	1.6
9.20	250	0.205	47.2	8650	1775	118.0	1.6
9.40	250	0.210	46.9	8465	1780	123.5	1.6

Punte elicoidali Supradrill N

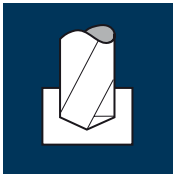
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine							U-4XD	
Articolo							B52015	
Codice-ø							B53015	
ø Code	d1 m7	d2 h6	l1	l2	l4	€		
.0760	7.60	8	91	53	36	80.00		
.0765	7.65	8	91	53	36	80.00		
.0770	7.70	8	91	53	36	80.00		
.0780	7.80	8	91	53	36	80.00		
.0790	7.90	8	91	53	36	80.00		
.0800	8.00	8	91	53	36	80.00		
.0810	8.10	10	103	61	40	91.00		
.0820	8.20	10	103	61	40	91.00		
.0830	8.30	10	103	61	40	91.00		
.0840	8.40	10	103	61	40	91.00		
.0850	8.50	10	103	61	40	91.00		
.0860	8.60	10	103	61	40	91.00		
.0870	8.70	10	103	61	40	91.00		
.0875	8.75	10	103	61	40	91.00		
.0880	8.80	10	103	61	40	91.00		
.0885	8.85	10	103	61	40	91.00		
.0890	8.90	10	103	61	40	91.00		
.0900	9.00	10	103	61	40	91.00		
.0910	9.10	10	103	61	40	91.00		
.0920	9.20	10	103	61	40	91.00		
.0925	9.25	10	103	61	40	91.00		
.0930	9.30	10	103	61	40	91.00		
.0940	9.40	10	103	61	40	91.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	160	0.250	46.8	5360	1340	95.0	2.1
9.60	160	0.255	46.6	5305	1355	98.0	2.1
9.80	160	0.260	46.3	5195	1350	102.0	2.1
10.00	160	0.265	46.0	5095	1350	106.0	2.0
10.20	160	0.270	55.7	4995	1350	110.5	2.5
10.50	160	0.275	55.3	4850	1335	115.5	2.5
10.80	160	0.285	54.8	4715	1345	123.0	2.4
11.00	160	0.290	54.5	4630	1345	128.0	2.4
11.50	160	0.305	53.8	4430	1350	140.0	2.4

Acciaio
500 - 850 N/mm²

9.50	120	0.250	46.8	4020	1005	71.0	2.8
9.60	120	0.255	46.6	3980	1015	73.5	2.8
9.80	120	0.260	46.3	3900	1015	76.5	2.7
10.00	120	0.265	46.0	3820	1010	79.5	2.7
10.20	120	0.270	55.7	3745	1010	82.5	3.3
10.50	120	0.275	55.3	3640	1000	86.5	3.3
10.80	120	0.285	54.8	3535	1005	92.0	3.3
11.00	120	0.290	54.5	3470	1005	95.5	3.3
11.50	120	0.305	53.8	3320	1015	105.5	3.2

Acciaio
850 - 1100 N/mm²

9.50	100	0.190	46.8	3350	635	45.0	4.4
9.60	100	0.190	46.6	3315	630	45.5	4.4
9.80	100	0.195	46.3	3250	635	48.0	4.4
10.00	100	0.200	46.0	3185	635	50.0	4.3
10.20	100	0.205	55.7	3120	640	52.5	5.2
10.50	100	0.210	55.3	3030	635	55.0	5.2
10.80	100	0.215	54.8	2945	635	58.0	5.2
11.00	100	0.220	54.5	2895	635	60.5	5.1
11.50	100	0.230	53.8	2770	635	66.0	5.1

Acciaio
1100 - 1300 N/mm²

9.50	65	0.160	46.8	2180	350	25.0	8.0
9.60	65	0.160	46.6	2155	345	25.0	8.1
9.80	65	0.165	46.3	2110	350	26.5	7.9
10.00	65	0.165	46.0	2070	340	26.5	8.1
10.20	65	0.170	55.7	2030	345	28.0	9.7
10.50	65	0.175	55.3	1970	345	30.0	9.6
10.80	65	0.180	54.8	1915	345	31.5	9.5
11.00	65	0.185	54.5	1880	350	33.5	9.3
11.50	65	0.190	53.8	1800	340	35.5	9.5

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	35	0.125	46.8	1175	145	10.5	19.4
9.60	35	0.130	46.6	1160	150	11.0	18.6
9.80	35	0.130	46.3	1135	150	11.5	18.5
10.00	35	0.135	46.0	1115	150	12.0	18.4
10.20	35	0.135	55.7	1090	145	12.0	23.0
10.50	35	0.140	55.3	1060	150	13.0	22.1
10.80	35	0.145	54.8	1030	150	13.5	21.9
11.00	35	0.145	54.5	1015	145	14.0	22.6
11.50	35	0.155	53.8	970	150	15.5	21.5

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

9.50	60	0.145	46.8	2010	290	20.5	9.7
9.60	60	0.150	46.6	1990	300	21.5	9.3
9.80	60	0.150	46.3	1950	295	22.5	9.4
10.00	60	0.155	46.0	1910	295	23.0	9.4
10.20	60	0.155	55.7	1870	290	23.5	11.5
10.50	60	0.160	55.3	1820	290	25.0	11.4
10.80	60	0.165	54.8	1770	290	26.5	11.3
11.00	60	0.170	54.5	1735	295	28.0	11.1
11.50	60	0.175	53.8	1660	290	30.0	11.1

Ghisa
(grigia / sferoidale)

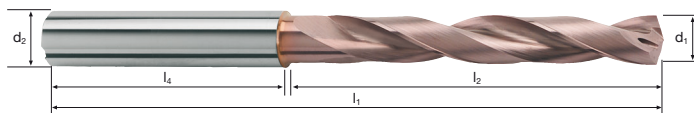
9.50	200	0.270	46.8	6700	1810	128.5	1.6
9.60	200	0.275	46.6	6630	1825	132.0	1.5
9.80	200	0.280	46.3	6495	1820	137.5	1.5
10.00	200	0.285	46.0	6365	1815	142.5	1.5
10.20	200	0.290	55.7	6240	1810	148.0	1.8
10.50	200	0.300	55.3	6065	1820	157.5	1.8
10.80	200	0.310	54.8	5895	1825	167.0	1.8
11.00	200	0.315	54.5	5785	1820	173.0	1.8
11.50	200	0.330	53.8	5535	1825	189.5	1.8

Alluminio malleabile
Si < 6%

9.50	250	0.210	46.8	8375	1760	125.0	1.6
9.60	250	0.215	46.6	8290	1780	129.0	1.6
9.80	250	0.220	46.3	8120	1785	134.5	1.6
10.00	250	0.220	46.0	7960	1750	137.5	1.6
10.20	250	0.225	55.7	7800	1755	143.5	1.9
10.50	250	0.235	55.3	7580	1780	154.0	1.9
10.80	250	0.240	54.8	7370	1770	162.0	1.9
11.00	250	0.245	54.5	7235	1775	168.5	1.8
11.50	250	0.255	53.8	6920	1765	183.5	1.8

Punte elicoidali Supradrill N

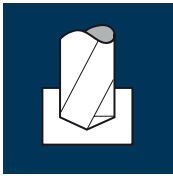
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		U-4XD	
						B52015		.0950		B52015	
										B53015	
ø Code	d1 m7	d2 h6	l1	l2	l4	€					
.0950	9.50	10	103	61	40	91.00					
.0955	9.55	10	103	61	40	91.00					
.0960	9.60	10	103	61	40	91.00					
.0965	9.65	10	103	61	40	91.00					
.0970	9.70	10	103	61	40	91.00					
.0980	9.80	10	103	61	40	91.00					
.0990	9.90	10	103	61	40	91.00					
.1000	10.00	10	103	61	40	91.00					
.1010	10.10	12	118	71	45	131.00					
.1020	10.20	12	118	71	45	131.00					
.1030	10.30	12	118	71	45	131.00					
.1040	10.40	12	118	71	45	131.00					
.1050	10.50	12	118	71	45	131.00					
.1060	10.60	12	118	71	45	131.00					
.1070	10.70	12	118	71	45	131.00					
.1080	10.80	12	118	71	45	131.00					
.1090	10.90	12	118	71	45	131.00					
.1100	11.00	12	118	71	45	131.00					
.1110	11.10	12	118	71	45	131.00					
.1120	11.20	12	118	71	45	131.00					
.1130	11.30	12	118	71	45	131.00					
.1140	11.40	12	118	71	45	131.00					
.1150	11.50	12	118	71	45	131.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.80	160	0.310	53.3	4315	1340	146.5	2.4
12.00	160	0.315	53.0	4245	1335	151.0	2.4
12.20	160	0.320	58.7	4175	1335	156.0	2.6
12.50	160	0.330	58.3	4075	1345	165.0	2.6
12.80	160	0.335	57.8	3980	1335	172.0	2.6
13.00	160	0.340	57.5	3920	1335	177.0	2.6
13.20	160	0.345	57.2	3860	1330	182.0	2.6
13.50	160	0.355	56.8	3775	1340	192.0	2.5
13.80	160	0.365	56.3	3690	1345	201.0	2.5

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.80	120	0.310	53.3	3235	1005	110.0	3.2
12.00	120	0.315	53.0	3185	1005	113.5	3.2
12.20	120	0.320	58.7	3130	1000	117.0	3.5
12.50	120	0.330	58.3	3055	1010	124.0	3.5
12.80	120	0.335	57.8	2985	1000	128.5	3.5
13.00	120	0.340	57.5	2940	1000	132.5	3.5
13.20	120	0.345	57.2	2895	1000	137.0	3.4
13.50	120	0.355	56.8	2830	1005	144.0	3.4
13.80	120	0.365	56.3	2770	1010	151.0	3.3

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.80	100	0.235	53.3	2700	635	69.5	5.0
12.00	100	0.240	53.0	2655	635	72.0	5.0
12.20	100	0.245	58.7	2610	640	75.0	5.5
12.50	100	0.250	58.3	2545	635	78.0	5.5
12.80	100	0.255	57.8	2485	635	81.5	5.5
13.00	100	0.260	57.5	2450	635	84.5	5.4
13.20	100	0.265	57.2	2410	640	87.5	5.4
13.50	100	0.270	56.8	2360	635	91.0	5.4
13.80	100	0.275	56.3	2305	635	95.0	5.3

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.80	65	0.195	53.3	1755	340	37.0	9.4
12.00	65	0.200	53.0	1725	345	39.0	9.2
12.20	65	0.205	58.7	1695	345	40.5	10.2
12.50	65	0.210	58.3	1655	350	43.0	10.0
12.80	65	0.215	57.8	1615	345	44.5	10.1
13.00	65	0.215	57.5	1590	340	45.0	10.1
13.20	65	0.220	57.2	1565	345	47.0	9.9
13.50	65	0.225	56.8	1535	345	49.5	9.9
13.80	65	0.230	56.3	1500	345	51.5	9.8

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.80	35	0.155	53.3	945	145	16.0	22.1
12.00	35	0.160	53.0	930	150	17.0	21.2
12.20	35	0.165	58.7	915	150	17.5	23.5
12.50	35	0.165	58.3	890	145	18.0	24.1
12.80	35	0.170	57.8	870	150	19.5	23.1
13.00	35	0.175	57.5	855	150	20.0	23.0
13.20	35	0.175	57.2	845	150	20.5	22.9
13.50	35	0.180	56.8	825	150	21.5	22.7
13.80	35	0.185	56.3	805	150	22.5	22.5

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.80	60	0.180	53.3	1620	290	31.5	11.0
12.00	60	0.185	53.0	1590	295	33.5	10.8
12.20	60	0.190	58.7	1565	295	34.5	11.9
12.50	60	0.190	58.3	1530	290	35.5	12.1
12.80	60	0.195	57.8	1490	290	37.5	12.0
13.00	60	0.200	57.5	1470	295	39.0	11.7
13.20	60	0.205	57.2	1445	295	40.5	11.6
13.50	60	0.210	56.8	1415	295	42.0	11.6
13.80	60	0.210	56.3	1385	290	43.5	11.6

Ghisa
(grigia / sferoidale)

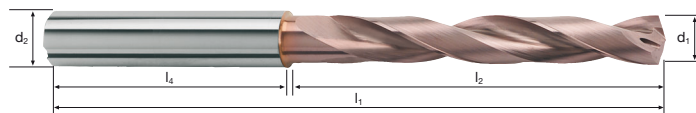
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.80	200	0.335	53.3	5395	1805	197.5	1.8
12.00	200	0.345	53.0	5305	1830	207.0	1.7
12.20	200	0.350	58.7	5220	1825	213.5	1.9
12.50	200	0.355	58.3	5095	1810	222.0	1.9
12.80	200	0.365	57.8	4975	1815	233.5	1.9
13.00	200	0.370	57.5	4895	1810	240.0	1.9
13.20	200	0.375	57.2	4825	1810	247.5	1.9
13.50	200	0.385	56.8	4715	1815	260.0	1.9
13.80	200	0.395	56.3	4615	1825	273.0	1.9

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.80	250	0.260	53.3	6745	1755	192.0	1.8
12.00	250	0.265	53.0	6630	1755	198.5	1.8
12.20	250	0.270	58.7	6525	1760	205.5	2.0
12.50	250	0.280	58.3	6365	1780	218.5	2.0
12.80	250	0.285	57.8	6215	1770	228.0	2.0
13.00	250	0.290	57.5	6120	1775	235.5	1.9
13.20	250	0.295	57.2	6030	1780	243.5	1.9
13.50	250	0.300	56.8	5895	1770	253.5	1.9
13.80	250	0.305	56.3	5765	1760	263.0	1.9

Punte elicoidali Supradrill N

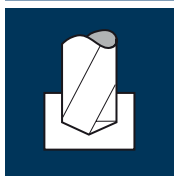
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine		Articolo		Codice-ø				U-4XD	
		B52015		.1160				B52015	
								B53015	
ø Code	d1 m7	d2 h6	l1	l2	l4			€	
.1160	11.60	12	118	71	45			131.00	
.1170	11.70	12	118	71	45			131.00	
.1180	11.80	12	118	71	45			131.00	
.1190	11.90	12	118	71	45			131.00	
.1200	12.00	12	118	71	45			131.00	
.1210	12.10	14	124	77	45			178.00	
.1220	12.20	14	124	77	45			178.00	
.1230	12.30	14	124	77	45			178.00	
.1240	12.40	14	124	77	45			178.00	
.1250	12.50	14	124	77	45			178.00	
.1260	12.60	14	124	77	45			178.00	
.1270	12.70	14	124	77	45			178.00	
.1280	12.80	14	124	77	45			178.00	
.1290	12.90	14	124	77	45			178.00	
.1300	13.00	14	124	77	45			178.00	
.1310	13.10	14	124	77	45			178.00	
.1320	13.20	14	124	77	45			178.00	
.1330	13.30	14	124	77	45			178.00	
.1340	13.40	14	124	77	45			178.00	
.1350	13.50	14	124	77	45			178.00	
.1360	13.60	14	124	77	45			178.00	
.1370	13.70	14	124	77	45			178.00	
.1380	13.80	14	124	77	45			178.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.00	160	0.370	56.0	3640	1345	207.0	2.5
14.20	160	0.375	61.7	3585	1345	213.0	2.8
14.50	160	0.380	61.3	3510	1335	220.5	2.8
14.80	160	0.390	60.8	3440	1340	230.5	2.7
15.00	160	0.395	60.5	3395	1340	237.0	2.7
15.20	160	0.400	60.2	3350	1340	243.0	2.7
15.50	160	0.410	59.8	3285	1345	254.0	2.7
15.80	160	0.415	59.3	3225	1340	262.5	2.7
16.00	160	0.420	59.0	3185	1340	269.5	2.6

Acciaio
500 - 850 N/mm²

14.00	120	0.370	56.0	2730	1010	155.5	3.3
14.20	120	0.375	61.7	2690	1010	160.0	3.7
14.50	120	0.380	61.3	2635	1000	165.0	3.7
14.80	120	0.390	60.8	2580	1005	173.0	3.6
15.00	120	0.395	60.5	2545	1005	177.5	3.6
15.20	120	0.400	60.2	2515	1005	182.5	3.6
15.50	120	0.410	59.8	2465	1010	190.5	3.6
15.80	120	0.415	59.3	2420	1005	197.0	3.5
16.00	120	0.420	59.0	2385	1000	201.0	3.5

Acciaio
850 - 1100 N/mm²

14.00	100	0.280	56.0	2275	635	98.0	5.3
14.20	100	0.285	61.7	2240	640	101.5	5.8
14.50	100	0.290	61.3	2195	635	105.0	5.8
14.80	100	0.295	60.8	2150	635	109.0	5.7
15.00	100	0.300	60.5	2120	635	112.0	5.7
15.20	100	0.305	60.2	2095	640	116.0	5.6
15.50	100	0.310	59.8	2055	635	120.0	5.7
15.80	100	0.315	59.3	2015	635	124.5	5.6
16.00	100	0.320	59.0	1990	635	127.5	5.6

Acciaio
1100 - 1300 N/mm²

14.00	65	0.235	56.0	1480	350	54.0	9.6
14.20	65	0.235	61.7	1455	340	54.0	10.9
14.50	65	0.240	61.3	1425	340	56.0	10.8
14.80	65	0.245	60.8	1400	345	59.5	10.6
15.00	65	0.250	60.5	1380	345	61.0	10.5
15.20	65	0.255	60.2	1360	345	62.5	10.5
15.50	65	0.260	59.8	1335	345	65.0	10.4
15.80	65	0.265	59.3	1310	345	67.5	10.3
16.00	65	0.265	59.0	1295	345	69.5	10.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.00	35	0.185	56.0	795	145	22.5	23.2
14.20	35	0.190	61.7	785	150	24.0	24.7
14.50	35	0.195	61.3	770	150	25.0	24.5
14.80	35	0.195	60.8	755	145	25.0	25.2
15.00	35	0.200	60.5	745	150	26.5	24.2
15.20	35	0.205	60.2	735	150	27.0	24.1
15.50	35	0.205	59.8	720	150	28.5	23.9
15.80	35	0.210	59.3	705	150	29.5	23.7
16.00	35	0.215	59.0	695	150	30.0	23.6

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

14.00	60	0.215	56.0	1365	295	45.5	11.4
14.20	60	0.220	61.7	1345	295	46.5	12.5
14.50	60	0.225	61.3	1315	295	48.5	12.5
14.80	60	0.230	60.8	1290	295	50.5	12.4
15.00	60	0.230	60.5	1275	295	52.0	12.3
15.20	60	0.235	60.2	1255	295	53.5	12.2
15.50	60	0.240	59.8	1230	295	55.5	12.2
15.80	60	0.245	59.3	1210	295	58.0	12.1
16.00	60	0.245	59.0	1195	295	59.5	12.0

Ghisa
(griglia / sferoidale)

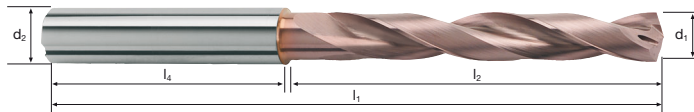
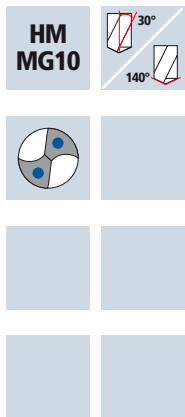
14.00	200	0.400	56.0	4545	1820	280.0	1.8
14.20	200	0.405	61.7	4485	1815	287.5	2.0
14.50	200	0.415	61.3	4390	1820	300.5	2.0
14.80	200	0.425	60.8	4300	1830	315.0	2.0
15.00	200	0.430	60.5	4245	1825	322.5	2.0
15.20	200	0.435	60.2	4190	1825	331.0	2.0
15.50	200	0.445	59.8	4105	1825	344.5	2.0
15.80	200	0.450	59.3	4030	1815	356.0	2.0
16.00	200	0.455	59.0	3980	1810	364.0	2.0

Alluminio malleabile
Si < 6%

14.00	250	0.310	56.0	5685	1760	271.0	1.9
14.20	250	0.315	61.7	5605	1765	279.5	2.1
14.50	250	0.320	61.3	5490	1755	290.0	2.1
14.80	250	0.330	60.8	5375	1775	305.5	2.1
15.00	250	0.335	60.5	5305	1775	313.5	2.0
15.20	250	0.340	60.2	5235	1780	323.0	2.0
15.50	250	0.345	59.8	5135	1770	334.0	2.0
15.80	250	0.350	59.3	5035	1760	345.0	2.0
16.00	250	0.355	59.0	4975	1765	355.0	2.0

Punte elicoidali Supradrill N

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		U-4XD	
							B52015		.1390			
ø Code	d1 m7	d2 h6	l1	l2	l4			€				
.1390	13.90	14	124	77	45			178.00				
.1400	14.00	14	124	77	45			178.00				
.1410	14.10	16	133	83	48			214.00				
.1420	14.20	16	133	83	48			214.00				
.1430	14.30	16	133	83	48			214.00				
.1440	14.40	16	133	83	48			214.00				
.1450	14.50	16	133	83	48			214.00				
.1460	14.60	16	133	83	48			214.00				
.1470	14.70	16	133	83	48			214.00				
.1480	14.80	16	133	83	48			214.00				
.1490	14.90	16	133	83	48			214.00				
.1500	15.00	16	133	83	48			214.00				
.1510	15.10	16	133	83	48			214.00				
.1520	15.20	16	133	83	48			214.00				
.1530	15.30	16	133	83	48			214.00				
.1540	15.40	16	133	83	48			214.00				
.1550	15.50	16	133	83	48			214.00				
.1560	15.60	16	133	83	48			214.00				
.1570	15.70	16	133	83	48			214.00				
.1580	15.80	16	133	83	48			214.00				
.1590	15.90	16	133	83	48			214.00				
.1600	16.00	16	133	83	48			214.00				

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
16.20	160	0.425	68.7	3145	1335	275.0	3.1
16.50	160	0.435	68.3	3085	1340	286.5	3.1
16.60	160	0.435	68.1	3070	1335	289.0	3.1
16.80	160	0.440	67.8	3030	1335	296.0	3.0
17.00	160	0.445	67.5	2995	1335	303.0	3.0
17.20	160	0.455	67.2	2960	1345	312.5	3.0
17.50	160	0.460	66.8	2910	1340	322.5	3.0
17.80	160	0.470	66.3	2860	1345	334.5	3.0
18.00	160	0.475	66.0	2830	1345	342.5	2.9

Acciaio
500 - 850 N/mm²

16.20	120	0.425	68.7	2360	1005	207.0	4.1
16.50	120	0.435	68.3	2315	1005	215.0	4.1
16.60	120	0.435	68.1	2300	1000	216.5	4.1
16.80	120	0.440	67.8	2275	1000	221.5	4.1
17.00	120	0.445	67.5	2245	1000	227.0	4.1
17.20	120	0.455	67.2	2220	1010	234.5	4.0
17.50	120	0.460	66.8	2185	1005	241.5	4.0
17.80	120	0.470	66.3	2145	1010	251.5	3.9
18.00	120	0.475	66.0	2120	1005	255.5	3.9

Acciaio
850 - 1100 N/mm²

16.20	100	0.325	68.7	1965	640	132.0	6.4
16.50	100	0.330	68.3	1930	635	136.0	6.5
16.60	100	0.330	68.1	1920	635	137.5	6.4
16.80	100	0.335	67.8	1895	635	141.0	6.4
17.00	100	0.340	67.5	1870	635	144.0	6.4
17.20	100	0.345	67.2	1850	640	148.5	6.3
17.50	100	0.350	66.8	1820	635	152.5	6.3
17.80	100	0.355	66.3	1790	635	158.0	6.3
18.00	100	0.360	66.0	1770	635	161.5	6.2

Acciaio
1100 - 1300 N/mm²

16.20	65	0.270	68.7	1275	345	71.0	11.9
16.50	65	0.275	68.3	1255	345	74.0	11.9
16.60	65	0.275	68.1	1245	340	73.5	12.0
16.80	65	0.280	67.8	1230	345	76.5	11.8
17.00	65	0.285	67.5	1215	345	78.5	11.7
17.20	65	0.285	67.2	1205	345	80.0	11.7
17.50	65	0.290	66.8	1180	340	82.0	11.8
17.80	65	0.295	66.3	1160	340	84.5	11.7
18.00	65	0.300	66.0	1150	345	88.0	11.5

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
16.20	35	0.215	68.7	690	150	31.0	27.5
16.50	35	0.220	68.3	675	150	32.0	27.3
16.60	35	0.220	68.1	670	145	31.5	28.2
16.80	35	0.225	67.8	665	150	33.5	27.1
17.00	35	0.225	67.5	655	145	33.0	27.9
17.20	35	0.230	67.2	650	150	35.0	26.9
17.50	35	0.235	66.8	635	150	36.0	26.7
17.80	35	0.235	66.3	625	145	36.0	27.4
18.00	35	0.240	66.0	620	150	38.0	26.4

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

16.20	60	0.250	68.7	1180	295	61.0	14.0
16.50	60	0.255	68.3	1155	295	63.0	13.9
16.60	60	0.255	68.1	1150	295	64.0	13.9
16.80	60	0.260	67.8	1135	295	65.5	13.8
17.00	60	0.260	67.5	1125	295	67.0	13.7
17.20	60	0.265	67.2	1110	295	68.5	13.7
17.50	60	0.270	66.8	1090	295	71.0	13.6
17.80	60	0.275	66.3	1075	295	73.5	13.5
18.00	60	0.275	66.0	1060	290	74.0	13.7

Ghisa
(griglia / sferoidale)

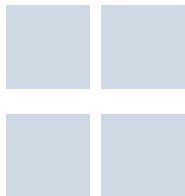
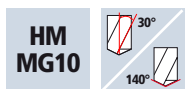
16.20	200	0.465	68.7	3930	1825	376.0	2.3
16.50	200	0.470	68.3	3860	1815	388.0	2.3
16.60	200	0.475	68.1	3835	1820	394.0	2.2
16.80	200	0.480	67.8	3790	1820	403.5	2.2
17.00	200	0.485	67.5	3745	1815	412.0	2.2
17.20	200	0.490	67.2	3700	1815	421.5	2.2
17.50	200	0.500	66.8	3640	1820	438.0	2.2
17.80	200	0.510	66.3	3575	1825	454.0	2.2
18.00	200	0.515	66.0	3535	1820	463.0	2.2

Alluminio malleabile
Si < 6%

16.20	250	0.360	68.7	4910	1770	365.0	2.3
16.50	250	0.365	68.3	4825	1760	376.5	2.3
16.60	250	0.370	68.1	4795	1775	384.0	2.3
16.80	250	0.375	67.8	4735	1775	393.5	2.3
17.00	250	0.380	67.5	4680	1780	404.0	2.3
17.20	250	0.380	67.2	4625	1760	409.0	2.3
17.50	250	0.390	66.8	4545	1775	427.0	2.3
17.80	250	0.395	66.3	4470	1765	439.0	2.3
18.00	250	0.400	66.0	4420	1770	450.5	2.2

Punte elicoidali Supradrill N

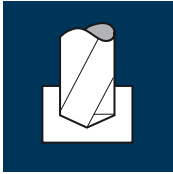
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		U-4XD	
							B52015		.1610			
ø Code	d1 m7	d2 h6	l1	l2	l4		€					
.1610	16.10	18	143	93	48		287.00					
.1620	16.20	18	143	93	48		287.00					
.1630	16.30	18	143	93	48		287.00					
.1640	16.40	18	143	93	48		287.00					
.1650	16.50	18	143	93	48		287.00					
.1660	16.60	18	143	93	48		287.00					
.1670	16.70	18	143	93	48		287.00					
.1680	16.80	18	143	93	48		287.00					
.1690	16.90	18	143	93	48		287.00					
.1700	17.00	18	143	93	48		287.00					
.1710	17.10	18	143	93	48		287.00					
.1720	17.20	18	143	93	48		287.00					
.1730	17.30	18	143	93	48		287.00					
.1740	17.40	18	143	93	48		287.00					
.1750	17.50	18	143	93	48		287.00					
.1760	17.60	18	143	93	48		287.00					
.1770	17.70	18	143	93	48		287.00					
.1780	17.80	18	143	93	48		287.00					
.1790	17.90	18	143	93	48		287.00					
.1800	18.00	18	143	93	48		287.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
18.50	160	0.485	73.3	2755	1335	359.0	3.3
18.70	160	0.490	73.0	2725	1335	366.5	3.3
19.00	160	0.500	72.5	2680	1340	380.0	3.2
19.20	160	0.505	72.2	2655	1340	388.0	3.2
19.30	160	0.510	72.0	2640	1345	393.5	3.2
19.50	160	0.515	71.8	2610	1345	401.5	3.2
19.70	160	0.520	71.5	2585	1345	410.0	3.2
19.80	160	0.520	71.3	2570	1335	411.0	3.2
20.00	160	0.525	71.0	2545	1335	419.5	3.2

Acciaio
500 - 850 N/mm²

18.50	120	0.485	73.3	2065	1000	269.0	4.4
18.70	120	0.490	73.0	2045	1000	274.5	4.4
19.00	120	0.500	72.5	2010	1005	285.0	4.3
19.20	120	0.505	72.2	1990	1005	291.0	4.3
19.30	120	0.510	72.0	1980	1010	295.5	4.3
19.50	120	0.515	71.8	1960	1010	301.5	4.3
19.70	120	0.520	71.5	1940	1010	308.0	4.2
19.80	120	0.520	71.3	1930	1005	309.5	4.3
20.00	120	0.525	71.0	1910	1005	315.5	4.2

Acciaio
850 - 1100 N/mm²

18.50	100	0.370	73.3	1720	635	170.5	6.9
18.70	100	0.375	73.0	1700	640	176.0	6.8
19.00	100	0.380	72.5	1675	635	180.0	6.9
19.20	100	0.385	72.2	1660	640	185.5	6.8
19.30	100	0.385	72.0	1650	635	186.0	6.8
19.50	100	0.390	71.8	1630	635	189.5	6.8
19.70	100	0.395	71.5	1615	640	195.0	6.7
19.80	100	0.395	71.3	1610	635	195.5	6.7
20.00	100	0.400	71.0	1590	635	199.5	6.7

Acciaio
1100 - 1300 N/mm²

18.50	65	0.310	73.3	1120	345	92.5	12.7
18.70	65	0.310	73.0	1105	345	95.0	12.7
19.00	65	0.315	72.5	1090	345	98.0	12.6
19.20	65	0.320	72.2	1080	345	100.0	12.6
19.30	65	0.320	72.0	1070	340	99.5	12.7
19.50	65	0.325	71.8	1060	345	103.0	12.5
19.70	65	0.330	71.5	1050	345	105.0	12.4
19.80	65	0.330	71.3	1045	345	106.0	12.4
20.00	65	0.335	71.0	1035	345	108.5	12.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
18.50	35	0.245	73.3	600	145	39.0	30.3
18.70	35	0.250	73.0	595	150	41.0	29.2
19.00	35	0.255	72.5	585	150	42.5	29.0
19.20	35	0.255	72.2	580	150	43.5	28.9
19.30	35	0.255	72.0	575	145	42.5	29.8
19.50	35	0.260	71.8	570	150	45.0	28.7
19.70	35	0.265	71.5	565	150	45.5	28.6
19.80	35	0.265	71.3	565	150	46.0	28.5
20.00	35	0.265	71.0	555	145	45.5	29.4

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

18.50	60	0.285	73.3	1030	295	79.5	14.9
18.70	60	0.290	73.0	1020	295	81.0	14.8
19.00	60	0.290	72.5	1005	290	82.0	15.0
19.20	60	0.295	72.2	995	295	85.5	14.7
19.30	60	0.295	72.0	990	290	85.0	14.9
19.50	60	0.300	71.8	980	295	88.0	14.6
19.70	60	0.305	71.5	970	295	90.0	14.5
19.80	60	0.305	71.3	965	295	91.0	14.5
20.00	60	0.310	71.0	955	295	92.5	14.4

Ghisa
(grigia / sferoidale)

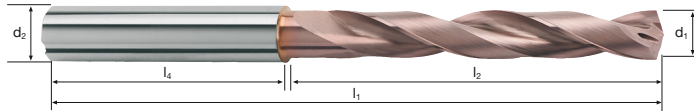
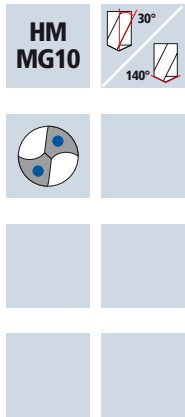
18.50	200	0.530	73.3	3440	1825	490.5	2.4
18.70	200	0.535	73.0	3405	1820	500.0	2.4
19.00	200	0.545	72.5	3350	1825	517.5	2.4
19.20	200	0.550	72.2	3315	1825	528.5	2.4
19.30	200	0.550	72.0	3300	1815	531.0	2.4
19.50	200	0.555	71.8	3265	1810	540.5	2.4
19.70	200	0.565	71.5	3230	1825	556.5	2.4
19.80	200	0.565	71.3	3215	1815	559.0	2.4
20.00	200	0.570	71.0	3185	1815	570.0	2.3

Alluminio malleabile
Si < 6%

18.50	250	0.410	73.3	4300	1765	474.5	2.5
18.70	250	0.415	73.0	4255	1765	484.5	2.5
19.00	250	0.420	72.5	4190	1760	499.0	2.5
19.20	250	0.425	72.2	4145	1760	509.5	2.5
19.30	250	0.430	72.0	4125	1775	519.5	2.4
19.50	250	0.435	71.8	4080	1775	530.0	2.4
19.70	250	0.440	71.5	4040	1780	542.5	2.4
19.80	250	0.440	71.3	4020	1770	545.0	2.4
20.00	250	0.445	71.0	3980	1770	556.0	2.4

Punte elicoidali Supradrill N

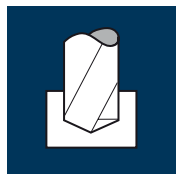
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						U-4XD	
						B52015	
						B53015	
Ø Code	d1 m7	d2 h6	l1	l2	l4	€	
.1850	18.50	20	153	101	50	337.00	
.1870	18.70	20	153	101	50	337.00	
.1900	19.00	20	153	101	50	337.00	
.1910	19.10	20	153	101	50	337.00	
.1920	19.20	20	153	101	50	337.00	
.1930	19.30	20	153	101	50	337.00	
.1950	19.50	20	153	101	50	337.00	
.1970	19.70	20	153	101	50	337.00	
.1980	19.80	20	153	101	50	337.00	
.2000	20.00	20	153	101	50	337.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	140	0.060	22.3	17825	1070	5.5	1.3
2.70	140	0.065	21.9	16505	1075	6.0	1.2
2.90	140	0.070	21.6	15365	1075	7.0	1.2
3.00	140	0.070	21.5	14855	1040	7.5	1.2
3.30	140	0.080	21.1	13505	1080	9.0	1.2
3.50	140	0.085	20.8	12730	1080	10.5	1.2
3.80	140	0.090	30.3	11725	1055	12.0	1.7
4.00	140	0.095	30.0	11140	1060	13.5	1.7
4.20	140	0.100	29.7	10610	1060	14.5	1.7

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	110	0.060	22.3	14005	840	4.0	1.6
2.70	110	0.065	21.9	12970	845	5.0	1.6
2.90	110	0.070	21.6	12075	845	5.5	1.5
3.00	110	0.070	21.5	11670	815	6.0	1.6
3.30	110	0.080	21.1	10610	850	7.5	1.5
3.50	110	0.085	20.8	10005	850	8.0	1.5
3.80	110	0.090	30.3	9215	830	9.5	2.2
4.00	110	0.095	30.0	8755	830	10.5	2.2
4.20	110	0.100	29.7	8335	835	11.5	2.1

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	80	0.045	22.3	10185	460	2.5	2.9
2.70	80	0.050	21.9	9430	470	2.5	2.8
2.90	80	0.050	21.6	8780	440	3.0	2.9
3.00	80	0.055	21.5	8490	465	3.5	2.8
3.30	80	0.060	21.1	7715	465	4.0	2.7
3.50	80	0.065	20.8	7275	475	4.5	2.6
3.80	80	0.070	30.3	6700	470	5.5	3.9
4.00	80	0.070	30.0	6365	445	5.5	4.0
4.20	80	0.075	29.7	6065	455	6.5	3.9

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	55	0.040	22.3	7005	280	1.5	4.8
2.70	55	0.040	21.9	6485	260	1.5	5.1
2.90	55	0.045	21.6	6035	270	2.0	4.8
3.00	55	0.045	21.5	5835	265	2.0	4.9
3.30	55	0.050	21.1	5305	265	2.5	4.8
3.50	55	0.055	20.8	5000	275	2.5	4.5
3.80	55	0.055	30.3	4605	255	3.0	7.1
4.00	55	0.060	30.0	4375	265	3.5	6.8
4.20	55	0.065	29.7	4170	270	3.5	6.6

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	25	0.025	22.3	3185	80	0.5	16.7
2.70	25	0.025	21.9	2945	75	0.5	17.5
2.90	25	0.030	21.6	2745	80	0.5	16.2
3.00	25	0.030	21.5	2655	80	0.5	16.1
3.30	25	0.035	21.1	2410	85	0.5	14.9
3.50	25	0.035	20.8	2275	80	1.0	15.6
3.80	25	0.040	30.3	2095	85	1.0	21.4
4.00	25	0.040	30.0	1990	80	1.0	22.5
4.20	25	0.040	29.7	1895	75	1.0	23.8

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	50	0.030	22.3	6365	190	1.0	7.0
2.70	50	0.035	21.9	5895	205	1.0	6.4
2.90	50	0.035	21.6	5490	190	1.5	6.8
3.00	50	0.040	21.5	5305	210	1.5	6.1
3.30	50	0.040	21.1	4825	195	1.5	6.5
3.50	50	0.045	20.8	4545	205	2.0	6.1
3.80	50	0.050	30.3	4190	210	2.5	8.7
4.00	50	0.050	30.0	3980	200	2.5	9.0
4.20	50	0.055	29.7	3790	210	3.0	8.5

Ghisa
(grigia / sferoidale)

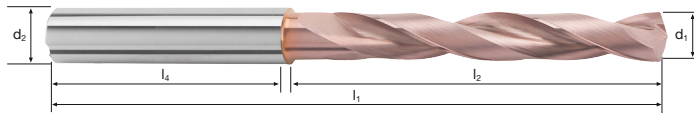
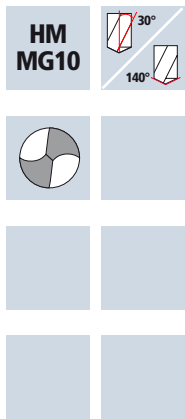
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	160	0.065	22.3	20370	1325	6.5	1.0
2.70	160	0.070	21.9	18865	1320	7.5	1.0
2.90	160	0.075	21.6	17560	1315	8.5	1.0
3.00	160	0.075	21.5	16975	1275	9.0	1.0
3.30	160	0.085	21.1	15435	1310	11.0	1.0
3.50	160	0.090	20.8	14550	1310	12.5	1.0
3.80	160	0.100	30.3	13405	1340	15.0	1.4
4.00	160	0.105	30.0	12730	1335	17.0	1.3
4.20	160	0.110	29.7	12125	1335	18.5	1.3

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	220	0.050	22.3	28010	1400	7.0	1.0
2.70	220	0.055	21.9	25935	1425	8.0	0.9
2.90	220	0.060	21.6	24150	1450	9.5	0.9
3.00	220	0.060	21.5	23345	1400	10.0	0.9
3.30	220	0.065	21.1	21220	1380	12.0	0.9
3.50	220	0.070	20.8	20010	1400	13.5	0.9
3.80	220	0.075	30.3	18430	1380	15.5	1.3
4.00	220	0.080	30.0	17505	1400	17.5	1.3
4.20	220	0.085	29.7	16675	1415	19.5	1.3

Punte elicoidali Supradrill N

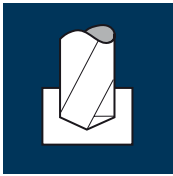
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		U-4XD	
						B52014		.0250		B52014	
										B53014	
ø Code	d1 m7	d2 h6	l1	l2	l4					€	
.0250	2.50	6	66	28	36					47.60	
.0255	2.55	6	66	28	36					47.60	
.0260	2.60	6	66	28	36					47.60	
.0265	2.65	6	66	28	36					47.60	
.0270	2.70	6	66	28	36					47.60	
.0280	2.80	6	66	28	36					47.60	
.0285	2.85	6	66	28	36					47.60	
.0290	2.90	6	66	28	36					47.60	
.0295	2.95	6	66	28	36					47.60	
.0300	3.00	6	66	28	36					47.60	
.0310	3.10	6	66	28	36					47.60	
.0320	3.20	6	66	28	36					47.60	
.0330	3.30	6	66	28	36					47.60	
.0340	3.40	6	66	28	36					47.60	
.0350	3.50	6	66	28	36					47.60	
.0360	3.60	6	66	28	36					47.60	
.0370	3.70	6	66	28	36					47.60	
.0380	3.80	6	74	36	36					47.60	
.0390	3.90	6	74	36	36					47.60	
.0400	4.00	6	74	36	36					47.60	
.0410	4.10	6	74	36	36					47.60	
.0420	4.20	6	74	36	36					47.60	
.0430	4.30	6	74	36	36					47.60	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.50	140	0.105	29.3	9905	1040	16.5	1.7
4.80	140	0.115	36.8	9285	1070	19.5	2.1
5.00	140	0.120	36.5	8915	1070	21.0	2.0
5.10	140	0.120	36.4	8740	1050	21.5	2.1
5.50	140	0.130	35.8	8100	1055	25.0	2.0
5.80	140	0.135	35.3	7685	1035	27.5	2.0
6.00	140	0.140	35.0	7425	1040	29.5	2.0
6.10	140	0.145	43.9	7305	1060	31.0	2.5
6.50	140	0.155	43.3	6855	1065	35.5	2.4

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.50	110	0.105	29.3	7780	815	13.0	2.2
4.80	110	0.115	36.8	7295	840	15.0	2.6
5.00	110	0.120	36.5	7005	840	16.5	2.6
5.10	110	0.120	36.4	6865	825	17.0	2.6
5.50	110	0.130	35.8	6365	825	19.5	2.6
5.80	110	0.135	35.3	6035	815	21.5	2.6
6.00	110	0.140	35.0	5835	815	23.0	2.6
6.10	110	0.145	43.9	5740	830	24.5	3.2
6.50	110	0.155	43.3	5385	835	27.5	3.1

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.50	80	0.080	29.3	5660	455	7.0	3.9
4.80	80	0.085	36.8	5305	450	8.0	4.9
5.00	80	0.090	36.5	5095	460	9.0	4.8
5.10	80	0.090	36.4	4995	450	9.0	4.9
5.50	80	0.100	35.8	4630	465	11.0	4.6
5.80	80	0.105	35.3	4390	460	12.0	4.6
6.00	80	0.110	35.0	4245	465	13.0	4.5
6.10	80	0.110	43.9	4175	460	13.5	5.7
6.50	80	0.115	43.3	3920	450	15.0	5.8

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.50	55	0.070	29.3	3890	270	4.5	6.5
4.80	55	0.070	36.8	3645	255	4.5	8.7
5.00	55	0.075	36.5	3500	265	5.0	8.3
5.10	55	0.075	36.4	3435	260	5.5	8.4
5.50	55	0.085	35.8	3185	270	6.5	8.0
5.80	55	0.085	35.3	3020	255	6.5	8.3
6.00	55	0.090	35.0	2920	265	7.5	7.9
6.10	55	0.090	43.9	2870	260	7.5	10.1
6.50	55	0.100	43.3	2695	270	9.0	9.6

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.50	25	0.045	29.3	1770	80	1.5	22.0
4.80	25	0.050	36.8	1660	85	1.5	26.0
5.00	25	0.050	36.5	1590	80	1.5	27.4
5.10	25	0.050	36.4	1560	80	1.5	27.3
5.50	25	0.055	35.8	1445	80	2.0	26.9
5.80	25	0.060	35.3	1370	80	2.0	26.5
6.00	25	0.060	35.0	1325	80	2.5	26.3
6.10	25	0.060	43.9	1305	80	2.5	32.9
6.50	25	0.065	43.3	1225	80	2.5	32.5

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.50	50	0.060	29.3	3535	210	3.5	8.4
4.80	50	0.060	36.8	3315	200	3.5	11.0
5.00	50	0.065	36.5	3185	205	4.0	10.7
5.10	50	0.065	36.4	3120	205	4.0	10.7
5.50	50	0.070	35.8	2895	205	5.0	10.5
5.80	50	0.075	35.3	2745	205	5.5	10.3
6.00	50	0.075	35.0	2655	200	5.5	10.5
6.10	50	0.080	43.9	2610	210	6.0	12.5
6.50	50	0.085	43.3	2450	210	7.0	12.4

Ghisa
(grigia / sferoidale)

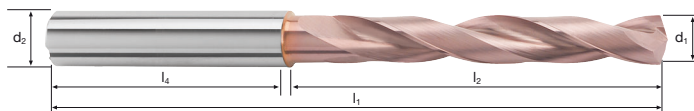
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.50	160	0.115	29.3	11320	1300	20.5	1.4
4.80	160	0.125	36.8	10610	1325	24.0	1.7
5.00	160	0.130	36.5	10185	1325	26.0	1.7
5.10	160	0.130	36.4	9985	1300	26.5	1.7
5.50	160	0.140	35.8	9260	1295	31.0	1.7
5.80	160	0.150	35.3	8780	1315	34.5	1.6
6.00	160	0.155	35.0	8490	1315	37.0	1.6
6.10	160	0.155	43.9	8350	1295	38.0	2.0
6.50	160	0.165	43.3	7835	1295	43.0	2.0

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.50	220	0.090	29.3	15560	1400	22.5	1.3
4.80	220	0.095	36.8	14590	1385	25.0	1.6
5.00	220	0.100	36.5	14005	1400	27.5	1.6
5.10	220	0.100	36.4	13730	1375	28.0	1.6
5.50	220	0.110	35.8	12730	1400	33.5	1.5
5.80	220	0.115	35.3	12075	1390	36.5	1.5
6.00	220	0.120	35.0	11670	1400	39.5	1.5
6.10	220	0.120	43.9	11480	1380	40.5	1.9
6.50	220	0.130	43.3	10775	1400	46.5	1.9

Punte elicoidali Supradrill N

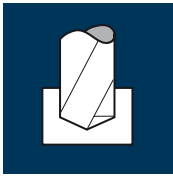
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine		Articolo		Codice-ø				U-4XD	
		B52014		.0440				B52014	
								B53014	
ø Code	d1 m7	d2 h6	l1	l2	l4			€	
.0440	4.40	6	74	36	36			47.60	
.0450	4.50	6	74	36	36			47.60	
.0460	4.60	6	74	36	36			47.60	
.0470	4.70	6	74	36	36			47.60	
.0480	4.80	6	82	44	36			47.60	
.0490	4.90	6	82	44	36			47.60	
.0500	5.00	6	82	44	36			47.60	
.0510	5.10	6	82	44	36			47.60	
.0520	5.20	6	82	44	36			47.60	
.0530	5.30	6	82	44	36			47.60	
.0540	5.40	6	82	44	36			47.60	
.0550	5.50	6	82	44	36			47.60	
.0560	5.60	6	82	44	36			47.60	
.0570	5.70	6	82	44	36			47.60	
.0580	5.80	6	82	44	36			47.60	
.0590	5.90	6	82	44	36			47.60	
.0600	6.00	6	82	44	36			47.60	
.0610	6.10	8	91	53	36			52.50	
.0620	6.20	8	91	53	36			52.50	
.0630	6.30	8	91	53	36			52.50	
.0640	6.40	8	91	53	36			52.50	
.0650	6.50	8	91	53	36			52.50	
.0660	6.60	8	91	53	36			52.50	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
6.80	140	0.160	42.8	6555	1050	38.0	2.4
6.90	140	0.165	42.6	6460	1065	40.0	2.4
7.00	140	0.165	42.5	6365	1050	40.5	2.4
7.50	140	0.180	41.8	5940	1070	47.5	2.3
7.80	140	0.185	41.3	5715	1055	50.5	2.3
8.00	140	0.190	41.0	5570	1060	53.5	2.3
8.20	140	0.195	48.7	5435	1060	56.0	2.8
8.50	140	0.200	48.3	5245	1050	59.5	2.8
8.60	140	0.205	48.1	5180	1060	61.5	2.7

Acciaio
500 - 850 N/mm²

6.80	110	0.160	42.8	5150	825	30.0	3.1
6.90	110	0.165	42.6	5075	835	31.0	3.1
7.00	110	0.165	42.5	5000	825	31.5	3.1
7.50	110	0.180	41.8	4670	840	37.0	3.0
7.80	110	0.185	41.3	4490	830	39.5	3.0
8.00	110	0.190	41.0	4375	830	41.5	3.0
8.20	110	0.195	48.7	4270	835	44.0	3.5
8.50	110	0.200	48.3	4120	825	47.0	3.5
8.60	110	0.205	48.1	4070	835	48.5	3.5

Acciaio
850 - 1100 N/mm²

6.80	80	0.120	42.8	3745	450	16.5	5.7
6.90	80	0.125	42.6	3690	460	17.0	5.6
7.00	80	0.125	42.5	3640	455	17.5	5.6
7.50	80	0.135	41.8	3395	460	20.5	5.5
7.80	80	0.140	41.3	3265	455	21.5	5.4
8.00	80	0.145	41.0	3185	460	23.0	5.3
8.20	80	0.150	48.7	3105	465	24.5	6.3
8.50	80	0.155	48.3	2995	465	26.5	6.2
8.60	80	0.155	48.1	2960	460	26.5	6.3

Acciaio
1100 - 1300 N/mm²

6.80	55	0.100	42.8	2575	260	9.5	9.9
6.90	55	0.105	42.6	2535	265	10.0	9.6
7.00	55	0.105	42.5	2500	265	10.0	9.6
7.50	55	0.115	41.8	2335	270	12.0	9.3
7.80	55	0.115	41.3	2245	260	12.5	9.5
8.00	55	0.120	41.0	2190	265	13.5	9.3
8.20	55	0.125	48.7	2135	265	14.0	11.0
8.50	55	0.130	48.3	2060	270	15.5	10.7
8.60	55	0.130	48.1	2035	265	15.5	10.9

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
6.80	25	0.070	42.8	1170	80	3.0	32.1
6.90	25	0.070	42.6	1155	80	3.0	32.0
7.00	25	0.070	42.5	1135	80	3.0	31.9
7.50	25	0.075	41.8	1060	80	3.5	31.4
7.80	25	0.080	41.3	1020	80	4.0	31.0
8.00	25	0.080	41.0	995	80	4.0	30.7
8.20	25	0.080	48.7	970	80	4.0	36.5
8.50	25	0.085	48.3	935	80	4.5	36.2
8.60	25	0.085	48.1	925	80	4.5	36.1

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

6.80	50	0.085	42.8	2340	200	7.5	12.8
6.90	50	0.090	42.6	2305	205	7.5	12.5
7.00	50	0.090	42.5	2275	205	8.0	12.4
7.50	50	0.095	41.8	2120	200	9.0	12.5
7.80	50	0.100	41.3	2040	205	10.0	12.1
8.00	50	0.105	41.0	1990	210	10.5	11.7
8.20	50	0.105	48.7	1940	205	11.0	14.3
8.50	50	0.110	48.3	1870	205	11.5	14.1
8.60	50	0.110	48.1	1850	205	12.0	14.1

Ghisa
(grigia / sferoidale)

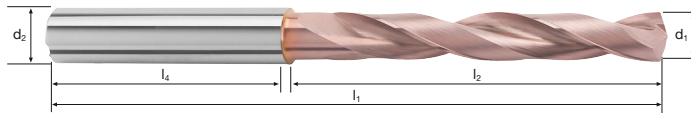
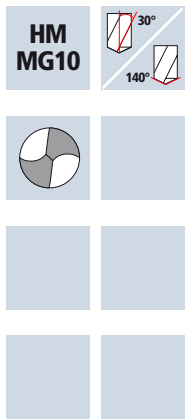
6.80	160	0.175	42.8	7490	1310	47.5	2.0
6.90	160	0.175	42.6	7380	1290	48.0	2.0
7.00	160	0.180	42.5	7275	1310	50.5	1.9
7.50	160	0.195	41.8	6790	1325	58.5	1.9
7.80	160	0.200	41.3	6530	1305	62.5	1.9
8.00	160	0.205	41.0	6365	1305	65.5	1.9
8.20	160	0.210	48.7	6210	1305	69.0	2.2
8.50	160	0.220	48.3	5990	1320	75.0	2.2
8.60	160	0.220	48.1	5920	1300	75.5	2.2

Alluminio malleabile
Si < 6%

6.80	220	0.135	42.8	10300	1390	50.5	1.8
6.90	220	0.140	42.6	10150	1420	53.0	1.8
7.00	220	0.140	42.5	10005	1400	54.0	1.8
7.50	220	0.150	41.8	9335	1400	62.0	1.8
7.80	220	0.155	41.3	8980	1390	66.5	1.8
8.00	220	0.160	41.0	8755	1400	70.5	1.8
8.20	220	0.165	48.7	8540	1410	74.5	2.1
8.50	220	0.170	48.3	8240	1400	79.5	2.1
8.60	220	0.170	48.1	8145	1385	80.5	2.1

Punte elicoidali Supradrill N

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		U-4XD	
							B52014		.0670		B52014	
											B53014	
ø Code	d1 m7	d2 h6	l1	l2	l4		€					
.0670	6.70	8	91	53	36		52.50					
.0680	6.80	8	91	53	36		52.50					
.0690	6.90	8	91	53	36		52.50					
.0700	7.00	8	91	53	36		52.50					
.0710	7.10	8	91	53	36		52.50					
.0720	7.20	8	91	53	36		52.50					
.0730	7.30	8	91	53	36		52.50					
.0740	7.40	8	91	53	36		52.50					
.0750	7.50	8	91	53	36		52.50					
.0760	7.60	8	91	53	36		52.50					
.0770	7.70	8	91	53	36		52.50					
.0780	7.80	8	91	53	36		52.50					
.0790	7.90	8	91	53	36		52.50					
.0800	8.00	8	91	53	36		52.50					
.0810	8.10	10	103	61	40		60.00					
.0820	8.20	10	103	61	40		60.00					
.0830	8.30	10	103	61	40		60.00					
.0840	8.40	10	103	61	40		60.00					
.0850	8.50	10	103	61	40		60.00					
.0860	8.60	10	103	61	40		60.00					
.0870	8.70	10	103	61	40		60.00					
.0880	8.80	10	103	61	40		60.00					
.0890	8.90	10	103	61	40		60.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.00	140	0.215	47.5	4950	1065	68.0	2.7
9.50	140	0.225	46.8	4690	1055	75.0	2.7
9.80	140	0.230	46.3	4545	1045	79.0	2.7
10.00	140	0.235	46.0	4455	1045	82.0	2.6
10.20	140	0.240	55.7	4370	1050	86.0	3.2
10.40	140	0.245	55.4	4285	1050	89.0	3.2
10.50	140	0.250	55.3	4245	1060	92.0	3.1
10.80	140	0.255	54.8	4125	1050	96.0	3.1
11.00	140	0.260	54.5	4050	1055	100.5	3.1

Acciaio
500 - 850 N/mm²

9.00	110	0.215	47.5	3890	835	53.0	3.4
9.50	110	0.225	46.8	3685	830	59.0	3.4
9.80	110	0.230	46.3	3575	820	62.0	3.4
10.00	110	0.235	46.0	3500	825	65.0	3.3
10.20	110	0.240	55.7	3435	825	67.5	4.1
10.40	110	0.245	55.4	3365	825	70.0	4.0
10.50	110	0.250	55.3	3335	835	72.5	4.0
10.80	110	0.255	54.8	3240	825	75.5	4.0
11.00	110	0.260	54.5	3185	830	79.0	3.9

Acciaio
850 - 1100 N/mm²

9.00	80	0.160	47.5	2830	455	29.0	6.3
9.50	80	0.170	46.8	2680	455	32.5	6.2
9.80	80	0.175	46.3	2600	455	34.5	6.1
10.00	80	0.180	46.0	2545	460	36.0	6.0
10.20	80	0.185	55.7	2495	460	37.5	7.3
10.40	80	0.185	55.4	2450	455	38.5	7.3
10.50	80	0.190	55.3	2425	460	40.0	7.2
10.80	80	0.195	54.8	2360	460	42.0	7.1
11.00	80	0.200	54.5	2315	465	44.0	7.0

Acciaio
1100 - 1300 N/mm²

9.00	55	0.135	47.5	1945	265	17.0	10.8
9.50	55	0.145	46.8	1845	270	19.0	10.4
9.80	55	0.145	46.3	1785	260	19.5	10.7
10.00	55	0.150	46.0	1750	265	21.0	10.4
10.20	55	0.155	55.7	1715	265	21.5	12.6
10.40	55	0.155	55.4	1685	260	22.0	12.8
10.50	55	0.160	55.3	1665	265	23.0	12.5
10.80	55	0.160	54.8	1620	260	24.0	12.6
11.00	55	0.165	54.5	1590	260	24.5	12.6

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.00	25	0.090	47.5	885	80	5.0	35.6
9.50	25	0.095	46.8	840	80	5.5	35.1
9.80	25	0.100	46.3	810	80	6.0	34.7
10.00	25	0.100	46.0	795	80	6.5	34.5
10.20	25	0.100	55.7	780	80	6.5	41.8
10.40	25	0.105	55.4	765	80	7.0	41.6
10.50	25	0.105	55.3	760	80	7.0	41.5
10.80	25	0.110	54.8	735	80	7.5	41.1
11.00	25	0.110	54.5	725	80	7.5	40.9

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

9.00	50	0.115	47.5	1770	205	13.0	13.9
9.50	50	0.120	46.8	1675	200	14.0	14.0
9.80	50	0.125	46.3	1625	205	15.5	13.6
10.00	50	0.130	46.0	1590	205	16.0	13.5
10.20	50	0.130	55.7	1560	205	17.0	16.3
10.40	50	0.135	55.4	1530	205	17.5	16.2
10.50	50	0.135	55.3	1515	205	18.0	16.2
10.80	50	0.140	54.8	1475	205	19.0	16.0
11.00	50	0.140	54.5	1445	200	19.0	16.4

Ghisa
(grigia / sferoidale)

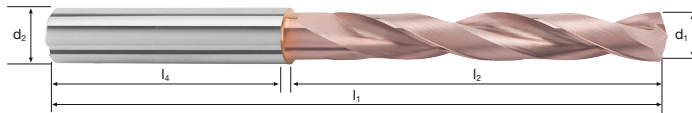
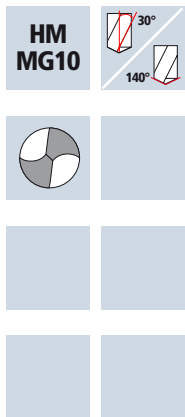
9.00	160	0.230	47.5	5660	1300	82.5	2.2
9.50	160	0.245	46.8	5360	1315	93.0	2.1
9.80	160	0.250	46.3	5195	1300	98.0	2.1
10.00	160	0.255	46.0	5095	1300	102.0	2.1
10.20	160	0.260	55.7	4995	1300	106.0	2.6
10.40	160	0.265	55.4	4895	1295	110.0	2.6
10.50	160	0.270	55.3	4850	1310	113.5	2.5
10.80	160	0.280	54.8	4715	1320	121.0	2.5
11.00	160	0.285	54.5	4630	1320	125.5	2.5

Alluminio malleabile
Si < 6%

9.00	220	0.180	47.5	7780	1400	89.0	2.0
9.50	220	0.190	46.8	7370	1400	99.0	2.0
9.80	220	0.195	46.3	7145	1395	105.0	2.0
10.00	220	0.200	46.0	7005	1400	110.0	2.0
10.20	220	0.205	55.7	6865	1405	115.0	2.4
10.40	220	0.210	55.4	6735	1415	120.0	2.3
10.50	220	0.210	55.3	6670	1400	121.0	2.4
10.80	220	0.215	54.8	6485	1395	128.0	2.4
11.00	220	0.220	54.5	6365	1400	133.0	2.3

Punte elicoidali Supradrill N

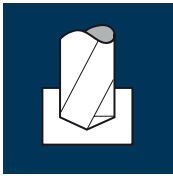
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		U-4XD	
							B52014		.0900		B52014	
											B53014	
ø Code	d1 m7	d2 h6	l1	l2	l4		€					
.0900	9.00	10	103	61	40		60.00					
.0910	9.10	10	103	61	40		60.00					
.0920	9.20	10	103	61	40		60.00					
.0930	9.30	10	103	61	40		60.00					
.0940	9.40	10	103	61	40		60.00					
.0950	9.50	10	103	61	40		60.00					
.0960	9.60	10	103	61	40		60.00					
.0970	9.70	10	103	61	40		60.00					
.0980	9.80	10	103	61	40		60.00					
.0990	9.90	10	103	61	40		60.00					
.1000	10.00	10	103	61	40		60.00					
.1010	10.10	12	118	71	45		86.00					
.1020	10.20	12	118	71	45		86.00					
.1030	10.30	12	118	71	45		86.00					
.1040	10.40	12	118	71	45		86.00					
.1050	10.50	12	118	71	45		86.00					
.1060	10.60	12	118	71	45		86.00					
.1070	10.70	12	118	71	45		86.00					
.1080	10.80	12	118	71	45		86.00					
.1090	10.90	12	118	71	45		86.00					
.1100	11.00	12	118	71	45		86.00					
.1110	11.10	12	118	71	45		86.00					
.1120	11.20	12	118	71	45		86.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.50	140	0.270	53.8	3875	1045	108.5	3.1
11.70	140	0.275	53.5	3810	1050	113.0	3.1
12.00	140	0.285	53.0	3715	1060	120.0	3.0
12.50	140	0.295	58.3	3565	1050	129.0	3.3
13.00	140	0.310	57.5	3430	1065	141.5	3.2
14.00	140	0.330	56.0	3185	1050	161.5	3.2
15.00	140	0.355	60.5	2970	1055	186.5	3.4
15.50	140	0.365	59.8	2875	1050	198.0	3.4
16.00	140	0.380	59.0	2785	1060	213.0	3.3

Acciaio
500 - 850 N/mm²

11.50	110	0.270	53.8	3045	820	85.0	3.9
11.70	110	0.275	53.5	2995	825	88.5	3.9
12.00	110	0.285	53.0	2920	830	94.0	3.8
12.50	110	0.295	58.3	2800	825	101.0	4.2
13.00	110	0.310	57.5	2695	835	111.0	4.1
14.00	110	0.330	56.0	2500	825	127.0	4.1
15.00	110	0.355	60.5	2335	830	146.5	4.4
15.50	110	0.365	59.8	2260	825	155.5	4.3
16.00	110	0.380	59.0	2190	830	167.0	4.3

Acciaio
850 - 1100 N/mm²

11.50	80	0.205	53.8	2215	455	47.5	7.1
11.70	80	0.210	53.5	2175	455	49.0	7.1
12.00	80	0.215	53.0	2120	455	51.5	7.0
12.50	80	0.225	58.3	2035	460	56.5	7.6
13.00	80	0.235	57.5	1960	460	61.0	7.5
14.00	80	0.250	56.0	1820	455	70.0	7.4
15.00	80	0.270	60.5	1700	460	81.5	7.9
15.50	80	0.280	59.8	1645	460	87.0	7.8
16.00	80	0.290	59.0	1590	460	92.5	7.7

Acciaio
1100 - 1300 N/mm²

11.50	55	0.175	53.8	1520	265	27.5	12.2
11.70	55	0.175	53.5	1495	260	28.0	12.3
12.00	55	0.180	53.0	1460	265	30.0	12.0
12.50	55	0.190	58.3	1400	265	32.5	13.2
13.00	55	0.195	57.5	1345	260	34.5	13.3
14.00	55	0.210	56.0	1250	265	41.0	12.7
15.00	55	0.225	60.5	1165	260	46.0	14.0
15.50	55	0.235	59.8	1130	265	50.0	13.5
16.00	55	0.240	59.0	1095	265	53.5	13.4

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
11.50	25	0.115	53.8	690	80	8.5	40.4
11.70	25	0.115	53.5	680	80	8.5	40.1
12.00	25	0.120	53.0	665	80	9.0	39.8
12.50	25	0.125	58.3	635	80	10.0	43.7
13.00	25	0.130	57.5	610	80	10.5	43.1
14.00	25	0.140	56.0	570	80	12.5	42.0
15.00	25	0.150	60.5	530	80	14.0	45.4
15.50	25	0.155	59.8	515	80	15.0	44.9
16.00	25	0.160	59.0	495	80	16.0	44.3

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

11.50	50	0.150	53.8	1385	210	22.0	15.4
11.70	50	0.150	53.5	1360	205	22.0	15.7
12.00	50	0.155	53.0	1325	205	23.0	15.5
12.50	50	0.160	58.3	1275	205	25.0	17.1
13.00	50	0.165	57.5	1225	200	26.5	17.3
14.00	50	0.180	56.0	1135	205	31.5	16.4
15.00	50	0.195	60.5	1060	205	36.0	17.7
15.50	50	0.200	59.8	1025	205	38.5	17.5
16.00	50	0.205	59.0	995	205	41.0	17.3

Ghisa
(griglia / sferoidale)

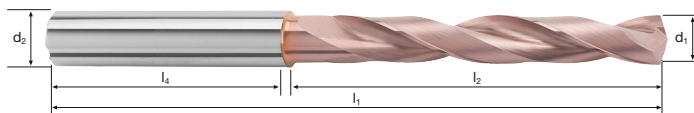
11.50	160	0.295	53.8	4430	1305	135.5	2.5
11.70	160	0.300	53.5	4355	1305	140.5	2.5
12.00	160	0.310	53.0	4245	1315	148.5	2.4
12.50	160	0.320	58.3	4075	1305	160.0	2.7
13.00	160	0.335	57.5	3920	1315	174.5	2.6
14.00	160	0.360	56.0	3640	1310	201.5	2.6
15.00	160	0.385	60.5	3395	1305	230.5	2.8
15.50	160	0.400	59.8	3285	1315	248.0	2.7
16.00	160	0.410	59.0	3185	1305	262.5	2.7

Alluminio malleabile
Si < 6%

11.50	220	0.230	53.8	6090	1400	145.5	2.3
11.70	220	0.235	53.5	5985	1405	151.0	2.3
12.00	220	0.240	53.0	5835	1400	158.5	2.3
12.50	220	0.250	58.3	5600	1400	172.0	2.5
13.00	220	0.260	57.5	5385	1400	186.0	2.5
14.00	220	0.280	56.0	5000	1400	215.5	2.4
15.00	220	0.300	60.5	4670	1400	247.5	2.6
15.50	220	0.310	59.8	4520	1400	264.0	2.6
16.00	220	0.320	59.0	4375	1400	281.5	2.5

Punte elicoidali Supradrill N

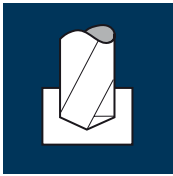
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		U-4XD	
							B52014		.1130		B52014	
											B53014	
ø Code	d1 m7	d2 h6	l1	l2	l4		€					
.1130	11.30	12	118	71	45		86.00					
.1140	11.40	12	118	71	45		86.00					
.1150	11.50	12	118	71	45		86.00					
.1160	11.60	12	118	71	45		86.00					
.1170	11.70	12	118	71	45		86.00					
.1180	11.80	12	118	71	45		86.00					
.1190	11.90	12	118	71	45		86.00					
.1200	12.00	12	118	71	45		86.00					
.1250	12.50	14	124	77	45		117.00					
.1280	12.80	14	124	77	45		117.00					
.1300	13.00	14	124	77	45		117.00					
.1350	13.50	14	124	77	45		117.00					
.1380	13.80	14	124	77	45		117.00					
.1400	14.00	14	124	77	45		117.00					
.1450	14.50	16	133	83	48		140.00					
.1480	14.80	16	133	83	48		140.00					
.1500	15.00	16	133	83	48		140.00					
.1550	15.50	16	133	83	48		140.00					
.1580	15.80	16	133	83	48		140.00					
.1600	16.00	16	133	83	48		140.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	170	0.065	22.3	21645	1405	7.0	1.0
2.80	170	0.075	21.8	19325	1450	9.0	0.9
3.00	170	0.080	21.5	18040	1445	10.0	0.9
3.30	170	0.085	21.1	16400	1395	12.0	0.9
3.50	170	0.090	20.8	15460	1390	13.5	0.9
4.00	170	0.105	30.0	13530	1420	18.0	1.3
4.20	170	0.110	29.7	12885	1415	19.5	1.3
4.50	170	0.120	29.3	12025	1445	23.0	1.2
4.80	170	0.125	36.8	11275	1410	25.5	1.6

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	130	0.065	22.3	16550	1075	5.5	1.2
2.80	130	0.075	21.8	14780	1110	7.0	1.2
3.00	130	0.080	21.5	13795	1105	8.0	1.2
3.30	130	0.085	21.1	12540	1065	9.0	1.2
3.50	130	0.090	20.8	11825	1065	10.0	1.2
4.00	130	0.105	30.0	10345	1085	13.5	1.7
4.20	130	0.110	29.7	9850	1085	15.0	1.6
4.50	130	0.120	29.3	9195	1105	17.5	1.6
4.80	130	0.125	36.8	8620	1080	19.5	2.0

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	110	0.050	22.3	14005	700	3.5	1.9
2.80	110	0.055	21.8	12505	690	4.0	1.9
3.00	110	0.060	21.5	11670	700	5.0	1.8
3.30	110	0.065	21.1	10610	690	6.0	1.8
3.50	110	0.070	20.8	10005	700	6.5	1.8
4.00	110	0.080	30.0	8755	700	9.0	2.6
4.20	110	0.085	29.7	8335	710	10.0	2.5
4.50	110	0.090	29.3	7780	700	11.0	2.5
4.80	110	0.095	36.8	7295	695	12.5	3.2

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	70	0.040	22.3	8915	355	1.5	3.8
2.80	70	0.045	21.8	7960	360	2.0	3.6
3.00	70	0.050	21.5	7425	370	2.5	3.5
3.30	70	0.055	21.1	6750	370	3.0	3.4
3.50	70	0.060	20.8	6365	380	3.5	3.3
4.00	70	0.065	30.0	5570	360	4.5	5.0
4.20	70	0.070	29.7	5305	370	5.0	4.8
4.50	70	0.075	29.3	4950	370	6.0	4.8
4.80	70	0.080	36.8	4640	370	6.5	6.0

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	40	0.035	22.3	5095	180	1.0	7.4
2.80	40	0.035	21.8	4545	160	1.0	8.2
3.00	40	0.040	21.5	4245	170	1.0	7.6
3.30	40	0.045	21.1	3860	175	1.5	7.2
3.50	40	0.045	20.8	3640	165	1.5	7.6
4.00	40	0.055	30.0	3185	175	2.0	10.3
4.20	40	0.055	29.7	3030	165	2.5	10.8
4.50	40	0.060	29.3	2830	170	2.5	10.3
4.80	40	0.065	36.8	2655	175	3.0	12.6

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	60	0.040	22.3	7640	305	1.5	4.4
2.80	60	0.045	21.8	6820	305	2.0	4.3
3.00	60	0.045	21.5	6365	285	2.0	4.5
3.30	60	0.050	21.1	5785	290	2.5	4.4
3.50	60	0.055	20.8	5455	300	3.0	4.2
4.00	60	0.060	30.0	4775	285	3.5	6.3
4.20	60	0.065	29.7	4545	295	4.0	6.0
4.50	60	0.070	29.3	4245	295	4.5	6.0
4.80	60	0.075	36.8	3980	300	5.5	7.4

Ghisa
(grigia / sferoidale)

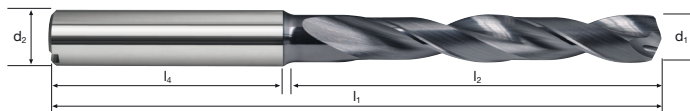
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	220	0.070	22.3	28010	1960	9.5	0.7
2.80	220	0.080	21.8	25010	2000	12.5	0.7
3.00	220	0.085	21.5	23345	1985	14.0	0.6
3.30	220	0.095	21.1	21220	2015	17.0	0.6
3.50	220	0.100	20.8	20010	2000	19.0	0.6
4.00	220	0.115	30.0	17505	2015	25.5	0.9
4.20	220	0.120	29.7	16675	2000	27.5	0.9
4.50	220	0.130	29.3	15560	2025	32.0	0.9
4.80	220	0.135	36.8	14590	1970	35.5	1.1

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.50	250	0.055	22.3	31830	1750	8.5	0.8
2.80	250	0.060	21.8	28420	1705	10.5	0.8
3.00	250	0.065	21.5	26525	1725	12.0	0.7
3.30	250	0.075	21.1	24115	1810	15.5	0.7
3.50	250	0.080	20.8	22735	1820	17.5	0.7
4.00	250	0.090	30.0	19895	1790	22.5	1.0
4.20	250	0.095	29.7	18945	1800	25.0	1.0
4.50	250	0.100	29.3	17685	1770	28.0	1.0
4.80	250	0.105	36.8	16580	1740	31.5	1.3

Punte elicoidali

5xd

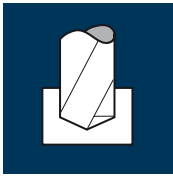


Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		NANO-U	
						BU42015		.0250		BU42015	
						BU43015					
ø Code	d1 m7	d2 h6	l1	l2	l4	€					
.0250*	2.5	6	66	28	36	42.30					
.0280*	2.8	6	66	28	36	42.30					
.0290*	2.9	6	66	28	36	42.30					
.0300	3.0	6	66	28	36	64.00					
.0310	3.1	6	66	28	36	64.00					
.0320	3.2	6	66	28	36	64.00					
.0330	3.3	6	66	28	36	64.00					
.0340	3.4	6	66	28	36	64.00					
.0350	3.5	6	66	28	36	64.00					
.0360	3.6	6	66	28	36	64.00					
.0370	3.7	6	66	28	36	64.00					
.0380	3.8	6	74	36	36	64.00					
.0390	3.9	6	74	36	36	64.00					
.0400	4.0	6	74	36	36	64.00					
.0410	4.1	6	74	36	36	64.00					
.0420	4.2	6	74	36	36	64.00					
.0430	4.3	6	74	36	36	64.00					
.0440	4.4	6	74	36	36	64.00					
.0450	4.5	6	74	36	36	64.00					
.0460	4.6	6	74	36	36	64.00					
.0470	4.7	6	74	36	36	64.00					
.0480	4.8	6	82	44	36	64.00					

* senza adduzione interna refrigerante

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.00	170	0.130	36.5	10825	1405	27.5	1.6
5.30	170	0.140	36.0	10210	1430	31.5	1.5
5.50	170	0.145	35.8	9840	1425	34.0	1.5
5.80	170	0.155	35.3	9330	1445	38.0	1.5
6.00	170	0.160	35.0	9020	1445	41.0	1.5
6.30	170	0.165	43.5	8590	1415	44.0	1.8
6.50	170	0.170	43.3	8325	1415	47.0	1.8
6.80	170	0.180	42.8	7960	1435	52.0	1.8
7.00	170	0.185	42.5	7730	1430	55.0	1.8

Acciaio
500 - 850 N/mm²

5.00	130	0.130	36.5	8275	1075	21.0	2.0
5.30	130	0.140	36.0	7810	1095	24.0	2.0
5.50	130	0.145	35.8	7525	1090	26.0	2.0
5.80	130	0.155	35.3	7135	1105	29.0	1.9
6.00	130	0.160	35.0	6895	1105	31.0	1.9
6.30	130	0.165	43.5	6570	1085	34.0	2.4
6.50	130	0.170	43.3	6365	1080	36.0	2.4
6.80	130	0.180	42.8	6085	1095	40.0	2.3
7.00	130	0.185	42.5	5910	1095	42.0	2.3

Acciaio
850 - 1100 N/mm²

5.00	110	0.100	36.5	7005	700	13.5	3.1
5.30	110	0.105	36.0	6605	695	15.5	3.1
5.50	110	0.110	35.8	6365	700	16.5	3.1
5.80	110	0.115	35.3	6035	695	18.5	3.0
6.00	110	0.120	35.0	5835	700	20.0	3.0
6.30	110	0.125	43.5	5560	695	21.5	3.8
6.50	110	0.130	43.3	5385	700	23.0	3.7
6.80	110	0.135	42.8	5150	695	25.0	3.7
7.00	110	0.140	42.5	5000	700	27.0	3.6

Acciaio
1100 - 1300 N/mm²

5.00	70	0.085	36.5	4455	380	7.5	5.8
5.30	70	0.090	36.0	4205	380	8.5	5.7
5.50	70	0.090	35.8	4050	365	8.5	5.9
5.80	70	0.095	35.3	3840	365	9.5	5.8
6.00	70	0.100	35.0	3715	370	10.5	5.7
6.30	70	0.105	43.5	3535	370	11.5	7.1
6.50	70	0.110	43.3	3430	375	12.5	6.9
6.80	70	0.115	42.8	3275	375	13.5	6.8
7.00	70	0.115	42.5	3185	365	14.0	7.0

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.00	40	0.065	36.5	2545	165	3.0	13.3
5.30	40	0.070	36.0	2400	170	4.0	12.7
5.50	40	0.075	35.8	2315	175	4.0	12.3
5.80	40	0.075	35.3	2195	165	4.5	12.8
6.00	40	0.080	35.0	2120	170	5.0	12.4
6.30	40	0.085	43.5	2020	170	5.5	15.4
6.50	40	0.085	43.3	1960	165	5.5	15.7
6.80	40	0.090	42.8	1870	170	6.0	15.1
7.00	40	0.095	42.5	1820	175	6.5	14.6

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

5.00	60	0.075	36.5	3820	285	5.5	7.7
5.30	60	0.080	36.0	3605	290	6.5	7.4
5.50	60	0.085	35.8	3470	295	7.0	7.3
5.80	60	0.090	35.3	3295	295	8.0	7.2
6.00	60	0.090	35.0	3185	285	8.0	7.4
6.30	60	0.095	43.5	3030	290	9.0	9.0
6.50	60	0.100	43.3	2940	295	10.0	8.8
6.80	60	0.105	42.8	2810	295	10.5	8.7
7.00	60	0.110	42.5	2730	300	11.5	8.5

Ghisa
(grigia / sferoidale)

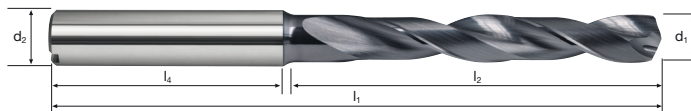
5.00	220	0.145	36.5	14005	2030	40.0	1.1
5.30	220	0.150	36.0	13215	1980	43.5	1.1
5.50	220	0.155	35.8	12730	1975	47.0	1.1
5.80	220	0.165	35.3	12075	1990	52.5	1.1
6.00	220	0.170	35.0	11670	1985	56.0	1.1
6.30	220	0.180	43.5	11115	2000	62.5	1.3
6.50	220	0.185	43.3	10775	1995	66.0	1.3
6.80	220	0.195	42.8	10300	2010	73.0	1.3
7.00	220	0.200	42.5	10005	2000	77.0	1.3

Alluminio malleabile
Si < 6%

5.00	250	0.110	36.5	15915	1750	34.5	1.3
5.30	250	0.120	36.0	15015	1800	39.5	1.2
5.50	250	0.120	35.8	14470	1735	41.0	1.2
5.80	250	0.130	35.3	13720	1785	47.0	1.2
6.00	250	0.135	35.0	13265	1790	50.5	1.2
6.30	250	0.140	43.5	12630	1770	55.0	1.5
6.50	250	0.145	43.3	12245	1775	59.0	1.5
6.80	250	0.150	42.8	11705	1755	63.5	1.5
7.00	250	0.155	42.5	11370	1760	67.5	1.4

Punte elicoidali

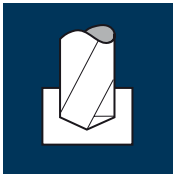
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		NANO-U	
						BU42015		.0490			
						BU43015					
ø Code	d1 m7	d2 h6	l1	l2	l4	€					
.0490	4.9	6	82	44	36	64.00					
.0500	5.0	6	82	44	36	64.00					
.0510	5.1	6	82	44	36	64.00					
.0520	5.2	6	82	44	36	64.00					
.0530	5.3	6	82	44	36	64.00					
.0540	5.4	6	82	44	36	64.00					
.0550	5.5	6	82	44	36	64.00					
.0560	5.6	6	82	44	36	64.00					
.0570	5.7	6	82	44	36	64.00					
.0580	5.8	6	82	44	36	64.00					
.0590	5.9	6	82	44	36	64.00					
.0600	6.0	6	82	44	36	64.00					
.0610	6.1	8	91	53	36	71.00					
.0620	6.2	8	91	53	36	71.00					
.0630	6.3	8	91	53	36	71.00					
.0640	6.4	8	91	53	36	71.00					
.0650	6.5	8	91	53	36	71.00					
.0660	6.6	8	91	53	36	71.00					
.0670	6.7	8	91	53	36	71.00					
.0680	6.8	8	91	53	36	71.00					
.0690	6.9	8	91	53	36	71.00					
.0700	7.0	8	91	53	36	71.00					
.0710	7.1	8	91	53	36	71.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.20	170	0.190	42.2	7515	1430	58.0	1.8
7.50	170	0.195	41.8	7215	1405	62.0	1.8
7.80	170	0.205	41.3	6940	1425	68.0	1.7
8.00	170	0.210	41.0	6765	1420	71.5	1.7
8.30	170	0.220	48.6	6520	1435	77.5	2.0
8.50	170	0.225	48.3	6365	1430	81.0	2.0
8.80	170	0.230	47.8	6150	1415	86.0	2.0
9.00	170	0.235	47.5	6015	1415	90.0	2.0
9.40	170	0.245	46.9	5755	1410	98.0	2.0

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.20	130	0.190	42.2	5745	1090	44.5	2.3
7.50	130	0.195	41.8	5515	1075	47.5	2.3
7.80	130	0.205	41.3	5305	1090	52.0	2.3
8.00	130	0.210	41.0	5175	1085	54.5	2.3
8.30	130	0.220	48.6	4985	1095	59.0	2.7
8.50	130	0.225	48.3	4870	1095	62.0	2.6
8.80	130	0.230	47.8	4700	1080	65.5	2.7
9.00	130	0.235	47.5	4600	1080	68.5	2.6
9.40	130	0.245	46.9	4400	1080	75.0	2.6

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.20	110	0.145	42.2	4865	705	28.5	3.6
7.50	110	0.150	41.8	4670	700	31.0	3.6
7.80	110	0.155	41.3	4490	695	33.0	3.6
8.00	110	0.160	41.0	4375	700	35.0	3.5
8.30	110	0.165	48.6	4220	695	37.5	4.2
8.50	110	0.170	48.3	4120	700	39.5	4.1
8.80	110	0.175	47.8	3980	695	42.5	4.1
9.00	110	0.180	47.5	3890	700	44.5	4.1
9.40	110	0.190	46.9	3725	710	49.5	4.0

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.20	70	0.120	42.2	3095	370	15.0	6.8
7.50	70	0.125	41.8	2970	370	16.5	6.8
7.80	70	0.130	41.3	2855	370	17.5	6.7
8.00	70	0.135	41.0	2785	375	19.0	6.6
8.30	70	0.140	48.6	2685	375	20.5	7.8
8.50	70	0.140	48.3	2620	365	20.5	7.9
8.80	70	0.145	47.8	2530	365	22.0	7.9
9.00	70	0.150	47.5	2475	370	23.5	7.7
9.40	70	0.155	46.9	2370	365	25.5	7.7

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.20	40	0.095	42.2	1770	170	7.0	14.9
7.50	40	0.100	41.8	1700	170	7.5	14.8
7.80	40	0.105	41.3	1630	170	8.0	14.6
8.00	40	0.105	41.0	1590	165	8.5	14.9
8.30	40	0.110	48.6	1535	170	9.0	17.2
8.50	40	0.115	48.3	1500	175	10.0	16.6
8.80	40	0.115	47.8	1445	165	10.0	17.4
9.00	40	0.120	47.5	1415	170	11.0	16.8
9.40	40	0.125	46.9	1355	170	12.0	16.6

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.20	60	0.110	42.2	2655	290	12.0	8.7
7.50	60	0.115	41.8	2545	295	13.0	8.5
7.80	60	0.120	41.3	2450	295	14.0	8.4
8.00	60	0.125	41.0	2385	300	15.0	8.2
8.30	60	0.130	48.6	2300	300	16.0	9.7
8.50	60	0.130	48.3	2245	290	16.5	10.0
8.80	60	0.135	47.8	2170	295	18.0	9.7
9.00	60	0.140	47.5	2120	295	19.0	9.7
9.40	60	0.145	46.9	2030	295	20.5	9.5

Ghisa
(grigia / sferoidale)

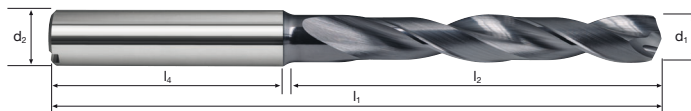
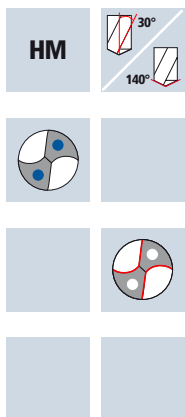
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.20	220	0.205	42.2	9725	1995	81.0	1.3
7.50	220	0.215	41.8	9335	2005	88.5	1.3
7.80	220	0.225	41.3	8980	2020	96.5	1.2
8.00	220	0.230	41.0	8755	2015	101.5	1.2
8.30	220	0.235	48.6	8435	1980	107.0	1.5
8.50	220	0.245	48.3	8240	2020	114.5	1.4
8.80	220	0.250	47.8	7960	1990	121.0	1.4
9.00	220	0.255	47.5	7780	1985	126.5	1.4
9.40	220	0.270	46.9	7450	2010	139.5	1.4

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.20	250	0.160	42.2	11050	1770	72.0	1.4
7.50	250	0.165	41.8	10610	1750	77.5	1.4
7.80	250	0.175	41.3	10200	1785	85.5	1.4
8.00	250	0.180	41.0	9945	1790	90.0	1.4
8.30	250	0.185	48.6	9590	1775	96.0	1.6
8.50	250	0.190	48.3	9360	1780	101.0	1.6
8.80	250	0.195	47.8	9045	1765	107.5	1.6
9.00	250	0.200	47.5	8840	1770	112.5	1.6
9.40	250	0.210	46.9	8465	1780	123.5	1.6

Punte elicoidali

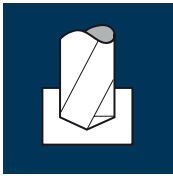
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		NANO-U	
							BU42015		.0720			
							BU43015					
ø Code	d1 m7	d2 h6	l1	l2	l4	€						
.0720	7.2	8	91	53	36	71.00						
.0730	7.3	8	91	53	36	71.00						
.0740	7.4	8	91	53	36	71.00						
.0750	7.5	8	91	53	36	71.00						
.0760	7.6	8	91	53	36	71.00						
.0770	7.7	8	91	53	36	71.00						
.0780	7.8	8	91	53	36	71.00						
.0790	7.9	8	91	53	36	71.00						
.0800	8.0	8	91	53	36	71.00						
.0810	8.1	10	103	61	40	81.00						
.0820	8.2	10	103	61	40	81.00						
.0830	8.3	10	103	61	40	81.00						
.0840	8.4	10	103	61	40	81.00						
.0850	8.5	10	103	61	40	81.00						
.0860	8.6	10	103	61	40	81.00						
.0870	8.7	10	103	61	40	81.00						
.0880	8.8	10	103	61	40	81.00						
.0890	8.9	10	103	61	40	81.00						
.0900	9.0	10	103	61	40	81.00						
.0910	9.1	10	103	61	40	81.00						
.0920	9.2	10	103	61	40	81.00						
.0930	9.3	10	103	61	40	81.00						
.0940	9.4	10	103	61	40	81.00						

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	170	0.250	46.8	5695	1425	101.0	2.0
9.80	170	0.260	46.3	5520	1435	108.0	1.9
10.00	170	0.265	46.0	5410	1435	112.5	1.9
10.20	170	0.270	55.7	5305	1430	117.0	2.3
10.50	170	0.275	55.3	5155	1420	123.0	2.3
10.80	170	0.285	54.8	5010	1430	131.0	2.3
11.00	170	0.290	54.5	4920	1425	135.5	2.3
11.30	170	0.295	54.0	4790	1415	142.0	2.3
11.50	170	0.305	53.8	4705	1435	149.0	2.2

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	130	0.250	46.8	4355	1090	77.5	2.6
9.80	130	0.260	46.3	4220	1095	82.5	2.5
10.00	130	0.265	46.0	4140	1095	86.0	2.5
10.20	130	0.270	55.7	4055	1095	89.5	3.1
10.50	130	0.275	55.3	3940	1085	94.0	3.1
10.80	130	0.285	54.8	3830	1090	100.0	3.0
11.00	130	0.290	54.5	3760	1090	103.5	3.0
11.30	130	0.295	54.0	3660	1080	108.5	3.0
11.50	130	0.305	53.8	3600	1100	114.5	2.9

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	110	0.190	46.8	3685	700	49.5	4.0
9.80	110	0.195	46.3	3575	695	52.5	4.0
10.00	110	0.200	46.0	3500	700	55.0	3.9
10.20	110	0.205	55.7	3435	705	57.5	4.7
10.50	110	0.210	55.3	3335	700	60.5	4.7
10.80	110	0.215	54.8	3240	695	63.5	4.7
11.00	110	0.220	54.5	3185	700	66.5	4.7
11.30	110	0.225	54.0	3100	700	70.0	4.6
11.50	110	0.230	53.8	3045	700	72.5	4.6

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	70	0.160	46.8	2345	375	26.5	7.5
9.80	70	0.165	46.3	2275	375	28.5	7.4
10.00	70	0.165	46.0	2230	370	29.0	7.5
10.20	70	0.170	55.7	2185	370	30.0	9.0
10.50	70	0.175	55.3	2120	370	32.0	9.0
10.80	70	0.180	54.8	2065	370	34.0	8.9
11.00	70	0.185	54.5	2025	375	35.5	8.7
11.30	70	0.190	54.0	1970	375	37.5	8.6
11.50	70	0.190	53.8	1940	370	38.5	8.7

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	40	0.125	46.8	1340	170	12.0	16.5
9.80	40	0.130	46.3	1300	170	13.0	16.3
10.00	40	0.135	46.0	1275	170	13.5	16.2
10.20	40	0.135	55.7	1250	170	14.0	19.7
10.50	40	0.140	55.3	1215	170	14.5	19.5
10.80	40	0.145	54.8	1180	170	15.5	19.3
11.00	40	0.145	54.5	1155	165	15.5	19.8
11.30	40	0.150	54.0	1125	170	17.0	19.1
11.50	40	0.155	53.8	1105	170	17.5	19.0

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	60	0.145	46.8	2010	290	20.5	9.7
9.80	60	0.150	46.3	1950	295	22.5	9.4
10.00	60	0.155	46.0	1910	295	23.0	9.4
10.20	60	0.155	55.7	1870	290	23.5	11.5
10.50	60	0.160	55.3	1820	290	25.0	11.4
10.80	60	0.165	54.8	1770	290	26.5	11.3
11.00	60	0.170	54.5	1735	295	28.0	11.1
11.30	60	0.175	54.0	1690	295	29.5	11.0
11.50	60	0.175	53.8	1660	290	30.0	11.1

Ghisa
(grigia / sferoidale)

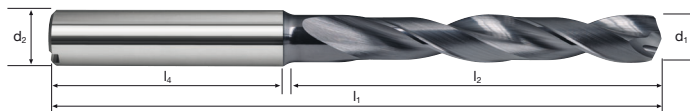
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	220	0.270	46.8	7370	1990	141.0	1.4
9.80	220	0.280	46.3	7145	2000	151.0	1.4
10.00	220	0.285	46.0	7005	1995	156.5	1.4
10.20	220	0.290	55.7	6865	1990	162.5	1.7
10.50	220	0.300	55.3	6670	2000	173.0	1.7
10.80	220	0.310	54.8	6485	2010	184.0	1.6
11.00	220	0.315	54.5	6365	2005	190.5	1.6
11.30	220	0.325	54.0	6195	2015	202.0	1.6
11.50	220	0.330	53.8	6090	2010	209.0	1.6

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
9.50	250	0.210	46.8	8375	1760	125.0	1.6
9.80	250	0.220	46.3	8120	1785	134.5	1.6
10.00	250	0.220	46.0	7960	1750	137.5	1.6
10.20	250	0.225	55.7	7800	1755	143.5	1.9
10.50	250	0.235	55.3	7580	1780	154.0	1.9
10.80	250	0.240	54.8	7370	1770	162.0	1.9
11.00	250	0.245	54.5	7235	1775	168.5	1.8
11.30	250	0.250	54.0	7040	1760	176.5	1.8
11.50	250	0.255	53.8	6920	1765	183.5	1.8

Punte elicoidali

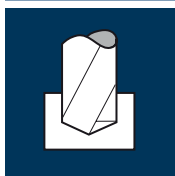
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		NANO-U	
						BU42015		.0950			
						BU43015					
ø Code	d1 m7	d2 h6	l1	l2	l4	€					
.0950	9.5	10	103	61	40	81.00					
.0960	9.6	10	103	61	40	81.00					
.0970	9.7	10	103	61	40	81.00					
.0980	9.8	10	103	61	40	81.00					
.0990	9.9	10	103	61	40	81.00					
.1000	10.0	10	103	61	40	81.00					
.1010	10.1	12	118	71	45	117.00					
.1020	10.2	12	118	71	45	117.00					
.1030	10.3	12	118	71	45	117.00					
.1040	10.4	12	118	71	45	117.00					
.1050	10.5	12	118	71	45	117.00					
.1060	10.6	12	118	71	45	117.00					
.1070	10.7	12	118	71	45	117.00					
.1080	10.8	12	118	71	45	117.00					
.1090	10.9	12	118	71	45	117.00					
.1100	11.0	12	118	71	45	117.00					
.1110	11.1	12	118	71	45	117.00					
.1120	11.2	12	118	71	45	117.00					
.1130	11.3	12	118	71	45	117.00					
.1140	11.4	12	118	71	45	117.00					
.1150	11.5	12	118	71	45	117.00					
.1160	11.6	12	118	71	45	117.00					
.1170	11.7	12	118	71	45	117.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.00	170	0.315	53.0	4510	1420	160.5	2.2
12.50	170	0.330	58.3	4330	1430	175.5	2.4
13.00	170	0.340	57.5	4165	1415	188.0	2.4
13.50	170	0.355	56.8	4010	1425	204.0	2.4
14.00	170	0.370	56.0	3865	1430	220.0	2.3
14.50	170	0.380	61.3	3730	1415	233.5	2.6
15.00	170	0.395	60.5	3610	1425	252.0	2.5
15.50	170	0.410	59.8	3490	1430	270.0	2.5
16.00	170	0.420	59.0	3380	1420	285.5	2.5

Acciaio
500 - 850 N/mm²

12.00	130	0.315	53.0	3450	1085	122.5	2.9
12.50	130	0.330	58.3	3310	1090	134.0	3.2
13.00	130	0.340	57.5	3185	1085	144.0	3.2
13.50	130	0.355	56.8	3065	1090	156.0	3.1
14.00	130	0.370	56.0	2955	1095	168.5	3.1
14.50	130	0.380	61.3	2855	1085	179.0	3.4
15.00	130	0.395	60.5	2760	1090	192.5	3.3
15.50	130	0.410	59.8	2670	1095	206.5	3.3
16.00	130	0.420	59.0	2585	1085	218.0	3.3

Acciaio
850 - 1100 N/mm²

12.00	110	0.240	53.0	2920	700	79.0	4.5
12.50	110	0.250	58.3	2800	700	86.0	5.0
13.00	110	0.260	57.5	2695	700	93.0	4.9
13.50	110	0.270	56.8	2595	700	100.0	4.9
14.00	110	0.280	56.0	2500	700	108.0	4.8
14.50	110	0.290	61.3	2415	700	115.5	5.3
15.00	110	0.300	60.5	2335	700	123.5	5.2
15.50	110	0.310	59.8	2260	700	132.0	5.1
16.00	110	0.320	59.0	2190	700	140.5	5.1

Acciaio
1100 - 1300 N/mm²

12.00	70	0.200	53.0	1855	370	42.0	8.6
12.50	70	0.210	58.3	1785	375	46.0	9.3
13.00	70	0.215	57.5	1715	370	49.0	9.3
13.50	70	0.225	56.8	1650	370	53.0	9.2
14.00	70	0.235	56.0	1590	375	57.5	9.0
14.50	70	0.240	61.3	1535	370	61.0	9.9
15.00	70	0.250	60.5	1485	370	65.5	9.8
15.50	70	0.260	59.8	1440	375	71.0	9.6
16.00	70	0.265	59.0	1395	370	74.5	9.6

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.00	40	0.160	53.0	1060	170	19.0	18.7
12.50	40	0.165	58.3	1020	170	21.0	20.6
13.00	40	0.175	57.5	980	170	22.5	20.3
13.50	40	0.180	56.8	945	170	24.5	20.0
14.00	40	0.185	56.0	910	170	26.0	19.8
14.50	40	0.195	61.3	880	170	28.0	21.6
15.00	40	0.200	60.5	850	170	30.0	21.4
15.50	40	0.205	59.8	820	170	32.0	21.1
16.00	40	0.215	59.0	795	170	34.0	20.8

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

12.00	60	0.185	53.0	1590	295	33.5	10.8
12.50	60	0.190	58.3	1530	290	35.5	12.1
13.00	60	0.200	57.5	1470	295	39.0	11.7
13.50	60	0.210	56.8	1415	295	42.0	11.6
14.00	60	0.215	56.0	1365	295	45.5	11.4
14.50	60	0.225	61.3	1315	295	48.5	12.5
15.00	60	0.230	60.5	1275	295	52.0	12.3
15.50	60	0.240	59.8	1230	295	55.5	12.2
16.00	60	0.245	59.0	1195	295	59.5	12.0

Ghisa
(grigia / sferoidale)

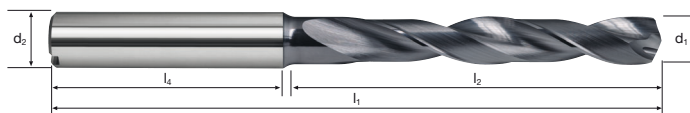
12.00	220	0.345	53.0	5835	2015	228.0	1.6
12.50	220	0.355	58.3	5600	1990	244.0	1.8
13.00	220	0.370	57.5	5385	1990	264.0	1.7
13.50	220	0.385	56.8	5185	1995	285.5	1.7
14.00	220	0.400	56.0	5000	2000	308.0	1.7
14.50	220	0.415	61.3	4830	2005	331.0	1.8
15.00	220	0.430	60.5	4670	2010	355.0	1.8
15.50	220	0.445	59.8	4520	2010	379.5	1.8
16.00	220	0.455	59.0	4375	1990	400.0	1.8

Alluminio malleabile
Si < 6%

12.00	250	0.265	53.0	6630	1755	198.5	1.8
12.50	250	0.280	58.3	6365	1780	218.5	2.0
13.00	250	0.290	57.5	6120	1775	235.5	1.9
13.50	250	0.300	56.8	5895	1770	253.5	1.9
14.00	250	0.310	56.0	5685	1760	271.0	1.9
14.50	250	0.320	61.3	5490	1755	290.0	2.1
15.00	250	0.335	60.5	5305	1775	313.5	2.0
15.50	250	0.345	59.8	5135	1770	334.0	2.0
16.00	250	0.355	59.0	4975	1765	355.0	2.0

Punte elicoidali

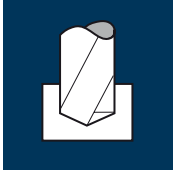
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		NANO-U	
						BU42015		.1180		BU42015	
						BU43015				BU43015	
ø Code	d1 m7	d2 h6	l1	l2	l4	€					
.1180	11.8	12	118	71	45	117.00					
.1190	11.9	12	118	71	45	117.00					
.1200	12.0	12	118	71	45	117.00					
.1250	12.5	14	124	77	45	158.00					
.1280	12.8	14	124	77	45	158.00					
.1300	13.0	14	124	77	45	158.00					
.1310	13.1	14	124	77	45	158.00					
.1350	13.5	14	124	77	45	158.00					
.1380	13.8	14	124	77	45	158.00					
.1400	14.0	14	124	77	45	158.00					
.1450	14.5	16	133	83	48	190.00					
.1480	14.8	16	133	83	48	190.00					
.1500	15.0	16	133	83	48	190.00					
.1510	15.1	16	133	83	48	190.00					
.1550	15.5	16	133	83	48	190.00					
.1580	15.8	16	133	83	48	190.00					
.1600	16.0	16	133	83	48	190.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	180	0.140	15.5	19100	2675	19.0	0.3
3.30	180	0.155	15.1	17360	2690	23.0	0.3
3.50	180	0.165	14.8	16370	2700	26.0	0.3
3.80	180	0.175	18.3	15080	2640	30.0	0.4
4.00	180	0.195	18.0	14325	2795	35.0	0.4
4.20	180	0.210	17.7	13640	2865	39.5	0.4
4.50	180	0.240	17.3	12730	3055	48.5	0.3
4.80	180	0.255	20.8	11935	3045	55.0	0.4
5.00	180	0.265	20.5	11460	3035	59.5	0.4

Acciaio
500 - 850 N/mm²

3.00	160	0.120	15.5	16975	2035	14.5	0.6
3.30	160	0.130	15.1	15435	2005	17.0	0.6
3.50	160	0.140	14.8	14550	2035	19.5	0.6
3.80	160	0.150	18.3	13405	2010	23.0	0.9
4.00	160	0.165	18.0	12730	2100	26.5	0.9
4.20	160	0.180	17.7	12125	2185	30.5	0.8
4.50	160	0.205	17.3	11320	2320	37.0	0.8
4.80	160	0.220	20.8	10610	2335	42.5	0.9
5.00	160	0.230	20.5	10185	2345	46.0	0.9

Acciaio
850 - 1100 N/mm²

3.00	140	0.110	15.5	14855	1635	11.5	0.8
3.30	140	0.120	15.1	13505	1620	14.0	0.8
3.50	140	0.130	14.8	12730	1655	16.0	0.8
3.80	140	0.140	18.3	11725	1640	18.5	1.1
4.00	140	0.155	18.0	11140	1725	21.5	1.0
4.20	140	0.165	17.7	10610	1750	24.0	1.0
4.50	140	0.190	17.3	9905	1880	30.0	0.9
4.80	140	0.200	20.8	9285	1855	33.5	1.2
5.00	140	0.210	20.5	8915	1870	36.5	1.2

Acciaio
1100 - 1300 N/mm²

3.00	100	0.085	15.5	10610	900	6.5	1.4
3.30	100	0.090	15.1	9645	870	7.5	1.5
3.50	100	0.100	14.8	9095	910	9.0	1.4
3.80	100	0.105	18.3	8375	880	10.0	2.1
4.00	100	0.115	18.0	7960	915	11.5	2.0
4.20	100	0.125	17.7	7580	950	13.0	1.9
4.50	100	0.145	17.3	7075	1025	16.5	1.7
4.80	100	0.155	20.8	6630	1030	18.5	2.1
5.00	100	0.160	20.5	6365	1020	20.0	2.1

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	55	0.065	15.5	5835	380	2.5	3.4
3.30	55	0.070	15.1	5305	370	3.0	3.4
3.50	55	0.075	14.8	5000	375	3.5	3.3
3.80	55	0.080	18.3	4605	370	4.0	4.9
4.00	55	0.090	18.0	4375	395	5.0	4.6
4.20	55	0.095	17.7	4170	395	5.5	4.5
4.50	55	0.110	17.3	3890	430	7.0	4.1
4.80	55	0.120	20.8	3645	435	8.0	5.1
5.00	55	0.125	20.5	3500	440	8.5	5.0

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

3.00	70	0.065	15.5	7425	485	3.5	2.7
3.30	70	0.070	15.1	6750	475	4.0	2.7
3.50	70	0.075	14.8	6365	475	4.5	2.6
3.80	70	0.080	18.3	5865	470	5.5	3.9
4.00	70	0.090	18.0	5570	500	6.5	3.6
4.20	70	0.095	17.7	5305	505	7.0	3.5
4.50	70	0.110	17.3	4950	545	8.5	3.2
4.80	70	0.120	20.8	4640	555	10.0	4.0
5.00	70	0.125	20.5	4455	555	11.0	3.9

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

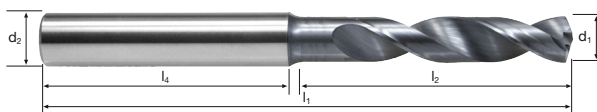
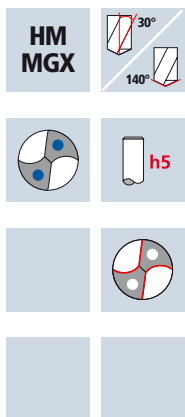
3.00	40	0.065	15.5	4245	275	2.0	4.7
3.30	40	0.070	15.1	3860	270	2.5	4.7
3.50	40	0.075	14.8	3640	275	2.5	4.5
3.80	40	0.080	18.3	3350	270	3.0	6.7
4.00	40	0.090	18.0	3185	285	3.5	6.3
4.20	40	0.095	17.7	3030	290	4.0	6.1
4.50	40	0.110	17.3	2830	310	5.0	5.7
4.80	40	0.120	20.8	2655	320	6.0	6.9
5.00	40	0.125	20.5	2545	320	6.5	6.8

Ghisa
(griglia / sferoidale)

3.00	240	0.125	15.5	25465	3185	22.5	0.4
3.30	240	0.140	15.1	23150	3240	27.5	0.4
3.50	240	0.150	14.8	21825	3275	31.5	0.4
3.80	240	0.160	18.3	20105	3215	36.5	0.6
4.00	240	0.175	18.0	19100	3345	42.0	0.5
4.20	240	0.190	17.7	18190	3455	48.0	0.5
4.50	240	0.220	17.3	16975	3735	59.5	0.5
4.80	240	0.235	20.8	15915	3740	67.5	0.6
5.00	240	0.240	20.5	15280	3665	72.0	0.6

Punte elicoidali XDrill®

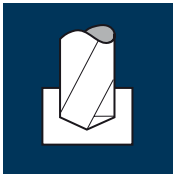
3xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo		Codice-ø		DURO-X	
						B72011		.0300		B72011	
ø Code	d1 m7	d2 h5	l1	l2	l4	€					
.0300	3.0	6	62	20	36	69.00					
.0310	3.1	6	62	20	36	69.00					
.0320	3.2	6	62	20	36	69.00					
.0330	3.3	6	62	20	36	69.00					
.0340	3.4	6	62	20	36	69.00					
.0350	3.5	6	62	20	36	69.00					
.0360	3.6	6	62	20	36	69.00					
.0370	3.7	6	62	20	36	69.00					
.0380	3.8	6	66	24	36	69.00					
.0390	3.9	6	66	24	36	69.00					
.0400	4.0	6	66	24	36	69.00					
.0410	4.1	6	66	24	36	69.00					
.0420	4.2	6	66	24	36	69.00					
.0430	4.3	6	66	24	36	69.00					
.0440	4.4	6	66	24	36	69.00					
.0450	4.5	6	66	24	36	69.00					
.0460	4.6	6	66	24	36	69.00					
.0470	4.7	6	66	24	36	69.00					
.0480	4.8	6	66	28	36	69.00					
.0490	4.9	6	66	28	36	69.00					
.0500	5.0	6	66	28	36	69.00					
.0510	5.1	6	66	28	36	69.00					
.0520	5.2	6	66	28	36	69.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	180	0.295	19.8	10415	3070	73.0	0.4
5.80	180	0.310	19.3	9880	3065	81.0	0.4
6.00	180	0.330	19.0	9550	3150	89.0	0.4
6.20	180	0.350	24.7	9240	3235	97.5	0.5
6.50	180	0.370	24.3	8815	3260	108.0	0.4
6.80	180	0.385	23.8	8425	3245	118.0	0.4
7.00	180	0.395	23.5	8185	3235	124.5	0.4
7.20	180	0.410	30.2	7960	3265	133.0	0.6
7.50	180	0.425	29.8	7640	3245	143.5	0.6

Acciaio
500 - 850 N/mm²

5.50	160	0.250	19.8	9260	2315	55.0	0.9
5.80	160	0.265	19.3	8780	2325	61.5	0.9
6.00	160	0.285	19.0	8490	2420	68.5	0.9
6.20	160	0.300	24.7	8215	2465	74.5	1.1
6.50	160	0.315	24.3	7835	2470	82.0	1.1
6.80	160	0.330	23.8	7490	2470	89.5	1.0
7.00	160	0.340	23.5	7275	2475	95.0	1.0
7.20	160	0.350	30.2	7075	2475	101.0	1.0
7.50	160	0.365	29.8	6790	2480	109.5	1.0

Acciaio
850 - 1100 N/mm²

5.50	140	0.230	19.8	8100	1865	44.5	1.2
5.80	140	0.245	19.3	7685	1885	50.0	1.1
6.00	140	0.260	19.0	7425	1930	54.5	1.1
6.20	140	0.275	24.7	7190	1975	59.5	1.3
6.50	140	0.290	24.3	6855	1990	66.0	1.3
6.80	140	0.305	23.8	6555	2000	72.5	1.3
7.00	140	0.315	23.5	6365	2005	77.0	1.3
7.20	140	0.320	30.2	6190	1980	80.5	1.3
7.50	140	0.335	29.8	5940	1990	88.0	1.3

Acciaio
1100 - 1300 N/mm²

5.50	100	0.175	19.8	5785	1010	24.0	2.1
5.80	100	0.185	19.3	5490	1015	27.0	2.1
6.00	100	0.200	19.0	5305	1060	30.0	2.0
6.20	100	0.210	24.7	5135	1080	32.5	2.4
6.50	100	0.220	24.3	4895	1075	35.5	2.4
6.80	100	0.230	23.8	4680	1075	39.0	2.4
7.00	100	0.240	23.5	4545	1090	42.0	2.3
7.20	100	0.245	30.2	4420	1085	44.0	2.3
7.50	100	0.255	29.8	4245	1080	47.5	2.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	55	0.135	19.8	3185	430	10.0	5.0
5.80	55	0.145	19.3	3020	440	11.5	4.8
6.00	55	0.150	19.0	2920	440	12.5	4.8
6.20	55	0.160	24.7	2825	450	13.5	5.8
6.50	55	0.170	24.3	2695	460	15.5	5.6
6.80	55	0.180	23.8	2575	465	17.0	5.5
7.00	55	0.185	23.5	2500	465	18.0	5.5
7.20	55	0.190	30.2	2430	460	18.5	5.5
7.50	55	0.195	29.8	2335	455	20.0	5.5

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

5.50	70	0.135	19.8	4050	545	13.0	3.9
5.80	70	0.145	19.3	3840	555	14.5	3.8
6.00	70	0.150	19.0	3715	555	15.5	3.8
6.20	70	0.160	24.7	3595	575	17.5	4.6
6.50	70	0.170	24.3	3430	585	19.5	4.4
6.80	70	0.180	23.8	3275	590	21.5	4.4
7.00	70	0.185	23.5	3185	590	22.5	4.3
7.20	70	0.190	30.2	3095	590	24.0	4.3
7.50	70	0.195	29.8	2970	580	25.5	4.3

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

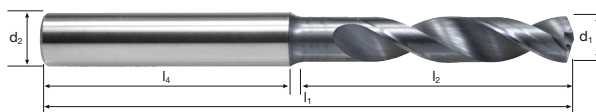
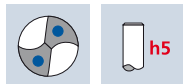
5.50	40	0.135	19.8	2315	315	7.5	6.8
5.80	40	0.145	19.3	2195	320	8.5	6.6
6.00	40	0.150	19.0	2120	320	9.0	6.6
6.20	40	0.160	24.7	2055	330	10.0	7.9
6.50	40	0.170	24.3	1960	335	11.0	7.8
6.80	40	0.180	23.8	1870	335	12.0	7.7
7.00	40	0.185	23.5	1820	335	13.0	7.6
7.20	40	0.190	30.2	1770	335	13.5	7.6
7.50	40	0.195	29.8	1700	330	14.5	7.6

Ghisa
(grigia / sferoidale)

5.50	240	0.265	19.8	13890	3680	87.5	0.6
5.80	240	0.280	19.3	13170	3690	97.5	0.6
6.00	240	0.300	19.0	12730	3820	108.0	0.5
6.20	240	0.320	24.7	12320	3940	119.0	0.7
6.50	240	0.335	24.3	11755	3940	130.5	0.7
6.80	240	0.350	23.8	11235	3930	142.5	0.7
7.00	240	0.360	23.5	10915	3930	151.0	0.6
7.20	240	0.370	30.2	10610	3925	160.0	0.6
7.50	240	0.385	29.8	10185	3920	173.0	0.6

Punte elicoidali XDrill®

3xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-X
						B72011	.0530		B72011
ø Code	d1 m7	d2 h5	l1	l2	l4			€	
.0530	5.3	6	66	28	36			69.00	
.0540	5.4	6	66	28	36			69.00	
.0550	5.5	6	66	28	36			69.00	
.0560	5.6	6	66	28	36			69.00	
.0570	5.7	6	66	28	36			69.00	
.0580	5.8	6	66	28	36			69.00	
.0590	5.9	6	66	28	36			69.00	
.0600	6.0	6	66	28	36			69.00	
.0610	6.1	8	79	34	36			76.00	
.0620	6.2	8	79	34	36			76.00	
.0630	6.3	8	79	34	36			76.00	
.0640	6.4	8	79	34	36			76.00	
.0650	6.5	8	79	34	36			76.00	
.0660	6.6	8	79	34	36			76.00	
.0670	6.7	8	79	34	36			76.00	
.0680	6.8	8	79	34	36			76.00	
.0690	6.9	8	79	34	36			76.00	
.0700	7.0	8	79	34	36			76.00	
.0710	7.1	8	79	41	36			76.00	
.0720	7.2	8	79	41	36			76.00	
.0730	7.3	8	79	41	36			76.00	
.0740	7.4	8	79	41	36			76.00	
.0750	7.5	8	79	41	36			76.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	180	0.430	29.6	7540	3240	147.0	0.5
8.00	180	0.455	29.0	7160	3260	164.0	0.5
8.20	180	0.465	34.7	6985	3250	171.5	0.6
8.50	180	0.480	34.3	6740	3235	183.5	0.6
8.80	180	0.500	33.8	6510	3255	198.0	0.6
9.00	180	0.510	33.5	6365	3245	206.5	0.6
9.20	180	0.520	33.2	6230	3240	215.5	0.6
9.50	180	0.540	32.8	6030	3255	230.5	0.6
9.80	180	0.555	32.3	5845	3245	245.0	0.6

Acciaio
500 - 850 N/mm²

7.60	160	0.370	29.6	6700	2480	112.5	1.0
8.00	160	0.390	29.0	6365	2480	124.5	1.0
8.20	160	0.400	34.7	6210	2485	131.0	1.2
8.50	160	0.415	34.3	5990	2485	141.0	1.2
8.80	160	0.425	33.8	5785	2460	149.5	1.2
9.00	160	0.435	33.5	5660	2460	156.5	1.2
9.20	160	0.445	33.2	5535	2465	164.0	1.1
9.50	160	0.460	32.8	5360	2465	174.5	1.1
9.80	160	0.475	32.3	5195	2470	186.5	1.1

Acciaio
850 - 1100 N/mm²

7.60	140	0.340	29.6	5865	1995	90.5	1.3
8.00	140	0.360	29.0	5570	2005	101.0	1.2
8.20	140	0.365	34.7	5435	1985	105.0	1.5
8.50	140	0.380	34.3	5245	1995	113.0	1.5
8.80	140	0.395	33.8	5065	2000	121.5	1.4
9.00	140	0.405	33.5	4950	2005	127.5	1.4
9.20	140	0.410	33.2	4845	1985	132.0	1.4
9.50	140	0.425	32.8	4690	1995	141.5	1.4
9.80	140	0.440	32.3	4545	2000	151.0	1.4

Acciaio
1100 - 1300 N/mm²

7.60	100	0.260	29.6	4190	1090	49.5	2.3
8.00	100	0.270	29.0	3980	1075	54.0	2.3
8.20	100	0.280	34.7	3880	1085	57.5	2.7
8.50	100	0.290	34.3	3745	1085	61.5	2.7
8.80	100	0.300	33.8	3615	1085	66.0	2.6
9.00	100	0.305	33.5	3535	1080	68.5	2.6
9.20	100	0.315	33.2	3460	1090	72.5	2.6
9.50	100	0.325	32.8	3350	1090	77.5	2.6
9.80	100	0.335	32.3	3250	1090	82.0	2.5

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	55	0.200	29.6	2305	460	21.0	5.4
8.00	55	0.210	29.0	2190	460	23.0	5.3
8.20	55	0.215	34.7	2135	460	24.5	6.4
8.50	55	0.220	34.3	2060	455	26.0	6.4
8.80	55	0.230	33.8	1990	460	28.0	6.2
9.00	55	0.235	33.5	1945	455	29.0	6.3
9.20	55	0.240	33.2	1905	455	30.0	6.2
9.50	55	0.250	32.8	1845	460	32.5	6.1
9.80	55	0.255	32.3	1785	455	34.5	6.1

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

7.60	70	0.200	29.6	2930	585	26.5	4.3
8.00	70	0.210	29.0	2785	585	29.5	4.2
8.20	70	0.215	34.7	2715	585	31.0	5.0
8.50	70	0.220	34.3	2620	575	32.5	5.0
8.80	70	0.230	33.8	2530	580	35.5	4.9
9.00	70	0.235	33.5	2475	580	37.0	4.9
9.20	70	0.240	33.2	2420	580	38.5	4.9
9.50	70	0.250	32.8	2345	585	41.5	4.8
9.80	70	0.255	32.3	2275	580	43.5	4.8

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

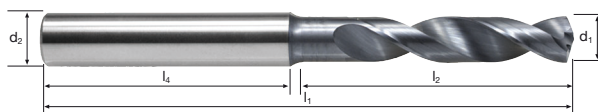
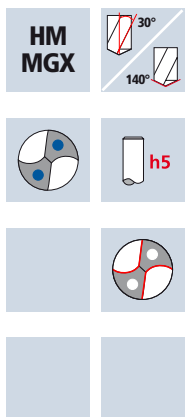
7.60	40	0.200	29.6	1675	335	15.0	7.5
8.00	40	0.210	29.0	1590	335	17.0	7.3
8.20	40	0.215	34.7	1555	335	17.5	8.7
8.50	40	0.220	34.3	1500	330	18.5	8.8
8.80	40	0.230	33.8	1445	330	20.0	8.7
9.00	40	0.235	33.5	1415	335	21.5	8.5
9.20	40	0.240	33.2	1385	330	22.0	8.6
9.50	40	0.250	32.8	1340	335	23.5	8.4
9.80	40	0.255	32.3	1300	330	25.0	8.4

Ghisa
(griglia / sferoidale)

7.60	240	0.390	29.6	10050	3920	178.0	0.6
8.00	240	0.410	29.0	9550	3915	197.0	0.6
8.20	240	0.420	34.7	9315	3910	206.5	0.7
8.50	240	0.440	34.3	8990	3955	224.5	0.7
8.80	240	0.455	33.8	8680	3950	240.0	0.7
9.00	240	0.465	33.5	8490	3950	251.5	0.7
9.20	240	0.475	33.2	8305	3945	262.0	0.7
9.50	240	0.490	32.8	8040	3940	279.5	0.7
9.80	240	0.505	32.3	7795	3935	297.0	0.7

Punte elicoidali XDrill®

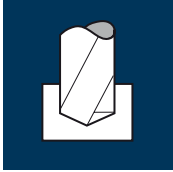
3xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo		Codice-ø		DURO-X	
						B72011		.0760		B72011	
ø Code	d1 m7	d2 h5	l1	l2	l4	€					
.0760	7.6	8	79	41	36	76.00					
.0770	7.7	8	79	41	36	76.00					
.0780	7.8	8	79	41	36	76.00					
.0790	7.9	8	79	41	36	76.00					
.0800	8.0	8	79	41	36	76.00					
.0810	8.1	10	89	47	40	87.00					
.0820	8.2	10	89	47	40	87.00					
.0830	8.3	10	89	47	40	87.00					
.0840	8.4	10	89	47	40	87.00					
.0850	8.5	10	89	47	40	87.00					
.0860	8.6	10	89	47	40	87.00					
.0870	8.7	10	89	47	40	87.00					
.0880	8.8	10	89	47	40	87.00					
.0890	8.9	10	89	47	40	87.00					
.0900	9.0	10	89	47	40	87.00					
.0910	9.1	10	89	47	40	87.00					
.0920	9.2	10	89	47	40	87.00					
.0930	9.3	10	89	47	40	87.00					
.0940	9.4	10	89	47	40	87.00					
.0950	9.5	10	89	47	40	87.00					
.0960	9.6	10	89	47	40	87.00					
.0970	9.7	10	89	47	40	87.00					
.0980	9.8	10	89	47	40	87.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	180	0.565	32.0	5730	3235	254.0	0.6
10.20	180	0.575	39.7	5615	3230	264.0	0.7
10.50	180	0.590	39.3	5455	3220	279.0	0.7
10.80	180	0.605	38.8	5305	3210	294.0	0.7
11.00	180	0.610	38.5	5210	3180	302.0	0.7
11.20	180	0.615	38.2	5115	3145	310.0	0.7
11.50	180	0.620	37.8	4980	3090	321.0	0.7
11.80	180	0.630	37.3	4855	3060	334.5	0.7
12.00	180	0.640	37.0	4775	3055	345.5	0.7

Acciaio
500 - 850 N/mm²

10.00	160	0.485	32.0	5095	2470	194.0	1.1
10.20	160	0.495	39.7	4995	2475	202.0	1.4
10.50	160	0.505	39.3	4850	2450	212.0	1.4
10.80	160	0.520	38.8	4715	2450	224.5	1.3
11.00	160	0.525	38.5	4630	2430	231.0	1.3
11.20	160	0.530	38.2	4545	2410	237.5	1.3
11.50	160	0.530	37.8	4430	2350	244.0	1.4
11.80	160	0.540	37.3	4315	2330	255.0	1.4
12.00	160	0.550	37.0	4245	2335	264.0	1.4

Acciaio
850 - 1100 N/mm²

10.00	140	0.445	32.0	4455	1980	155.5	1.4
10.20	140	0.455	39.7	4370	1990	162.5	1.7
10.50	140	0.465	39.3	4245	1975	171.0	1.7
10.80	140	0.475	38.8	4125	1960	179.5	1.7
11.00	140	0.485	38.5	4050	1965	186.5	1.7
11.20	140	0.485	38.2	3980	1930	190.0	1.7
11.50	140	0.490	37.8	3875	1900	197.5	1.7
11.80	140	0.495	37.3	3775	1870	204.5	1.7
12.00	140	0.505	37.0	3715	1875	212.0	1.7

Acciaio
1100 - 1300 N/mm²

10.00	100	0.340	32.0	3185	1085	85.0	2.5
10.20	100	0.345	39.7	3120	1075	88.0	3.1
10.50	100	0.355	39.3	3030	1075	93.0	3.1
10.80	100	0.365	38.8	2945	1075	98.5	3.1
11.00	100	0.365	38.5	2895	1055	100.5	3.1
11.20	100	0.370	38.2	2840	1050	103.5	3.1
11.50	100	0.375	37.8	2770	1040	108.0	3.1
11.80	100	0.380	37.3	2700	1025	112.0	3.1
12.00	100	0.385	37.0	2655	1020	115.5	3.1

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	55	0.260	32.0	1750	455	35.5	6.1
10.20	55	0.265	39.7	1715	455	37.0	7.3
10.50	55	0.275	39.3	1665	460	40.0	7.2
10.80	55	0.280	38.8	1620	455	41.5	7.2
11.00	55	0.285	38.5	1590	455	43.0	7.2
11.20	55	0.285	38.2	1565	445	44.0	7.3
11.50	55	0.285	37.8	1520	435	45.0	7.4
11.80	55	0.290	37.3	1485	430	47.0	7.4
12.00	55	0.295	37.0	1460	430	48.5	7.4

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

10.00	70	0.260	32.0	2230	580	45.5	4.8
10.20	70	0.265	39.7	2185	580	47.5	5.8
10.50	70	0.275	39.3	2120	585	50.5	5.7
10.80	70	0.280	38.8	2065	580	53.0	5.7
11.00	70	0.285	38.5	2025	575	54.5	5.7
11.20	70	0.285	38.2	1990	565	55.5	5.8
11.50	70	0.285	37.8	1940	555	57.5	5.8
11.80	70	0.290	37.3	1890	550	60.0	5.8
12.00	70	0.295	37.0	1855	545	61.5	5.8

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

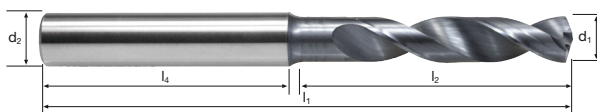
10.00	40	0.260	32.0	1275	330	26.0	8.4
10.20	40	0.265	39.7	1250	330	27.0	10.1
10.50	40	0.275	39.3	1215	335	29.0	9.9
10.80	40	0.280	38.8	1180	330	30.0	10.0
11.00	40	0.285	38.5	1155	330	31.5	9.9
11.20	40	0.285	38.2	1135	325	32.0	10.0
11.50	40	0.285	37.8	1105	315	32.5	10.2
11.80	40	0.290	37.3	1080	315	34.5	10.2
12.00	40	0.295	37.0	1060	315	35.5	10.1

Ghisa
(griglia / sferoidale)

10.00	240	0.515	32.0	7640	3935	309.0	0.7
10.20	240	0.520	39.7	7490	3895	318.5	0.9
10.50	240	0.540	39.3	7275	3930	340.5	0.8
10.80	240	0.550	38.8	7075	3890	356.5	0.8
11.00	240	0.555	38.5	6945	3855	366.5	0.8
11.20	240	0.560	38.2	6820	3820	376.5	0.9
11.50	240	0.565	37.8	6645	3755	390.0	0.9
11.80	240	0.570	37.3	6475	3690	403.5	0.9
12.00	240	0.580	37.0	6365	3690	417.5	0.9

Punte elicoidali XDrill®

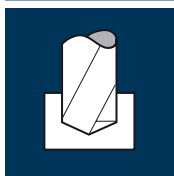
3xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-X
						B72011	.0990		B72011
ø Code	d1 m7	d2 h5	l1	l2	l4			€	
.0990	9.9	10	89	47	40			87.00	
.1000	10.0	10	89	47	40			87.00	
.1010	10.1	12	102	55	45			125.00	
.1020	10.2	12	102	55	45			125.00	
.1030	10.3	12	102	55	45			125.00	
.1040	10.4	12	102	55	45			125.00	
.1050	10.5	12	102	55	45			125.00	
.1060	10.6	12	102	55	45			125.00	
.1070	10.7	12	102	55	45			125.00	
.1080	10.8	12	102	55	45			125.00	
.1090	10.9	12	102	55	45			125.00	
.1100	11.0	12	102	55	45			125.00	
.1110	11.1	12	102	55	45			125.00	
.1120	11.2	12	102	55	45			125.00	
.1130	11.3	12	102	55	45			125.00	
.1140	11.4	12	102	55	45			125.00	
.1150	11.5	12	102	55	45			125.00	
.1160	11.6	12	102	55	45			125.00	
.1170	11.7	12	102	55	45			125.00	
.1180	11.8	12	102	55	45			125.00	
.1190	11.9	12	102	55	45			125.00	
.1200	12.0	12	102	55	45			125.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.50	180	0.665	41.3	4585	3050	374.5	0.8
13.00	180	0.695	40.5	4405	3060	406.0	0.8
13.50	180	0.705	40.2	4340	3060	419.0	0.8
14.00	180	0.715	39.0	4095	2930	451.0	0.8
14.50	180	0.725	43.3	3950	2865	473.0	0.9
15.00	180	0.745	42.5	3820	2845	503.0	0.9
15.50	180	0.760	41.8	3695	2810	530.0	0.9
15.80	180	0.770	41.3	3625	2790	547.0	0.9
16.00	180	0.775	41.0	3580	2775	558.0	0.9

Acciaio
500 - 850 N/mm²

12.50	160	0.570	41.3	4075	2325	285.5	1.5
13.00	160	0.595	40.5	3920	2330	309.5	1.5
13.50	160	0.605	40.2	3860	2335	319.5	1.5
14.00	160	0.610	39.0	3640	2220	341.5	1.5
14.50	160	0.620	43.3	3510	2175	359.0	1.7
15.00	160	0.640	42.5	3395	2175	384.5	1.7
15.50	160	0.650	41.8	3285	2135	403.0	1.7
15.80	160	0.660	41.3	3225	2130	417.5	1.7
16.00	160	0.665	41.0	3185	2120	426.5	1.7

Acciaio
850 - 1100 N/mm²

12.50	140	0.525	41.3	3565	1870	229.5	1.9
13.00	140	0.545	40.5	3430	1870	248.0	1.8
13.50	140	0.555	40.2	3375	1875	256.5	1.8
14.00	140	0.565	39.0	3185	1800	277.0	1.9
14.50	140	0.570	43.3	3075	1755	290.0	2.1
15.00	140	0.590	42.5	2970	1750	309.5	2.1
15.50	140	0.600	41.8	2875	1725	325.5	2.1
15.80	140	0.605	41.3	2820	1705	334.5	2.1
16.00	140	0.610	41.0	2785	1700	342.0	2.1

Acciaio
1100 - 1300 N/mm²

12.50	100	0.400	41.3	2545	1020	125.0	3.4
13.00	100	0.415	40.5	2450	1015	134.5	3.4
13.50	100	0.420	40.2	2410	1010	138.0	3.4
14.00	100	0.430	39.0	2275	980	151.0	3.4
14.50	100	0.435	43.3	2195	955	157.5	3.9
15.00	100	0.445	42.5	2120	945	167.0	3.8
15.50	100	0.455	41.8	2055	935	176.5	3.8
15.80	100	0.460	41.3	2015	925	181.5	3.8
16.00	100	0.465	41.0	1990	925	186.0	3.8

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.50	55	0.310	41.3	1400	435	53.5	8.0
13.00	55	0.320	40.5	1345	430	57.0	8.0
13.50	55	0.325	40.2	1325	430	59.0	8.0
14.00	55	0.330	39.0	1250	415	64.0	8.1
14.50	55	0.335	43.3	1205	405	67.0	9.1
15.00	55	0.345	42.5	1165	400	70.5	9.1
15.50	55	0.350	41.8	1130	395	74.5	9.1
15.80	55	0.355	41.3	1110	395	77.5	9.0
16.00	55	0.355	41.0	1095	390	78.5	9.1

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

12.50	70	0.310	41.3	1785	555	68.0	6.3
13.00	70	0.320	40.5	1715	550	73.0	6.3
13.50	70	0.325	40.2	1690	550	75.5	6.2
14.00	70	0.330	39.0	1590	525	81.0	6.4
14.50	70	0.335	43.3	1535	515	85.0	7.1
15.00	70	0.345	42.5	1485	510	90.0	7.1
15.50	70	0.350	41.8	1440	505	95.5	7.1
15.80	70	0.355	41.3	1410	500	98.0	7.1
16.00	70	0.355	41.0	1395	495	99.5	7.2

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

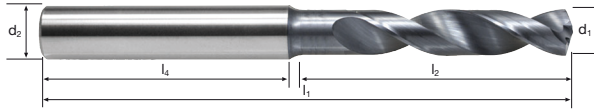
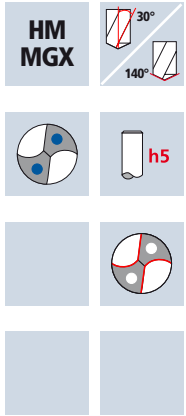
12.50	40	0.310	41.3	1020	315	38.5	11.1
13.00	40	0.320	40.5	980	315	42.0	11.0
13.50	40	0.325	40.2	965	315	43.0	10.9
14.00	40	0.330	39.0	910	300	46.0	11.2
14.50	40	0.335	43.3	880	295	48.5	12.5
15.00	40	0.345	42.5	850	295	52.0	12.3
15.50	40	0.350	41.8	820	285	54.0	12.6
15.80	40	0.355	41.3	805	285	56.0	12.5
16.00	40	0.355	41.0	795	280	56.5	12.6

Ghisa
(griglia / sferoidale)

12.50	240	0.605	41.3	6110	3695	453.5	0.9
13.00	240	0.630	40.5	5875	3700	491.0	0.9
13.50	240	0.640	40.2	5785	3700	506.5	0.9
14.00	240	0.650	39.0	5455	3545	545.5	0.9
14.50	240	0.660	43.3	5270	3480	574.5	1.1
15.00	240	0.675	42.5	5095	3440	608.0	1.1
15.50	240	0.690	41.8	4930	3400	641.5	1.1
15.80	240	0.700	41.3	4835	3385	663.5	1.1
16.00	240	0.705	41.0	4775	3365	676.5	1.1

Punte elicoidali XDrill®

3xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56		Inox Stainless	Ti Titanium	GG(G)
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						DURO-X	
						B72011	
						€	
Esempio: N° Ordine	Articolo B72011		Codice-ø .1250				
Ø Code	d1 m7	d2 h5	l1	l2	l4		
.1250	12.5	14	107	60	45	169.00	
.1280	12.8	14	107	60	45	169.00	
.1300	13.0	14	107	60	45	169.00	
.1350	13.5	14	107	60	45	169.00	
.1380	13.8	14	107	60	45	169.00	
.1400	14.0	14	107	60	45	169.00	
.1450	14.5	16	115	65	48	204.00	
.1480	14.8	16	115	65	48	204.00	
.1500	15.0	16	115	65	48	204.00	
.1550	15.5	16	115	65	48	204.00	
.1580	15.8	16	115	65	48	204.00	
.1600	16.0	16	115	65	48	204.00	

Applicazione



Materiale

Acciaio da utensile
temprato
42 - 48 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	35	0.060	15.5	3715	225	1.5	4.1
4.00	35	0.080	18.0	2785	225	3.0	4.8
4.30	35	0.085	17.6	2590	220	3.0	4.8
5.00	35	0.100	20.5	2230	225	4.5	5.5
5.50	35	0.110	19.8	2025	225	5.5	5.3
6.00	35	0.120	19.0	1855	225	6.5	5.1
6.50	35	0.130	24.3	1715	225	7.5	6.5
6.90	35	0.135	23.6	1615	220	8.0	6.4
8.00	35	0.155	29.0	1395	215	11.0	8.1

Acciaio da utensile
temprato
48 - 52 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	30	0.050	15.5	3185	160	1.0	5.8
4.00	30	0.065	18.0	2385	155	2.0	7.0
4.30	30	0.070	17.6	2220	155	2.5	6.8
5.00	30	0.085	20.5	1910	160	3.0	7.7
5.50	30	0.090	19.8	1735	155	3.5	7.7
6.00	30	0.100	19.0	1590	160	4.5	7.1
6.50	30	0.110	24.3	1470	160	5.5	9.1
6.90	30	0.115	23.6	1385	160	6.0	8.9
8.00	30	0.130	29.0	1195	155	8.0	11.2

Acciaio da utensile
temprato
52 - 56 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	20	0.045	15.5	2120	95	0.5	9.8
4.00	20	0.055	18.0	1590	85	1.0	12.7
4.30	20	0.060	17.6	1480	90	1.5	11.7
5.00	20	0.070	20.5	1275	90	2.0	13.7
5.50	20	0.080	19.8	1155	90	2.0	13.2
6.00	20	0.085	19.0	1060	90	2.5	12.7
6.50	20	0.095	24.3	980	95	3.0	15.3
6.90	20	0.080	23.6	925	75	3.0	18.9
8.00	20	0.085	29.0	795	70	3.5	24.9

Acciaio da utensile
temprato
56 - 60 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	15	0.020	15.5	1590	30	0.0	31.0
4.00	15	0.025	18.0	1195	30	0.5	36.0
4.30	15	0.025	17.6	1110	30	0.5	35.2
5.00	15	0.030	20.5	955	30	0.5	41.0
5.50	15	0.035	19.8	870	30	0.5	39.6
6.00	15	0.040	19.0	795	30	1.0	38.0
6.50	15	0.040	24.3	735	30	1.0	48.6
6.90	15	0.040	23.6	690	30	1.0	47.2
8.00	15	0.050	29.0	595	30	1.5	58.0

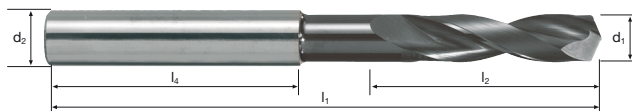
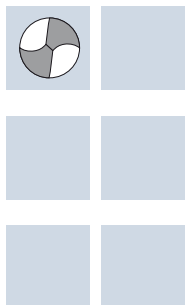
Materiale

Acciaio da utensile
temprato
> 60 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	10	0.015	15.5	1060	15	0.0	62.0
4.00	10	0.020	18.0	795	15	0.0	72.0
4.30	10	0.025	17.6	740	20	0.5	52.8
5.00	10	0.030	20.5	635	20	0.5	61.5
5.50	10	0.030	19.8	580	15	0.5	79.2
6.00	10	0.035	19.0	530	20	0.5	57.0
6.50	10	0.035	24.3	490	15	0.5	97.2
6.90	10	0.040	23.6	460	20	0.5	70.8
8.00	10	0.045	29.0	400	20	1.0	87.0

Punte elicoidali Supradrill HX

3xd



			Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60			HSS GG(G)
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Esempio: N° Ordine							Articolo		Codice-ø		DURO-SD	
							B52111		.0260		B52111	
											B53111	
ø Code	d1 m7	d2 h6	l1	l2	l4	€						
.0260	2.60	6	62	20	36	69.00						
.0300	3.00	6	62	20	36	69.00						
.0340	3.40	6	62	20	36	69.00						
.0350	3.50	6	62	20	36	69.00						
.0400	4.00	6	66	24	36	69.00						
.0420	4.20	6	66	24	36	69.00						
.0430	4.30	6	66	24	36	69.00						
.0450	4.50	6	66	24	36	69.00						
.0500	5.00	6	66	28	36	69.00						
.0510	5.10	6	66	28	36	69.00						
.0520	5.20	6	66	28	36	69.00						
.0550	5.50	6	66	28	36	69.00						
.0560	5.60	6	66	28	36	69.00						
.0600	6.00	6	66	28	36	69.00						
.0650	6.50	8	79	34	36	76.00						
.0670	6.70	8	79	34	36	76.00						
.0690	6.90	8	79	34	36	76.00						
.0700	7.00	8	79	34	36	76.00						
.0710	7.10	8	79	41	36	76.00						
.0750	7.50	8	79	41	36	76.00						
.0800	8.00	8	79	41	36	76.00						

Applicazione



Materiale

Acciaio da utensile
temprato
42 - 48 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
8.60	35	0.160	34.1	1295	205	12.0	10.0
9.00	35	0.170	33.5	1240	210	13.5	9.6
10.00	35	0.185	32.0	1115	205	16.0	9.4
10.40	35	0.190	39.4	1070	205	17.5	11.5
11.00	35	0.195	38.5	1015	200	19.0	11.6
12.00	35	0.210	37.0	930	195	22.0	11.4
12.20	35	0.210	41.7	915	190	22.0	13.2
13.00	35	0.220	40.5	855	190	25.0	12.8
14.00	35	0.235	39.0	795	185	28.5	12.6

Acciaio da utensile
temprato
48 - 52 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
8.60	30	0.135	34.1	1110	150	8.5	13.6
9.00	30	0.140	33.5	1060	150	9.5	13.4
10.00	30	0.155	32.0	955	150	12.0	12.8
10.40	30	0.155	39.4	920	145	12.5	16.3
11.00	30	0.165	38.5	870	145	14.0	15.9
12.00	30	0.175	37.0	795	140	16.0	15.9
12.20	30	0.175	41.7	785	135	16.0	18.5
13.00	30	0.185	40.5	735	135	18.0	18.0
14.00	30	0.195	39.0	680	135	21.0	17.3

Acciaio da utensile
temprato
52 - 56 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
8.60	20	0.090	34.1	740	65	4.0	31.5
9.00	20	0.095	33.5	705	65	4.0	30.9
10.00	20	0.100	32.0	635	65	5.0	29.5
10.40	20	0.100	39.4	610	60	5.0	39.4
11.00	20	0.105	38.5	580	60	5.5	38.5
12.00	20	0.110	37.0	530	60	7.0	37.0
12.20	20	0.110	41.7	520	55	6.5	45.5
13.00	20	0.115	40.5	490	55	7.5	44.2
14.00	20	0.125	39.0	455	55	8.5	42.5

Acciaio da utensile
temprato
56 - 60 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
8.60	15	0.050	34.1	555	30	1.5	68.2
9.00	15	0.050	33.5	530	25	1.5	80.4
10.00	15	0.055	32.0	475	25	2.0	76.8
10.40	15	0.060	39.4	460	30	2.5	78.8
11.00	15	0.060	38.5	435	25	2.5	92.4
12.00	15	0.065	37.0	400	25	3.0	88.8
12.20	15	0.065	41.7	390	25	3.0	100.1
13.00	15	0.070	40.5	365	25	3.5	97.2
14.00	15	0.075	39.0	340	25	4.0	93.6

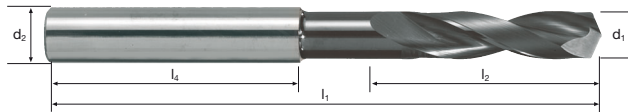
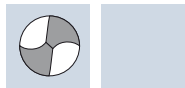
Materiale

Acciaio da utensile
temprato
> 60 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
8.60	10	0.045	34.1	370	15	1.0	136.4
9.00	10	0.045	33.5	355	15	1.0	134.0
10.00	10	0.050	32.0	320	15	1.0	128.0
10.40	10	0.050	39.4	305	15	1.5	157.6
11.00	10	0.055	38.5	290	15	1.5	154.0
12.00	10	0.060	37.0	265	15	1.5	148.0
12.20	10	0.060	41.7	260	15	2.0	166.8
13.00	10	0.060	40.5	245	15	2.0	162.0
14.00	10	0.065	39.0	225	15	2.5	156.0

Punte elicoidali Supradrill HX

3xd



			Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60			HSS GG(G)
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Esempio: N° Ordine						Articolo		Codice-ø		DURO-SD	
						B52111		.0810		B52111	
										B53111	
ø Code	d1 m7	d2 h6	l1	l2	l4					€	
.0810	8.10	10	89	47	40					87.00	
.0850	8.50	10	89	47	40					87.00	
.0860	8.60	10	89	47	40					87.00	
.0885	8.85	10	89	47	40					87.00	
.0900	9.00	10	89	47	40					87.00	
.0910	9.10	10	89	47	40					87.00	
.0950	9.50	10	89	47	40					87.00	
.1000	10.00	10	89	47	40					87.00	
.1030	10.30	12	102	55	45					125.00	
.1040	10.40	12	102	55	45					125.00	
.1050	10.50	12	102	55	45					125.00	
.1070	10.70	12	102	55	45					125.00	
.1100	11.00	12	102	55	45					125.00	
.1150	11.50	12	102	55	45					125.00	
.1160	11.60	12	102	55	45					125.00	
.1190	11.90	12	102	55	45					125.00	
.1200	12.00	12	102	55	45					125.00	
.1210	12.10	14	107	60	45					169.00	
.1220	12.20	14	107	60	45					169.00	
.1250	12.50	14	107	60	45					169.00	
.1270	12.70	14	107	60	45					169.00	
.1300	13.00	14	107	60	45					169.00	
.1400	14.00	14	107	60	45					169.00	

Applicazione



Materiale

Acciaio da utensile
temprato
42 - 48 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.10	35	0.235	43.9	790	185	29.0	14.2
14.20	35	0.235	43.7	785	185	29.5	14.2
14.70	35	0.245	43.0	760	185	31.5	13.9
15.00	35	0.245	42.5	745	185	32.5	13.8
15.40	35	0.250	41.9	725	180	33.5	14.0
16.00	35	0.260	41.0	695	180	36.0	13.7
19.20	35	0.310	50.2	580	180	52.0	16.7

Acciaio da utensile
temprato
48 - 52 HRC

14.10	30	0.195	43.9	675	130	20.5	20.3
14.20	30	0.195	43.7	670	130	20.5	20.2
14.70	30	0.205	43.0	650	135	23.0	19.1
15.00	30	0.205	42.5	635	130	23.0	19.6
15.40	30	0.210	41.9	620	130	24.0	19.3
16.00	30	0.215	41.0	595	130	26.0	18.9
19.20	30	0.260	50.2	495	130	37.5	23.2

Acciaio da utensile
temprato
52 - 56 HRC

14.10	20	0.125	43.9	450	55	8.5	47.9
14.20	20	0.125	43.7	450	55	8.5	47.7
14.70	20	0.130	43.0	435	55	9.5	46.9
15.00	20	0.130	42.5	425	55	9.5	46.4
15.40	20	0.135	41.9	415	55	10.0	45.7
16.00	20	0.135	41.0	400	55	11.0	44.7
19.20	20	0.165	50.2	330	55	16.0	54.8

Acciaio da utensile
temprato
56 - 60 HRC

14.10	15	0.075	43.9	340	25	4.0	105.4
14.20	15	0.075	43.7	335	25	4.0	104.9
14.70	15	0.075	43.0	325	25	4.0	103.2
15.00	15	0.075	42.5	320	25	4.5	102.0
15.40	15	0.080	41.9	310	25	4.5	100.6
16.00	15	0.080	41.0	300	25	5.0	98.4
19.20	15	0.095	50.2	250	25	7.0	120.5

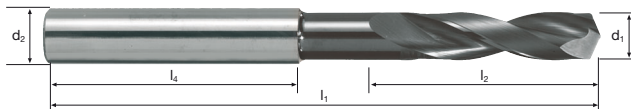
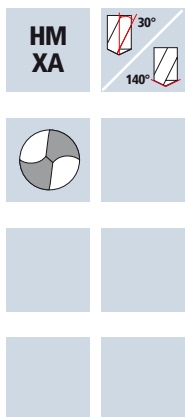
Materiale

Acciaio da utensile
temprato
> 60 HRC

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
14.10	10	0.065	43.9	225	15	2.5	175.6
14.20	10	0.065	43.7	225	15	2.5	174.8
14.70	10	0.070	43.0	215	15	2.5	172.0
15.00	10	0.070	42.5	210	15	2.5	170.0
15.40	10	0.070	41.9	205	15	3.0	167.6
16.00	10	0.070	41.0	200	15	3.0	164.0
19.20	10	0.085	50.2	165	15	4.5	200.8

Punte elicoidali Supradrill HX

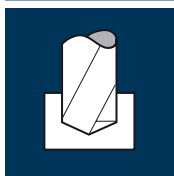
3xd



			Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60		HSS GG(G)
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Esempio: N° Ordine		Articolo		Codice-ø			DURO-SD	
		B52111		.1410			B52111	
							B53111	
ø Code	d1 m7	d2 h6	l1	l2	l3		€	
.1410	14.10	16	115	65	48		204.00	
.1420	14.20	16	115	65	48		204.00	
.1470	14.70	16	115	65	48		204.00	
.1500	15.00	16	115	65	48		204.00	
.1540	15.40	16	115	65	48		204.00	
.1600	16.00	16	115	65	48		204.00	
.1920	19.20	20	131	79	50		321.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	160	0.085	15.5	16975	1445	10.0	0.6
3.30	160	0.095	15.1	15435	1465	12.5	0.6
3.50	160	0.100	14.8	14550	1455	14.0	0.6
4.00	160	0.115	18.0	12730	1465	18.5	0.7
4.20	160	0.120	17.7	12125	1455	20.0	0.7
5.00	160	0.145	20.5	10185	1475	29.0	0.8
6.00	160	0.170	19.0	8490	1445	41.0	0.8
6.80	160	0.195	23.8	7490	1460	53.0	1.0
8.50	160	0.245	34.3	5990	1470	83.5	1.4

Acciaio
500 - 850 N/mm²

3.00	120	0.085	15.5	12730	1080	7.5	0.9
3.30	120	0.095	15.1	11575	1100	9.5	0.8
3.50	120	0.100	14.8	10915	1090	10.5	0.8
4.00	120	0.115	18.0	9550	1100	14.0	1.0
4.20	120	0.120	17.7	9095	1090	15.0	1.0
5.00	120	0.145	20.5	7640	1110	22.0	1.1
6.00	120	0.170	19.0	6365	1080	30.5	1.1
6.80	120	0.195	23.8	5615	1095	40.0	1.3
8.50	120	0.245	34.3	4495	1100	62.5	1.9

Acciaio
850 - 1100 N/mm²

3.00	100	0.065	15.5	10610	690	5.0	1.3
3.30	100	0.075	15.1	9645	725	6.0	1.2
3.50	100	0.080	14.8	9095	730	7.0	1.2
4.00	100	0.090	18.0	7960	715	9.0	1.5
4.20	100	0.095	17.7	7580	720	10.0	1.5
5.00	100	0.110	20.5	6365	700	13.5	1.8
6.00	100	0.135	19.0	5305	715	20.0	1.6
6.80	100	0.150	23.8	4680	700	25.5	2.0
8.50	100	0.190	34.3	3745	710	40.5	2.9

Acciaio
1100 - 1300 N/mm²

3.00	65	0.055	15.5	6895	380	2.5	2.4
3.30	65	0.060	15.1	6270	375	3.0	2.4
3.50	65	0.060	14.8	5910	355	3.5	2.5
4.00	65	0.070	18.0	5175	360	4.5	3.0
4.20	65	0.075	17.7	4925	370	5.0	2.9
5.00	65	0.090	20.5	4140	375	7.5	3.3
6.00	65	0.105	19.0	3450	360	10.0	3.2
6.80	65	0.120	23.8	3045	365	13.5	3.9
8.50	65	0.150	34.3	2435	365	20.5	5.6

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	35	0.045	15.5	3715	165	1.0	5.6
3.30	35	0.045	15.1	3375	150	1.5	6.0
3.50	35	0.050	14.8	3185	160	1.5	5.5
4.00	35	0.055	18.0	2785	155	2.0	7.0
4.20	35	0.060	17.7	2655	160	2.0	6.6
5.00	35	0.070	20.5	2230	155	3.0	7.9
6.00	35	0.085	19.0	1855	160	4.5	7.1
6.80	35	0.095	23.8	1640	155	5.5	9.2
8.50	35	0.120	34.3	1310	155	9.0	13.3

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

3.00	60	0.045	15.5	6365	285	2.0	3.3
3.30	60	0.050	15.1	5785	290	2.5	3.1
3.50	60	0.050	14.8	5455	275	2.5	3.2
4.00	60	0.060	18.0	4775	285	3.5	3.8
4.20	60	0.065	17.7	4545	295	4.0	3.6
5.00	60	0.075	20.5	3820	285	5.5	4.3
6.00	60	0.090	19.0	3185	285	8.0	4.0
6.80	60	0.100	23.8	2810	280	10.0	5.1
8.50	60	0.125	34.3	2245	280	16.0	7.4

Ghisa
(grigia / sferoidale)

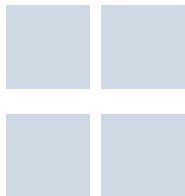
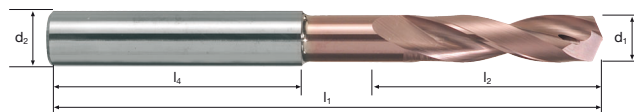
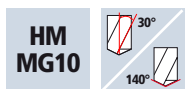
3.00	200	0.095	15.5	21220	2015	14.0	0.5
3.30	200	0.105	15.1	19290	2025	17.5	0.4
3.50	200	0.110	14.8	18190	2000	19.0	0.4
4.00	200	0.125	18.0	15915	1990	25.0	0.5
4.20	200	0.130	17.7	15160	1970	27.5	0.5
5.00	200	0.155	20.5	12730	1975	39.0	0.6
6.00	200	0.190	19.0	10610	2015	57.0	0.6
6.80	200	0.215	23.8	9360	2010	73.0	0.7
8.50	200	0.265	34.3	7490	1985	112.5	1.0

Alluminio malleabile
Si < 6%

3.00	250	0.085	15.5	26525	2255	16.0	0.4
3.30	250	0.095	15.1	24115	2290	19.5	0.4
3.50	250	0.100	14.8	22735	2275	22.0	0.4
4.00	250	0.115	18.0	19895	2290	29.0	0.5
4.20	250	0.120	17.7	18945	2275	31.5	0.5
5.00	250	0.145	20.5	15915	2310	45.5	0.5
6.00	250	0.170	19.0	13265	2255	64.0	0.5
6.80	250	0.195	23.8	11705	2280	83.0	0.6
8.50	250	0.245	34.3	9360	2295	130.0	0.9

Punte elicoidali Supradrill N

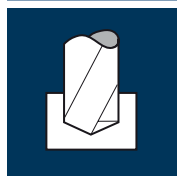
3xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		U-4XD	
						B52011		.0300		B52011	
										B53011	
ø Code	d1 m7	d2 h6	l1	l2	l4					€	
.0300	3.0	6	62	20	36					61.00	
.0330	3.3	6	62	20	36					61.00	
.0340	3.4	6	62	20	36					61.00	
.0350	3.5	6	62	20	36					61.00	
.0370	3.7	6	62	20	36					61.00	
.0380	3.8	6	66	24	36					61.00	
.0400	4.0	6	66	24	36					61.00	
.0420	4.2	6	66	24	36					61.00	
.0450	4.5	6	66	24	36					61.00	
.0480	4.8	6	66	28	36					61.00	
.0500	5.0	6	66	28	36					61.00	
.0550	5.5	6	66	28	36					61.00	
.0580	5.8	6	66	28	36					61.00	
.0600	6.0	6	66	28	36					61.00	
.0650	6.5	8	79	34	36					68.00	
.0680	6.8	8	79	34	36					68.00	
.0700	7.0	8	79	34	36					68.00	
.0750	7.5	8	79	41	36					68.00	
.0780	7.8	8	79	41	36					68.00	
.0800	8.0	8	79	41	36					68.00	
.0850	8.5	10	89	47	40					78.00	
.0880	8.8	10	89	47	40					78.00	
.0900	9.0	10	89	47	40					78.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	160	0.285	32.0	5095	1450	114.0	1.3
10.20	160	0.290	39.7	4995	1450	118.5	1.6
11.00	160	0.315	38.5	4630	1460	138.5	1.6
12.00	160	0.345	37.0	4245	1465	165.5	1.5
13.00	160	0.370	40.5	3920	1450	192.5	1.7
14.00	160	0.400	39.0	3640	1455	224.0	1.6
15.00	160	0.430	42.5	3395	1460	258.0	1.7
15.50	160	0.445	41.8	3285	1460	275.5	1.7
16.00	160	0.455	41.0	3185	1450	291.5	1.7

Acciaio
500 - 850 N/mm²

10.00	120	0.285	32.0	3820	1090	85.5	1.8
10.20	120	0.290	39.7	3745	1085	88.5	2.2
11.00	120	0.315	38.5	3470	1095	104.0	2.1
12.00	120	0.345	37.0	3185	1100	124.5	2.0
13.00	120	0.370	40.5	2940	1090	144.5	2.2
14.00	120	0.400	39.0	2730	1090	168.0	2.1
15.00	120	0.430	42.5	2545	1095	193.5	2.3
15.50	120	0.445	41.8	2465	1095	206.5	2.3
16.00	120	0.455	41.0	2385	1085	218.0	2.3

Acciaio
850 - 1100 N/mm²

10.00	100	0.220	32.0	3185	700	55.0	2.7
10.20	100	0.225	39.7	3120	700	57.0	3.4
11.00	100	0.245	38.5	2895	710	67.5	3.3
12.00	100	0.265	37.0	2655	705	79.5	3.1
13.00	100	0.290	40.5	2450	710	94.0	3.4
14.00	100	0.310	39.0	2275	705	108.5	3.3
15.00	100	0.335	42.5	2120	710	125.5	3.6
15.50	100	0.345	41.8	2055	710	134.0	3.5
16.00	100	0.355	41.0	1990	705	141.5	3.5

Acciaio
1100 - 1300 N/mm²

10.00	65	0.175	32.0	2070	360	28.5	5.3
10.20	65	0.180	39.7	2030	365	30.0	6.5
11.00	65	0.195	38.5	1880	365	34.5	6.3
12.00	65	0.210	37.0	1725	360	40.5	6.2
13.00	65	0.230	40.5	1590	365	48.5	6.7
14.00	65	0.245	39.0	1480	365	56.0	6.4
15.00	65	0.265	42.5	1380	365	64.5	7.0
15.50	65	0.270	41.8	1335	360	68.0	7.0
16.00	65	0.280	41.0	1295	365	73.5	6.7

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	35	0.145	32.0	1115	160	12.5	12.0
10.20	35	0.145	39.7	1090	160	13.0	14.9
11.00	35	0.155	38.5	1015	155	14.5	14.9
12.00	35	0.170	37.0	930	160	18.0	13.9
13.00	35	0.185	40.5	855	160	21.0	15.2
14.00	35	0.200	39.0	795	160	24.5	14.6
15.00	35	0.215	42.5	745	160	28.5	15.9
15.50	35	0.220	41.8	720	160	30.0	15.7
16.00	35	0.230	41.0	695	160	32.0	15.4

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

10.00	60	0.150	32.0	1910	285	22.5	6.7
10.20	60	0.150	39.7	1870	280	23.0	8.5
11.00	60	0.165	38.5	1735	285	27.0	8.1
12.00	60	0.180	37.0	1590	285	32.0	7.8
13.00	60	0.195	40.5	1470	285	38.0	8.5
14.00	60	0.210	39.0	1365	285	44.0	8.2
15.00	60	0.225	42.5	1275	285	50.5	8.9
15.50	60	0.230	41.8	1230	285	54.0	8.8
16.00	60	0.240	41.0	1195	285	57.5	8.6

Ghisa
(grigia / sferoidale)

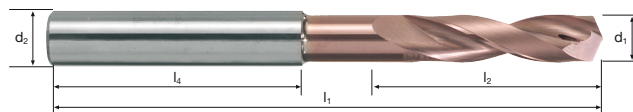
10.00	200	0.315	32.0	6365	2005	157.5	1.0
10.20	200	0.320	39.7	6240	1995	163.0	1.2
11.00	200	0.345	38.5	5785	1995	189.5	1.2
12.00	200	0.375	37.0	5305	1990	225.0	1.1
13.00	200	0.405	40.5	4895	1980	263.0	1.2
14.00	200	0.440	39.0	4545	2000	308.0	1.2
15.00	200	0.470	42.5	4245	1995	352.5	1.3
15.50	200	0.485	41.8	4105	1990	375.5	1.3
16.00	200	0.500	41.0	3980	1990	400.0	1.2

Alluminio malleabile
Si < 6%

10.00	250	0.285	32.0	7960	2270	178.5	0.8
10.20	250	0.290	39.7	7800	2260	184.5	1.1
11.00	250	0.315	38.5	7235	2280	216.5	1.0
12.00	250	0.345	37.0	6630	2285	258.5	1.0
13.00	250	0.370	40.5	6120	2265	300.5	1.1
14.00	250	0.400	39.0	5685	2275	350.0	1.0
15.00	250	0.430	42.5	5305	2280	403.0	1.1
15.50	250	0.445	41.8	5135	2285	431.0	1.1
16.00	250	0.455	41.0	4975	2265	455.5	1.1

Punte elicoidali Supradrill N

3xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		U-4XD	
						B52011		.0950		B52011	
										B53011	
ø Code	d1 m7	d2 h6	l1	l2	l4					€	
.0950	9.5	10	89	47	40					78.00	
.0980	9.8	10	89	47	40					78.00	
.1000	10.0	10	89	47	40					78.00	
.1020	10.2	12	102	55	45					112.00	
.1050	10.5	12	102	55	45					112.00	
.1080	10.8	12	102	55	45					112.00	
.1100	11.0	12	102	55	45					112.00	
.1150	11.5	12	102	55	45					112.00	
.1180	11.8	12	102	55	45					112.00	
.1200	12.0	12	102	55	45					112.00	
.1250	12.5	14	107	60	45					151.00	
.1280	12.8	14	107	60	45					151.00	
.1300	13.0	14	107	60	45					151.00	
.1350	13.5	14	107	60	45					151.00	
.1380	13.8	14	107	60	45					151.00	
.1400	14.0	14	107	60	45					151.00	
.1450	14.5	16	115	65	48					182.00	
.1480	14.8	16	115	65	48					182.00	
.1500	15.0	16	115	65	48					182.00	
.1550	15.5	16	115	65	48					182.00	
.1580	15.8	16	115	65	48					182.00	
.1600	16.0	16	115	65	48					182.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	140	0.080	15.5	14855	1190	8.5	0.8
3.30	140	0.085	15.1	13505	1150	10.0	0.8
3.50	140	0.090	14.8	12730	1145	11.0	0.8
3.80	140	0.100	18.3	11725	1175	13.5	0.9
4.00	140	0.105	18.0	11140	1170	14.5	0.9
4.20	140	0.110	17.7	10610	1165	16.0	0.9
4.50	140	0.120	17.3	9905	1190	19.0	0.9
4.80	140	0.125	20.8	9285	1160	21.0	1.1
5.00	140	0.130	20.5	8915	1160	23.0	1.1

Acciaio
500 - 850 N/mm²

3.00	110	0.080	15.5	11670	935	6.5	1.0
3.30	110	0.085	15.1	10610	900	7.5	1.0
3.50	110	0.090	14.8	10005	900	8.5	1.0
3.80	110	0.100	18.3	9215	920	10.5	1.2
4.00	110	0.105	18.0	8755	920	11.5	1.2
4.20	110	0.110	17.7	8335	915	12.5	1.2
4.50	110	0.120	17.3	7780	935	15.0	1.1
4.80	110	0.125	20.8	7295	910	16.5	1.4
5.00	110	0.130	20.5	7005	910	18.0	1.4

Acciaio
850 - 1100 N/mm²

3.00	80	0.060	15.5	8490	510	3.5	1.8
3.30	80	0.065	15.1	7715	500	4.5	1.8
3.50	80	0.070	14.8	7275	510	5.0	1.7
3.80	80	0.075	18.3	6700	505	5.5	2.2
4.00	80	0.080	18.0	6365	510	6.5	2.1
4.20	80	0.085	17.7	6065	515	7.0	2.1
4.50	80	0.090	17.3	5660	510	8.0	2.0
4.80	80	0.095	20.8	5305	505	9.0	2.5
5.00	80	0.100	20.5	5095	510	10.0	2.4

Acciaio
1100 - 1300 N/mm²

3.00	55	0.050	15.5	5835	290	2.0	3.2
3.30	55	0.055	15.1	5305	290	2.5	3.1
3.50	55	0.060	14.8	5000	300	3.0	3.0
3.80	55	0.065	18.3	4605	300	3.5	3.7
4.00	55	0.065	18.0	4375	285	3.5	3.8
4.20	55	0.070	17.7	4170	290	4.0	3.7
4.50	55	0.075	17.3	3890	290	4.5	3.6
4.80	55	0.080	20.8	3645	290	5.0	4.3
5.00	55	0.085	20.5	3500	300	6.0	4.1

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	25	0.035	15.5	2655	95	0.5	9.8
3.30	25	0.040	15.1	2410	95	1.0	9.5
3.50	25	0.040	14.8	2275	90	1.0	9.9
3.80	25	0.045	18.3	2095	95	1.0	11.6
4.00	25	0.045	18.0	1990	90	1.0	12.0
4.20	25	0.050	17.7	1895	95	1.5	11.2
4.50	25	0.055	17.3	1770	95	1.5	10.9
4.80	25	0.055	20.8	1660	90	1.5	13.9
5.00	25	0.060	20.5	1590	95	2.0	12.9

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

3.00	50	0.045	15.5	5305	240	1.5	3.9
3.30	50	0.045	15.1	4825	215	2.0	4.2
3.50	50	0.050	14.8	4545	225	2.0	3.9
3.80	50	0.055	18.3	4190	230	2.5	4.8
4.00	50	0.055	18.0	3980	220	3.0	4.9
4.20	50	0.060	17.7	3790	225	3.0	4.7
4.50	50	0.065	17.3	3535	230	3.5	4.5
4.80	50	0.070	20.8	3315	230	4.0	5.4
5.00	50	0.070	20.5	3185	225	4.5	5.5

Ghisa
(grigia / sferoidale)

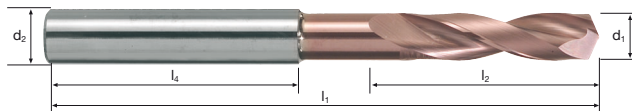
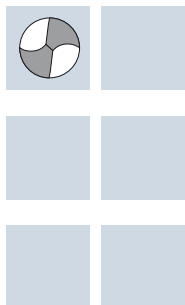
3.00	160	0.085	15.5	16975	1445	10.0	0.6
3.30	160	0.095	15.1	15435	1465	12.5	0.6
3.50	160	0.100	14.8	14550	1455	14.0	0.6
3.80	160	0.110	18.3	13405	1475	16.5	0.7
4.00	160	0.115	18.0	12730	1465	18.5	0.7
4.20	160	0.120	17.7	12125	1455	20.0	0.7
4.50	160	0.130	17.3	11320	1470	23.5	0.7
4.80	160	0.135	20.8	10610	1430	26.0	0.9
5.00	160	0.145	20.5	10185	1475	29.0	0.8

Alluminio malleabile
Si < 6%

3.00	250	0.070	15.5	26525	1855	13.0	0.5
3.30	250	0.075	15.1	24115	1810	15.5	0.5
3.50	250	0.080	14.8	22735	1820	17.5	0.5
3.80	250	0.085	18.3	20940	1780	20.0	0.6
4.00	250	0.090	18.0	19895	1790	22.5	0.6
4.20	250	0.095	17.7	18945	1800	25.0	0.6
4.50	250	0.105	17.3	17685	1855	29.5	0.6
4.80	250	0.110	20.8	16580	1825	33.0	0.7
5.00	250	0.115	20.5	15915	1830	36.0	0.7

Punte elicoidali Supradrill N

3xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine		Articolo		Codice-ø				U-4XD	
		B52010		.0300				B52010	
								B53010	
ø Code	d1 m7	d2 h6	l1	l2	l4			€	
.0300	3.0	6	62	20	36			40.40	
.0310	3.1	6	62	20	36			40.40	
.0320	3.2	6	62	20	36			40.40	
.0330	3.3	6	62	20	36			40.40	
.0340	3.4	6	62	20	36			40.40	
.0350	3.5	6	62	20	36			40.40	
.0360	3.6	6	62	20	36			40.40	
.0370	3.7	6	62	20	36			40.40	
.0380	3.8	6	66	24	36			40.40	
.0390	3.9	6	66	24	36			40.40	
.0400	4.0	6	66	24	36			40.40	
.0410	4.1	6	66	24	36			40.40	
.0420	4.2	6	66	24	36			40.40	
.0430	4.3	6	66	24	36			40.40	
.0440	4.4	6	66	24	36			40.40	
.0450	4.5	6	66	24	36			40.40	
.0460	4.6	6	66	24	36			40.40	
.0470	4.7	6	66	24	36			40.40	
.0480	4.8	6	66	28	36			40.40	
.0490	4.9	6	66	28	36			40.40	
.0500	5.0	6	66	28	36			40.40	
.0510	5.1	6	66	28	36			40.40	
.0520	5.2	6	66	28	36			40.40	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	140	0.145	19.8	8100	1175	28.0	1.0
5.80	140	0.155	19.3	7685	1190	31.5	1.0
6.00	140	0.160	19.0	7425	1190	33.5	1.0
6.20	140	0.165	31.7	7190	1185	36.0	1.6
6.50	140	0.170	31.3	6855	1165	38.5	1.6
6.80	140	0.180	30.8	6555	1180	43.0	1.6
7.00	140	0.185	30.5	6365	1180	45.5	1.6
7.20	140	0.190	30.2	6190	1175	48.0	1.5
7.50	140	0.195	29.8	5940	1160	51.0	1.5

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	110	0.145	19.8	6365	925	22.0	1.3
5.80	110	0.155	19.3	6035	935	24.5	1.2
6.00	110	0.160	19.0	5835	935	26.5	1.2
6.20	110	0.165	31.7	5645	930	28.0	2.0
6.50	110	0.170	31.3	5385	915	30.5	2.1
6.80	110	0.180	30.8	5150	925	33.5	2.0
7.00	110	0.185	30.5	5000	925	35.5	2.0
7.20	110	0.190	30.2	4865	925	37.5	2.0
7.50	110	0.195	29.8	4670	910	40.0	2.0

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	80	0.110	19.8	4630	510	12.0	2.3
5.80	80	0.115	19.3	4390	505	13.5	2.3
6.00	80	0.120	19.0	4245	510	14.5	2.2
6.20	80	0.125	31.7	4105	515	15.5	3.7
6.50	80	0.130	31.3	3920	510	17.0	3.7
6.80	80	0.135	30.8	3745	505	18.5	3.7
7.00	80	0.140	30.5	3640	510	19.5	3.6
7.20	80	0.145	30.2	3535	515	21.0	3.5
7.50	80	0.150	29.8	3395	510	22.5	3.5

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	55	0.090	19.8	3185	285	7.0	4.2
5.80	55	0.095	19.3	3020	285	7.5	4.1
6.00	55	0.100	19.0	2920	290	8.0	3.9
6.20	55	0.105	31.7	2825	295	9.0	6.4
6.50	55	0.110	31.3	2695	295	10.0	6.4
6.80	55	0.115	30.8	2575	295	10.5	6.3
7.00	55	0.115	30.5	2500	290	11.0	6.3
7.20	55	0.120	30.2	2430	290	12.0	6.2
7.50	55	0.125	29.8	2335	290	13.0	6.2

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	25	0.065	19.8	1445	95	2.5	12.5
5.80	25	0.070	19.3	1370	95	2.5	12.2
6.00	25	0.070	19.0	1325	95	2.5	12.0
6.20	25	0.075	31.7	1285	95	3.0	20.0
6.50	25	0.075	31.3	1225	90	3.0	20.9
6.80	25	0.080	30.8	1170	95	3.5	19.5
7.00	25	0.080	30.5	1135	90	3.5	20.3
7.20	25	0.085	30.2	1105	95	4.0	19.1
7.50	25	0.090	29.8	1060	95	4.0	18.8

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	50	0.080	19.8	2895	230	5.5	5.2
5.80	50	0.085	19.3	2745	235	6.0	4.9
6.00	50	0.085	19.0	2655	225	6.5	5.1
6.20	50	0.090	31.7	2565	230	7.0	8.3
6.50	50	0.095	31.3	2450	235	8.0	8.0
6.80	50	0.095	30.8	2340	220	8.0	8.4
7.00	50	0.100	30.5	2275	230	9.0	8.0
7.20	50	0.105	30.2	2210	230	9.5	7.9
7.50	50	0.105	29.8	2120	225	10.0	7.9

Ghisa
(grigia / sferoidale)

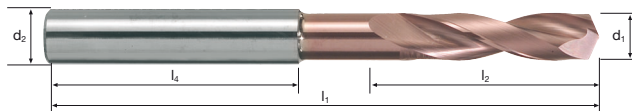
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	160	0.155	19.8	9260	1435	34.0	0.8
5.80	160	0.165	19.3	8780	1450	38.5	0.8
6.00	160	0.170	19.0	8490	1445	41.0	0.8
6.20	160	0.175	31.7	8215	1440	43.5	1.3
6.50	160	0.185	31.3	7835	1450	48.0	1.3
6.80	160	0.195	30.8	7490	1460	53.0	1.3
7.00	160	0.200	30.5	7275	1455	56.0	1.3
7.20	160	0.205	30.2	7075	1450	59.0	1.2
7.50	160	0.215	29.8	6790	1460	64.5	1.2

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	250	0.125	19.8	14470	1810	43.0	0.7
5.80	250	0.135	19.3	13720	1850	49.0	0.6
6.00	250	0.135	19.0	13265	1790	50.5	0.6
6.20	250	0.140	31.7	12835	1795	54.0	1.1
6.50	250	0.150	31.3	12245	1835	61.0	1.0
6.80	250	0.155	30.8	11705	1815	66.0	1.0
7.00	250	0.160	30.5	11370	1820	70.0	1.0
7.20	250	0.165	30.2	11050	1825	74.5	1.0
7.50	250	0.170	29.8	10610	1805	79.5	1.0

Punte elicoidali Supradrill N

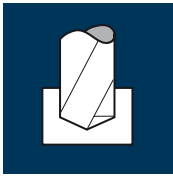
3xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		U-4XD	
						B52010		.0530		B52010	
										B53010	
ø Code	d1 m7	d2 h6	l1	l2	l4					€	
.0530	5.3	6	66	28	36					40.40	
.0540	5.4	6	66	28	36					40.40	
.0550	5.5	6	66	28	36					40.40	
.0560	5.6	6	66	28	36					40.40	
.0570	5.7	6	66	28	36					40.40	
.0580	5.8	6	66	28	36					40.40	
.0590	5.9	6	66	28	36					40.40	
.0600	6.0	6	66	28	36					40.40	
.0610	6.1	8	79	34	36					44.60	
.0620	6.2	8	79	34	36					44.60	
.0630	6.3	8	79	34	36					44.60	
.0640	6.4	8	79	34	36					44.60	
.0650	6.5	8	79	34	36					44.60	
.0660	6.6	8	79	34	36					44.60	
.0670	6.7	8	79	34	36					44.60	
.0680	6.8	8	79	34	36					44.60	
.0690	6.9	8	79	34	36					44.60	
.0700	7.0	8	79	34	36					44.60	
.0710	7.1	8	79	41	36					44.60	
.0720	7.2	8	79	41	36					44.60	
.0730	7.3	8	79	41	36					44.60	
.0740	7.4	8	79	41	36					44.60	
.0750	7.5	8	79	41	36					44.60	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	140	0.200	29.6	5865	1175	53.5	1.5
8.00	140	0.210	29.0	5570	1170	59.0	1.5
8.20	140	0.215	34.7	5435	1170	62.0	1.8
8.50	140	0.225	34.3	5245	1180	67.0	1.7
8.80	140	0.230	33.8	5065	1165	71.0	1.7
9.00	140	0.235	33.5	4950	1165	74.0	1.7
9.20	140	0.240	33.2	4845	1165	77.5	1.7
9.50	140	0.250	32.8	4690	1175	83.5	1.7
9.80	140	0.260	32.3	4545	1180	89.0	1.6

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	110	0.200	29.6	4605	920	41.5	1.9
8.00	110	0.210	29.0	4375	920	46.0	1.9
8.20	110	0.215	34.7	4270	920	48.5	2.3
8.50	110	0.225	34.3	4120	925	52.5	2.2
8.80	110	0.230	33.8	3980	915	55.5	2.2
9.00	110	0.235	33.5	3890	915	58.0	2.2
9.20	110	0.240	33.2	3805	915	61.0	2.2
9.50	110	0.250	32.8	3685	920	65.0	2.1
9.80	110	0.260	32.3	3575	930	70.0	2.1

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	80	0.150	29.6	3350	505	23.0	3.5
8.00	80	0.160	29.0	3185	510	25.5	3.4
8.20	80	0.165	34.7	3105	510	27.0	4.1
8.50	80	0.170	34.3	2995	510	29.0	4.0
8.80	80	0.175	33.8	2895	505	30.5	4.0
9.00	80	0.180	33.5	2830	510	32.5	3.9
9.20	80	0.185	33.2	2770	510	34.0	3.9
9.50	80	0.190	32.8	2680	510	36.0	3.9
9.80	80	0.195	32.3	2600	505	38.0	3.8

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	55	0.125	29.6	2305	290	13.0	6.1
8.00	55	0.135	29.0	2190	295	15.0	5.9
8.20	55	0.135	34.7	2135	290	15.5	7.2
8.50	55	0.140	34.3	2060	290	16.5	7.1
8.80	55	0.145	33.8	1990	290	17.5	7.0
9.00	55	0.150	33.5	1945	290	18.5	6.9
9.20	55	0.155	33.2	1905	295	19.5	6.8
9.50	55	0.160	32.8	1845	295	21.0	6.7
9.80	55	0.165	32.3	1785	295	22.5	6.6

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	25	0.090	29.6	1045	95	4.5	18.7
8.00	25	0.095	29.0	995	95	5.0	18.3
8.20	25	0.095	34.7	970	90	5.0	23.1
8.50	25	0.100	34.3	935	95	5.5	21.7
8.80	25	0.105	33.8	905	95	6.0	21.3
9.00	25	0.105	33.5	885	95	6.0	21.2
9.20	25	0.110	33.2	865	95	6.5	21.0
9.50	25	0.110	32.8	840	90	6.5	21.9
9.80	25	0.115	32.3	810	95	7.0	20.4

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	50	0.110	29.6	2095	230	10.5	7.7
8.00	50	0.115	29.0	1990	230	11.5	7.6
8.20	50	0.115	34.7	1940	225	12.0	9.3
8.50	50	0.120	34.3	1870	225	13.0	9.1
8.80	50	0.125	33.8	1810	225	13.5	9.0
9.00	50	0.130	33.5	1770	230	14.5	8.7
9.20	50	0.130	33.2	1730	225	15.0	8.9
9.50	50	0.135	32.8	1675	225	16.0	8.7
9.80	50	0.140	32.3	1625	230	17.5	8.4

Ghisa
(grigia / sferoidale)

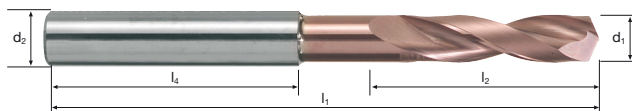
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	160	0.215	29.6	6700	1440	65.5	1.2
8.00	160	0.230	29.0	6365	1465	73.5	1.2
8.20	160	0.235	34.7	6210	1460	77.0	1.4
8.50	160	0.245	34.3	5990	1470	83.5	1.4
8.80	160	0.250	33.8	5785	1445	88.0	1.4
9.00	160	0.255	33.5	5660	1445	92.0	1.4
9.20	160	0.265	33.2	5535	1465	97.5	1.4
9.50	160	0.270	32.8	5360	1445	102.5	1.4
9.80	160	0.280	32.3	5195	1455	110.0	1.3

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	250	0.175	29.6	10470	1830	83.0	1.0
8.00	250	0.185	29.0	9945	1840	92.5	0.9
8.20	250	0.185	34.7	9705	1795	95.0	1.2
8.50	250	0.195	34.3	9360	1825	103.5	1.1
8.80	250	0.200	33.8	9045	1810	110.0	1.1
9.00	250	0.205	33.5	8840	1810	115.0	1.1
9.20	250	0.210	33.2	8650	1815	120.5	1.1
9.50	250	0.215	32.8	8375	1800	127.5	1.1
9.80	250	0.225	32.3	8120	1825	137.5	1.1

Punte elicoidali Supradrill N

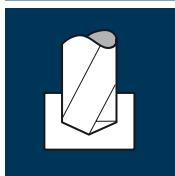
3xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		U-4XD	
						B52010		.0760		B52010	
										B53010	
ø Code	d1 m7	d2 h6	l1	l2	l4					€	
.0760	7.6	8	79	41	36					44.60	
.0770	7.7	8	79	41	36					44.60	
.0780	7.8	8	79	41	36					44.60	
.0790	7.9	8	79	41	36					44.60	
.0800	8.0	8	79	41	36					44.60	
.0810	8.1	10	89	47	40					51.10	
.0820	8.2	10	89	47	40					51.10	
.0830	8.3	10	89	47	40					51.10	
.0840	8.4	10	89	47	40					51.10	
.0850	8.5	10	89	47	40					51.10	
.0860	8.6	10	89	47	40					51.10	
.0870	8.7	10	89	47	40					51.10	
.0880	8.8	10	89	47	40					51.10	
.0890	8.9	10	89	47	40					51.10	
.0900	9.0	10	89	47	40					51.10	
.0910	9.1	10	89	47	40					51.10	
.0920	9.2	10	89	47	40					51.10	
.0930	9.3	10	89	47	40					51.10	
.0940	9.4	10	89	47	40					51.10	
.0950	9.5	10	89	47	40					51.10	
.0960	9.6	10	89	47	40					51.10	
.0970	9.7	10	89	47	40					51.10	
.0980	9.8	10	89	47	40					51.10	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	140	0.265	32.0	4455	1180	92.5	1.6
10.20	140	0.270	39.7	4370	1180	96.5	2.0
10.50	140	0.275	39.3	4245	1165	101.0	2.0
10.80	140	0.285	38.8	4125	1175	107.5	2.0
11.00	140	0.290	38.5	4050	1175	111.5	2.0
11.20	140	0.295	38.2	3980	1175	116.0	2.0
11.50	140	0.305	37.8	3875	1180	122.5	1.9
11.80	140	0.310	37.3	3775	1170	128.0	1.9
12.00	140	0.315	37.0	3715	1170	132.5	1.9

Acciaio
500 - 850 N/mm²

10.00	110	0.265	32.0	3500	930	73.0	2.1
10.20	110	0.270	39.7	3435	925	75.5	2.6
10.50	110	0.275	39.3	3335	915	79.0	2.6
10.80	110	0.285	38.8	3240	925	84.5	2.5
11.00	110	0.290	38.5	3185	925	88.0	2.5
11.20	110	0.295	38.2	3125	920	90.5	2.5
11.50	110	0.305	37.8	3045	930	96.5	2.4
11.80	110	0.310	37.3	2965	920	100.5	2.4
12.00	110	0.315	37.0	2920	920	104.0	2.4

Acciaio
850 - 1100 N/mm²

10.00	80	0.200	32.0	2545	510	40.0	3.8
10.20	80	0.205	39.7	2495	510	41.5	4.7
10.50	80	0.210	39.3	2425	510	44.0	4.6
10.80	80	0.215	38.8	2360	505	46.5	4.6
11.00	80	0.220	38.5	2315	510	48.5	4.5
11.20	80	0.225	38.2	2275	510	50.0	4.5
11.50	80	0.230	37.8	2215	510	53.0	4.4
11.80	80	0.235	37.3	2160	510	56.0	4.4
12.00	80	0.240	37.0	2120	510	57.5	4.4

Acciaio
1100 - 1300 N/mm²

10.00	55	0.165	32.0	1750	290	23.0	6.6
10.20	55	0.170	39.7	1715	290	23.5	8.2
10.50	55	0.175	39.3	1665	290	25.0	8.1
10.80	55	0.180	38.8	1620	290	26.5	8.0
11.00	55	0.185	38.5	1590	295	28.0	7.8
11.20	55	0.185	38.2	1565	290	28.5	7.9
11.50	55	0.190	37.8	1520	290	30.0	7.8
11.80	55	0.195	37.3	1485	290	31.5	7.7
12.00	55	0.200	37.0	1460	290	33.0	7.7

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	25	0.120	32.0	795	95	7.5	20.2
10.20	25	0.120	39.7	780	95	8.0	25.1
10.50	25	0.125	39.3	760	95	8.0	24.8
10.80	25	0.125	38.8	735	90	8.0	25.9
11.00	25	0.130	38.5	725	95	9.0	24.3
11.20	25	0.130	38.2	710	90	9.0	25.5
11.50	25	0.135	37.8	690	95	10.0	23.9
11.80	25	0.140	37.3	675	95	10.5	23.6
12.00	25	0.140	37.0	665	95	10.5	23.4

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

10.00	50	0.145	32.0	1590	230	18.0	8.3
10.20	50	0.145	39.7	1560	225	18.5	10.6
10.50	50	0.150	39.3	1515	225	19.5	10.5
10.80	50	0.155	38.8	1475	230	21.0	10.1
11.00	50	0.155	38.5	1445	225	21.5	10.3
11.20	50	0.160	38.2	1420	225	22.0	10.2
11.50	50	0.165	37.8	1385	230	24.0	9.9
11.80	50	0.170	37.3	1350	230	25.0	9.7
12.00	50	0.170	37.0	1325	225	25.5	9.9

Ghisa
(grigia / sferoidale)

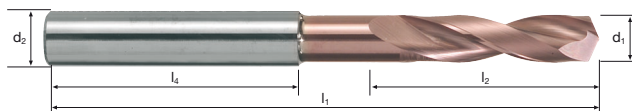
10.00	160	0.285	32.0	5095	1450	114.0	1.3
10.20	160	0.290	39.7	4995	1450	118.5	1.6
10.50	160	0.300	39.3	4850	1455	126.0	1.6
10.80	160	0.310	38.8	4715	1460	133.5	1.6
11.00	160	0.315	38.5	4630	1460	138.5	1.6
11.20	160	0.320	38.2	4545	1455	143.5	1.6
11.50	160	0.330	37.8	4430	1460	151.5	1.6
11.80	160	0.335	37.3	4315	1445	158.0	1.5
12.00	160	0.345	37.0	4245	1465	165.5	1.5

Alluminio malleabile
Si < 6%

10.00	250	0.230	32.0	7960	1830	143.5	1.0
10.20	250	0.235	39.7	7800	1835	150.0	1.3
10.50	250	0.240	39.3	7580	1820	157.5	1.3
10.80	250	0.245	38.8	7370	1805	165.5	1.3
11.00	250	0.250	38.5	7235	1810	172.0	1.3
11.20	250	0.255	38.2	7105	1810	178.5	1.3
11.50	250	0.265	37.8	6920	1835	190.5	1.2
11.80	250	0.270	37.3	6745	1820	199.0	1.2
12.00	250	0.275	37.0	6630	1825	206.5	1.2

Punte elicoidali Supradrill N

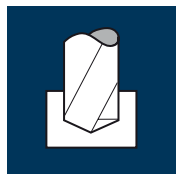
3xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		U-4XD	
						B52010		.0990		B52010	
										B53010	
ø Code	d1 m7	d2 h6	l1	l2	l4					€	
.0990	9.9	10	89	47	40					51.10	
.1000	10.0	10	89	47	40					51.10	
.1010	10.1	12	102	55	45					73.00	
.1020	10.2	12	102	55	45					73.00	
.1030	10.3	12	102	55	45					73.00	
.1040	10.4	12	102	55	45					73.00	
.1050	10.5	12	102	55	45					73.00	
.1060	10.6	12	102	55	45					73.00	
.1070	10.7	12	102	55	45					73.00	
.1080	10.8	12	102	55	45					73.00	
.1090	10.9	12	102	55	45					73.00	
.1100	11.0	12	102	55	45					73.00	
.1110	11.1	12	102	55	45					73.00	
.1120	11.2	12	102	55	45					73.00	
.1130	11.3	12	102	55	45					73.00	
.1140	11.4	12	102	55	45					73.00	
.1150	11.5	12	102	55	45					73.00	
.1160	11.6	12	102	55	45					73.00	
.1170	11.7	12	102	55	45					73.00	
.1180	11.8	12	102	55	45					73.00	
.1190	11.9	12	102	55	45					73.00	
.1200	12.0	12	102	55	45					73.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.50	140	0.330	41.3	3565	1175	144.0	2.1
12.80	140	0.335	40.8	3480	1165	150.0	2.1
13.00	140	0.340	40.5	3430	1165	154.5	2.1
13.50	140	0.355	39.8	3300	1170	167.5	2.0
14.00	140	0.370	39.0	3185	1180	181.5	2.0
14.50	140	0.380	43.3	3075	1170	193.0	2.2
15.00	140	0.395	42.5	2970	1175	207.5	2.2
15.50	140	0.410	41.8	2875	1180	222.5	2.1
16.00	140	0.420	41.0	2785	1170	235.0	2.1

Acciaio
500 - 850 N/mm²

12.50	110	0.330	41.3	2800	925	113.5	2.7
12.80	110	0.335	40.8	2735	915	117.5	2.7
13.00	110	0.340	40.5	2695	915	121.5	2.7
13.50	110	0.355	39.8	2595	920	131.5	2.6
14.00	110	0.370	39.0	2500	925	142.5	2.5
14.50	110	0.380	43.3	2415	920	152.0	2.8
15.00	110	0.395	42.5	2335	920	162.5	2.8
15.50	110	0.410	41.8	2260	925	174.5	2.7
16.00	110	0.420	41.0	2190	920	185.0	2.7

Acciaio
850 - 1100 N/mm²

12.50	80	0.250	41.3	2035	510	62.5	4.9
12.80	80	0.255	40.8	1990	505	65.0	4.8
13.00	80	0.260	40.5	1960	510	67.5	4.8
13.50	80	0.270	39.8	1885	510	73.0	4.7
14.00	80	0.280	39.0	1820	510	78.5	4.6
14.50	80	0.290	43.3	1755	510	84.0	5.1
15.00	80	0.300	42.5	1700	510	90.0	5.0
15.50	80	0.310	41.8	1645	510	96.0	4.9
16.00	80	0.320	41.0	1590	510	102.5	4.8

Acciaio
1100 - 1300 N/mm²

12.50	55	0.210	41.3	1400	295	36.0	8.4
12.80	55	0.215	40.8	1370	295	38.0	8.3
13.00	55	0.215	40.5	1345	290	38.5	8.4
13.50	55	0.225	39.8	1295	290	41.5	8.2
14.00	55	0.235	39.0	1250	295	45.5	7.9
14.50	55	0.240	43.3	1205	290	48.0	9.0
15.00	55	0.250	42.5	1165	290	51.0	8.8
15.50	55	0.260	41.8	1130	295	55.5	8.5
16.00	55	0.265	41.0	1095	290	58.5	8.5

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.50	25	0.145	41.3	635	90	11.0	27.5
12.80	25	0.150	40.8	620	95	12.0	25.8
13.00	25	0.155	40.5	610	95	12.5	25.6
13.50	25	0.160	39.8	590	95	13.5	25.1
14.00	25	0.165	39.0	570	95	14.5	24.6
14.50	25	0.170	43.3	550	95	15.5	27.3
15.00	25	0.175	42.5	530	95	17.0	26.8
15.50	25	0.180	41.8	515	95	18.0	26.4
16.00	25	0.190	41.0	495	95	19.0	25.9

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

12.50	50	0.180	41.3	1275	230	28.0	10.8
12.80	50	0.185	40.8	1245	230	29.5	10.6
13.00	50	0.185	40.5	1225	225	30.0	10.8
13.50	50	0.195	39.8	1180	230	33.0	10.4
14.00	50	0.200	39.0	1135	225	34.5	10.4
14.50	50	0.205	43.3	1100	225	37.0	11.5
15.00	50	0.215	42.5	1060	230	40.5	11.1
15.50	50	0.220	41.8	1025	225	42.5	11.1
16.00	50	0.230	41.0	995	230	46.0	10.7

Ghisa
(grigia / sferoidale)

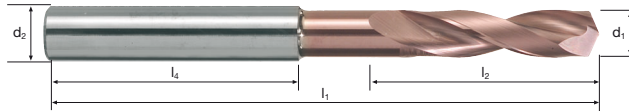
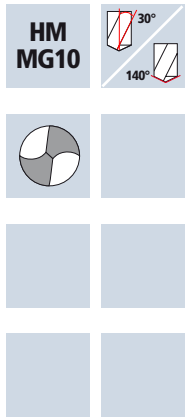
12.50	160	0.355	41.3	4075	1445	177.5	1.7
12.80	160	0.365	40.8	3980	1455	187.0	1.7
13.00	160	0.370	40.5	3920	1450	192.5	1.7
13.50	160	0.385	39.8	3775	1455	208.5	1.6
14.00	160	0.400	39.0	3640	1455	224.0	1.6
14.50	160	0.415	43.3	3510	1455	240.5	1.8
15.00	160	0.430	42.5	3395	1460	258.0	1.7
15.50	160	0.445	41.8	3285	1460	275.5	1.7
16.00	160	0.455	41.0	3185	1450	291.5	1.7

Alluminio malleabile
Si < 6%

12.50	250	0.285	41.3	6365	1815	222.5	1.4
12.80	250	0.295	40.8	6215	1835	236.0	1.3
13.00	250	0.295	40.5	6120	1805	239.5	1.3
13.50	250	0.310	39.8	5895	1825	261.0	1.3
14.00	250	0.320	39.0	5685	1820	280.0	1.3
14.50	250	0.330	43.3	5490	1810	299.0	1.4
15.00	250	0.345	42.5	5305	1830	323.5	1.4
15.50	250	0.355	41.8	5135	1825	344.5	1.4
16.00	250	0.365	41.0	4975	1815	365.0	1.4

Punte elicoidali Supradrill N

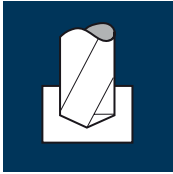
3xd



Rm < 850	Rm 850-1100	Rm 1100-1300							GG(G) Aluminium
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Esempio: N° Ordine							Articolo Codice-ø B52010 .1250		U-4XD B52010 B53010	
ø Code	d1 m7	d2 h6	l1	l2	l4		€			
.1250	12.5	14	107	60	45		99.00			
.1280	12.8	14	107	60	45		99.00			
.1300	13.0	14	107	60	45		99.00			
.1350	13.5	14	107	60	45		99.00			
.1380	13.8	14	107	60	45		99.00			
.1400	14.0	14	107	60	45		99.00			
.1450	14.5	16	115	65	48		119.00			
.1480	14.8	16	115	65	48		119.00			
.1500	15.0	16	115	65	48		119.00			
.1550	15.5	16	115	65	48		119.00			
.1580	15.8	16	115	65	48		119.00			
.1600	16.0	16	115	65	48		119.00			

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	150	0.080	29.5	15915	1275	9.0	1.4
3.30	150	0.090	29.1	14470	1300	11.0	1.3
3.50	150	0.095	28.8	13640	1295	12.5	1.3
3.80	150	0.105	37.3	12565	1320	15.0	1.7
4.00	150	0.110	37.0	11935	1315	16.5	1.7
4.20	150	0.120	36.7	11370	1365	19.0	1.6
4.50	150	0.140	36.3	10610	1485	23.5	1.5
4.80	150	0.145	48.8	9945	1440	26.0	2.0
5.00	150	0.155	48.5	9550	1480	29.0	2.0

Acciaio
500 - 850 N/mm²

3.00	120	0.070	29.5	12730	890	6.5	2.0
3.30	120	0.075	29.1	11575	870	7.5	2.0
3.50	120	0.080	28.8	10915	875	8.5	2.0
3.80	120	0.090	37.3	10050	905	10.5	2.5
4.00	120	0.095	37.0	9550	905	11.5	2.5
4.20	120	0.105	36.7	9095	955	13.0	2.3
4.50	120	0.120	36.3	8490	1020	16.0	2.1
4.80	120	0.125	48.8	7960	995	18.0	2.9
5.00	120	0.130	48.5	7640	995	19.5	2.9

Acciaio
850 - 1100 N/mm²

3.00	100	0.065	29.5	10610	690	5.0	2.6
3.30	100	0.070	29.1	9645	675	6.0	2.6
3.50	100	0.075	28.8	9095	680	6.5	2.5
3.80	100	0.080	37.3	8375	710	7.5	3.3
4.00	100	0.090	37.0	7960	675	9.0	3.1
4.20	100	0.095	36.7	7580	720	10.0	3.1
4.50	100	0.110	36.3	7075	780	12.5	2.8
4.80	100	0.115	48.8	6630	760	14.0	3.9
5.00	100	0.120	48.5	6365	765	15.0	3.8

Acciaio
1100 - 1300 N/mm²

3.00	70	0.050	29.5	7425	370	2.5	4.8
3.30	70	0.055	29.1	6750	370	3.0	4.7
3.50	70	0.055	28.8	6365	350	3.5	4.9
3.80	70	0.060	37.3	5865	350	4.0	6.4
4.00	70	0.065	37.0	5570	360	4.5	6.2
4.20	70	0.070	36.7	5305	370	5.0	6.0
4.50	70	0.085	36.3	4950	420	6.5	5.2
4.80	70	0.090	48.8	4640	420	7.5	7.0
5.00	70	0.090	48.5	4455	400	8.0	7.3

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	40	0.035	29.5	4245	150	1.0	11.8
3.30	40	0.040	29.1	3860	155	1.5	11.3
3.50	40	0.045	28.8	3640	165	1.5	10.5
3.80	40	0.045	37.3	3350	150	1.5	14.9
4.00	40	0.050	37.0	3185	160	2.0	13.9
4.20	40	0.055	36.7	3030	165	2.5	13.3
4.50	40	0.065	36.3	2830	185	3.0	11.8
4.80	40	0.070	48.8	2655	185	3.5	15.8
5.00	40	0.070	48.5	2545	180	3.5	16.2

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

3.00	60	0.035	29.5	6365	225	1.5	7.9
3.30	60	0.040	29.1	5785	230	2.0	7.6
3.50	60	0.045	28.8	5455	245	2.5	7.1
3.80	60	0.045	37.3	5025	225	2.5	9.9
4.00	60	0.050	37.0	4775	240	3.0	9.3
4.20	60	0.055	36.7	4545	250	3.5	8.8
4.50	60	0.065	36.3	4245	275	4.5	7.9
4.80	60	0.070	48.8	3980	280	5.0	10.5
5.00	60	0.070	48.5	3820	265	5.0	11.0

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

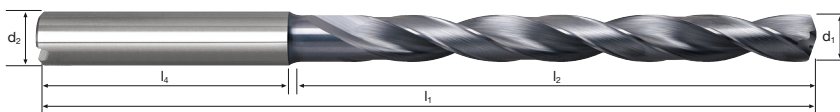
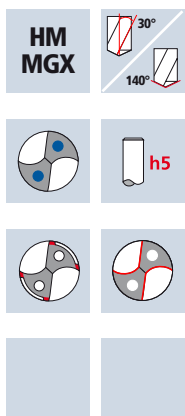
3.00	35	0.035	29.5	3715	130	1.0	13.6
3.30	35	0.040	29.1	3375	135	1.0	12.9
3.50	35	0.045	28.8	3185	145	1.5	11.9
3.80	35	0.045	37.3	2930	130	1.5	17.2
4.00	35	0.050	37.0	2785	140	2.0	15.9
4.20	35	0.055	36.7	2655	145	2.0	15.2
4.50	35	0.065	36.3	2475	160	2.5	13.6
4.80	35	0.070	48.8	2320	160	3.0	18.3
5.00	35	0.070	48.5	2230	155	3.0	18.8

Ghisa
(griglia / sferoidale)

3.00	220	0.075	29.5	23345	1750	12.5	1.0
3.30	220	0.080	29.1	21220	1700	14.5	1.0
3.50	220	0.085	28.8	20010	1700	16.5	1.0
3.80	220	0.095	37.3	18430	1750	20.0	1.3
4.00	220	0.100	37.0	17505	1750	22.0	1.3
4.20	220	0.110	36.7	16675	1835	25.5	1.2
4.50	220	0.125	36.3	15560	1945	31.0	1.1
4.80	220	0.135	48.8	14590	1970	35.5	1.5
5.00	220	0.140	48.5	14005	1960	38.5	1.5

Punte elicoidali XDrill®

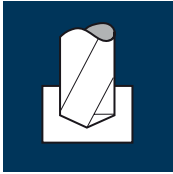
8xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-X
						B72020	.0300		B72020
ø Code	d1 m7	d2 h5	l1	l2	l4			€	
.0300	3.0	6	73	34	36			151.00	
.0310	3.1	6	73	34	36			151.00	
.0320	3.2	6	73	34	36			151.00	
.0330	3.3	6	73	34	36			151.00	
.0340	3.4	6	73	34	36			151.00	
.0350	3.5	6	73	34	36			151.00	
.0360	3.6	6	73	34	36			151.00	
.0370	3.7	6	73	34	36			151.00	
.0380	3.8	6	82	43	36			151.00	
.0390	3.9	6	82	43	36			151.00	
.0400	4.0	6	82	43	36			151.00	
.0410	4.1	6	82	43	36			151.00	
.0420	4.2	6	82	43	36			151.00	
.0430	4.3	6	82	43	36			151.00	
.0440	4.4	6	82	43	36			151.00	
.0450	4.5	6	82	43	36			151.00	
.0460	4.6	6	82	43	36			151.00	
.0470	4.7	6	82	43	36			151.00	
.0480	4.8	6	95	56	36			151.00	
.0490	4.9	6	95	56	36			151.00	
.0500	5.0	6	95	56	36			151.00	
.0510	5.1	6	95	56	36			151.00	
.0520	5.2	6	95	56	36			151.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	150	0.170	47.8	8680	1475	35.0	1.9
5.80	150	0.180	47.3	8230	1480	39.0	1.9
6.00	150	0.190	47.0	7960	1510	42.5	1.9
6.20	150	0.205	56.7	7700	1580	47.5	2.2
6.50	150	0.210	56.3	7345	1540	51.0	2.2
6.80	150	0.220	55.8	7020	1545	56.0	2.2
7.00	150	0.230	55.5	6820	1570	60.5	2.1
7.20	150	0.235	65.2	6630	1560	63.5	2.5
7.50	150	0.245	64.8	6365	1560	69.0	2.5

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	120	0.145	47.8	6945	1005	24.0	2.9
5.80	120	0.150	47.3	6585	990	26.0	2.9
6.00	120	0.165	47.0	6365	1050	29.5	2.7
6.20	120	0.175	56.7	6160	1080	32.5	3.2
6.50	120	0.180	56.3	5875	1060	35.0	3.2
6.80	120	0.190	55.8	5615	1065	38.5	3.1
7.00	120	0.195	55.5	5455	1065	41.0	3.1
7.20	120	0.200	65.2	5305	1060	43.0	3.7
7.50	120	0.210	64.8	5095	1070	47.5	3.6

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	100	0.135	47.8	5785	780	18.5	3.7
5.80	100	0.140	47.3	5490	770	20.5	3.7
6.00	100	0.150	47.0	5305	795	22.5	3.5
6.20	100	0.160	56.7	5135	820	25.0	4.1
6.50	100	0.170	56.3	4895	830	27.5	4.1
6.80	100	0.175	55.8	4680	820	30.0	4.1
7.00	100	0.180	55.5	4545	820	31.5	4.1
7.20	100	0.185	65.2	4420	820	33.5	4.8
7.50	100	0.195	64.8	4245	830	36.5	4.7

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	70	0.100	47.8	4050	405	9.5	7.1
5.80	70	0.105	47.3	3840	405	10.5	7.0
6.00	70	0.115	47.0	3715	425	12.0	6.6
6.20	70	0.120	56.7	3595	430	13.0	7.9
6.50	70	0.125	56.3	3430	430	14.5	7.9
6.80	70	0.135	55.8	3275	440	16.0	7.6
7.00	70	0.135	55.5	3185	430	16.5	7.7
7.20	70	0.140	65.2	3095	435	17.5	9.0
7.50	70	0.145	64.8	2970	430	19.0	9.0

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	40	0.080	47.8	2315	185	4.5	15.5
5.80	40	0.080	47.3	2195	175	4.5	16.2
6.00	40	0.090	47.0	2120	190	5.5	14.8
6.20	40	0.095	56.7	2055	195	6.0	17.4
6.50	40	0.100	56.3	1960	195	6.5	17.3
6.80	40	0.105	55.8	1870	195	7.0	17.2
7.00	40	0.105	55.5	1820	190	7.5	17.5
7.20	40	0.110	65.2	1770	195	8.0	20.1
7.50	40	0.115	64.8	1700	195	8.5	19.9

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	60	0.080	47.8	3470	280	6.5	10.2
5.80	60	0.080	47.3	3295	265	7.0	10.7
6.00	60	0.090	47.0	3185	285	8.0	9.9
6.20	60	0.095	56.7	3080	295	9.0	11.5
6.50	60	0.100	56.3	2940	295	10.0	11.5
6.80	60	0.105	55.8	2810	295	10.5	11.3
7.00	60	0.105	55.5	2730	285	11.0	11.7
7.20	60	0.110	65.2	2655	290	12.0	13.5
7.50	60	0.115	64.8	2545	295	13.0	13.2

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

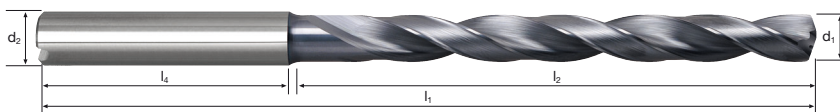
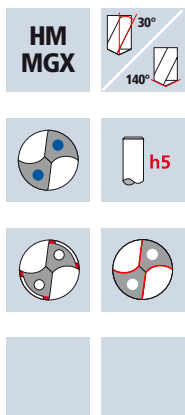
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	35	0.080	47.8	2025	160	4.0	17.9
5.80	35	0.080	47.3	1920	155	4.0	18.3
6.00	35	0.090	47.0	1855	165	4.5	17.1
6.20	35	0.095	56.7	1795	170	5.0	20.0
6.50	35	0.100	56.3	1715	170	5.5	19.9
6.80	35	0.105	55.8	1640	170	6.0	19.7
7.00	35	0.105	55.5	1590	165	6.5	20.2
7.20	35	0.110	65.2	1545	170	7.0	23.0
7.50	35	0.115	64.8	1485	170	7.5	22.9

Ghisa
(griglia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
5.50	220	0.155	47.8	12730	1975	47.0	1.5
5.80	220	0.160	47.3	12075	1930	51.0	1.5
6.00	220	0.175	47.0	11670	2040	57.5	1.4
6.20	220	0.185	56.7	11295	2090	63.0	1.6
6.50	220	0.195	56.3	10775	2100	69.5	1.6
6.80	220	0.200	55.8	10300	2060	75.0	1.6
7.00	220	0.210	55.5	10005	2100	81.0	1.6
7.20	220	0.215	65.2	9725	2090	85.0	1.9
7.50	220	0.225	64.8	9335	2100	93.0	1.9

Punte elicoidali XDrill®

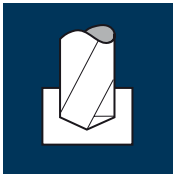
8xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo B72020		Codice-ø .0530		DURO-X
Ø Code	d1 m7	d2 h5	l1	l2	l4			€		
.0530	5.3	6	95	56	36			151.00		
.0540	5.4	6	95	56	36			151.00		
.0550	5.5	6	95	56	36			151.00		
.0560	5.6	6	95	56	36			151.00		
.0570	5.7	6	95	56	36			151.00		
.0580	5.8	6	95	56	36			151.00		
.0590	5.9	6	95	56	36			151.00		
.0600	6.0	6	95	56	36			151.00		
.0610	6.1	8	105	66	36			166.00		
.0620	6.2	8	105	66	36			166.00		
.0630	6.3	8	105	66	36			166.00		
.0640	6.4	8	105	66	36			166.00		
.0650	6.5	8	105	66	36			166.00		
.0660	6.6	8	105	66	36			166.00		
.0670	6.7	8	105	66	36			166.00		
.0680	6.8	8	105	66	36			166.00		
.0690	6.9	8	105	66	36			166.00		
.0700	7.0	8	105	66	36			166.00		
.0710	7.1	8	115	76	36			166.00		
.0720	7.2	8	115	76	36			166.00		
.0730	7.3	8	115	76	36			166.00		
.0740	7.4	8	115	76	36			166.00		
.0750	7.5	8	115	76	36			166.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	150	0.250	64.6	6280	1570	71.0	2.5
8.00	150	0.260	64.0	5970	1550	78.0	2.5
8.20	150	0.270	73.7	5825	1575	83.0	2.8
8.50	150	0.280	73.3	5615	1570	89.0	2.8
8.80	150	0.285	72.8	5425	1545	94.0	2.8
9.00	150	0.295	72.5	5305	1565	99.5	2.8
9.20	150	0.300	81.2	5190	1555	103.5	3.1
9.50	150	0.310	80.8	5025	1560	110.5	3.1
9.80	150	0.320	80.3	4870	1560	117.5	3.1

Acciaio
500 - 850 N/mm²

7.60	120	0.215	64.6	5025	1080	49.0	3.6
8.00	120	0.225	64.0	4775	1075	54.0	3.6
8.20	120	0.230	73.7	4660	1070	56.5	4.1
8.50	120	0.240	73.3	4495	1080	61.5	4.1
8.80	120	0.245	72.8	4340	1065	65.0	4.1
9.00	120	0.250	72.5	4245	1060	67.5	4.1
9.20	120	0.260	81.2	4150	1080	72.0	4.5
9.50	120	0.265	80.8	4020	1065	75.5	4.6
9.80	120	0.275	80.3	3900	1075	81.0	4.5

Acciaio
850 - 1100 N/mm²

7.60	100	0.195	64.6	4190	815	37.0	4.8
8.00	100	0.205	64.0	3980	815	41.0	4.7
8.20	100	0.210	73.7	3880	815	43.0	5.4
8.50	100	0.220	73.3	3745	825	47.0	5.3
8.80	100	0.225	72.8	3615	815	49.5	5.4
9.00	100	0.230	72.5	3535	815	52.0	5.3
9.20	100	0.235	81.2	3460	815	54.0	6.0
9.50	100	0.245	80.8	3350	820	58.0	5.9
9.80	100	0.255	80.3	3250	830	62.5	5.8

Acciaio
1100 - 1300 N/mm²

7.60	70	0.150	64.6	2930	440	20.0	8.8
8.00	70	0.155	64.0	2785	430	21.5	8.9
8.20	70	0.160	73.7	2715	435	23.0	10.2
8.50	70	0.165	73.3	2620	430	24.5	10.2
8.80	70	0.170	72.8	2530	430	26.0	10.2
9.00	70	0.175	72.5	2475	435	27.5	10.0
9.20	70	0.180	81.2	2420	435	29.0	11.2
9.50	70	0.185	80.8	2345	435	31.0	11.1
9.80	70	0.190	80.3	2275	430	32.5	11.2

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
7.60	40	0.115	64.6	1675	195	9.0	19.9
8.00	40	0.120	64.0	1590	190	9.5	20.2
8.20	40	0.125	73.7	1555	195	10.5	22.7
8.50	40	0.130	73.3	1500	195	11.0	22.6
8.80	40	0.135	72.8	1445	195	12.0	22.4
9.00	40	0.135	72.5	1415	190	12.0	22.9
9.20	40	0.140	81.2	1385	195	13.0	25.0
9.50	40	0.145	80.8	1340	195	14.0	24.9
9.80	40	0.150	80.3	1300	195	14.5	24.7

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

7.60	60	0.115	64.6	2515	290	13.0	13.4
8.00	60	0.120	64.0	2385	285	14.5	13.5
8.20	60	0.125	73.7	2330	290	15.5	15.2
8.50	60	0.130	73.3	2245	290	16.5	15.2
8.80	60	0.135	72.8	2170	295	18.0	14.8
9.00	60	0.135	72.5	2120	285	18.0	15.3
9.20	60	0.140	81.2	2075	290	19.5	16.8
9.50	60	0.145	80.8	2010	290	20.5	16.7
9.80	60	0.150	80.3	1950	295	22.5	16.3

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

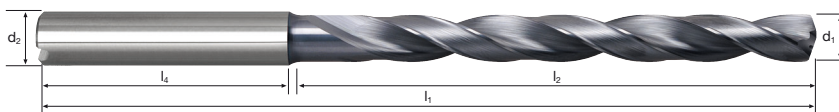
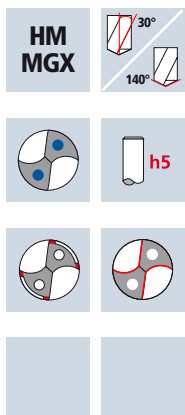
7.60	35	0.115	64.6	1465	170	7.5	22.8
8.00	35	0.120	64.0	1395	165	8.5	23.3
8.20	35	0.125	73.7	1360	170	9.0	26.0
8.50	35	0.130	73.3	1310	170	9.5	25.9
8.80	35	0.135	72.8	1265	170	10.5	25.7
9.00	35	0.135	72.5	1240	165	10.5	26.4
9.20	35	0.140	81.2	1210	170	11.5	28.7
9.50	35	0.145	80.8	1175	170	12.0	28.5
9.80	35	0.150	80.3	1135	170	13.0	28.3

Ghisa
(griglia / sferoidale)

7.60	220	0.225	64.6	9215	2075	94.0	1.9
8.00	220	0.240	64.0	8755	2100	105.5	1.8
8.20	220	0.245	73.7	8540	2090	110.5	2.1
8.50	220	0.250	73.3	8240	2060	117.0	2.1
8.80	220	0.260	72.8	7960	2070	126.0	2.1
9.00	220	0.265	72.5	7780	2060	131.0	2.1
9.20	220	0.275	81.2	7610	2095	139.5	2.3
9.50	220	0.280	80.8	7370	2065	146.5	2.3
9.80	220	0.290	80.3	7145	2070	156.0	2.3

Punte elicoidali XDrill®

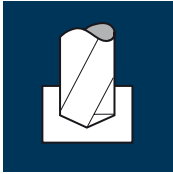
8xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-X
						B72020	.0760		B72020
ø Code	d1 m7	d2 h5	l1	l2	l4			€	
.0760	7.6	8	115	76	36			166.00	
.0770	7.7	8	115	76	36			166.00	
.0780	7.8	8	115	76	36			166.00	
.0790	7.9	8	115	76	36			166.00	
.0800	8.0	8	115	76	36			166.00	
.0810	8.1	10	129	86	40			190.00	
.0820	8.2	10	129	86	40			190.00	
.0830	8.3	10	129	86	40			190.00	
.0840	8.4	10	129	86	40			190.00	
.0850	8.5	10	129	86	40			190.00	
.0860	8.6	10	129	86	40			190.00	
.0870	8.7	10	129	86	40			190.00	
.0880	8.8	10	129	86	40			190.00	
.0890	8.9	10	129	86	40			190.00	
.0900	9.0	10	129	86	40			190.00	
.0910	9.1	10	138	95	40			190.00	
.0920	9.2	10	138	95	40			190.00	
.0930	9.3	10	138	95	40			190.00	
.0940	9.4	10	138	95	40			190.00	
.0950	9.5	10	138	95	40			190.00	
.0960	9.6	10	138	95	40			190.00	
.0970	9.7	10	138	95	40			190.00	
.0980	9.8	10	138	95	40			190.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	150	0.325	80.0	4775	1550	121.5	3.1
10.20	150	0.335	89.7	4680	1570	128.5	3.4
10.50	150	0.345	89.3	4545	1570	136.0	3.4
10.80	150	0.350	88.8	4420	1545	141.5	3.4
11.00	150	0.355	88.5	4340	1540	146.5	3.4
11.50	150	0.360	96.8	4150	1495	155.5	3.9
11.80	150	0.360	96.3	4045	1455	159.0	4.0
12.00	150	0.370	96.0	3980	1475	167.0	3.9
12.50	150	0.385	114.3	3820	1470	180.5	4.7

Acciaio
500 - 850 N/mm²

10.00	120	0.280	80.0	3820	1070	84.0	4.5
10.20	120	0.285	89.7	3745	1065	87.0	5.1
10.50	120	0.295	89.3	3640	1075	93.0	5.0
10.80	120	0.300	88.8	3535	1060	97.0	5.0
11.00	120	0.305	88.5	3470	1060	100.5	5.0
11.50	120	0.310	96.8	3320	1030	107.0	5.6
11.80	120	0.310	96.3	3235	1005	110.0	5.7
12.00	120	0.315	96.0	3185	1005	113.5	5.7
12.50	120	0.330	114.3	3055	1010	124.0	6.8

Acciaio
850 - 1100 N/mm²

10.00	100	0.260	80.0	3185	830	65.0	5.8
10.20	100	0.265	89.7	3120	825	67.5	6.5
10.50	100	0.270	89.3	3030	820	71.0	6.5
10.80	100	0.275	88.8	2945	810	74.0	6.6
11.00	100	0.280	88.5	2895	810	77.0	6.6
11.50	100	0.285	96.8	2770	790	82.0	7.4
11.80	100	0.285	96.3	2700	770	84.0	7.5
12.00	100	0.290	96.0	2655	770	87.0	7.5
12.50	100	0.305	114.3	2545	775	95.0	8.8

Acciaio
1100 - 1300 N/mm²

10.00	70	0.195	80.0	2230	435	34.0	11.0
10.20	70	0.200	89.7	2185	435	35.5	12.4
10.50	70	0.205	89.3	2120	435	37.5	12.3
10.80	70	0.210	88.8	2065	435	40.0	12.2
11.00	70	0.215	88.5	2025	435	41.5	12.2
11.50	70	0.215	96.8	1940	415	43.0	14.0
11.80	70	0.215	96.3	1890	405	44.5	14.3
12.00	70	0.220	96.0	1855	410	46.5	14.0
12.50	70	0.230	114.3	1785	410	50.5	16.7

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
10.00	40	0.150	80.0	1275	190	15.0	25.3
10.20	40	0.155	89.7	1250	195	16.0	27.6
10.50	40	0.160	89.3	1215	195	17.0	27.5
10.80	40	0.160	88.8	1180	190	17.5	28.0
11.00	40	0.165	88.5	1155	190	18.0	27.9
11.50	40	0.165	96.8	1105	180	18.5	32.3
11.80	40	0.165	96.3	1080	180	19.5	32.1
12.00	40	0.170	96.0	1060	180	20.5	32.0
12.50	40	0.175	114.3	1020	180	22.0	38.1

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

10.00	60	0.150	80.0	1910	285	22.5	16.8
10.20	60	0.155	89.7	1870	290	23.5	18.6
10.50	60	0.160	89.3	1820	290	25.0	18.5
10.80	60	0.160	88.8	1770	285	26.0	18.7
11.00	60	0.165	88.5	1735	285	27.0	18.6
11.50	60	0.165	96.8	1660	275	28.5	21.1
11.80	60	0.165	96.3	1620	265	29.0	21.8
12.00	60	0.170	96.0	1590	270	30.5	21.3
12.50	60	0.175	114.3	1530	270	33.0	25.4

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

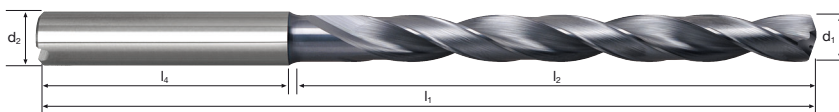
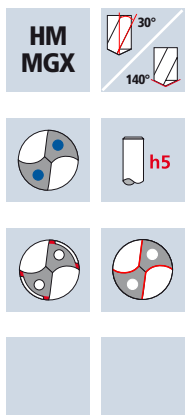
10.00	35	0.150	80.0	1115	165	13.0	29.1
10.20	35	0.155	89.7	1090	170	14.0	31.7
10.50	35	0.160	89.3	1060	170	14.5	31.5
10.80	35	0.160	88.8	1030	165	15.0	32.3
11.00	35	0.165	88.5	1015	165	15.5	32.2
11.50	35	0.165	96.8	970	160	16.5	36.3
11.80	35	0.165	96.3	945	155	17.0	37.3
12.00	35	0.170	96.0	930	160	18.0	36.0
12.50	35	0.175	114.3	890	155	19.0	44.2

Ghisa
(griglia / sferoidale)

10.00	220	0.295	80.0	7005	2065	162.0	2.3
10.20	220	0.305	89.7	6865	2095	171.0	2.6
10.50	220	0.310	89.3	6670	2070	179.0	2.6
10.80	220	0.315	88.8	6485	2045	187.5	2.6
11.00	220	0.325	88.5	6365	2070	196.5	2.6
11.50	220	0.330	96.8	6090	2010	209.0	2.9
11.80	220	0.330	96.3	5935	1960	214.5	2.9
12.00	220	0.335	96.0	5835	1955	221.0	2.9
12.50	220	0.350	114.3	5600	1960	240.5	3.5

Punte elicoidali XDrill®

8xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine						Articolo B72020		Codice-ø .0990		DURO-X	
Ø Code	d1 m7	d2 h5	l1	l2	l4			€			
.0990	9.9	10	138	95	40			190.00			
.1000	10.0	10	138	95	40			190.00			
.1010	10.1	12	153	105	45			274.00			
.1020	10.2	12	153	105	45			274.00			
.1030	10.3	12	153	105	45			274.00			
.1040	10.4	12	153	105	45			274.00			
.1050	10.5	12	153	105	45			274.00			
.1060	10.6	12	153	105	45			274.00			
.1070	10.7	12	153	105	45			274.00			
.1080	10.8	12	153	105	45			274.00			
.1090	10.9	12	153	105	45			274.00			
.1100	11.0	12	153	105	45			274.00			
.1110	11.1	12	162	114	45			274.00			
.1120	11.2	12	162	114	45			274.00			
.1130	11.3	12	162	114	45			274.00			
.1140	11.4	12	162	114	45			274.00			
.1150	11.5	12	162	114	45			274.00			
.1160	11.6	12	162	114	45			274.00			
.1170	11.7	12	162	114	45			274.00			
.1180	11.8	12	162	114	45			274.00			
.1190	11.9	12	162	114	45			274.00			
.1200	12.0	12	162	114	45			274.00			
.1250	12.5	14	181	133	45			370.00			

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.80	150	0.395	113.8	3730	1475	190.0	4.6
13.00	150	0.400	113.5	3675	1470	195.0	4.6
13.50	150	0.405	113.2	3615	1465	200.5	4.6
14.00	150	0.410	112.0	3410	1400	215.5	4.8
14.50	150	0.420	130.3	3295	1385	228.5	5.6
14.80	150	0.425	129.8	3225	1370	235.5	5.7
15.00	150	0.430	129.5	3185	1370	242.0	5.7
15.50	150	0.440	128.8	3080	1355	255.5	5.7
16.00	150	0.450	128.0	2985	1345	270.5	5.7

Acciaio
500 - 850 N/mm²

12.80	120	0.335	113.8	2985	1000	128.5	6.8
13.00	120	0.340	113.5	2940	1000	132.5	6.8
13.50	120	0.345	113.2	2895	1000	137.0	6.8
14.00	120	0.350	112.0	2730	955	147.0	7.0
14.50	120	0.360	130.3	2635	950	157.0	8.2
14.80	120	0.365	129.8	2580	940	161.5	8.3
15.00	120	0.370	129.5	2545	940	166.0	8.3
15.50	120	0.375	128.8	2465	925	174.5	8.4
16.00	120	0.385	128.0	2385	920	185.0	8.3

Acciaio
850 - 1100 N/mm²

12.80	100	0.310	113.8	2485	770	99.0	8.9
13.00	100	0.315	113.5	2450	770	102.0	8.8
13.50	100	0.320	113.2	2410	770	105.5	8.8
14.00	100	0.325	112.0	2275	740	114.0	9.1
14.50	100	0.330	130.3	2195	725	119.5	10.8
14.80	100	0.335	129.8	2150	720	124.0	10.8
15.00	100	0.340	129.5	2120	720	127.0	10.8
15.50	100	0.345	128.8	2055	710	134.0	10.9
16.00	100	0.355	128.0	1990	705	141.5	10.9

Acciaio
1100 - 1300 N/mm²

12.80	70	0.235	113.8	1740	410	53.0	16.7
13.00	70	0.240	113.5	1715	410	54.5	16.6
13.50	70	0.245	113.2	1690	415	57.0	16.4
14.00	70	0.245	112.0	1590	390	60.0	17.2
14.50	70	0.250	130.3	1535	385	63.5	20.3
14.80	70	0.255	129.8	1505	385	66.0	20.2
15.00	70	0.260	129.5	1485	385	68.0	20.2
15.50	70	0.265	128.8	1440	380	71.5	20.3
16.00	70	0.270	128.0	1395	375	75.5	20.5

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.80	40	0.180	113.8	995	180	23.0	37.9
13.00	40	0.185	113.5	980	180	24.0	37.8
13.50	40	0.185	113.2	965	180	24.5	37.7
14.00	40	0.190	112.0	910	175	27.0	38.4
14.50	40	0.195	130.3	880	170	28.0	46.0
14.80	40	0.195	129.8	860	170	29.0	45.8
15.00	40	0.200	129.5	850	170	30.0	45.7
15.50	40	0.205	128.8	820	170	32.0	45.5
16.00	40	0.205	128.0	795	165	33.0	46.5

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

12.80	60	0.180	113.8	1490	270	34.5	25.3
13.00	60	0.185	113.5	1470	270	36.0	25.2
13.50	60	0.185	113.2	1445	265	36.5	25.6
14.00	60	0.190	112.0	1365	260	40.0	25.8
14.50	60	0.195	130.3	1315	255	42.0	30.7
14.80	60	0.195	129.8	1290	250	43.0	31.2
15.00	60	0.200	129.5	1275	255	45.0	30.5
15.50	60	0.205	128.8	1230	250	47.0	30.9
16.00	60	0.205	128.0	1195	245	49.5	31.3

Leghe di titanio indurite
>300 HB
[Ti6Al4V]

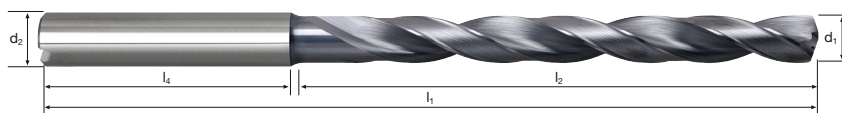
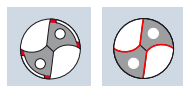
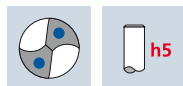
12.80	35	0.180	113.8	870	155	20.0	44.1
13.00	35	0.185	113.5	855	160	21.0	42.6
13.50	35	0.185	113.2	845	155	21.0	43.8
14.00	35	0.190	112.0	795	150	23.0	44.8
14.50	35	0.195	130.3	770	150	25.0	52.1
14.80	35	0.195	129.8	755	145	25.0	53.7
15.00	35	0.200	129.5	745	150	26.5	51.8
15.50	35	0.205	128.8	720	150	28.5	51.5
16.00	35	0.205	128.0	695	140	28.0	54.9

Ghisa
(griglia / sferoidale)

12.80	220	0.355	113.8	5470	1940	249.5	3.5
13.00	220	0.360	113.5	5385	1940	257.5	3.5
13.50	220	0.370	113.2	5305	1965	269.0	3.5
14.00	220	0.375	112.0	5000	1875	288.5	3.6
14.50	220	0.380	130.3	4830	1835	303.0	4.3
14.80	220	0.385	129.8	4730	1820	313.0	4.3
15.00	220	0.390	129.5	4670	1820	321.5	4.3
15.50	220	0.400	128.8	4520	1810	341.5	4.3
16.00	220	0.405	128.0	4375	1770	356.0	4.3

Punte elicoidali XDrill®

8xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)
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Esempio: N° Ordine		Articolo	Codice-ø				DURO-X	
		B72020	.1280				B72020	
ø Code	d1 m7	d2 h5	l1	l2	l4	€		
.1280	12.8	14	181	133	45	370.00		
.1300	13.0	14	181	133	45	370.00		
.1350	13.5	14	181	133	45	370.00		
.1380	13.8	14	181	133	45	370.00		
.1400	14.0	14	181	133	45	370.00		
.1450	14.5	16	203	152	48	445.00		
.1480	14.8	16	203	152	48	445.00		
.1500	15.0	16	203	152	48	445.00		
.1550	15.5	16	203	152	48	445.00		
.1580	15.8	16	203	152	48	445.00		
.1600	16.0	16	203	152	48	445.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	130	0.085	38.0	10345	880	11.0	2.6
5.00	130	0.105	49.5	8275	870	17.0	3.4
6.00	130	0.125	48.0	6895	860	24.5	3.3
7.00	130	0.145	65.5	5910	855	33.0	4.6
8.00	130	0.170	64.0	5175	880	44.0	4.4
9.00	130	0.190	81.5	4600	875	55.5	5.6
10.00	130	0.210	80.0	4140	870	68.5	5.5
11.00	130	0.230	97.5	3760	865	82.0	6.8
12.00	130	0.255	96.0	3450	880	99.5	6.5

Acciaio
500 - 850 N/mm²

4.00	100	0.085	38.0	7960	675	8.5	3.4
5.00	100	0.105	49.5	6365	670	13.0	4.4
6.00	100	0.125	48.0	5305	665	19.0	4.3
7.00	100	0.145	65.5	4545	660	25.5	6.0
8.00	100	0.170	64.0	3980	675	34.0	5.7
9.00	100	0.190	81.5	3535	670	42.5	7.3
10.00	100	0.210	80.0	3185	670	52.5	7.2
11.00	100	0.230	97.5	2895	665	63.0	8.8
12.00	100	0.255	96.0	2655	675	76.5	8.5

Acciaio
850 - 1100 N/mm²

4.00	70	0.065	38.0	5570	360	4.5	6.3
5.00	70	0.080	49.5	4455	355	7.0	8.4
6.00	70	0.095	48.0	3715	355	10.0	8.1
7.00	70	0.110	65.5	3185	350	13.5	11.2
8.00	70	0.130	64.0	2785	360	18.0	10.7
9.00	70	0.145	81.5	2475	360	23.0	13.6
10.00	70	0.160	80.0	2230	355	28.0	13.5
11.00	70	0.175	97.5	2025	355	33.5	16.5
12.00	70	0.190	96.0	1855	350	39.5	16.5

Acciaio
1100 - 1300 N/mm²

4.00	50	0.055	38.0	3980	220	3.0	10.4
5.00	50	0.065	49.5	3185	205	4.0	14.5
6.00	50	0.080	48.0	2655	210	6.0	13.7
7.00	50	0.095	65.5	2275	215	8.5	18.3
8.00	50	0.105	64.0	1990	210	10.5	18.3
9.00	50	0.120	81.5	1770	210	13.5	23.3
10.00	50	0.135	80.0	1590	215	17.0	22.3
11.00	50	0.145	97.5	1445	210	20.0	27.9
12.00	50	0.160	96.0	1325	210	24.0	27.4

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.00	25	0.045	38.0	1990	90	1.0	25.3
5.00	25	0.060	49.5	1590	95	2.0	31.3
6.00	25	0.070	48.0	1325	95	2.5	30.3
7.00	25	0.080	65.5	1135	90	3.5	43.7
8.00	25	0.095	64.0	995	95	5.0	40.4
9.00	25	0.105	81.5	885	95	6.0	51.5
10.00	25	0.115	80.0	795	90	7.0	53.3
11.00	25	0.130	97.5	725	95	9.0	61.6
12.00	25	0.140	96.0	665	95	10.5	60.6

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

4.00	50	0.045	38.0	3980	180	2.5	12.7
5.00	50	0.055	49.5	3185	175	3.5	17.0
6.00	50	0.070	48.0	2655	185	5.0	15.6
7.00	50	0.080	65.5	2275	180	7.0	21.8
8.00	50	0.090	64.0	1990	180	9.0	21.3
9.00	50	0.105	81.5	1770	185	12.0	26.4
10.00	50	0.115	80.0	1590	185	14.5	25.9
11.00	50	0.125	97.5	1445	180	17.0	32.5
12.00	50	0.135	96.0	1325	180	20.5	32.0

Ghisa
(grigia / sferoidale)

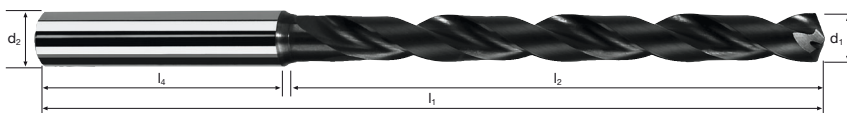
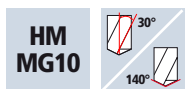
4.00	150	0.090	38.0	11935	1075	13.5	2.1
5.00	150	0.115	49.5	9550	1100	21.5	2.7
6.00	150	0.135	48.0	7960	1075	30.5	2.7
7.00	150	0.160	65.5	6820	1090	42.0	3.6
8.00	150	0.185	64.0	5970	1105	55.5	3.5
9.00	150	0.205	81.5	5305	1090	69.5	4.5
10.00	150	0.230	80.0	4775	1100	86.5	4.4
11.00	150	0.250	97.5	4340	1085	103.0	5.4
12.00	150	0.275	96.0	3980	1095	124.0	5.3

Alluminio malleabile
Si < 6%

4.00	200	0.080	38.0	15915	1275	16.0	1.8
5.00	200	0.100	49.5	12730	1275	25.0	2.3
6.00	200	0.120	48.0	10610	1275	36.0	2.3
7.00	200	0.140	65.5	9095	1275	49.0	3.1
8.00	200	0.160	64.0	7960	1275	64.0	3.0
9.00	200	0.180	81.5	7075	1275	81.0	3.8
10.00	200	0.200	80.0	6365	1275	100.0	3.8
11.00	200	0.220	97.5	5785	1275	121.0	4.6
12.00	200	0.240	96.0	5305	1275	144.0	4.5

Punte elicoidali Supradrill N

8xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine							Articolo		Codice-ø		DURO-SD	
							B52020		.0400		B52020	
											B53020	
ø Code	d1 m7	d2 h6	l1	l2	l4		€					
.0400	4.0	6	82	44	36		121.00					
.0420	4.2	6	82	44	36		121.00					
.0450	4.5	6	82	44	36		121.00					
.0480	4.8	6	82	44	36		121.00					
.0500	5.0	6	95	57	36		121.00					
.0550	5.5	6	95	57	36		121.00					
.0580	5.8	6	95	57	36		121.00					
.0600	6.0	6	95	57	36		121.00					
.0650	6.5	8	114	76	36		134.00					
.0680	6.8	8	114	76	36		134.00					
.0700	7.0	8	114	76	36		134.00					
.0750	7.5	8	114	76	36		134.00					
.0780	7.8	8	114	76	36		134.00					
.0800	8.0	8	114	76	36		134.00					
.0850	8.5	10	138	95	40		153.00					
.0900	9.0	10	138	95	40		153.00					
.0950	9.5	10	138	95	40		153.00					
.1000	10.0	10	138	95	40		153.00					
.1050	10.5	12	162	114	45		220.00					
.1100	11.0	12	162	114	45		220.00					
.1150	11.5	12	162	114	45		220.00					
.1200	12.0	12	162	114	45		220.00					

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.50	130	0.265	114.3	3310	875	107.5	7.8
13.00	130	0.275	113.5	3185	875	116.0	7.8
13.50	130	0.285	112.8	3065	875	125.0	7.7
14.00	130	0.295	112.0	2955	870	134.0	7.7
14.50	130	0.305	130.3	2855	870	143.5	9.0
15.00	130	0.315	129.5	2760	870	153.5	8.9
16.00	130	0.335	128.0	2585	865	174.0	8.9

Acciaio
500 - 850 N/mm²

12.50	100	0.265	114.3	2545	675	83.0	10.2
13.00	100	0.275	113.5	2450	675	89.5	10.1
13.50	100	0.285	112.8	2360	675	96.5	10.0
14.00	100	0.295	112.0	2275	670	103.0	10.0
14.50	100	0.305	130.3	2195	670	110.5	11.7
15.00	100	0.315	129.5	2120	670	118.5	11.6
16.00	100	0.335	128.0	1990	665	133.5	11.5

Acciaio
850 - 1100 N/mm²

12.50	70	0.200	114.3	1785	355	43.5	19.3
13.00	70	0.210	113.5	1715	360	48.0	18.9
13.50	70	0.215	112.8	1650	355	51.0	19.1
14.00	70	0.225	112.0	1590	360	55.5	18.7
14.50	70	0.230	130.3	1535	355	58.5	22.0
15.00	70	0.240	129.5	1485	355	62.5	21.9
16.00	70	0.255	128.0	1395	355	71.5	21.6

Acciaio
1100 - 1300 N/mm²

12.50	50	0.165	114.3	1275	210	26.0	32.7
13.00	50	0.175	113.5	1225	215	28.5	31.7
13.50	50	0.180	112.8	1180	210	30.0	32.2
14.00	50	0.185	112.0	1135	210	32.5	32.0
14.50	50	0.195	130.3	1100	215	35.5	36.4
15.00	50	0.200	129.5	1060	210	37.0	37.0
16.00	50	0.215	128.0	995	215	43.0	35.7

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
12.50	25	0.145	114.3	635	90	11.0	76.2
13.00	25	0.150	113.5	610	90	12.0	75.7
13.50	25	0.160	112.8	590	95	13.5	71.2
14.00	25	0.165	112.0	570	95	14.5	70.7
14.50	25	0.170	130.3	550	95	15.5	82.3
15.00	25	0.175	129.5	530	95	17.0	81.8
16.00	25	0.185	128.0	495	90	18.0	85.3

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

12.50	50	0.145	114.3	1275	185	22.5	37.1
13.00	50	0.150	113.5	1225	185	24.5	36.8
13.50	50	0.155	112.8	1180	185	26.5	36.6
14.00	50	0.160	112.0	1135	180	27.5	37.3
14.50	50	0.165	130.3	1100	180	29.5	43.4
15.00	50	0.170	129.5	1060	180	32.0	43.2
16.00	50	0.185	128.0	995	185	37.0	41.5

Ghisa
(grigia / sferoidale)

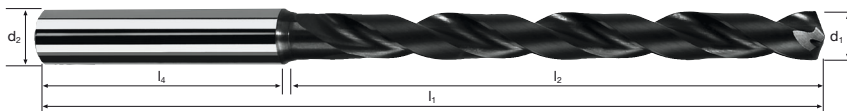
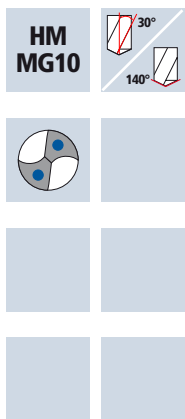
12.50	150	0.285	114.3	3820	1090	134.0	6.3
13.00	150	0.295	113.5	3675	1085	144.0	6.3
13.50	150	0.310	112.8	3535	1095	156.5	6.2
14.00	150	0.320	112.0	3410	1090	168.0	6.2
14.50	150	0.330	130.3	3295	1085	179.0	7.2
15.00	150	0.345	129.5	3185	1100	194.5	7.1
16.00	150	0.365	128.0	2985	1090	219.0	7.0

Alluminio malleabile
Si < 6%

12.50	200	0.250	114.3	5095	1275	156.5	5.4
13.00	200	0.260	113.5	4895	1275	169.0	5.3
13.50	200	0.270	112.8	4715	1275	182.5	5.3
14.00	200	0.280	112.0	4545	1275	196.5	5.3
14.50	200	0.290	130.3	4390	1275	210.5	6.1
15.00	200	0.300	129.5	4245	1275	225.5	6.1
16.00	200	0.320	128.0	3980	1275	256.5	6.0

Punte elicoidali Supradrill N

8xd



Rm < 850	Rm 850-1100	Rm 1100-1300						Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine	Articolo B52020	Codice-ø .1250	Ø Code	d1 m7	d2 h6	l1	l2	l4	DURO-SD		
										€	
			.1250	12.5	14	181	133	45		B52020	
			.1300	13.0	14	181	133	45	298.00	B53020	
			.1350	13.5	14	181	133	45	298.00		
			.1400	14.0	14	181	133	45	298.00		
			.1450	14.5	16	203	152	48	359.00		
			.1500	15.0	16	203	152	48	359.00		
			.1600	16.0	16	203	152	48	359.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	100	0.120	51.5	10610	1275	9.0	2.4
4.00	100	0.120	60.0	7960	955	12.0	3.8
5.00	100	0.120	76.5	6365	765	15.0	6.0
6.00	100	0.150	93.0	5305	795	22.5	7.0
8.00	100	0.150	121.0	3980	595	30.0	12.2
10.00	100	0.200	153.0	3185	635	50.0	14.5
12.00	100	0.200	185.0	2655	530	60.0	20.9
14.00	100	0.240	212.0	2275	545	84.0	23.3
16.00	100	0.240	244.0	1990	480	96.5	30.5

Acciaio
500 - 850 N/mm²

3.00	75	0.115	51.5	7960	915	6.5	3.4
4.00	75	0.115	60.0	5970	685	8.5	5.3
5.00	75	0.115	76.5	4775	550	11.0	8.3
6.00	75	0.145	93.0	3980	575	16.5	9.7
8.00	75	0.145	121.0	2985	435	22.0	16.7
10.00	75	0.190	153.0	2385	455	35.5	20.2
12.00	75	0.190	185.0	1990	380	43.0	29.2
14.00	75	0.230	212.0	1705	390	60.0	32.6
16.00	75	0.230	244.0	1490	345	69.5	42.4

Acciaio
850 - 1100 N/mm²

3.00	50	0.100	51.5	5305	530	3.5	5.8
4.00	50	0.100	60.0	3980	400	5.0	9.0
5.00	50	0.100	76.5	3185	320	6.5	14.3
6.00	50	0.140	93.0	2655	370	10.5	15.1
8.00	50	0.140	121.0	1990	280	14.0	25.9
10.00	50	0.180	153.0	1590	285	22.5	32.2
12.00	50	0.180	185.0	1325	240	27.0	46.3
14.00	50	0.220	212.0	1135	250	38.5	50.9
16.00	50	0.220	244.0	995	220	44.0	66.5

Acciaio
1100 - 1300 N/mm²

3.00	35	0.090	51.5	3715	335	2.5	9.2
4.00	35	0.090	60.0	2785	250	3.0	14.4
5.00	35	0.090	76.5	2230	200	4.0	22.9
6.00	35	0.125	93.0	1855	230	6.5	24.3
8.00	35	0.125	121.0	1395	175	9.0	41.5
10.00	35	0.160	153.0	1115	180	14.0	51.0
12.00	35	0.160	185.0	930	150	17.0	74.0
14.00	35	0.200	212.0	795	160	24.5	79.5
16.00	35	0.200	244.0	695	140	28.0	104.6

Materiale

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	40	0.100	51.5	4245	425	3.0	7.3
4.00	40	0.100	60.0	3185	320	4.0	11.3
5.00	40	0.100	76.5	2545	255	5.0	18.0
6.00	40	0.140	93.0	2120	295	8.5	18.9
8.00	40	0.140	121.0	1590	225	11.5	32.3
10.00	40	0.180	153.0	1275	230	18.0	39.9
12.00	40	0.180	185.0	1060	190	21.5	58.4
14.00	40	0.220	212.0	910	200	31.0	63.6
16.00	40	0.220	244.0	795	175	35.0	83.7

Ghisa
(griglia / sferoidale)

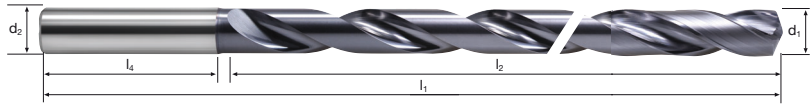
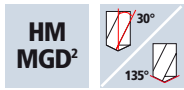
3.00	80	0.160	51.5	8490	1360	9.5	2.3
4.00	80	0.160	60.0	6365	1020	13.0	3.5
5.00	80	0.160	76.5	5095	815	16.0	5.6
6.00	80	0.210	93.0	4245	890	25.0	6.3
8.00	80	0.210	121.0	3185	670	33.5	10.8
10.00	80	0.260	153.0	2545	660	52.0	13.9
12.00	80	0.260	185.0	2120	550	62.0	20.2
14.00	80	0.320	212.0	1820	580	89.5	21.9
16.00	80	0.320	244.0	1590	510	102.5	28.7

Alluminio malleabile
Si < 6%

3.00	180	0.120	51.5	19100	2290	16.0	1.3
4.00	180	0.120	60.0	14325	1720	21.5	2.1
5.00	180	0.120	76.5	11460	1375	27.0	3.3
6.00	180	0.150	93.0	9550	1435	40.5	3.9
8.00	180	0.150	121.0	7160	1075	54.0	6.8
10.00	180	0.200	153.0	5730	1145	90.0	8.0
12.00	180	0.200	185.0	4775	955	108.0	11.6
14.00	180	0.240	212.0	4095	985	151.5	12.9
16.00	180	0.240	244.0	3580	860	173.0	17.0

Punte per foratura profonda

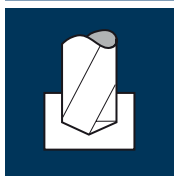
15xd



Rm < 850	Rm 850-1100	Rm 1100-1300							GG(G) Aluminium
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-D ²	
						B52915	.0300		B52915	
ø Code	d1 h7	d2 h6	l1	l2	l4			€		
.0300	3.0	4	90	56	32			212.00		
.0350	3.5	4	100	66	32			212.00		
.0400	4.0	4	100	66	32			212.00		
.0450	4.5	5	110	74	34			220.00		
.0500	5.0	5	120	84	34			220.00		
.0550	5.5	6	130	92	36			230.00		
.0600	6.0	6	140	102	36			230.00		
.0700	7.0	7	155	115	38			241.00		
.0800	8.0	8	175	133	40			255.00		
.0900	9.0	9	190	148	40			283.00		
.1000	10.0	10	210	168	40			314.00		
.1100	11.0	11	230	183	45			348.00		
.1200	12.0	12	250	203	45			408.00		
.1300	13.0	13	265	218	45			475.00		
.1400	14.0	14	285	233	50			558.00		
.1500	15.0	15	305	253	50			643.00		
.1600	16.0	16	320	268	50			732.00		
Istruzioni tecniche, pagina 151										
E' richiesto il foro pilota!										

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	100	0.120	69.5	10610	1275	9.0	3.3
4.00	100	0.120	80.0	7960	955	12.0	5.0
5.00	100	0.120	101.5	6365	765	15.0	8.0
6.00	100	0.150	121.0	5305	795	22.5	9.1
8.00	100	0.150	161.0	3980	595	30.0	16.2
10.00	100	0.200	203.0	3185	635	50.0	19.2
12.00	100	0.200	240.0	2655	530	60.0	27.2
14.00	100	0.240	282.0	2275	545	84.0	31.0
16.00	100	0.240	324.0	1990	480	96.5	40.5

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	75	0.115	69.5	7960	915	6.5	4.6
4.00	75	0.115	80.0	5970	685	8.5	7.0
5.00	75	0.115	101.5	4775	550	11.0	11.1
6.00	75	0.145	121.0	3980	575	16.5	12.6
8.00	75	0.145	161.0	2985	435	22.0	22.2
10.00	75	0.190	203.0	2385	455	35.5	26.8
12.00	75	0.190	240.0	1990	380	43.0	37.9
14.00	75	0.230	282.0	1705	390	60.0	43.4
16.00	75	0.230	324.0	1490	345	69.5	56.3

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	50	0.100	69.5	5305	530	3.5	7.9
4.00	50	0.100	80.0	3980	400	5.0	12.0
5.00	50	0.100	101.5	3185	320	6.5	19.0
6.00	50	0.140	121.0	2655	370	10.5	19.6
8.00	50	0.140	161.0	1990	280	14.0	34.5
10.00	50	0.180	203.0	1590	285	22.5	42.7
12.00	50	0.180	240.0	1325	240	27.0	60.0
14.00	50	0.220	282.0	1135	250	38.5	67.7
16.00	50	0.220	324.0	995	220	44.0	88.4

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	35	0.090	69.5	3715	335	2.5	12.4
4.00	35	0.090	80.0	2785	250	3.0	19.2
5.00	35	0.090	101.5	2230	200	4.0	30.4
6.00	35	0.125	121.0	1855	230	6.5	31.6
8.00	35	0.125	161.0	1395	175	9.0	55.2
10.00	35	0.160	203.0	1115	180	14.0	67.7
12.00	35	0.160	240.0	930	150	17.0	96.0
14.00	35	0.200	282.0	795	160	24.5	105.8
16.00	35	0.200	324.0	695	140	28.0	138.9

Materiale

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	40	0.100	69.5	4245	425	3.0	9.8
4.00	40	0.100	80.0	3185	320	4.0	15.0
5.00	40	0.100	101.5	2545	255	5.0	23.9
6.00	40	0.140	121.0	2120	295	8.5	24.6
8.00	40	0.140	161.0	1590	225	11.5	42.9
10.00	40	0.180	203.0	1275	230	18.0	53.0
12.00	40	0.180	240.0	1060	190	21.5	75.8
14.00	40	0.220	282.0	910	200	31.0	84.6
16.00	40	0.220	324.0	795	175	35.0	111.1

Ghisa
(griglia / sferoidale)

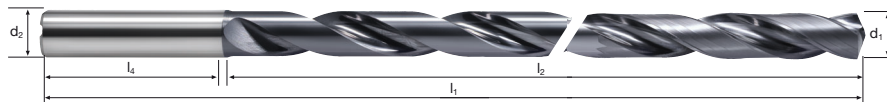
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	80	0.160	69.5	8490	1360	9.5	3.1
4.00	80	0.160	80.0	6365	1020	13.0	4.7
5.00	80	0.160	101.5	5095	815	16.0	7.5
6.00	80	0.210	121.0	4245	890	25.0	8.2
8.00	80	0.210	161.0	3185	670	33.5	14.4
10.00	80	0.260	203.0	2545	660	52.0	18.5
12.00	80	0.260	240.0	2120	550	62.0	26.2
14.00	80	0.320	282.0	1820	580	89.5	29.2
16.00	80	0.320	324.0	1590	510	102.5	38.1

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	180	0.120	69.5	19100	2290	16.0	1.8
4.00	180	0.120	80.0	14325	1720	21.5	2.8
5.00	180	0.120	101.5	11460	1375	27.0	4.4
6.00	180	0.150	121.0	9550	1435	40.5	5.1
8.00	180	0.150	161.0	7160	1075	54.0	9.0
10.00	180	0.200	203.0	5730	1145	90.0	10.6
12.00	180	0.200	240.0	4775	955	108.0	15.1
14.00	180	0.240	282.0	4095	985	151.5	17.2
16.00	180	0.240	324.0	3580	860	173.0	22.6

Punte per foratura profonda

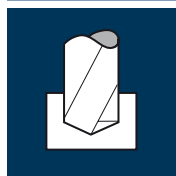
20xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Esempio: N° Ordine							DURO-D²	
Articolo		Codice-ø						
							€	
.0300	d1 h7 3.0	d2 h6 4	l1 110	l2 74	l4 32	246.00		
.0350	3.5	4	120	86	32	246.00		
.0400	4.0	4	120	86	32	246.00		
.0450	4.5	5	135	98	34	255.00		
.0500	5.0	5	145	109	34	255.00		
.0550	5.5	6	160	120	36	267.00		
.0600	6.0	6	170	130	36	267.00		
.0700	7.0	7	190	150	38	280.00		
.0800	8.0	8	215	173	40	296.00		
.0900	9.0	9	240	196	40	328.00		
.1000	10.0	10	260	218	40	364.00		
.1100	11.0	11	285	238	45	404.00		
.1200	12.0	12	305	258	45	474.00		
.1300	13.0	13	330	283	45	551.00		
.1400	14.0	14	355	303	50	648.00		
.1500	15.0	15	375	323	50	746.00		
.1600	16.0	16	400	348	50	849.00		
Istruzioni tecniche, pagina 151								
E' richiesto il foro pilota!								

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	90	0.120	86.5	9550	1145	8.0	4.5
4.00	90	0.120	100.0	7160	860	11.0	7.0
5.00	90	0.120	126.5	5730	690	13.5	11.0
6.00	90	0.150	151.0	4775	715	20.0	12.7
8.00	90	0.150	201.0	3580	535	27.0	22.5
9.00	90	0.200	224.5	3185	635	40.5	21.2
10.00	90	0.200	253.0	2865	575	45.0	26.4
12.00	90	0.200	300.0	2385	475	53.5	37.9
14.00	90	0.240	352.0	2045	490	75.5	43.1

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	70	0.115	86.5	7425	855	6.0	6.1
4.00	70	0.115	100.0	5570	640	8.0	9.4
5.00	70	0.115	126.5	4455	510	10.0	14.9
6.00	70	0.145	151.0	3715	540	15.5	16.8
8.00	70	0.145	201.0	2785	405	20.5	29.8
9.00	70	0.190	224.5	2475	470	30.0	28.7
10.00	70	0.190	253.0	2230	425	33.5	35.7
12.00	70	0.190	300.0	1855	350	39.5	51.4
14.00	70	0.230	352.0	1590	365	56.0	57.9

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	45	0.100	86.5	4775	480	3.5	10.8
4.00	45	0.100	100.0	3580	360	4.5	16.7
5.00	45	0.100	126.5	2865	285	5.5	26.6
6.00	45	0.140	151.0	2385	335	9.5	27.0
8.00	45	0.140	201.0	1790	250	12.5	48.2
9.00	45	0.180	224.5	1590	285	18.0	47.3
10.00	45	0.180	253.0	1430	255	20.0	59.5
12.00	45	0.180	300.0	1195	215	24.5	83.7
14.00	45	0.220	352.0	1025	225	34.5	93.9

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	30	0.090	86.5	3185	285	2.0	18.2
4.00	30	0.090	100.0	2385	215	2.5	27.9
5.00	30	0.090	126.5	1910	170	3.5	44.6
6.00	30	0.125	151.0	1590	200	5.5	45.3
8.00	30	0.125	201.0	1195	150	7.5	80.4
9.00	30	0.160	224.5	1060	170	11.0	79.2
10.00	30	0.160	253.0	955	155	12.0	97.9
12.00	30	0.160	300.0	795	125	14.0	144.0
14.00	30	0.200	352.0	680	135	21.0	156.4

Materiale

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	35	0.100	86.5	3715	370	2.5	14.0
4.00	35	0.100	100.0	2785	280	3.5	21.4
5.00	35	0.100	126.5	2230	225	4.5	33.7
6.00	35	0.140	151.0	1855	260	7.5	34.8
8.00	35	0.140	201.0	1395	195	10.0	61.8
9.00	35	0.180	224.5	1240	225	14.5	59.9
10.00	35	0.180	253.0	1115	200	15.5	75.9
12.00	35	0.180	300.0	930	165	18.5	109.1
14.00	35	0.220	352.0	795	175	27.0	120.7

Ghisa
(griglia / sferoidale)

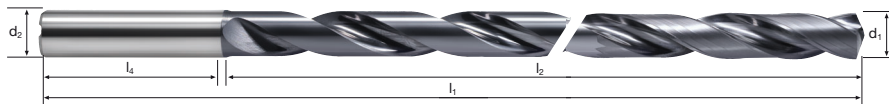
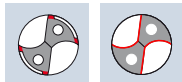
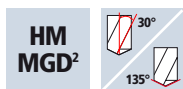
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	70	0.160	86.5	7425	1190	8.5	4.4
4.00	70	0.160	100.0	5570	890	11.0	6.7
5.00	70	0.160	126.5	4455	715	14.0	10.6
6.00	70	0.210	151.0	3715	780	22.0	11.6
8.00	70	0.210	201.0	2785	585	29.5	20.6
9.00	70	0.260	224.5	2475	645	41.0	20.9
10.00	70	0.260	253.0	2230	580	45.5	26.2
12.00	70	0.260	300.0	1855	480	54.5	37.5
14.00	70	0.320	352.0	1590	510	78.5	41.4

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	160	0.120	86.5	16975	2035	14.5	2.6
4.00	160	0.120	100.0	12730	1530	19.0	3.9
5.00	160	0.120	126.5	10185	1220	24.0	6.2
6.00	160	0.150	151.0	8490	1275	36.0	7.1
8.00	160	0.150	201.0	6365	955	48.0	12.6
9.00	160	0.200	224.5	5660	1130	72.0	11.9
10.00	160	0.200	253.0	5095	1020	80.0	14.9
12.00	160	0.200	300.0	4245	850	96.0	21.2
14.00	160	0.240	352.0	3640	875	134.5	24.1

Punte per foratura profonda

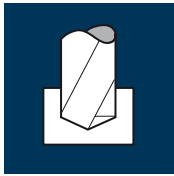
25xd



Rm < 850	Rm 850-1100	Rm 1100-1300								GG(G) Aluminium
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Ø Code	d1 h7	d2 h6	l1	l2	l4	DURO-D ²		
						Articolo	Codice-ø	
Esempio: N° Ordine <u>B52925</u> .0300							<input type="text"/>	B52925
							€	
.0300	3.0	4	125	91	32		288.00	
.0350	3.5	4	140	106	32		288.00	
.0400	4.0	4	140	106	32		288.00	
.0450	4.5	5	155	119	34		299.00	
.0500	5.0	5	170	134	34		299.00	
.0550	5.5	6	185	147	36		313.00	
.0600	6.0	6	200	160	36		313.00	
.0700	7.0	7	225	185	38		328.00	
.0800	8.0	8	255	213	40		347.00	
.0900	9.0	9	280	238	40		385.00	
.1000	10.0	10	310	268	40		427.00	
.1100	11.0	11	340	293	45		473.00	
.1200	12.0	12	365	318	45		555.00	
.1300	13.0	13	390	343	45		646.00	
.1400	14.0	14	425	373	50		759.00	
Istruzioni tecniche, pagina 151								
E' richiesto il foro pilota!								

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	90	0.120	105.5	9550	1145	8.0	5.5
4.00	90	0.120	120.0	7160	860	11.0	8.4
5.00	90	0.120	151.5	5730	690	13.5	13.2
6.00	90	0.150	183.0	4775	715	20.0	15.4
7.00	90	0.150	209.5	4095	615	23.5	20.4
8.00	90	0.150	241.0	3580	535	27.0	27.0
9.00	90	0.200	269.5	3185	635	40.5	25.5
10.00	90	0.200	303.0	2865	575	45.0	31.6
12.00	90	0.200	365.0	2385	475	53.5	46.1

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	70	0.115	105.5	7425	855	6.0	7.4
4.00	70	0.115	120.0	5570	640	8.0	11.3
5.00	70	0.115	151.5	4455	510	10.0	17.8
6.00	70	0.145	183.0	3715	540	15.5	20.3
7.00	70	0.145	209.5	3185	460	17.5	27.3
8.00	70	0.145	241.0	2785	405	20.5	35.7
9.00	70	0.190	269.5	2475	470	30.0	34.4
10.00	70	0.190	303.0	2230	425	33.5	42.8
12.00	70	0.190	365.0	1855	350	39.5	62.6

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	45	0.100	105.5	4775	480	3.5	13.2
4.00	45	0.100	120.0	3580	360	4.5	20.0
5.00	45	0.100	151.5	2865	285	5.5	31.9
6.00	45	0.140	183.0	2385	335	9.5	32.8
7.00	45	0.140	209.5	2045	285	11.0	44.1
8.00	45	0.140	241.0	1790	250	12.5	57.8
9.00	45	0.180	269.5	1590	285	18.0	56.7
10.00	45	0.180	303.0	1430	255	20.0	71.3
12.00	45	0.180	365.0	1195	215	24.5	101.9

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	30	0.090	105.5	3185	285	2.0	22.2
4.00	30	0.090	120.0	2385	215	2.5	33.5
5.00	30	0.090	151.5	1910	170	3.5	53.5
6.00	30	0.125	183.0	1590	200	5.5	54.9
7.00	30	0.125	209.5	1365	170	6.5	73.9
8.00	30	0.125	241.0	1195	150	7.5	96.4
9.00	30	0.160	269.5	1060	170	11.0	95.1
10.00	30	0.160	303.0	955	155	12.0	117.3
12.00	30	0.160	365.0	795	125	14.0	175.2

Materiale

Acciaio per lavorazione a freddo (12% Cr) fortemente legati [1.2379]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	35	0.100	105.5	3715	370	2.5	17.1
4.00	35	0.100	120.0	2785	280	3.5	25.7
5.00	35	0.100	151.5	2230	225	4.5	40.4
6.00	35	0.140	183.0	1855	260	7.5	42.2
7.00	35	0.140	209.5	1590	225	8.5	55.9
8.00	35	0.140	241.0	1395	195	10.0	74.2
9.00	35	0.180	269.5	1240	225	14.5	71.9
10.00	35	0.180	303.0	1115	200	15.5	90.9
12.00	35	0.180	365.0	930	165	18.5	132.7

Ghisa (griglia / sferoidale)

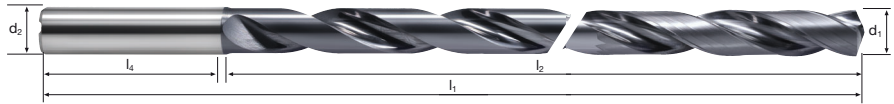
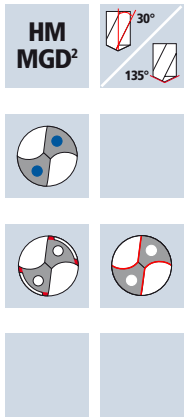
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	70	0.160	105.5	7425	1190	8.5	5.3
4.00	70	0.160	120.0	5570	890	11.0	8.1
5.00	70	0.160	151.5	4455	715	14.0	12.7
6.00	70	0.210	183.0	3715	780	22.0	14.1
7.00	70	0.210	209.5	3185	670	26.0	18.8
8.00	70	0.210	241.0	2785	585	29.5	24.7
9.00	70	0.260	269.5	2475	645	41.0	25.1
10.00	70	0.260	303.0	2230	580	45.5	31.3
12.00	70	0.260	365.0	1855	480	54.5	45.6

Alluminio malleabile Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
3.00	160	0.120	105.5	16975	2035	14.5	3.1
4.00	160	0.120	120.0	12730	1530	19.0	4.7
5.00	160	0.120	151.5	10185	1220	24.0	7.5
6.00	160	0.150	183.0	8490	1275	36.0	8.6
7.00	160	0.150	209.5	7275	1090	42.0	11.5
8.00	160	0.150	241.0	6365	955	48.0	15.1
9.00	160	0.200	269.5	5660	1130	72.0	14.3
10.00	160	0.200	303.0	5095	1020	80.0	17.8
12.00	160	0.200	365.0	4245	850	96.0	25.8

Punte per foratura profonda

30xd



Rm < 850	Rm 850-1100	Rm 1100-1300							GG(G) Aluminium
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						DURO-D ²		
Esempio: N° Ordine B52930 .0300						B52930		
Ø Code	d1 h7	d2 h6	l1	l2	l4	€		
.0300	3.0	4	145	110	32	350.00		
.0350	3.5	4	160	126	32	350.00		
.0400	4.0	4	160	126	32	350.00		
.0450	4.5	5	180	144	34	362.00		
.0500	5.0	5	195	159	34	362.00		
.0550	5.5	6	210	172	36	380.00		
.0600	6.0	6	230	192	36	380.00		
.0700	7.0	7	260	220	38	398.00		
.0800	8.0	8	295	253	40	421.00		
.0900	9.0	9	325	283	40	467.00		
.1000	10.0	10	360	318	40	518.00		
.1100	11.0	11	400	353	45	574.00		
.1200	12.0	12	430	383	45	674.00		
Istruzioni tecniche, pagina 151								
E' richiesto il foro pilota!								

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
0.20	100	0.004	1.0	60000	240	0.0	0.3
0.30	100	0.006	1.6	60000	360	0.0	0.3
0.40	100	0.008	2.0	60000	480	0.0	0.3
0.50	100	0.010	2.6	60000	600	0.0	0.3
0.60	100	0.012	3.0	53050	635	0.0	0.3
0.70	100	0.014	3.5	45475	635	0.0	0.3
0.80	100	0.016	4.0	39790	635	0.5	0.4
0.90	100	0.018	4.6	35370	635	0.5	0.4
1.00	100	0.020	5.0	31830	635	0.5	0.5

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
0.20	80	0.004	1.0	60000	240	0.0	0.3
0.30	80	0.007	1.6	60000	420	0.0	0.2
0.40	80	0.009	2.0	60000	540	0.0	0.2
0.50	80	0.011	2.6	50930	560	0.0	0.3
0.60	80	0.013	3.0	42440	550	0.0	0.3
0.70	80	0.016	3.5	36380	580	0.0	0.4
0.80	80	0.018	4.0	31830	575	0.5	0.4
0.90	80	0.020	4.6	28295	565	0.5	0.5
1.00	80	0.022	5.0	25465	560	0.5	0.5

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
0.20	40	0.003	1.0	60000	180	0.0	0.3
0.30	40	0.005	1.6	42440	210	0.0	0.5
0.40	40	0.006	2.0	31830	190	0.0	0.6
0.50	40	0.008	2.6	25465	205	0.0	0.8
0.60	40	0.009	3.0	21220	190	0.0	0.9
0.70	40	0.011	3.5	18190	200	0.0	1.1
0.80	40	0.012	4.0	15915	190	0.0	1.3
0.90	40	0.014	4.6	14145	200	0.0	1.4
1.00	40	0.015	5.0	12730	190	0.0	1.6

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
0.20	50	0.004	1.0	60000	240	0.0	0.3
0.30	50	0.005	1.6	53050	265	0.0	0.4
0.40	50	0.007	2.0	39790	280	0.0	0.4
0.50	50	0.009	2.6	31830	285	0.0	0.5
0.60	50	0.011	3.0	26525	290	0.0	0.6
0.70	50	0.013	3.5	22735	295	0.0	0.7
0.80	50	0.015	4.0	19895	300	0.0	0.8
0.90	50	0.016	4.6	17685	285	0.0	1.0
1.00	50	0.018	5.0	15915	285	0.0	1.1

Materiale

Ghisa
(grigia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
0.20	130	0.004	1.0	60000	240	0.0	0.3
0.30	130	0.007	1.6	60000	420	0.0	0.2
0.40	130	0.009	2.0	60000	540	0.0	0.2
0.50	130	0.011	2.6	60000	660	0.0	0.2
0.60	130	0.013	3.0	60000	780	0.0	0.2
0.70	130	0.016	3.5	59115	945	0.5	0.2
0.80	130	0.018	4.0	51725	930	0.5	0.3
0.90	130	0.020	4.6	45980	920	0.5	0.3
1.00	130	0.022	5.0	41380	910	0.5	0.3

Alluminio malleabile
Si < 6%

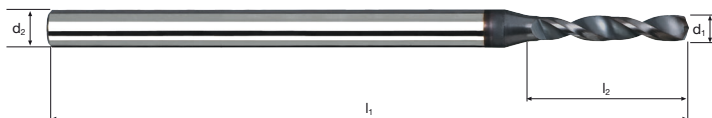
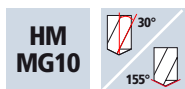
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
0.20	160	0.004	1.0	60000	240	0.0	0.3
0.30	160	0.007	1.6	60000	420	0.0	0.2
0.40	160	0.009	2.0	60000	540	0.0	0.2
0.50	160	0.011	2.6	60000	660	0.0	0.2
0.60	160	0.013	3.0	60000	780	0.0	0.2
0.70	160	0.016	3.5	60000	960	0.5	0.2
0.80	160	0.018	4.0	60000	1080	0.5	0.2
0.90	160	0.020	4.6	56590	1130	0.5	0.2
1.00	160	0.022	5.0	50930	1120	1.0	0.3

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]

Micropunte Microdrill NX

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine					Articolo		Codice-ø		DURO-SD
					B57014		.0020		B57014
ø Code	d1 m7	d2 h6	l1	l2					€
.0020	0.20	3	42	1.3					49.50
.0025	0.25	3	42	1.6					49.50
.0030	0.30	3	42	2.0					43.80
.0035	0.35	3	42	2.3					43.80
.0040	0.40	3	42	2.6					43.80
.0045	0.45	3	42	2.9					43.80
.0050	0.50	3	42	3.3					43.80
.0055	0.55	3	42	3.6					43.80
.0060	0.60	3	42	3.9					43.80
.0065	0.65	3	42	4.2					43.80
.0070	0.70	3	42	4.6					43.80
.0075	0.75	3	42	4.9					43.80
.0080	0.80	3	42	5.2					43.80
.0085	0.85	3	42	5.5					43.80
.0087	0.87	3	42	5.7					43.80
.0090	0.90	3	42	5.9					43.80
.0095	0.95	3	42	6.2					43.80
.0100	1.00	3	42	6.5					43.80
.0105	1.05	3	42	6.8					42.00
.0107	1.07	3	42	7.0					42.00

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
1.10	100	0.022	5.5	28935	635	0.5	0.5
1.20	100	0.024	6.0	26525	635	0.5	0.6
1.30	100	0.026	6.6	24485	635	1.0	0.6
1.40	100	0.028	7.0	22735	635	1.0	0.7
1.50	100	0.030	7.6	21220	635	1.0	0.7
1.60	100	0.032	8.0	19895	635	1.5	0.8
1.70	100	0.034	8.6	18725	635	1.5	0.8
1.80	100	0.036	9.0	17685	635	1.5	0.9
1.90	100	0.038	9.6	16755	635	2.0	0.9

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
1.10	80	0.024	5.5	23150	555	0.5	0.6
1.20	80	0.027	6.0	21220	575	0.5	0.6
1.30	80	0.029	6.6	19590	570	1.0	0.7
1.40	80	0.031	7.0	18190	565	1.0	0.7
1.50	80	0.033	7.6	16975	560	1.0	0.8
1.60	80	0.036	8.0	15915	575	1.0	0.8
1.70	80	0.038	8.6	14980	570	1.5	0.9
1.80	80	0.040	9.0	14145	565	1.5	1.0
1.90	80	0.042	9.6	13405	565	1.5	1.0

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
1.10	40	0.017	5.5	11575	195	0.0	1.7
1.20	40	0.018	6.0	10610	190	0.0	1.9
1.30	40	0.020	6.6	9795	195	0.5	2.0
1.40	40	0.022	7.0	9095	200	0.5	2.1
1.50	40	0.023	7.6	8490	195	0.5	2.3
1.60	40	0.025	8.0	7960	200	0.5	2.4
1.70	40	0.026	8.6	7490	195	0.5	2.6
1.80	40	0.028	9.0	7075	200	0.5	2.7
1.90	40	0.029	9.6	6700	195	0.5	3.0

Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
1.10	30	0.017	5.5	8680	150	0.0	2.2
1.20	30	0.018	6.0	7960	145	0.0	2.5
1.30	30	0.020	6.6	7345	145	0.0	2.7
1.40	30	0.022	7.0	6820	150	0.0	2.8
1.50	30	0.023	7.6	6365	145	0.5	3.1
1.60	30	0.025	8.0	5970	150	0.5	3.2
1.70	30	0.026	8.6	5615	145	0.5	3.6
1.80	30	0.028	9.0	5305	150	0.5	3.6
1.90	30	0.029	9.6	5025	145	0.5	4.0

Materiale

Ghisa
(grigia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
1.10	130	0.024	5.5	37620	905	1.0	0.4
1.20	130	0.027	6.0	34485	930	1.0	0.4
1.30	130	0.029	6.6	31830	925	1.0	0.4
1.40	130	0.031	7.0	29555	915	1.5	0.5
1.50	130	0.033	7.6	27585	910	1.5	0.5
1.60	130	0.036	8.0	25865	930	2.0	0.5
1.70	130	0.038	8.6	24340	925	2.0	0.6
1.80	130	0.040	9.0	22990	920	2.5	0.6
1.90	130	0.042	9.6	21780	915	2.5	0.6

Alluminio malleabile
Si < 6%

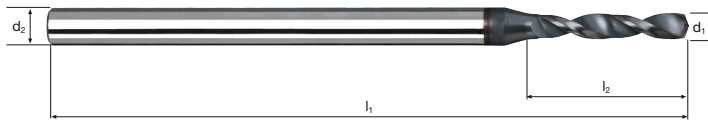
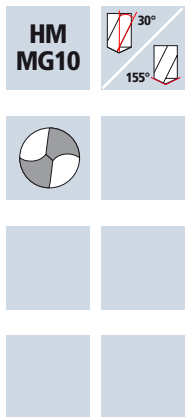
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
1.10	160	0.024	5.5	46300	1110	1.0	0.3
1.20	160	0.027	6.0	42440	1145	1.5	0.3
1.30	160	0.029	6.6	39175	1135	1.5	0.3
1.40	160	0.031	7.0	36380	1130	1.5	0.4
1.50	160	0.033	7.6	33955	1120	2.0	0.4
1.60	160	0.036	8.0	31830	1145	2.5	0.4
1.70	160	0.038	8.6	29960	1140	2.5	0.5
1.80	160	0.040	9.0	28295	1130	3.0	0.5
1.90	160	0.042	9.6	26805	1125	3.0	0.5

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]

Micropunte Microdrill NX

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-SD
						B57014	.0110		B57014
ø Code	d1 m7	d2 h6	l1	l2				€	
.0110	1.10	3	42	7.2				42.00	
.0115	1.15	3	42	7.5				42.00	
.0120	1.20	3	42	7.8				42.00	
.0125	1.25	3	42	8.1				42.00	
.0130	1.30	3	42	8.5				42.00	
.0135	1.35	3	42	8.8				42.00	
.0140	1.40	3	42	9.1				42.00	
.0142	1.42	3	42	9.2				42.00	
.0145	1.45	3	42	9.4				42.00	
.0150	1.50	3	42	9.8				42.00	
.0155	1.55	3	42	10.1				42.00	
.0160	1.60	3	42	10.4				42.00	
.0162	1.62	3	42	10.5				42.00	
.0165	1.65	3	42	10.7				42.00	
.0170	1.70	3	42	11.1				42.00	
.0175	1.75	3	42	11.4				42.00	
.0180	1.80	3	42	11.7				42.00	
.0185	1.85	3	50	12.0				42.00	
.0190	1.90	3	50	12.4				42.00	
.0195	1.95	3	50	12.7				42.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	100	0.040	10.0	15915	635	2.0	0.9
2.10	100	0.042	10.5	15160	635	2.0	1.0
2.20	100	0.044	11.0	14470	635	2.5	1.0
2.35	100	0.047	11.8	13545	635	3.0	1.1
2.50	100	0.050	12.6	12730	635	3.0	1.2
2.60	100	0.052	13.0	12245	635	3.5	1.2
2.75	100	0.055	13.8	11575	635	4.0	1.3
2.85	100	0.057	14.2	11170	635	4.0	1.3
2.95	100	0.059	14.8	10790	635	4.5	1.4
2.00	80	0.044	10.0	12730	560	2.0	1.1
2.10	80	0.047	10.5	12125	570	2.0	1.1
2.20	80	0.049	11.0	11575	565	2.0	1.2
2.35	80	0.052	11.8	10835	565	2.5	1.3
2.50	80	0.056	12.6	10185	570	3.0	1.3
2.60	80	0.058	13.0	9795	570	3.0	1.4
2.75	80	0.061	13.8	9260	565	3.5	1.5
2.85	80	0.063	14.2	8935	565	3.5	1.5
2.95	80	0.066	14.8	8630	570	4.0	1.6
2.00	40	0.031	10.0	6365	195	0.5	3.1
2.10	40	0.032	10.5	6065	195	0.5	3.2
2.20	40	0.034	11.0	5785	195	0.5	3.4
2.35	40	0.036	11.8	5420	195	1.0	3.6
2.50	40	0.038	12.6	5095	195	1.0	3.9
2.60	40	0.040	13.0	4895	195	1.0	4.0
2.75	40	0.042	13.8	4630	195	1.0	4.2
2.85	40	0.044	14.2	4470	195	1.0	4.4
2.95	40	0.045	14.8	4315	195	1.5	4.6
2.00	30	0.031	10.0	4775	150	0.5	4.0
2.10	30	0.032	10.5	4545	145	0.5	4.3
2.20	30	0.034	11.0	4340	150	0.5	4.4
2.35	30	0.036	11.8	4065	145	0.5	4.9
2.50	30	0.038	12.6	3820	145	0.5	5.2
2.60	30	0.040	13.0	3675	145	1.0	5.4
2.75	30	0.042	13.8	3470	145	1.0	5.7
2.85	30	0.044	14.2	3350	145	1.0	5.9
2.95	30	0.045	14.8	3235	145	1.0	6.1

Materiale

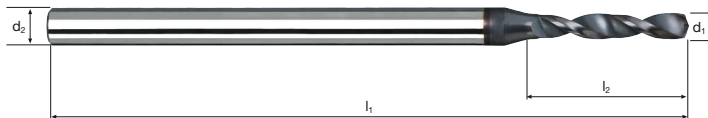
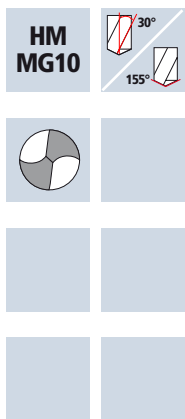
Ghisa
(grigia / sferoidale)

Alluminio malleabile
Si < 6%

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	130	0.044	10.0	20690	910	3.0	0.7
2.10	130	0.047	10.5	19705	925	3.0	0.7
2.20	130	0.049	11.0	18810	920	3.5	0.7
2.35	130	0.052	11.8	17610	915	4.0	0.8
2.50	130	0.056	12.6	16550	925	4.5	0.8
2.60	130	0.058	13.0	15915	925	5.0	0.8
2.75	130	0.061	13.8	15045	920	5.5	0.9
2.85	130	0.063	14.2	14520	915	6.0	0.9
2.95	130	0.066	14.8	14025	925	6.5	1.0
2.00	160	0.044	10.0	25465	1120	3.5	0.5
2.10	160	0.047	10.5	24250	1140	4.0	0.6
2.20	160	0.049	11.0	23150	1135	4.5	0.6
2.35	160	0.052	11.8	21670	1125	5.0	0.6
2.50	160	0.056	12.6	20370	1140	5.5	0.7
2.60	160	0.058	13.0	19590	1135	6.0	0.7
2.75	160	0.061	13.8	18520	1130	6.5	0.7
2.85	160	0.063	14.2	17870	1125	7.0	0.8
2.95	160	0.066	14.8	17265	1140	8.0	0.8

Micropunte Microdrill NX

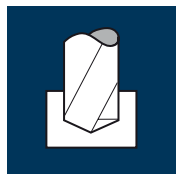
5xd



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						DURO-SD	
Articolo						B57014	
Codice-ø							
Ø Code	d1 m7	d2 h6	l1	l2		€	
.0200	2.00	3	50	13.0		42.00	
.0205	2.05	3	50	13.3		40.50	
.0210	2.10	3	50	13.7		40.50	
.0215	2.15	3	50	14.0		40.50	
.0220	2.20	3	50	14.3		40.50	
.0225	2.25	3	50	14.6		40.50	
.0230	2.30	3	50	15.0		40.50	
.0235	2.35	3	50	15.3		40.50	
.0240	2.40	3	50	15.6		40.50	
.0245	2.45	3	50	15.9		40.50	
.0250	2.50	3	50	16.3		40.50	
.0255	2.55	3	50	16.6		40.50	
.0260	2.60	3	50	16.9		40.50	
.0265	2.65	3	50	17.2		40.50	
.0270	2.70	3	50	17.6		40.50	
.0275	2.75	3	50	17.9		40.50	
.0280	2.80	3	50	18.2		40.50	
.0285	2.85	3	50	18.5		40.50	
.0290	2.90	3	50	18.9		40.50	
.0295	2.95	3	50	19.2		40.50	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	160	0.049	10.0	25465	1250	4.0	0.5
2.10	160	0.051	10.5	24250	1235	4.5	0.5
2.20	160	0.054	11.0	23150	1250	5.0	0.5
2.35	160	0.059	11.8	21670	1280	5.5	0.6
2.50	160	0.064	12.6	20370	1305	6.5	0.6
2.60	160	0.067	13.0	19590	1315	7.0	0.6
2.75	160	0.072	13.8	18520	1335	8.0	0.6
2.85	160	0.075	14.2	17870	1340	8.5	0.6
2.95	160	0.080	14.8	17265	1380	9.5	0.6

Acciaio
500 - 850 N/mm²

2.00	120	0.049	10.0	19100	935	3.0	0.6
2.10	120	0.051	10.5	18190	930	3.0	0.7
2.20	120	0.054	11.0	17360	935	3.5	0.7
2.35	120	0.059	11.8	16255	960	4.0	0.7
2.50	120	0.064	12.6	15280	980	5.0	0.8
2.60	120	0.067	13.0	14690	985	5.0	0.8
2.75	120	0.072	13.8	13890	1000	6.0	0.8
2.85	120	0.075	14.2	13405	1005	6.5	0.8
2.95	120	0.080	14.8	12950	1035	7.0	0.9

Acciaio
850 - 1100 N/mm²

2.00	100	0.049	10.0	15915	780	2.5	0.8
2.10	100	0.051	10.5	15160	775	2.5	0.8
2.20	100	0.054	11.0	14470	780	3.0	0.8
2.35	100	0.059	11.8	13545	800	3.5	0.9
2.50	100	0.064	12.6	12730	815	4.0	0.9
2.60	100	0.067	13.0	12245	820	4.5	1.0
2.75	100	0.072	13.8	11575	835	5.0	1.0
2.85	100	0.075	14.2	11170	840	5.5	1.0
2.95	100	0.080	14.8	10790	865	6.0	1.0

Acciaio inossidabile
[Cr-Ni-Mo/1.4571]

2.00	70	0.045	10.0	11140	500	1.5	1.2
2.10	70	0.048	10.5	10610	510	2.0	1.2
2.20	70	0.050	11.0	10130	505	2.0	1.3
2.35	70	0.055	11.8	9480	520	2.5	1.4
2.50	70	0.058	12.6	8915	515	2.5	1.5
2.60	70	0.062	13.0	8570	530	3.0	1.5
2.75	70	0.067	13.8	8100	545	3.0	1.5
2.85	70	0.071	14.2	7820	555	3.5	1.5
2.95	70	0.074	14.8	7555	560	4.0	1.6

Materiale

Ghisa
(grigia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	200	0.057	10.0	31830	1815	5.5	0.3
2.10	200	0.060	10.5	30315	1820	6.5	0.3
2.20	200	0.063	11.0	28935	1825	7.0	0.4
2.35	200	0.069	11.8	27090	1870	8.0	0.4
2.50	200	0.074	12.6	25465	1885	9.5	0.4
2.60	200	0.079	13.0	24485	1935	10.5	0.4
2.75	200	0.083	13.8	23150	1920	11.5	0.4
2.85	200	0.086	14.2	22340	1920	12.0	0.4
2.95	200	0.089	14.8	21580	1920	13.0	0.5

Alluminio malleabile
Si < 6%

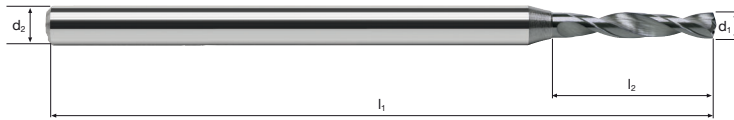
2.00	250	0.057	10.0	39790	2270	7.0	0.3
2.10	250	0.060	10.5	37895	2275	8.0	0.3
2.20	250	0.063	11.0	36170	2280	8.5	0.3
2.35	250	0.069	11.8	33865	2335	10.0	0.3
2.50	250	0.074	12.6	31830	2355	11.5	0.3
2.60	250	0.079	13.0	30605	2420	13.0	0.3
2.75	250	0.083	13.8	28935	2400	14.5	0.3
2.85	250	0.086	14.2	27920	2400	15.5	0.4
2.95	250	0.089	14.8	26975	2400	16.5	0.4

Micropunte Microdrill NX

5xd



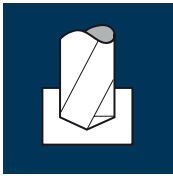
new!



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo	Codice-ø		DURO-SD	
						B57015	.0200		B57015	
ø Code	d1 m7	d2 h5	l1	l2				€		
.0200	2.00	3	56	13.0				68.00		
.0205	2.05	3	56	13.3				68.00		
.0210	2.10	3	56	13.7				68.00		
.0215	2.15	3	56	14.0				68.00		
.0220	2.20	3	56	14.3				68.00		
.0225	2.25	3	56	14.6				68.00		
.0230	2.30	3	56	15.0				68.00		
.0235	2.35	3	56	15.3				68.00		
.0240	2.40	3	56	15.6				68.00		
.0245	2.45	3	56	15.9				68.00		
.0250	2.50	3	56	16.3				68.00		
.0255	2.55	3	60	16.6				68.00		
.0260	2.60	3	60	16.9				68.00		
.0265	2.65	3	60	17.2				68.00		
.0270	2.70	3	60	17.6				68.00		
.0275	2.75	3	60	17.9				68.00		
.0280	2.80	3	60	18.2				68.00		
.0285	2.85	3	60	18.5				68.00		
.0290	2.90	3	60	18.9				68.00		
.0295	2.95	3	60	19.2				68.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	140	0.039	16.0	22280	870	2.5	1.1
2.10	140	0.041	16.9	21220	870	3.0	1.2
2.20	140	0.043	17.6	20255	870	3.5	1.2
2.35	140	0.047	18.8	18965	890	4.0	1.3
2.50	140	0.051	20.1	17825	910	4.5	1.3
2.60	140	0.053	20.8	17140	910	5.0	1.4
2.75	140	0.058	22.0	16205	940	5.5	1.4
2.85	140	0.060	22.8	15635	940	6.0	1.5
2.95	140	0.064	23.6	15105	965	6.5	1.5

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	100	0.039	16.0	15915	620	2.0	1.5
2.10	100	0.041	16.9	15160	620	2.0	1.6
2.20	100	0.043	17.6	14470	620	2.5	1.7
2.35	100	0.047	18.8	13545	635	3.0	1.8
2.50	100	0.051	20.1	12730	650	3.0	1.9
2.60	100	0.053	20.8	12245	650	3.5	1.9
2.75	100	0.058	22.0	11575	670	4.0	2.0
2.85	100	0.060	22.8	11170	670	4.5	2.0
2.95	100	0.064	23.6	10790	690	4.5	2.1

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	80	0.039	16.0	12730	495	1.5	1.9
2.10	80	0.041	16.9	12125	495	1.5	2.0
2.20	80	0.043	17.6	11575	500	2.0	2.1
2.35	80	0.047	18.8	10835	510	2.0	2.2
2.50	80	0.051	20.1	10185	520	2.5	2.3
2.60	80	0.053	20.8	9795	520	3.0	2.4
2.75	80	0.058	22.0	9260	535	3.0	2.5
2.85	80	0.060	22.8	8935	535	3.5	2.6
2.95	80	0.064	23.6	8630	550	4.0	2.6

Acciaio inossidabile
[Cr-Ni-Mo/1.4571]

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	60	0.036	16.0	9550	345	1.0	2.8
2.10	60	0.038	16.9	9095	345	1.0	2.9
2.20	60	0.040	17.6	8680	345	1.5	3.1
2.35	60	0.044	18.8	8125	360	1.5	3.1
2.50	60	0.047	20.1	7640	360	2.0	3.4
2.60	60	0.050	20.8	7345	365	2.0	3.4
2.75	60	0.054	22.0	6945	375	2.0	3.5
2.85	60	0.057	22.8	6700	380	2.5	3.6
2.95	60	0.059	23.6	6475	380	2.5	3.7

Materiale

Ghisa
(grigia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	150	0.046	16.0	23875	1100	3.5	0.9
2.10	150	0.048	16.9	22735	1090	4.0	0.9
2.20	150	0.050	17.6	21705	1085	4.0	1.0
2.35	150	0.055	18.8	20320	1120	5.0	1.0
2.50	150	0.059	20.1	19100	1125	5.5	1.1
2.60	150	0.063	20.8	18365	1155	6.0	1.1
2.75	150	0.067	22.0	17360	1165	7.0	1.1
2.85	150	0.069	22.8	16755	1155	7.5	1.2
2.95	150	0.072	23.6	16185	1165	8.0	1.2

Alluminio malleabile
Si < 6%

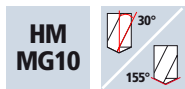
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
2.00	200	0.046	16.0	31830	1465	4.5	0.7
2.10	200	0.048	16.9	30315	1455	5.0	0.7
2.20	200	0.050	17.6	28935	1445	5.5	0.7
2.35	200	0.055	18.8	27090	1490	6.5	0.8
2.50	200	0.059	20.1	25465	1500	7.5	0.8
2.60	200	0.063	20.8	24485	1545	8.0	0.8
2.75	200	0.067	22.0	23150	1550	9.0	0.9
2.85	200	0.069	22.8	22340	1540	10.0	0.9
2.95	200	0.072	23.6	21580	1555	10.5	0.9

d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]

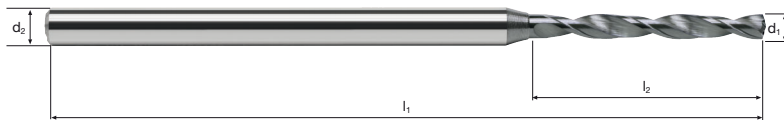
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]

Micropunte Microdrill NX

8xd



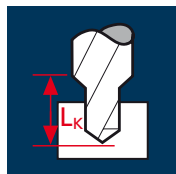
new!



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						Articolo		Codice-ø		DURO-SD
						B57020		.0200		B57020
ø Code	d1 m7	d2 h5	l1	l2		€				
.0200	2.00	3	56	19.0		88.00				
.0205	2.05	3	56	19.5		88.00				
.0210	2.10	3	56	20.0		88.00				
.0215	2.15	3	56	20.4		88.00				
.0220	2.20	3	56	20.9		88.00				
.0225	2.25	3	56	21.4		88.00				
.0230	2.30	3	56	21.9		88.00				
.0235	2.35	3	56	22.3		88.00				
.0240	2.40	3	56	22.8		88.00				
.0245	2.45	3	56	23.3		88.00				
.0250	2.50	3	56	23.8		88.00				
.0255	2.55	3	60	24.2		88.00				
.0260	2.60	3	60	24.7		88.00				
.0265	2.65	3	60	25.2		88.00				
.0270	2.70	3	60	25.7		88.00				
.0275	2.75	3	60	26.1		88.00				
.0280	2.80	3	60	26.6		88.00				
.0285	2.85	3	60	27.1		88.00				
.0290	2.90	3	60	27.6		88.00				
.0295	2.95	3	60	28.0		88.00				

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	per	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]
2.50	M3	110	0.045	11670	525	3.5
3.30	M4	110	0.055	8755	480	6.0
4.20	M5	110	0.070	7005	490	9.5
5.00	M6	110	0.085	5835	495	14.0
6.80	M8	110	0.115	4375	505	25.5
8.50	M10	110	0.145	3500	505	39.5
10.20	M12	110	0.170	2920	495	56.0
14.00	M16	110	0.230	2190	505	101.5

Acciaio
500 - 850 N/mm²

2.50	M3	80	0.045	8490	380	2.5
3.30	M4	80	0.055	6365	350	4.5
4.20	M5	80	0.070	5095	355	7.0
5.00	M6	80	0.085	4245	360	10.0
6.80	M8	80	0.115	3185	365	18.5
8.50	M10	80	0.145	2545	370	29.0
10.20	M12	80	0.170	2120	360	40.5
14.00	M16	80	0.230	1590	365	73.5

Acciaio
850 - 1100 N/mm²

2.50	M3	55	0.040	5835	235	1.5
3.30	M4	55	0.050	4375	220	3.0
4.20	M5	55	0.065	3500	230	4.5
5.00	M6	55	0.075	2920	220	6.0
6.80	M8	55	0.100	2190	220	11.0
8.50	M10	55	0.125	1750	220	17.5
10.20	M12	55	0.150	1460	220	25.0
14.00	M16	55	0.200	1095	220	44.0

Ghisa
(grigia / sferoidale)

2.50	M3	160	0.080	16975	1360	9.5
3.30	M4	160	0.105	12730	1335	17.0
4.20	M5	160	0.130	10185	1325	26.0
5.00	M6	160	0.160	8490	1360	38.5
6.80	M8	160	0.210	6365	1335	67.0
8.50	M10	160	0.265	5095	1350	106.0
10.20	M12	160	0.315	4245	1335	151.0
14.00	M16	160	0.420	3185	1340	269.5

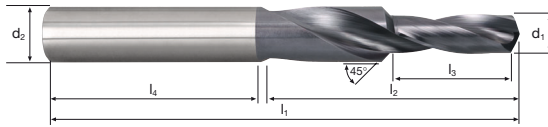
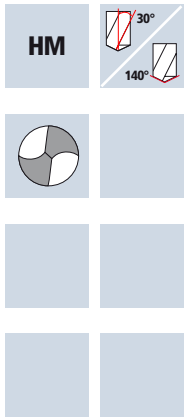
Materiale

Alluminio malleabile
Si < 6%

d1 [mm]	per	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]
2.50	M3	200	0.080	21220	1700	12.0
3.30	M4	200	0.105	15915	1670	21.0
4.20	M5	200	0.130	12730	1655	32.5
5.00	M6	200	0.160	10610	1700	48.0
6.80	M8	200	0.210	7960	1670	84.0
8.50	M10	200	0.265	6365	1685	132.5
10.20	M12	200	0.315	5305	1670	189.0
14.00	M16	200	0.420	3980	1670	336.0

Punte a gradini

3xd, per prefori di maschiatura



Rm < 850	Rm 850-1100	Rm 1100-1300							GG(G) Aluminium
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Esempio: N° Ordine								Articolo B52801	Codice- α .0250		DURO-D ²	
\varnothing Code	per	d1 m7	d2 h6	l1	l2	l3	l4			€		
.0250	M 3	2.5	6	62	20	8.8	36			30.90		
.0330	M 4	3.3	6	62	24	11.4	36			37.60		
.0420	M 5	4.2	6	66	28	13.6	36			43.10		
.0500	M 6	5.0	8	79	34	16.5	36			54.20		
.0680	M 8	6.8	10	89	47	21.0	40			88.00		
.0850	M10	8.5	12	102	55	25.5	45			108.00		
.1020	M12	10.2	14	107	60	30.0	45			152.00		
.1400	M16	14.0	18	123	73	38.5	48			192.00		



Punte per CFC, CFC / Composito metallico

Punte elicoidali

3xd

N° B52710

new!



X-Generation

X

HM
XA



CFK

131

||

5xd

N° B52724



X-Generation

X

HM
MG10



CFK/Ti

CFK/Al

133

Micropunte

3xd

N° B57710

new!



X-Generation

X

HM
XA



CFK

135

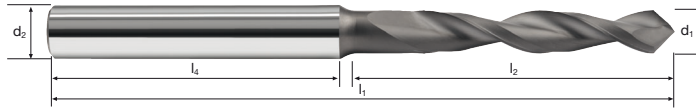
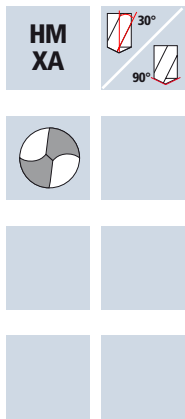
Punte elicoidali CFC

3xd



new!

II



Esempio: N° Ordine						Articolo	Codice-ø	DIAPLUS	
						B52710	.0300	B52710	
Ø Code	d1	d2 h6	l1	l2	l4	€			
.0300	3.00	6	62	22	36	101.00			
.0400	4.00	6	66	26	36	101.00			
.0483	4.83	6	66	27	36	101.00			
.0500	5.00	6	66	27	36	101.00			
.0600	6.00	8	79	39	36	130.00			
.0635	6.35	8	79	39	36	130.00			
Altre esecuzioni a richiesta									

Applicazione



Materiale

Materiale CFC/Ti

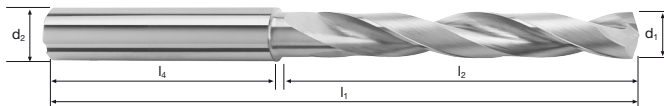
d1 [mm]	v _c [m/min]	f [mm]	L _{max} [mm]	n [min ⁻¹]	v _f [mm/min]	Q [cm ³ /min]	T [sek]
4.83	20	0.060	36.8	1320	80	1.5	27.6
6.35	20	0.080	43.5	1005	80	2.5	32.6

Materiale CFC/Al


4.83	40	0.060	36.8	2635	160	3.0	13.8
6.35	40	0.080	43.5	2005	160	5.0	16.3

Punte elicoidali CFC / Composto metallico

5xd

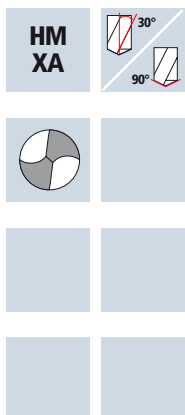


Esempio: N° Ordine B52724 .0483						<input type="text"/>	B52724	
∅ Code	d1 *	d2 h5	l1	l2	l4	€		
.0483	4.83	6	82	44	36	51.00		
.0635	6.35	8	91	53	36	56.20		
Altre esecuzioni a richiesta								

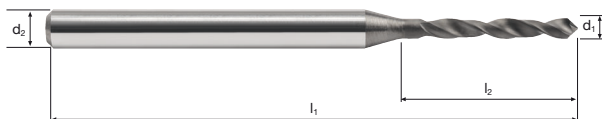
Applicazione	Materiale	d1 [mm]	v_c [m/min]	f [mm]	L_{max} [mm]	n [min ⁻¹]	v_f [mm/min]	Q [cm ³ /min]	T [sek]
	Materiale CFC	1.50	100	0.050	4.5	21220	1060	2.0	0.3
		2.00	100	0.060	6.0	15915	875	2.5	0.4

Micropunte Microdrill CFC

3xd



new!



					DIAPLUS	
Esempio: N° Ordine						
					B57710	
Ø Code	d1	d2 h5	l1	l2	€	
.0150	1.50	3	40	6.8	80.00	
.0200	2.00	3	40	9.0	80.00	
Altre esecuzioni a richiesta						



Punte da centro, Allargatori

Punte da centro

N° B92040



Base-X	B	HM MG10	90°	Rm <1100			139
	B	HM MG10	120°	Rm <1100			141
	B	HM MG10	144°	Rm <1100			143

N° B92020



N° B92008



III

Allargatori

N° B92360



N° B92310 / B92300



Base-X	B	HM	90°	Rm <1100			144
	HSS	HSS	90°	Rm <1100			145

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	160	0.070	16975	1190
4	160	0.095	12730	1210
5	160	0.120	10185	1220
6	160	0.145	8490	1230
8	160	0.190	6365	1210
10	160	0.240	5095	1225
12	160	0.285	4245	1210
16	160	0.380	3185	1210

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	120	0.070	12730	890
4	120	0.095	9550	905
5	120	0.120	7640	915
6	120	0.145	6365	925
8	120	0.190	4775	905
10	120	0.240	3820	915
12	120	0.285	3185	910
16	120	0.380	2385	905

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	90	0.060	9550	575
4	90	0.075	7160	535
5	90	0.095	5730	545
6	90	0.115	4775	550
8	90	0.155	3580	555
10	90	0.190	2865	545
12	90	0.230	2385	550
16	90	0.310	1790	555

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	60	0.050	6365	320
4	60	0.065	4775	310
5	60	0.080	3820	305
6	60	0.095	3185	305
8	60	0.125	2385	300
10	60	0.160	1910	305
12	60	0.190	1590	300
16	60	0.255	1195	305

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	30	0.050	3185	160
4	30	0.065	2385	155
5	30	0.080	1910	155
6	30	0.095	1590	150
8	30	0.125	1195	150
10	30	0.160	955	155
12	30	0.190	795	150
16	30	0.255	595	150

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	60	0.040	6365	255
4	60	0.055	4775	265
5	60	0.070	3820	265
6	60	0.080	3185	255
8	60	0.110	2385	260
10	60	0.135	1910	260
12	60	0.165	1590	260
16	60	0.220	1195	265

Ghisa
(grigia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	180	0.080	19100	1530
4	180	0.105	14325	1505
5	180	0.130	11460	1490
6	180	0.160	9550	1530
8	180	0.210	7160	1505
10	180	0.265	5730	1520
12	180	0.315	4775	1505
16	180	0.420	3580	1505

Alluminio malleabile
Si < 6%

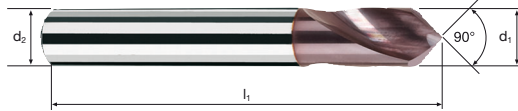
d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	220	0.080	23345	1870
4	220	0.105	17505	1840
5	220	0.130	14005	1820
6	220	0.160	11670	1865
8	220	0.210	8755	1840
10	220	0.265	7005	1855
12	220	0.315	5835	1840
16	220	0.420	4375	1840

Punte da centro

90°



**HM
MG10**



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine				Articolo	Codice-ø		U-4XD	
				B92040	.0300		B92040	
ø Code	d1 h6	d2 h6	l1				€	
.0300	3	3	50				35.40	
.0400	4	4	50				39.50	
.0500	5	5	50				43.80	
.0600	6	6	57				44.60	
.0800	8	8	63				56.90	
.1000	10	10	72				74.00	
.1200	12	12	83				95.00	
.1600	16	16	92				165.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	160	0.070	16975	1190
4	160	0.095	12730	1210
5	160	0.120	10185	1220
6	160	0.145	8490	1230
8	160	0.190	6365	1210
10	160	0.240	5095	1225
12	160	0.285	4245	1210
16	160	0.380	3185	1210

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	120	0.070	12730	890
4	120	0.095	9550	905
5	120	0.120	7640	915
6	120	0.145	6365	925
8	120	0.190	4775	905
10	120	0.240	3820	915
12	120	0.285	3185	910
16	120	0.380	2385	905

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	90	0.060	9550	575
4	90	0.075	7160	535
5	90	0.095	5730	545
6	90	0.115	4775	550
8	90	0.155	3580	555
10	90	0.190	2865	545
12	90	0.230	2385	550
16	90	0.310	1790	555

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	60	0.050	6365	320
4	60	0.065	4775	310
5	60	0.080	3820	305
6	60	0.095	3185	305
8	60	0.125	2385	300
10	60	0.160	1910	305
12	60	0.190	1590	300
16	60	0.255	1195	305

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	30	0.050	3185	160
4	30	0.065	2385	155
5	30	0.080	1910	155
6	30	0.095	1590	150
8	30	0.125	1195	150
10	30	0.160	955	155
12	30	0.190	795	150
16	30	0.255	595	150

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	60	0.040	6365	255
4	60	0.055	4775	265
5	60	0.070	3820	265
6	60	0.080	3185	255
8	60	0.110	2385	260
10	60	0.135	1910	260
12	60	0.165	1590	260
16	60	0.220	1195	265

Ghisa
(grigia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	180	0.080	19100	1530
4	180	0.105	14325	1505
5	180	0.130	11460	1490
6	180	0.160	9550	1530
8	180	0.210	7160	1505
10	180	0.265	5730	1520
12	180	0.315	4775	1505
16	180	0.420	3580	1505

Alluminio malleabile
Si < 6%

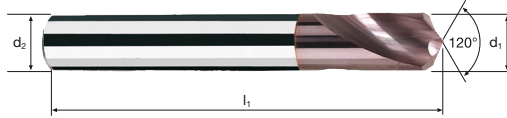
d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	220	0.080	23345	1870
4	220	0.105	17505	1840
5	220	0.130	14005	1820
6	220	0.160	11670	1865
8	220	0.210	8755	1840
10	220	0.265	7005	1855
12	220	0.315	5835	1840
16	220	0.420	4375	1840

Punte da centro

120°



HM	
MG10	



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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				U-4XD	
Esempio: N° Ordine				B92020	
		Articolo	Codice-Ø		
Ø Code	d1 h6	d2 h6	l1	€	
.0300	3	3	50	35.40	
.0400	4	4	50	39.50	
.0500	5	5	50	43.80	
.0600	6	6	57	44.60	
.0800	8	8	63	56.90	
.1000	10	10	72	74.00	
.1200	12	12	83	95.00	
.1600	16	16	92	165.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	160	0.070	16975	1190
4	160	0.095	12730	1210
5	160	0.120	10185	1220
6	160	0.145	8490	1230
8	160	0.190	6365	1210
10	160	0.240	5095	1225
12	160	0.285	4245	1210
16	160	0.380	3185	1210

Acciaio
500 - 850 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	120	0.070	12730	890
4	120	0.095	9550	905
5	120	0.120	7640	915
6	120	0.145	6365	925
8	120	0.190	4775	905
10	120	0.240	3820	915
12	120	0.285	3185	910
16	120	0.380	2385	905

Acciaio
850 - 1100 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	90	0.060	9550	575
4	90	0.075	7160	535
5	90	0.095	5730	545
6	90	0.115	4775	550
8	90	0.155	3580	555
10	90	0.190	2865	545
12	90	0.230	2385	550
16	90	0.310	1790	555

Acciaio
1100 - 1300 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	60	0.050	6365	320
4	60	0.065	4775	310
5	60	0.080	3820	305
6	60	0.095	3185	305
8	60	0.125	2385	300
10	60	0.160	1910	305
12	60	0.190	1590	300
16	60	0.255	1195	305

Materiale

Acciaio
1300 - 1500 N/mm²

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	30	0.050	3185	160
4	30	0.065	2385	155
5	30	0.080	1910	155
6	30	0.095	1590	150
8	30	0.125	1195	150
10	30	0.160	955	155
12	30	0.190	795	150
16	30	0.255	595	150

Acciaio per
lavorazione a freddo
(12% Cr)
fortemente legati
[1.2379]
Acciaio inossidabile
[Cr-Ni/1.4301]

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	60	0.040	6365	255
4	60	0.055	4775	265
5	60	0.070	3820	265
6	60	0.080	3185	255
8	60	0.110	2385	260
10	60	0.135	1910	260
12	60	0.165	1590	260
16	60	0.220	1195	265

Ghisa
(grigia / sferoidale)

d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	180	0.080	19100	1530
4	180	0.105	14325	1505
5	180	0.130	11460	1490
6	180	0.160	9550	1530
8	180	0.210	7160	1505
10	180	0.265	5730	1520
12	180	0.315	4775	1505
16	180	0.420	3580	1505

Alluminio malleabile
Si < 6%

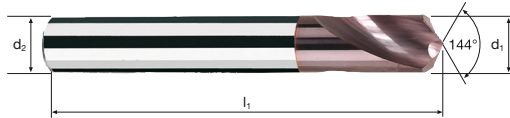
d1 [mm]	v _c [m/min]	f [mm]	n [min ⁻¹]	v _f [mm/min]
3	220	0.080	23345	1870
4	220	0.105	17505	1840
5	220	0.130	14005	1820
6	220	0.160	11670	1865
8	220	0.210	8755	1840
10	220	0.265	7005	1855
12	220	0.315	5835	1840
16	220	0.420	4375	1840

Punte da centro

144°



HM	
MG10	



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium
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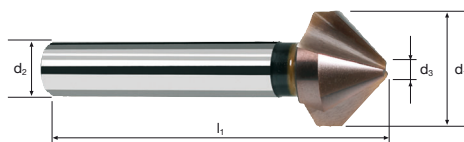
Esempio: N° Ordine				Articolo	Codice-ø		U-4XD		
				B92008	.0300		B92008		
Ø Code	d1 h6	d2 h6	l1					€	
.0300	3	3	50					35.40	
.0400	4	4	50					39.50	
.0500	5	5	50					43.80	
.0600	6	6	57					44.60	
.0800	8	8	63					56.90	
.1000	10	10	72					74.00	
.1200	12	12	83					95.00	
.1600	16	16	92					165.00	

Frese a svasare

90°



HM	

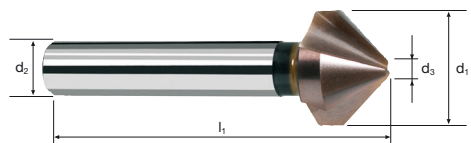
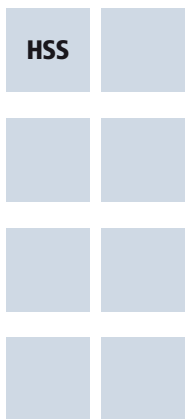


Rm < 850	Rm 850-1100					Inox Stainless	GG(G) Aluminium
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Esempio: N° Ordine						Articolo	Codice-ø		4-UXD
						B92360	.0630	<input type="text"/>	B92360
ø Code	d1 z9	d2 h9	d3	l1	z			€	
.0630	6.3	5	1.5	45	3			124.00	
.0830	8.3	6	2.0	50	3			124.00	
.1040*	10.4	6	2.5	50	3			124.00	
.1240*	12.4	8	2.8	56	3			124.00	
.1650*	16.5	10	3.2	60	3			159.00	
.2050*	20.5	10	3.5	63	3			184.00	
* Testa in metallo duro, gambo brasato									

Frese a svasare

90°



Rm < 850	Rm 850-1100						Inox Stainless		GG(G) Aluminium
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Esempio: N° Ordine						U-4XD	
						B92310	B92300
						€	€
Articolo	B92310						
Codice-ø	.0530						
ø Code	d1 z9	d2 h9	d3	l1	z	€	€
.0530	5.3	4	1.5	40	3	21.40	15.20
.0580	5.8	5	1.5	45	3	22.50	16.20
.0630	6.3	5	1.5	45	3	22.50	16.20
.0730	7.3	6	1.8	50	3	22.50	16.20
.0830	8.3	6	2.0	50	3	25.00	17.60
.0940	9.4	6	2.2	50	3	25.40	18.20
.1040	10.4	6	2.5	50	3	28.90	20.60
.1150	11.5	8	2.8	56	3	28.90	20.60
.1240	12.4	8	2.8	56	3	33.30	23.80
.1340	13.4	8	2.9	56	3	33.30	23.80
.1500	15.0	10	3.2	60	3	33.30	23.80
.1650	16.5	10	3.2	60	3	39.50	25.80
.1900	19.0	10	3.5	63	3	45.00	32.20
.2050	20.5	10	3.5	63	3	53.40	35.20
.2500	25.0	10	3.8	67	3	67.00	42.20
.3100	31.0	12	4.2	71	3	98.00	65.00
.9999	Assortimento di frese a svasare a contenente: 1 pz. ø 6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5					205.00	138.00

Legenda riguardante la pagina dei prodotti

Classi di prestazione



Utensili per foratura della classe ad alto rendimento X-Generation



Utensili per foratura della classe universale Base-X



Punte della classe Favora® – Favorevole e tecnicamente perfetto



Punte della classe ASR

Tecnologie degli utensili



Punte con quattro smussi (due smussi d'attrito e due smussi guida)

- Miglioramento rettilineità del foro
- Migliore qualità del foro e migliore allineamento
- Minori deviazioni del foro nell'intersezione con fori trasversali
- fori di ottima concentricità, buona superficie; massimo supporto dell'utensile in uscita dal foro.



Punte con scanalature di scarico trucioli ottimizzate e lucidate

- Riduzione attrito (e quindi meno tendenza all'adesione), migliore evacuazione del truciolo e minore riscaldamento



Punte con gambo di presa in qualità h5

- Elevata precisione di concentricità ed eccentricità
- Ottima per le moderne attrezzature di serraggio di precisione

Adduzione refrigerante



Le punte con adduzione interna del refrigerante danno migliore formazione ed evacuazione del truciolo assicurando maggior sicurezza di processo e durata utensile.



Punte senza adduzione interna refrigerante.

Legenda riguardante la pagina dei prodotti

Materiali per utensili

**HM
XA**

Metallo duro micrograna. Durezza 1950 HV. Contenuto di cobalto 8%. Si distingue particolarmente per l'elevata resistenza all'usura (Abrasion).

**HM
MGX**

Metallo duro micrograna ad alto rendimento con carburo di tungsteno ultrafine. Durezza 1610 HV. Contenuto di cobalto 10%.

**HM
MG10**

Metallo duro micrograna. Durezza 1600 HV. Contenuto di cobalto 10%.

**HM
MGD²**

Metallo duro micrograna con caratteristiche di elevata resistenza a flessione e al taglio in condizioni di buona elasticità.

HM

Metallo duro micrograno, universale.

HSS

Materiale per utensili ad alto rendimento. Lega ASR prodotto con metallurgia convenzionale.

Angolo alla sommità ed inclinazione dell'elica



Il valore dell'angolo di testa influenza in modo determinante la gamma di materiali lavorabili. Angoli minori facilitano il centraggio mentre angoli maggiori riducono la coppia.



L'inclinazione dell'elica incide in modo determinante sulla spoglia principale (estremità della punta). Grandi inclinazioni si addicono ai materiali teneri, piccole inclinazioni ai materiali secchi e duri.

Legenda riguardante la pagina dei prodotti

Esecuzioni e dimensioni delle punte elicoidali

Punte elicoidali in metallo duro, 3xd

Le dimensioni di questo utensile rispondono alla norma DIN 6537 K «Punte elicoidali in metallo duro con gambo cilindrico ribassato».

Punte elicoidali in metallo duro, 5xd

Le dimensioni di questo utensile rispondono alla norma DIN 6537 L «Punte elicoidali in metallo duro con gambo cilindrico ribassato».

Punte elicoidali in metallo duro e punte per foratura profonda, lunghezza maggiore di 5xd.

Secondo lo standard aziendale.

Punte elicoidali in metallo duro lunghezza 8xd, ottimizzate; secondo norma aziendale ma con rapporto l/d ottimizzato per la max stabilità dell'utensile.

Esecuzioni e dimensioni speciali

90°

Indicazione dell'angolo al vertice per punte da centro o punte per intestatura conica.

Punte per svasatura a 90° DIN 335




Profondità di foratura

Dati della profondità nominale di foratura. (Esempio: 5xd = 5 volte il diametro).


La profondità nominale di foratura non corrisponde alla profondità massima! La profondità massima di foratura dell'utensile è indicata con L_{max} e può essere calcolata con la corrispondente formula.


Legenda riguardante la pagina dei prodotti

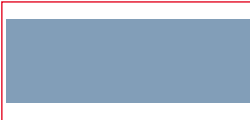
Forma del gambo / Esecuzioni del gambo

-  Utensili per metallo duro con gambo cilindrico: esecuzione gambo ai sensi della norma DIN 6535 HA
-  Utensili per metallo duro con gambo cilindrico e superficie di serraggio laterale: esecuzione gambo ai sensi della norma DIN 6535 HB
-  Micropunta per metallo duro e punte per foratura profondi con gambo cilindrico: esecuzione gambo secondo gli standard aziendali.

Idoneità alla lavorazione

 Lo sfondo blu indica l'eccezionale adeguatezza dell'utensile a questo materiale.

 Lo sfondo azzurro indica un'adeguatezza da buona a sufficiente dell'utensile a questo materiale.

Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60	Inox Stainless	Ti Titanium	
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Nel campo aggiuntivo sono indicati gli altri materiali che è possibile lavorare

Abbreviazioni

- d₁** Diametro dei taglienti [mm]
- d₂** Diametro del gambo [mm]
- d₃** Diametro della superficie frontale di frese a svasare [mm]
- l₁** Lunghezza totale dell'utensile [mm]
- l₂** Lunghezza della scanalatura per i trucioli [mm]
- l₃** Lunghezza del 2° gradino (punte a gradini) [mm]
- l₄** Lunghezza del gambo [mm]

Informazioni riguardanti i parametri di taglio

Lubrorefrigerazione e pressione del refrigerante

Di regola la foratura avviene con lubrorefrigerante. Obiettivi sono l'efficiente evacuazione del truciolo e del calore. Acciai temperati o materiali abrasivi possono essere forati anche a secco (raffreddamento con aria) o con MMS (lubrificazione minimale). Se il liquido di raffreddamento perviene dall'esterno occorre fare attenzione al corretto posizionamento del getto. Questo dovrebbe essere diretto parallelamente all'angolo d'elica e sull'ingresso del foro.

Con uso di una erogazione interna del lubrorefrigerante (attraverso mandrino e utensile) si ottengono superiori prestazioni e una maggiore vita dell'utensile. In questo caso, in funzione dell'esecuzione e del diametro dell'utensile, occorre una determinata pressione minima del fluido refrigerante.

La seguente tabella fornisce valori orientativi del lubrorefrigerante raccomandati da Fraisa per punte con erogazione interna del fluido:

Pressione di refrigerante richiesta per punte elicoidali con erogazione interna di fluido						
Esecuzioni	< \varnothing 3 mm	\varnothing 3-5 mm	\varnothing 5-8 mm	\varnothing 8-12 mm	\varnothing 12-16 mm	\varnothing 16-20 mm
fino a 5xd	60 bar	50 bar	30 bar	25 bar	20 bar	15 bar
8xd – 30xd	80 bar	60 bar	40 bar	30 bar	25 bar	20 bar
Pressione di refrigerante richiesta per punte a elica con erogazione interna e lubrificazione minimale						
Esecuzioni	< \varnothing 3 mm	\varnothing 3-5 mm	\varnothing 5-8 mm	\varnothing 8-12 mm	\varnothing 12-16 mm	\varnothing 16-20 mm
fino a 5xd	12 bar	10 bar	9 bar	8 bar	8 bar	7 bar
8xd – 30xd	14 bar	12 bar	10 bar	9 bar	9 bar	8 bar

Concentricità

La concentricità di rotazione nel processo di foratura è una grandezza molto importante. L'eccentricità deve essere la più piccola possibile poiché influenza fortemente lo sviluppo dell'usura. La concentricità di rotazione dovrebbe essere controllata soprattutto con i diametri di foro sotto 6 mm. La misura di controllo va effettuata a utensile montato e serrato nel portautensile o nel mandrino della macchina.

La seguente tabella fornisce un orientamento per l'errore di concentricità massimo, secondo Fraisa:

Eccentricità massima di punte elicoidali						
Campo di diametri	< \varnothing 1 mm	\varnothing 1-3 mm	\varnothing 3-6 mm	\varnothing 6-10 mm	\varnothing 10-16 mm	\varnothing 16-20 mm
Eccentricità massima	3 μ m	5 μ m	10 μ m	15 μ m	20 μ m	25 μ m

Centraggio e foro pilota

La punta deve essere sempre perpendicolare al pezzo. In caso di foratura su una superficie inclinata è necessario prevedere una superficie ausiliaria perpendicolare alla punta per foratura.

L'angolo al vertice della punta da centro deve essere sempre più grande dell'angolo al vertice della punta elicoidale. Così, si ha un centraggio ottimale della punta a forare e minore usura.

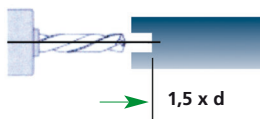
Raccomandazioni Fraisa circa centraggi e fori pilota:

Esecuzioni	Mat. per utensili	Raccomandazione
fino a 5xd	Metallo duro	No
fino a 5xd	ASR	Si
8xd	Metallo duro	Opzione: Un miglioramento della cilindricità può essere ottenuto mediante centraggio.
12xd – 30xd	Metallo duro	Si, un foro pilota è necessario (vedere a pagina 151)

Istruzioni tecniche per l'impiego delle punte per foratura profondi

Allo scopo di aumentare la durata e l'affidabilità di questo di tipo di punta, Fraisa SA suggerisce di adottare la seguente tecnica di foratura:

Fase 1

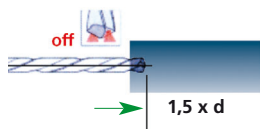


Esecuzione del foro pilota = $1,5 \times d$.

Ad esempio con Supradrill N 3xd. B52010 o B52011.

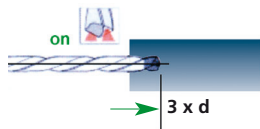
Il foro pilota dovrà essere pulito, libero da trucioli, prima dell'uso della punta per fori profondi!

Fase 2



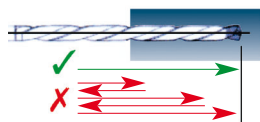
Introdurre la punta per fori profondi nel foro con numero di giri massimo di 300 1/min e avanzamento $v_f = 1000\text{mm/min}$, senza refrigerante fino ad 1 mm dal fondo del foro pilota.

Fase 3



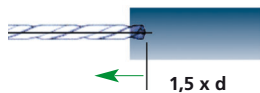
Forare per una profondità di circa $3xd$ mantenendo una ridotta velocità di taglio e di avanzamento. A tal fine, le velocità di taglio e di avanzamento dovranno essere ridotte al 40% dei parametri di taglio consigliati da Fraisa. L'adduzione del refrigerante è inserita.

Fase 4



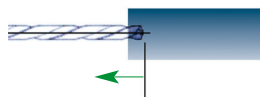
Aumentare il numero di giri e la velocità di avanzamento fino a raggiungere i valori indicati nei parametri di taglio consigliati; senza interruzione dell'avanzamento perché la punta deve essere sempre mantenuta in presa. **Continuare a forare senza aria!**

Fase 5



Far arretrare la punta per fori profondi alla velocità di avanzamento $v_f = 1000\text{mm/min}$ fino a $1,5 \times d$ dall'ingresso del foro. Posizione come da fase 2.

Fase 6



Ridurre quindi la velocità a un massimo di 300 giri/min. Estrarre la punta dal foro.

AVVERTENZA DI SICUREZZA

Le punte per fori profondi lunghe possono essere fatte ruotare libere, al di fuori del foro soltanto a basso numero di giri (max. 300 1/min).

Velocità maggiori possono generare vibrazioni tali da portare ad una loro rottura spontanea.

Formule di calcolo per i parametri di taglio

Formule

d₁	Diametro dei taglienti [mm]
v_c	Velocità di taglio [m/min]
f	Avanzamento per giro [mm]
n	Velocità di rotazione [min ⁻¹]
v_f	Velocità di avanzamento [mm/min]
Q	Volume di truciolatura [cm ³ /min]
T	Tempo macchina di lavorazione per la profondità massima di perforazione L _{max} dell'utensile [sec]
L	Profondità di foratura effettiva [mm]
L_{max}	Profondità massima di foratura dell'utensile, definita dalla formula [mm]

Velocità di rotazione

$$n = \frac{v_c \cdot 1000}{d_1 \cdot \pi} \left[\frac{1}{\text{min}} \right]$$

Velocità di taglio

$$v_c = \frac{d_1 \cdot n \cdot \pi}{1000} \left[\frac{\text{m}}{\text{min}} \right]$$

Velocità di avanzamento

$$v_f = f \cdot n \left[\frac{\text{mm}}{\text{min}} \right]$$

Volume di truciolatura

$$Q = \frac{d_1^2 \cdot \pi \cdot v_f}{4 \cdot 1000} \left[\frac{\text{cm}^3}{\text{min}} \right]$$

Tempo macchina di lavorazione

$$T = \frac{L}{v_f} \cdot 60 \quad [\text{sec}]$$

Profondità massima di foratura dell'utensile L_{max}

$$L_{\text{max}} = l_2 - (1.5 \cdot d_1) \quad [\text{mm}]$$

































Utensili per filettatura

a passion for precision











































Filettatura metrica M









Tolleranza ISO 2 (6H)		Mat.	Code			
N° EH0100 / EH0101		HSS PM/F	Steel < 850 N/mm²	08		161
N° EA0310 / EA0311						163
N° EH0502 / EH0503		HSS PM/F	Steel 850-1100 N/mm²	11		165
N° EH0570 / EH0571						167
N° EH0580 / EH0581						171
N° EH0590						173
N° EH0591						175
N° EH0512 / EH0513		HSS PM/F	Steel 1100-1500 N/mm²	15		177
N° EH0595 / EH0596						179
N° EH6900 / EH6901		HM MG10	HRC 48-60	60		181
N° ET0400 / ET0401		HSS PM/F	Inox Stainless	In		183
N° ET0570 / ET0571						185
N° ET0580 / ET0581						187
N° ET0590						189
N° ET0591						191


M

Filettatura metrica M

Tolleranza ISO 2 (6H)		Mat.	Code	
N° EH0600 / EH0601		HSS PM/F		 193
N° EH0620 / EH0621				 195
N° EH6500		HM MG10	GG(G) Cast iron 	 197
N° EH6501				 199
N° EH6550 / EH6551				 201
N° EI0020 / EI0021				HSS PM/F
N° EI0050 / EI0051		 205		
N° EH6300		HM MG10	Al Aluminium 	 207
N° EH6301				 209
N° EH6350 / EH6351				 211
N° ET0705 / ET0706		HSS PM/F	Ti Titanium 	 213
N° ET0755 / ET0756				 217
N° E0598		HSS PM/F	Ni Nickel 	 219
N° EH0109		HSS PM/F	Uni- versal Rigid 	 221
N° EH0110				 223
N° EH0229				 225
N° EH0230				 227

Filettatura metrica M

Tolleranza ISO 2 (6H)		Mat.	Code		
N° E10102 / E10103		HSS PM/F	Uni- versal	U	 229
N° E10210 / E10211					 233
N° E10340	Esecuzione extralunga 				 237
N° E10350	Esecuzione extralunga 				 239

Tolleranza ISO 2 (6H) LH		Mat.	Code		
N° E10122 / E10123		HSS PM/F	Uni- versal	U	 241
N° E10222 / E10223					 243

M

Tolleranza ISO 2 +0.1		Mat.	Code		
N° E10118 / E10119		HSS PM/F	Uni- versal	U	 245
N° E10220 / E10221					 247

Tolleranza ISO 3 (6G)		Mat.	Code		
N° EH0504 / EH0505		HSS PM/F	Steel 850-1100 N/mm ²	11	 249
N° EH0572 / EH0573					 251

Tolleranza ISO 1 (4H)		Mat.	Code		
N° E10110		HSS PM/F	Uni- versal	U	 253
N° E10214					 255



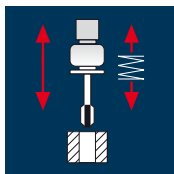
Filettatura metrica M / MJ

Tolleranza 7G		Mat.	Code		
N° E10114 / E10115		HSS PM/F	Uni- versal	U	 257
N° E10218 / E10219					 259

MJ Tolleranza 4H		Mat.	Code		
N° E0599		HSS PM/F	Ni Nickel	 Ni	 261

M

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 2	2.0	0.40	28	4455	1782	23	3660	1464	18	2865	1146
M 2.5	2.5	0.45	28	3565	1604	23	2930	1319	18	2290	1031
M 3	3.0	0.50	28	2970	1485	23	2440	1220	18	1910	955
M 4	4.0	0.70	28	2230	1561	23	1830	1281	18	1430	1001
M 5	5.0	0.80	28	1785	1428	23	1465	1172	18	1145	916
M 6	6.0	1.00	28	1485	1485	23	1220	1220	18	955	955
M 8	8.0	1.25	28	1115	1394	23	915	1144	18	715	894
M10	10.0	1.50	28	890	1335	23	730	1095	18	575	863
M12	12.0	1.75	28	745	1304	23	610	1068	18	475	831

Acciaio
< 500 N/mm²

M14	14.0	2.00	28	635	1270	23	525	1050	18	410	820
M16	16.0	2.00	28	555	1110	23	460	920	18	360	720
M18	18.0	2.50	28	495	1238	23	405	1013	18	320	800
M20	20.0	2.50	28	445	1113	23	365	913	18	285	713
M22	22.0	2.50	28	405	1013	23	335	838	18	260	650
M24	24.0	3.00	28	370	1110	23	305	915	18	240	720

Acciaio
500 - 850 N/mm²

M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	877
M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
M12	12.0	1.75	25	665	1164	20	530	928	15	400	700

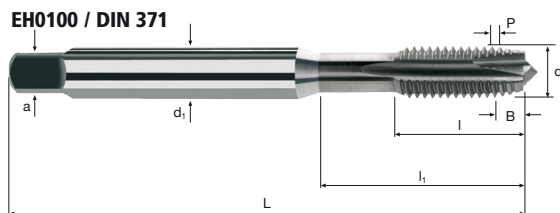
Acciaio
500 - 850 N/mm²

M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
M16	16.0	2.00	25	495	990	20	400	800	15	300	600
M18	18.0	2.50	25	440	1100	20	355	888	15	265	663
M20	20.0	2.50	25	400	1000	20	320	800	15	240	600
M22	22.0	2.50	25	360	900	20	290	725	15	215	538
M24	24.0	3.00	25	330	990	20	265	795	15	200	600

M ISO 2 (6H)

HSS PM/F

Form B



EH0101 / DIN 376



Rm
< 850 N/mm²

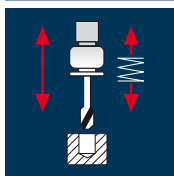
Rm
850-1100 N/mm²

M

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH0100		.034							EH0100	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	1.60	25.70		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	2.05	22.40		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.50	21.20		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.30	21.20		
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.20	21.60		
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	5.00	22.50		
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	6.80	27.20		
.174	M10	1.50	100	22	39.0	10.0	8.0	3	8.50	31.40		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH0101		.240							EH0101	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.20	39.20		
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.00	49.60		
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.00	58.90		
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.50	75.00		
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.50	91.00		
.316	M22	2.50	140	32	50.0	18.0	14.5	4	19.50	109.00		
.320	M24	3.00	160	34	60.0	18.0	14.5	4	21.00	127.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø	P	1.0 x d			1.5 x d			2.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 2	2.0	0.40	25	3980	1592	20	3185	1274	18	2865	1146
M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	18	2290	1031
M 3	3.0	0.50	25	2655	1328	20	2120	1060	18	1910	955
M 4	4.0	0.70	25	1990	1393	20	1590	1113	18	1430	1001
M 5	5.0	0.80	25	1590	1272	20	1275	1020	18	1145	916
M 6	6.0	1.00	25	1325	1325	20	1060	1060	18	955	955
M 8	8.0	1.25	25	995	1244	20	795	994	18	715	894
M10	10.0	1.50	25	795	1193	20	635	953	18	575	863
M12	12.0	1.75	25	665	1164	20	530	928	18	475	831

Acciaio
< 500 N/mm²

M14	14.0	2.00	25	570	1140	20	455	910	18	410	820
M16	16.0	2.00	25	495	990	20	400	800	18	360	720
M18	18.0	2.50	25	440	1100	20	355	888	18	320	800
M20	20.0	2.50	25	400	1000	20	320	800	18	285	713
M22	22.0	2.50	25	360	900	20	290	725	18	260	650
M24	24.0	3.00	25	330	990	20	265	795	18	240	720

Acciaio
500 - 850 N/mm²

M 2	2.0	0.40	16	2545	1018	14	2230	892	12	1910	764
M 2.5	2.5	0.45	16	2035	916	14	1785	803	12	1530	689
M 3	3.0	0.50	16	1700	850	14	1485	743	12	1275	638
M 4	4.0	0.70	16	1275	893	14	1115	781	12	955	669
M 5	5.0	0.80	16	1020	816	14	890	712	12	765	612
M 6	6.0	1.00	16	850	850	14	745	745	12	635	635
M 8	8.0	1.25	16	635	794	14	555	694	12	475	594
M10	10.0	1.50	16	510	765	14	445	668	12	380	570
M12	12.0	1.75	16	425	744	14	370	648	12	320	560

Acciaio
500 - 850 N/mm²

M14	14.0	2.00	16	365	730	14	320	640	12	275	550
M16	16.0	2.00	16	320	640	14	280	560	12	240	480
M18	18.0	2.50	16	285	713	14	250	625	12	210	525
M20	20.0	2.50	16	255	638	14	225	563	12	190	475
M22	22.0	2.50	16	230	575	14	205	513	12	175	438
M24	24.0	3.00	16	210	630	14	185	555	12	160	480

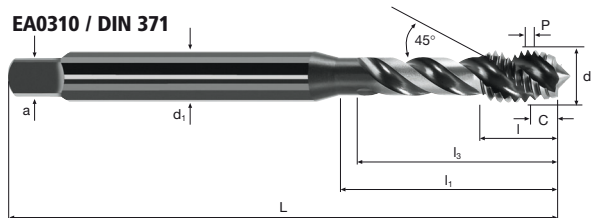


M ISO 2 (6H)

HSS PM/F+

DIN 371/376

X-P Form C



EA0311 / DIN 376



Rm
< 850 N/mm²

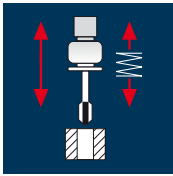
Rm
850-1100 N/mm²

M

Esempio: N° Ordine		Articolo EA0310		Codice-Ø .034								ADSC	
Ø Code	d	P	L	l	l ₁	l ₂	d ₁	a			€		
.034	M 2	0.40	45	8.0	12.5	10.5	2.8	2.1	3	1.60	29.10		
.040	M 2.5	0.45	50	9.0	15.0	13.0	2.8	2.1	3	2.05	25.80		
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	2.50	23.90		
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	3.30	23.90		
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	4.20	24.40		
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	5.00	25.50		
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	6.80	30.70		
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	8.50	36.40		

Esempio: N° Ordine		Articolo EA0311		Codice-Ø .240								ADSC	
Ø Code	d	P	L	l	l ₁	l ₂	d ₁	a			€		
.240	M12	1.75	110	14.0	50.0	48.0	9.0	7.0	3	10.20	46.20		
.244	M14	2.00	110	16.0	58.0	56.0	11.0	9.0	4	12.00	55.40		
.246	M16	2.00	110	16.0	58.0	56.0	12.0	9.0	4	14.00	67.00		
.312	M18	2.50	125	20.0	65.0	63.0	14.0	11.0	4	15.50	83.00		
.314	M20	2.50	140	20.0	72.0	70.0	16.0	12.0	4	17.50	100.00		
.316	M22	2.50	140	20.0	72.0	70.0	18.0	14.5	4	19.50	119.00		
.320	M24	3.00	160	24.0	74.0	72.0	18.0	14.5	4	21.00	140.00		

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]
M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
M12	12.0	1.75	25	665	1164	20	530	928	15	400	700

Acciaio
500 - 850 N/mm²

M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
M16	16.0	2.00	25	495	990	20	400	800	15	300	600
M18	18.0	2.50	25	440	1100	20	355	888	15	265	663
M20	20.0	2.50	25	400	1000	20	320	800	15	240	600
M22	22.0	2.50	25	360	900	20	290	725	15	215	538
M24	24.0	3.00	25	330	990	20	265	795	15	200	600

Acciaio
850 - 1100 N/mm²

M 2	2.0	0.40	20	3185	1274	15	2385	954	12	1910	764
M 2.5	2.5	0.45	20	2545	1145	15	1910	860	12	1530	689
M 3	3.0	0.50	20	2120	1060	15	1590	795	12	1275	638
M 4	4.0	0.70	20	1590	1113	15	1195	837	12	955	669
M 5	5.0	0.80	20	1275	1020	15	955	764	12	765	612
M 6	6.0	1.00	20	1060	1060	15	795	795	12	635	635
M 8	8.0	1.25	20	795	994	15	595	744	12	475	594
M10	10.0	1.50	20	635	953	15	475	713	12	380	570
M12	12.0	1.75	20	530	928	15	400	700	12	320	560

Acciaio
850 - 1100 N/mm²

M14	14.0	2.00	20	455	910	15	340	680	12	275	550
M16	16.0	2.00	20	400	800	15	300	600	12	240	480
M18	18.0	2.50	20	355	888	15	265	663	12	210	525
M20	20.0	2.50	20	320	800	15	240	600	12	190	475
M22	22.0	2.50	20	290	725	15	215	538	12	175	438
M24	24.0	3.00	20	265	795	15	200	600	12	160	480

Materiale

Acciaio
1100 - 1300 N/mm²



M	ø [mm]	P [mm]	1.5 x d			2.0 x d					
			v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]			
M 2	2.0	0.40	7	1115	446	4	635	254			
M 2.5	2.5	0.45	7	890	401	4	510	230			
M 3	3.0	0.50	7	745	373	4	425	213			
M 4	4.0	0.70	7	555	389	4	320	224			
M 5	5.0	0.80	7	445	356	4	255	204			
M 6	6.0	1.00	7	370	370	4	210	210			
M 8	8.0	1.25	7	280	350	4	160	200			
M10	10.0	1.50	7	225	338	4	125	188			
M12	12.0	1.75	7	185	324	4	105	184			

Acciaio
1100 - 1300 N/mm²

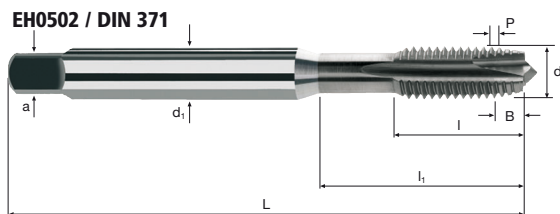


M14	14.0	2.00	7	160	320	4	90	180			
M16	16.0	2.00	7	140	280	4	80	160			
M18	18.0	2.50	7	125	313	4	70	175			
M20	20.0	2.50	7	110	275	4	65	163			
M22	22.0	2.50	7	100	250	4	60	150			
M24	24.0	3.00	7	95	285	4	55	165			

M ISO 2 (6H)

HSS PM/F

Form B



EH0503 / DIN 376



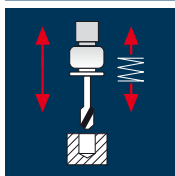
Rm 850-1100 N/mm ²	Rm 1100-1300 N/mm ²	Rm 500-850 N/mm ²
---	--	--

M

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH0502		.034							EH0502	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	1.60	34.10		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	2.05	29.70		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.50	28.10		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.30	28.10		
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.20	28.60		
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	5.00	29.90		
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	6.80	36.10		
.174	M10	1.50	100	22	39.0	10.0	8.0	3	8.50	41.70		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH0503		.240							EH0503	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.20	52.10		
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.00	66.00		
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.00	78.00		
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.50	100.00		
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.50	121.00		
.316	M22	2.50	140	32	50.0	18.0	14.5	4	19.50	144.00		
.320	M24	3.00	160	34	60.0	18.0	14.5	4	21.00	168.00		

Applicazione



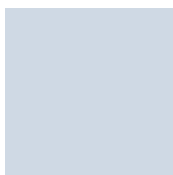
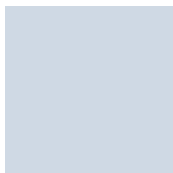
Materiale

Acciaio
500 - 850 N/mm²

M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [100%]	v _f [100%]	v _c [m/min]	n [100%]	v _f [100%]
M 2	2.0	0.40	32	5095	2038	28	4455	1782	22	3500	1400
M 2.5	2.5	0.45	32	4075	1834	28	3565	1604	22	2800	1260
M 3	3.0	0.50	32	3395	1698	28	2970	1485	22	2335	1168
M 4	4.0	0.70	32	2545	1782	28	2230	1561	22	1750	1225
M 5	5.0	0.80	32	2035	1628	28	1785	1428	22	1400	1120
M 6	6.0	1.00	32	1700	1700	28	1485	1485	22	1165	1165
M 8	8.0	1.25	32	1275	1594	28	1115	1394	22	875	1094
M10	10.0	1.50	32	1020	1530	28	890	1335	22	700	1050

Acciaio
850 - 1100 N/mm²

M 2	2.0	0.40	20	3185	1274	16	2545	1018	10	1590	636
M 2.5	2.5	0.45	20	2545	1145	16	2035	916	10	1275	574
M 3	3.0	0.50	20	2120	1060	16	1700	850	10	1060	530
M 4	4.0	0.70	20	1590	1113	16	1275	893	10	795	557
M 5	5.0	0.80	20	1275	1020	16	1020	816	10	635	508
M 6	6.0	1.00	20	1060	1060	16	850	850	10	530	530
M 8	8.0	1.25	20	795	994	16	635	794	10	400	500
M10	10.0	1.50	20	635	953	16	510	765	10	320	480



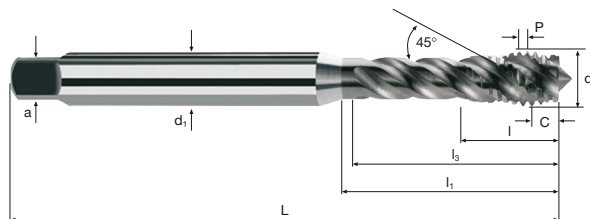
M ISO 2
(6H)

HSS
PM/F

DIN
371

X-P
Form C

Oil



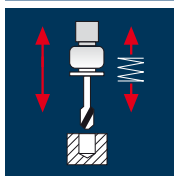
Rm
850-1100 N/mm²

Rm
500-850 N/mm²

M

Esempio: N° Ordine											TiCN	
Articolo EH0570 Codice-ø .034											EH0570	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.034	M 2	0.40	45	8	12.5	10.5	2.8	2.1	3	1.60	38.60	
.040	M 2.5	0.45	50	9	15.0	13.0	2.8	2.1	3	2.05	34.30	
.044	M 3	0.50	56	5	18.0	16.0	3.5	2.7	3	2.50	31.70	
.058	M 4	0.70	63	7	21.0	19.0	4.5	3.4	3	3.30	31.70	
.084	M 5	0.80	70	8	25.0	23.0	6.0	4.9	3	4.20	32.30	
.088	M 6	1.00	80	10	30.0	28.0	6.0	4.9	3	5.00	33.80	
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	6.80	40.80	
.173	M10	1.50	100	15	39.0	37.0	10.0	8.0	3	8.50	48.30	
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	4	8.50	48.30	
Dimensioni superiori vedere articolo E0571, pagina 169												

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]
M12	12.0	1.75	32	850	1488	28	745	1304	22	585	1024
M14	14.0	2.00	32	730	1460	28	635	1270	22	500	1000
M16	16.0	2.00	32	635	1270	28	555	1110	22	440	880
M18	18.0	2.50	32	565	1413	28	495	1238	22	390	975
M20	20.0	2.50	32	510	1275	28	445	1113	22	350	875
M22	22.0	2.50	32	465	1163	28	405	1013	22	320	800
M24	24.0	3.00	32	425	1275	28	370	1110	22	290	870
M27	27.0	3.00	32	375	1125	28	330	990	22	260	780
M30	30.0	3.50	32	340	1190	28	295	1033	22	235	823

Acciaio
500 - 850 N/mm²

M33	33.0	3.50	32	310	1085	28	270	945	22	210	735
M36	36.0	4.00	32	285	1140	28	250	1000	22	195	780
M39	39.0	4.00	32	260	1040	28	230	920	22	180	720
M42	42.0	4.50	32	245	1103	28	210	945	22	165	743

Acciaio
850 - 1100 N/mm²

M12	12.0	1.75	20	530	928	16	425	744	10	265	464
M14	14.0	2.00	20	455	910	16	365	730	10	225	450
M16	16.0	2.00	20	400	800	16	320	640	10	200	400
M18	18.0	2.50	20	355	888	16	285	713	10	175	438
M20	20.0	2.50	20	320	800	16	255	638	10	160	400
M22	22.0	2.50	20	290	725	16	230	575	10	145	363
M24	24.0	3.00	20	265	795	16	210	630	10	135	405
M27	27.0	3.00	20	235	705	16	190	570	10	120	360
M30	30.0	3.50	20	210	735	16	170	595	10	105	368

Acciaio
850 - 1100 N/mm²

M33	33.0	3.50	20	195	683	16	155	543	10	95	333
M36	36.0	4.00	20	175	700	16	140	560	10	90	360
M39	39.0	4.00	20	165	660	16	130	520	10	80	320
M42	42.0	4.50	20	150	675	16	120	540	10	75	338

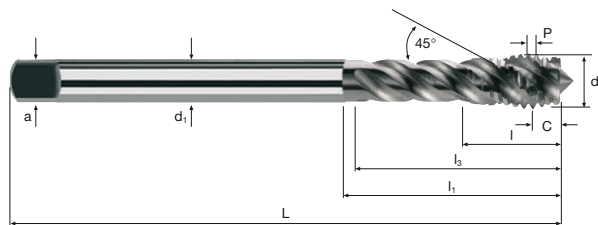
M ISO 2
(6H)

HSS
PM/F

DIN
376

X - P
Form C

Oil



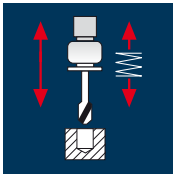
Rm
850-1100 N/mm²

Rm
500-850 N/mm²

M

Esempio: N° Ordine EH0571 .240											TiCN	
											EH0571	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.240	M12	1.75	110	18	50	48	9.0	7.0	4	10.20	61.00	
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.00	74.00	
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.00	89.00	
.312	M18	2.50	125	25	65	63	14.0	11.0	4	15.50	110.00	
.314	M20	2.50	140	25	72	70	16.0	12.0	4	17.50	133.00	
.316	M22	2.50	140	25	72	70	18.0	14.5	5	19.50	158.00	
.320	M24	3.00	160	30	74	72	18.0	14.5	5	21.00	185.00	
.322	M27	3.00	160	30	84	82	20.0	16.0	5	24.00	227.00	
.374	M30	3.50	180	35	92	90	22.0	18.0	5	26.50	268.00	
.376	M33	3.50	180	35	100	98	25.0	20.0	6	29.50	339.00	
.378	M36	4.00	200	40	101	99	28.0	22.0	6	32.00	429.00	
.380	M39	4.00	200	40	101	99	32.0	24.0	6	35.00	551.00	
.382	M42	4.50	200	45	106	104	32.0	24.0	6	37.50	687.00	

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio
850 - 1100 N/mm²

M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [100%]	v _f [100%]	v _c [m/min]	n [100%]	v _f [100%]
M 4	4.0	0.70	32	2545	1782	28	2230	1561	22	1750	1225
M 5	5.0	0.80	32	2035	1628	28	1785	1428	22	1400	1120
M 6	6.0	1.00	32	1700	1700	28	1485	1485	22	1165	1165
M 8	8.0	1.25	32	1275	1594	28	1115	1394	22	875	1094
M10	10.0	1.50	32	1020	1530	28	890	1335	22	700	1050
M12	12.0	1.75	32	850	1488	28	745	1304	22	585	1024
M14	14.0	2.00	32	730	1460	28	635	1270	22	500	1000
M16	16.0	2.00	32	635	1270	28	555	1110	22	440	880
M18	18.0	2.50	32	565	1413	28	495	1238	22	390	975
M20	20.0	2.50	32	510	1275	28	445	1113	22	350	875
M22	22.0	2.50	32	465	1163	28	405	1013	22	320	800
M24	24.0	3.00	32	425	1275	28	370	1110	22	290	870
M 4	4.0	0.70	20	1590	1113	16	1275	893	10	795	557
M 5	5.0	0.80	20	1275	1020	16	1020	816	10	635	508
M 6	6.0	1.00	20	1060	1060	16	850	850	10	530	530
M 8	8.0	1.25	20	795	994	16	635	794	10	400	500
M10	10.0	1.50	20	635	953	16	510	765	10	320	480
M12	12.0	1.75	20	530	928	16	425	744	10	265	464
M14	14.0	2.00	20	455	910	16	365	730	10	225	450
M16	16.0	2.00	20	400	800	16	320	640	10	200	400
M18	18.0	2.50	20	355	888	16	285	713	10	175	438
M20	20.0	2.50	20	320	800	16	255	638	10	160	400
M22	22.0	2.50	20	290	725	16	230	575	10	145	363
M24	24.0	3.00	20	265	795	16	210	630	10	135	405

Maschi x-tap

Incool

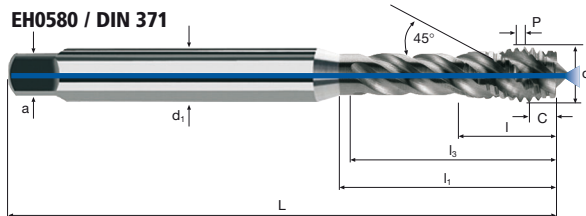
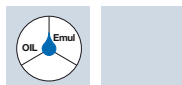
11

M ISO 2 (6H)

60°
HSS PM/F

DIN 371/376

X-P
Form C



EH0581 / DIN 376



Rm
850-1100 N/mm²

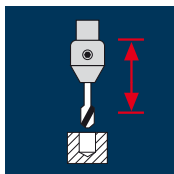
Rm
500-850 N/mm²

M

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH0580		.058								EH0580	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.058	M 4	0.70	63	7	21	19	4.5	3.4	3	3.30	44.40		
.084	M 5	0.80	70	8	25	23	6.0	4.9	3	4.20	45.30		
.088	M 6	1.00	80	10	30	28	6.0	4.9	3	5.00	47.30		
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.80	57.10		
.174	M10	1.50	100	15	39	37	10.0	8.0	4	8.50	68.00		

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH0581		.240								EH0581	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.240	M12	1.75	110	18	50	48	9.0	7.0	4	10.20	86.00		
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.00	103.00		
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.00	124.00		
.312	M18	2.50	125	25	65	63	14.0	11.0	4	15.50	154.00		
.314	M20	2.50	140	25	72	70	16.0	12.0	4	17.50	187.00		
.316	M22	2.50	140	25	72	70	18.0	14.5	5	19.50	221.00		
.320	M24	3.00	160	30	74	72	18.0	14.5	5	21.00	259.00		

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio
850 - 1100 N/mm²

M	ø	P	v _c n		v _c n		v _c n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]
[mm]	[mm]	[mm]						
M 3	3.0	0.50	34	3610	30	3185	24	2545
M 4	4.0	0.70	34	2705	30	2385	24	1910
M 5	5.0	0.80	34	2165	30	1910	24	1530
M 6	6.0	1.00	34	1805	30	1590	24	1275
M 8	8.0	1.25	34	1355	30	1195	24	955
M10	10.0	1.50	34	1080	30	955	24	765
M12	12.0	1.75	34	900	30	795	24	635
M14	14.0	2.00	34	775	30	680	24	545
M16	16.0	2.00	34	675	30	595	24	475
M18	18.0	2.50	34	600	30	530	24	425
M20	20.0	2.50	34	540	30	475	24	380
M22	22.0	2.50	34	490	30	435	24	345
M24	24.0	3.00	34	450	30	400	24	320
M 3	3.0	0.50	22	2335	18	1910	12	1275
M 4	4.0	0.70	22	1750	18	1430	12	955
M 5	5.0	0.80	22	1400	18	1145	12	765
M 6	6.0	1.00	22	1165	18	955	12	635
M 8	8.0	1.25	22	875	18	715	12	475
M10	10.0	1.50	22	700	18	575	12	380
M12	12.0	1.75	22	585	18	475	12	320
M14	14.0	2.00	22	500	18	410	12	275
M16	16.0	2.00	22	440	18	360	12	240
M18	18.0	2.50	22	390	18	320	12	210
M20	20.0	2.50	22	350	18	285	12	190
M22	22.0	2.50	22	320	18	260	12	175
M24	24.0	3.00	22	290	18	240	12	160

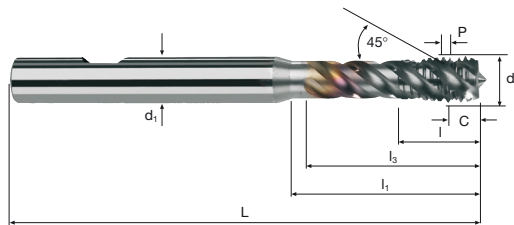
M ISO 2
(6H)

HSS
PM/F

DIN
1835B
ISO
3338

X-P
Form C

Oil



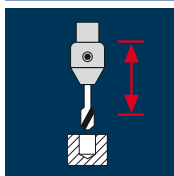
Rm
850-1100 N/mm²

Rm
500-850 N/mm²

M

Esempio: N° Ordine										TiCN	
										EH0590	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁ h6			€	
.044	M 3	0.50	63	5	18	16	6	3	2.50	31.70	
.058	M 4	0.70	66	7	21	19	6	3	3.30	31.70	
.084	M 5	0.80	70	8	25	23	6	3	4.20	32.30	
.088	M 6	1.00	80	10	30	28	6	3	5.00	33.80	
.160	M 8	1.25	90	13	35	33	8	3	6.80	40.80	
.174	M10	1.50	100	15	39	37	10	4	8.50	48.30	
.240	M12	1.75	110	18	45	43	12	4	10.20	61.00	
.244	M14	2.00	110	20	46	44	16	4	12.00	74.00	
.246	M16	2.00	110	20	50	48	16	4	14.00	89.00	
.312	M18	2.50	125	25	60	58	16	4	15.50	110.00	
.314	M20	2.50	140	25	64	62	16	4	17.50	133.00	
.316	M22	2.50	140	25	64	62	20	5	19.50	158.00	
.320	M24	3.00	160	30	74	72	20	5	21.00	185.00	

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio
850 - 1100 N/mm²

M	ø	P	v _c		n		v _c		n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]		
M 4	4.0	0.70	28	2230	24	1910	18	1430		
M 5	5.0	0.80	28	1785	24	1530	18	1145		
M 6	6.0	1.00	28	1485	24	1275	18	955		
M 8	8.0	1.25	28	1115	24	955	18	715		
M10	10.0	1.50	28	890	24	765	18	575		
M12	12.0	1.75	28	745	24	635	18	475		
M14	14.0	2.00	28	635	24	545	18	410		
M16	16.0	2.00	28	555	24	475	18	360		
M18	18.0	2.50	28	495	24	425	18	320		
M20	20.0	2.50	28	445	24	380	18	285		
M22	22.0	2.50	28	405	24	345	18	260		
M24	24.0	3.00	28	370	24	320	18	240		
M 4	4.0	0.70	22	1750	18	1430	12	955		
M 5	5.0	0.80	22	1400	18	1145	12	765		
M 6	6.0	1.00	22	1165	18	955	12	635		
M 8	8.0	1.25	22	875	18	715	12	475		
M10	10.0	1.50	22	700	18	575	12	380		
M12	12.0	1.75	22	585	18	475	12	320		
M14	14.0	2.00	22	500	18	410	12	275		
M16	16.0	2.00	22	440	18	360	12	240		
M18	18.0	2.50	22	390	18	320	12	210		
M20	20.0	2.50	22	350	18	285	12	190		
M22	22.0	2.50	22	320	18	260	12	175		
M24	24.0	3.00	22	290	18	240	12	160		

Maschi x-tap-R

Incool

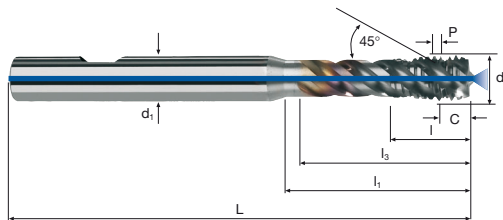
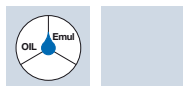


M ISO 2 (6H)

60° **HSS PM/F**

DIN 1835B ISO 3338

X-P Form C



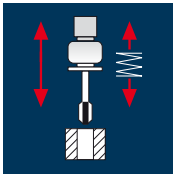
Rm
850-1100 N/mm²

Rm
500-850 N/mm²

M

Esempio: N° Ordine										TiCN	
										EH0591	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁ h6			€	
.058	M 4	0.70	66	7	21	19	6	3	3.30	44.40	
.084	M 5	0.80	70	8	25	23	6	3	4.20	45.30	
.088	M 6	1.00	80	10	30	28	6	3	5.00	47.30	
.160	M 8	1.25	90	13	35	33	8	3	6.80	57.10	
.174	M10	1.50	100	15	39	37	10	4	8.50	68.00	
.240	M12	1.75	110	18	45	43	12	4	10.20	86.00	
.244	M14	2.00	110	20	46	44	16	4	12.00	103.00	
.246	M16	2.00	110	20	50	48	16	4	14.00	124.00	
.312	M18	2.50	125	25	60	58	16	4	15.50	154.00	
.314	M20	2.50	140	25	64	62	16	4	17.50	187.00	
.316	M22	2.50	140	25	64	62	20	5	19.50	221.00	
.320	M24	3.00	160	30	74	72	20	5	21.00	259.00	

Applicazione



Materiale

Acciaio
1100 - 1300 N/mm²



Acciaio
1100 - 1300 N/mm²



Acciaio
1300 - 1500 N/mm²



Acciaio
1300 - 1500 N/mm²

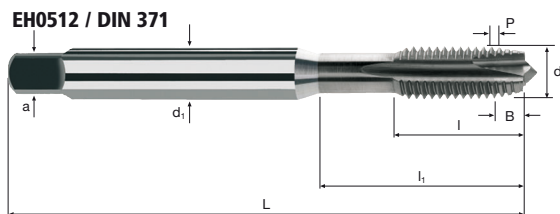


M	ø	P	1.0 x d			1.5 x d			2.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 2	2.0	0.40	10	1590	636	8	1275	510	5	795	318
M 2.5	2.5	0.45	10	1275	574	8	1020	459	5	635	286
M 3	3.0	0.50	10	1060	530	8	850	425	5	530	265
M 4	4.0	0.70	10	795	557	8	635	445	5	400	280
M 5	5.0	0.80	10	635	508	8	510	408	5	320	256
M 6	6.0	1.00	10	530	530	8	425	425	5	265	265
M 8	8.0	1.25	10	400	500	8	320	400	5	200	250
M10	10.0	1.50	10	320	480	8	255	383	5	160	240
M12	12.0	1.75	10	265	464	8	210	368	5	135	236
M14	14.0	2.00	10	225	450	8	180	360	5	115	230
M16	16.0	2.00	10	200	400	8	160	320	5	100	200
M18	18.0	2.50	10	175	438	8	140	350	5	90	225
M20	20.0	2.50	10	160	400	8	125	313	5	80	200
M22	22.0	2.50	10	145	363	8	115	288	5	70	175
M24	24.0	3.00	10	135	405	8	105	315	5	65	195
M 2	2.0	0.40	6	955	382	4	635	254	3	475	190
M 2.5	2.5	0.45	6	765	344	4	510	230	3	380	171
M 3	3.0	0.50	6	635	318	4	425	213	3	320	160
M 4	4.0	0.70	6	475	333	4	320	224	3	240	168
M 5	5.0	0.80	6	380	304	4	255	204	3	190	152
M 6	6.0	1.00	6	320	320	4	210	210	3	160	160
M 8	8.0	1.25	6	240	300	4	160	200	3	120	150
M10	10.0	1.50	6	190	285	4	125	188	3	95	143
M12	12.0	1.75	6	160	280	4	105	184	3	80	140
M14	14.0	2.00	6	135	270	4	90	180	3	70	140
M16	16.0	2.00	6	120	240	4	80	160	3	60	120
M18	18.0	2.50	6	105	263	4	70	175	3	55	138
M20	20.0	2.50	6	95	238	4	65	163	3	50	125
M22	22.0	2.50	6	85	213	4	60	150	3	45	113
M24	24.0	3.00	6	80	240	4	55	165	3	40	120

M ISO 2 (6H)

HSS PM/F

X-P Form B



EH0513 / DIN 376



Rm
1100-1500 N/mm²

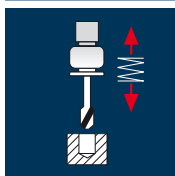
M

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH0512		.034							EH0512	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	1.70 *	34.10		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	2.10	29.70		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.60 *	28.10		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.40	28.10		
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.30	28.60		
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	5.10	29.90		
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	6.90	36.10		
.174	M10	1.50	100	22	39.0	10.0	8.0	3	8.60	41.70		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH0513		.240							EH0513	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.40	52.10		
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.20	66.00		
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.20	78.00		
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.70	100.00		
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.70	121.00		
.316	M22	2.50	140	32	50.0	18.0	14.5	4	19.70	144.00		
.320	M24	3.00	160	34	60.0	18.0	14.5	4	21.20	168.00		

* La dimensione data è fuori norma

Applicazione



Materiale

Acciaio
1100 - 1300 N/mm²



Acciaio
1100 - 1300 N/mm²



Acciaio
1300 - 1500 N/mm²



Acciaio
1300 - 1500 N/mm²

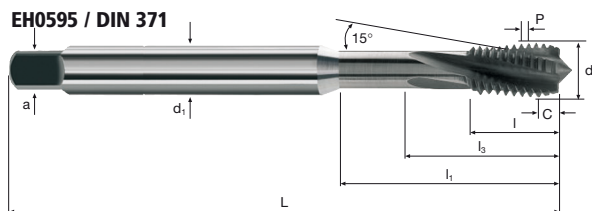


M	ø [mm]	P [mm]	v _c			n			v _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]			
M 3	3.0	0.50	6	635	318	5	530	265			
M 4	4.0	0.70	6	475	333	5	400	280			
M 5	5.0	0.80	6	380	304	5	320	256			
M 6	6.0	1.00	6	320	320	5	265	265			
M 8	8.0	1.25	6	240	300	5	200	250			
M10	10.0	1.50	6	190	285	5	160	240			
M12	12.0	1.75	6	160	280	5	135	236			
M14	14.0	2.00	6	135	270	5	115	230			
M16	16.0	2.00	6	120	240	5	100	200			
M18	18.0	2.50	6	105	263	5	90	225			
M20	20.0	2.50	6	95	238	5	80	200			
M22	22.0	2.50	6	85	213	5	70	175			
M24	24.0	3.00	6	80	240	5	65	195			
M 3	3.0	0.50	5	530	265	4	425	213			
M 4	4.0	0.70	5	400	280	4	320	224			
M 5	5.0	0.80	5	320	256	4	255	204			
M 6	6.0	1.00	5	265	265	4	210	210			
M 8	8.0	1.25	5	200	250	4	160	200			
M10	10.0	1.50	5	160	240	4	125	188			
M12	12.0	1.75	5	135	236	4	105	184			
M14	14.0	2.00	5	115	230	4	90	180			
M16	16.0	2.00	5	100	200	4	80	160			
M18	18.0	2.50	5	90	225	4	70	175			
M20	20.0	2.50	5	80	200	4	65	163			
M22	22.0	2.50	5	70	175	4	60	150			
M24	24.0	3.00	5	65	195	4	55	165			

M ISO 2 (6H)

HSS PM/F

Form C



Rm
1100-1500 N/mm²

M

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH0595		.044								EH0595	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€		
.044	M 3	0.50	56	5	18	16	3.5	2.7	3	2.60*	31.70		
.058	M 4	0.70	63	7	21	19	4.5	3.4	3	3.40	31.70		
.084	M 5	0.80	70	8	25	23	6.0	4.9	3	4.30	32.30		
.088	M 6	1.00	80	10	30	28	6.0	4.9	3	5.10	33.80		
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.90	40.80		
.174	M10	1.50	100	15	39	37	10.0	8.0	4	8.60	48.30		

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH0596		.240								EH0596	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€		
.240	M12	1.75	110	18	50	48	9.0	7.0	4	10.40	61.00		
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.20	74.00		
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.20	89.00		
.312	M18	2.50	125	25	65	63	14.0	11.0	4	15.70	110.00		
.314	M20	2.50	140	25	72	70	16.0	12.0	4	17.70	133.00		
.316	M22	2.50	140	25	72	70	18.0	14.5	5	19.70	158.00		
.320	M24	3.00	160	30	74	72	18.0	14.5	5	21.20	185.00		

* La dimensione data è fuori norma

Applicazione

Materiale

Acciaio da utensile temperato
48 - 52 HRC

M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[100%]	[m/min]	[100%]	[m/min]	[100%]	[m/min]	[100%]	
M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
M10	10.0	1.50	8	255	383	6	190	285	4	125	188
M12	12.0	1.75	8	210	368	6	160	280	4	105	184
M14	14.0	2.00	8	180	360	6	135	270	4	90	180
M16	16.0	2.00	8	160	320	6	120	240	4	80	160

Acciaio da utensile temperato
52 - 56 HRC

M 4	4.0	0.70	6	475	333	4	320	224	3	240	168
M 5	5.0	0.80	6	380	304	4	255	204	3	190	152
M 6	6.0	1.00	6	320	320	4	210	210	3	160	160
M 8	8.0	1.25	6	240	300	4	160	200	3	120	150
M10	10.0	1.50	6	190	285	4	125	188	3	95	143
M12	12.0	1.75	6	160	280	4	105	184	3	80	140
M14	14.0	2.00	6	135	270	4	90	180	3	70	140
M16	16.0	2.00	6	120	240	4	80	160	3	60	120

Acciaio da utensile temperato
56 - 60 HRC

M 4	4.0	0.70	4	320	224	2	160	112			
M 5	5.0	0.80	4	255	204	2	125	100			
M 6	6.0	1.00	4	210	210	2	105	105			
M 8	8.0	1.25	4	160	200	2	80	100			
M10	10.0	1.50	4	125	188	2	65	98			
M12	12.0	1.75	4	105	184	2	55	96			
M14	14.0	2.00	4	90	180	2	45	90			
M16	16.0	2.00	4	80	160	2	40	80			

Acciaio da utensile temperato
> 60 HRC

M 4	4.0	0.70	2	160	112	1.5	120	84			
M 5	5.0	0.80	2	125	100	1.5	95	76			
M 6	6.0	1.00	2	105	105	1.5	80	80			
M 8	8.0	1.25	2	80	100	1.5	60	75			
M10	10.0	1.50	2	65	98	1.5	50	75			
M12	12.0	1.75	2	55	96	1.5	40	70			
M14	14.0	2.00	2	45	90	1.5	35	70			
M16	16.0	2.00	2	40	80	1.5	30	60			

Applicazione

Materiale

Acciaio da utensile temperato
48 - 52 HRC

M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[100%]	[m/min]	[100%]	[m/min]	[100%]	[m/min]	[100%]	
M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
M10	10.0	1.50	8	255	383	6	190	285	4	125	188
M12	12.0	1.75	8	210	368	6	160	280	4	105	184
M14	14.0	2.00	8	180	360	6	135	270	4	90	180
M16	16.0	2.00	8	160	320	6	120	240	4	80	160

Acciaio da utensile temperato
52 - 56 HRC

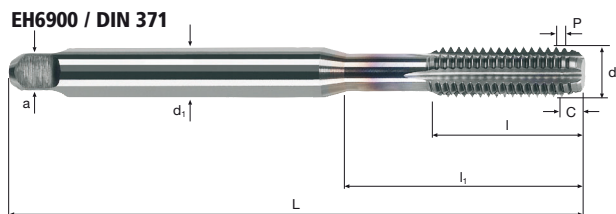
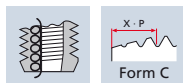
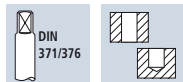
M 4	4.0	0.70	6	475	333	4	320	224	3	240	168
M 5	5.0	0.80	6	380	304	4	255	204	3	190	152
M 6	6.0	1.00	6	320	320	4	210	210	3	160	160
M 8	8.0	1.25	6	240	300	4	160	200	3	120	150
M10	10.0	1.50	6	190	285	4	125	188	3	95	143
M12	12.0	1.75	6	160	280	4	105	184	3	80	140
M14	14.0	2.00	6	135	270	4	90	180	3	70	140
M16	16.0	2.00	6	120	240	4	80	160	3	60	120

Acciaio da utensile temperato
56 - 60 HRC

M 4	4.0	0.70	4	320	224	2	160	112			
M 5	5.0	0.80	4	255	204	2	125	100			
M 6	6.0	1.00	4	210	210	2	105	105			
M 8	8.0	1.25	4	160	200	2	80	100			
M10	10.0	1.50	4	125	188	2	65	98			
M12	12.0	1.75	4	105	184	2	55	96			
M14	14.0	2.00	4	90	180	2	45	90			
M16	16.0	2.00	4	80	160	2	40	80			

Acciaio da utensile temperato
> 60 HRC

M 4	4.0	0.70	2	160	112	1.5	120	84			
M 5	5.0	0.80	2	125	100	1.5	95	76			
M 6	6.0	1.00	2	105	105	1.5	80	80			
M 8	8.0	1.25	2	80	100	1.5	60	75			
M10	10.0	1.50	2	65	98	1.5	50	75			
M12	12.0	1.75	2	55	96	1.5	40	70			
M14	14.0	2.00	2	45	90	1.5	35	70			
M16	16.0	2.00	2	40	80	1.5	30	60			



EH6901 / DIN 376

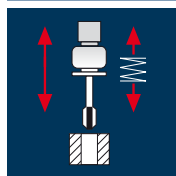


M

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH6900		.058							EH6900	
Ø Code	d	P	L	l	li	d1	a			€		
.058	M 4	0.70	63	13	21	4.5	3.4	4	3.40	151.00		
.084	M 5	0.80	70	15	25	6.0	4.9	4	4.30	154.00		
.088	M 6	1.00	80	17	30	6.0	4.9	4	5.10	161.00		
.160	M 8	1.25	90	20	35	8.0	6.2	5	6.90	195.00		
.174	M10	1.50	100	22	39	10.0	8.0	5	8.60	239.00		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH6901		.240							EH6901	
Ø Code	d	P	L	l	li	d1	a			€		
.240	M12	1.75	110	24	40	9.0	7.0	5	10.40	294.00		
.244	M14	2.00	110	26	40	11.0	9.0	5	12.20	353.00		
.246	M16	2.00	110	27	40	12.0	9.0	5	14.20	416.00		

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]
M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
M 3	3.0	0.50	12	1275	638	10	1060	530	8	850	425
M 4	4.0	0.70	12	955	669	10	795	557	8	635	445
M 5	5.0	0.80	12	765	612	10	635	508	8	510	408
M 6	6.0	1.00	12	635	635	10	530	530	8	425	425
M 8	8.0	1.25	12	475	594	10	400	500	8	320	400
M10	10.0	1.50	12	380	570	10	320	480	8	255	383
M12	12.0	1.75	12	320	560	10	265	464	8	210	368
M14	14.0	2.00	12	275	550	10	225	450	8	180	360
M16	16.0	2.00	12	240	480	10	200	400	8	160	320
M18	18.0	2.50	12	210	525	10	175	438	8	140	350
M20	20.0	2.50	12	190	475	10	160	400	8	125	313
M22	22.0	2.50	12	175	438	10	145	363	8	115	288
M24	24.0	3.00	12	160	480	10	135	405	8	105	315
M 2	2.0	0.40	7	1115	446	5	795	318	4	635	254
M 2.5	2.5	0.45	7	890	401	5	635	286	4	510	230
M 3	3.0	0.50	7	745	373	5	530	265	4	425	213
M 4	4.0	0.70	7	555	389	5	400	280	4	320	224
M 5	5.0	0.80	7	445	356	5	320	256	4	255	204
M 6	6.0	1.00	7	370	370	5	265	265	4	210	210
M 8	8.0	1.25	7	280	350	5	200	250	4	160	200
M10	10.0	1.50	7	225	338	5	160	240	4	125	188
M12	12.0	1.75	7	185	324	5	135	236	4	105	184
M14	14.0	2.00	7	160	320	5	115	230	4	90	180
M16	16.0	2.00	7	140	280	5	100	200	4	80	160
M18	18.0	2.50	7	125	313	5	90	225	4	70	175
M20	20.0	2.50	7	110	275	5	80	200	4	65	163
M22	22.0	2.50	7	100	250	5	70	175	4	60	150
M24	24.0	3.00	7	95	285	5	65	195	4	55	165

Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [m·min ⁻¹]	n [min ⁻¹]	v _f [100%]
M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
M 3	3.0	0.50	8	850	425	6	635	318	5	530	265
M 4	4.0	0.70	8	635	445	6	475	333	5	400	280
M 5	5.0	0.80	8	510	408	6	380	304	5	320	256
M 6	6.0	1.00	8	425	425	6	320	320	5	265	265
M 8	8.0	1.25	8	320	400	6	240	300	5	200	250
M10	10.0	1.50	8	255	383	6	190	285	5	160	240
M12	12.0	1.75	8	210	368	6	160	280	5	135	236
M14	14.0	2.00	8	180	360	6	135	270	5	115	230
M16	16.0	2.00	8	160	320	6	120	240	5	100	200
M18	18.0	2.50	8	140	350	6	105	263	5	90	225
M20	20.0	2.50	8	125	313	6	95	238	5	80	200
M22	22.0	2.50	8	115	288	6	85	213	5	70	175
M24	24.0	3.00	8	105	315	6	80	240	5	65	195
M 2	2.0	0.40	5	795	318	4	635	254	3	475	190
M 2.5	2.5	0.45	5	635	286	4	510	230	3	380	171
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143
M12	12.0	1.75	5	135	236	4	105	184	3	80	140
M14	14.0	2.00	5	115	230	4	90	180	3	70	140
M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M18	18.0	2.50	5	90	225	4	70	175	3	55	138
M20	20.0	2.50	5	80	200	4	65	163	3	50	125
M22	22.0	2.50	5	70	175	4	60	150	3	45	113
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

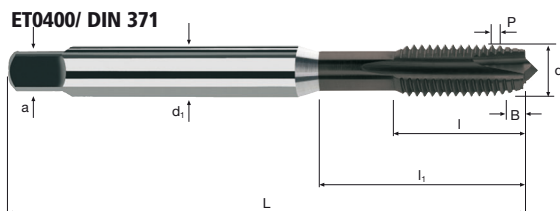
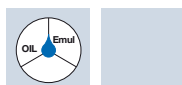


M ISO 2 (6H)

HSS PM/F

DIN 371/376

Form B



ET0401/ DIN 376



Inox
Stainless

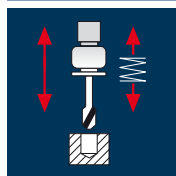
M

Esempio: N° Ordine										TRIBO	
Articolo ET0400 Codice-Ø .034										ET0400	
Ø Code	d	P	L	l	l1	d1	a			€	
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	1.70 *	34.60	
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	2.10	30.10	
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.60 *	28.50	
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.40	28.50	
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.30	29.00	
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	5.10	30.40	
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	6.90	36.60	
.174	M10	1.50	100	22	39.0	10.0	8.0	3	8.60	42.30	

Esempio: N° Ordine										TRIBO	
Articolo ET0401 Codice-Ø .240										ET0401	
Ø Code	d	P	L	l	l1	d1	a			€	
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.40	52.80	
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.20	67.00	
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.20	79.00	
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.70	101.00	
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.70	123.00	
.316	M22	2.50	140	32	50.0	18.0	14.5	4	19.70	146.00	
.320	M24	3.00	160	34	60.0	18.0	14.5	4	21.20	171.00	

* La dimensione data è fuori norma

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]
M 2	2.0	0.40	10	1590	636	8	1275	510	6	955	382
M 2.5	2.5	0.45	10	1275	574	8	1020	459	6	765	344
M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
M10	10.0	1.50	10	320	480	8	255	383	6	190	285
M12	12.0	1.75	10	265	464	8	210	368	6	160	280
M14	14.0	2.00	10	225	450	8	180	360	6	135	270
M16	16.0	2.00	10	200	400	8	160	320	6	120	240
M18	18.0	2.50	10	175	438	8	140	350	6	105	263
M20	20.0	2.50	10	160	400	8	125	313	6	95	238
M22	22.0	2.50	10	145	363	8	115	288	6	85	213
M24	24.0	3.00	10	135	405	8	105	315	6	80	240
M 2	2.0	0.40	5	795	318	4	635	254	3	475	190
M 2.5	2.5	0.45	5	635	286	4	510	230	3	380	171
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143
M12	12.0	1.75	5	135	236	4	105	184	3	80	140
M14	14.0	2.00	5	115	230	4	90	180	3	70	140
M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M18	18.0	2.50	5	90	225	4	70	175	3	55	138
M20	20.0	2.50	5	80	200	4	65	163	3	50	125
M22	22.0	2.50	5	70	175	4	60	150	3	45	113
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]




M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]
M 2	2.0	0.40	6	955	382	5	795	318	4	635	254
M 2.5	2.5	0.45	6	765	344	5	635	286	4	510	230
M 3	3.0	0.50	6	635	318	5	530	265	4	425	213
M 4	4.0	0.70	6	475	333	5	400	280	4	320	224
M 5	5.0	0.80	6	380	304	5	320	256	4	255	204
M 6	6.0	1.00	6	320	320	5	265	265	4	210	210
M 8	8.0	1.25	6	240	300	5	200	250	4	160	200
M10	10.0	1.50	6	190	285	5	160	240	4	125	188
M12	12.0	1.75	6	160	280	5	135	236	4	105	184
M14	14.0	2.00	6	135	270	5	115	230	4	90	180
M16	16.0	2.00	6	120	240	5	100	200	4	80	160
M18	18.0	2.50	6	105	263	5	90	225	4	70	175
M20	20.0	2.50	6	95	238	5	80	200	4	65	163
M22	22.0	2.50	6	85	213	5	70	175	4	60	150
M24	24.0	3.00	6	80	240	5	65	195	4	55	165
M 2	2.0	0.40	4	635	254	3	475	190			
M 2.5	2.5	0.45	4	510	230	3	380	171			
M 3	3.0	0.50	4	425	213	3	320	160			
M 4	4.0	0.70	4	320	224	3	240	168			
M 5	5.0	0.80	4	255	204	3	190	152			
M 6	6.0	1.00	4	210	210	3	160	160			
M 8	8.0	1.25	4	160	200	3	120	150			
M10	10.0	1.50	4	125	188	3	95	143			
M12	12.0	1.75	4	105	184	3	80	140			
M14	14.0	2.00	4	90	180	3	70	140			
M16	16.0	2.00	4	80	160	3	60	120			
M18	18.0	2.50	4	70	175	3	55	138			
M20	20.0	2.50	4	65	163	3	50	125			
M22	22.0	2.50	4	60	150	3	45	113			
M24	24.0	3.00	4	55	165	3	40	120			

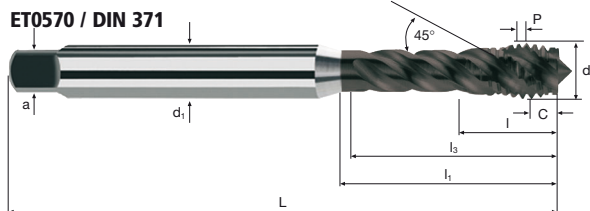
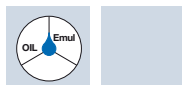


M ISO 2 (6H)

 **HSS PM/F**

 **Form C**







ET0571 / DIN 376



Inox
Stainless

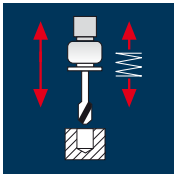
M

Esempio: N° Ordine											TRIBO	
Articolo ET0570 Codice-Ø .034											ET0570	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.034	M 2	0.40	45	8	12.5	10.5	2.8	2.1	3	1.70 *	39.20	
.040	M 2.5	0.45	50	9	15.0	13.0	2.8	2.1	3	2.10	34.80	
.044	M 3	0.50	56	5	18.0	16.0	3.5	2.7	3	2.60 *	32.20	
.058	M 4	0.70	63	7	21.0	19.0	4.5	3.4	3	3.40	32.20	
.084	M 5	0.80	70	8	25.0	23.0	6.0	4.9	3	4.30	32.80	
.088	M 6	1.00	80	10	30.0	28.0	6.0	4.9	3	5.10	34.30	
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	6.90	41.30	
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	4	8.60	49.00	

Esempio: N° Ordine											TRIBO	
Articolo ET0571 Codice-Ø .240											ET0571	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.240	M12	1.75	110	18	50.0	48.0	9.0	7.0	4	10.40	62.00	
.244	M14	2.00	110	20	58.0	56.0	11.0	9.0	4	12.20	75.00	
.246	M16	2.00	110	20	58.0	56.0	12.0	9.0	4	14.20	90.00	
.312	M18	2.50	125	25	65.0	63.0	14.0	11.0	4	15.70	112.00	
.314	M20	2.50	140	25	72.0	70.0	16.0	12.0	4	17.70	135.00	
.316	M22	2.50	140	25	72.0	70.0	18.0	14.5	5	19.70	160.00	
.320	M24	3.00	160	30	74.0	72.0	18.0	14.5	5	21.20	188.00	

* La dimensione data è fuori norma

Applicazione



Materiale

**Acciaio inossidabile
ferritico/martensitico**

**Acciaio inossidabile
[Cr-Ni/1.4301]**

**Acciaio inossidabile
[Cr-Ni/1.4301]**

Materiale

**Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]**

**Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]**

**Acciaio resistente
al calore
[17-4 PH]**

**Acciaio resistente
al calore
[17-4 PH]**

M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]
M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
M10	10.0	1.50	10	320	480	8	255	383	6	190	285
M12	12.0	1.75	10	265	464	8	210	368	6	160	280
M14	14.0	2.00	10	225	450	8	180	360	6	135	270
M16	16.0	2.00	10	200	400	8	160	320	6	120	240
M18	18.0	2.50	10	175	438	8	140	350	6	105	263
M20	20.0	2.50	10	160	400	8	125	313	6	95	238
M22	22.0	2.50	10	145	363	8	115	288	6	85	213
M24	24.0	3.00	10	135	405	8	105	315	6	80	240
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143
M12	12.0	1.75	5	135	236	4	105	184	3	80	140
M14	14.0	2.00	5	115	230	4	90	180	3	70	140
M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M18	18.0	2.50	5	90	225	4	70	175	3	55	138
M20	20.0	2.50	5	80	200	4	65	163	3	50	125
M22	22.0	2.50	5	70	175	4	60	150	3	45	113
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]
M 4	4.0	0.70	6	475	333	5	400	280	4	320	224
M 5	5.0	0.80	6	380	304	5	320	256	4	255	204
M 6	6.0	1.00	6	320	320	5	265	265	4	210	210
M 8	8.0	1.25	6	240	300	5	200	250	4	160	200
M10	10.0	1.50	6	190	285	5	160	240	4	125	188
M12	12.0	1.75	6	160	280	5	135	236	4	105	184
M14	14.0	2.00	6	135	270	5	115	230	4	90	180
M16	16.0	2.00	6	120	240	5	100	200	4	80	160
M18	18.0	2.50	6	105	263	5	90	225	4	70	175
M20	20.0	2.50	6	95	238	5	80	200	4	65	163
M22	22.0	2.50	6	85	213	5	70	175	4	60	150
M24	24.0	3.00	6	80	240	5	65	195	4	55	165
M 4	4.0	0.70	4	320	224	3	240	168			
M 5	5.0	0.80	4	255	204	3	190	152			
M 6	6.0	1.00	4	210	210	3	160	160			
M 8	8.0	1.25	4	160	200	3	120	150			
M10	10.0	1.50	4	125	188	3	95	143			
M12	12.0	1.75	4	105	184	3	80	140			
M14	14.0	2.00	4	90	180	3	70	140			
M16	16.0	2.00	4	80	160	3	60	120			
M18	18.0	2.50	4	70	175	3	55	138			
M20	20.0	2.50	4	65	163	3	50	125			
M22	22.0	2.50	4	60	150	3	45	113			
M24	24.0	3.00	4	55	165	3	40	120			

Maschi x-tap

Incool

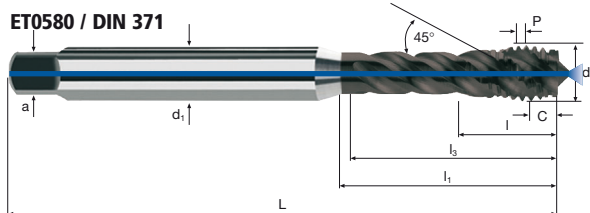
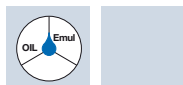


M ISO 2 (6H)

60° HSS PM/F

DIN 371/376

X-P Form C



ET0581 / DIN 376



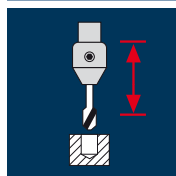
Inox
Stainless

M

Esempio: N° Ordine											TRIBO	
Articolo ET0580 Codice-Ø .058											ET0580	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.058	M 4	0.70	63	7	21	19	4.5	3.4	3	3.40	45.00	
.084	M 5	0.80	70	8	25	23	6.0	4.9	3	4.30	45.90	
.088	M 6	1.00	80	10	30	28	6.0	4.9	3	5.10	48.00	
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.90	57.90	
.174	M10	1.50	100	15	39	37	10.0	8.0	4	8.60	69.00	

Esempio: N° Ordine											TRIBO	
Articolo ET0581 Codice-Ø .240											ET0581	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.240	M12	1.75	110	18	50	48	9.0	7.0	4	10.40	87.00	
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.20	104.00	
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.20	126.00	
.312	M18	2.50	125	25	65	63	14.0	11.0	4	15.70	157.00	
.314	M20	2.50	140	25	72	70	16.0	12.0	4	17.70	189.00	
.316	M22	2.50	140	25	72	70	18.0	14.5	5	19.70	224.00	
.320	M24	3.00	160	30	74	72	18.0	14.5	5	21.20	263.00	

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø	P	v_c		n		v_c		n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]		
M 3	3.0	0.50	12	1275	10	1060	8	850		
M 4	4.0	0.70	12	955	10	795	8	635		
M 5	5.0	0.80	12	765	10	635	8	510		
M 6	6.0	1.00	12	635	10	530	8	425		
M 8	8.0	1.25	12	475	10	400	8	320		
M10	10.0	1.50	12	380	10	320	8	255		
M12	12.0	1.75	12	320	10	265	8	210		
M14	14.0	2.00	12	275	10	225	8	180		
M16	16.0	2.00	12	240	10	200	8	160		
M18	18.0	2.50	12	210	10	175	8	140		
M20	20.0	2.50	12	190	10	160	8	125		
M22	22.0	2.50	12	175	10	145	8	115		
M24	24.0	3.00	12	160	10	135	8	105		
M 3	3.0	0.50	7	745	5	530	4	425		
M 4	4.0	0.70	7	555	5	400	4	320		
M 5	5.0	0.80	7	445	5	320	4	255		
M 6	6.0	1.00	7	370	5	265	4	210		
M 8	8.0	1.25	7	280	5	200	4	160		
M10	10.0	1.50	7	225	5	160	4	125		
M12	12.0	1.75	7	185	5	135	4	105		
M14	14.0	2.00	7	160	5	115	4	90		
M16	16.0	2.00	7	140	5	100	4	80		
M18	18.0	2.50	7	125	5	90	4	70		
M20	20.0	2.50	7	110	5	80	4	65		
M22	22.0	2.50	7	100	5	70	4	60		
M24	24.0	3.00	7	95	5	65	4	55		

Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



M	ø	P	v_c		n		v_c		n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]		
M 3	3.0	0.50	8	850	6	635	5	530		
M 4	4.0	0.70	8	635	6	475	5	400		
M 5	5.0	0.80	8	510	6	380	5	320		
M 6	6.0	1.00	8	425	6	320	5	265		
M 8	8.0	1.25	8	320	6	240	5	200		
M10	10.0	1.50	8	255	6	190	5	160		
M12	12.0	1.75	8	210	6	160	5	135		
M14	14.0	2.00	8	180	6	135	5	115		
M16	16.0	2.00	8	160	6	120	5	100		
M18	18.0	2.50	8	140	6	105	5	90		
M20	20.0	2.50	8	125	6	95	5	80		
M22	22.0	2.50	8	115	6	85	5	70		
M24	24.0	3.00	8	105	6	80	5	65		
M 3	3.0	0.50	5	530	4	425				
M 4	4.0	0.70	5	400	4	320				
M 5	5.0	0.80	5	320	4	255				
M 6	6.0	1.00	5	265	4	210				
M 8	8.0	1.25	5	200	4	160				
M10	10.0	1.50	5	160	4	125				
M12	12.0	1.75	5	135	4	105				
M14	14.0	2.00	5	115	4	90				
M16	16.0	2.00	5	100	4	80				
M18	18.0	2.50	5	90	4	70				
M20	20.0	2.50	5	80	4	65				
M22	22.0	2.50	5	70	4	60				
M24	24.0	3.00	5	65	4	55				

Maschi x-tap-R

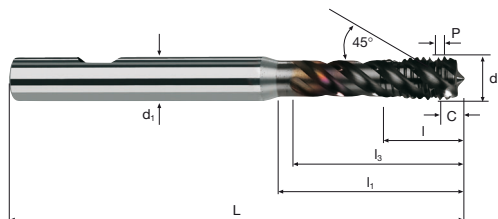
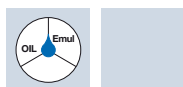


M ISO 2 (6H)

60°
HSS PM/F



DIN 1835B
ISO 3338

X-P
Form C

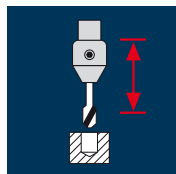


Inox
Stainless

M

Esempio: N° Ordine										TRIBO	
Articolo ET0590 Codice-ø .044										ET0590	
Ø Code	d	P	L	l	l1	l3	d1 h6			€	
.044	M 3	0.50	63	5	18	16	6	3	2.60*	32.20	
.058	M 4	0.70	66	7	21	19	6	3	3.40	32.20	
.084	M 5	0.80	70	8	25	23	6	3	4.30	32.80	
.088	M 6	1.00	80	10	30	28	6	3	5.10	34.30	
.160	M 8	1.25	90	13	35	33	8	3	6.90	41.30	
.174	M10	1.50	100	15	39	37	10	4	8.60	49.00	
.240	M12	1.75	110	18	45	43	12	4	10.40	62.00	
.244	M14	2.00	110	20	46	44	16	4	12.20	75.00	
.246	M16	2.00	110	20	50	48	16	4	14.20	90.00	
.312	M18	2.50	125	25	60	58	16	4	15.70	112.00	
.314	M20	2.50	140	25	64	62	16	4	17.70	135.00	
.316	M22	2.50	140	25	64	62	20	5	19.70	160.00	
.320	M24	3.00	160	30	74	72	20	5	21.20	188.00	
* La dimensione data è fuori norma											

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



M	ø [mm]	P [mm]	v_c		n		v_c		n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]		
M 4	4.0	0.70	12	955	10	795	8	635		
M 5	5.0	0.80	12	765	10	635	8	510		
M 6	6.0	1.00	12	635	10	530	8	425		
M 8	8.0	1.25	12	475	10	400	8	320		
M10	10.0	1.50	12	380	10	320	8	255		
M12	12.0	1.75	12	320	10	265	8	210		
M14	14.0	2.00	12	275	10	225	8	180		
M16	16.0	2.00	12	240	10	200	8	160		
M18	18.0	2.50	12	210	10	175	8	140		
M20	20.0	2.50	12	190	10	160	8	125		
M22	22.0	2.50	12	175	10	145	8	115		
M24	24.0	3.00	12	160	10	135	8	105		
M 4	4.0	0.70	7	555	5	400	4	320		
M 5	5.0	0.80	7	445	5	320	4	255		
M 6	6.0	1.00	7	370	5	265	4	210		
M 8	8.0	1.25	7	280	5	200	4	160		
M10	10.0	1.50	7	225	5	160	4	125		
M12	12.0	1.75	7	185	5	135	4	105		
M14	14.0	2.00	7	160	5	115	4	90		
M16	16.0	2.00	7	140	5	100	4	80		
M18	18.0	2.50	7	125	5	90	4	70		
M20	20.0	2.50	7	110	5	80	4	65		
M22	22.0	2.50	7	100	5	70	4	60		
M24	24.0	3.00	7	95	5	65	4	55		

M	ø [mm]	P [mm]	v_c		n		v_c		n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]		
M 4	4.0	0.70	8	635	6	475	5	400		
M 5	5.0	0.80	8	510	6	380	5	320		
M 6	6.0	1.00	8	425	6	320	5	265		
M 8	8.0	1.25	8	320	6	240	5	200		
M10	10.0	1.50	8	255	6	190	5	160		
M12	12.0	1.75	8	210	6	160	5	135		
M14	14.0	2.00	8	180	6	135	5	115		
M16	16.0	2.00	8	160	6	120	5	100		
M18	18.0	2.50	8	140	6	105	5	90		
M20	20.0	2.50	8	125	6	95	5	80		
M22	22.0	2.50	8	115	6	85	5	70		
M24	24.0	3.00	8	105	6	80	5	65		
M 4	4.0	0.70	5	400	4	320				
M 5	5.0	0.80	5	320	4	255				
M 6	6.0	1.00	5	265	4	210				
M 8	8.0	1.25	5	200	4	160				
M10	10.0	1.50	5	160	4	125				
M12	12.0	1.75	5	135	4	105				
M14	14.0	2.00	5	115	4	90				
M16	16.0	2.00	5	100	4	80				
M18	18.0	2.50	5	90	4	70				
M20	20.0	2.50	5	80	4	65				
M22	22.0	2.50	5	70	4	60				
M24	24.0	3.00	5	65	4	55				

Maschi x-tap-R

Incool

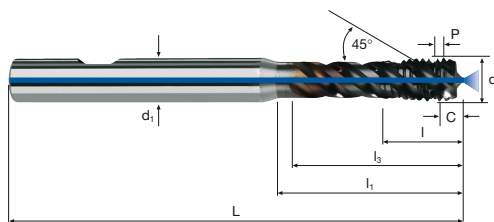
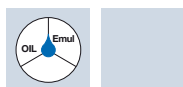


M ISO 2 (6H)

60° **HSS PM/F**



DIN 1835B ISO 3338

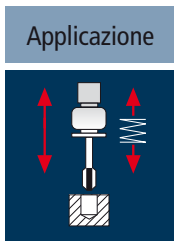
X-P Form C



Inox
Stainless

M

Esempio: N° Ordine										TRIBO	
		Articolo		Codice-ø						ET0591	
		ET0591		.058							
Ø Code	d	P	L	l	l ₁	l ₃	d ₁ h6			€	
.058	M 4	0.70	66	7	21	19	6	3	3.40	45.00	
.084	M 5	0.80	70	8	25	23	6	3	4.30	45.90	
.088	M 6	1.00	80	10	30	28	6	3	5.10	48.00	
.160	M 8	1.25	90	13	35	33	8	3	6.90	57.90	
.174	M10	1.50	100	15	39	37	10	4	8.60	69.00	
.240	M12	1.75	110	18	45	43	12	4	10.40	87.00	
.244	M14	2.00	110	20	46	44	16	4	12.20	104.00	
.246	M16	2.00	110	20	50	48	16	4	14.20	126.00	
.312	M18	2.50	125	25	60	58	16	4	15.70	157.00	
.314	M20	2.50	140	25	64	62	16	4	17.70	189.00	
.316	M22	2.50	140	25	64	62	20	5	19.70	224.00	
.320	M24	3.00	160	30	74	72	20	5	21.20	263.00	



Materiale

Ghisa GG

M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]
M 2	2.0	0.40	28	4455	1782	24	3820	1528	20	3185	1274
M 2.5	2.5	0.45	28	3565	1604	24	3055	1375	20	2545	1145
M 3	3.0	0.50	28	2970	1485	24	2545	1273	20	2120	1060
M 4	4.0	0.70	28	2230	1561	24	1910	1337	20	1590	1113
M 5	5.0	0.80	28	1785	1428	24	1530	1224	20	1275	1020
M 6	6.0	1.00	28	1485	1485	24	1275	1275	20	1060	1060
M 8	8.0	1.25	28	1115	1394	24	955	1194	20	795	994
M10	10.0	1.50	28	890	1335	24	765	1148	20	635	953
M12	12.0	1.75	28	745	1304	24	635	1111	20	530	928

Ghisa GG

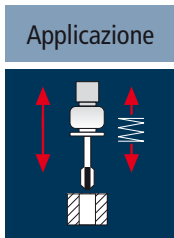
M14	14.0	2.00	28	635	1270	24	545	1090	20	455	910
M16	16.0	2.00	28	555	1110	24	475	950	20	400	800
M18	18.0	2.50	28	495	1238	24	425	1063	20	355	888
M20	20.0	2.50	28	445	1113	24	380	950	20	320	800
M22	22.0	2.50	28	405	1013	24	345	863	20	290	725
M24	24.0	3.00	28	370	1110	24	320	960	20	265	795

Ghisa GGG

M 2	2.0	0.40	20	3185	1274	18	2865	1146	15	2385	954
M 2.5	2.5	0.45	20	2545	1145	18	2290	1031	15	1910	860
M 3	3.0	0.50	20	2120	1060	18	1910	955	15	1590	795
M 4	4.0	0.70	20	1590	1113	18	1430	1001	15	1195	837
M 5	5.0	0.80	20	1275	1020	18	1145	916	15	955	764
M 6	6.0	1.00	20	1060	1060	18	955	955	15	795	795
M 8	8.0	1.25	20	795	994	18	715	894	15	595	744
M10	10.0	1.50	20	635	953	18	575	863	15	475	713
M12	12.0	1.75	20	530	928	18	475	831	15	400	700

Ghisa GGG

M14	14.0	2.00	20	455	910	18	410	820	15	340	680
M16	16.0	2.00	20	400	800	18	360	720	15	300	600
M18	18.0	2.50	20	355	888	18	320	800	15	265	663
M20	20.0	2.50	20	320	800	18	285	713	15	240	600
M22	22.0	2.50	20	290	725	18	260	650	15	215	538
M24	24.0	3.00	20	265	795	18	240	720	15	200	600



Materiale

Ghisa GG

M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]
M 2	2.0	0.40	30	4775	1910	28	4455	1782	25	3980	1592
M 2.5	2.5	0.45	30	3820	1719	28	3565	1604	25	3185	1433
M 3	3.0	0.50	30	3185	1593	28	2970	1485	25	2655	1328
M 4	4.0	0.70	30	2385	1670	28	2230	1561	25	1990	1393
M 5	5.0	0.80	30	1910	1528	28	1785	1428	25	1590	1272
M 6	6.0	1.00	30	1590	1590	28	1485	1485	25	1325	1325
M 8	8.0	1.25	30	1195	1494	28	1115	1394	25	995	1244
M10	10.0	1.50	30	955	1433	28	890	1335	25	795	1193
M12	12.0	1.75	30	795	1391	28	745	1304	25	665	1164

Ghisa GG

M14	14.0	2.00	30	680	1360	28	635	1270	25	570	1140
M16	16.0	2.00	30	595	1190	28	555	1110	25	495	990
M18	18.0	2.50	30	530	1325	28	495	1238	25	440	1100
M20	20.0	2.50	30	475	1188	28	445	1113	25	400	1000
M22	22.0	2.50	30	435	1088	28	405	1013	25	360	900
M24	24.0	3.00	30	400	1200	28	370	1110	25	330	990

Ghisa GGG

M 2	2.0	0.40	25	3980	1592	22	3500	1400	20	3185	1274
M 2.5	2.5	0.45	25	3185	1433	22	2800	1260	20	2545	1145
M 3	3.0	0.50	25	2655	1328	22	2335	1168	20	2120	1060
M 4	4.0	0.70	25	1990	1393	22	1750	1225	20	1590	1113
M 5	5.0	0.80	25	1590	1272	22	1400	1120	20	1275	1020
M 6	6.0	1.00	25	1325	1325	22	1165	1165	20	1060	1060
M 8	8.0	1.25	25	995	1244	22	875	1094	20	795	994
M10	10.0	1.50	25	795	1193	22	700	1050	20	635	953
M12	12.0	1.75	25	665	1164	22	585	1024	20	530	928

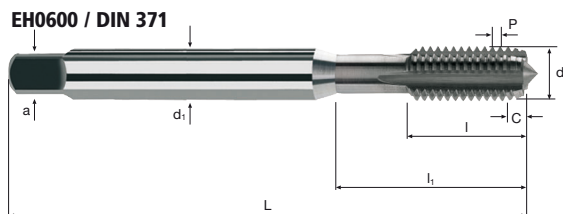
Ghisa GGG

M14	14.0	2.00	25	570	1140	22	500	1000	20	455	910
M16	16.0	2.00	25	495	990	22	440	880	20	400	800
M18	18.0	2.50	25	440	1100	22	390	975	20	355	888
M20	20.0	2.50	25	400	1000	22	350	875	20	320	800
M22	22.0	2.50	25	360	900	22	320	800	20	290	725
M24	24.0	3.00	25	330	990	22	290	870	20	265	795

M ISO 2 (6H)

HSS PM/F

Form C



EH0601 / DIN 376



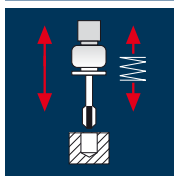
GG(G)
Cast iron

M

Esempio: N° Ordine		Articolo EH0600		Codice-Ø .034							TiCN	
											EH0600	
Ø Code	d	P	L	l	li	d1	a			€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	3	1.60	25.70		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	3	2.05	22.40		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.50	21.20		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.30	21.20		
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.20	21.60		
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.00	22.50		
.160	M 8	1.25	90	20	35.0	8.0	6.2	4	6.80	27.20		
.174	M10	1.50	100	22	39.0	10.0	8.0	4	8.50	31.40		

Esempio: N° Ordine		Articolo EH0601		Codice-Ø .240							TiCN	
											EH0601	
Ø Code	d	P	L	l	li	d1	a			€		
.240	M12	1.75	110	24	40.0	9.0	7.0	4	10.20	39.20		
.244	M14	2.00	110	26	40.0	11.0	9.0	4	12.00	49.60		
.246	M16	2.00	110	27	40.0	12.0	9.0	4	14.00	58.90		
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.50	75.00		
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.50	91.00		
.316	M22	2.50	140	32	50.0	18.0	14.5	5	19.50	109.00		
.320	M24	3.00	160	34	60.0	18.0	14.5	5	21.00	127.00		

Applicazione



Materiale

Ghisa
GG

M	ø	P	1.0 x d			1.5 x d			2.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 4	4.0	0.70	28	2230	1561	24	1910	1337	20	1590	1113
M 5	5.0	0.80	28	1785	1428	24	1530	1224	20	1275	1020
M 6	6.0	1.00	28	1485	1485	24	1275	1275	20	1060	1060
M 8	8.0	1.25	28	1115	1394	24	955	1194	20	795	994
M10	10.0	1.50	28	890	1335	24	765	1148	20	635	953
M12	12.0	1.75	28	745	1304	24	635	1111	20	530	928
M14	14.0	2.00	28	635	1270	24	545	1090	20	455	910
M16	16.0	2.00	28	555	1110	24	475	950	20	400	800
M18	18.0	2.50	28	495	1238	24	425	1063	20	355	888

Ghisa
GG

M20	20.0	2.50	28	445	1113	24	380	950	20	320	800
M22	22.0	2.50	28	405	1013	24	345	863	20	290	725
M24	24.0	3.00	28	370	1110	24	320	960	20	265	795

Ghisa
GGG

M 4	4.0	0.40	20	1590	636	18	1430	572	15	1195	478
M 5	5.0	0.45	20	1275	574	18	1145	515	15	955	430
M 6	6.0	0.50	20	1060	530	18	955	478	15	795	398
M 8	8.0	0.70	20	795	557	18	715	500	15	595	417
M10	10.0	0.80	20	635	508	18	575	460	15	475	380
M12	12.0	1.00	20	530	530	18	475	475	15	400	400
M14	14.0	1.25	20	455	569	18	410	513	15	340	425
M16	16.0	1.50	20	400	600	18	360	540	15	300	450
M18	18.0	1.75	20	355	621	18	320	560	15	265	464

Ghisa
GGG

M20	20.0	2.00	20	320	640	18	285	570	15	240	480
M22	22.0	2.00	20	290	580	18	260	520	15	215	430
M24	24.0	2.50	20	265	663	18	240	600	15	200	500

Maschi c-tap

Incool

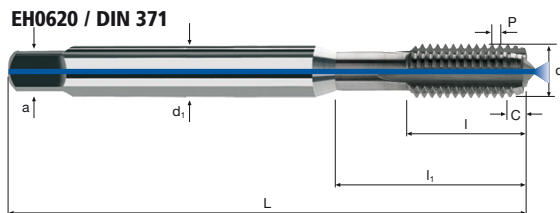


M ISO 2 (6H)

HSS PM/F

DIN 371/376

X-P Form C



EH0621 / DIN 376



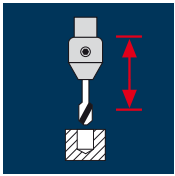
GG(G)
Cast iron

M

Esempio: N° Ordine		Articolo EH0620		Codice-Ø .058						TiCN	
Ø Code	d	P	L	l	li	d1	a			€	
.058	M 4	0.70	63	13	21	4.5	3.4	3	3.30	32.90	
.084	M 5	0.80	70	15	25	6.0	4.9	3	4.20	33.40	
.088	M 6	1.00	80	17	30	6.0	4.9	4	5.00	34.90	
.160	M 8	1.25	90	20	35	8.0	6.2	4	6.80	42.10	
.174	M10	1.50	100	22	39	10.0	8.0	4	8.50	48.70	

Esempio: N° Ordine		Articolo EH0621		Codice-Ø .240						TiCN	
Ø Code	d	P	L	l	li	d1	a			€	
.240	M12	1.75	110	24	40	9.0	7.0	4	10.20	61.00	
.244	M14	2.00	110	26	40	11.0	9.0	4	12.00	77.00	
.246	M16	2.00	110	27	40	12.0	9.0	4	14.00	91.00	
.312	M18	2.50	125	30	45	14.0	11.0	4	15.50	116.00	
.314	M20	2.50	140	32	50	16.0	12.0	4	17.50	141.00	
.316	M22	2.50	140	32	50	18.0	14.5	5	19.50	168.00	
.320	M24	3.00	160	34	60	18.0	14.5	5	21.00	197.00	

Applicazione



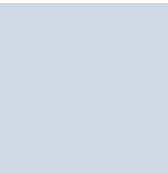
Materiale

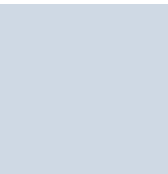
Ghisa
GG

M	ø	P	v_c		n		v_c		n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]		
M 3	3.0	0.50	80	8490	70	7425	50	5305		
M 4	4.0	0.70	80	6365	70	5570	50	3980		
M 5	5.0	0.80	80	5095	70	4455	50	3185		
M 6	6.0	1.00	80	4245	70	3715	50	2655		
M 8	8.0	1.25	80	3185	70	2785	50	1990		
M10	10.0	1.50	80	2545	70	2230	50	1590		
M12	12.0	1.75	80	2120	70	1855	50	1325		

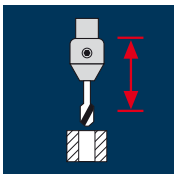
Ghisa
GGG

M 3	3.0	0.50	60	6365	40	4245	30	3185
M 4	4.0	0.70	60	4775	40	3185	30	2385
M 5	5.0	0.80	60	3820	40	2545	30	1910
M 6	6.0	1.00	60	3185	40	2120	30	1590
M 8	8.0	1.25	60	2385	40	1590	30	1195
M10	10.0	1.50	60	1910	40	1275	30	955
M12	12.0	1.75	60	1590	40	1060	30	795





Applicazione



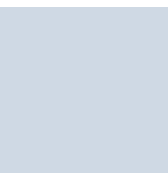
Materiale

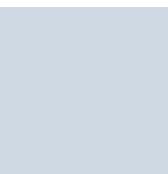
Ghisa
GG

M	ø	P	v_c		n		v_c		n	
			1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]	3.0 x d	[min ⁻¹]		
M 3	3.0	0.50	80	8490	60	6365	50	5305		
M 4	4.0	0.70	80	6365	60	4775	50	3980		
M 5	5.0	0.80	80	5095	60	3820	50	3185		
M 6	6.0	1.00	80	4245	60	3185	50	2655		
M 8	8.0	1.25	80	3185	60	2385	50	1990		
M10	10.0	1.50	80	2545	60	1910	50	1590		
M12	12.0	1.75	80	2120	60	1590	50	1325		

Ghisa
GGG

M 3	3.0	0.50	60	6365	50	5305	40	4245
M 4	4.0	0.70	60	4775	50	3980	40	3185
M 5	5.0	0.80	60	3820	50	3185	40	2545
M 6	6.0	1.00	60	3185	50	2655	40	2120
M 8	8.0	1.25	60	2385	50	1990	40	1590
M10	10.0	1.50	60	1910	50	1590	40	1275
M12	12.0	1.75	60	1590	50	1325	40	1060





Maschi durotap GG-R

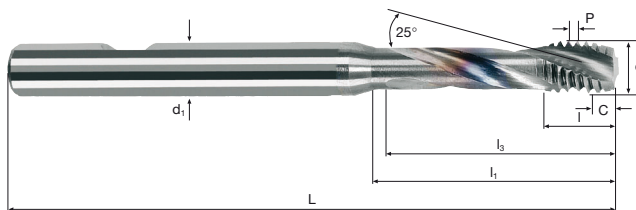


M ISO 2
(6H)

60°
HM
MG10

DIN
6535
HB

X-P
Form C

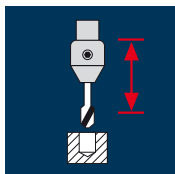


GG(G)
Cast iron

M

Esempio: N° Ordine EH6500 .044										TiCN	
										EH6500	
Ø Code	d	P	L	I	I ₁	I ₃	d ₁ h6			€	
.044	M 3	0.50	63	2.5	18	16	6	3	2.50	91.00	
.058	M 4	0.70	63	3.5	21	19	6	3	3.30	91.00	
.084	M 5	0.80	70	4.0	25	23	6	3	4.20	92.00	
.088	M 6	1.00	80	5.0	30	28	6	3	5.00	97.00	
.160	M 8	1.25	90	6.5	35	33	8	3	6.80	117.00	
.174	M10	1.50	100	7.5	39	37	10	3	8.50	143.00	
.240	M12	1.75	110	9.0	45	43	12	3	10.20	177.00	

Applicazione



Materiale

Ghisa
GG

M	ø	P	v_c		n		v_c		n	
			$1.0 \times d$	$[min^{-1}]$	$1.5 \times d$	$[min^{-1}]$	$2.0 \times d$	$[min^{-1}]$		
M 6	6.0	1.00	80	4245	70	3715	50	2655		
M 8	8.0	1.25	80	3185	70	2785	50	1990		
M10	10.0	1.50	80	2545	70	2230	50	1590		
M12	12.0	1.75	80	2120	70	1855	50	1325		

Ghisa
GGG

M 6	6.0	1.00	60	3185	70	3715	30	1590		
M 8	8.0	1.25	60	2385	70	2785	30	1195		
M10	10.0	1.50	60	1910	70	2230	30	955		
M12	12.0	1.75	60	1590	70	1855	30	795		

Maschi durotap GG-R

Incool



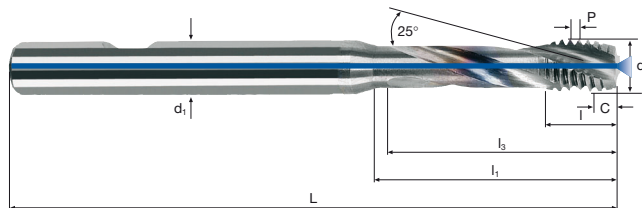
M ISO 2 (6H)

60° **HM MG10**

DIN 6535 HB

X-P Form C

OIL Emul

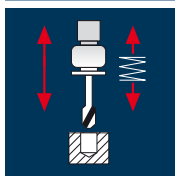


GG(G)
Cast iron

M

Esempio: N° Ordine										TiCN	
		Articolo		Codice-ø							
		EH6501		.088							
Ø Code	d	P	L	I	I1	I3	d1 h6	✱	✱	€	
.088	M 6	1.00	80	5.0	30	28	6	3	5.00	135.00	
.160	M 8	1.25	90	6.5	35	33	8	3	6.80	164.00	
.174	M10	1.50	100	7.5	39	37	10	3	8.50	201.00	
.240	M12	1.75	110	9.0	45	43	12	3	10.20	247.00	

Applicazione



Materiale

Ghisa
GG

M	ø	P	v_c		n		v_c		n	
			$1.0 \times d$	$[min^{-1}]$	$1.5 \times d$	$[min^{-1}]$	$2.0 \times d$	$[min^{-1}]$		
M 3	3.0	0.50	80	8490	70	7425	50	5305		
M 4	4.0	0.70	80	6365	70	5570	50	3980		
M 5	5.0	0.80	80	5095	70	4455	50	3185		
M 6	6.0	1.00	80	4245	70	3715	50	2655		
M 8	8.0	1.25	80	3185	70	2785	50	1990		
M10	10.0	1.50	80	2545	70	2230	50	1590		
M12	12.0	1.75	80	2120	70	1855	50	1325		

Ghisa
GGG

M 3	3.0	0.50	60	6365	40	4245	30	3185		
M 4	4.0	0.70	60	4775	40	3185	30	2385		
M 5	5.0	0.80	60	3820	40	2545	30	1910		
M 6	6.0	1.00	60	3185	40	2120	30	1590		
M 8	8.0	1.25	60	2385	40	1590	30	1195		
M10	10.0	1.50	60	1910	40	1275	30	955		
M12	12.0	1.75	60	1590	40	1060	30	795		

Maschi durotap GG

Incool

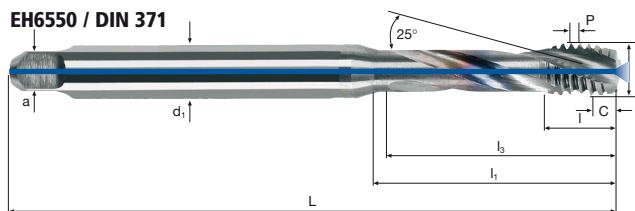
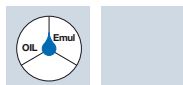


M ISO 2 (6H)

60° **HM MG10**

DIN 371/376

X-P Form C



EH6551 / DIN 376



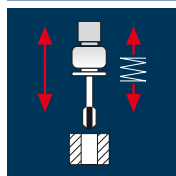
GG(G)
Cast iron

M

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH6550		.044								EH6550	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.044 *	M 3	0.50	56	5	18	16	3.5	2.7	3	2.50	127.00		
.058 *	M 4	0.70	63	7	21	19	4.5	3.4	3	3.30	127.00		
.084 *	M 5	0.80	70	8	25	23	6.0	4.9	3	4.20	129.00		
.088	M 6	1.00	80	10	30	28	6.0	4.9	3	5.00	135.00		
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.80	164.00		
.174	M10	1.50	100	15	39	37	10.0	8.0	3	8.50	201.00		

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH6551		.240								EH6551	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.240	M12	1.75	110	18	50	48	9.0	7.0	3	10.20	247.00		
* Senza adduzione interna del refrigerante													

Applicazione



Materiale

Alluminio non legato

M	ø	P	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	23	3660	1464	19	3025	1210	16	2545	1018
M 2.5	2.5	0.45	23	2930	1319	19	2420	1089	16	2035	916
M 3	3.0	0.50	23	2440	1220	19	2015	1008	16	1700	850
M 4	4.0	0.70	23	1830	1281	19	1510	1057	16	1275	893
M 5	5.0	0.80	23	1465	1172	19	1210	968	16	1020	816
M 6	6.0	1.00	23	1220	1220	19	1010	1010	16	850	850
M 8	8.0	1.25	23	915	1144	19	755	944	16	635	794
M10	10.0	1.50	23	730	1095	19	605	908	16	510	765
M12	12.0	1.75	23	610	1068	19	505	884	16	425	744

Alluminio non legato

M14	14.0	2.00	23	525	1050	19	430	860	16	365	730
M16	16.0	2.00	23	460	920	19	380	760	16	320	640
M18	18.0	2.50	23	405	1013	19	335	838	16	285	713
M20	20.0	2.50	23	365	913	19	300	750	16	255	638
M22	22.0	2.50	23	335	838	19	275	688	16	230	575
M24	24.0	3.00	23	305	915	19	250	750	16	210	630

Alluminio malleabile
Si < 6%
non temprato

M 2	2.0	0.40	35	5570	2228	30	4775	1910	25	3980	1592
M 2.5	2.5	0.45	35	4455	2005	30	3820	1719	25	3185	1433
M 3	3.0	0.50	35	3715	1858	30	3185	1593	25	2655	1328
M 4	4.0	0.70	35	2785	1949	30	2385	1670	25	1990	1393
M 5	5.0	0.80	35	2230	1784	30	1910	1528	25	1590	1272
M 6	6.0	1.00	35	1855	1855	30	1590	1590	25	1325	1325
M 8	8.0	1.25	35	1395	1744	30	1195	1494	25	995	1244
M10	10.0	1.50	35	1115	1673	30	955	1433	25	795	1193
M12	12.0	1.75	35	930	1628	30	795	1391	25	665	1164

Alluminio malleabile
Si < 6%
non temprato

M14	14.0	2.00	35	795	1590	30	680	1360	25	570	1140
M16	16.0	2.00	35	695	1390	30	595	1190	25	495	990
M18	18.0	2.50	35	620	1550	30	530	1325	25	440	1100
M20	20.0	2.50	35	555	1388	30	475	1188	25	400	1000
M22	22.0	2.50	35	505	1263	30	435	1088	25	360	900
M24	24.0	3.00	35	465	1395	30	400	1200	25	330	990

Materiale

Alluminio malleabile
Si < 6%
temprato

M	ø	P	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	20	3185	1274	17	2705	1082	14	2230	892
M 2.5	2.5	0.45	20	2545	1145	17	2165	974	14	1785	803
M 3	3.0	0.50	20	2120	1060	17	1805	903	14	1485	743
M 4	4.0	0.70	20	1590	1113	17	1355	948	14	1115	781
M 5	5.0	0.80	20	1275	1020	17	1080	864	14	890	712
M 6	6.0	1.00	20	1060	1060	17	900	900	14	745	745
M 8	8.0	1.25	20	795	994	17	675	844	14	555	694
M10	10.0	1.50	20	635	953	17	540	810	14	445	668
M12	12.0	1.75	20	530	928	17	450	788	14	370	648

Alluminio malleabile
Si < 6%
temprato

M14	14.0	2.00	20	455	910	17	385	770	14	320	640
M16	16.0	2.00	20	400	800	17	340	680	14	280	560
M18	18.0	2.50	20	355	888	17	300	750	14	250	625
M20	20.0	2.50	20	320	800	17	270	675	14	225	563
M22	22.0	2.50	20	290	725	17	245	613	14	205	513
M24	24.0	3.00	20	265	795	17	225	675	14	185	555

Rame non legato

M 2	2.0	0.40	21	3340	1336	18	2865	1146	15	2385	954
M 2.5	2.5	0.45	21	2675	1204	18	2290	1031	15	1910	860
M 3	3.0	0.50	21	2230	1115	18	1910	955	15	1590	795
M 4	4.0	0.70	21	1670	1169	18	1430	1001	15	1195	837
M 5	5.0	0.80	21	1335	1068	18	1145	916	15	955	764
M 6	6.0	1.00	21	1115	1115	18	955	955	15	795	795
M 8	8.0	1.25	21	835	1044	18	715	894	15	595	744
M10	10.0	1.50	21	670	1005	18	575	863	15	475	713
M12	12.0	1.75	21	555	971	18	475	831	15	400	700

Rame non legato

M14	14.0	2.00	21	475	950	18	410	820	15	340	680
M16	16.0	2.00	21	420	840	18	360	720	15	300	600
M18	18.0	2.50	21	370	925	18	320	800	15	265	663
M20	20.0	2.50	21	335	838	18	285	713	15	240	600
M22	22.0	2.50	21	305	763	18	260	650	15	215	538
M24	24.0	3.00	21	280	840	18	240	720	15	200	600

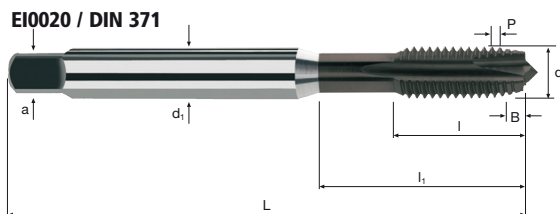
M ISO 2
(6H)

HSS
PM/F

DIN
371/376

Form B

Emul



E10021 / DIN 376



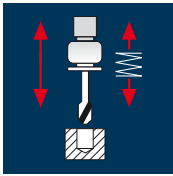
Al Aluminium
Cu Copper
Plastic Thermoplast

M

Esempio: N° Ordine											INTEGRAL	
Articolo E10020 Codice-Ø .034											E10020	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	1.60	30.10		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	2.05	26.20		
.044	M 3	0.50	56	12	18.0	3.5	2.7	2	2.50	24.80		
.058	M 4	0.70	63	13	21.0	4.5	3.4	2	3.30	24.80		
.084	M 5	0.80	70	15	25.0	6.0	4.9	2	4.20	25.20		
.088	M 6	1.00	80	17	30.0	6.0	4.9	2	5.00	26.40		
.160	M 8	1.25	90	20	35.0	8.0	6.2	2	6.80	31.80		
.174	M10	1.50	100	22	39.0	10.0	8.0	2	8.50	36.80		

Esempio: N° Ordine											INTEGRAL	
Articolo E10021 Codice-Ø .240											E10021	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.20	45.90		
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.00	58.10		
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.00	69.00		
.312	M18	2.50	125	30	45.0	14.0	11.0	3	15.50	88.00		
.314	M20	2.50	140	32	50.0	16.0	12.0	3	17.50	107.00		
.316	M22	2.50	140	32	50.0	18.0	14.5	3	19.50	127.00		
.320	M24	3.00	160	34	60.0	18.0	14.5	3	21.00	149.00		

Applicazione



Materiale

Alluminio non legato

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	15	2385	954	12	1910	764	10	1590	636
M 2.5	2.5	0.45	15	1910	860	12	1530	689	10	1275	574
M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
M10	10.0	1.50	15	475	713	12	380	570	10	320	480
M12	12.0	1.75	15	400	700	12	320	560	10	265	464

Alluminio non legato

M14	14.0	2.00	15	340	680	12	275	550	10	225	450
M16	16.0	2.00	15	300	600	12	240	480	10	200	400
M18	18.0	2.50	15	265	663	12	210	525	10	175	438
M20	20.0	2.50	15	240	600	12	190	475	10	160	400
M22	22.0	2.50	15	215	538	12	175	438	10	145	363
M24	24.0	3.00	15	200	600	12	160	480	10	135	405

Alluminio malleabile
Si < 6%
non temprato

M 2	2.0	0.40	15	2385	954	13	2070	828	10	1590	636
M 2.5	2.5	0.45	15	1910	860	13	1655	745	10	1275	574
M 3	3.0	0.50	15	1590	795	13	1380	690	10	1060	530
M 4	4.0	0.70	15	1195	837	13	1035	725	10	795	557
M 5	5.0	0.80	15	955	764	13	830	664	10	635	508
M 6	6.0	1.00	15	795	795	13	690	690	10	530	530
M 8	8.0	1.25	15	595	744	13	515	644	10	400	500
M10	10.0	1.50	15	475	713	13	415	623	10	320	480
M12	12.0	1.75	15	400	700	13	345	604	10	265	464

Alluminio malleabile
Si < 6%
non temprato

M14	14.0	2.00	15	340	680	13	295	590	10	225	450
M16	16.0	2.00	15	300	600	13	260	520	10	200	400
M18	18.0	2.50	15	265	663	13	230	575	10	175	438
M20	20.0	2.50	15	240	600	13	205	513	10	160	400
M22	22.0	2.50	15	215	538	13	190	475	10	145	363
M24	24.0	3.00	15	200	600	13	170	510	10	135	405

Materiale

Alluminio malleabile
Si < 6%
temprato

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	13	2070	828	11	1750	700	10	1590	636
M 2.5	2.5	0.45	13	1655	745	11	1400	630	10	1275	574
M 3	3.0	0.50	13	1380	690	11	1165	583	10	1060	530
M 4	4.0	0.70	13	1035	725	11	875	613	10	795	557
M 5	5.0	0.80	13	830	664	11	700	560	10	635	508
M 6	6.0	1.00	13	690	690	11	585	585	10	530	530
M 8	8.0	1.25	13	515	644	11	440	550	10	400	500
M10	10.0	1.50	13	415	623	11	350	525	10	320	480
M12	12.0	1.75	13	345	604	11	290	508	10	265	464

Alluminio malleabile
Si < 6%
temprato

M14	14.0	2.00	13	295	590	11	250	500	10	225	450
M16	16.0	2.00	13	260	520	11	220	440	10	200	400
M18	18.0	2.50	13	230	575	11	195	488	10	175	438
M20	20.0	2.50	13	205	513	11	175	438	10	160	400
M22	22.0	2.50	13	190	475	11	160	400	10	145	363
M24	24.0	3.00	13	170	510	11	145	435	10	135	405

Rame non legato

M 2	2.0	0.40	20	3185	1274	18	2865	1146	16	2545	1018
M 2.5	2.5	0.45	20	2545	1145	18	2290	1031	16	2035	916
M 3	3.0	0.50	20	2120	1060	18	1910	955	16	1700	850
M 4	4.0	0.70	20	1590	1113	18	1430	1001	16	1275	893
M 5	5.0	0.80	20	1275	1020	18	1145	916	16	1020	816
M 6	6.0	1.00	20	1060	1060	18	955	955	16	850	850
M 8	8.0	1.25	20	795	994	18	715	894	16	635	794
M10	10.0	1.50	20	635	953	18	575	863	16	510	765
M12	12.0	1.75	20	530	928	18	475	831	16	425	744

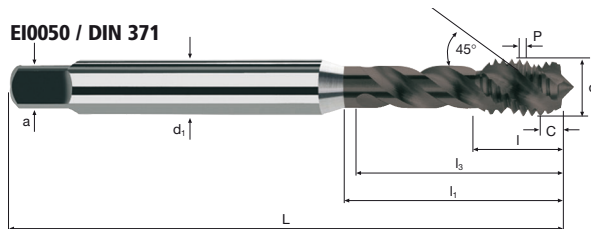
Rame non legato

M14	14.0	2.00	20	455	910	18	410	820	16	365	730
M16	16.0	2.00	20	400	800	18	360	720	16	320	640
M18	18.0	2.50	20	355	888	18	320	800	16	285	713
M20	20.0	2.50	20	320	800	18	285	713	16	255	638
M22	22.0	2.50	20	290	725	18	260	650	16	230	575
M24	24.0	3.00	20	265	795	18	240	720	16	210	630

M ISO 2 (6H)

HSS PM/F

Form C



E10051 / DIN 376



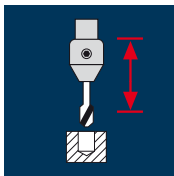
Al Aluminium
Cu Copper
Plastic Thermoplast

M

Esempio: N° Ordine		Articolo E10050		Codice-Ø .034								INTEGRAL	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.034	M 2	0.40	45	8	12.5	10.5	2.8	2.1	3	1.60	34.10		
.040	M 2.5	0.45	50	9	15.0	13.0	2.8	2.1	3	2.05	30.20		
.044	M 3	0.50	56	5	18.0	16.0	3.5	2.7	3	2.50	28.00		
.058	M 4	0.70	63	7	21.0	19.0	4.5	3.4	3	3.30	28.00		
.084	M 5	0.80	70	8	25.0	23.0	6.0	4.9	3	4.20	28.50		
.088	M 6	1.00	80	10	30.0	28.0	6.0	4.9	3	5.00	29.80		
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	6.80	35.90		
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	3	8.50	42.60		

Esempio: N° Ordine		Articolo E10051		Codice-Ø .240								INTEGRAL	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.240	M12	1.75	110	18	50.0	48.0	9.0	7.0	3	10.20	54.00		
.244	M14	2.00	110	20	58.0	56.0	11.0	9.0	4	12.00	65.00		
.246	M16	2.00	110	20	58.0	56.0	12.0	9.0	4	14.00	78.00		
.312	M18	2.50	125	25	65.0	63.0	14.0	11.0	4	15.50	97.00		
.314	M20	2.50	140	25	72.0	70.0	16.0	12.0	4	17.50	118.00		
.316	M22	2.50	140	25	72.0	70.0	18.0	14.5	4	19.50	139.00		
.320	M24	3.00	160	30	74.0	72.0	18.0	14.5	4	21.00	164.00		

Applicazione



Materiale

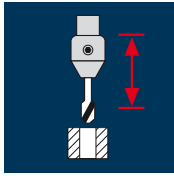
Getti d'alluminio

CuAlFe
(Ampco)

M	ø	P	v_c		n		v_c		n	
			[mm]	[mm]	$1.0 \times d$	[min ⁻¹]	$1.5 \times d$	[min ⁻¹]	$2.0 \times d$	[min ⁻¹]
M 5	5.0	0.80	80	5095	60	3820	40	2545		
M 6	6.0	1.00	80	4245	60	3185	40	2120		
M 7	7.0	1.00	80	3640	60	2730	40	1820		
M 8	8.0	1.25	80	3185	60	2385	40	1590		
M10	10.0	1.50	80	2545	60	1910	40	1275		

M 5	5.0	0.80	10	635	8	510	7	445		
M 6	6.0	1.00	10	530	8	425	7	370		
M 7	7.0	1.00	10	455	8	365	7	320		
M 8	8.0	1.25	10	400	8	320	7	280		
M10	10.0	1.50	10	320	8	255	7	225		

Applicazione



Materiale

Getti d'alluminio

CuAlFe
(Ampco)

M	ø	P	v_c		n		v_c		n	
			[mm]	[mm]	$1.5 \times d$	[min ⁻¹]	$2.0 \times d$	[min ⁻¹]	$3.0 \times d$	[min ⁻¹]
M 5	5.0	0.80	100	6365	80	5095	60	3820		
M 6	6.0	1.00	100	5305	80	4245	60	3185		
M 7	7.0	1.00	100	4545	80	3640	60	2730		
M 8	8.0	1.25	100	3980	80	3185	60	2385		
M10	10.0	1.50	100	3185	80	2545	60	1910		

M 5	5.0	0.80	12	765	10	635	9	575		
M 6	6.0	1.00	12	635	10	530	9	475		
M 7	7.0	1.00	12	545	10	455	9	410		
M 8	8.0	1.25	12	475	10	400	9	360		
M10	10.0	1.50	12	380	10	320	9	285		

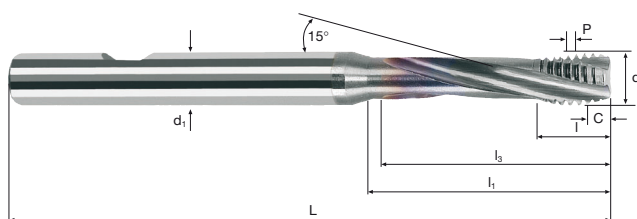
M ISO 2
(6H)

60° **HM
MG10**

DIN 6535
HB

X-P
Form C

OIL Emul



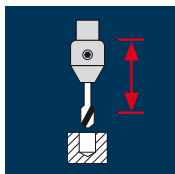
Al
Aluminium

GG(G)
Cast iron

M

Esempio: N° Ordine										TiCN		
			Articolo	Codice-Ø							EH6300	
			EH6300	.084								
Ø Code	d	P	L	I	I ₁	I ₃	d ₁ h6	✎	✎	€		
.084	M 5	0.80	70	4.0	25	23	6	3	4.20	98.00		
.088	M 6	1.00	80	5.0	30	28	6	3	5.00	103.00		
.089	M 7	1.00	80	5.0	30	28	8	3	6.00	103.00		
.160	M 8	1.25	90	6.5	35	33	8	3	6.80	124.00		
.174	M10	1.50	100	7.5	39	37	10	3	8.50	153.00		

Applicazione



Materiale

Getti d'alluminio

M	ø	P	v_c		n		v_c		n	
			$1.0 \times d$	$[min^{-1}]$	$1.5 \times d$	$[min^{-1}]$	$2.0 \times d$	$[min^{-1}]$		
M 6	6.0	1.00	80	4245	60	3185	40	2120		
M 7	7.0	1.00	80	3640	60	2730	40	1820		
M 8	8.0	1.25	80	3185	60	2385	40	1590		
M10	10.0	1.50	80	2545	60	1910	40	1275		

CuAlFe
(Ampco)

M 6	6.0	1.00	10	530	8	425	7	370
M 7	7.0	1.00	10	455	8	365	7	320
M 8	8.0	1.25	10	400	8	320	7	280
M10	10.0	1.50	10	320	8	255	7	225

Maschi durotap A-R

Incool

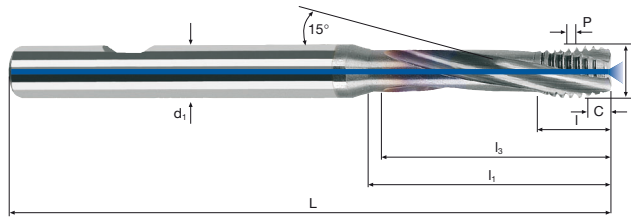


M ISO 2 (6H)

HM MG10

DIN 6535 HB

X - P Form C



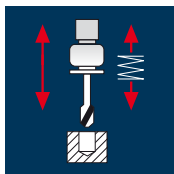
Al
Aluminium

GG(G)
Cast iron

M

										TiCN
Esempio: N° Ordine EH6301 .088										EH6301
Ø Code	d	P	L	l	l ₁	l ₃	d ₁ h6			€
.088	M 6	1.00	80	5.0	30	28	6	3	5.00	144.00
.089	M 7	1.00	80	5.0	30	28	8	3	6.00	144.00
.160	M 8	1.25	90	6.5	35	33	8	3	6.80	174.00
.174	M10	1.50	100	7.5	39	37	10	3	8.50	214.00

Applicazione



Materiale

Getti d'alluminio

M	ø	P	v_c			n			v_f		
			$1.0 \times d$	n	v_f	$1.5 \times d$	n	v_f	$2.0 \times d$	n	v_f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 4	4.0	0.70	80	6365	4456	60	4775	3343	40	3185	2230
M 5	5.0	0.80	80	5095	4076	60	3820	3056	40	2545	2036
M 6	6.0	1.00	80	4245	4245	60	3185	3185	40	2120	2120
M 8	8.0	1.25	80	3185	3981	60	2385	2981	40	1590	1988
M10	10.0	1.50	80	2545	3818	60	1910	2865	40	1275	1913
M12	12.0	1.75	80	2120	3710	60	1590	2783	40	1060	1855
M14	14.0	2.00	80	1820	3640	60	1365	2730	40	910	1820
M16	16.0	2.00	80	1590	3180	60	1195	2390	40	795	1590

CuAlFe
(Ampco)

M 4	4.0	0.70	10	795	557	8	635	445	7	555	389
M 5	5.0	0.80	10	635	508	8	510	408	7	445	356
M 6	6.0	1.00	10	530	530	8	425	425	7	370	370
M 8	8.0	1.25	10	400	500	8	320	400	7	280	350
M10	10.0	1.50	10	320	480	8	255	383	7	225	338
M12	12.0	1.75	10	265	464	8	210	368	7	185	324
M14	14.0	2.00	10	225	450	8	180	360	7	160	320
M16	16.0	2.00	10	200	400	8	160	320	7	140	280

Maschi durotap A

Incool

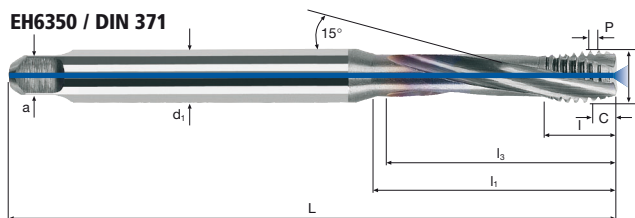
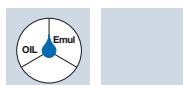


M ISO 2 (6H)

60° **HM MG10**

DIN 371/376

X-P Form C



EH6351 / DIN 376



Al
Aluminium

GG(G)
Cast iron

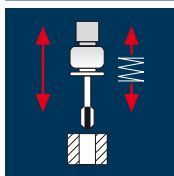
M

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH6350		.058								EH6350	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.058 *	M 4	0.70	63	7	21	19	4.5	3.4	3	3.30	135.00		
.084 *	M 5	0.80	70	8	25	23	6.0	4.9	3	4.20	137.00		
.088	M 6	1.00	80	10	30	28	6.0	4.9	3	5.00	144.00		
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.80	174.00		
.174	M10	1.50	100	15	39	37	10.0	8.0	3	8.50	214.00		

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH6351		.240								EH6351	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.240	M12	1.75	110	18	50	48	9.0	7.0	3	10.20	263.00		
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.00	316.00		
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.00	371.00		

* Senza adduzione interna del refrigerante

Applicazione



Materiale

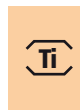
Leghe di titanio indurite
> 300 HB
[Ti6Al4V]



Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

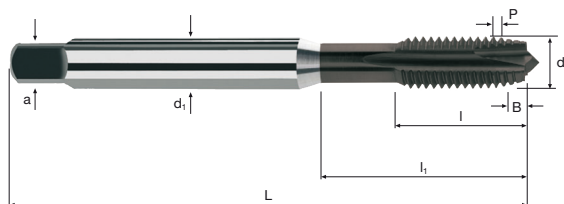
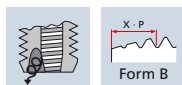


M	ø	P	v_c			v_f			v_c			v_f		
			1.5 x d	n	[100%]	2.0 x d	n	[100%]	3.0 x d	n	[100%]			
M 1.2	1.2	0.25	4	1060	265	3	795	199	2	530	133			
M 1.4	1.4	0.30	4	910	273	3	680	204	2	455	137			
M 1.6	1.6	0.35	4	795	278	3	595	208	2	400	140			
M 1.8	1.8	0.35	4	705	247	3	530	186	2	355	124			
M 2	2.0	0.40	4	635	254	3	475	190	2	320	128			
M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115			
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160			
M 3.5	3.5	0.60	5	455	273	4	365	219	3	275	165			
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168			
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152			
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160			
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150			
M10	10.0	1.50	5	160	240	4	125	188	3	95	143			



M ISO 2
(6H)

HSS PM/F

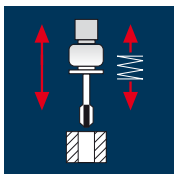


Ti
Titanium

M

Esempio: N° Ordine ET0705 .012											TRIBO	
											ET0705	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.012	M 1.2	0.25	40	5.5	7.5	2.5	2.1	2	1.00*	44.80		
.020	M 1.4	0.30	40	7.0	10.0	2.5	2.1	2	1.15*	44.80		
.022	M 1.6	0.35	40	8.0	11.0	2.5	2.1	2	1.30	41.30		
.026	M 1.8	0.35	40	8.0	11.0	2.5	2.1	2	1.50	41.30		
.034	M 2	0.40	45	8.0	12.5	2.8	2.1	2	1.70*	36.30		
.040	M 2.5	0.45	50	9.0	15.0	2.8	2.1	2	2.10	31.70		
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.60*	30.00		
.056	M 3.5	0.60	56	12.0	20.0	4.0	3.0	3	3.00	30.00		
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	3	3.40	30.00		
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	3	4.30	30.50		
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	3	5.10	31.90		
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	3	6.90	38.40		
.174	M10	1.50	100	22.0	39.0	10.0	8.0	3	8.60	44.40		
≤ M1.4 Tolleranza ISO 1 (4H)												
* La dimensione data è fuori norma												
Dimensioni superiori vedere articolo ET0706, pagina 215												

Applicazione



Materiale

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

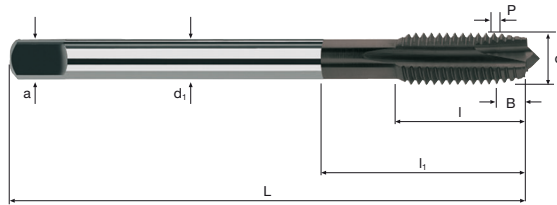


M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
			[m·d]	[min ⁻¹]	[100%]	[m·d]	[min ⁻¹]	[100%]	[m·d]	[min ⁻¹]	[100%]
M12	12.0	1.75	5	135	236	4	105	184	3	80	140
M14	14.0	2.00	5	115	230	4	90	180	3	70	140
M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M18	18.0	2.50	5	90	225	4	70	175	3	55	138
M20	20.0	2.50	5	80	200	4	65	163	3	50	125
M22	22.0	2.50	5	70	175	4	60	150	3	45	113
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

Maschi titap



M	ISO 2 (6H)
	HSS PM/F
	Form B

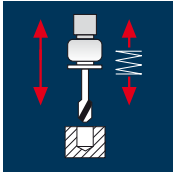


Ti
Titanium

M



										TRIBO	
										ET0706	
Esempio: N° Ordine											
Articolo ET0706 Codice-ø .240											
Ø Code	d	P	L	l	l ₁	d ₁	a			€	
.240	M12	2.00	110	24	40	9	7.0	3	10.40	55.50	
.244	M14	2.00	110	26	40	11	9.0	3	12.20	70.00	
.246	M16	2.00	110	27	40	12	9.0	3	14.20	83.00	
.312	M18	2.50	125	30	45	14	11.0	4	15.70	106.00	
.314	M20	2.50	140	32	50	16	12.0	4	17.70	129.00	
.316	M22	2.50	140	32	50	18	14.5	4	19.70	153.00	
.320	M24	3.00	160	34	60	18	14.5	4	21.20	179.00	

Applicazione





Materiale

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

M	ø	P	1.0 x d			1.5 x d			
			v _c	n	v _f	v _c	n	v _f	
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	
M 2	2.0	0.40	4	635	254	3	475	190	
M 2.5	2.5	0.45	4	510	230	3	380	171	
M 3	3.0	0.50	5	530	265	4	425	213	
M 3.5	3.5	0.60	5	455	273	4	365	219	
M 4	4.0	0.70	5	400	280	4	320	224	
M 5	5.0	0.80	5	320	256	4	255	204	
M 6	6.0	1.00	5	265	265	4	210	210	
M 8	8.0	1.25	5	200	250	4	160	200	
M10	10.0	1.50	5	160	240	4	125	188	
M12	12.0	1.75	5	135	236	4	105	184	
M14	14.0	2.00	5	115	230	4	90	180	
M16	16.0	2.00	5	100	200	4	80	160	
M18	18.0	2.50	5	90	225	4	70	175	
M20	20.0	2.50	5	80	200	4	65	163	
M22	22.0	2.50	5	70	175	4	60	150	
M24	24.0	3.00	5	65	195	4	55	165	



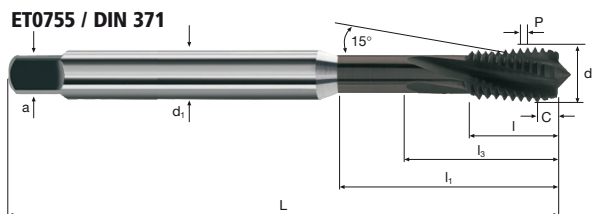
M **ISO 2 (6H)**

60° **HSS PM/F**

DIN 371/376

X-P
Form C

OIL



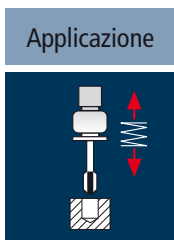
Ti
Titanium

M

Esempio: N° Ordine											TRIBO	
Articolo ET0755 Codice-Ø .034											ET0755	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.034	M 2	0.40	45	8	12.5	10.5	2.8	2.1	3	1.70 *	41.20	
.040	M 2.5	0.45	50	9	15.0	13.0	2.8	2.1	3	2.10	36.50	
.044	M 3	0.50	56	5	18.0	16.0	3.5	2.7	3	2.60 *	33.80	
.056	M 3.5	0.60	56	6	20.0	18.0	4.0	3.0	3	3.00	33.80	
.058	M 4	0.70	63	7	21.0	19.0	4.5	3.4	3	3.40	33.80	
.084	M 5	0.80	70	8	25.0	23.0	6.0	4.9	3	4.30	34.50	
.088	M 6	1.00	80	10	30.0	28.0	6.0	4.9	3	5.10	36.00	
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	6.90	43.40	
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	4	8.60	51.40	

Esempio: N° Ordine											TRIBO	
Articolo ET0756 Codice-Ø .240											ET0756	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.240	M12	1.75	110	18	50.0	48.0	9.0	7.0	4	10.40	65.00	
.244	M14	2.00	110	20	58.0	56.0	11.0	9.0	4	12.20	78.00	
.246	M16	2.00	110	20	58.0	56.0	12.0	9.0	4	14.20	95.00	
.312	M18	2.50	125	25	65.0	63.0	14.0	11.0	5	15.70	117.00	
.314	M20	2.50	140	25	72.0	70.0	16.0	12.0	5	17.70	142.00	
.316	M22	2.50	140	25	72.0	70.0	18.0	14.5	5	19.70	168.00	
.320	M24	3.00	160	30	74.0	72.0	18.0	14.5	5	21.20	197.00	

* La dimensione data è fuori norma



Materiale

Leg. a base di nichel non indurite

M	ø [mm]	P [mm]	1.0 x d			1.5 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]
M 2	2.0	0.40	3	475	190	2	320	128
M 2.5	2.5	0.45	3	380	171	2	255	115
M 3	3.0	0.50	3	320	160	2	210	105
M 4	4.0	0.70	3	240	168	2	160	112
M 5	5.0	0.80	3	190	152	2	125	100
M 6	6.0	1.00	3	160	160	2	105	105
M 8	8.0	1.25	3	120	150	2	80	100
M10	10.0	1.50	3	95	143	2	65	98
M12	12.0	1.75	3	80	140	2	55	96

Leg. a base di nichel non indurite

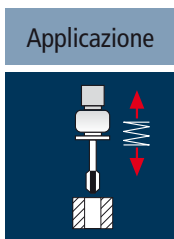
M14	14.0	2.00	3	70	140	2	45	90
M16	16.0	2.00	3	60	120	2	40	80
M18	18.0	2.50	3	55	138	2	35	88
M20	20.0	2.50	3	50	125	2	30	75
M22	22.0	2.50	3	45	113	2	30	75
M24	24.0	3.00	3	40	120	2	25	75

Leg. a base di nichel indurite

M 2	2.0	0.40	2	320	128	2	320	128
M 2.5	2.5	0.45	2	255	115	2	255	115
M 3	3.0	0.50	2	210	105	2	210	105
M 4	4.0	0.70	2	160	112	2	160	112
M 5	5.0	0.80	2	125	100	2	125	100
M 6	6.0	1.00	2	105	105	2	105	105
M 8	8.0	1.25	2	80	100	2	80	100
M10	10.0	1.50	2	65	98	2	65	98
M12	12.0	1.75	2	55	96	2	55	96

Leg. a base di nichel indurite

M14	14.0	2.00	2	45	90	2	45	90
M16	16.0	2.00	2	40	80	2	40	80
M18	18.0	2.50	2	35	88	2	35	88
M20	20.0	2.50	2	30	75	2	30	75
M22	22.0	2.50	2	30	75	2	30	75
M24	24.0	3.00	2	25	75	2	25	75



Materiale

Leg. a base di nichel non indurite

M	ø [mm]	P [mm]	1.0 x d			1.5 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]
M 2	2.0	0.40	3	475	190	2	320	128
M 2.5	2.5	0.45	3	380	171	2	255	115
M 3	3.0	0.50	3	320	160	2	210	105
M 4	4.0	0.70	3	240	168	2	160	112
M 5	5.0	0.80	3	190	152	2	125	100
M 6	6.0	1.00	3	160	160	2	105	105
M 8	8.0	1.25	3	120	150	2	80	100
M10	10.0	1.50	3	95	143	2	65	98
M12	12.0	1.75	3	80	140	2	55	96

Leg. a base di nichel non indurite

M14	14.0	2.00	3	70	140	2	45	90
M16	16.0	2.00	3	60	120	2	40	80
M18	18.0	2.50	3	55	138	2	35	88
M20	20.0	2.50	3	50	125	2	30	75
M22	22.0	2.50	3	45	113	2	30	75
M24	24.0	3.00	3	40	120	2	25	75

Leg. a base di nichel indurite

M 2	2.0	0.40	2	320	128	2	320	128
M 2.5	2.5	0.45	2	255	115	2	255	115
M 3	3.0	0.50	2	210	105	2	210	105
M 4	4.0	0.70	2	160	112	2	160	112
M 5	5.0	0.80	2	125	100	2	125	100
M 6	6.0	1.00	2	105	105	2	105	105
M 8	8.0	1.25	2	80	100	2	80	100
M 10	10.0	1.50	2	65	98	2	65	98
M 12	12.0	1.75	2	55	96	2	55	96

Leg. a base di nichel indurite

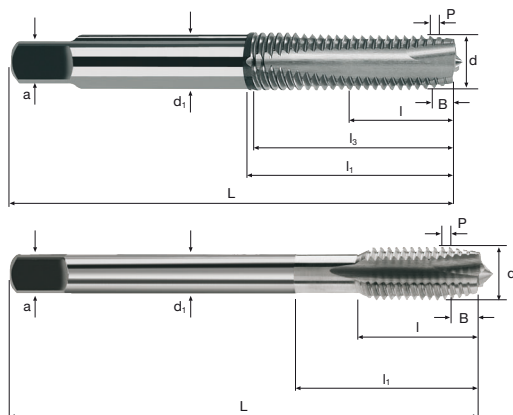
M14	14.0	2.00	2	45	90	2	45	90
M16	16.0	2.00	2	40	80	2	40	80
M18	18.0	2.50	2	35	88	2	35	88
M20	20.0	2.50	2	30	75	2	30	75
M22	22.0	2.50	2	30	75	2	30	75
M24	24.0	3.00	2	25	75	2	25	75



M **ISO 2 (6H)**

HSS PM/F

Form B

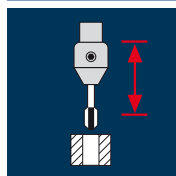


Ni
Nickel

M

Esempio: N° Ordine		Articolo E0598		Codice-ø .034						E0598			
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€		
.034	M 2	0.40	41	8	13	11	2.8	2.1	2	1.70*	29.40		
.040	M 2.5	0.45	44	9	15	13	2.8	2.1	2	2.10	25.60		
.044	M 3	0.50	48	11	18	16	3.5	2.7	3	2.60*	24.30		
.058	M 4	0.70	53	13	21	19	4.5	3.4	3	3.40	24.30		
.084	M 5	0.80	58	15	24	22	6.0	4.9	3	4.30	24.70		
.088	M 6	1.00	66	17	30	28	6.0	4.9	3	5.10	25.80		
.160	M 8	1.25	72	20	36	34	8.0	6.2	3	6.90	31.10		
.174	M10	1.50	80	22	39	37	10.0	8.0	3	8.60	36.00		
.240	M12	1.75	89	24	40		9.0	7.0	3	10.40	44.90		
.244	M14	2.00	95	26	40		11.0	9.0	3	12.20	56.80		
.246	M16	2.00	102	27	40		12.0	9.0	3	14.20	67.00		
.312	M18	2.50	112	30	45		14.0	11.0	3	15.70	86.00		
.314	M20	2.50	112	32	45		16.0	12.0	3	17.70	104.00		
.316	M22	2.50	118	32	50		18.0	14.5	4	19.70	124.00		
.320	M24	3.00	130	34	60		18.0	14.5	4	21.20	145.00		
* La dimensione data è fuori norma													

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	v _c n		v _c n		v _c n	
			1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]	3.0 x d	[min ⁻¹]
M 3	3.0	0.50	25	2655	20	2120	15	1590
M 4	4.0	0.70	25	1990	20	1590	15	1195
M 5	5.0	0.80	25	1590	20	1275	15	955
M 6	6.0	1.00	25	1325	20	1060	15	795
M 8	8.0	1.25	25	995	20	795	15	595
M10	10.0	1.50	25	795	20	635	15	475
M12	12.0	1.75	25	665	20	530	15	400
M16	16.0	2.00	25	495	20	400	15	300
M20	20.0	2.50	25	400	20	320	15	240

Acciaio
500 - 850 N/mm²

M 3	3.0	0.50	22	2335	18	1910	12	1275
M 4	4.0	0.70	22	1750	18	1430	12	955
M 5	5.0	0.80	22	1400	18	1145	12	765
M 6	6.0	1.00	22	1165	18	955	12	635
M 8	8.0	1.25	22	875	18	715	12	475
M10	10.0	1.50	22	700	18	575	12	380
M12	12.0	1.75	22	585	18	475	12	320
M16	16.0	2.00	22	440	18	360	12	240
M20	20.0	2.50	22	350	18	285	12	190

Acciaio
850 - 1100 N/mm²

M 3	3.0	0.50	18	1910	12	1275	10	1060
M 4	4.0	0.70	18	1430	12	955	10	795
M 5	5.0	0.80	18	1145	12	765	10	635
M 6	6.0	1.00	18	955	12	635	10	530
M 8	8.0	1.25	18	715	12	475	10	400
M10	10.0	1.50	18	575	12	380	10	320
M12	12.0	1.75	18	475	12	320	10	265
M16	16.0	2.00	18	360	12	240	10	200
M20	20.0	2.50	18	285	12	190	10	160

Ghisa
GG(G)

M 3	3.0	0.50	22	2335	20	2120	18	1910
M 4	4.0	0.70	22	1750	20	1590	18	1430
M 5	5.0	0.80	22	1400	20	1275	18	1145
M 6	6.0	1.00	22	1165	20	1060	18	955
M 8	8.0	1.25	22	875	20	795	18	715
M10	10.0	1.50	22	700	20	635	18	575
M12	12.0	1.75	22	585	20	530	18	475
M16	16.0	2.00	22	440	20	400	18	360
M20	20.0	2.50	22	350	20	320	18	285

Materiale

Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø [mm]	P [mm]	v _c n		v _c n		v _c n	
			1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]	3.0 x d	[min ⁻¹]
M 3	3.0	0.50	6	635	4	425	3	320
M 4	4.0	0.70	6	475	4	320	3	240
M 5	5.0	0.80	6	380	4	255	3	190
M 6	6.0	1.00	6	320	4	210	3	160
M 8	8.0	1.25	6	240	4	160	3	120
M10	10.0	1.50	6	190	4	125	3	95
M12	12.0	1.75	6	160	4	105	3	80
M16	16.0	2.00	6	120	4	80	3	60
M20	20.0	2.50	6	95	4	65	3	50

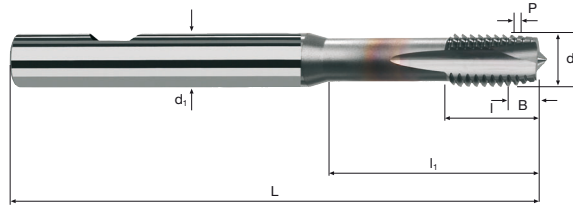
Alluminio malleabile
Si < 6%
temprato

M 3	3.0	0.50	18	1910	15	1590	12	1275
M 4	4.0	0.70	18	1430	15	1195	12	955
M 5	5.0	0.80	18	1145	15	955	12	765
M 6	6.0	1.00	18	955	15	795	12	635
M 8	8.0	1.25	18	715	15	595	12	475
M10	10.0	1.50	18	575	15	475	12	380
M12	12.0	1.75	18	475	15	400	12	320
M16	16.0	2.00	18	360	15	300	12	240
M20	20.0	2.50	18	285	15	240	12	190

M ISO 2 (6H)

HSS PM/F

Form B



Rm < 1100 N/mm²

Inox Stainless

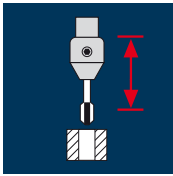
GG(G) Cast iron

Al Aluminium

M

Esempio: N° Ordine									TiCN	
Articolo EH0109 Codice-ø .044									EH0109	
Ø Code	d	P	L	l	l ₁	d ₁ h6			€	
.044	M 3	0.50	63	5	18	6	3	2.50	26.90	
.058	M 4	0.70	66	7	21	6	3	3.30	26.90	
.084	M 5	0.80	70	8	25	6	3	4.20	27.40	
.088	M 6	1.00	80	10	30	6	3	5.00	28.60	
.160	M 8	1.25	90	13	35	8	3	6.80	34.50	
.174	M10	1.50	100	15	39	10	3	8.50	39.90	
.240	M12	1.75	110	18	45	12	3	10.20	49.80	
.244	M14	2.00	110	20	46	16	3	12.00	63.00	
.246	M16	2.00	110	20	50	16	3	14.00	75.00	
.312	M18	2.50	125	25	60	16	4	15.50	95.00	
.314	M20	2.50	140	25	64	16	4	17.50	116.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø	P	v _c		n		v _c		n	
			1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]	3.0 x d	[min ⁻¹]		
M 6	6.0	1.00	25	1325	20	1060	15	795		
M 8	8.0	1.25	25	995	20	795	15	595		
M10	10.0	1.50	25	795	20	635	15	475		
M12	12.0	1.75	25	665	20	530	15	400		
M14	14.0	2.00	25	570	20	455	15	340		
M16	16.0	2.00	25	495	20	400	15	300		
M18	18.0	2.50	25	440	20	355	15	265		
M20	20.0	2.50	25	400	20	320	15	240		

Acciaio
500 - 850 N/mm²

M 6	6.0	1.00	22	1165	18	955	12	635
M 8	8.0	1.25	22	875	18	715	12	475
M10	10.0	1.50	22	700	18	575	12	380
M12	12.0	1.75	22	585	18	475	12	320
M14	14.0	2.00	22	500	18	410	12	275
M16	16.0	2.00	22	440	18	360	12	240
M18	18.0	2.50	22	390	18	320	12	210
M20	20.0	2.50	22	350	18	285	12	190

Acciaio
850 - 1100 N/mm²

M 6	6.0	1.00	18	955	12	635	10	530
M 8	8.0	1.25	18	715	12	475	10	400
M10	10.0	1.50	18	575	12	380	10	320
M12	12.0	1.75	18	475	12	320	10	265
M14	14.0	2.00	18	410	12	275	10	225
M16	16.0	2.00	18	360	12	240	10	200
M18	18.0	2.50	18	320	12	210	10	175
M20	20.0	2.50	18	285	12	190	10	160

Ghisa
GG(G)

M 6	6.0	1.00	22	1165	20	1060	18	955
M 8	8.0	1.25	22	875	20	795	18	715
M10	10.0	1.50	22	700	20	635	18	575
M12	12.0	1.75	22	585	20	530	18	475
M14	14.0	2.00	22	500	20	455	18	410
M16	16.0	2.00	22	440	20	400	18	360
M18	18.0	2.50	22	390	20	355	18	320
M20	20.0	2.50	22	350	20	320	18	285

Materiale

Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø	P	v _c		n		v _c		n	
			1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]	3.0 x d	[min ⁻¹]		
M 6	6.0	1.00	6	320	4	210	3	160		
M 8	8.0	1.25	6	240	4	160	3	120		
M10	10.0	1.50	6	190	4	125	3	95		
M12	12.0	1.75	6	160	4	105	3	80		
M14	14.0	2.00	6	135	4	90	3	70		
M16	16.0	2.00	6	120	4	80	3	60		
M18	18.0	2.50	6	105	4	70	3	55		
M20	20.0	2.50	6	95	4	65	3	50		

Alluminio malleabile
Si < 6%
temprato

M 6	6.0	1.00	18	955	15	795	12	635
M 8	8.0	1.25	18	715	15	595	12	475
M10	10.0	1.50	18	575	15	475	12	380
M12	12.0	1.75	18	475	15	400	12	320
M14	14.0	2.00	18	410	15	340	12	275
M16	16.0	2.00	18	360	15	300	12	240
M18	18.0	2.50	18	320	15	265	12	210
M20	20.0	2.50	18	285	15	240	12	190

Maschi polytap-R

Incool



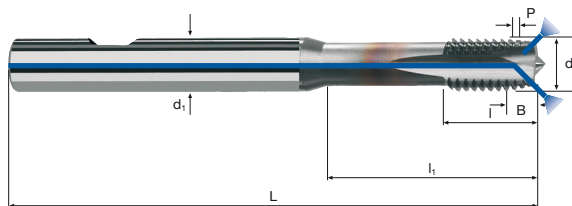
M ISO 2
(6H)

60°
HSS
PM/F

DIN 1835B
ISO 3338

X-P
Form B

OIL Emul



Rm
< 1100 N/mm²

Inox
Stainless

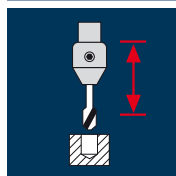
GG(G)
Cast iron

Al
Aluminium

M

									TiCN	
Esempio: N° Ordine									EH0110	
Ø Code	d	P	L	l	l ₁	d ₁ h6			€	
.088	M 6	1.00	80	10	30	6	3	5.00	41.60	
.160	M 8	1.25	90	13	35	8	3	6.80	50.20	
.174	M10	1.50	100	15	39	10	3	8.50	58.00	
.240	M12	1.75	110	18	45	12	3	10.20	72.00	
.244	M14	2.00	110	20	46	16	3	12.00	92.00	
.246	M16	2.00	110	20	50	16	3	14.00	109.00	
.312	M18	2.50	125	25	60	16	4	15.50	139.00	
.314	M20	2.50	140	25	64	16	4	17.50	168.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	v _c n		v _c n		v _c n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]
M 3	3.0	0.50	25	2655	22	2335	15	1590
M 4	4.0	0.70	25	1990	22	1750	15	1195
M 5	5.0	0.80	25	1590	22	1400	15	955
M 6	6.0	1.00	25	1325	22	1165	15	795
M 8	8.0	1.25	25	995	22	875	15	595
M10	10.0	1.50	25	795	22	700	15	475
M12	12.0	1.75	25	665	22	585	15	400
M16	16.0	2.00	25	495	22	440	15	300
M20	20.0	2.50	25	400	22	350	15	240

Acciaio
500 - 850 N/mm²

M 3	3.0	0.50	22	2335	20	2120	12	1275
M 4	4.0	0.70	22	1750	20	1590	12	955
M 5	5.0	0.80	22	1400	20	1275	12	765
M 6	6.0	1.00	22	1165	20	1060	12	635
M 8	8.0	1.25	22	875	20	795	12	475
M10	10.0	1.50	22	700	20	635	12	380
M12	12.0	1.75	22	585	20	530	12	320
M16	16.0	2.00	22	440	20	400	12	240
M20	20.0	2.50	22	350	20	320	12	190

Acciaio
850 - 1100 N/mm²

M 3	3.0	0.50	18	1910	12	1275	8	850
M 4	4.0	0.70	18	1430	12	955	8	635
M 5	5.0	0.80	18	1145	12	765	8	510
M 6	6.0	1.00	18	955	12	635	8	425
M 8	8.0	1.25	18	715	12	475	8	320
M10	10.0	1.50	18	575	12	380	8	255
M12	12.0	1.75	18	475	12	320	8	210
M16	16.0	2.00	18	360	12	240	8	160
M20	20.0	2.50	18	285	12	190	8	125

Ghisa
GG(G)

M 3	3.0	0.50	18	1910	15	1590	12	1275
M 4	4.0	0.70	18	1430	15	1195	12	955
M 5	5.0	0.80	18	1145	15	955	12	765
M 6	6.0	1.00	18	955	15	795	12	635
M 8	8.0	1.25	18	715	15	595	12	475
M10	10.0	1.50	18	575	15	475	12	380
M12	12.0	1.75	18	475	15	400	12	320
M16	16.0	2.00	18	360	15	300	12	240
M20	20.0	2.50	18	285	15	240	12	190

Materiale

Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø [mm]	P [mm]	v _c n		v _c n		v _c n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]
M 3	3.0	0.50	4	425	3	320	2	210
M 4	4.0	0.70	4	320	3	240	2	160
M 5	5.0	0.80	4	255	3	190	2	125
M 6	6.0	1.00	4	210	3	160	2	105
M 8	8.0	1.25	4	160	3	120	2	80
M10	10.0	1.50	4	125	3	95	2	65
M12	12.0	1.75	4	105	3	80	2	55
M16	16.0	2.00	4	80	3	60	2	40
M20	20.0	2.50	4	65	3	50	2	30

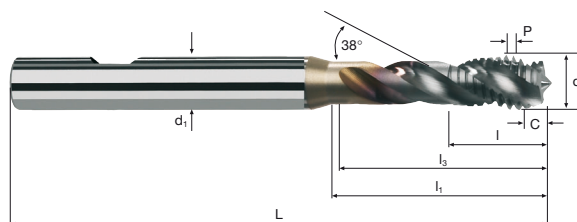
Alluminio malleabile
Si < 6%
temprato

M 3	3.0	0.50	12	1275	10	1060	8	850
M 4	4.0	0.70	12	955	10	795	8	635
M 5	5.0	0.80	12	765	10	635	8	510
M 6	6.0	1.00	12	635	10	530	8	425
M 8	8.0	1.25	12	475	10	400	8	320
M10	10.0	1.50	12	380	10	320	8	255
M12	12.0	1.75	12	320	10	265	8	210
M16	16.0	2.00	12	240	10	200	8	160
M20	20.0	2.50	12	190	10	160	8	125

M ISO 2 (6H)

HSS PM/F

Form C



Rm
< 1100 N/mm²

Inox
Stainless

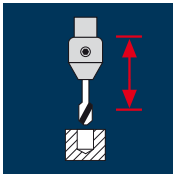
GG(G)
Cast iron

Al
Aluminium

M

Esempio: N° Ordine											TiCN	
Articolo											EH0229	
Codice-ø												
Ø Code	d	P	L	l	l ₁	l ₃	d ₁ h ₆			€		
.044	M 3	0.50	63	5	18	16	6	3	2.50	28.90		
.058	M 4	0.70	66	7	21	19	6	3	3.30	28.90		
.084	M 5	0.80	70	8	25	23	6	3	4.20	29.50		
.088	M 6	1.00	80	10	30	28	6	3	5.00	30.90		
.160	M 8	1.25	90	13	35	33	8	3	6.80	37.20		
.174	M10	1.50	100	15	39	37	10	3	8.50	44.10		
.240	M12	1.75	110	18	45	43	12	3	10.20	55.90		
.244	M14	2.00	110	20	46	44	16	4	12.00	67.00		
.246	M16	2.00	110	20	50	48	16	4	14.00	81.00		
.312	M18	2.50	125	25	60	58	16	4	15.50	101.00		
.314	M20	2.50	140	25	64	62	16	4	17.50	122.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	v _c n		v _c n		v _c n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]
M 4	4.0	0.70	25	1990	22	1750	15	1195
M 5	5.0	0.80	25	1590	22	1400	15	955
M 6	6.0	1.00	25	1325	22	1165	15	795
M 8	8.0	1.25	25	995	22	875	15	595
M10	10.0	1.50	25	795	22	700	15	475
M12	12.0	1.75	25	665	22	585	15	400
M14	14.0	2.00	25	570	22	500	15	340
M16	16.0	2.00	25	495	22	440	15	300
M20	20.0	2.50	25	400	22	350	15	240

Acciaio
500 - 850 N/mm²

M 4	4.0	0.70	22	1750	20	1590	12	955
M 5	5.0	0.80	22	1400	20	1275	12	765
M 6	6.0	1.00	22	1165	20	1060	12	635
M 8	8.0	1.25	22	875	20	795	12	475
M10	10.0	1.50	22	700	20	635	12	380
M12	12.0	1.75	22	585	20	530	12	320
M14	14.0	2.00	22	500	20	455	12	275
M16	16.0	2.00	22	440	20	400	12	240
M20	20.0	2.50	22	350	20	320	12	190

Acciaio
850 - 1100 N/mm²

M 4	4.0	0.70	18	1430	12	955	8	635
M 5	5.0	0.80	18	1145	12	765	8	510
M 6	6.0	1.00	18	955	12	635	8	425
M 8	8.0	1.25	18	715	12	475	8	320
M10	10.0	1.50	18	575	12	380	8	255
M12	12.0	1.75	18	475	12	320	8	210
M14	14.0	2.00	18	410	12	275	8	180
M16	16.0	2.00	18	360	12	240	8	160
M20	20.0	2.50	18	285	12	190	8	125

Ghisa
GG(G)

M 4	4.0	0.70	18	1430	15	1195	12	955
M 5	5.0	0.80	18	1145	15	955	12	765
M 6	6.0	1.00	18	955	15	795	12	635
M 8	8.0	1.25	18	715	15	595	12	475
M10	10.0	1.50	18	575	15	475	12	380
M12	12.0	1.75	18	475	15	400	12	320
M14	14.0	2.00	18	410	15	340	12	275
M16	16.0	2.00	18	360	15	300	12	240
M20	20.0	2.50	18	285	15	240	12	190

Materiale

Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø [mm]	P [mm]	v _c n		v _c n		v _c n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]
M 4	4.0	0.70	4	320	3	240	2	160
M 5	5.0	0.80	4	255	3	190	2	125
M 6	6.0	1.00	4	210	3	160	2	105
M 8	8.0	1.25	4	160	3	120	2	80
M10	10.0	1.50	4	125	3	95	2	65
M12	12.0	1.75	4	105	3	80	2	55
M14	14.0	2.00	4	90	3	70	2	45
M16	16.0	2.00	4	80	3	60	2	40
M20	20.0	2.50	4	65	3	50	2	30

Alluminio malleabile
Si < 6%
temprato

M 4	4.0	0.70	12	955	10	795	8	635
M 5	5.0	0.80	12	765	10	635	8	510
M 6	6.0	1.00	12	635	10	530	8	425
M 8	8.0	1.25	12	475	10	400	8	320
M10	10.0	1.50	12	380	10	320	8	255
M12	12.0	1.75	12	320	10	265	8	210
M14	14.0	2.00	12	275	10	225	8	180
M16	16.0	2.00	12	240	10	200	8	160
M20	20.0	2.50	12	190	10	160	8	125

Maschi polytap-R

Incool

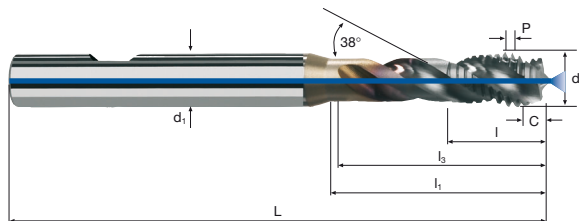


M ISO 2 (6H)

60° **HSS PM/F**

DIN 1835B ISO 3338

X-P Form C

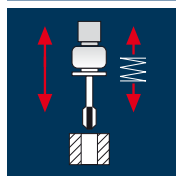


- Rm**
 < 1100 N/mm²
- Inox**
 Stainless
- GG(G)**
 Cast iron
- Al**
 Aluminium

M

Esempio: N° Ordine										TiCN	
Articolo										EH0230	
Codice-ø											
Ø Code	d	P	L	l	l ₁	l ₃	d ₁ h6			€	
.058	M 4	0.70	66	7	21	19	6	3	3.30	40.00	
.084	M 5	0.80	70	8	25	23	6	3	4.20	40.80	
.088	M 6	1.00	80	10	30	28	6	3	5.00	42.60	
.160	M 8	1.25	90	13	35	33	8	3	6.80	51.40	
.174	M10	1.50	100	15	39	37	10	3	8.50	61.00	
.240	M12	1.75	110	18	45	43	12	3	10.20	77.00	
.244	M14	2.00	110	20	46	44	16	4	12.00	93.00	
.246	M16	2.00	110	20	50	48	16	4	14.00	112.00	
.312	M18	2.50	125	25	60	58	16	4	15.50	139.00	
.314	M20	2.50	140	25	64	62	16	4	17.50	168.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 1	1.0	0.25	14	4455	1114	12	3820	955	10	3185	796
M 1.2	1.2	0.25	14	3715	929	12	3185	796	10	2655	664
M 1.4	1.4	0.30	14	3185	956	12	2730	819	10	2275	683
M 1.6	1.6	0.35	14	2785	975	12	2385	835	10	1990	697
M 1.8	1.8	0.35	14	2475	866	12	2120	742	10	1770	620
M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
M 2.2	2.2	0.45	14	2025	911	12	1735	781	10	1445	650
M 2.3	2.3	0.40	14	1940	776	12	1660	664	10	1385	554
M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574

Acciaio
< 500 N/mm²

M 2.6	2.6	0.45	18	2205	992	15	1835	826	12	1470	662
M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
M 3.5	3.5	0.60	18	1635	981	15	1365	819	12	1090	654
M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
M 4.5	4.5	0.75	18	1275	956	15	1060	795	12	850	638
M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
M10	10.0	1.50	18	575	863	15	475	713	12	380	570

Acciaio
500 - 850 N/mm²

M 1	1.0	0.25	12	3820	955	8	2545	636	6	1910	478
M 1.2	1.2	0.25	12	3185	796	8	2120	530	6	1590	398
M 1.4	1.4	0.30	12	2730	819	8	1820	546	6	1365	410
M 1.6	1.6	0.35	12	2385	835	8	1590	557	6	1195	418
M 1.8	1.8	0.35	12	2120	742	8	1415	495	6	1060	371
M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
M 2.2	2.2	0.45	12	1735	781	8	1155	520	6	870	392
M 2.3	2.3	0.40	12	1660	664	8	1105	442	6	830	332
M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344

Acciaio
500 - 850 N/mm²

M 2.6	2.6	0.45	15	1835	826	10	1225	551	8	980	441
M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
M 3.5	3.5	0.60	15	1365	819	10	910	546	8	730	438
M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
M 4.5	4.5	0.75	15	1060	795	10	705	529	8	565	424
M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
M10	10.0	1.50	15	475	713	10	320	480	8	255	383

Materiale

Alluminio malleabile
Si < 6%
temprato

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 1	1.0	0.25	12	3820	955	10	3185	796	8	2545	636
M 1.2	1.2	0.25	12	3185	796	10	2655	664	8	2120	530
M 1.4	1.4	0.30	12	2730	819	10	2275	683	8	1820	546
M 1.6	1.6	0.35	12	2385	835	10	1990	697	8	1590	557
M 1.8	1.8	0.35	12	2120	742	10	1770	620	8	1415	495
M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
M 2.2	2.2	0.45	12	1735	781	10	1445	650	8	1155	520
M 2.3	2.3	0.40	12	1660	664	10	1385	554	8	1105	442
M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459

Raccomandazione:
senza rivestimento

Alluminio malleabile
Si < 6%
temprato

M 2.6	2.6	0.45	15	1835	826	12	1470	662	10	1225	551
M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
M 3.5	3.5	0.60	15	1365	819	12	1090	654	10	910	546
M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
M 4.5	4.5	0.75	15	1060	795	12	850	638	10	705	529
M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
M10	10.0	1.50	15	475	713	12	380	570	10	320	480

Raccomandazione:
senza rivestimento

Acciaio inossidabile
[Cr-Ni/1.4301]



M 1	1.0	0.25	4	1275	319	3	955	239	2	635	159
M 1.2	1.2	0.25	4	1060	265	3	795	199	2	530	133
M 1.4	1.4	0.30	4	910	273	3	680	204	2	455	137
M 1.6	1.6	0.35	4	795	278	3	595	208	2	400	140
M 1.8	1.8	0.35	4	705	247	3	530	186	2	355	124
M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
M 2.2	2.2	0.45	4	580	261	3	435	196	2	290	131
M 2.3	2.3	0.40	4	555	222	3	415	166	2	275	110
M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115

Acciaio inossidabile
[Cr-Ni/1.4301]



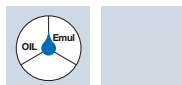
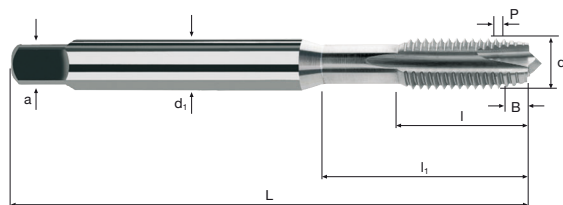
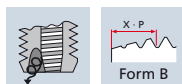
M 2.6	2.6	0.45	5	610	275	4	490	221	3	365	164
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 3.5	3.5	0.60	5	455	273	4	365	219	3	275	165
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 4.5	4.5	0.75	5	355	266	4	285	214	3	210	158
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143

Maschi e-tap



M ISO 2
(6H)

HSS
PM/F+



Rm
< 850 N/mm²

Inox
Stainless

Al
Aluminium

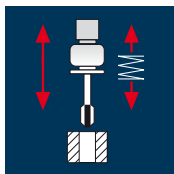
GG(G)
Cast iron

Cu
Copper

M

Esempio: N° Ordine E10102 .010										VAP	
										E10102	EV10102
Ø Code	d	P	L	l	li	d1	a			€	€
.010	M 1	0.25	40	5.5	7.5	2.5	2.1	2	0.80*	24.20	24.70
.012	M 1.2	0.25	40	5.5	7.5	2.5	2.1	2	1.00*	24.20	24.70
.020	M 1.4	0.30	40	7.0	10.0	2.5	2.1	2	1.15*	24.20	24.70
.022	M 1.6	0.35	40	8.0	11.0	2.5	2.1	2	1.30	22.30	22.80
.024	M 1.7	0.35	40	8.0	11.0	2.5	2.1	2	1.40	22.30	22.80
.026	M 1.8	0.35	40	8.0	11.0	2.5	2.1	2	1.50	22.30	22.80
.034	M 2	0.40	45	8.0	12.5	2.8	2.1	2	1.60	19.60	20.10
.036	M 2.2	0.45	45	9.0	14.5	2.8	2.1	2	1.75	19.60	20.10
.038	M 2.3	0.40	45	9.0	14.5	2.8	2.1	2	1.90	19.60	20.10
.040	M 2.5	0.45	50	9.0	15.0	2.8	2.1	2	2.05	17.10	17.50
.042	M 2.6	0.45	50	9.0	15.0	2.8	2.1	2	2.15	17.10	17.50
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.50	16.20	16.60
.056	M 3.5	0.60	56	12.0	20.0	4.0	3.0	3	2.90	16.20	16.60
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	3	3.30	16.20	16.60
.061	M 4.5	0.75	70	14.0	25.0	6.0	4.9	3	3.75	16.20	16.60
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	3	4.20	16.50	16.80
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	3	5.00	17.20	17.60
.089	M 7	1.00	80	17.0	30.0	7.0	6.2	3	6.00	17.20	17.60
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	3	6.80	20.70	21.20
.174	M10	1.50	100	22.0	39.0	10.0	8.0	3	8.50	24.00	24.50
≤ M1.4 Tolleranza ISO 1 (4H)											
* La dimensione data è fuori norma											
Dimensioni superiori vedere articolo E10103, pagina 231											

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]
M12	12.0	1.75	18	475	831	15	400	700	12	320	560
M14	14.0	2.00	18	410	820	15	340	680	12	275	550
M16	16.0	2.00	18	360	720	15	300	600	12	240	480
M18	18.0	2.50	18	320	800	15	265	663	12	210	525
M20	20.0	2.50	18	285	713	15	240	600	12	190	475
M22	22.0	2.50	18	260	650	15	215	538	12	175	438
M24	24.0	3.00	18	240	720	15	200	600	12	160	480

Acciaio
500 - 850 N/mm²

M12	12.0	1.75	15	400	700	10	265	464	8	210	368
M14	14.0	2.00	15	340	680	10	225	450	8	180	360
M16	16.0	2.00	15	300	600	10	200	400	8	160	320
M18	18.0	2.50	15	265	663	10	175	438	8	140	350
M20	20.0	2.50	15	240	600	10	160	400	8	125	313
M22	22.0	2.50	15	215	538	10	145	363	8	115	288
M24	24.0	3.00	15	200	600	10	135	405	8	105	315

Alluminio malleabile
Si < 6%
temprato

M12	12.0	1.75	15	400	700	12	320	560	10	265	464
M14	14.0	2.00	15	340	680	12	275	550	10	225	450
M16	16.0	2.00	15	300	600	12	240	480	10	200	400
M18	18.0	2.50	15	265	663	12	210	525	10	175	438
M20	20.0	2.50	15	240	600	12	190	475	10	160	400
M22	22.0	2.50	15	215	538	12	175	438	10	145	363
M24	24.0	3.00	15	200	600	12	160	480	10	135	405

Raccomandazione:
senza rivestimento

Acciaio inossidabile
[Cr-Ni/1.4301]



M12	2.6	0.45	5	610	275	4	490	221	3	365	164
M14	3.0	0.50	5	530	265	4	425	213	3	320	160
M16	3.5	0.60	5	455	273	4	365	219	3	275	165
M18	4.0	0.70	5	400	280	4	320	224	3	240	168
M20	4.5	0.75	5	355	266	4	285	214	3	210	158
M22	5.0	0.80	5	320	256	4	255	204	3	190	152
M24	6.0	1.00	5	265	265	4	210	210	3	160	160

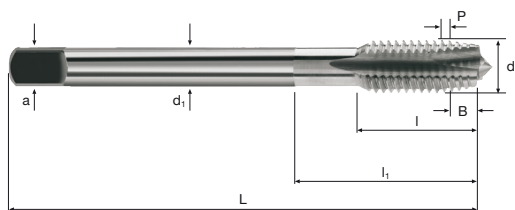
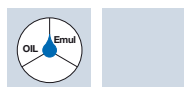
Maschi e-tap



M ISO 2 (6H)

HSS PM/F+

Form B



Rm
< 850 N/mm²

Inox
Stainless

Al
Aluminium

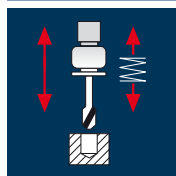
GG(G)
Cast iron

Cu
Copper

M

										VAP		
Esempio: N° Ordine										E10103	EV10103	
	Articolo		Codice-ø									
	E10103		.240									
Ø Code	d	P	L	I	I ₁	d ₁	a			€	€	
.240	M12	1.75	110	24	40	9.0	7.0	3	10.20	29.90	30.60	
.244	M14	2.00	110	26	40	11.0	9.0	3	12.00	37.90	38.80	
.246	M16	2.00	110	27	40	12.0	9.0	3	14.00	44.90	46.00	
.312	M18	2.50	125	30	45	14.0	11.0	4	15.50	57.20	58.60	
.314	M20	2.50	140	32	50	16.0	12.0	4	17.50	70.00	71.00	
.316	M22	2.50	140	32	50	18.0	14.5	4	19.50	83.00	85.00	
.320	M24	3.00	160	34	60	18.0	14.5	4	21.00	97.00	99.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 1.6	1.6	0.35	11	2190	767	10	1990	697	8	1590	557
M 1.7	1.7	0.35	11	2060	721	10	1870	655	8	1500	525
M 1.8	1.8	0.35	11	1945	681	10	1770	620	8	1415	495
M 2	2.0	0.40	11	1750	700	10	1590	636	8	1275	510
M 2.2	2.2	0.45	11	1590	716	10	1445	650	8	1155	520
M 2.3	2.3	0.40	11	1520	608	10	1385	554	8	1105	442
M 2.5	2.5	0.45	11	1400	630	10	1275	574	8	1020	459
M 2.6	2.6	0.45	14	1715	772	12	1470	662	10	1225	551
M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530

Acciaio
< 500 N/mm²

M 3.5	3.5	0.60	14	1275	765	12	1090	654	10	910	546
M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
M 4.5	4.5	0.75	14	990	743	12	850	638	10	705	529
M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
M 7	7.0	1.00	14	635	635	12	545	645	10	455	455
M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
M10	10.0	1.50	14	445	668	12	380	570	10	320	480

Acciaio
500 - 850 N/mm²

M 1.6	1.6	0.35	8	1590	557	7	1395	488	6	1195	418
M 1.7	1.7	0.35	8	1500	525	7	1310	458	6	1125	394
M 1.8	1.8	0.35	8	1415	495	7	1240	434	6	1060	371
M 2	2.0	0.40	8	1275	510	7	1115	446	6	955	382
M 2.2	2.2	0.45	8	1155	520	7	1015	457	6	870	392
M 2.3	2.3	0.40	8	1105	442	7	970	388	6	830	332
M 2.5	2.5	0.45	8	1020	459	7	890	401	6	765	344
M 2.6	2.6	0.45	9	1100	495	8	980	441	7	855	385
M 3	3.0	0.50	9	955	478	8	850	425	7	745	373

Acciaio
500 - 850 N/mm²

M 3.5	3.5	0.60	9	820	492	8	730	438	7	635	381
M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
M 4.5	4.5	0.75	9	635	476	8	565	424	7	495	371
M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
M 7	7.0	1.00	9	410	410	8	365	365	7	320	320
M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
M10	10.0	1.50	9	285	428	8	255	383	7	225	338

Materiale

Alluminio malleabile
Si < 6%
temprato

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 1.6	1.6	0.35	8	1590	557	6	1195	418	5	995	348
M 1.7	1.7	0.35	8	1500	525	6	1125	394	5	935	327
M 1.8	1.8	0.35	8	1415	495	6	1060	371	5	885	310
M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
M 2.2	2.2	0.45	8	1155	520	6	870	392	5	725	326
M 2.3	2.3	0.40	8	1105	442	6	830	332	5	690	276
M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
M 2.6	2.6	0.45	10	1225	551	8	980	441	6	735	331
M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318

Raccomandazione:
senza rivestimento

Alluminio malleabile
Si < 6%
temprato

M 3.5	3.5	0.60	10	910	546	8	730	438	6	545	327
M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
M 4.5	4.5	0.75	10	705	529	8	565	424	6	425	319
M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
M 7	7.0	1.00	10	455	455	8	365	365	6	275	275
M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
M10	10.0	1.50	10	320	480	8	255	383	6	190	285

Raccomandazione:
senza rivestimento

Acciaio inossidabile
[Cr-Ni/1.4301]



M 1.6	1.6	0.35	3	595	208	2	400	140	2	400	140
M 1.7	1.7	0.35	3	560	196	2	375	131	2	375	131
M 1.8	1.8	0.35	3	530	186	2	355	124	2	355	124
M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
M 2.2	2.2	0.45	3	435	196	2	290	131	2	290	131
M 2.3	2.3	0.40	3	415	166	2	275	110	2	275	110
M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
M 2.6	2.6	0.45	4	490	221	3	365	164	3	365	164
M 3	3.0	0.50	4	425	213	3	320	160	3	320	160

Acciaio inossidabile
[Cr-Ni/1.4301]



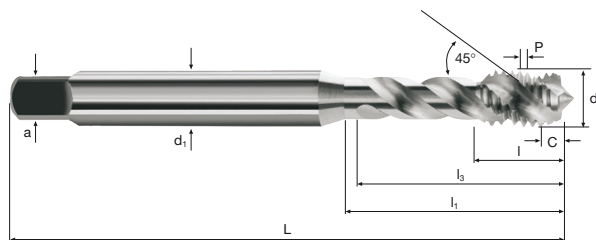
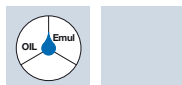
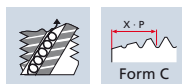
M 3.5	3.5	0.60	4	365	219	3	275	165	3	275	165
M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
M 4.5	4.5	0.75	4	285	214	3	210	158	3	210	158
M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
M 7	7.0	1.00	4	180	180	3	135	135	3	135	135
M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
M10	10.0	1.50	4	125	188	3	95	143	3	95	143

Maschi e-tap



M ISO 2
(6H)

HSS
PM/F+



Rm
< 850 N/mm²

Inox
Stainless

Al
Aluminium

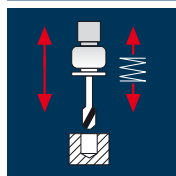
GG(G)
Cast iron

Cu
Copper

M

Esempio: N° Ordine E10210 .022											VAP	
											E10210	EV10210
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	€
.022	M 1.6	0.35	40	8.0	11.0	9.0	2.5	2.1	3	1.30	25.10	25.70
.024	M 1.7	0.35	40	8.0	11.0	9.0	2.5	2.1	3	1.40	25.10	25.70
.026	M 1.8	0.35	40	8.0	11.0	9.0	2.5	2.1	3	1.50	25.10	25.70
.034	M 2	0.40	45	8.0	12.5	10.5	2.8	2.1	3	1.60	22.20	22.70
.036	M 2.2	0.45	45	9.0	14.5	12.5	2.8	2.1	3	1.75	22.20	22.70
.038	M 2.3	0.40	45	9.0	14.5	12.5	2.8	2.1	3	1.90	22.20	22.70
.040	M 2.5	0.45	50	9.0	15.0	13.0	2.8	2.1	3	2.05	19.70	20.20
.042	M 2.6	0.45	50	9.0	15.0	13.0	2.8	2.1	3	2.15	19.70	20.20
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	2.50	18.20	18.60
.056	M 3.5	0.60	56	4.8	20.0	18.0	4.0	3.0	3	2.90	18.20	18.60
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	3.30	18.20	18.60
.061	M 4.5	0.75	70	6.0	25.0	23.0	6.0	4.9	3	3.75	18.20	18.60
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	4.20	18.60	19.00
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	5.00	19.40	19.90
.089	M 7	1.00	80	8.0	30.0	28.0	7.0	6.2	3	6.00	19.40	19.90
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	6.80	23.40	24.00
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	8.50	27.70	28.40
Dimensioni superiori vedere articolo E10211, pagina 235												

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	v _c			n			v _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M12	12.0	1.75	14	370	648	12	320	560	10	265	464
M14	14.0	2.00	14	320	640	12	275	550	10	225	450
M16	16.0	2.00	14	280	560	12	240	480	10	200	400
M18	18.0	2.50	14	250	625	12	210	525	10	175	438
M20	20.0	2.50	14	225	563	12	190	475	10	160	400
M22	22.0	2.50	14	205	513	12	175	438	10	145	363
M24	24.0	3.00	14	185	555	12	160	480	10	135	405
M27	27.0	3.00	14	165	495	12	140	420	10	120	360
M30	30.0	3.50	14	150	525	12	125	438	10	105	368

Acciaio
< 500 N/mm²

M33	33.0	3.50	14	135	473	12	115	403	10	95	333
M36	36.0	4.00	14	125	500	12	105	420	10	90	360
M39	39.0	4.00	14	115	460	12	100	400	10	80	320
M42	42.0	4.50	14	105	473	12	90	405	10	75	338

Acciaio
500 - 850 N/mm²

M12	12.0	1.75	9	240	420	8	210	368	7	185	324
M14	14.0	2.00	9	205	410	8	180	360	7	160	320
M16	16.0	2.00	9	180	360	8	160	320	7	140	280
M18	18.0	2.50	9	160	400	8	140	350	7	125	313
M20	20.0	2.50	9	145	363	8	125	313	7	110	275
M22	22.0	2.50	9	130	325	8	115	288	7	100	250
M24	24.0	3.00	9	120	360	8	105	315	7	95	285
M27	27.0	3.00	9	105	315	8	95	285	7	85	255
M30	30.0	3.50	9	95	333	8	85	298	7	75	263

Acciaio
500 - 850 N/mm²

M33	33.0	3.50	9	85	298	8	75	263	7	70	245
M36	36.0	4.00	9	80	320	8	70	280	7	60	240
M39	39.0	4.00	9	75	300	8	65	260	7	55	220
M42	42.0	4.50	9	70	315	8	60	270	7	55	248

Materiale

Alluminio malleabile
Si < 6%
temprato

M	ø [mm]	P [mm]	v _c			n			v _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M12	12.0	1.75	10	265	464	8	210	368	6	160	280
M14	14.0	2.00	10	225	450	8	180	360	6	135	270
M16	16.0	2.00	10	200	400	8	160	320	6	120	240
M18	18.0	2.50	10	175	438	8	140	350	6	105	263
M20	20.0	2.50	10	160	400	8	125	313	6	95	238
M22	22.0	2.50	10	145	363	8	115	288	6	85	213
M24	24.0	3.00	10	135	405	8	105	315	6	80	240
M27	27.0	3.00	10	120	360	8	95	285	6	70	210
M30	30.0	3.50	10	105	368	8	85	298	6	65	228

Raccomandazione:
senza rivestimento

Alluminio malleabile
Si < 6%
temprato

M33	33.0	3.50	10	95	333	8	75	263	6	60	210
M36	36.0	4.00	10	90	360	8	70	280	6	55	220
M39	39.0	4.00	10	80	320	8	65	260	6	50	200
M42	42.0	4.50	10	75	338	8	60	270	6	45	203

Raccomandazione:
senza rivestimento

Acciaio inossidabile
[Cr-Ni/1.4301]



M12	12.0	1.75	4	105	184	3	80	140	3	80	140
M14	14.0	2.00	4	90	180	3	70	140	3	70	140
M16	16.0	2.00	4	80	160	3	60	120	3	60	120
M18	18.0	2.50	4	70	175	3	55	138	3	55	138
M20	20.0	2.50	4	65	163	3	50	125	3	50	125
M22	22.0	2.50	4	60	150	3	45	113	3	45	113
M24	24.0	3.00	4	55	165	3	40	120	3	40	120
M27	27.0	3.00	4	45	135	3	35	105	3	35	105
M30	30.0	3.50	4	40	140	3	30	105	3	30	105

Acciaio inossidabile
[Cr-Ni/1.4301]



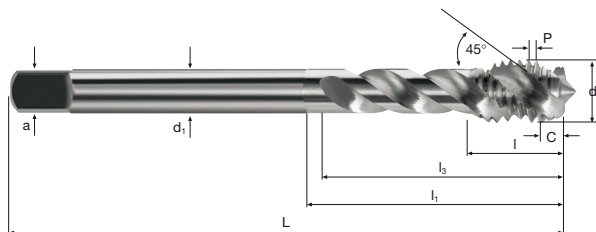
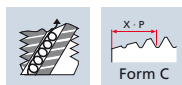
M33	33.0	3.50	4	40	140	3	30	105	3	30	105
M36	36.0	4.00	4	35	140	3	25	100	3	25	100
M39	39.0	4.00	4	35	140	3	25	100	3	25	100
M42	42.0	4.50	4	30	135	3	25	113	3	25	113

Maschi e-tap



M ISO 2 (6H)

HSS PM/F+



Rm
< 850 N/mm²

Inox
Stainless

Al
Aluminium

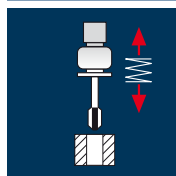
GG(G)
Cast iron

Cu
Copper

M

Esempio: N° Ordine											VAP	
											E10211	EV10211
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	€
.240	M12	1.75	110	14	50	48	9	7.0	3	10.20	35.20	36.10
.244	M14	2.00	110	16	58	56	11	9.0	4	12.00	42.30	43.30
.246	M16	2.00	110	16	58	56	12	9.0	4	14.00	51.10	52.30
.312	M18	2.50	125	20	65	63	14	11.0	4	15.50	63.00	65.00
.314	M20	2.50	140	20	72	70	16	12.0	4	17.50	77.00	78.00
.316	M22	2.50	140	20	72	70	18	14.5	4	19.50	91.00	93.00
.320	M24	3.00	160	24	74	72	18	14.5	4	21.00	107.00	109.00
.322	M27	3.00	160	30	84	82	20	16.0	4	24.00	130.00	133.00
.374	M30	3.50	180	35	92	90	22	18.0	4	26.50	154.00	158.00
.376	M33	3.50	180	35	100	98	25	20.0	4	29.50	195.00	199.00
.378	M36	4.00	200	40	101	99	28	22.0	4	32.00	247.00	252.00
.380	M39	4.00	200	40	101	99	32	24.0	4	35.00	317.00	324.00
.382	M42	4.50	200	45	106	104	32	24.0	4	37.50	395.00	404.00

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [min ⁻¹]	n [min ⁻¹]	v _f [100%]
M 3	3.0	0.50	8	850	425	6	635	318	4	425	213
M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
M10	10.0	1.50	8	255	383	6	190	285	4	125	188
M12	12.0	1.75	8	210	368	6	160	280	4	105	184
M16	16.0	2.00	8	160	320	6	120	240	4	80	160
M20	20.0	2.50	8	125	313	6	95	238	4	65	163

Acciaio
< 500 N/mm²

M	ø	P	v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
M24	24.0	3.00	8	105	315	6	80	240	4	55	165

Acciaio
500 - 850 N/mm²

M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143
M12	12.0	1.75	5	135	236	4	105	184	3	80	140
M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M20	20.0	2.50	5	80	200	4	65	163	3	50	125

Acciaio
500 - 850 N/mm²

M	ø	P	v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

Materiale

Alluminio malleabile
Si < 6%
temprato

M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [min ⁻¹]	n [min ⁻¹]	v _f [100%]	v _c [min ⁻¹]	n [min ⁻¹]	v _f [100%]
M 3	3.0	0.50	8	850	425	6	635	318	4	425	213
M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
M10	10.0	1.50	8	255	383	6	190	285	4	125	188
M12	12.0	1.75	8	210	368	6	160	280	4	105	184
M16	16.0	2.00	8	160	320	6	120	240	4	80	160
M20	20.0	2.50	8	125	313	6	95	238	4	65	163

Alluminio malleabile
Si < 6%
temprato

M	ø	P	v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
M24	24.0	3.00	8	105	315	6	80	240	4	55	165

Ghisa
GG(G)

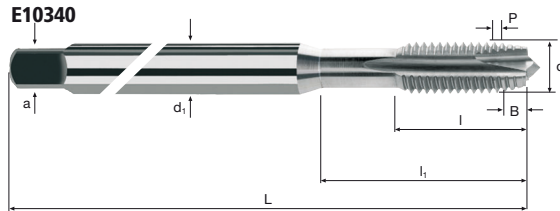
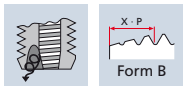
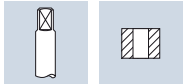
M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
M 3	3.0	0.50	12	1275	638	10	1060	530	8	850	425
M 4	4.0	0.70	12	955	669	10	795	557	8	635	445
M 5	5.0	0.80	12	765	612	10	635	508	8	510	408
M 6	6.0	1.00	12	635	635	10	530	530	8	425	425
M 8	8.0	1.25	12	475	594	10	400	500	8	320	400
M10	10.0	1.50	12	380	570	10	320	480	8	255	383
M12	12.0	1.75	12	320	560	10	265	464	8	210	368
M16	16.0	2.00	12	240	480	10	200	400	8	160	320
M20	20.0	2.50	12	190	475	10	160	400	8	125	313

Ghisa
GG(G)

M	ø	P	v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
M24	24.0	3.00	12	160	480	10	135	405	8	105	315

Maschi

Esecuzione extralunga



Rm
< 850 N/mm²

Al
Aluminium

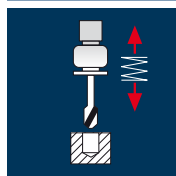
GG(G)
Cast iron

M

Esempio: **N° Ordine** Articolo **E10340** Codice- \varnothing **.044**

\varnothing Code	d	P	L	l	l ₁	d ₁	a			€	
.044	M 3	0.50	100	12	18	3.5	2.7	3	2.50	26.70	
.058	M 4	0.70	125	13	21	4.5	3.4	3	3.30	26.70	
.084	M 5	0.80	140	15	25	6.0	4.9	3	4.20	27.20	
.088	M 6	1.00	160	17	30	6.0	4.9	3	5.00	28.40	
.160	M 8	1.25	180	20	35	8.0	6.2	3	6.80	34.20	
.174	M10	1.50	200	22	39	10.0	8.0	3	8.50	39.60	

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	v _c			n			v _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 3	3.0	0.50	8	850	425	6	635	318	4	425	213
M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
M10	10.0	1.50	8	255	383	6	190	285	4	125	188
M12	12.0	1.75	8	210	368	6	160	280	4	105	184
M16	16.0	2.00	8	160	320	6	120	240	4	80	160
M20	20.0	2.50	8	125	313	6	95	238	4	65	163

Acciaio
< 500 N/mm²

M24	24.0	3.00	8	105	315	6	80	240	4	55	165

Acciaio
500 - 850 N/mm²

M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143
M12	12.0	1.75	5	135	236	4	105	184	3	80	140
M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M20	20.0	2.50	5	80	200	4	65	163	3	50	125

Acciaio
500 - 850 N/mm²

M24	24.0	3.00	5	65	195	4	55	165	3	40	120

Materiale

Alluminio malleabile
Si < 6%
temptrato

M	ø [mm]	P [mm]	v _c			n			v _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 3	3.0	0.50	8	850	425	6	635	318	4	425	213
M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
M10	10.0	1.50	8	255	383	6	190	285	4	125	188
M12	12.0	1.75	8	210	368	6	160	280	4	105	184
M16	16.0	2.00	8	160	320	6	120	240	4	80	160
M20	20.0	2.50	8	125	313	6	95	238	4	65	163

Alluminio malleabile
Si < 6%
temptrato

M24	24.0	3.00	8	105	315	6	80	240	4	55	165

Ghisa
GG(G)

M 3	3.0	0.50	12	1275	638	10	1060	530	8	850	425
M 4	4.0	0.70	12	955	669	10	795	557	8	635	445
M 5	5.0	0.80	12	765	612	10	635	508	8	510	408
M 6	6.0	1.00	12	635	635	10	530	530	8	425	425
M 8	8.0	1.25	12	475	594	10	400	500	8	320	400
M10	10.0	1.50	12	380	570	10	320	480	8	255	383
M12	12.0	1.75	12	320	560	10	265	464	8	210	368
M16	16.0	2.00	12	240	480	10	200	400	8	160	320
M20	20.0	2.50	12	190	475	10	160	400	8	125	313

Ghisa
GG(G)

M24	24.0	3.00	12	160	480	10	135	405	8	105	315

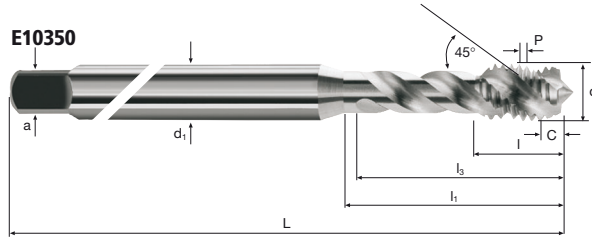
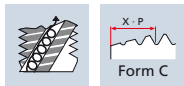
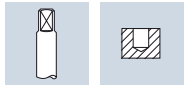
Maschi

Esecuzione extralunga



M ISO 2
(6H)

HSS
PM/F



M

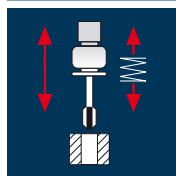
Rm
< 850 N/mm²

Al
Aluminium

GG(G)
Cast iron

Esempio: N° Ordine											E10350	
Articolo												
Codice-ø												
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.044	M 3	0.50	100	4.0	18	16	3.5	2.7	3	2.50	30.10	
.058	M 4	0.70	125	5.6	21	19	4.5	3.4	3	3.30	30.10	
.084	M 5	0.80	140	6.4	25	23	6.0	4.9	3	4.20	30.70	
.088	M 6	1.00	160	8.0	30	28	6.0	4.9	3	5.00	32.10	
.160	M 8	1.25	180	10.0	35	33	8.0	6.2	3	6.80	38.70	
.174	M10	1.50	200	12.0	39	37	10.0	8.0	3	8.50	45.80	

Applicazione



Materiale

Acciaio
< 500 N/mm²

M-LH	ø	P	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
M10	10.0	1.50	18	575	863	15	475	713	12	380	570
M12	12.0	1.75	18	475	831	15	400	700	12	320	560

Acciaio
< 500 N/mm²

M16	16.0	2.00	18	360	720	15	300	600	12	240	480
M20	20.0	2.50	18	285	713	15	240	600	12	190	475
M24	24.0	3.00	18	240	720	15	200	600	12	160	480

Acciaio
500 - 850 N/mm²

M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
M10	10.0	1.50	15	475	713	10	320	480	8	255	383
M12	12.0	1.75	15	400	700	10	265	464	8	210	368

Acciaio
500 - 850 N/mm²

M16	16.0	2.00	15	300	600	10	200	400	8	160	320
M20	20.0	2.50	15	240	600	10	160	400	8	125	313
M24	24.0	3.00	15	200	600	10	135	405	8	105	315

Materiale

Alluminio malleabile
Si < 6%
temprato

M-LH	ø	P	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
M10	10.0	1.50	15	475	713	12	380	570	10	320	480
M12	12.0	1.75	15	400	700	12	320	560	10	265	464

Alluminio malleabile
Si < 6%
temprato

M16	16.0	2.00	15	300	600	12	240	480	10	200	400
M20	20.0	2.50	15	240	600	12	190	475	10	160	400
M24	24.0	3.00	15	200	600	12	160	480	10	135	405

Acciaio inossidabile
[Cr-Ni/1.4301]



M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143
M12	12.0	1.75	5	135	236	4	105	184	3	80	140

Acciaio inossidabile
[Cr-Ni/1.4301]



M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M20	20.0	2.50	5	80	200	4	65	163	3	50	125
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

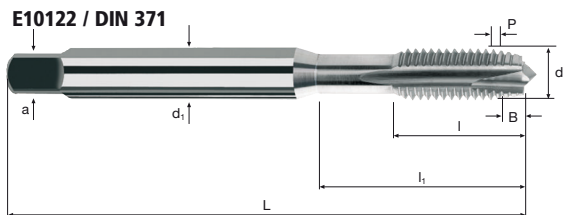


M-LH ISO 2 (6H)

HSS PM/F+

DIN 371/376

Form B



E10123 / DIN 376



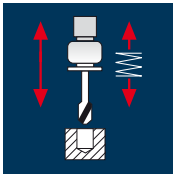
Rm < 850 N/mm² **Inox** Stainless **Al** Aluminium **GG(G)** Cast iron **Cu** Copper

M

Esempio: N° Ordine		Articolo		Codice-Ø								E10122	
		E10122		.034								€	
Ø Code	d	P		L	l	li	d1	a			€		
.034	M 2	0.40	LH	45	8.0	12.5	2.8	2.1	2	1.60	30.40		
.040	M 2.5	0.45	LH	50	9.0	15.0	2.8	2.1	2	2.05	26.50		
.044	M 3	0.50	LH	56	12.0	18.0	3.5	2.7	3	2.50	25.10		
.058	M 4	0.70	LH	63	13.0	21.0	4.5	3.4	3	3.30	25.10		
.084	M 5	0.80	LH	70	15.0	25.0	6.0	4.9	3	4.20	25.50		
.088	M 6	1.00	LH	80	17.0	30.0	6.0	4.9	3	5.00	26.70		
.160	M 8	1.25	LH	90	20.0	35.0	8.0	6.2	3	6.80	32.10		
.174	M10	1.50	LH	100	22.0	39.0	10.0	8.0	3	8.50	37.20		

Esempio: N° Ordine		Articolo		Codice-Ø								E10123	
		E10123		.240								€	
Ø Code	d	P		L	l	li	d1	a			€		
.240	M12	1.75	LH	110	24.0	40.0	9.0	7.0	3	10.20	46.40		
.246	M16	2.00	LH	110	27.0	40.0	12.0	9.0	3	14.00	70.00		
.314	M20	2.50	LH	140	32.0	50.0	16.0	12.0	4	17.50	108.00		
.320	M24	3.00	LH	160	34.0	60.0	18.0	14.5	4	21.00	150.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

M-LH	ø [mm]	P [mm]	V_c			n			V_f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	11	1750	700	10	1590	636	8	1275	510
M 2.5	2.5	0.45	11	1400	630	10	1275	574	8	1020	459
M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
M10	10.0	1.50	14	445	668	12	380	570	10	320	480
M12	12.0	1.75	14	370	648	12	320	560	10	265	464

Acciaio
< 500 N/mm²

M16	16.0	2.00	14	280	560	12	240	480	10	200	400
M20	20.0	2.50	14	225	563	12	190	475	10	160	400
M24	24.0	3.00	14	185	555	12	160	480	10	135	405

Acciaio
500 - 850 N/mm²

M 2	2.0	0.40	7	1115	446	6	955	382	5	795	318
M 2.5	2.5	0.45	7	890	401	6	765	344	5	635	286
M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
M10	10.0	1.50	9	285	428	8	255	383	7	225	338
M12	12.0	1.75	9	240	420	8	210	368	7	185	324

Acciaio
500 - 850 N/mm²

M16	16.0	2.00	9	180	360	8	160	320	7	140	280
M20	20.0	2.50	9	145	363	8	125	313	7	110	275
M24	24.0	3.00	9	120	360	8	105	315	7	95	285

Materiale

Alluminio malleabile
Si < 6%
temprato

M-LH	ø [mm]	P [mm]	V_c			n			V_f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
M10	10.0	1.50	10	320	480	8	255	383	6	190	285
M12	12.0	1.75	10	265	464	8	210	368	6	160	280

Alluminio malleabile
Si < 6%
temprato

M16	16.0	2.00	10	200	400	8	160	320	6	120	240
M20	20.0	2.50	10	160	400	8	125	313	6	95	238
M24	24.0	3.00	10	135	405	8	105	315	6	80	240

Acciaio inossidabile
[Cr-Ni/1.4301]



M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
M10	10.0	1.50	4	125	188	3	95	143	3	95	143
M12	12.0	1.75	4	105	184	3	80	140	3	80	140

Acciaio inossidabile
[Cr-Ni/1.4301]



M16	16.0	2.00	4	80	160	3	60	120	3	60	120
M20	20.0	2.50	4	65	163	3	50	125	3	50	125
M24	24.0	3.00	4	55	165	3	40	120	3	40	120

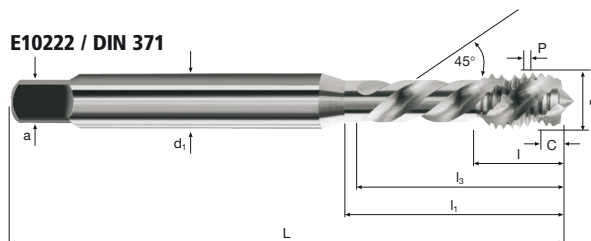
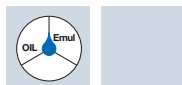


M-LH ISO 2 (6H)

HSS PM/F+

DIN 371/376

X-P Form C



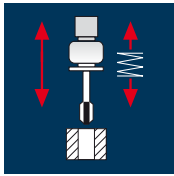
Rm < 850 N/mm ²	Inox Stainless	Al Aluminium	GG(G) Cast iron	Cu Copper
--------------------------------------	--------------------------	------------------------	---------------------------	---------------------

M

Esempio: N° Ordine		Articolo		Codice-Ø												E10222
		E10222		.034												€
Ø Code	d	P		L	l	l ₁	l ₃	d ₁	a					€		
.034	M 2	0.40	LH	45	8.0	12.5	10.5	2.8	2.1	3	1.60			34.40		
.040	M 2.5	0.45	LH	50	9.0	15.0	13.0	2.8	2.1	3	2.05			30.50		
.044	M 3	0.50	LH	56	4.0	18.0	16.0	3.5	2.7	3	2.50			28.20		
.058	M 4	0.70	LH	63	5.6	21.0	19.0	4.5	3.4	3	3.30			28.20		
.084	M 5	0.80	LH	70	6.4	25.0	23.0	6.0	4.9	3	4.20			28.80		
.088	M 6	1.00	LH	80	8.0	30.0	28.0	6.0	4.9	3	5.00			30.10		
.160	M 8	1.25	LH	90	10.0	35.0	33.0	8.0	6.2	3	6.80			36.30		
.174	M10	1.50	LH	100	12.0	39.0	37.0	10.0	8.0	3	8.50			43.00		

Esempio: N° Ordine		Articolo		Codice-Ø												E10223
		E10223		.240												€
Ø Code	d	P		L	l	l ₁	l ₃	d ₁	a					€		
.240	M12	1.75	LH	110	14.0	50.0	48.0	9.0	7.0	3	10.20			54.60		
.246	M16	2.00	LH	110	16.0	58.0	56.0	12.0	9.0	4	14.00			79.00		
.314	M20	2.50	LH	140	20.0	72.0	70.0	16.0	12.0	4	17.50			119.00		
.320	M24	3.00	LH	160	24.0	74.0	72.0	18.0	14.5	4	21.00			165.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio
< 500 N/mm²

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio
500 - 850 N/mm²

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio
500 - 850 N/mm²

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
M10	10.0	1.50	18	575	863	15	475	713	12	380	570
M12	12.0	1.75	18	475	831	15	400	700	12	320	560
M16	16.0	2.00	18	360	720	15	300	600	12	240	480
M20	20.0	2.50	18	285	713	15	240	600	12	190	475
M24	24.0	3.00	18	240	720	15	200	600	12	160	480
M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
M10	10.0	1.50	15	475	713	10	320	480	8	255	383
M12	12.0	1.75	15	400	700	10	265	464	8	210	368
M16	16.0	2.00	15	300	600	10	200	400	8	160	320
M20	20.0	2.50	15	240	600	10	160	400	8	125	313
M24	24.0	3.00	15	200	600	10	135	405	8	105	315

Materiale

Alluminio malleabile
Si < 6%
temprato

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Alluminio malleabile
Si < 6%
temprato

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio inossidabile
[Cr-Ni/1.4301]

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio inossidabile
[Cr-Ni/1.4301]

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
M10	10.0	1.50	15	475	713	12	380	570	10	320	480
M12	12.0	1.75	15	400	700	12	320	560	10	265	464
M16	16.0	2.00	15	300	600	12	240	480	10	200	400
M20	20.0	2.50	15	240	600	12	190	475	10	160	400
M24	24.0	3.00	15	200	600	12	160	480	10	135	405
M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143
M12	12.0	1.75	5	135	236	4	105	184	3	80	140
M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M20	20.0	2.50	5	80	200	4	65	163	3	50	125
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

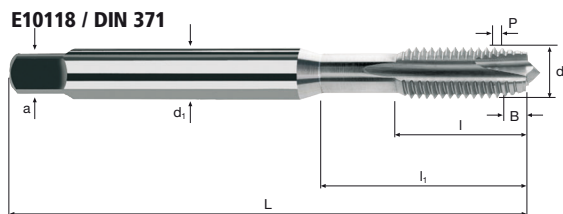


M ISO 2
+0.1

HSS
PM/F+

DIN
371/376

X - P
Form B



E10119 / DIN 376



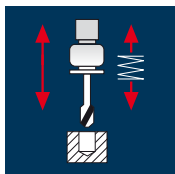
Rm < 850 N/mm² **Inox** Stainless **Al** Aluminium **GG(G)** Cast iron **Cu** Copper

M

Esempio: N° Ordine		Articolo		Codice-Ø							E10118		
		E10118	.034										
Ø Code	d	P	L	l	l ₁	d ₁	a	Flute	Δ	€			
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	+0.100	24.50			
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	+0.100	21.40			
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	+0.100	20.20			
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	+0.100	20.20			
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	+0.100	20.60			
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	+0.100	21.50			
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	+0.100	25.90			
.174	M10	1.50	100	22	39.0	10.0	8.0	3	+0.100	30.00			

Esempio: N° Ordine		Articolo		Codice-Ø							E10119		
		E10119	.240										
Ø Code	d	P	L	l	l ₁	d ₁	a	Flute	Δ	€			
.240	M12	1.75	110	24	40.0	9.0	7.0	3	+0.100	37.40			
.246	M16	2.00	110	27	40.0	12.0	9.0	4	+0.100	56.10			
.314	M20	2.50	140	32	50.0	16.0	12.0	4	+0.100	87.00			
.320	M24	3.00	160	34	60.0	18.0	14.5	4	+0.100	121.00			

Applicazione



Materiale

Acciaio
< 500 N/mm²

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio
< 500 N/mm²

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio
500 - 850 N/mm²

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio
500 - 850 N/mm²

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
M10	10.0	1.50	14	445	668	12	380	570	10	320	480
M12	12.0	1.75	14	370	648	12	320	560	10	265	464
M16	16.0	2.00	14	280	560	12	240	480	10	200	400
M20	20.0	2.50	14	225	563	12	190	475	10	160	400
M24	24.0	3.00	14	185	555	12	160	480	10	135	405
M 2	2.0	0.40	7	1115	446	6	955	382	5	795	318
M 2.5	2.5	0.45	7	890	401	6	765	344	5	635	286
M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
M10	10.0	1.50	9	285	428	8	255	383	7	225	338
M12	12.0	1.75	9	240	420	8	210	368	7	185	324
M16	16.0	2.00	9	180	360	8	160	320	7	140	280
M20	20.0	2.50	9	145	363	8	125	313	7	110	275
M24	24.0	3.00	9	120	360	8	105	315	7	95	285

Materiale

Alluminio malleabile
Si < 6%
temprato

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Alluminio malleabile
Si < 6%
temprato

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio inossidabile
[Cr-Ni/1.4301]

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza

Acciaio inossidabile
[Cr-Ni/1.4301]

Raccomandazione:
adgiustare il ø del foro
secondo la tolleranza


M	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
M10	10.0	1.50	10	320	480	8	255	383	6	190	285
M12	12.0	1.75	10	265	464	8	210	368	6	160	280
M16	16.0	2.00	10	200	400	8	160	320	6	120	240
M20	20.0	2.50	10	160	400	8	125	313	6	95	238
M24	24.0	3.00	10	135	405	8	105	315	6	80	240
M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
M10	10.0	1.50	4	125	188	3	95	143	3	95	143
M12	12.0	1.75	4	105	184	3	80	140	3	80	140
M16	16.0	2.00	4	80	160	3	60	120	3	60	120
M20	20.0	2.50	4	65	163	3	50	125	3	50	125
M24	24.0	3.00	4	55	165	3	40	120	3	40	120

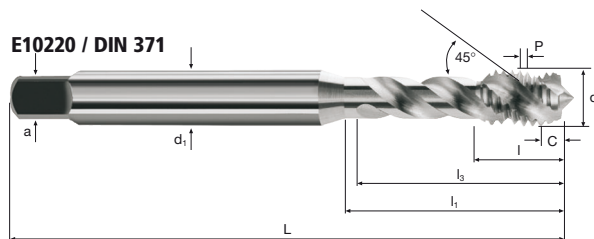
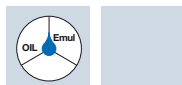


M ISO 2
+0.1

 **HSS**
PM/F+

 **DIN**
371/376 

 **X-P**
Form C





E10221 / DIN 376

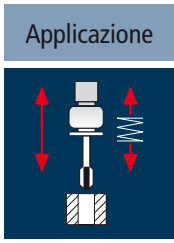


Rm < 850 N/mm² **Inox** Stainless **Al** Aluminium **GG(G)** Cast iron **Cu** Copper

M





Esempio: N° Ordine		Articolo E10220		Codice-Ø .034								E10220	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a		Δ	€		
.034	M 2	0.40	45	8.0	12.5	10.5	2.8	2.1	3	+0.100	27.80		
.040	M 2.5	0.45	50	9.0	15.0	13.0	2.8	2.1	3	+0.100	24.60		
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	+0.100	22.80		
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	+0.100	22.80		
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	+0.100	23.20		
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	+0.100	24.30		
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	+0.100	29.30		
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	+0.100	34.70		

Esempio: N° Ordine		Articolo E10221		Codice-Ø .240								E10221	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a		Δ	€		
.240	M12	1.75	110	14.0	50.0	48.0	9.0	7.0	3	+0.100	44.00		
.246	M16	2.00	110	16.0	58.0	56.0	12.0	9.0	4	+0.100	64.00		
.314	M20	2.50	140	20.0	72.0	70.0	16.0	12.0	4	+0.100	96.00		
.320	M24	3.00	160	24.0	74.0	72.0	18.0	14.5	4	+0.100	133.00		



Materiale	
Acciaio 500 - 850 N/mm ²	
Acciaio 850 - 1100 N/mm ²	
Acciaio 850 - 1100 N/mm ²	

M	ø	P	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
M16	16.0	2.00	25	495	990	20	400	800	15	300	600
M20	20.0	2.50	25	400	1000	20	320	800	15	240	600
M24	24.0	3.00	25	330	990	20	265	795	15	200	600
M 2	2.0	0.40	20	3185	1274	15	2385	954	12	1910	764
M 2.5	2.5	0.45	20	2545	1145	15	1910	860	12	1530	689
M 3	3.0	0.50	20	2120	1060	15	1590	795	12	1275	638
M 4	4.0	0.70	20	1590	1113	15	1195	837	12	955	669
M 5	5.0	0.80	20	1275	1020	15	955	764	12	765	612
M 6	6.0	1.00	20	1060	1060	15	795	795	12	635	635
M 8	8.0	1.25	20	795	994	15	595	744	12	475	594
M10	10.0	1.50	20	635	953	15	475	713	12	380	570
M12	12.0	1.75	20	530	928	15	400	700	12	320	560
M16	16.0	2.00	20	400	800	15	300	600	12	240	480
M20	20.0	2.50	20	320	800	15	240	600	12	190	475
M24	24.0	3.00	20	265	795	15	200	600	12	160	480

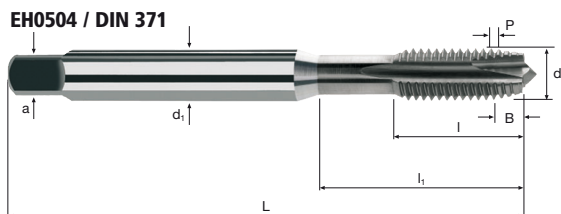
Materiale	
Acciaio 1100 - 1300 N/mm ²	 
Acciaio 1100 - 1300 N/mm ²	 

M	ø	P	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	7	1115	446	4	635	254			
M 2.5	2.5	0.45	7	890	401	4	510	230			
M 3	3.0	0.50	7	745	373	4	425	213			
M 4	4.0	0.70	7	555	389	4	320	224			
M 5	5.0	0.80	7	445	356	4	255	204			
M 6	6.0	1.00	7	370	370	4	210	210			
M 8	8.0	1.25	7	280	350	4	160	200			
M10	10.0	1.50	7	225	338	4	125	188			
M12	12.0	1.75	7	185	324	4	105	184			
M16	16.0	2.00	7	140	280	4	80	160			
M20	20.0	2.50	7	110	275	4	65	163			
M24	24.0	3.00	7	95	285	4	55	165			

M ISO 3 (6G)

HSS PM/F

Form B



EH0505 / DIN 376



Rm
850-1100 N/mm²

Rm
500-850 N/mm²

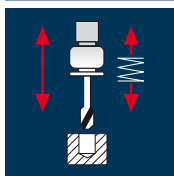
Rm
1100-1300 N/mm²

M

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH0504		.034							EH0504	
Ø Code	d	P	L	l	l ₁	d ₁	a		Δ	€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	+0.015	39.20		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	+0.015	34.20		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	+0.016	32.40		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	+0.019	32.40		
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	+0.020	32.90		
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	+0.024	34.40		
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	+0.025	41.50		
.174	M10	1.50	100	22	39.0	10.0	8.0	3	+0.028	48.00		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH0505		.240							EH0505	
Ø Code	d	P	L	l	l ₁	d ₁	a		Δ	€		
.240	M 12	1.75	110	24	40.0	9.0	7.0	3	+0.032	59.90		
.246	M 16	2.00	110	27	40.0	12.0	9.0	3	+0.034	90.00		
.314	M 20	2.50	140	32	50.0	16.0	12.0	4	+0.036	139.00		
.320	M 24	3.00	160	34	60.0	18.0	14.5	4	+0.042	194.00		

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio
850 - 1100 N/mm²

M	ø	P	1.0 x d			1.5 x d			2.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 2	2.0	0.40	32	5095	2038	28	4455	1782	22	3500	1400
M 2.5	2.5	0.45	32	4075	1834	28	3565	1604	22	2800	1260
M 3	3.0	0.50	32	3395	1698	28	2970	1485	22	2335	1168
M 4	4.0	0.70	32	2545	1782	28	2230	1561	22	1750	1225
M 5	5.0	0.80	32	2035	1628	28	1785	1428	22	1400	1120
M 6	6.0	1.00	32	1700	1700	28	1485	1485	22	1165	1165
M 8	8.0	1.25	32	1275	1594	28	1115	1394	22	875	1094
M10	10.0	1.50	32	1020	1530	28	890	1335	22	700	1050
M12	12.0	1.75	32	850	1488	28	745	1304	22	585	1024
M16	16.0	2.00	32	635	1270	28	555	1110	22	440	880
M20	20.0	2.50	32	510	1275	28	445	1113	22	350	875
M24	24.0	3.00	32	425	1275	28	370	1110	22	290	870
M 2	2.0	0.40	20	3185	1274	16	2545	1018	10	1590	636
M 2.5	2.5	0.45	20	2545	1145	16	2035	916	10	1275	574
M 3	3.0	0.50	20	2120	1060	16	1700	850	10	1060	530
M 4	4.0	0.70	20	1590	1113	16	1275	893	10	795	557
M 5	5.0	0.80	20	1275	1020	16	1020	816	10	635	508
M 6	6.0	1.00	20	1060	1060	16	850	850	10	530	530
M 8	8.0	1.25	20	795	994	16	635	794	10	400	500
M10	10.0	1.50	20	635	953	16	510	765	10	320	480
M12	12.0	1.75	20	530	928	16	425	744	10	265	464
M16	16.0	2.00	20	400	800	16	320	640	10	200	400
M20	20.0	2.50	20	320	800	16	255	638	10	160	400
M24	24.0	3.00	20	265	795	16	210	630	10	135	405

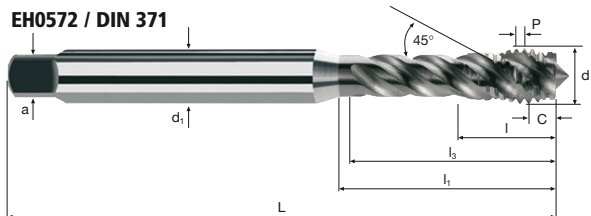
M ISO 3
(6G)

HSS
PM/F

DIN
371/376

X - P
Form C

OIL Emul



EH0573 / DIN 376



Rm
850-1100 N/mm²

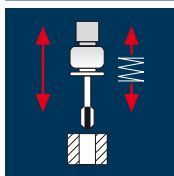
Rm
500-850 N/mm²

M

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH0572		.034								EH0572	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a		Δ	€		
.034	M 2	0.40	45	8	12.5	10.5	2.8	2.1	3	+0.015	44.40		
.040	M 2.5	0.45	50	9	15.0	13.0	2.8	2.1	3	+0.015	39.40		
.044	M 3	0.50	56	5	18.0	16.0	3.5	2.7	3	+0.016	36.40		
.058	M 4	0.70	63	7	21.0	19.0	4.5	3.4	3	+0.019	36.40		
.084	M 5	0.80	70	8	25.0	23.0	6.0	4.9	3	+0.020	37.20		
.088	M 6	1.00	80	10	30.0	28.0	6.0	4.9	3	+0.024	38.90		
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	+0.025	46.90		
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	4	+0.028	55.50		

Esempio: N° Ordine		Articolo		Codice-Ø								TiCN	
		EH0573		.240								EH0573	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a		Δ	€		
.240	M12	1.75	110	18	50.0	48.0	9.0	7.0	4	+0.032	70.00		
.246	M16	2.00	110	20	58.0	56.0	12.0	9.0	4	+0.034	102.00		
.314	M20	2.50	140	25	72.0	70.0	16.0	12.0	4	+0.036	153.00		
.320	M24	3.00	160	30	74.0	72.0	18.0	14.5	5	+0.042	213.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
M10	10.0	1.50	18	575	863	15	475	713	12	380	570

Acciaio
500 - 850 N/mm²

M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
M10	10.0	1.50	15	475	713	10	320	480	8	255	383

Alluminio malleabile
Si < 6%
temprato

M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
M10	10.0	1.50	15	475	713	12	380	570	10	320	480

Acciaio inossidabile
[Cr-Ni/1.4301]



M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143

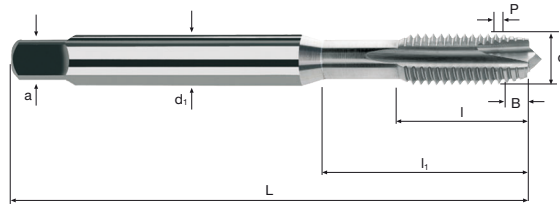
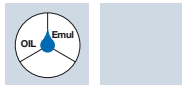


M ISO 1
(4H)

60°
HSS
PM/F+

DIN
371

X-P
Form B



Rm
< 850 N/mm²

Inox
Stainless

Al
Aluminium

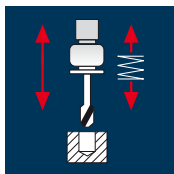
GG(G)
Cast iron

Cu
Copper

M

Esempio: N° Ordine		Articolo E10110		Codice-Ø .034							E10110	
Ø Code	d	P	L	l	li	d1	a		Δ	€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	-0.014	24.50		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	-0.015	21.40		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	-0.016	20.20		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	-0.019	20.20		
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	-0.020	20.60		
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	-0.024	21.50		
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	-0.025	25.90		
.174	M10	1.50	100	22	39.0	10.0	8.0	3	-0.028	30.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]
M 2	2.0	0.40	11	1750	700	10	1590	636	8	1275	510
M 2.5	2.5	0.45	11	1400	630	10	1275	574	8	1020	459
M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
M10	10.0	1.50	14	445	668	12	380	570	10	320	480

Acciaio
500 - 850 N/mm²

M 2	2.0	0.40	7	1115	446	6	955	382	5	795	318
M 2.5	2.5	0.45	7	890	401	6	765	344	5	635	286
M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
M10	10.0	1.50	9	285	428	8	255	383	7	225	338

Alluminio malleabile
Si < 6%
temprato

M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
M10	10.0	1.50	10	320	480	8	255	383	6	190	285

Acciaio inossidabile
[Cr-Ni/1.4301]

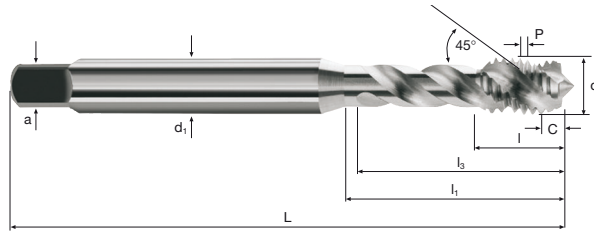
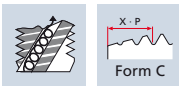


M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
M10	10.0	1.50	4	125	188	3	95	143	3	95	143



M ISO 1 (4H)

HSS PM/F+



Rm
 < 850 N/mm²

Inox
 Stainless

Al
 Aluminium

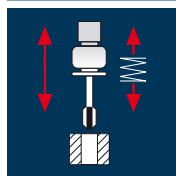
GG(G)
 Cast iron

Cu
 Copper

M

Esempio: N° Ordine		Articolo E10214	Codice- ϕ .034								E10214	
ϕ Code	d	P	L	l	l ₁	l ₃	d ₁	a		Δ	€	
.034	M 2	0.40	45	8.0	12.5	10.5	2.8	2.1	3	-0.014	27.80	
.040	M 2.5	0.45	50	9.0	15.0	13.0	2.8	2.1	3	-0.015	24.60	
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	-0.016	22.80	
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	-0.019	22.80	
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	-0.020	23.20	
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	-0.024	24.30	
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	-0.025	29.30	
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	-0.028	34.70	

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
M10	10.0	1.50	18	575	863	15	475	713	12	380	570
M12	12.0	1.75	18	475	831	15	400	700	12	320	560

Acciaio
< 500 N/mm²

M16	16.0	2.00	18	360	720	15	300	600	12	240	480
M20	20.0	2.50	18	285	713	15	240	600	12	190	475
M24	24.0	3.00	18	240	720	15	200	600	12	160	480

Acciaio
500 - 850 N/mm²

M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
M10	10.0	1.50	15	475	713	10	320	480	8	255	383
M12	12.0	1.75	15	400	700	10	265	464	8	210	368

Acciaio
500 - 850 N/mm²

M16	16.0	2.00	15	300	600	10	200	400	8	160	320
M20	20.0	2.50	15	240	600	10	160	400	8	125	313
M24	24.0	3.00	15	200	600	10	135	405	8	105	315

Materiale

Alluminio malleabile
Si < 6%
temprato

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
M10	10.0	1.50	15	475	713	12	380	570	10	320	480
M12	12.0	1.75	15	400	700	12	320	560	10	265	464

Alluminio malleabile
Si < 6%
temprato

M16	16.0	2.00	15	300	600	12	240	480	10	200	400
M20	20.0	2.50	15	240	600	12	190	475	10	160	400
M24	24.0	3.00	15	200	600	12	160	480	10	135	405

Acciaio inossidabile
[Cr-Ni/1.4301]



M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143
M12	12.0	1.75	5	135	236	4	105	184	3	80	140

Acciaio inossidabile
[Cr-Ni/1.4301]



M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M20	20.0	2.50	5	80	200	4	65	163	3	50	125
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

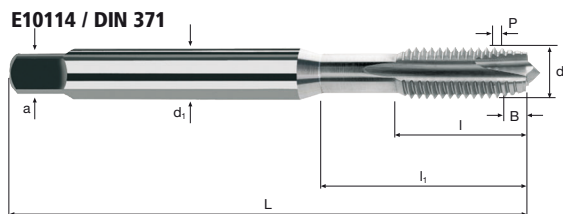


M **7G**

HSS
PM/F+

DIN
371/376

X-P
Form B



E10115 / DIN 376



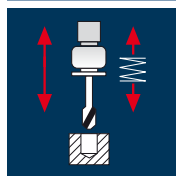
Rm < 850 N/mm² **Inox** Stainless **Al** Aluminium **GG(G)** Cast iron **Cu** Copper

M

Esempio: N° Ordine		Articolo		Codice-Ø							E10114
		E10114		.034							
Ø Code	d	P	L	l	l ₁	d ₁	a		Δ	€	
.034	M 2	0.40	45	8	12.5	2.8	2.1	2	+0.030	24.50	
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	2	+0.030	21.40	
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	+0.032	20.20	
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	+0.038	20.20	
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	+0.040	20.60	
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	+0.048	21.50	
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	+0.050	25.90	
.174	M10	1.50	100	22	39.0	10.0	8.0	3	+0.056	30.00	

Esempio: N° Ordine		Articolo		Codice-Ø							E10115
		E10115		.240							
Ø Code	d	P	L	l	l ₁	d ₁	a		Δ	€	
.240	M12	1.75	110	24	40.0	9.0	7.0	3	+0.064	37.40	
.246	M16	2.00	110	27	40.0	12.0	9.0	3	+0.068	56.10	
.314	M20	2.50	140	32	50.0	16.0	12.0	4	+0.072	87.00	
.320	M24	3.00	160	34	60.0	18.0	14.5	4	+0.085	121.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

M	ø [mm]	P [mm]	v _c			n			v _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	11	1750	700	10	1590	636	8	1275	510
M 2.5	2.5	0.45	11	1400	630	10	1275	574	8	1020	459
M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
M10	10.0	1.50	14	445	668	12	380	570	10	320	480
M12	12.0	1.75	14	370	648	12	320	560	10	265	464

Acciaio
< 500 N/mm²

M16	16.0	2.00	14	280	560	12	240	480	10	200	400
M20	20.0	2.50	14	225	563	12	190	475	10	160	400
M24	24.0	3.00	14	185	555	12	160	480	10	135	405

Acciaio
500 - 850 N/mm²

M 2	2.0	0.40	7	1115	446	6	955	382	5	795	318
M 2.5	2.5	0.45	7	890	401	6	765	344	5	635	286
M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
M10	10.0	1.50	9	285	428	8	255	383	7	225	338
M12	12.0	1.75	9	240	420	8	210	368	7	185	324

Acciaio
500 - 850 N/mm²

M16	16.0	2.00	9	180	360	8	160	320	7	140	280
M20	20.0	2.50	9	145	363	8	125	313	7	110	275
M24	24.0	3.00	9	120	360	8	105	315	7	95	285

Materiale

Alluminio malleabile
Si < 6%
temprato

M	ø [mm]	P [mm]	v _c			n			v _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
M10	10.0	1.50	10	320	480	8	255	383	6	190	285
M12	12.0	1.75	10	265	464	8	210	368	6	160	280

Alluminio malleabile
Si < 6%
temprato

M16	16.0	2.00	10	200	400	8	160	320	6	120	240
M20	20.0	2.50	10	160	400	8	125	313	6	95	238
M24	24.0	3.00	10	135	405	8	105	315	6	80	240

Acciaio inossidabile
[Cr-Ni/1.4301]



M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
M10	10.0	1.50	4	125	188	3	95	143	3	95	143
M12	12.0	1.75	4	105	184	3	80	140	3	80	140

Acciaio inossidabile
[Cr-Ni/1.4301]




M16	16.0	2.00	4	80	160	3	60	120	3	60	120
M20	20.0	2.50	4	65	163	3	50	125	3	50	125
M24	24.0	3.00	4	55	165	3	40	120	3	40	120

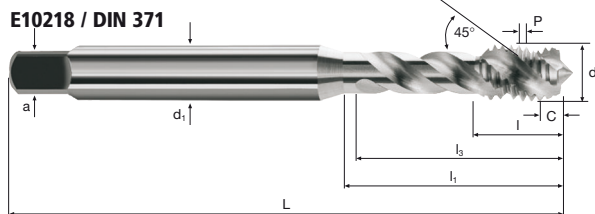
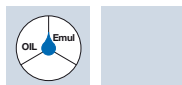


M **7G**

 **HSS PM/F+**

 **DIN 371/376** 

 **X - P**
Form C





E10219 / DIN 376



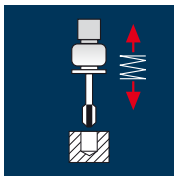
Rm < 850 N/mm ²	Inox Stainless	Al Aluminium	GG(G) Cast iron	Cu Copper
--------------------------------------	--------------------------	------------------------	---------------------------	---------------------

M

Esempio: N° Ordine		Articolo		Codice-Ø								E10218	
		E10218		.034									
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a		Δ	€		
.034	M 2	0.40	45	8.0	12.5	10.5	2.8	2.1	3	+0.030	27.80		
.040	M 2.5	0.45	50	9.0	15.0	13.0	2.8	2.1	3	+0.030	24.60		
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	+0.032	22.80		
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	+0.038	22.80		
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	+0.040	23.20		
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	+0.048	24.30		
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	+0.050	29.30		
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	+0.056	34.70		

Esempio: N° Ordine		Articolo		Codice-Ø								E10219	
		E10219		.240									
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a		Δ	€		
.240	M12	1.75	110	14.0	50.0	48.0	9.0	7.0	3	+0.064	44.00		
.246	M16	2.00	110	16.0	58.0	56.0	12.0	9.0	4	+0.068	64.00		
.314	M20	2.50	140	20.0	72.0	70.0	16.0	12.0	4	+0.072	96.00		
.320	M24	3.00	160	24.0	74.0	72.0	18.0	14.5	4	+0.085	133.00		

Applicazione



Materiale

Leg. a base di nichel non indurite



Leg. a base di nichel non indurite



Leg. a base di nichel indurite

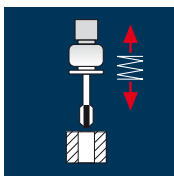


Leg. a base di nichel indurite



MJ	ø [mm]	P [mm]	V _c			V _f		
			1.0 x d	n [min ⁻¹]	V _f [100%]	1.5 x d	n [min ⁻¹]	V _f [100%]
MJ 2	2.0	0.40	3	475	190	2	320	128
MJ 2.5	2.5	0.45	3	380	171	2	255	115
MJ 3	3.0	0.50	3	320	160	2	210	105
MJ 4	4.0	0.70	3	240	168	2	160	112
MJ 5	5.0	0.80	3	190	152	2	125	100
MJ 6	6.0	1.00	3	160	160	2	105	105
MJ 8	8.0	1.00	3	120	120	2	80	80
MJ 8	8.0	1.25	3	120	150	2	80	100
MJ 10	10.0	1.25	3	95	119	2	65	81
MJ 10	10.0	1.50	3	95	143	2	65	98
MJ 2	2.0	0.40	2	320	128	2	320	128
MJ 2.5	2.5	0.45	2	255	115	2	255	115
MJ 3	3.0	0.50	2	210	105	2	210	105
MJ 4	4.0	0.70	2	160	112	2	160	112
MJ 5	5.0	0.80	2	125	100	2	125	100
MJ 6	6.0	1.00	2	105	105	2	105	105
MJ 8	8.0	1.00	2	80	80	2	80	80
MJ 8	8.0	1.25	2	80	100	2	80	100
MJ 10	10.0	1.25	2	65	81	2	65	81
MJ 10	10.0	1.50	2	65	98	2	65	98

Applicazione



Materiale

Leg. a base di nichel non indurite



Leg. a base di nichel non indurite



Leg. a base di nichel indurite



Leg. a base di nichel indurite

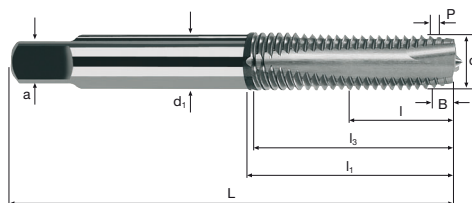
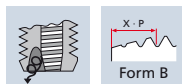
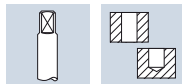


MJ	ø [mm]	P [mm]	V _c			V _f		
			1.0 x d	n [min ⁻¹]	V _f [100%]	1.5 x d	n [min ⁻¹]	V _f [100%]
MJ 2	2.0	0.40	3	475	190	2	320	128
MJ 2.5	2.5	0.45	3	380	171	2	255	115
MJ 3	3.0	0.50	3	320	160	2	210	105
MJ 4	4.0	0.70	3	240	168	2	160	112
MJ 5	5.0	0.80	3	190	152	2	125	100
MJ 6	6.0	1.00	3	160	160	2	105	105
MJ 8	8.0	1.00	3	120	120	2	80	80
MJ 8	8.0	1.25	3	120	150	2	80	100
MJ 10	10.0	1.25	3	95	119	2	65	81
MJ 10	10.0	1.50	3	95	143	2	65	98
MJ 2	2.0	0.40	2	320	128	2	320	128
MJ 2.5	2.5	0.45	2	255	115	2	255	115
MJ 3	3.0	0.50	2	210	105	2	210	105
MJ 4	4.0	0.70	2	160	112	2	160	112
MJ 5	5.0	0.80	2	125	100	2	125	100
MJ 6	6.0	1.00	2	105	105	2	105	105
MJ 8	8.0	1.00	2	80	80	2	80	80
MJ 8	8.0	1.25	2	80	100	2	80	100
MJ 10	10.0	1.25	2	65	81	2	65	81
MJ 10	10.0	1.50	2	65	98	2	65	98



MJ **4H**

HSS PM/F



Ni
Nickel

M

Esempio: N° Ordine											Articolo		Codice-ø	
											E0599		.034	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€			
.034	MJ 2	0.40	41	8	13	11	2.8	2.1	3	1.70	32.20			
.040	MJ 2.5	0.45	44	9	15	13	2.8	2.1	3	2.20*	28.10			
.044	MJ 3	0.50	48	11	18	16	3.5	2.7	3	2.65	26.60			
.058	MJ 4	0.70	53	13	21	19	4.5	3.4	3	3.50*	26.60			
.084	MJ 5	0.80	58	15	24	22	6.0	4.9	3	4.40	27.00			
.088	MJ 6	1.00	66	17	30	28	6.0	4.9	3	5.20	28.30			
.090	MJ 8	1.00	72	20	36	34	8.0	6.2	3	7.20	28.30			
.160	MJ 8	1.25	72	20	36	34	8.0	6.2	3	7.00*	34.10			
.162	MJ10	1.25	80	22	39	37	10.0	8.0	3	9.00*	34.10			
.174	MJ10	1.50	80	22	39	37	10.0	8.0	3	8.70	39.40			
* La dimensione data è fuori norma														



Filettatura metrica fina MF

Tolleranza ISO 2 (6H)

N° EH1257 / EH1258



N° EH1260 / EH1261



N° EH6910 / EH6911



N° ET1240 / ET1241



N° ET1260 / ET1261



N° EH1270 / EH1271



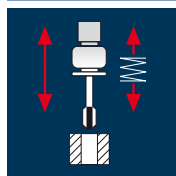
N° EH1229



		Mat.	Code		
HSS PM/F	Steel 850-1100 N/mm²	11		265	
				269	
HM MG10	HRC 48-60	60		273	
HSS PM/F	Inox Stainless	In		275	
				279	
	GG(G) Cast iron	GG		283	
	Uni- versal Rigid	R		287	

MF

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

MF	ø	P	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2.5	2.5	0.35	25	3185	1115	20	2545	891	15	1910	669
M 3	3.0	0.35	25	2655	929	20	2120	742	15	1590	557
M 3.5	3.5	0.35	25	2275	796	20	1820	637	15	1365	478
M 4	4.0	0.50	25	1990	995	20	1590	795	15	1195	598
M 5	5.0	0.50	25	1590	795	20	1275	638	15	955	478
M 6	6.0	0.50	25	1325	663	20	1060	530	15	795	398
M 8	8.0	0.50	25	995	498	20	795	398	15	595	298
M10	10.0	0.50	25	795	398	20	635	318	15	475	238
M 6	6.0	0.75	25	1325	994	20	1060	795	15	795	596

Acciaio
500 - 850 N/mm²

M 7	7.0	0.75	25	1135	851	20	910	683	15	680	510
M 8	8.0	0.75	25	995	746	20	795	596	15	595	446
M10	10.0	0.75	25	795	596	20	635	476	15	475	356
M 8	8.0	1.00	25	995	995	20	795	795	15	595	595
M 9	9.0	1.00	25	885	885	20	705	705	15	530	530
M10	10.0	1.00	25	795	795	20	635	635	15	475	475
M10	10.0	1.25	25	795	994	20	635	794	15	475	594

Acciaio
850 - 1100 N/mm²

M 2.5	2.5	0.35	20	2545	891	15	1910	669	12	1530	536
M 3	3.0	0.35	20	2120	742	15	1590	557	12	1275	446
M 3.5	3.5	0.35	20	1820	637	15	1365	478	12	1090	382
M 4	4.0	0.50	20	1590	795	15	1195	598	12	955	478
M 5	5.0	0.50	20	1275	638	15	955	478	12	765	383
M 6	6.0	0.50	20	1060	530	15	795	398	12	635	318
M 8	8.0	0.50	20	795	398	15	595	298	12	475	238
M10	10.0	0.50	20	635	318	15	475	238	12	380	190
M 6	6.0	0.75	20	1060	795	15	795	596	12	635	476

Acciaio
850 - 1100 N/mm²

M 7	7.0	0.75	20	910	683	15	680	510	12	545	409
M 8	8.0	0.75	20	795	596	15	595	446	12	475	356
M10	10.0	0.75	20	635	476	15	475	356	12	380	285
M 8	8.0	1.00	20	795	795	15	595	595	12	475	475
M 9	9.0	1.00	20	705	705	15	530	530	12	425	425
M10	10.0	1.00	20	635	635	15	475	475	12	380	380
M10	10.0	1.25	20	635	794	15	475	594	12	380	475

Materiale

Acciaio
1100 - 1300 N/mm²



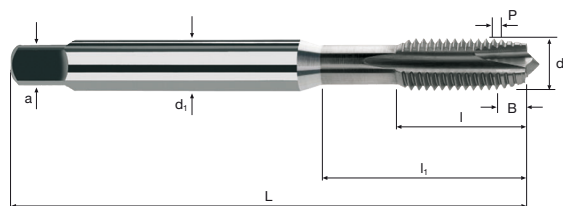
MF	ø	P	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2.5	2.5	0.35	7	890	312	4	510	179			
M 3	3.0	0.35	7	745	261	4	425	149			
M 3.5	3.5	0.35	7	635	222	4	365	128			
M 4	4.0	0.50	7	555	278	4	320	160			
M 5	5.0	0.50	7	445	223	4	255	128			
M 6	6.0	0.50	7	370	185	4	210	105			
M 8	8.0	0.50	7	280	140	4	160	80			
M10	10.0	0.50	7	225	113	4	125	63			
M 6	6.0	0.75	7	370	278	4	210	158			

Acciaio
1100 - 1300 N/mm²



M 7	7.0	0.75	7	320	240	4	180	135			
M 8	8.0	0.75	7	280	210	4	160	120			
M10	10.0	0.75	7	225	169	4	125	94			
M 8	8.0	1.00	7	280	280	4	160	160			
M 9	9.0	1.00	7	250	250	4	140	140			
M10	10.0	1.00	7	225	225	4	125	125			
M10	10.0	1.25	7	225	281	4	125	156			

MF
**ISO 2
(6H)**

**HSS
PM/F**

Rm
850-1100 N/mm²
Rm
1100-1300 N/mm²
Rm
500-850 N/mm²
MF

Esempio:
N° Ordine **EH1257 .029**

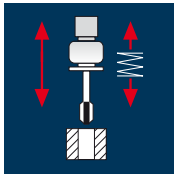
Articolo: **EH1257**
Codice-ø: **.029**

TiCN
EH1257

Ø Code	d	P	L	l	li	d1	a			€
.029	M 2.5	0.35	50	9	15	2.8	2.1	2	2.15	39.20
.031	M 3	0.35	56	12	18	3.5	2.7	3	2.65	32.40
.032	M 3.5	0.35	56	12	20	4.0	3.0	3	3.15	32.40
.046	M 4	0.50	63	13	21	4.5	3.4	3	3.50	32.40
.048	M 5	0.50	70	15	25	6.0	4.9	3	4.50	32.90
.050	M 6	0.50	80	17	30	6.0	4.9	3	5.50	34.40
.052	M 8	0.50	90	20	35	8.0	6.2	3	7.50	41.50
.054	M10	0.50	100	22	39	10.0	8.0	3	9.50	48.00
.064	M 6	0.75	80	17	30	6.0	4.9	3	5.20	34.40
.065	M 7	0.75	80	17	30	7.0	5.5	3	6.20	37.90
.066	M 8	0.75	90	20	35	8.0	6.2	3	7.20	41.50
.068	M10	0.75	100	22	39	10.0	8.0	3	9.20	48.00
.090	M 8	1.00	90	20	35	8.0	6.2	3	7.00	41.50
.091	M 9	1.00	90	20	35	9.0	7.0	3	8.00	44.70
.092	M10	1.00	100	22	39	10.0	8.0	3	9.00	48.00
.162	M10	1.25	100	22	39	10.0	8.0	3	8.80	48.00

Dimensioni superiori vedere articolo EH1258, pagina 267

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	25	665	499	20	530	398	15	400	300
M14	14.0	0.75	25	570	428	20	455	341	15	340	255
M16	16.0	0.75	25	495	371	20	400	300	15	300	225
M12	12.0	1.00	25	665	665	20	530	530	15	400	400
M13	13.0	1.00	25	610	610	20	490	490	15	365	365
M14	14.0	1.00	25	570	570	20	455	455	15	340	340
M16	16.0	1.00	25	495	495	20	400	400	15	300	300
M18	18.0	1.00	25	440	440	20	355	355	15	265	265
M20	20.0	1.00	25	400	400	20	320	320	15	240	240

Acciaio
500 - 850 N/mm²

M12	12.0	1.25	25	665	831	20	530	663	15	400	500
M14	14.0	1.25	25	570	713	20	455	569	15	340	425
M16	16.0	1.25	25	495	619	20	400	500	15	300	375
M12	12.0	1.50	25	665	998	20	530	795	15	400	600
M14	14.0	1.50	25	570	855	20	455	683	15	340	510
M16	16.0	1.50	25	495	743	20	400	600	15	300	450
M18	18.0	1.50	25	440	660	20	355	533	15	265	398
M20	20.0	1.50	25	400	600	20	320	480	15	240	360
M24	24.0	1.50	25	330	495	20	265	398	15	200	300

Acciaio
850 - 1100 N/mm²

M12	12.0	0.75	20	530	398	15	400	300	12	320	240
M14	14.0	0.75	20	455	341	15	340	255	12	275	206
M16	16.0	0.75	20	400	300	15	300	225	12	240	180
M12	12.0	1.00	20	530	530	15	400	400	12	320	320
M13	13.0	1.00	20	490	490	15	365	365	12	295	295
M14	14.0	1.00	20	455	455	15	340	340	12	275	275
M16	16.0	1.00	20	400	400	15	300	300	12	240	240
M18	18.0	1.00	20	355	355	15	265	265	12	210	210
M20	20.0	1.00	20	320	320	15	240	240	12	190	190

Acciaio
850 - 1100 N/mm²

M12	12.0	1.25	20	530	663	15	400	500	12	320	400
M14	14.0	1.25	20	455	569	15	340	425	12	275	344
M16	16.0	1.25	20	400	500	15	300	375	12	240	300
M12	12.0	1.50	20	530	795	15	400	600	12	320	480
M14	14.0	1.50	20	455	683	15	340	510	12	275	413
M16	16.0	1.50	20	400	600	15	300	450	12	240	360
M18	18.0	1.50	20	355	533	15	265	398	12	210	315
M20	20.0	1.50	20	320	480	15	240	360	12	190	285
M24	24.0	1.50	20	265	398	15	200	300	12	160	240

Materiale

Acciaio
1100 - 1300 N/mm²



MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	7	185	139	4	105	79			
M14	14.0	0.75	7	160	120	4	90	68			
M16	16.0	0.75	7	140	105	4	80	60			
M12	12.0	1.00	7	185	185	4	105	105			
M13	13.0	1.00	7	170	170	4	100	100			
M14	14.0	1.00	7	160	160	4	90	90			
M16	16.0	1.00	7	140	140	4	80	80			
M18	18.0	1.00	7	125	125	4	70	70			
M20	20.0	1.00	7	110	110	4	65	65			

Acciaio
1100 - 1300 N/mm²

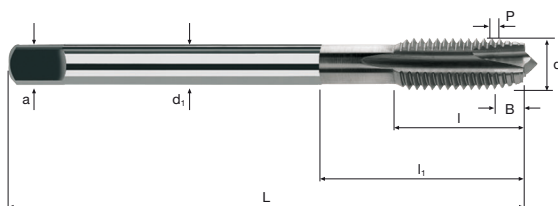


M12	12.0	1.25	7	185	231	4	105	131			
M14	14.0	1.25	7	160	200	4	90	113			
M16	16.0	1.25	7	140	175	4	80	100			
M12	12.0	1.50	7	185	278	4	105	158			
M14	14.0	1.50	7	160	240	4	90	135			
M16	16.0	1.50	7	140	210	4	80	120			
M18	18.0	1.50	7	125	188	4	70	105			
M20	20.0	1.50	7	110	165	4	65	98			
M24	24.0	1.50	7	95	143	4	55	83			

MF **ISO 2 (6H)**

HSS PM/F

Form B



Rm
850-1100 N/mm²

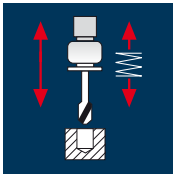
Rm
1100-1300 N/mm²

Rm
500-850 N/mm²

MF

Esempio: N° Ordine EH1258 .070											TiCN	
											EH1258	
Ø Code	d	P	L	l	li	d1	a			€		
.070	M12	0.75	100	18	39	9.0	7.0	3	11.30	59.90		
.072	M14	0.75	100	18	39	11.0	9.0	3	13.30	76.00		
.074	M16	0.75	100	18	39	12.0	9.0	3	15.30	90.00		
.094	M12	1.00	100	18	39	9.0	7.0	3	11.00	59.90		
.095	M13	1.00	100	18	39	11.0	7.0	3	12.00	69.00		
.096	M14	1.00	100	18	39	11.0	9.0	3	13.00	76.00		
.097	M15	1.00	100	18	39	12.0	9.0	3	14.00	83.00		
.098	M16	1.00	100	18	39	12.0	9.0	3	15.00	90.00		
.099	M17	1.00	100	18	39	12.0	9.0	4	16.00	101.00		
.100	M18	1.00	110	20	45	14.0	11.0	4	17.00	115.00		
.102	M20	1.00	125	20	50	16.0	12.0	4	19.00	139.00		
.164	M12	1.25	100	22	39	9.0	7.0	3	10.80	59.90		
.166	M14	1.25	100	22	39	11.0	9.0	3	12.80	76.00		
.168	M16	1.25	100	22	39	12.0	9.0	3	14.80	90.00		
.176	M12	1.50	100	22	39	9.0	7.0	3	10.50	59.90		
.178	M14	1.50	100	22	39	11.0	9.0	3	12.50	76.00		
.180	M16	1.50	100	22	39	12.0	9.0	3	14.50	90.00		
.182	M18	1.50	110	22	45	14.0	11.0	4	16.50	115.00		
.184	M20	1.50	125	25	50	16.0	12.0	4	18.50	139.00		
.186	M22	1.50	125	26	50	18.0	14.5	4	20.50	166.00		
.188	M24	1.50	140	27	52	18.0	14.5	4	22.50	194.00		

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio
850 - 1100 N/mm²

MF	ø	P	V _c			n			V _f		
			1.0 x d	n	V _f	1.5 x d	n	V _f	2.0 x d	n	V _f
	[mm]	[mm]		[min ⁻¹]	[100%]		[min ⁻¹]	[100%]		[min ⁻¹]	[100%]
M 2.5	2.5	0.35	32	4075	1426	28	3565	1248	22	2800	980
M 3	3.0	0.35	32	3395	1188	28	2970	1040	22	2335	817
M 3.5	3.5	0.35	32	2910	1018	28	2545	891	22	2000	700
M 4	4.0	0.50	32	2545	1273	28	2230	1115	22	1750	875
M 5	5.0	0.50	32	2035	1018	28	1785	893	22	1400	700
M 6	6.0	0.50	32	1700	850	28	1485	743	22	1165	583
M 8	8.0	0.50	32	1275	638	28	1115	558	22	875	438
M10	10.0	0.50	32	1020	510	28	890	445	22	700	350
M 6	6.0	0.75	32	1700	1275	28	1485	1114	22	1165	874
M 7	7.0	0.75	32	1455	1091	28	1275	956	22	1000	750
M 8	8.0	0.75	32	1275	956	28	1115	836	22	875	656
M10	10.0	0.75	32	1020	765	28	890	668	22	700	525
M 8	8.0	1.00	32	1275	1275	28	1115	1115	22	875	875
M 9	9.0	1.00	32	1130	1130	28	990	990	22	780	780
M10	10.0	1.00	32	1020	1020	28	890	890	22	700	700
M10	10.0	1.25	32	1020	1275	28	890	1113	22	700	875
M 2.5	2.5	0.35	20	2545	891	16	2035	712	10	1275	446
M 3	3.0	0.35	20	2120	742	16	1700	595	10	1060	371
M 3.5	3.5	0.35	20	1820	637	16	1455	509	10	910	319
M 4	4.0	0.50	20	1590	795	16	1275	638	10	795	398
M 5	5.0	0.50	20	1275	638	16	1020	510	10	635	318
M 6	6.0	0.50	20	1060	530	16	850	425	10	530	265
M 8	8.0	0.50	20	795	398	16	635	318	10	400	200
M10	10.0	0.50	20	635	318	16	510	255	10	320	160
M 6	6.0	0.75	20	1060	795	16	850	638	10	530	398
M 7	7.0	0.75	20	910	683	16	730	548	10	455	341
M 8	8.0	0.75	20	795	596	16	635	476	10	400	300
M10	10.0	0.75	20	635	476	16	510	383	10	320	240
M 8	8.0	1.00	20	795	795	16	635	635	10	400	400
M 9	9.0	1.00	20	705	705	16	565	565	10	355	355
M10	10.0	1.00	20	635	635	16	510	510	10	320	320
M10	10.0	1.25	20	635	794	16	510	638	10	320	400

MF

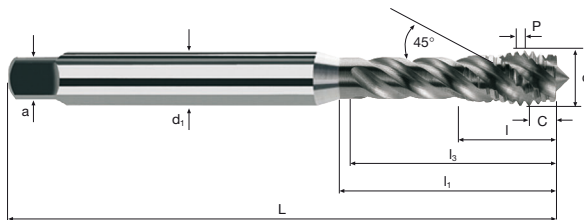
**ISO 2
(6H)**



**HSS
PM/F**



**X-P
Form C**



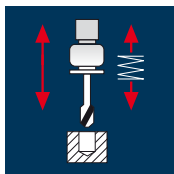
Rm
850-1100 N/mm²

Rm
500-850 N/mm²

MF

Esempio: N° Ordine EH1260 .029 <div style="display: flex; justify-content: space-around; font-size: small;"> Articolo Codice-ø </div>											TiCN	
											EH1260	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.029	M 2.5	0.35	50	9	15	13	2.8	2.1	3	2.15	44.40	
.031	M 3	0.35	56	5	18	16	3.5	2.7	3	2.65	36.40	
.032	M 3.5	0.35	56	6	20	18	4.0	3.0	3	3.15	36.40	
.046	M 4	0.50	63	7	21	19	4.5	3.4	3	3.50	36.40	
.048	M 5	0.50	70	8	25	23	6.0	4.9	3	4.50	37.20	
.050	M 6	0.50	80	10	30	28	6.0	4.9	3	5.50	38.90	
.052	M 8	0.50	90	13	35	33	8.0	6.2	3	7.50	46.90	
.054	M10	0.50	100	15	39	37	10.0	8.0	4	9.50	55.50	
.064	M 6	0.75	80	10	30	28	6.0	4.9	3	5.20	38.90	
.065	M 7	0.75	80	10	30	28	7.0	5.5	3	6.20	42.30	
.066	M 8	0.75	90	13	35	33	8.0	6.2	3	7.20	46.90	
.068	M10	0.75	100	15	39	37	10.0	8.0	4	9.20	55.50	
.090	M 8	1.00	90	13	35	33	8.0	6.2	3	7.00	46.90	
.091	M 9	1.00	90	13	35	33	9.0	7.0	3	8.00	50.40	
.092	M10	1.00	100	15	39	37	10.0	8.0	4	9.00	55.50	
.162	M10	1.25	100	15	39	37	10.0	8.0	4	8.80	55.50	
Dimensioni superiori vedere articolo EH1261, pagina 271												

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

MF	ø [mm]	P [mm]	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	32	850	638	28	745	559	22	585	439
M14	14.0	0.75	32	730	548	28	635	476	22	500	375
M16	16.0	0.75	32	635	476	28	555	416	22	440	330
M12	12.0	1.00	32	850	850	28	745	745	22	585	585
M13	13.0	1.00	32	785	785	28	685	685	22	540	540
M14	14.0	1.00	32	730	730	28	635	635	22	500	500
M15	15.0	1.00	32	680	680	28	595	595	22	465	465
M16	16.0	1.00	32	635	635	28	555	555	22	440	440
M17	17.0	1.00	32	600	600	28	525	525	22	410	410

Acciaio
500 - 850 N/mm²

M18	18.0	1.00	32	565	565	28	495	495	22	390	390
M20	20.0	1.00	32	510	510	28	445	445	22	350	350
M12	12.0	1.25	32	850	1063	28	745	931	22	585	731
M14	14.0	1.25	32	730	913	28	635	794	22	500	625
M16	16.0	1.25	32	635	794	28	555	694	22	440	550
M12	12.0	1.50	32	850	1275	28	745	1118	22	585	878
M14	14.0	1.50	32	730	1095	28	635	953	22	500	750
M16	16.0	1.50	32	635	953	28	555	833	22	440	660
M18	18.0	1.50	32	565	848	28	495	743	22	390	585

Acciaio
500 - 850 N/mm²

M20	20.0	1.50	32	510	765	28	445	668	22	350	525
M22	22.0	1.50	32	465	698	28	405	608	22	320	480
M24	24.0	1.50	32	425	638	28	370	555	22	290	435

Materiale

Acciaio
850 - 1100 N/mm²

MF	ø [mm]	P [mm]	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	20	530	398	16	425	319	10	265	199
M14	14.0	0.75	20	455	341	16	365	274	10	225	169
M16	16.0	0.75	20	400	300	16	320	240	10	200	150
M12	12.0	1.00	20	530	530	16	425	425	10	265	265
M13	13.0	1.00	20	490	490	16	390	390	10	245	245
M14	14.0	1.00	20	455	455	16	365	365	10	225	225
M15	15.0	1.00	20	425	425	16	340	340	10	210	210
M16	16.0	1.00	20	400	400	16	320	320	10	200	200
M17	17.0	1.00	20	375	375	16	300	300	10	185	185

Acciaio
850 - 1100 N/mm²

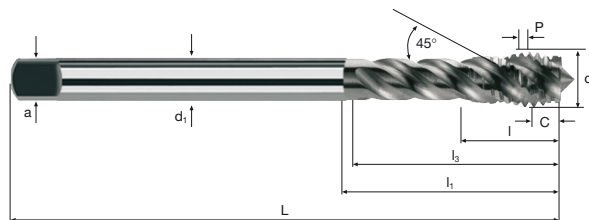
M18	18.0	1.00	20	355	355	16	285	285	10	175	175
M20	20.0	1.00	20	320	320	16	255	255	10	160	160
M12	12.0	1.25	20	530	663	16	425	531	10	265	331
M14	14.0	1.25	20	455	569	16	365	456	10	225	281
M16	16.0	1.25	20	400	500	16	320	400	10	200	250
M12	12.0	1.50	20	530	795	16	425	638	10	265	398
M14	14.0	1.50	20	455	683	16	365	548	10	225	338
M16	16.0	1.50	20	400	600	16	320	480	10	200	300
M18	18.0	1.50	20	355	533	16	285	428	10	175	263

Acciaio
850 - 1100 N/mm²

M20	20.0	1.50	20	320	480	16	255	383	10	160	240
M22	22.0	1.50	20	290	435	16	230	345	10	145	218
M24	24.0	1.50	20	265	398	16	210	315	10	135	203

MF
**ISO 2
(6H)**

**HSS
PM/F**

**X-P
Form C**

Rm
850-1100 N/mm²
Rm
500-850 N/mm²
MF

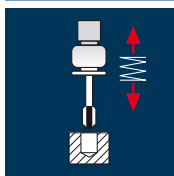
Esempio:
N° Ordine **EH1261 .070**

Articolo: **EH1261** Codice-ø: **.070**

TiCN
EH1261

Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€
.070	M12	0.75	100	11	39	37	9.0	7.0	4	11.30	70.00
.072	M14	0.75	100	11	39	37	11.0	9.0	4	13.30	85.00
.074	M16	0.75	100	12	39	37	12.0	9.0	4	15.30	102.00
.094	M12	1.00	100	11	39	37	9.0	7.0	4	11.00	70.00
.095	M13	1.00	100	11	39	37	11.0	9.0	4	12.00	78.00
.096	M14	1.00	100	11	39	37	11.0	9.0	4	13.00	85.00
.097	M15	1.00	100	12	39	37	12.0	9.0	4	14.00	93.00
.098	M16	1.00	100	12	39	37	12.0	9.0	4	15.00	102.00
.099	M17	1.00	100	12	39	37	12.0	9.0	4	16.00	113.00
.100	M18	1.00	110	13	50	48	14.0	11.0	4	17.00	127.00
.102	M20	1.00	125	14	65	63	16.0	12.0	4	19.00	153.00
.164	M12	1.25	100	15	39	37	9.0	7.0	4	10.80	70.00
.166	M14	1.25	100	15	39	37	11.0	9.0	4	12.80	85.00
.168	M16	1.25	100	15	39	37	12.0	9.0	4	14.80	102.00
.176	M12	1.50	100	15	39	37	9.0	7.0	4	10.50	70.00
.178	M14	1.50	100	15	39	37	11.0	9.0	4	12.50	85.00
.180	M16	1.50	100	15	39	37	12.0	9.0	4	14.50	102.00
.182	M18	1.50	110	17	50	48	14.0	11.0	4	16.50	127.00
.184	M20	1.50	125	18	65	63	16.0	12.0	4	18.50	153.00
.186	M22	1.50	125	18	65	63	18.0	14.5	5	20.50	181.00
.188	M24	1.50	140	20	72	70	18.0	14.5	5	22.50	213.00

Applicazione



Materiale

Acciaio da utensile temperato
48 - 52 HRC



Acciaio da utensile temperato
52 - 56 HRC



Acciaio da utensile temperato
56 - 60 HRC



Acciaio da utensile temperato
> 60 HRC



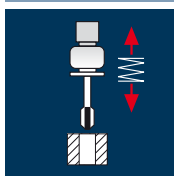
MF	ø [mm]	P [mm]	V_c	n	V_f	V_c	n	V_f	V_c	n	V_f
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 6	6.0	0.50	8	425	213	6	320	160	4	210	105
M 8	8.0	1.00	8	320	320	6	240	240	4	160	160
M10	10.0	1.00	8	255	255	6	190	190	4	125	125
M12	12.0	1.50	8	210	315	6	160	240	4	105	158
M14	14.0	1.50	8	180	270	6	135	203	4	90	135
M16	16.0	1.50	8	160	240	6	120	180	4	80	120

M 6	6.0	0.50	6	320	160	4	210	105	3	160	80
M 8	8.0	1.00	6	240	240	4	160	160	3	120	120
M10	10.0	1.00	6	190	190	4	125	125	3	95	95
M12	12.0	1.50	6	160	240	4	105	158	3	80	120
M14	14.0	1.50	6	135	203	4	90	135	3	70	105
M16	16.0	1.50	6	120	180	4	80	120	3	60	90

M 6	6.0	0.50	4	210	105	2	105	53			
M 8	8.0	1.00	4	160	160	2	80	80			
M10	10.0	1.00	4	125	125	2	65	65			
M12	12.0	1.50	4	105	158	2	55	83			
M14	14.0	1.50	4	90	135	2	45	68			
M16	16.0	1.50	4	80	120	2	40	60			

M 6	6.0	0.50	2	105	53	1.5	80	40			
M 8	8.0	1.00	2	80	80	1.5	60	60			
M10	10.0	1.00	2	65	65	1.5	50	50			
M12	12.0	1.50	2	55	83	1.5	40	60			
M14	14.0	1.50	2	45	68	1.5	35	53			
M16	16.0	1.50	2	40	60	1.5	30	45			

Applicazione



Materiale

Acciaio da utensile temperato
48 - 52 HRC



Acciaio da utensile temperato
52 - 56 HRC



Acciaio da utensile temperato
56 - 60 HRC



Acciaio da utensile temperato
> 60 HRC



MF	ø [mm]	P [mm]	V_c	n	V_f	V_c	n	V_f	V_c	n	V_f
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 6	6.0	0.50	8	425	213	6	320	160	4	210	105
M 8	8.0	1.00	8	320	320	6	240	240	4	160	160
M10	10.0	1.00	8	255	255	6	190	190	4	125	125
M12	12.0	1.50	8	210	315	6	160	240	4	105	158
M14	14.0	1.50	8	180	270	6	135	203	4	90	135
M16	16.0	1.50	8	160	240	6	120	180	4	80	120

M 6	6.0	0.50	6	320	160	4	210	105	3	160	80
M 8	8.0	1.00	6	240	240	4	160	160	3	120	120
M10	10.0	1.00	6	190	190	4	125	125	3	95	95
M12	12.0	1.50	6	160	240	4	105	158	3	80	120
M14	14.0	1.50	6	135	203	4	90	135	3	70	105
M16	16.0	1.50	6	120	180	4	80	120	3	60	90

M 6	6.0	0.50	4	210	105	2	105	53			
M 8	8.0	1.00	4	160	160	2	80	80			
M10	10.0	1.00	4	125	125	2	65	65			
M12	12.0	1.50	4	105	158	2	55	83			
M14	14.0	1.50	4	90	135	2	45	68			
M16	16.0	1.50	4	80	120	2	40	60			

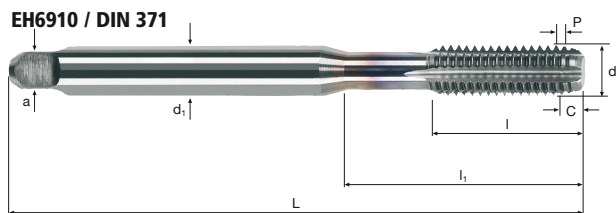
M 6	6.0	0.50	2	105	53	1.5	80	40			
M 8	8.0	1.00	2	80	80	1.5	60	60			
M10	10.0	1.00	2	65	65	1.5	50	50			
M12	12.0	1.50	2	55	83	1.5	40	60			
M14	14.0	1.50	2	45	68	1.5	35	53			
M16	16.0	1.50	2	40	60	1.5	30	45			

MF ISO 2 (6H)

HM MG10

DIN 371/374

X-P Form C



HRC 48 - 60

HRC > 60

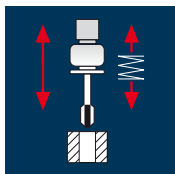
MF

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH6910		.050							EH6910	
Ø Code	d	P	L	I	I1	d1	a			€		
.050	M 6	0.50	80	17	30	6.0	4.9	4	5.60 *	185.00		
.090	M 8	1.00	90	20	35	8.0	6.2	5	7.10	224.00		
.092	M10	1.00	100	22	39	10.0	8.0	5	9.10	275.00		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH6911		.176							EH6911	
Ø Code	d	P	L	I	I1	d1	a			€		
.176	M12	1.50	100	22	39	9	7.0	5	10.70 *	339.00		
.178	M14	1.50	100	22	39	11	9.0	5	12.70 *	406.00		
.180	M16	1.50	100	22	39	12	9.0	5	14.70 *	478.00		

* La dimensione data è fuori norma

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2.5	2.5	0.35	12	1530	536	10	1275	446	8	1020	357
M 3	3.0	0.35	12	1275	446	10	1060	371	8	850	298
M 3.5	3.5	0.35	12	1090	382	10	910	319	8	730	255
M 4	4.0	0.50	12	955	478	10	795	398	8	635	318
M 5	5.0	0.50	12	765	383	10	635	318	8	510	255
M 6	6.0	0.50	12	635	318	10	530	265	8	425	213
M 8	8.0	0.50	12	475	238	10	400	200	8	320	160
M10	10.0	0.50	12	380	190	10	320	160	8	255	128
M 6	6.0	0.75	12	635	476	10	530	398	8	425	319
M 7	7.0	0.75	12	545	409	10	455	341	8	365	274
M 8	8.0	0.75	12	475	356	10	400	300	8	320	240
M10	10.0	0.75	12	380	285	10	320	240	8	255	191
M 8	8.0	1.00	12	475	475	10	400	400	8	320	320
M 9	9.0	1.00	12	425	425	10	355	355	8	285	285
M10	10.0	1.00	12	380	380	10	320	320	8	255	255
M10	10.0	1.25	12	380	475	10	320	400	8	255	319
M 2.5	2.5	0.35	7	890	312	5	635	222	4	510	179
M 3	3.0	0.35	7	745	261	5	530	186	4	425	149
M 3.5	3.5	0.35	7	635	222	5	455	159	4	365	128
M 4	4.0	0.50	7	555	278	5	400	200	4	320	160
M 5	5.0	0.50	7	445	223	5	320	160	4	255	128
M 6	6.0	0.50	7	370	185	5	265	133	4	210	105
M 8	8.0	0.50	7	280	140	5	200	100	4	160	80
M10	10.0	0.50	7	225	113	5	160	80	4	125	63
M 6	6.0	0.75	7	370	278	5	265	199	4	210	158
M 7	7.0	0.75	7	320	240	5	225	169	4	180	135
M 8	8.0	0.75	7	280	210	5	200	150	4	160	120
M10	10.0	0.75	7	225	169	5	160	120	4	125	94
M 8	8.0	1.00	7	280	280	5	200	200	4	160	160
M 9	9.0	1.00	7	250	250	5	175	175	4	140	140
M10	10.0	1.00	7	225	225	5	160	160	4	125	125
M10	10.0	1.25	7	225	281	5	160	200	4	125	156

Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2.5	2.5	0.35	8	1020	357	6	765	268	5	635	222
M 3	3.0	0.35	8	850	298	6	635	222	5	530	186
M 3.5	3.5	0.35	8	730	255	6	545	191	5	455	159
M 4	4.0	0.50	8	635	318	6	475	238	5	400	200
M 5	5.0	0.50	8	510	255	6	380	190	5	320	160
M 6	6.0	0.50	8	425	213	6	320	160	5	265	133
M 8	8.0	0.50	8	320	160	6	240	120	5	200	100
M10	10.0	0.50	8	255	128	6	190	95	5	160	80
M 6	6.0	0.75	8	425	319	6	320	240	5	265	199
M 7	7.0	0.75	8	365	274	6	275	206	5	225	169
M 8	8.0	0.75	8	320	240	6	240	180	5	200	150
M10	10.0	0.75	8	255	191	6	190	143	5	160	120
M 8	8.0	1.00	8	320	320	6	240	240	5	200	200
M 9	9.0	1.00	8	285	285	6	210	210	5	175	175
M10	10.0	1.00	8	255	255	6	190	190	5	160	160
M10	10.0	1.25	8	255	319	6	190	238	5	160	200
M 2.5	2.5	0.35	5	635	222	4	510	179	3	380	133
M 3	3.0	0.35	5	530	186	4	425	149	3	320	112
M 3.5	3.5	0.35	5	455	159	4	365	128	3	275	96
M 4	4.0	0.50	5	400	200	4	320	160	3	240	120
M 5	5.0	0.50	5	320	160	4	255	128	3	190	95
M 6	6.0	0.50	5	265	133	4	210	105	3	160	80
M 8	8.0	0.50	5	200	100	4	160	80	3	120	60
M10	10.0	0.50	5	160	80	4	125	63	3	95	48
M 6	6.0	0.75	5	265	199	4	210	158	3	160	120
M 7	7.0	0.75	5	225	169	4	180	135	3	135	101
M 8	8.0	0.75	5	200	150	4	160	120	3	120	90
M10	10.0	0.75	5	160	120	4	125	94	3	95	71
M 8	8.0	1.00	5	200	200	4	160	160	3	120	120
M 9	9.0	1.00	5	175	175	4	140	140	3	105	105
M10	10.0	1.00	5	160	160	4	125	125	3	95	95
M10	10.0	1.25	5	160	200	4	125	156	3	95	119

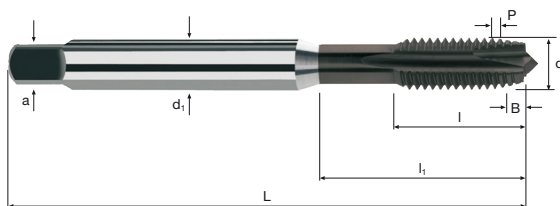
MF **ISO 2 (6H)**

HSS PM/F

DIN 371

Form B

OIL Emul

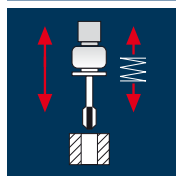


Inox
Stainless

MF

Esempio: N° Ordine ET1240 .029											TRIBO	
											ET1240	
Ø Code	d	P	L	l	li	d1	a			€		
.029	M 2.5	0.35	50	9	15	2.8	2.1	2	2.20	39.80		
.031	M 3	0.35	56	12	18	3.5	2.7	3	2.70	32.80		
.032	M 3.5	0.35	56	12	20	4.0	3.0	3	3.20	32.80		
.046	M 4	0.50	63	13	21	4.5	3.4	3	3.60*	32.80		
.048	M 5	0.50	70	15	25	6.0	4.9	3	4.60*	33.40		
.050	M 6	0.50	80	17	30	6.0	4.9	3	5.60*	34.90		
.052	M 8	0.50	90	20	35	8.0	6.2	3	7.60*	42.10		
.054	M10	0.50	100	22	39	10.0	8.0	3	9.60*	48.70		
.064	M 6	0.75	80	17	30	6.0	4.9	3	5.30	34.90		
.065	M 7	0.75	80	17	30	7.0	5.5	3	6.30	38.40		
.066	M 8	0.75	90	20	35	8.0	6.2	3	7.30	42.10		
.068	M10	0.75	100	22	39	10.0	8.0	3	9.30	48.70		
.090	M 8	1.00	90	20	35	8.0	6.2	3	7.10	42.10		
.091	M 9	1.00	90	20	35	9.0	7.0	3	8.10	45.40		
.092	M10	1.00	100	22	39	10.0	8.0	3	9.10	48.70		
.162	M10	1.25	100	22	39	10.0	8.0	3	8.90	48.70		
* La dimensione data è fuori norma												
Dimensioni superiori vedere articolo EH1241, pagina 277												

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	12	320	240	10	265	199	8	210	158
M14	14.0	0.75	12	275	206	10	225	169	8	180	135
M16	16.0	0.75	12	240	180	10	200	150	8	160	120
M12	12.0	1.00	12	320	320	10	265	265	8	210	210
M13	13.0	1.00	12	295	295	10	245	245	8	195	195
M14	14.0	1.00	12	275	275	10	225	225	8	180	180
M16	16.0	1.00	12	240	240	10	200	200	8	160	160
M18	18.0	1.00	12	210	210	10	175	175	8	140	140
M20	20.0	1.00	12	190	190	10	160	160	8	125	125
M12	12.0	1.25	12	320	400	10	265	331	8	210	263
M14	14.0	1.25	12	275	344	10	225	281	8	180	225
M16	16.0	1.25	12	240	300	10	200	250	8	160	200
M12	12.0	1.50	12	320	480	10	265	398	8	210	315
M14	14.0	1.50	12	275	413	10	225	338	8	180	270
M16	16.0	1.50	12	240	360	10	200	300	8	160	240
M18	18.0	1.50	12	210	315	10	175	263	8	140	210
M20	20.0	1.50	12	190	285	10	160	240	8	125	188
M24	24.0	1.50	12	160	240	10	135	203	8	105	158
M12	12.0	0.75	7	185	139	5	135	101	4	105	79
M14	14.0	0.75	7	160	120	5	115	86	4	90	68
M16	16.0	0.75	7	140	105	5	100	75	4	80	60
M12	12.0	1.00	7	185	185	5	135	135	4	105	105
M13	13.0	1.00	7	170	170	5	120	120	4	100	100
M14	14.0	1.00	7	160	160	5	115	115	4	90	90
M16	16.0	1.00	7	140	140	5	100	100	4	80	80
M18	18.0	1.00	7	125	125	5	90	90	4	70	70
M20	20.0	1.00	7	110	110	5	80	80	4	65	65
M12	12.0	1.25	7	185	231	5	135	169	4	105	131
M14	14.0	1.25	7	160	200	5	115	144	4	90	113
M16	16.0	1.25	7	140	175	5	100	125	4	80	100
M12	12.0	1.50	7	185	278	5	135	203	4	105	158
M14	14.0	1.50	7	160	240	5	115	173	4	90	135
M16	16.0	1.50	7	140	210	5	100	150	4	80	120
M18	18.0	1.50	7	125	188	5	90	135	4	70	105
M20	20.0	1.50	7	110	165	5	80	120	4	65	98
M24	24.0	1.50	7	95	143	5	65	98	4	55	83

Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]

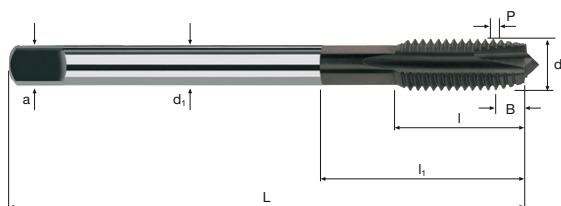
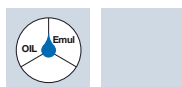
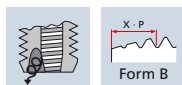


MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	8	210	158	6	160	120	5	135	101
M14	14.0	0.75	8	180	135	6	135	101	5	115	86
M16	16.0	0.75	8	160	120	6	120	90	5	100	75
M12	12.0	1.00	8	210	210	6	160	160	5	135	135
M13	13.0	1.00	8	195	195	6	145	145	5	120	120
M14	14.0	1.00	8	180	180	6	135	135	5	115	115
M16	16.0	1.00	8	160	160	6	120	120	5	100	100
M18	18.0	1.00	8	140	140	6	105	105	5	90	90
M20	20.0	1.00	8	125	125	6	95	95	5	80	80
M12	12.0	1.25	8	210	263	6	160	200	5	135	169
M14	14.0	1.25	8	180	225	6	135	169	5	115	144
M16	16.0	1.25	8	160	200	6	120	150	5	100	125
M12	12.0	1.50	8	210	315	6	160	240	5	135	203
M14	14.0	1.50	8	180	270	6	135	203	5	115	173
M16	16.0	1.50	8	160	240	6	120	180	5	100	150
M18	18.0	1.50	8	140	210	6	105	158	5	90	135
M20	20.0	1.50	8	125	188	6	95	143	5	80	120
M24	24.0	1.50	8	105	158	6	80	120	5	65	98
M12	12.0	0.75	5	135	101	4	105	79	3	80	60
M14	14.0	0.75	5	115	86	4	90	68	3	70	53
M16	16.0	0.75	5	100	75	4	80	60	3	60	45
M12	12.0	1.00	5	135	135	4	105	105	3	80	80
M13	13.0	1.00	5	120	120	4	100	100	3	75	75
M14	14.0	1.00	5	115	115	4	90	90	3	70	70
M16	16.0	1.00	5	100	100	4	80	80	3	60	60
M18	18.0	1.00	5	90	90	4	70	70	3	55	55
M20	20.0	1.00	5	80	80	4	65	65	3	50	50
M12	12.0	1.25	5	135	169	4	105	131	3	80	100
M14	14.0	1.25	5	115	144	4	90	113	3	70	88
M16	16.0	1.25	5	100	125	4	80	100	3	60	75
M12	12.0	1.50	5	135	203	4	105	158	3	80	120
M14	14.0	1.50	5	115	173	4	90	135	3	70	105
M16	16.0	1.50	5	100	150	4	80	120	3	60	90
M18	18.0	1.50	5	90	135	4	70	105	3	55	83
M20	20.0	1.50	5	80	120	4	65	98	3	50	75
M24	24.0	1.50	5	65	98	4	55	83	3	40	60



MF **ISO 2 (6H)**

HSS PM/F

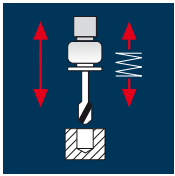


Inox
Stainless

MF

Esempio: N° Ordine										TRIBO	
		Articolo		Codice-ø						ET1241	
		ET1241		.070							
Ø Code	d	P	L	l	li	d1	a			€	
.070	M12	0.75	100	18	39	9.0	7.0	3	11.40*	61.00	
.072	M14	0.75	100	18	39	11.0	9.0	3	13.40*	77.00	
.074	M16	0.75	100	18	39	12.0	9.0	3	15.40*	91.00	
.094	M12	1.00	100	18	39	9.0	7.0	3	11.10	61.00	
.095	M13	1.00	100	18	39	11.0	9.0	3	12.10	70.00	
.096	M14	1.00	100	18	39	11.0	9.0	3	13.10	77.00	
.097	M15	1.00	100	18	39	12.0	9.0	3	14.10	84.00	
.098	M16	1.00	100	18	39	12.0	9.0	3	15.10	91.00	
.099	M17	1.00	100	18	39	12.0	9.0	4	16.10	103.00	
.100	M18	1.00	110	20	45	14.0	11.0	4	17.10	116.00	
.102	M20	1.00	125	20	50	16.0	12.0	4	19.10	141.00	
.164	M12	1.25	100	22	39	9.0	7.0	3	10.90	61.00	
.166	M14	1.25	100	22	39	11.0	9.0	3	12.90	77.00	
.168	M16	1.25	100	22	39	12.0	9.0	3	14.90	91.00	
.176	M12	1.50	100	22	39	9.0	7.0	3	10.70	61.00	
.178	M14	1.50	100	22	39	11.0	9.0	3	12.70	77.00	
.180	M16	1.50	100	22	39	12.0	9.0	3	14.70	91.00	
.182	M18	1.50	110	25	45	14.0	11.0	4	16.70	116.00	
.184	M20	1.50	125	26	50	16.0	12.0	4	18.70	141.00	
.186	M22	1.50	125	26	50	18.0	14.5	4	20.70	168.00	
.188	M24	1.50	140	27	52	18.0	14.5	4	22.70	197.00	
* La dimensione data è fuori norma											

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2.5	2.5	0.35	10	1275	446	8	1020	357	6	765	268
M 3	3.0	0.35	10	1060	371	8	850	298	6	635	222
M 3.5	3.5	0.35	10	910	319	8	730	255	6	545	191
M 4	4.0	0.50	10	795	398	8	635	318	6	475	238
M 5	5.0	0.50	10	635	318	8	510	255	6	380	190
M 6	6.0	0.50	10	530	265	8	425	213	6	320	160
M 8	8.0	0.50	10	400	200	8	320	160	6	240	120
M10	10.0	0.50	10	320	160	8	255	128	6	190	95
M 6	6.0	0.75	10	530	398	8	425	319	6	320	240
M 7	7.0	0.75	10	455	341	8	365	274	6	275	206
M 8	8.0	0.75	10	400	300	8	320	240	6	240	180
M10	10.0	0.75	10	320	240	8	255	191	6	190	143
M 8	8.0	1.00	10	400	400	8	320	320	6	240	240
M 9	9.0	1.00	10	355	355	8	285	285	6	210	210
M10	10.0	1.00	10	320	320	8	255	255	6	190	190
M10	10.0	1.25	10	320	400	8	255	319	6	190	238
M 2.5	2.5	0.35	5	635	222	4	510	179	3	380	133
M 3	3.0	0.35	5	530	186	4	425	149	3	320	112
M 3.5	3.5	0.35	5	455	159	4	365	128	3	275	96
M 4	4.0	0.50	5	400	200	4	320	160	3	240	120
M 5	5.0	0.50	5	320	160	4	255	128	3	190	95
M 6	6.0	0.50	5	265	133	4	210	105	3	160	80
M 8	8.0	0.50	5	200	100	4	160	80	3	120	60
M10	10.0	0.50	5	160	80	4	125	63	3	95	48
M 6	6.0	0.75	5	265	199	4	210	158	3	160	120
M 7	7.0	0.75	5	225	169	4	180	135	3	135	101
M 8	8.0	0.75	5	200	150	4	160	120	3	120	90
M10	10.0	0.75	5	160	120	4	125	94	3	95	71
M 8	8.0	1.00	5	200	200	4	160	160	3	120	120
M 9	9.0	1.00	5	175	175	4	140	140	3	105	105
M10	10.0	1.00	5	160	160	4	125	125	3	95	95
M10	10.0	1.25	5	160	200	4	125	156	3	95	119

MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2.5	2.5	0.35	6	765	268	5	635	222	4	510	179
M 3	3.0	0.35	6	635	222	5	530	186	4	425	149
M 3.5	3.5	0.35	6	545	191	5	455	159	4	365	128
M 4	4.0	0.50	6	475	238	5	400	200	4	320	160
M 5	5.0	0.50	6	380	190	5	320	160	4	255	128
M 6	6.0	0.50	6	320	160	5	265	133	4	210	105
M 8	8.0	0.50	6	240	120	5	200	100	4	160	80
M10	10.0	0.50	6	190	95	5	160	80	4	125	63
M 6	6.0	0.75	6	320	240	5	265	199	4	210	158
M 7	7.0	0.75	6	275	206	5	225	169	4	180	135
M 8	8.0	0.75	6	240	180	5	200	150	4	160	120
M10	10.0	0.75	6	190	143	5	160	120	4	125	94
M 8	8.0	1.00	6	240	240	5	200	200	4	160	160
M 9	9.0	1.00	6	210	210	5	175	175	4	140	140
M10	10.0	1.00	6	190	190	5	160	160	4	125	125
M10	10.0	1.25	6	190	238	5	160	200	4	125	156
M 2.5	2.5	0.35	4	510	179	3	380	133			
M 3	3.0	0.35	4	425	149	3	320	112			
M 3.5	3.5	0.35	4	365	128	3	275	96			
M 4	4.0	0.50	4	320	160	3	240	120			
M 5	5.0	0.50	4	255	128	3	190	95			
M 6	6.0	0.50	4	210	105	3	160	80			
M 8	8.0	0.50	4	160	80	3	120	60			
M10	10.0	0.50	4	125	63	3	95	48			
M 6	6.0	0.75	4	210	158	3	160	120			
M 7	7.0	0.75	4	180	135	3	135	101			
M 8	8.0	0.75	4	160	120	3	120	90			
M10	10.0	0.75	4	125	94	3	95	71			
M 8	8.0	1.00	4	160	160	3	120	120			
M 9	9.0	1.00	4	140	140	3	105	105			
M10	10.0	1.00	4	125	125	3	95	95			
M10	10.0	1.25	4	125	156	3	95	119			

Maschi x-tap



MF

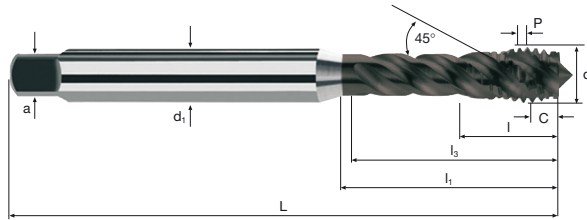
**ISO 2
(6H)**



**HSS
PM/F**



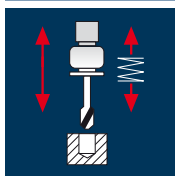
Inox
Stainless



MF

Esempio: N° Ordine Articolo Codice-ø												TRIBO
N° Ordine ET1260 .029												ET1260
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a	⊖	⊗	€	
.029	M 2.5	0.35	50	9	15	13	2.8	2.1	3	2.20	45.10	
.031	M 3	0.35	56	5	18	16	3.5	2.7	3	2.70	37.00	
.032	M 3.5	0.35	56	6	20	18	4.0	3.0	3	3.20	37.00	
.046	M 4	0.50	63	7	21	19	4.5	3.4	3	3.60 *	37.00	
.048	M 5	0.50	70	8	25	23	6.0	4.9	3	4.60 *	37.70	
.050	M 6	0.50	80	10	30	28	6.0	4.9	3	5.60 *	39.40	
.052	M 8	0.50	90	13	35	33	8.0	6.2	3	7.60 *	47.50	
.054	M10	0.50	100	15	39	37	10.0	8.0	4	9.60 *	56.30	
.064	M 6	0.75	80	10	30	28	6.0	4.9	3	5.30	39.40	
.065	M 7	0.75	80	10	30	28	7.0	5.5	3	6.30	42.90	
.066	M 8	0.75	90	13	35	33	8.0	6.2	3	7.30	47.50	
.068	M10	0.75	100	15	39	37	10.0	8.0	4	9.30	56.30	
.090	M 8	1.00	90	13	35	33	8.0	6.2	3	7.10	47.50	
.091	M 9	1.00	90	13	35	33	9.0	7.0	3	8.10	51.10	
.092	M10	1.00	100	15	39	37	10.0	8.0	4	9.10	56.30	
.162	M10	1.25	100	15	39	37	10.0	8.0	4	8.90	56.30	
* La dimensione data è fuori norma												
Dimensioni superiori vedere articolo E1261, pagina 281												

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	10	265	199	8	210	158	6	160	120
M14	14.0	0.75	10	225	169	8	180	135	6	135	101
M16	16.0	0.75	10	200	150	8	160	120	6	120	90
M12	12.0	1.00	10	265	265	8	210	210	6	160	160
M13	13.0	1.00	10	245	245	8	195	195	6	145	145
M14	14.0	1.00	10	225	225	8	180	180	6	135	135
M16	16.0	1.00	10	200	200	8	160	160	6	120	120
M18	18.0	1.00	10	175	175	8	140	140	6	105	105
M20	20.0	1.00	10	160	160	8	125	125	6	95	95
M12	12.0	1.25	10	265	331	8	210	263	6	160	200
M14	14.0	1.25	10	225	281	8	180	225	6	135	169
M16	16.0	1.25	10	200	250	8	160	200	6	120	150
M12	12.0	1.50	10	265	398	8	210	315	6	160	240
M14	14.0	1.50	10	225	338	8	180	270	6	135	203
M16	16.0	1.50	10	200	300	8	160	240	6	120	180
M18	18.0	1.50	10	175	263	8	140	210	6	105	158
M20	20.0	1.50	10	160	240	8	125	188	6	95	143
M24	24.0	1.50	10	135	203	8	105	158	6	80	120
M12	12.0	0.75	5	135	101	4	105	79	3	80	60
M14	14.0	0.75	5	115	86	4	90	68	3	70	53
M16	16.0	0.75	5	100	75	4	80	60	3	60	45
M12	12.0	1.00	5	135	135	4	105	105	3	80	80
M13	13.0	1.00	5	120	120	4	100	100	3	75	75
M14	14.0	1.00	5	115	115	4	90	90	3	70	70
M16	16.0	1.00	5	100	100	4	80	80	3	60	60
M18	18.0	1.00	5	90	90	4	70	70	3	55	55
M20	20.0	1.00	5	80	80	4	65	65	3	50	50
M12	12.0	1.25	5	135	169	4	105	131	3	80	100
M14	14.0	1.25	5	115	144	4	90	113	3	70	88
M16	16.0	1.25	5	100	125	4	80	100	3	60	75
M12	12.0	1.50	5	135	203	4	105	158	3	80	120
M14	14.0	1.50	5	115	173	4	90	135	3	70	105
M16	16.0	1.50	5	100	150	4	80	120	3	60	90
M18	18.0	1.50	5	90	135	4	70	105	3	55	83
M20	20.0	1.50	5	80	120	4	65	98	3	50	75
M24	24.0	1.50	5	65	98	4	55	83	3	40	60

Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	6	160	120	5	135	101	4	105	79
M14	14.0	0.75	6	135	101	5	115	86	4	90	68
M16	16.0	0.75	6	120	90	5	100	75	4	80	60
M12	12.0	1.00	6	160	160	5	135	135	4	105	105
M13	13.0	1.00	6	145	145	5	120	120	4	100	100
M14	14.0	1.00	6	135	135	5	115	115	4	90	90
M16	16.0	1.00	6	120	120	5	100	100	4	80	80
M18	18.0	1.00	6	105	105	5	90	90	4	70	70
M20	20.0	1.00	6	95	95	5	80	80	4	65	65
M12	12.0	1.25	6	160	200	5	135	169	4	105	131
M14	14.0	1.25	6	135	169	5	115	144	4	90	113
M16	16.0	1.25	6	120	150	5	100	125	4	80	100
M12	12.0	1.50	6	160	240	5	135	203	4	105	158
M14	14.0	1.50	6	135	203	5	115	173	4	90	135
M16	16.0	1.50	6	120	180	5	100	150	4	80	120
M18	18.0	1.50	6	105	158	5	90	135	4	70	105
M20	20.0	1.50	6	95	143	5	80	120	4	65	98
M24	24.0	1.50	6	80	120	5	65	98	4	55	83
M12	12.0	0.75	4	105	79	3	80	60			
M14	14.0	0.75	4	90	68	3	70	53			
M16	16.0	0.75	4	80	60	3	60	45			
M12	12.0	1.00	4	105	105	3	80	80			
M13	13.0	1.00	4	100	100	3	75	75			
M14	14.0	1.00	4	90	90	3	70	70			
M16	16.0	1.00	4	80	80	3	60	60			
M18	18.0	1.00	4	70	70	3	55	55			
M20	20.0	1.00	4	65	65	3	50	50			
M12	12.0	1.25	4	105	131	3	80	100			
M14	14.0	1.25	4	90	113	3	70	88			
M16	16.0	1.25	4	80	100	3	60	75			
M12	12.0	1.50	4	105	158	3	80	120			
M14	14.0	1.50	4	90	135	3	70	105			
M16	16.0	1.50	4	80	120	3	60	90			
M18	18.0	1.50	4	70	105	3	55	83			
M20	20.0	1.50	4	65	98	3	50	75			
M24	24.0	1.50	4	55	83	3	40	60			

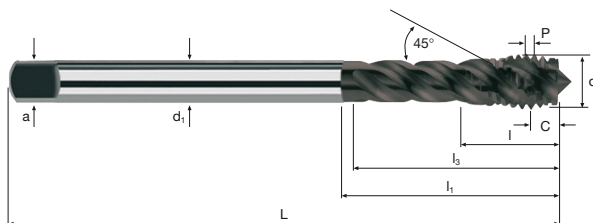
MF **ISO 2 (6H)**

HSS PM/F

DIN 374

X-P
Form C

OIL Emul

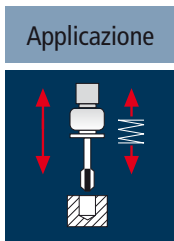


Inox
Stainless

MF

Esempio: N° Ordine ET1261 .070											TRIBO	
											ET1261	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁	a			€	
.070	M12	0.75	100	11	39	37	9.0	7.0	4	11.40*	71.00	
.072	M14	0.75	100	11	39	37	11.0	9.0	4	13.40*	86.00	
.074	M16	0.75	100	12	39	37	12.0	9.0	4	15.40*	104.00	
.094	M12	1.00	100	11	39	37	9.0	7.0	4	11.10	71.00	
.095	M13	1.00	100	11	39	37	11.0	9.0	4	12.10	79.00	
.096	M14	1.00	100	11	39	37	11.0	9.0	4	13.10	86.00	
.097	M15	1.00	100	12	39	37	12.0	9.0	4	14.10	95.00	
.098	M16	1.00	100	12	39	37	12.0	9.0	4	15.10	104.00	
.099	M17	1.00	100	12	39	37	12.0	9.0	4	16.10	114.00	
.100	M18	1.00	110	13	50	48	14.0	11.0	4	17.10	129.00	
.102	M20	1.00	125	14	65	63	16.0	12.0	4	19.10	155.00	
.164	M12	1.25	100	15	39	37	9.0	7.0	4	10.90	71.00	
.166	M14	1.25	100	15	39	37	11.0	9.0	4	12.90	86.00	
.168	M16	1.25	100	15	39	37	12.0	9.0	4	14.90	104.00	
.176	M12	1.50	100	15	39	37	9.0	7.0	4	10.70*	71.00	
.178	M14	1.50	100	15	39	37	11.0	9.0	4	12.70*	86.00	
.180	M16	1.50	100	15	39	37	12.0	9.0	4	14.70*	104.00	
.182	M18	1.50	110	17	50	48	14.0	11.0	4	16.70*	129.00	
.184	M20	1.50	125	18	65	63	16.0	12.0	4	18.70*	155.00	
.186	M22	1.50	125	18	65	63	18.0	14.5	5	20.70*	184.00	
.188	M24	1.50	140	20	72	70	18.0	14.5	5	22.70*	216.00	

* La dimensione data è fuori norma



Materiale

Ghisa
GG

MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M 2.5	2.5	0.35	28	3565	1248	24	3055	1069	20	2545	891
M 3	3.0	0.35	28	2970	1040	24	2545	891	20	2120	742
M 3.5	3.5	0.35	28	2545	891	24	2185	765	20	1820	637
M 4	4.0	0.50	28	2230	1115	24	1910	955	20	1590	795
M 5	5.0	0.50	28	1785	893	24	1530	765	20	1275	638
M 6	6.0	0.50	28	1485	743	24	1275	638	20	1060	530
M 8	8.0	0.50	28	1115	558	24	955	478	20	795	398
M10	10.0	0.50	28	890	445	24	765	383	20	635	318
M 6	6.0	0.75	28	1485	1114	24	1275	956	20	1060	795

Ghisa
GG

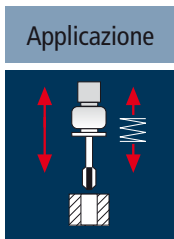
M 7	7.0	0.75	28	1275	956	24	1090	818	20	910	683
M 8	8.0	0.75	28	1115	836	24	955	716	20	795	596
M10	10.0	0.75	28	890	668	24	765	574	20	635	476
M 8	8.0	1.00	28	1115	1115	24	955	955	20	795	795
M 9	9.0	1.00	28	990	990	24	850	850	20	705	705
M10	10.0	1.00	28	890	890	24	765	765	20	635	635
M10	10.0	1.25	28	890	1113	24	765	956	20	635	794

Ghisa
GGG

M 2.5	2.5	0.35	20	2545	891	18	2290	802	15	1910	669
M 3	3.0	0.35	20	2120	742	18	1910	669	15	1590	557
M 3.5	3.5	0.35	20	1820	637	18	1635	572	15	1365	478
M 4	4.0	0.50	20	1590	795	18	1430	715	15	1195	598
M 5	5.0	0.50	20	1275	638	18	1145	573	15	955	478
M 6	6.0	0.50	20	1060	530	18	955	478	15	795	398
M 8	8.0	0.50	20	795	398	18	715	358	15	595	298
M10	10.0	0.50	20	635	318	18	575	288	15	475	238
M 6	6.0	0.75	20	1060	795	18	955	716	15	795	596

Ghisa
GGG

M 7	7.0	0.75	20	910	683	18	820	615	15	680	510
M 8	8.0	0.75	20	795	596	18	715	536	15	595	446
M10	10.0	0.75	20	635	476	18	575	431	15	475	356
M 8	8.0	1.00	20	795	795	18	715	715	15	595	595
M 9	9.0	1.00	20	705	705	18	635	635	15	530	530
M10	10.0	1.00	20	635	635	18	575	575	15	475	475
M10	10.0	1.25	20	635	794	18	575	719	15	475	594



Materiale

Ghisa
GG

MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 2.5	2.5	0.35	30	3820	1337	28	3565	1248	25	3185	1115
M 3	3.0	0.35	30	3185	1115	28	2970	1040	25	2655	929
M 3.5	3.5	0.35	30	2730	955	28	2545	891	25	2275	796
M 4	4.0	0.50	30	2385	1193	28	2230	1115	25	1990	995
M 5	5.0	0.50	30	1910	955	28	1785	893	25	1590	795
M 6	6.0	0.50	30	1590	795	28	1485	743	25	1325	663
M 8	8.0	0.50	30	1195	598	28	1115	558	25	995	498
M10	10.0	0.50	30	955	478	28	890	445	25	795	398
M 6	6.0	0.75	30	1590	1193	28	1485	1114	25	1325	994

Ghisa
GG

M 7	7.0	0.75	30	1365	1024	28	1275	956	25	1135	851
M 8	8.0	0.75	30	1195	896	28	1115	836	25	995	746
M10	10.0	0.75	30	955	716	28	890	668	25	795	596
M 8	8.0	1.00	30	1195	1195	28	1115	1115	25	995	995
M 9	9.0	1.00	30	1060	1060	28	990	990	25	885	885
M10	10.0	1.00	30	955	955	28	890	890	25	795	795
M10	10.0	1.25	30	955	1194	28	890	1113	25	795	994

Ghisa
GGG

M 2.5	2.5	0.35	25	3185	1115	22	2800	980	20	2545	891
M 3	3.0	0.35	25	2655	929	22	2335	817	20	2120	742
M 3.5	3.5	0.35	25	2275	796	22	2000	700	20	1820	637
M 4	4.0	0.50	25	1990	995	22	1750	875	20	1590	795
M 5	5.0	0.50	25	1590	795	22	1400	700	20	1275	638
M 6	6.0	0.50	25	1325	663	22	1165	583	20	1060	530
M 8	8.0	0.50	25	995	498	22	875	438	20	795	398
M10	10.0	0.50	25	795	398	22	700	350	20	635	318
M 6	6.0	0.75	25	1325	994	22	1165	874	20	1060	795

Ghisa
GGG

M 7	7.0	0.75	25	1135	851	22	1000	750	20	910	683
M 8	8.0	0.75	25	995	746	22	875	656	20	795	596
M10	10.0	0.75	25	795	596	22	700	525	20	635	476
M 8	8.0	1.00	25	995	995	22	875	875	20	795	795
M 9	9.0	1.00	25	885	885	22	780	780	20	705	705
M10	10.0	1.00	25	795	795	22	700	700	20	635	635
M10	10.0	1.25	25	795	994	22	700	875	20	635	794

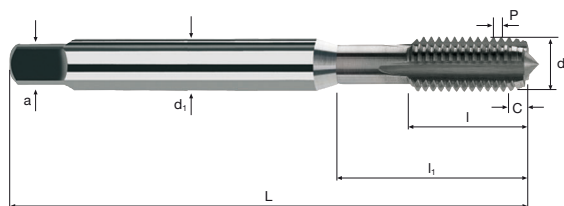
MF **ISO 2 (6H)**

HSS PM/F

DIN 371

Form C

OIL Emul

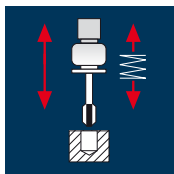


GG(G)
Cast iron

MF

Esempio: N° Ordine EH1270 .029											TiCN	
											EH1270	
Ø Code	d	P	L	l	li	d1	a			€		
.029	M 2.5	0.35	50	9	15	2.8	2.1	3	2.15	29.60		
.031	M 3	0.35	56	12	18	3.5	2.7	3	2.65	24.40		
.032	M 3.5	0.35	56	12	20	4.0	3.0	3	3.15	24.40		
.046	M 4	0.50	63	13	21	4.5	3.4	3	3.50	24.40		
.048	M 5	0.50	70	15	25	6.0	4.9	3	4.50	24.80		
.050	M 6	0.50	80	17	30	6.0	4.9	4	5.50	25.90		
.052	M 8	0.50	90	20	35	8.0	6.2	4	7.50	31.30		
.054	M10	0.50	100	22	39	10.0	8.0	4	9.50	36.20		
.064	M 6	0.75	80	17	30	6.0	4.9	4	5.20	25.90		
.065	M 7	0.75	80	17	30	7.0	5.5	4	6.20	28.50		
.066	M 8	0.75	90	20	35	8.0	6.2	4	7.20	31.30		
.068	M10	0.75	100	22	39	10.0	8.0	4	9.20	36.20		
.090	M 8	1.00	90	20	35	8.0	6.2	4	7.00	31.30		
.091	M 9	1.00	90	20	35	9.0	7.0	4	8.00	33.70		
.092	M10	1.00	100	22	39	10.0	8.0	4	9.00	36.20		
.162	M10	1.25	100	22	39	10.0	8.0	4	8.80	36.20		
Dimensioni superiori vedere articolo EH1271, pagina 285												

Applicazione



Materiale

Ghisa
GG

MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	28	745	559	24	635	476	20	530	398
M14	14.0	0.75	28	635	476	24	545	409	20	455	341
M16	16.0	0.75	28	555	416	24	475	356	20	400	300
M12	12.0	1.00	28	745	745	24	635	635	20	530	530
M13	13.0	1.00	28	685	685	24	590	590	20	490	490
M14	14.0	1.00	28	635	635	24	545	545	20	455	455
M16	16.0	1.00	28	555	555	24	475	475	20	400	400
M18	18.0	1.00	28	495	495	24	425	425	20	355	355
M20	20.0	1.00	28	445	445	24	380	380	20	320	320

Ghisa
GG

M12	12.0	1.25	28	745	931	24	635	794	20	530	663
M14	14.0	1.25	28	635	794	24	545	681	20	455	569
M16	16.0	1.25	28	555	694	24	475	594	20	400	500
M12	12.0	1.50	28	745	1118	24	635	953	20	530	795
M14	14.0	1.50	28	635	953	24	545	818	20	455	683
M16	16.0	1.50	28	555	833	24	475	713	20	400	600
M18	18.0	1.50	28	495	743	24	425	638	20	355	533
M20	20.0	1.50	28	445	668	24	380	570	20	320	480
M24	24.0	1.50	28	370	555	24	320	480	20	265	398

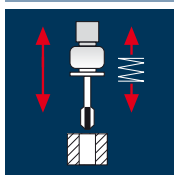
Ghisa
GGG

M12	12.0	0.75	20	530	398	18	475	356	15	400	300
M14	14.0	0.75	20	455	341	18	410	308	15	340	255
M16	16.0	0.75	20	400	300	18	360	270	15	300	225
M12	12.0	1.00	20	530	530	18	475	475	15	400	400
M13	13.0	1.00	20	490	490	18	440	440	15	365	365
M14	14.0	1.00	20	455	455	18	410	410	15	340	340
M16	16.0	1.00	20	400	400	18	360	360	15	300	300
M18	18.0	1.00	20	355	355	18	320	320	15	265	265
M20	20.0	1.00	20	320	320	18	285	285	15	240	240

Ghisa
GGG

M12	12.0	1.25	20	530	663	18	475	594	15	400	500
M14	14.0	1.25	20	455	569	18	410	513	15	340	425
M16	16.0	1.25	20	400	500	18	360	450	15	300	375
M12	12.0	1.50	20	530	795	18	475	713	15	400	600
M14	14.0	1.50	20	455	683	18	410	615	15	340	510
M16	16.0	1.50	20	400	600	18	360	540	15	300	450
M18	18.0	1.50	20	355	533	18	320	480	15	265	398
M20	20.0	1.50	20	320	480	18	285	428	15	240	360
M24	24.0	1.50	20	265	398	18	240	360	15	200	300

Applicazione



Materiale

Ghisa
GG

MF	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M12	12.0	0.75	30	795	596	28	745	559	25	665	499
M14	14.0	0.75	30	680	510	28	635	476	25	570	428
M16	16.0	0.75	30	595	446	28	555	416	25	495	371
M12	12.0	1.00	30	795	795	28	745	745	25	665	665
M13	13.0	1.00	30	735	735	28	685	685	25	610	610
M14	14.0	1.00	30	680	680	28	635	635	25	570	570
M16	16.0	1.00	30	595	595	28	555	555	25	495	495
M18	18.0	1.00	30	530	530	28	495	495	25	440	440
M20	20.0	1.00	30	475	475	28	445	445	25	400	400

Ghisa
GG

M12	12.0	1.25	30	795	994	28	745	931	25	665	831
M14	14.0	1.25	30	680	850	28	635	794	25	570	713
M16	16.0	1.25	30	595	744	28	555	694	25	495	619
M12	12.0	1.50	30	795	1193	28	745	1118	25	665	998
M14	14.0	1.50	30	680	1020	28	635	953	25	570	855
M16	16.0	1.50	30	595	893	28	555	833	25	495	743
M18	18.0	1.50	30	530	795	28	495	743	25	440	660
M20	20.0	1.50	30	475	713	28	445	668	25	400	600
M24	24.0	1.50	30	400	600	28	370	555	25	330	495

Ghisa
GGG

M12	12.0	0.75	25	665	499	22	585	439	20	530	398
M14	14.0	0.75	25	570	428	22	500	375	20	455	341
M16	16.0	0.75	25	495	371	22	440	330	20	400	300
M12	12.0	1.00	25	665	665	22	585	585	20	530	530
M13	13.0	1.00	25	610	610	22	540	540	20	490	490
M14	14.0	1.00	25	570	570	22	500	500	20	455	455
M16	16.0	1.00	25	495	495	22	440	440	20	400	400
M18	18.0	1.00	25	440	440	22	390	390	20	355	355
M20	20.0	1.00	25	400	400	22	350	350	20	320	320

Ghisa
GGG

M12	12.0	1.25	25	665	831	22	585	731	20	530	663
M14	14.0	1.25	25	570	713	22	500	625	20	455	569
M16	16.0	1.25	25	495	619	22	440	550	20	400	500
M12	12.0	1.50	25	665	998	22	585	878	20	530	795
M14	14.0	1.50	25	570	855	22	500	750	20	455	683
M16	16.0	1.50	25	495	743	22	440	660	20	400	600
M18	18.0	1.50	25	440	660	22	390	585	20	355	533
M20	20.0	1.50	25	400	600	22	350	525	20	320	480
M24	24.0	1.50	25	330	495	22	290	435	20	265	398

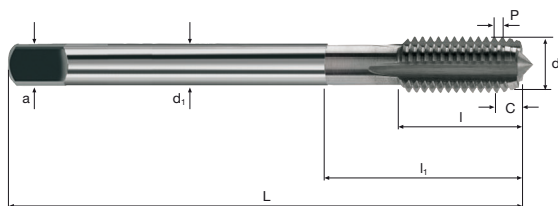
MF **ISO 2 (6H)**

HSS PM/F

DIN 374

Form C

Emul

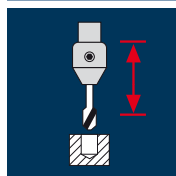


GG(G)
Cast iron

MF

Esempio: N° Ordine EH1271 .070											TiCN	
											EH1271	
Ø Code	d	P	L	l	li	d1	a			€		
.070	M12	0.75	100	18	39	9.0	7.0	4	11.30	45.10		
.072	M14	0.75	100	18	39	11.0	9.0	4	13.30	57.10		
.074	M16	0.75	100	18	39	12.0	9.0	4	15.30	68.00		
.094	M12	1.00	100	18	39	9.0	7.0	4	11.00	45.10		
.095	M13	1.00	100	18	39	11.0	9.0	4	12.00	51.80		
.096	M14	1.00	100	18	39	11.0	9.0	4	13.00	57.10		
.097	M15	1.00	100	18	39	12.0	9.0	4	14.00	63.00		
.098	M16	1.00	100	18	39	12.0	9.0	4	15.00	68.00		
.099	M17	1.00	100	18	39	12.0	9.0	4	16.00	76.00		
.100	M18	1.00	110	20	45	14.0	11.0	4	17.00	86.00		
.102	M20	1.00	125	20	50	16.0	12.0	4	19.00	105.00		
.164	M12	1.25	100	22	39	9.0	7.0	4	10.80	45.10		
.166	M14	1.25	100	22	39	11.0	9.0	4	12.80	57.10		
.168	M16	1.25	100	22	39	12.0	9.0	4	14.80	68.00		
.176	M12	1.50	100	22	39	9.0	7.0	4	10.50	45.10		
.178	M14	1.50	100	22	39	11.0	9.0	4	12.50	57.10		
.180	M16	1.50	100	22	39	12.0	9.0	4	14.50	68.00		
.182	M18	1.50	110	25	45	14.0	11.0	4	16.50	86.00		
.184	M20	1.50	125	26	50	16.0	12.0	4	18.50	105.00		
.186	M22	1.50	125	26	50	18.0	14.5	5	20.50	125.00		
.188	M24	1.50	140	27	52	18.0	14.5	5	22.50	146.00		

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

MF	ø [mm]	P [mm]	V _c		n		V _c		n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]		
M 3	3.0	0.35	22	2335	20	2120	12	1275		
M 4	4.0	0.50	22	1750	20	1590	12	955		
M 5	5.0	0.50	22	1400	20	1275	12	765		
M 6	6.0	0.50	22	1165	20	1060	12	635		
M 6	6.0	0.75	22	1165	20	1060	12	635		
M 8	8.0	0.75	22	875	20	795	12	475		
M10	10.0	0.75	22	700	20	635	12	380		
M 8	8.0	1.00	22	875	20	795	12	475		
M10	10.0	1.00	22	700	20	635	12	380		

Acciaio
500 - 850 N/mm²

M12	12.0	1.00	22	585	20	530	12	320
M14	14.0	1.00	22	500	20	455	12	275
M16	16.0	1.00	22	440	20	400	12	240
M10	10.0	1.25	22	700	20	635	12	380
M12	12.0	1.25	22	585	20	530	12	320
M12	12.0	1.50	22	585	20	530	12	320
M14	14.0	1.50	22	500	20	455	12	275
M16	16.0	1.50	22	440	20	400	12	240
M20	20.0	1.50	22	350	20	320	12	190

Acciaio
850 - 1100 N/mm²

M 3	3.0	0.35	18	1910	12	1275	8	850
M 4	4.0	0.50	18	1430	12	955	8	635
M 5	5.0	0.50	18	1145	12	765	8	510
M 6	6.0	0.50	18	955	12	635	8	425
M 6	6.0	0.75	18	955	12	635	8	425
M 8	8.0	0.75	18	715	12	475	8	320
M10	10.0	0.75	18	575	12	380	8	255
M 8	8.0	1.00	18	715	12	475	8	320
M10	10.0	1.00	18	575	12	380	8	255

Acciaio
850 - 1100 N/mm²

M12	12.0	1.00	18	475	12	320	8	210
M14	14.0	1.00	18	410	12	275	8	180
M16	16.0	1.00	18	360	12	240	8	160
M10	10.0	1.25	18	575	12	380	8	255
M12	12.0	1.25	18	475	12	320	8	210
M12	12.0	1.50	18	475	12	320	8	210
M14	14.0	1.50	18	410	12	275	8	180
M16	16.0	1.50	18	360	12	240	8	160
M20	20.0	1.50	18	285	12	190	8	125

Materiale

Acciaio inossidabile
[Cr-Ni/1.4301]



MF	ø [mm]	P [mm]	V _c		n		V _c		n	
			1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]		
M 3	3.0	0.35	4	425	3	320	2	210		
M 4	4.0	0.50	4	320	3	240	2	160		
M 5	5.0	0.50	4	255	3	190	2	125		
M 6	6.0	0.50	4	210	3	160	2	105		
M 6	6.0	0.75	4	210	3	160	2	105		
M 8	8.0	0.75	4	160	3	120	2	80		
M10	10.0	0.75	4	125	3	95	2	65		
M 8	8.0	1.00	4	160	3	120	2	80		
M10	10.0	1.00	4	125	3	95	2	65		

Acciaio inossidabile
[Cr-Ni/1.4301]



M12	12.0	1.00	4	105	3	80	2	55
M14	14.0	1.00	4	90	3	70	2	45
M16	16.0	1.00	4	80	3	60	2	40
M10	10.0	1.25	4	125	3	95	2	65
M12	12.0	1.25	4	105	3	80	2	55
M12	12.0	1.50	4	105	3	80	2	55
M14	14.0	1.50	4	90	3	70	2	45
M16	16.0	1.50	4	80	3	60	2	40
M20	20.0	1.50	4	65	3	50	2	30

Alluminio malleabile
Si < 6%
temptrato

M 3	3.0	0.35	12	1275	10	1060	8	850
M 4	4.0	0.50	12	955	10	795	8	635
M 5	5.0	0.50	12	765	10	635	8	510
M 6	6.0	0.50	12	635	10	530	8	425
M 6	6.0	0.75	12	635	10	530	8	425
M 8	8.0	0.75	12	475	10	400	8	320
M10	10.0	0.75	12	380	10	320	8	255
M 8	8.0	1.00	12	475	10	400	8	320
M10	10.0	1.00	12	380	10	320	8	255

Alluminio malleabile
Si < 6%
temptrato

M12	12.0	1.00	12	320	10	265	8	210
M14	14.0	1.00	12	275	10	225	8	180
M16	16.0	1.00	12	240	10	200	8	160
M10	10.0	1.25	12	380	10	320	8	255
M12	12.0	1.25	12	320	10	265	8	210
M12	12.0	1.50	12	320	10	265	8	210
M14	14.0	1.50	12	275	10	225	8	180
M16	16.0	1.50	12	240	10	200	8	160
M20	20.0	1.50	12	190	10	160	8	125

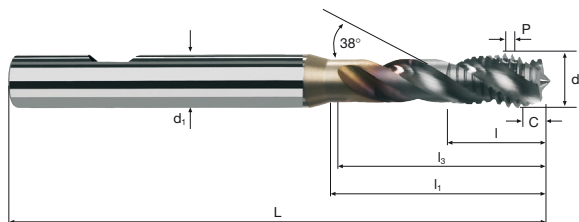
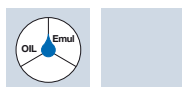


MF ISO 2 (6H)

HSS PM/F

DIN 1835B
ISO 3338

X-P
Form C



Rm < 1100 N/mm²

Inox Stainless

GG(G) Cast iron




























Al Aluminium

MF

Esempio: N° Ordine											TiCN	
Articolo EH1229 Codice-ø .031											EH1229	
Ø Code	d	P	L	l	l ₁	l ₃	d ₁ h6			€		
.031	M 3	0.35	63	5	18	16	6	3	2.65	34.50		
.046	M 4	0.50	66	7	21	19	6	3	3.50	34.50		
.048	M 5	0.50	70	8	25	23	6	3	4.50	35.20		
.050	M 6	0.50	80	10	30	28	6	3	5.50	36.70		
.064	M 6	0.75	80	10	30	28	6	3	5.20	36.70		
.066	M 8	0.75	90	13	35	33	8	3	7.20	44.30		
.068	M10	0.75	100	15	39	37	10	3	9.20	52.40		
.090	M 8	1.00	90	13	35	37	8	3	7.00	44.30		
.092	M10	1.00	100	15	39	37	10	3	9.00	52.40		
.094	M12	1.00	110	11	39	37	12	3	11.00	67.00		
.096	M14	1.00	110	11	46	44	16	4	13.00	80.00		
.098	M16	1.00	110	12	50	48	16	4	15.00	97.00		
.162	M10	1.25	100	15	39	37	10	3	8.80	52.40		
.164	M12	1.25	110	15	39	37	12	3	10.80	67.00		
.176	M12	1.50	110	15	39	37	12	3	10.50	67.00		
.178	M14	1.50	110	15	46	44	16	4	12.50	80.00		
.180	M16	1.50	110	15	50	48	16	4	14.50	97.00		
.184	M20	1.50	140	20	64	62	16	4	18.50	145.00		

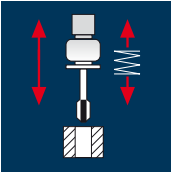


Filettatura gas Whitworth cilindrica G

G		Mat.	Code				
N° EH1400		HSS PM/F	Steel < 850 N/mm ²	08		291	
N° EA1425						293	
N° EH1472						295	
N° EH1475			Steel 850-1100 N/mm ²	11		297	
N° EH1482						299	
N° EH1495						301	
N° EH6916			HM MG10	HRC 48-60	60		303
N° ET1440							305
N° ET1475			HSS PM/F	Inox Stainless	In		307
N° EH1480						309	
N° EI1402		GG(G) Cast iron		GG		311	
N° EI1452						313	
N° EH1429		Uni- versal Rigid		R		315	
						313	

G

Applicazione



Materiale

Acciaio
< 500 N/mm²

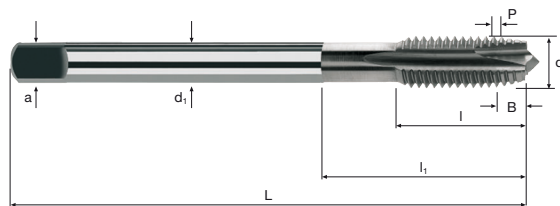
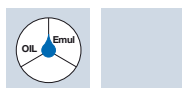
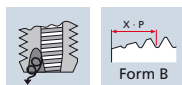
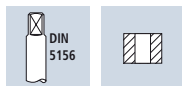
G	Ø	P	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
G 1/8	9.728	0.907	28	915	830	23	755	685	18	590	535
G 1/4	13.157	1.337	28	675	902	23	555	742	18	435	582
G 3/8	16.662	1.337	28	535	715	23	440	588	18	345	461
G 1/2	20.955	1.814	28	425	771	23	350	635	18	275	499
G 5/8	22.911	1.814	28	390	707	23	320	580	18	250	454
G 3/4	26.441	1.814	28	335	608	23	275	499	18	215	390

Acciaio
500 - 850 N/mm²

G 1/8	9.728	0.907	25	820	744	20	655	594	15	490	444
G 1/4	13.157	1.337	25	605	809	20	485	648	15	365	488
G 3/8	16.662	1.337	25	480	642	20	380	508	15	285	381
G 1/2	20.955	1.814	25	380	689	20	305	553	15	230	417
G 5/8	22.911	1.814	25	345	626	20	280	508	15	210	381
G 3/4	26.441	1.814	25	300	544	20	240	435	15	180	327



G

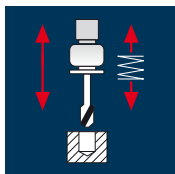


R_m
< 850 N/mm²

R_m
850-1100 N/mm²

Esempio: N° Ordine											TiCN	
Articolo EH1400 Codice-α .551											EH1400	
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€	
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.80	34.60	
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.80	49.50	
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.25	73.00	
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.00	109.00	
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.00	130.00	
.556	G 3/4	14	26.441	140	28	56	20	16.0	4	24.50	160.00	

Applicazione



Materiale

Acciaio
< 500 N/mm²

Acciaio
500 - 850 N/mm²

G	ø	P	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
G 1/8	9.728	0.907	25	820	744	20	655	594	18	590	535
G 1/4	13.157	1.337	25	605	809	20	485	648	18	435	582
G 3/8	16.662	1.337	25	480	642	20	380	508	18	345	461
G 1/2	20.955	1.814	25	380	689	20	305	553	18	275	499
G 5/8	22.911	1.814	25	345	626	20	280	508	18	250	454
G 3/4	26.441	1.814	25	300	544	20	240	435	18	215	390
G 1/8	9.728	0.907	16	525	476	14	460	417	12	395	358
G 1/4	13.157	1.337	16	385	515	14	340	455	12	290	388
G 3/8	16.662	1.337	16	305	408	14	265	354	12	230	308
G 1/2	20.955	1.814	16	245	444	14	215	390	12	180	327
G 5/8	22.911	1.814	16	220	399	14	195	354	12	165	299
G 3/4	26.441	1.814	16	195	354	14	170	308	12	145	263

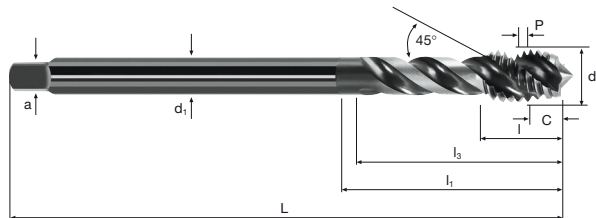
Maschi a-tap

08

G



HSS
PM/F+



Rm

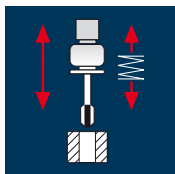
< 850 N/mm²

Rm

850-1100 N/mm²

Esempio: N° Ordine												ADSC		
Articolo EA1425 Codice-ø .551												EA1425		
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	l ₃	d ₁	a			€		
.551	G 1/8	28	9.728	90	7.3	35	33	7	5.5	3	8.80	40.00		
.552	G 1/4	19	13.157	100	10.7	39	37	11	9.0	4	11.80	55.90		
.553	G 3/8	19	16.662	100	10.7	39	37	12	9.0	4	15.25	81.00		
.554	G 1/2	14	20.955	125	14.5	65	63	16	12.0	4	19.00	121.00		
.555	G 5/8	14	22.911	125	14.5	65	63	18	14.5	4	21.00	142.00		
.556	G 3/4	14	26.441	140	14.5	72	70	20	16.0	5	24.50	175.00		

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

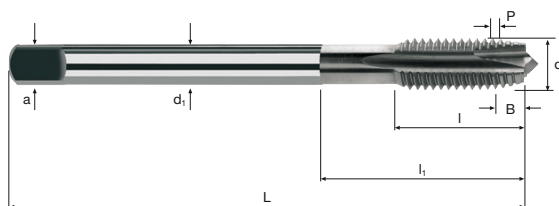
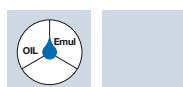
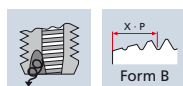
Acciaio
850 - 1100 N/mm²

Acciaio
1100 - 1300 N/mm²



G	ø	P	1.5 x d			2.0 x d			3.0 x d		
			V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
G 1/8	9.728	0.907	25	820	744	20	655	594	15	490	444
G 1/4	13.157	1.337	25	605	809	20	485	648	15	365	488
G 3/8	16.662	1.337	25	480	642	20	380	508	15	285	381
G 1/2	20.955	1.814	25	380	689	20	305	553	15	230	417
G 5/8	22.911	1.814	25	345	626	20	280	508	15	210	381
G 3/4	26.441	1.814	25	300	544	20	240	435	15	180	327
G 1/8	9.728	0.907	20	655	594	15	490	444	12	395	358
G 1/4	13.157	1.337	20	485	648	15	365	488	12	290	388
G 3/8	16.662	1.337	20	380	508	15	285	381	12	230	308
G 1/2	20.955	1.814	20	305	553	15	230	417	12	180	327
G 5/8	22.911	1.814	20	280	508	15	210	381	12	165	299
G 3/4	26.441	1.814	20	240	435	15	180	327	12	145	263
G 1/8	9.728	0.907	7	230	209	4	130	118			
G 1/4	13.157	1.337	7	170	227	4	95	127			
G 3/8	16.662	1.337	7	135	180	4	75	100			
G 1/2	20.955	1.814	7	105	190	4	60	109			
G 5/8	22.911	1.814	7	95	172	4	55	100			
G 3/4	26.441	1.814	7	85	154	4	50	91			

Maschi x-tap



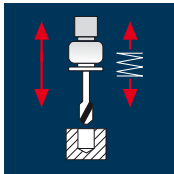
Rm
850-1100 N/mm²

Rm
1100-1300 N/mm²

Rm
500-850 N/mm²

Esempio: N° Ordine											TiCN		
			Articolo		Codice-ø						EH1472		G
			EH1472		.551								
Ø Code	d	P(TPI)	d (mm)	L	l	li	d1	a			€		
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.80	45.90		
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.80	66.00		
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.25	97.00		
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.00	145.00		
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.00	172.00		
.556	G 3/4	14	26.441	140	28	56	20	16.0	5	24.50	212.00		

Applicazione



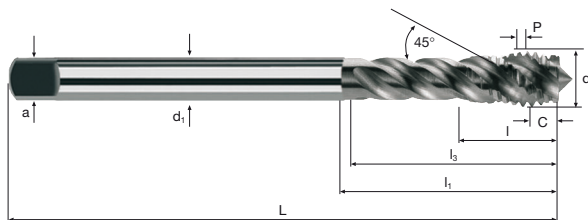
Materiale

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

G	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d		
			V _c [m/min]	n [min ⁻¹]	V _f [100%]	V _c [m/min]	n [100%]	V _f [100%]	V _c [m/min]	n [100%]	V _f [100%]
G 1/8	9.728	0.907	32	1045	948	28	915	830	22	720	653
G 1/4	13.157	1.337	32	775	1036	28	675	902	22	530	709
G 3/8	16.662	1.337	32	610	816	28	535	715	22	420	562
G 1/2	20.955	1.814	32	485	880	28	425	771	22	335	608
G 5/8	22.911	1.814	32	445	807	28	390	707	22	305	553
G 3/4	26.441	1.814	32	385	698	28	335	608	22	265	481
G 1/8	9.728	0.907	20	655	594	16	525	476	10	325	295
G 1/4	13.157	1.337	20	485	648	16	385	515	10	240	321
G 3/8	16.662	1.337	20	380	508	16	305	408	10	190	254
G 1/2	20.955	1.814	20	305	553	16	245	444	10	150	272
G 5/8	22.911	1.814	20	280	508	16	220	399	10	140	254
G 3/4	26.441	1.814	20	240	435	16	195	354	10	120	218

Maschi x-tap

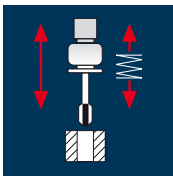


Rm
850-1100 N/mm²

Rm
500-850 N/mm²

Ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a	⊘	⊘	TiCN	€
												EH1475	
Esempio: N° Ordine EH1475 .551													G
<div style="display: flex; justify-content: space-around; font-size: small;"> Articolo Codice-ø </div>													
.551	G 1/8	28	9.728	90	10	35	33	7	5.5	3	8.80	53.10	
.552	G 1/4	19	13.157	100	14	39	37	11	9.0	4	11.80	74.00	
.553	G 3/8	19	16.662	100	14	39	37	12	9.0	4	15.25	108.00	
.554	G 1/2	14	20.955	125	20	65	63	16	12.0	5	19.00	160.00	
.555	G 5/8	14	22.911	125	20	65	63	18	14.5	5	21.00	189.00	
.556	G 3/4	14	26.441	140	22	72	70	20	16.0	5	24.50	233.00	

Applicazione



Materiale

Acciaio
1100 - 1300 N/mm²

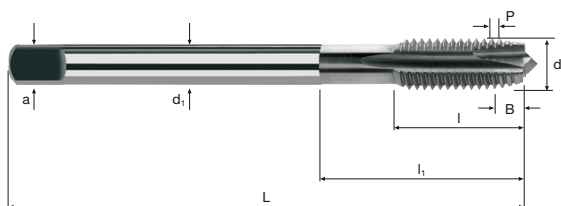


Acciaio
1300 - 1500 N/mm²



G	Ø	P	1.0 x d			1.5 x d			2.0 x d		
			V_c	n	V_f	V_c	n	V_f	V_c	n	V_f
	[mm]	[mm]	[m/min]	[1/min]	[100%]	[m/min]	[1/min]	[100%]	[m/min]	[1/min]	[100%]
G 1/8	9.728	0.907	10	325	295	8	260	236	5	165	150
G 1/4	13.157	1.337	10	240	321	8	195	261	5	120	160
G 3/8	16.662	1.337	10	190	254	8	155	207	5	95	127
G 1/2	20.955	1.814	10	150	272	8	120	218	5	75	136
G 5/8	22.911	1.814	10	140	254	8	110	200	5	70	127
G 3/4	26.441	1.814	10	120	218	8	95	172	5	60	109

G

**HSS
PM/F**

Rm

 1100-1500 N/mm²

 Esempio:
N° Ordine

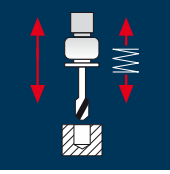
 Articolo
EH1482

 Codice-ø
.551
TiCN
EH1482
G

Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.85 *	44.30
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.90 *	63.00
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.40 *	94.00
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.20 *	140.00
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.10	166.00
.556	G 3/4	14	26.441	140	28	56	20	16.0	5	24.60	205.00

* La dimensione data è fuori norma

Applicazione



Materiale

Acciaio
1100 - 1300 N/mm²

Acciaio
1300 - 1500 N/mm²

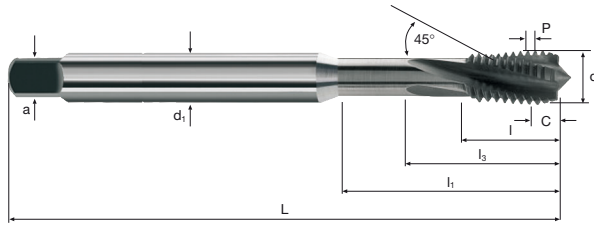
G	ø	P	V _c	n	V _f	V _c	n	V _f	
	[mm]	[mm]	1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	

G 1/8	9.728	0.907	6	195	177	5	165	150	
G 1/4	13.157	1.337	6	145	194	5	120	160	
G 3/8	16.662	1.337	6	115	154	5	95	127	
G 1/2	20.955	1.814	6	90	163	5	75	136	
G 5/8	22.911	1.814	6	85	154	5	70	127	
G 3/4	26.441	1.814	6	70	127	5	60	109	

G 1/8	9.728	0.907	5	165	150	4	130	118	
G 1/4	13.157	1.337	5	120	160	4	95	127	
G 3/8	16.662	1.337	5	95	127	4	75	100	
G 1/2	20.955	1.814	5	75	136	4	60	109	
G 5/8	22.911	1.814	5	70	127	4	55	100	
G 3/4	26.441	1.814	5	60	109	4	50	91	

G

**HSS
PM/F**

**X - P
Form C**

Rm

 1100-1500 N/mm²

Esempio: N° Ordine EH1495 .551												TiCN	G
												EH1495	
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	l ₃	d ₁	a			€	
.551	G 1/8	28	9.728	90	10	35	33	7	5.5	4	8.85 *	51.30	
.552	G 1/4	19	13.157	100	14	39	37	11	9.0	4	11.90 *	72.00	
.553	G 3/8	19	16.662	100	14	39	37	12	9.0	4	15.40 *	104.00	
.554	G 1/2	14	20.955	125	20	65	63	16	12.0	4	19.20 *	155.00	
.555	G 5/8	14	22.911	125	20	65	63	18	14.5	4	21.10	182.00	
.556	G 3/4	14	26.441	140	22	72	70	20	16.0	4	24.60	225.00	
* La dimensione data è fuori norma													

Applicazione

Materiale

Acciaio da utensile temperato
48 - 52 HRC

G	ø	P	1.0 x d			1.5 x d			2.0 x d		
			V_c	n	V_f	V_c	n	V_f	V_c	n	V_f
	[mm]	[mm]	[min ⁻¹]	[100%]	[min ⁻¹]	[100%]	[min ⁻¹]	[100%]	[min ⁻¹]	[100%]	
G 1/8	9.728	0.907	8	260	236	6	195	177	4	130	118
G 1/4	13.157	1.337	8	195	261	6	145	194	4	95	127
G 3/8	16.662	1.337	8	155	207	6	115	154	4	75	100
G 1/2	20.955	1.814	8	120	218	6	90	163	4	60	109

Acciaio da utensile temperato
52 - 56 HRC

G 1/8	9.728	0.907	6	195	177	4	130	118	3	100	91
G 1/4	13.157	1.337	6	145	194	4	95	127	3	75	100
G 3/8	16.662	1.337	6	115	154	4	75	100	3	55	74
G 1/2	20.955	1.814	6	90	163	4	60	109	3	45	82

Acciaio da utensile temperato
56 - 60 HRC

G 1/8	9.728	0.907	4	130	118	2	65	59			
G 1/4	13.157	1.337	4	95	127	2	50	67			
G 3/8	16.662	1.337	4	75	100	2	40	53			
G 1/2	20.955	1.814	4	60	109	2	30	54			

Acciaio da utensile temperato
> 60 HRC

G 1/8	9.728	0.907	2	65	59	1.5	50	45			
G 1/4	13.157	1.337	2	50	67	1.5	35	47			
G 3/8	16.662	1.337	2	40	53	1.5	30	40			
G 1/2	20.955	1.814	2	30	54	1.5	25	45			

Applicazione

Materiale

Acciaio da utensile temperato
48 - 52 HRC

G	ø	P	1.5 x d			2.0 x d			3.0 x d		
			V_c	n	V_f	V_c	n	V_f	V_c	n	V_f
	[mm]	[mm]	[min ⁻¹]	[100%]	[min ⁻¹]	[100%]	[min ⁻¹]	[100%]	[min ⁻¹]	[100%]	
G 1/8	9.728	0.907	8	260	236	6	195	177	4	130	118
G 1/4	13.157	1.337	8	195	261	6	145	194	4	95	127
G 3/8	16.662	1.337	8	155	207	6	115	154	4	75	100
G 1/2	20.955	1.814	8	120	218	6	90	163	4	60	109

Acciaio da utensile temperato
52 - 56 HRC

G 1/8	9.728	0.907	6	195	177	4	130	118	3	100	91
G 1/4	13.157	1.337	6	145	194	4	95	127	3	75	100
G 3/8	16.662	1.337	6	115	154	4	75	100	3	55	74
G 1/2	20.955	1.814	6	90	163	4	60	109	3	45	82

Acciaio da utensile temperato
56 - 60 HRC

G 1/8	9.728	0.907	4	130	118	2	65	59			
G 1/4	13.157	1.337	4	95	127	2	50	67			
G 3/8	16.662	1.337	4	75	100	2	40	53			
G 1/2	20.955	1.814	4	60	109	2	30	54			

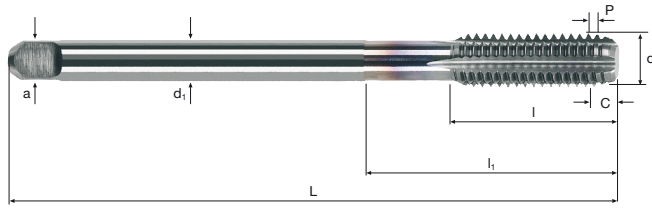
Acciaio da utensile temperato
> 60 HRC

G 1/8	9.728	0.907	2	65	59	1.5	50	45			
G 1/4	13.157	1.337	2	50	67	1.5	35	47			
G 3/8	16.662	1.337	2	40	53	1.5	30	40			
G 1/2	20.955	1.814	2	30	54	1.5	25	45			

G



**HM
MG10**



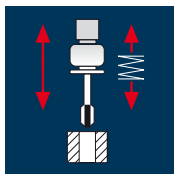
HRC
48 - 60

HRC
> 60

Esempio: N° Ordine											TiCN	
											EH6916	
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€	
.551	G 1/8	28	9.728	90	18	35	7	5.5	5	8.85*	263.00	
.552	G 1/4	19	13.157	100	20	39	11	9.0	5	11.90*	356.00	
.553	G 3/8	19	16.662	100	22	39	12	9.0	5	15.40*	488.00	
.554	G 1/2	14	20.955	125	25	50	16	12.0	5	19.20*	617.00	
* La dimensione data è fuori norma												

G

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



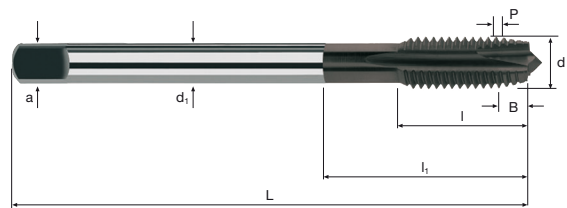
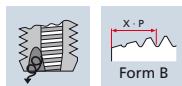
Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



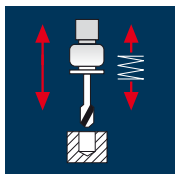
G	ø	P	1.5 x d			2.0 x d			3.0 x d		
			V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
G 1/8	9.728	0.907	12	395	358	10	325	295	8	260	236
G 1/4	13.157	1.337	12	290	388	10	240	321	8	195	261
G 3/8	16.662	1.337	12	230	308	10	190	254	8	155	207
G 1/2	20.955	1.814	12	180	327	10	150	272	8	120	218
G 5/8	22.911	1.814	12	165	299	10	140	254	8	110	200
G 3/4	26.441	1.814	12	145	263	10	120	218	8	95	172
G 1/8	9.728	0.907	7	230	209	5	165	150	4	130	118
G 1/4	13.157	1.337	7	170	227	5	120	160	4	95	127
G 3/8	16.662	1.337	7	135	180	5	95	127	4	75	100
G 1/2	20.955	1.814	7	105	190	5	75	136	4	60	109
G 5/8	22.911	1.814	7	95	172	5	70	127	4	55	100
G 3/4	26.441	1.814	7	85	154	5	60	109	4	50	91
G 1/8	9.728	0.907	8	260	236	6	195	177	5	165	150
G 1/4	13.157	1.337	8	195	261	6	145	194	5	120	160
G 3/8	16.662	1.337	8	155	207	6	115	154	5	95	127
G 1/2	20.955	1.814	8	120	218	6	90	163	5	75	136
G 5/8	22.911	1.814	8	110	200	6	85	154	5	70	127
G 3/4	26.441	1.814	8	95	172	6	70	127	5	60	109
G 1/8	9.728	0.907	5	165	150	4	130	118	3	100	91
G 1/4	13.157	1.337	5	120	160	4	95	127	3	75	100
G 3/8	16.662	1.337	5	95	127	4	75	100	3	55	74
G 1/2	20.955	1.814	5	75	136	4	60	109	3	45	82
G 5/8	22.911	1.814	5	70	127	4	55	100	3	40	73
G 3/4	26.441	1.814	5	60	109	4	50	91	3	35	63



Inox
Stainless

Esempio: N° Ordine											TRIBO	
		Articolo			Codice-α						ET1440	
		ET1440			.551							
Ø Code	d	P(TPI)	d (mm)	L	l	l1	d1	a			€	
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.85 *	46.60	
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.90 *	67.00	
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.40 *	98.00	
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.20 *	147.00	
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.10	174.00	
.556	G 3/4	14	26.441	140	28	56	20	16.0	4	24.60	215.00	
* La dimensione data è fuori norma												

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]

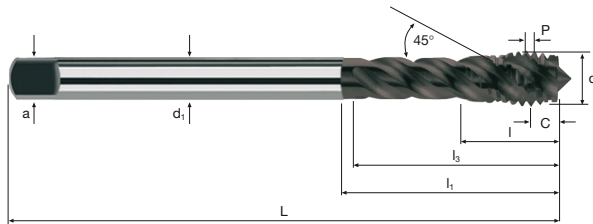
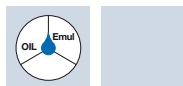
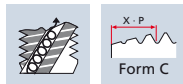


Acciaio resistente
al calore
[17-4 PH]



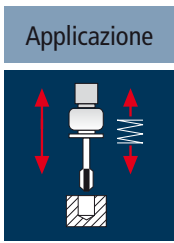
G	ø	P	1.0 x d			1.5 x d			2.0 x d		
			V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
G 1/8	9.728	0.907	10	325	295	8	260	236	6	195	177
G 1/4	13.157	1.337	10	240	321	8	195	261	6	145	194
G 3/8	16.662	1.337	10	190	254	8	155	207	6	115	154
G 1/2	20.955	1.814	10	150	272	8	120	218	6	90	163
G 5/8	22.911	1.814	10	140	254	8	110	200	6	85	154
G 3/4	26.441	1.814	10	120	218	8	95	172	6	70	127
G 1/8	9.728	0.907	5	165	150	4	130	118	3	100	91
G 1/4	13.157	1.337	5	120	160	4	95	127	3	75	100
G 3/8	16.662	1.337	5	95	127	4	75	100	3	55	74
G 1/2	20.955	1.814	5	75	136	4	60	109	3	45	82
G 5/8	22.911	1.814	5	70	127	4	55	100	3	40	73
G 3/4	26.441	1.814	5	60	109	4	50	91	3	35	63
G 1/8	9.728	0.907	6	195	177	5	165	150	4	130	118
G 1/4	13.157	1.337	6	145	194	5	120	160	4	95	127
G 3/8	16.662	1.337	6	115	154	5	95	127	4	75	100
G 1/2	20.955	1.814	6	90	163	5	75	136	4	60	109
G 5/8	22.911	1.814	6	85	154	5	70	127	4	55	100
G 3/4	26.441	1.814	6	70	127	5	60	109	4	50	91
G 1/8	9.728	0.907	4	130	118	3	100	91			
G 1/4	13.157	1.337	4	95	127	3	75	100			
G 3/8	16.662	1.337	4	75	100	3	55	74			
G 1/2	20.955	1.814	4	60	109	3	45	82			
G 5/8	22.911	1.814	4	55	100	3	40	73			
G 3/4	26.441	1.814	4	50	91	3	35	63			

Maschi x-tap



Inox
Stainless

Esempio: N° Ordine												TRIBO	
		Articolo		Codice-ø								ET1475	
		ET1475		.551									
Ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			€	
.551	G 1/8	28	9.728	90	10	35	33	7	5.5	3	8.85*	53.80	
.552	G 1/4	19	13.157	100	14	39	37	11	9.0	4	11.90*	75.00	
.553	G 3/8	19	16.662	100	14	39	37	12	9.0	4	15.40*	109.00	
.554	G 1/2	14	20.955	125	20	65	63	16	12.0	5	19.20*	162.00	
.555	G 5/8	14	22.911	125	20	65	63	18	14.5	5	21.10	191.00	
.556	G 3/4	14	26.441	140	22	72	70	20	16.0	5	24.60	236.00	
* La dimensione data è fuori norma													



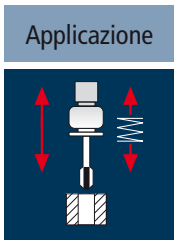
Materiale

Ghisa
GG

G	ø	P	V_c			n			V_f		
			$1.0 \times d$	n	V_f	$1.5 \times d$	n	V_f	$2.0 \times d$	n	V_f
	[mm]	[mm]	[100%]	[min ⁻¹]	[100%]	[100%]	[min ⁻¹]	[100%]	[100%]	[min ⁻¹]	[100%]
G 1/8	9.728	0.907	28	915	830	24	785	712	20	655	594
G 1/4	13.157	1.337	28	675	902	24	580	775	20	485	648
G 3/8	16.662	1.337	28	535	771	24	460	615	20	380	508
G 1/2	20.955	1.814	28	425	771	24	365	662	20	305	553
G 5/8	22.911	1.814	28	390	707	24	335	608	20	280	508
G 3/4	26.441	1.814	28	335	608	24	290	526	20	240	435

Ghisa
GGG

G 1/8	9.728	0.907	20	655	594	18	590	535	15	490	444
G 1/4	13.157	1.337	20	485	648	18	435	582	15	365	488
G 3/8	16.662	1.337	20	380	508	18	345	461	15	285	381
G 1/2	20.955	1.814	20	305	553	18	275	499	15	230	417
G 5/8	22.911	1.814	20	280	508	18	250	454	15	210	381
G 3/4	26.441	1.814	20	240	435	18	215	390	15	180	327



Materiale

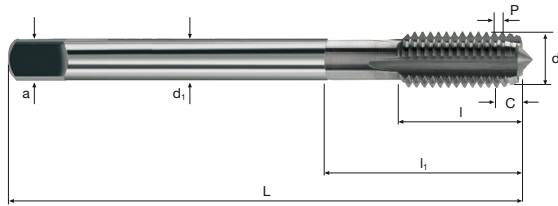
Ghisa
GG

G	ø	P	V_c			n			V_f		
			$1.5 \times d$	n	V_f	$2.0 \times d$	n	V_f	$3.0 \times d$	n	V_f
	[mm]	[mm]	[100%]	[min ⁻¹]	[100%]	[100%]	[min ⁻¹]	[100%]	[100%]	[min ⁻¹]	[100%]
G 1/8	9.728	0.907	30	980	889	28	915	830	25	820	744
G 1/4	13.157	1.337	30	725	969	28	675	902	25	605	809
G 3/8	16.662	1.337	30	575	769	28	535	715	25	480	642
G 1/2	20.955	1.814	30	455	825	28	425	771	25	380	689
G 5/8	22.911	1.814	30	415	753	28	390	707	25	345	626
G 3/4	26.441	1.814	30	360	653	28	335	608	25	300	544

Ghisa
GGG

G 1/8	9.728	0.907	25	820	744	22	720	653	20	655	594
G 1/4	13.157	1.337	25	605	809	22	530	709	20	485	648
G 3/8	16.662	1.337	25	480	642	22	420	562	20	380	508
G 1/2	20.955	1.814	25	380	689	22	335	608	20	305	553
G 5/8	22.911	1.814	25	345	626	22	305	553	20	280	508
G 3/4	26.441	1.814	25	300	544	22	265	481	20	240	435

G



**HSS
PM/F**

GG(G)
Cast iron

Esempio:
 N° Ordine **EH1480** **.551**

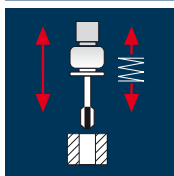
Articolo

Codice-ø

TiCN
EH1480
G

Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€	
.551	G 1/8	28	9.728	90	18	35	7	5.5	4	8.80	34.60	
.552	G 1/4	19	13.157	100	20	39	11	9.0	4	11.80	49.50	
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.25	73.00	
.554	G 1/2	14	20.955	125	25	50	16	12.0	5	19.00	109.00	
.555	G 5/8	14	22.911	125	25	50	18	14.5	5	21.00	130.00	
.556	G 3/4	14	26.441	140	28	56	20	16.0	5	24.50	160.00	

Applicazione



Materiale

Alluminio non legato

G	ø	P	1.5 x d			2.0 x d			3.0 x d		
			V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
G 1/8	9.728	0.907	23	755	685	19	620	562	16	525	476
G 1/4	13.157	1.337	23	555	742	19	460	615	16	385	515
G 3/8	16.662	1.337	23	440	588	19	365	488	16	305	408
G 1/2	20.955	1.814	23	350	635	19	290	526	16	245	444
G 5/8	22.911	1.814	23	320	580	19	265	481	16	220	399
G 3/4	26.441	1.814	23	275	499	19	230	417	16	195	354

Alluminio malleabile
Si < 6%
non temprato

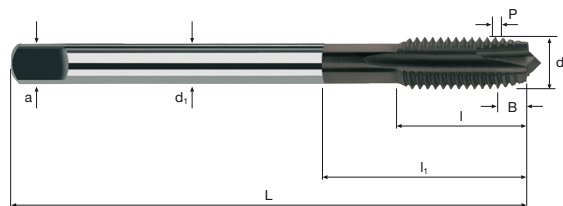
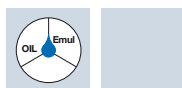
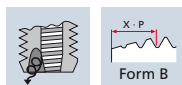
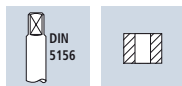
G 1/8	9.728	0.907	35	1145	1039	30	980	889	25	820	744
G 1/4	13.157	1.337	35	845	1130	30	725	969	25	605	809
G 3/8	16.662	1.337	35	670	896	30	575	769	25	480	642
G 1/2	20.955	1.814	35	530	961	30	455	825	25	380	689
G 5/8	22.911	1.814	35	485	880	30	415	753	25	345	626
G 3/4	26.441	1.814	35	420	762	30	360	653	25	300	544

Alluminio malleabile
Si < 6%
temprato

G 1/8	9.728	0.907	20	655	594	17	555	503	14	460	417
G 1/4	13.157	1.337	20	485	648	17	410	548	14	340	455
G 3/8	16.662	1.337	20	380	508	17	325	435	14	265	354
G 1/2	20.955	1.814	20	305	553	17	260	472	14	215	390
G 5/8	22.911	1.814	20	280	508	17	235	426	14	195	354
G 3/4	26.441	1.814	20	240	435	17	205	372	14	170	308

Rame non legato

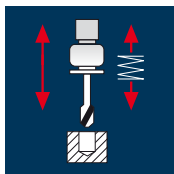
G 1/8	9.728	0.907	21	685	621	18	590	535	15	490	444
G 1/4	13.157	1.337	21	510	682	18	435	582	15	365	488
G 3/8	16.662	1.337	21	400	535	18	345	461	15	285	381
G 1/2	20.955	1.814	21	320	580	18	275	499	15	230	417
G 5/8	22.911	1.814	21	290	526	18	250	454	15	210	381
G 3/4	26.441	1.814	21	255	463	18	215	390	15	180	327



Al Aluminium	Cu Copper	Plastic Thermoplast
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											INTEGRAL	
											EI1402	
Esempio: N° Ordine EI1402 .551												
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€	
.551	G 1/8	28	9.728	90	18	35	7	5.5	2	8.80	40.50	
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.80	58.00	
.553	G 3/8	19	16.662	100	22	39	12	9.0	3	15.25	85.00	
.554	G 1/2	14	20.955	125	25	50	16	12.0	3	19.00	128.00	
.555	G 5/8	14	22.911	125	25	50	18	14.5	3	21.00	152.00	
.556	G 3/4	14	26.441	140	28	56	20	16.0	3	24.50	187.00	

Applicazione



Materiale

Alluminio non legato

G	ø	P	1.0 x d			1.5 x d			2.0 x d		
			V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
G 1/8	9.728	0.907	15	490	444	12	395	358	10	325	295
G 1/4	13.157	1.337	15	365	488	12	290	388	10	240	321
G 3/8	16.662	1.337	15	285	381	12	230	308	10	190	254
G 1/2	20.955	1.814	15	230	417	12	180	327	10	150	272
G 5/8	22.911	1.814	15	210	381	12	165	299	10	140	254
G 3/4	26.441	1.814	15	180	327	12	145	263	10	120	218

Alluminio malleabile
Si < 6%
non temprato

G 1/8	9.728	0.907	15	490	444	13	425	385	10	325	295
G 1/4	13.157	1.337	15	365	488	13	315	421	10	240	321
G 3/8	16.662	1.337	15	285	381	13	250	334	10	190	254
G 1/2	20.955	1.814	15	230	417	13	195	354	10	150	272
G 5/8	22.911	1.814	15	210	381	13	180	327	10	140	254
G 3/4	26.441	1.814	15	180	327	13	155	281	10	120	218

Alluminio malleabile
Si < 6%
temprato

G 1/8	9.728	0.907	13	425	385	11	360	327	10	325	295
G 1/4	13.157	1.337	13	315	421	11	265	354	10	240	321
G 3/8	16.662	1.337	13	250	334	11	210	281	10	190	254
G 1/2	20.955	1.814	13	195	354	11	165	299	10	150	272
G 5/8	22.911	1.814	13	180	327	11	155	281	10	140	254
G 3/4	26.441	1.814	13	155	281	11	130	236	10	120	218

Rame non legato

G 1/8	9.728	0.907	20	655	594	18	590	535	16	525	476
G 1/4	13.157	1.337	20	485	648	18	435	582	16	385	515
G 3/8	16.662	1.337	20	380	508	18	345	461	16	305	408
G 1/2	20.955	1.814	20	305	553	18	275	499	16	245	444
G 5/8	22.911	1.814	20	280	508	18	250	454	16	220	399
G 3/4	26.441	1.814	20	240	435	18	215	390	16	195	354

Maschi




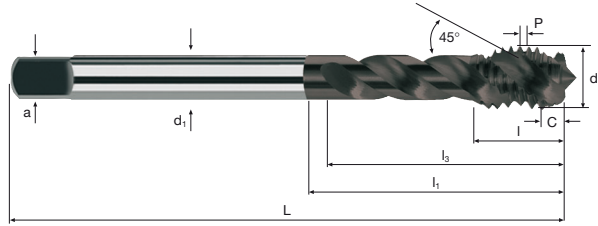
G

HSS
PM/F

DIN
5156

X-P
Form C







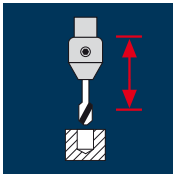
Al
Aluminium

Cu
Copper

Plastic
Thermoplast

Esempio: N° Ordine												INTEGRAL		G
Articolo E11452 Codice-ø .551											E11452			
Ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			€		
.551	G 1/8	28	9.728	90	10	35	33	7	5.5	3	8.80	46.80		
.552	G 1/4	19	13.157	100	14	39	37	11	9.0	4	11.80	65.00		
.553	G 3/8	19	16.662	100	14	39	37	12	9.0	4	15.25	95.00		
.554	G 1/2	14	20.955	125	20	65	63	16	12.0	4	19.00	141.00		
.555	G 5/8	14	22.911	125	20	65	63	18	14.5	4	21.00	166.00		
.556	G 3/4	14	26.441	140	22	72	70	20	16.0	5	24.50	205.00		

Applicazione



Materiale

Acciaio
< 500 N/mm²

G	ø	P	V _c	n	V _c	n	V _c	n
	[mm]	[mm]	1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]
G 1/8	9.728	0.907	25	820	22	720	15	490
G 1/4	13.157	1.337	25	605	22	530	15	365
G 3/8	16.662	1.337	25	480	22	420	15	285
G 1/2	20.955	1.814	25	380	22	335	15	230
G 5/8	22.911	1.814	25	345	22	305	15	210
G 3/4	26.441	1.814	25	300	22	265	15	180

Acciaio
500 - 850 N/mm²

G 1/8	9.728	0.907	22	720	20	655	12	395
G 1/4	13.157	1.337	22	530	20	485	12	290
G 3/8	16.662	1.337	22	420	20	380	12	230
G 1/2	20.955	1.814	22	335	20	305	12	180
G 5/8	22.911	1.814	22	305	20	280	12	165
G 3/4	26.441	1.814	22	265	20	240	12	145

Acciaio
850 - 1100 N/mm²

G 1/8	9.728	0.907	18	590	12	395	8	260
G 1/4	13.157	1.337	18	435	12	290	8	195
G 3/8	16.662	1.337	18	345	12	230	8	155
G 1/2	20.955	1.814	18	275	12	180	8	120
G 5/8	22.911	1.814	18	250	12	165	8	110
G 3/4	26.441	1.814	18	215	12	145	8	95

Ghisa
GG(G)

G 1/8	9.728	0.907	18	590	15	490	12	395
G 1/4	13.157	1.337	18	435	15	365	12	290
G 3/8	16.662	1.337	18	345	15	285	12	230
G 1/2	20.955	1.814	18	275	15	230	12	180
G 5/8	22.911	1.814	18	250	15	210	12	165
G 3/4	26.441	1.814	18	215	15	180	12	145

Materiale

Acciaio inossidabile
[Cr-Ni/1.4301]



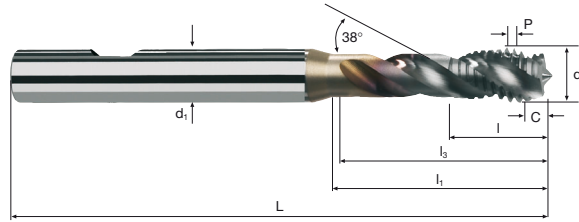
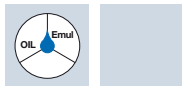
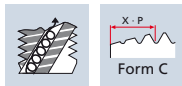
M	ø	P	V _c	n	V _c	n	V _c	n
	[mm]	[mm]	1.0 x d	[min ⁻¹]	1.5 x d	[min ⁻¹]	2.0 x d	[min ⁻¹]
G 1/8	9.728	0.907	4	130	3	100	2	65
G 1/4	13.157	1.337	4	95	3	75	2	50
G 3/8	16.662	1.337	4	75	3	55	2	40
G 1/2	20.955	1.814	4	60	3	45	2	30
G 5/8	22.911	1.814	4	55	3	40	2	30
G 3/4	26.441	1.814	4	50	3	35	2	25

Alluminio malleabile
Si < 6%
temprato

G 1/8	9.728	0.907	12	395	10	325	8	260
G 1/4	13.157	1.337	12	290	10	240	8	195
G 3/8	16.662	1.337	12	230	10	190	8	155
G 1/2	20.955	1.814	12	180	10	150	8	120
G 5/8	22.911	1.814	12	165	10	140	8	110
G 3/4	26.441	1.814	12	145	10	120	8	95



G



Rm
< 1100 N/mm²

Inox
Stainless

GG(G)
Cast iron

Al
Aluminium

											TiCN	
Esempio: N° Ordine											EH1429	
Articolo EH1429 Codice-ø .551												
Ø Code	d	P(TPI)	d (mm)	L	I	I1	I3	d1 h6			€	
.551	G 1/8	28	9.728	100	15	39	37	10	3	8.80	50.30	
.552	G 1/4	19	13.157	110	15	46	44	16	4	11.80	70.00	
.553	G 3/8	19	16.662	110	15	50	48	16	4	15.25	102.00	
.554	G 1/2	14	20.955	140	20	64	62	20	4	19.00	152.00	
.555	G 5/8	14	22.911	140	20	64	62	20	4	21.00	179.00	
.556	G 3/4	14	26.441	160	24	84	82	20	5	24.50	221.00	

G



Filettatura americana UNC / UNJC / UNF / UNJF

UNC, tolleranza 2B

N° EH1687 / EH1688



N° EH1690 / EH1691



N° ET1620 / ET1621



N° ET1690 / ET1691



N° EI1602



N° EI1652



Mat.	Code		
HSS PM/F	Steel 850-1100 N/mm ² 11		319
			323
	Inox Stainless In		327
			331
	Al Aluminium Al		335
			337

UNJC, tolleranza 3B

N° E1699



Mat.	Code		
HSS PM/F	Ni Nickel Ni		339

UNF, tolleranza 2B

N° EH1787 / EH1788



N° EH1790 / EH1791



N° ET1750 / ET1751



N° ET1790 / ET1791



Mat.	Code		
HSS PM/F	Steel 850-1100 N/mm ² 11		341
			343
	Inox Stainless In		345
			347

UN

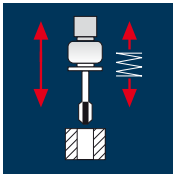
UNJF, tolleranza 3B

N° E1799



Mat.	Code		
HSS PM/F	Ni Nickel Ni		349

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio
850 - 1100 N/mm²

UNC	ø [mm]	P [mm]	v_c	n	v_f	v_c	n	v_f	v_c	n	v_f	
			1.5 x d [min ⁻¹]	[100%]	2.0 x d [min ⁻¹]	[100%]	3.0 x d [min ⁻¹]	[100%]				
2	-56	2.184	0.454	20	2915	1323	16	2330	1058	12	1750	795
3	-48	2.515	0.529	20	2530	1338	16	2025	1071	12	1520	804
4	-40	2.845	0.635	20	2240	1422	16	1790	1137	12	1345	854
5	-40	3.175	0.635	20	2005	1273	16	1605	1019	12	1205	765
6	-32	3.505	0.794	20	1815	1441	16	1455	1155	12	1090	865
8	-32	4.166	0.794	20	1530	1215	16	1225	973	12	915	727
10	-24	4.826	1.058	20	1320	1397	16	1055	1116	12	790	836
12	-24	5.486	1.058	20	1160	1227	16	930	984	12	695	735
1/4	-20	6.350	1.270	20	1005	1276	16	800	1016	12	600	762
5/16	-18	7.938	1.411	20	800	1129	16	640	903	12	480	677
3/8	-16	9.525	1.588	20	670	1064	16	535	850	12	400	635

Materiale

Acciaio
1100 - 1300 N/mm²



Acciaio
1100 - 1300 N/mm²



UNC	ø [mm]	P [mm]	v_c	n	v_f	v_c	n	v_f	v_c	n	v_f
			1.5 x d [min ⁻¹]	[100%]	2.0 x d [min ⁻¹]	[100%]	3.0 x d [min ⁻¹]	[100%]			
2	-56	2.184	0.454	5	730	331	3	435	197		
3	-48	2.515	0.529	5	635	336	3	380	201		
4	-40	2.845	0.635	5	560	356	3	335	213		
5	-40	3.175	0.635	5	500	318	3	300	191		
6	-32	3.505	0.794	5	455	361	3	270	214		
8	-32	4.166	0.794	5	380	302	3	230	183		
10	-24	4.826	1.058	5	330	349	3	200	212		
12	-24	5.486	1.058	5	290	307	3	175	185		
1/4	-20	6.350	1.270	5	250	318	3	150	191		
5/16	-18	7.938	1.411	5	200	282	3	120	169		
3/8	-16	9.525	1.588	5	165	262	3	100	159		

UNC

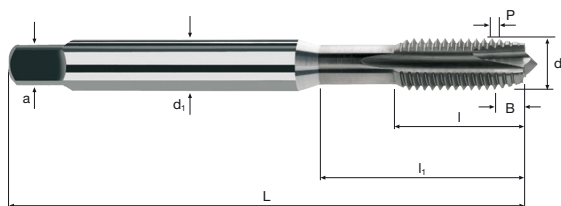
2B



HSS
PM/F



X - P
Form B



Rm

850-1100 N/mm²

Rm

1100-1300 N/mm²

Rm

500-850 N/mm²

Esempio:
N° Ordine

Articolo **EH1687** Codice-ø **.701**

TiCN

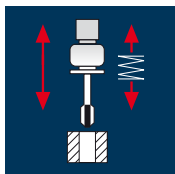
EH1687

Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€
.701	Nr. 2	-56	2.184	45	9	14.5	2.8	2.1	3	1.85	39.20
.702	Nr. 3	-48	2.515	50	9	15.0	2.8	2.1	3	2.10	32.40
.703	Nr. 4	-40	2.845	56	12	18.0	3.5	2.7	3	2.35	32.40
.704	Nr. 5	-40	3.175	56	12	18.0	3.5	2.7	3	2.65	32.40
.705	Nr. 6	-32	3.505	56	12	20.0	4.0	3.0	3	2.85	32.40
.706	Nr. 8	-32	4.166	63	13	21.0	4.5	3.4	3	3.50	32.40
.707	Nr. 10	-24	4.826	70	15	25.0	6.0	4.9	3	3.90	32.90
.708	Nr. 12	-24	5.486	80	17	30.0	6.0	4.9	3	4.50	32.90
.709	1/4	-20	6.350	80	17	30.0	7.0	5.5	3	5.10	34.40
.710	5/16	-18	7.938	90	20	35.0	8.0	6.2	3	6.60	41.50
.711	3/8	-16	9.525	100	22	39.0	10.0	8.0	3	8.00	48.00

UN

Dimensioni superiori vedere articolo EH1688, pagina 321

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio
1100 - 1300 N/mm²



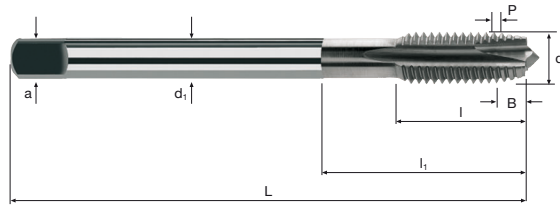
UNC	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			V _c [m/min]	n [min ⁻¹]	V _f [100%]	V _c [m/min]	n [min ⁻¹]	V _f [100%]	V _c [m/min]	n [min ⁻¹]	V _f [100%]
7/16 -14	11.113	1.814	20	575	1043	16	460	834	12	345	626
1/2 -13	12.700	1.954	20	500	977	16	400	782	12	300	586
9/16 -12	14.288	2.117	20	445	942	16	355	752	12	265	561
5/8 -11	15.875	2.309	20	400	924	16	320	739	12	240	554
3/4 -10	19.050	2.540	20	335	851	16	265	673	12	200	508
7/8 -9	22.225	2.822	20	285	804	16	230	649	12	170	480
1" -8	25.400	3.175	20	250	794	16	200	635	12	150	476
7/16 -14	11.113	1.814	16	460	834	12	345	626	10	285	517
1/2 -13	12.700	1.954	16	400	782	12	300	586	10	250	489
9/16 -12	14.288	2.117	16	355	752	12	265	561	10	225	476
5/8 -11	15.875	2.309	16	320	739	12	240	554	10	200	462
3/4 -10	19.050	2.540	16	265	673	12	200	508	10	165	419
7/8 -9	22.225	2.822	16	230	649	12	170	480	10	145	409
1" -8	25.400	3.175	16	200	635	12	150	476	10	125	397
7/16 -14	11.113	1.814	5	145	263	3	85	154			
1/2 -13	12.700	1.954	5	125	244	3	75	147			
9/16 -12	14.288	2.117	5	110	233	3	65	138			
5/8 -11	15.875	2.309	5	100	231	3	60	139			
3/4 -10	19.050	2.540	5	85	216	3	50	127			
7/8 -9	22.225	2.822	5	70	198	3	45	127			
1" -8	25.400	3.175	5	65	206	3	40	127			

UNC **2B**

HSS
PM/F

DIN
376

X - P
Form B

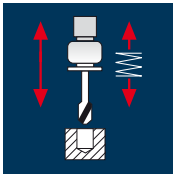


Rm 850-1100 N/mm ²	Rm 1100-1300 N/mm ²	Rm 500-850 N/mm ²
---	--	--

Esempio: N° Ordine												TiCN	
		Articolo		Codice- α								EH1688	
		EH1688		.712									
\emptyset Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€		
.712	7/16	-14	11.113	100	22	39	8	6.2	3	9.40	56.00		
.713	1/2	-13	12.700	110	24	40	9	7.0	3	10.80	69.00		
.714	9/16	-12	14.288	110	26	40	11	9.0	3	12.20	76.00		
.715	5/8	-11	15.875	110	27	40	12	9.0	3	13.50	90.00		
.716	3/4	-10	19.050	125	30	45	14	11.0	4	16.50	127.00		
.717	7/8	-9	22.225	140	32	50	18	14.5	4	19.50	166.00		
.718	1"	-8	25.400	160	34	50	18	14.5	5	22.30	208.00		

UN

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

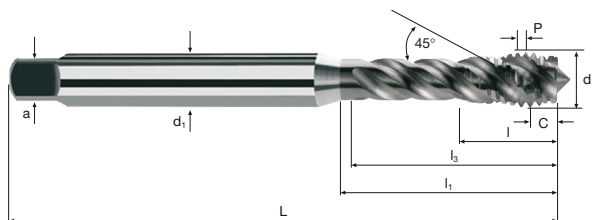
Acciaio
850 - 1100 N/mm²

UNC	Ø	P	1.0 x d			1.5 x d			2.0 x d			
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f	
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	
2	-56	2.184	0.454	25	3645	1655	22	3205	1455	18	2625	1192
3	-48	2.515	0.529	25	3165	1674	22	2785	1473	18	2280	1206
4	-40	2.845	0.635	25	2795	1775	22	2460	1562	18	2015	1280
5	-40	3.175	0.635	25	2505	1591	22	2205	1400	18	1805	1146
6	-32	3.505	0.794	25	2270	1802	22	2000	1588	18	1635	1298
8	-32	4.166	0.794	25	1910	1517	22	1680	1334	18	1375	1052
10	-24	4.826	1.058	25	1650	1746	22	1450	1534	18	1185	1254
12	-24	5.486	1.058	25	1450	1534	22	1275	1349	18	1045	1106
1/4	-20	6.350	1.270	25	1255	1594	22	1105	1403	18	900	1143
5/16	-18	7.938	1.411	25	1000	1411	22	880	1242	18	720	1016
3/8	-16	9.525	1.588	25	835	1326	22	735	1167	18	600	953
2	-56	2.184	0.454	16	2330	1058	13	1895	860	8	1165	529
3	-48	2.515	0.529	16	2025	1071	13	1645	870	8	1015	537
4	-40	2.845	0.635	16	1790	1137	13	1455	924	8	895	568
5	-40	3.175	0.635	16	1605	1019	13	1305	829	8	800	508
6	-32	3.505	0.794	16	1455	1155	13	1180	937	8	725	576
8	-32	4.166	0.794	16	1225	973	13	995	790	8	610	484
10	-24	4.826	1.058	16	1055	1116	13	855	905	8	530	561
12	-24	5.486	1.058	16	930	984	13	755	799	8	465	492
1/4	-20	6.350	1.270	16	800	1016	13	650	826	8	400	508
5/16	-18	7.938	1.411	16	640	903	13	520	734	8	320	452
3/8	-16	9.525	1.588	16	535	850	13	435	691	8	265	421

UNC **2B**

HSS PM/F

Form C



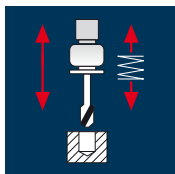
Rm
850-1100 N/mm²

Rm
500-850 N/mm²

Esempio: N° Ordine EH1690 .701												TiCN	
												EH1690	
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	l ₃	d ₁	a			€	
.701	Nr. 2	-56	2.184	45	9	14.5	12.5	2.8	2.1	3	1.85	44.40	
.702	Nr. 3	-48	2.515	50	9	15.0	13.0	2.8	2.1	3	2.10	36.40	
.703	Nr. 4	-40	2.845	56	5	18.0	16.0	3.5	2.7	3	2.35	36.40	
.704	Nr. 5	-40	3.175	56	5	18.0	16.0	3.5	2.7	3	2.65	36.40	
.705	Nr. 6	-32	3.505	56	6	20.0	18.0	4.0	3.0	3	2.85	36.40	
.706	Nr. 8	-32	4.166	63	7	21.0	19.0	4.5	3.4	3	3.50	36.40	
.707	Nr. 10	-24	4.826	70	8	25.0	23.0	6.0	4.9	3	3.90	37.20	
.708	Nr. 12	-24	5.486	80	10	30.0	28.0	6.0	4.9	3	4.50	37.20	
.709	1/4	-20	6.350	80	10	30.0	28.0	7.0	5.5	3	5.10	38.90	
.710	5/16	-18	7.938	90	13	35.0	33.0	8.0	6.2	3	6.60	46.90	
.711	3/8	-16	9.525	100	15	39.0	37.0	10.0	8.0	3	8.00	55.50	
Dimensioni superiori vedere articolo EH1691, pagina 325													

UN

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

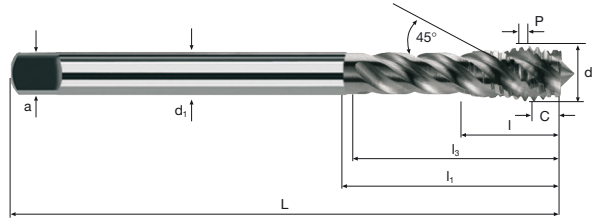
Acciaio
850 - 1100 N/mm²

UNC	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d			
			v_c [min ⁻¹]	n [100%]	v_f [100%]	v_c [min ⁻¹]	n [100%]	v_f [100%]	v_c [min ⁻¹]	n [100%]	v_f [100%]	
7/16	-14	11.113	1.814	25	715	1297	22	630	1143	18	515	934
1/2	-13	12.700	1.954	25	625	1221	22	550	1075	18	450	879
9/16	-12	14.288	2.117	25	555	1175	22	490	1037	18	400	847
5/8	-11	15.875	2.309	25	500	1155	22	440	1016	18	360	831
3/4	-10	19.050	2.540	25	420	1067	22	370	940	18	300	762
7/8	-9	22.225	2.822	25	360	1016	22	315	889	18	260	734
1"	-8	25.400	3.175	25	315	1000	22	275	873	18	225	714
7/16	-14	11.113	1.814	16	460	834	13	370	671	8	230	417
1/2	-13	12.700	1.954	16	400	782	13	325	635	8	200	391
9/16	-12	14.288	2.117	16	355	752	13	290	614	8	180	381
5/8	-11	15.875	2.309	16	320	739	13	260	600	8	160	369
3/4	-10	19.050	2.540	16	265	673	13	215	546	8	135	343
7/8	-9	22.225	2.822	16	230	649	13	185	522	8	115	325
1"	-8	25.400	3.175	16	200	635	13	165	524	8	100	318

UNC **2B**

HSS
PM/F

Form C



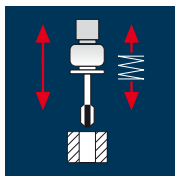
Rm
850-1100 N/mm²

Rm
500-850 N/mm²

Esempio: N° Ordine												TiCN			
Articolo		Codice-α												EH1691	
EH1691		.712													
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	l ₃	d ₁	a			€			
.712	7/16	-14	11.113	100	15	39	37	8	6.2	3	9.40	63.00			
.713	1/2	-13	12.700	110	18	50	48	9	7.0	3	10.80	78.00			
.714	9/16	-12	14.288	110	20	58	56	11	9.0	3	12.20	85.00			
.715	5/8	-11	15.875	110	20	58	56	12	9.0	3	13.50	102.00			
.716	3/4	-10	19.050	125	25	65	63	14	11.0	4	16.50	141.00			
.717	7/8	-9	22.225	140	25	72	70	18	14.5	4	19.50	181.00			
.718	1"	-8	25.400	160	30	72	70	18	14.5	5	22.30	229.00			

UN

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



UNC	Ø [mm]	P [mm]	V_c	n	V_f	V_c	n	V_f	V_c	n	V_f	
			1.5 x d [min ⁻¹]	[100%]	2.0 x d [min ⁻¹]	[100%]	3.0 x d [min ⁻¹]	[100%]				
2	-56	2.184	0.454	10	1455	661	8	1165	529	6	875	397
3	-48	2.515	0.529	10	1265	669	8	1015	537	6	760	402
4	-40	2.845	0.635	10	1120	711	8	895	568	6	670	425
5	-40	3.175	0.635	10	1005	638	8	800	508	6	600	381
6	-32	3.505	0.794	10	910	723	8	725	576	6	545	433
8	-32	4.166	0.794	10	765	607	8	610	484	6	460	365
10	-24	4.826	1.058	10	660	698	8	530	561	6	395	418
12	-24	5.486	1.058	10	580	614	8	465	492	6	350	370
1/4	-20	6.350	1.270	10	500	635	8	400	508	6	300	381
5/16	-18	7.938	1.411	10	400	564	8	320	452	6	240	339
3/8	-16	9.525	1.588	10	335	532	8	265	421	6	200	318
2	-56	2.184	0.454	6	875	397	4	585	266	3	435	197
3	-48	2.515	0.529	6	760	402	4	505	267	3	380	201
4	-40	2.845	0.635	6	670	425	4	450	286	3	335	213
5	-40	3.175	0.635	6	600	381	4	400	254	3	300	191
6	-32	3.505	0.794	6	545	433	4	365	290	3	270	214
8	-32	4.166	0.794	6	460	365	4	305	242	3	230	183
10	-24	4.826	1.058	6	395	418	4	265	280	3	200	212
12	-24	5.486	1.058	6	350	370	4	230	243	3	175	185
1/4	-20	6.350	1.270	6	300	381	4	200	254	3	150	191
5/16	-18	7.938	1.411	6	240	339	4	160	226	3	120	169
3/8	-16	9.525	1.588	6	200	318	4	135	214	3	100	159

UNC	Ø [mm]	P [mm]	V_c	n	V_f	V_c	n	V_f	V_c	n	V_f	
			1.5 x d [min ⁻¹]	[100%]	2.0 x d [min ⁻¹]	[100%]	3.0 x d [min ⁻¹]	[100%]				
2	-56	2.184	0.454	6	875	397	5	730	331	4	585	266
3	-48	2.515	0.529	6	760	402	5	635	336	4	505	267
4	-40	2.845	0.635	6	670	425	5	560	356	4	450	286
5	-40	3.175	0.635	6	600	381	5	500	318	4	400	254
6	-32	3.505	0.794	6	545	433	5	455	361	4	365	290
8	-32	4.166	0.794	6	460	365	5	380	302	4	305	242
10	-24	4.826	1.058	6	395	418	5	330	349	4	265	280
12	-24	5.486	1.058	6	350	370	5	290	307	4	230	243
1/4	-20	6.350	1.270	6	300	381	5	250	318	4	200	254
5/16	-18	7.938	1.411	6	240	339	5	200	282	4	160	226
3/8	-16	9.525	1.588	6	200	318	5	165	262	4	135	214
2	-56	2.184	0.454	4	585	266	3	435	197	2	290	132
3	-48	2.515	0.529	4	505	267	3	380	201	2	255	135
4	-40	2.845	0.635	4	450	286	3	335	213	2	225	143
5	-40	3.175	0.635	4	400	254	3	300	191	2	200	127
6	-32	3.505	0.794	4	365	290	3	270	214	2	180	143
8	-32	4.166	0.794	4	305	242	3	230	183	2	155	123
10	-24	4.826	1.058	4	265	280	3	200	212	2	130	138
12	-24	5.486	1.058	4	230	243	3	175	185	2	115	122
1/4	-20	6.350	1.270	4	200	254	3	150	191	2	100	127
5/16	-18	7.938	1.411	4	160	226	3	120	169	2	80	113
3/8	-16	9.525	1.588	4	135	214	3	100	159	2	65	103

UNC

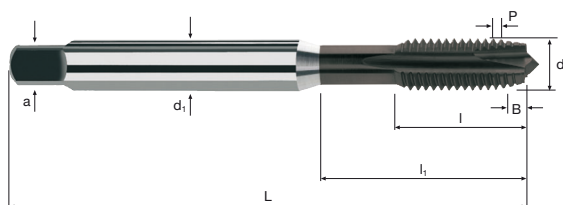
2B



HSS
PM/F



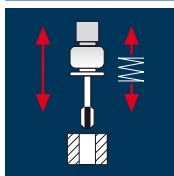
Inox
Stainless



Esempio: N° Ordine											TRIBO	
Articolo ET1620 Codice-ø .701											ET1620	
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€	
.701	Nr. 2	-56	2.184	45	9	14.5	2.8	2.1	2	1.90*	39.80	
.702	Nr. 3	-48	2.515	50	9	15.0	2.8	2.1	2	2.15*	32.80	
.703	Nr. 4	-40	2.845	56	12	18.0	3.5	2.7	3	2.40*	32.80	
.704	Nr. 5	-40	3.175	56	12	18.0	3.5	2.7	3	2.70*	32.80	
.705	Nr. 6	-32	3.505	56	12	20.0	4.0	3.0	3	2.90*	32.80	
.706	Nr. 8	-32	4.166	63	13	21.0	4.5	3.4	3	3.50	32.80	
.707	Nr. 10	-24	4.826	70	15	25.0	6.0	4.9	3	4.00*	33.40	
.708	Nr. 12	-24	5.486	80	17	30.0	6.0	4.9	3	4.60*	33.40	
.709	1/4	-20	6.350	80	17	30.0	7.0	5.5	3	5.20	34.90	
.710	5/16	-18	7.938	90	20	35.0	8.0	6.2	3	6.70	42.10	
.711	3/8	-16	9.525	100	22	39.0	10.0	8.0	3	8.10	48.70	
* La dimensione data è fuori norma												
Dimensioni superiori vedere articolo ET1621, pagina 329												

UN

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



UNC	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d			
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]	
7/16	-14	11.113	1.814	10	285	517	8	230	417	6	170	308
1/2	-13	12.700	1.954	10	250	489	8	200	391	6	150	293
9/16	-12	14.288	2.117	10	225	476	8	180	381	6	135	286
5/8	-11	15.875	2.309	10	200	462	8	160	369	6	120	277
3/4	-10	19.050	2.540	10	165	419	8	135	343	6	100	254
7/8	-9	22.225	2.822	10	145	409	8	115	325	6	85	240
1"	-8	25.400	3.175	10	125	397	8	100	318	6	75	238
7/16	-14	11.113	1.814	6	170	308	4	115	209	3	85	154
1/2	-13	12.700	1.954	6	150	293	4	100	195	3	75	147
9/16	-12	14.288	2.117	6	135	286	4	90	191	3	65	138
5/8	-11	15.875	2.309	6	120	277	4	80	185	3	60	139
3/4	-10	19.050	2.540	6	100	254	4	65	165	3	50	127
7/8	-9	22.225	2.822	6	85	240	4	55	155	3	45	127
1"	-8	25.400	3.175	6	75	238	4	50	159	3	40	127
7/16	-14	11.113	1.814	6	170	308	5	145	263	4	115	209
1/2	-13	12.700	1.954	6	150	293	5	125	244	4	100	195
9/16	-12	14.288	2.117	6	135	286	5	110	233	4	90	191
5/8	-11	15.875	2.309	6	120	277	5	100	231	4	80	185
3/4	-10	19.050	2.540	6	100	254	5	85	216	4	65	165
7/8	-9	22.225	2.822	6	85	240	5	70	198	4	55	155
1"	-8	25.400	3.175	6	75	238	5	65	206	4	50	159
7/16	-14	11.113	1.814	4	115	209	3	85	154	2	55	100
1/2	-13	12.700	1.954	4	100	195	3	75	147	2	50	98
9/16	-12	14.288	2.117	4	90	191	3	65	138	2	45	95
5/8	-11	15.875	2.309	4	80	185	3	60	139	2	40	92
3/4	-10	19.050	2.540	4	65	165	3	50	127	2	35	89
7/8	-9	22.225	2.822	4	55	155	3	45	127	2	30	85
1"	-8	25.400	3.175	4	50	159	3	40	127	2	25	79

UNC

2B



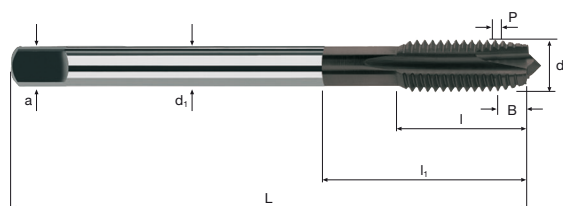
HSS
PM/F



X - P
Form B



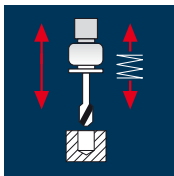
Inox
Stainless



Esempio: N° Ordine												TRIBO	
Articolo ET1621 Codice-ø .712												ET1621	
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€		
.712	7/16	-14	11.113	100	22	39	8	6.2	3	9.50	56.80		
.713	1/2	-13	12.700	110	24	40	9	7.0	3	11.00	70.00		
.714	9/16	-12	14.288	110	26	40	11	9.0	3	12.40	77.00		
.715	5/8	-11	15.875	110	27	40	12	9.0	3	13.80	91.00		
.716	3/4	-10	19.050	125	30	45	14	11.0	4	16.80	129.00		
.717	7/8	-9	22.225	140	32	50	18	14.5	4	19.70	168.00		
.718	1 "	-8	25.400	160	34	50	18	14.5	5	22.60	211.00		

UN

Applicazione



Materiale

**Acciaio inossidabile
ferritico/martensitico**



UNC	Ø [mm]	P [mm]	V _c 1.0 x d			V _c 1.5 x d			V _c 2.0 x d			
			n [min ⁻¹]	v _f [100%]		n [min ⁻¹]	v _f [100%]		n [min ⁻¹]	v _f [100%]		
2	-56	2.184	0.454	8	1165	529	6	875	397	5	730	331
3	-48	2.515	0.529	8	1015	537	6	760	402	5	635	336
4	-40	2.845	0.635	8	895	568	6	670	425	5	560	356
5	-40	3.175	0.635	8	800	508	6	600	381	5	500	318
6	-32	3.505	0.794	8	725	576	6	545	433	5	455	361
8	-32	4.166	0.794	8	610	484	6	460	365	5	380	302
10	-24	4.826	1.058	8	530	561	6	395	418	5	330	349
12	-24	5.486	1.058	8	465	492	6	350	370	5	290	307
1/4	-20	6.350	1.270	8	400	508	6	300	381	5	250	318

**Acciaio inossidabile
ferritico/martensitico**



5/16	-18	7.938	1.411	8	320	452	6	240	339	5	200	282
3/8	-16	9.525	1.588	8	265	421	6	200	318	5	165	262

**Acciaio inossidabile
[Cr-Ni/1.4301]**



2	-56	2.184	0.454	4	585	266	3	435	197	2	290	132
3	-48	2.515	0.529	4	505	267	3	380	201	2	255	135
4	-40	2.845	0.635	4	450	286	3	335	213	2	225	143
5	-40	3.175	0.635	4	400	254	3	300	191	2	200	127
6	-32	3.505	0.794	4	365	290	3	270	214	2	180	143
8	-32	4.166	0.794	4	305	242	3	230	183	2	155	123
10	-24	4.826	1.058	4	265	280	3	200	212	2	130	138
12	-24	5.486	1.058	4	230	243	3	175	185	2	115	122
1/4	-20	6.350	1.270	4	200	254	3	150	191	2	100	127

**Acciaio inossidabile
[Cr-Ni/1.4301]**



5/16	-18	7.938	1.411	4	160	226	3	120	169	2	80	113
3/8	-16	9.525	1.588	4	135	214	3	100	159	2	65	103

Materiale

**Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]**



UNC	Ø [mm]	P [mm]	V _c 1.0 x d			V _c 1.5 x d			V _c 2.0 x d			
			n [min ⁻¹]	v _f [100%]		n [min ⁻¹]	v _f [100%]		n [min ⁻¹]	v _f [100%]		
2	-56	2.184	0.454	5	730	331	4	585	266	3	435	197
3	-48	2.515	0.529	5	635	336	4	505	267	3	380	201
4	-40	2.845	0.635	5	560	356	4	450	286	3	335	213
5	-40	3.175	0.635	5	500	318	4	400	254	3	300	191
6	-32	3.505	0.794	5	455	361	4	365	290	3	270	214
8	-32	4.166	0.794	5	380	302	4	305	242	3	230	183
10	-24	4.826	1.058	5	330	349	4	265	280	3	200	212
12	-24	5.486	1.058	5	290	307	4	230	243	3	175	185
1/4	-20	6.350	1.270	5	250	318	4	200	254	3	150	191

**Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]**



5/16	-18	7.938	1.411	5	200	282	4	160	226	3	120	169
3/8	-16	9.525	1.588	5	165	262	4	135	214	3	100	159

**Acciaio resistente
al calore
[17-4 PH]**



2	-56	2.184	0.454	3	435	197	2	290	132			
3	-48	2.515	0.529	3	380	201	2	255	135			
4	-40	2.845	0.635	3	335	213	2	225	143			
5	-40	3.175	0.635	3	300	191	2	200	127			
6	-32	3.505	0.794	3	270	214	2	180	143			
8	-32	4.166	0.794	3	230	183	2	155	123			
10	-24	4.826	1.058	3	200	212	2	130	138			
12	-24	5.486	1.058	3	175	185	2	115	122			
1/4	-20	6.350	1.270	3	150	191	2	100	127			

**Acciaio resistente
al calore
[17-4 PH]**



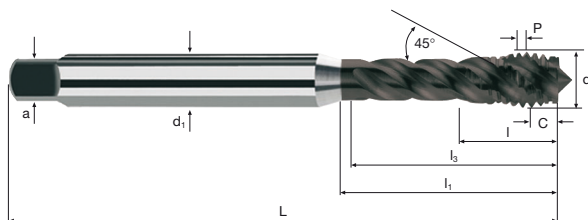
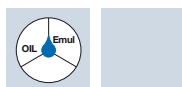
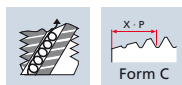
5/16	-18	7.938	1.411	3	120	169	2	80	113			
3/8	-16	9.525	1.588	3	100	159	2	65	103			

Maschi x-tap



UNC **2B**

HSS
PM/F

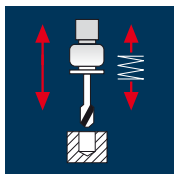


Inox
Stainless

Esempio: N° Ordine ET1690 .701												TRIBO	
												ET1690	
												€	
.701	Nr. 2	-56	2.184	45	9	14.5	12.5	2.8	2.1	3	1.90*	45.10	
.702	Nr. 3	-48	2.515	50	9	15.0	13.0	2.8	2.1	3	2.15*	37.00	
.703	Nr. 4	-40	2.845	56	5	18.0	16.0	3.5	2.7	3	2.40*	37.00	
.704	Nr. 5	-40	3.175	56	5	18.0	16.0	3.5	2.7	3	2.70*	37.00	
.705	Nr. 6	-32	3.505	56	6	20.0	18.0	4.0	3.0	3	2.90*	37.00	
.706	Nr. 8	-32	4.166	63	7	21.0	19.0	4.5	3.4	3	3.50	37.00	
.707	Nr. 10	-24	4.826	70	8	25.0	23.0	6.0	4.9	3	4.00*	37.70	
.708	Nr. 12	-24	5.486	80	10	30.0	28.0	6.0	4.9	3	4.60*	37.70	
.709	1/4	-20	6.350	80	10	30.0	28.0	7.0	5.5	3	5.20	39.40	
.710	5/16	-18	7.938	90	13	35.0	33.0	8.0	6.2	3	6.70	47.50	
.711	3/8	-16	9.525	100	15	39.0	37.0	10.0	8.0	3	8.10	56.30	
* La dimensione data è fuori norma													
Dimensioni superiori vedere articolo ET1691, pagina 333													

UN

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



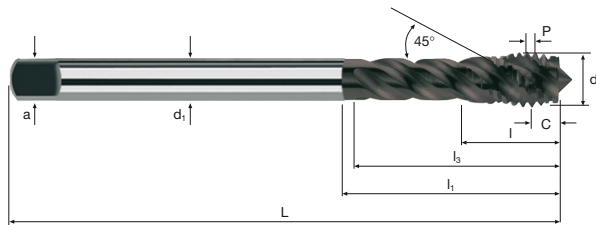
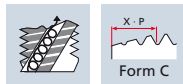
UNC	ø [mm]	P [mm]	v_c			v_f			v_c			v_f		
			$1.0 \times d$	n [min ⁻¹]	v_f [100%]	$1.5 \times d$	n [min ⁻¹]	v_f [100%]	$2.0 \times d$	n [min ⁻¹]	v_f [100%]			
7/16	-14	11.113	1.814	8	230	417	6	170	308	5	145	263		
1/2	-13	12.700	1.954	8	200	391	6	150	293	5	125	244		
9/16	-12	14.288	2.117	8	180	381	6	135	286	5	110	233		
5/8	-11	15.875	2.309	8	160	369	6	120	277	5	100	231		
3/4	-10	19.050	2.540	8	135	343	6	100	254	5	85	216		
7/8	-9	22.225	2.822	8	115	325	6	85	240	5	70	198		
1"	-8	25.400	3.175	8	100	318	6	75	238	5	65	206		
7/16	-14	11.113	1.814	4	115	209	3	85	154	2	55	100		
1/2	-13	12.700	1.954	4	100	195	3	75	147	2	50	98		
9/16	-12	14.288	2.117	4	90	191	3	65	138	2	45	95		
5/8	-11	15.875	2.309	4	80	185	3	60	139	2	40	92		
3/4	-10	19.050	2.540	4	65	165	3	50	127	2	35	89		
7/8	-9	22.225	2.822	4	55	155	3	45	127	2	30	85		
1"	-8	25.400	3.175	4	50	159	3	40	127	2	25	79		
7/16	-14	11.113	1.814	5	145	263	4	115	209	3	85	154		
1/2	-13	12.700	1.954	5	125	244	4	100	195	3	75	147		
9/16	-12	14.288	2.117	5	110	233	4	90	191	3	65	138		
5/8	-11	15.875	2.309	5	100	231	4	80	185	3	60	139		
3/4	-10	19.050	2.540	5	85	216	4	65	165	3	50	127		
7/8	-9	22.225	2.822	5	70	198	4	55	155	3	45	127		
1"	-8	25.400	3.175	5	65	206	4	50	159	3	40	127		
7/16	-14	11.113	1.814	3	85	154	2	55	100					
1/2	-13	12.700	1.954	3	75	147	2	50	98					
9/16	-12	14.288	2.117	3	65	138	2	45	95					
5/8	-11	15.875	2.309	3	60	139	2	40	92					
3/4	-10	19.050	2.540	3	50	127	2	35	89					
7/8	-9	22.225	2.822	3	45	127	2	30	85					
1"	-8	25.400	3.175	3	40	127	2	25	79					

Maschi x-tap



UNC **2B**

HSS PM/F

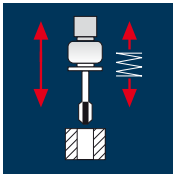


Inox
Stainless

Esempio: N° Ordine												TRIBO		
Articolo ET1691 Codice-ø .712												ET1691		
Ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			€		
.712	7/16	-14	11.113	100	15	39	37	8	6.2	3	9.50	64.00		
.713	1/2	-13	12.700	110	18	50	48	9	7.0	3	11.00	79.00		
.714	9/16	-12	14.288	110	20	58	56	11	9.0	3	12.40	86.00		
.715	5/8	-11	15.875	110	20	58	56	12	9.0	3	13.80	104.00		
.716	3/4	-10	19.050	125	25	65	63	14	11.0	4	16.80	143.00		
.717	7/8	-9	22.225	140	25	72	70	18	14.5	4	19.70	184.00		
.718	1"	-8	25.400	160	30	72	70	18	14.5	5	22.60	232.00		

UN

Applicazione



Materiale

Alluminio non legato

UNC	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d			
			v_c	n	v_f	v_c	n	v_f	v_c	n	v_f	
			[1.5 x d]	[min ⁻¹]	[100%]	[2.0 x d]	[min ⁻¹]	[100%]	[3.0 x d]	[min ⁻¹]	[100%]	
2	-56	2.184	0.454	18	2625	1192	15	2185	992	13	1895	860
3	-48	2.515	0.529	18	2280	1206	15	1900	1005	13	1645	870
4	-40	2.845	0.635	18	2015	1280	15	1680	1067	13	1455	924
5	-40	3.175	0.635	18	1805	1146	15	1505	956	13	1305	829
6	-32	3.505	0.794	18	1635	1298	15	1360	1080	13	1180	937
8	-32	4.166	0.794	18	1375	1092	15	1145	909	13	995	790
10	-24	4.826	1.058	18	1185	1254	15	990	1047	13	855	905
12	-24	5.486	1.058	18	1045	1106	15	870	920	13	755	799
1/4	-20	6.350	1.270	18	900	1143	15	750	953	13	650	826

Alluminio non legato

5/16	-18	7.938	1.411	18	720	1016	15	600	847	13	520	734
3/8	-16	9.525	1.588	18	600	953	15	500	794	13	435	691

Alluminio malleabile
Si < 6%
non temprato

2	-56	2.184	0.454	28	4080	1852	24	3500	1589	20	2915	1323
3	-48	2.515	0.529	28	3545	1875	24	3040	1608	20	2530	1338
4	-40	2.845	0.635	28	3135	1991	24	2685	1705	20	2240	1422
5	-40	3.175	0.635	28	2805	1781	24	2405	1527	20	2005	1273
6	-32	3.505	0.794	28	2545	2021	24	2180	1731	20	1815	1441
8	-32	4.166	0.794	28	2140	1699	24	1835	1457	20	1530	1215
10	-24	4.826	1.058	28	1845	1952	24	1585	1677	20	1320	1397
12	-24	5.486	1.058	28	1625	1719	24	1395	1476	20	1160	1227
1/4	-20	6.350	1.270	28	1405	1784	24	1205	1530	20	1005	1276

Alluminio malleabile
Si < 6%
non temprato

5/16	-18	7.938	1.411	28	1125	1587	24	960	1355	20	800	1129
3/8	-16	9.525	1.588	28	935	1485	24	800	1270	20	670	1064

Materiale

Alluminio malleabile
Si < 6%
temprato

UNC	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d			
			v_c	n	v_f	v_c	n	v_f	v_c	n	v_f	
			[1.5 x d]	[min ⁻¹]	[100%]	[2.0 x d]	[min ⁻¹]	[100%]	[3.0 x d]	[min ⁻¹]	[100%]	
2	-56	2.184	0.454	16	2330	1058	14	2040	926	11	1605	729
3	-48	2.515	0.529	16	2025	1071	14	1770	936	11	1390	735
4	-40	2.845	0.635	16	1790	1137	14	1565	994	11	1230	781
5	-40	3.175	0.635	16	1605	1019	14	1405	892	11	1105	702
6	-32	3.505	0.794	16	1455	1155	14	1270	1008	11	1000	794
8	-32	4.166	0.794	16	1225	973	14	1070	850	11	840	667
10	-24	4.826	1.058	16	1055	1116	14	925	979	11	725	767
12	-24	5.486	1.058	16	930	984	14	810	857	11	640	677
1/4	-20	6.350	1.270	16	800	1016	14	700	889	11	550	699

Alluminio malleabile
Si < 6%
temprato

5/16	-18	7.938	1.411	16	640	903	14	560	790	11	440	621
3/8	-16	9.525	1.588	16	535	850	14	470	746	11	370	588

Rame non legato

2	-56	2.184	0.454	17	2480	1126	14	2040	926	12	1750	795
3	-48	2.515	0.529	17	2150	1137	14	1770	936	12	1520	804
4	-40	2.845	0.635	17	1900	1207	14	1565	994	12	1345	854
5	-40	3.175	0.635	17	1705	1083	14	1405	892	12	1205	765
6	-32	3.505	0.794	17	1545	1227	14	1270	1008	12	1090	865
8	-32	4.166	0.794	17	1300	1032	14	1070	850	12	915	727
10	-24	4.826	1.058	17	1120	1185	14	925	979	12	790	836
12	-24	5.486	1.058	17	985	1042	14	810	857	12	695	735
1/4	-20	6.350	1.270	17	850	1080	14	700	889	12	600	762

Rame non legato

5/16	-18	7.938	1.411	17	680	959	14	560	790	12	480	677
3/8	-16	9.525	1.588	17	570	905	14	470	746	12	400	635



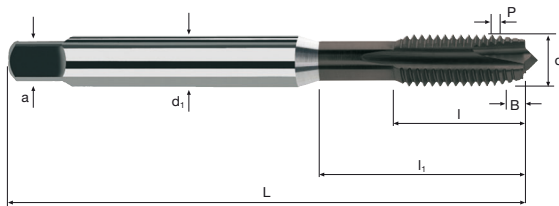
UNC **2B**

HSS
PM/F

DIN
371

X-P
Form B

OIL **Emul**



Al
Aluminium

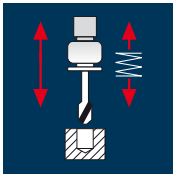
Cu
Copper

Plastic
Thermoplast

											INTEGRAL	
Esempio: Articolo Codice-ø N° Ordine E11602 .701											E11602	
Ø Code	d	P(TPI)	d (mm)	L	I	I1	d1	a			€	
.701	Nr. 2	-56	2.184	45	9	14.5	2.8	2.1	2	1.85	34.60	
.702	Nr. 3	-48	2.515	50	9	15.0	2.8	2.1	2	2.10	28.50	
.703	Nr. 4	-40	2.845	56	12	18.0	3.5	2.7	2	2.35	28.50	
.704	Nr. 5	-40	3.175	56	12	18.0	3.5	2.7	2	2.65	28.50	
.705	Nr. 6	-32	3.505	56	12	20.0	4.0	3.0	2	2.85	28.50	
.706	Nr. 8	-32	4.166	63	13	21.0	4.5	3.4	2	3.50	28.50	
.707	Nr. 10	-24	4.826	70	15	25.0	6.0	4.9	2	3.90	29.00	
.708	Nr. 12	-24	5.486	80	17	30.0	6.0	4.9	2	4.50	29.00	
.709	1/4	-20	6.350	80	17	30.0	7.0	5.5	2	5.10	30.30	
.710	5/16	-18	7.938	90	20	35.0	8.0	6.2	2	6.60	36.60	
.711	3/8	-16	9.525	100	22	39.0	10.0	8.0	2	8.00	42.30	

UN

Applicazione



Materiale

Alluminio non legato

UNC	ø [mm]	P [mm]	V _c			n			V _f			
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	
2	-56	2.184	0.454	12	1750	795	10	1455	661	8	1165	529
3	-48	2.515	0.529	12	1520	804	10	1265	669	8	1015	537
4	-40	2.845	0.635	12	1345	854	10	1120	711	8	895	568
5	-40	3.175	0.635	12	1205	765	10	1005	638	8	800	508
6	-32	3.505	0.794	12	1090	865	10	910	723	8	725	576
8	-32	4.166	0.794	12	915	727	10	765	607	8	610	484
10	-24	4.826	1.058	12	790	836	10	660	698	8	530	561
12	-24	5.486	1.058	12	695	735	10	580	614	8	465	492
1/4	-20	6.350	1.270	12	600	762	10	500	635	8	400	508

Alluminio non legato

5/16	-18	7.938	1.411	12	480	677	10	400	564	8	320	452
3/8	-16	9.525	1.588	12	400	635	10	335	532	8	265	421

Alluminio malleabile
Si < 6%
non temprato

2	-56	2.184	0.454	12	1750	795	10	1455	661	8	1165	529
3	-48	2.515	0.529	12	1520	804	10	1265	669	8	1015	537
4	-40	2.845	0.635	12	1345	854	10	1120	711	8	895	568
5	-40	3.175	0.635	12	1205	765	10	1005	638	8	800	508
6	-32	3.505	0.794	12	1090	865	10	910	723	8	725	576
8	-32	4.166	0.794	12	915	727	10	765	607	8	610	484
10	-24	4.826	1.058	12	790	836	10	660	698	8	530	561
12	-24	5.486	1.058	12	695	735	10	580	614	8	465	492
1/4	-20	6.350	1.270	12	600	762	10	500	635	8	400	508

Alluminio malleabile
Si < 6%
non temprato

5/16	-18	7.938	1.411	12	480	677	10	400	564	8	320	452
3/8	-16	9.525	1.588	12	400	635	10	335	532	8	265	421

Materiale

Alluminio malleabile
Si < 6%
temprato

UNC	ø [mm]	P [mm]	V _c			n			V _f			
			1.0 x d	[min ⁻¹]	[100%]	1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	
2	-56	2.184	0.454	10	1455	661	9	1310	595	8	1165	529
3	-48	2.515	0.529	10	1265	669	9	1140	603	8	1015	537
4	-40	2.845	0.635	10	1120	711	9	1005	638	8	895	568
5	-40	3.175	0.635	10	1005	638	9	900	572	8	800	508
6	-32	3.505	0.794	10	910	723	9	815	647	8	725	576
8	-32	4.166	0.794	10	765	607	9	690	548	8	610	484
10	-24	4.826	1.058	10	660	698	9	595	630	8	530	561
12	-24	5.486	1.058	10	580	614	9	520	550	8	465	492
1/4	-20	6.350	1.270	10	500	635	9	450	572	8	400	508

Alluminio malleabile
Si < 6%
temprato

5/16	-18	7.938	1.411	10	400	564	9	360	508	8	320	452
3/8	-16	9.525	1.588	10	335	532	9	300	476	8	265	421

Rame non legato

2	-56	2.184	0.454	16	2330	1058	14	2040	926	13	1895	860
3	-48	2.515	0.529	16	2025	1071	14	1770	936	13	1645	870
4	-40	2.845	0.635	16	1790	1137	14	1565	994	13	1455	924
5	-40	3.175	0.635	16	1605	1019	14	1405	892	13	1305	829
6	-32	3.505	0.794	16	1455	1155	14	1270	1008	13	1180	937
8	-32	4.166	0.794	16	1225	973	14	1070	850	13	995	790
10	-24	4.826	1.058	16	1055	1116	14	925	979	13	855	905
12	-24	5.486	1.058	16	930	984	14	810	857	13	755	799
1/4	-20	6.350	1.270	16	800	1016	14	700	889	13	650	826

Rame non legato

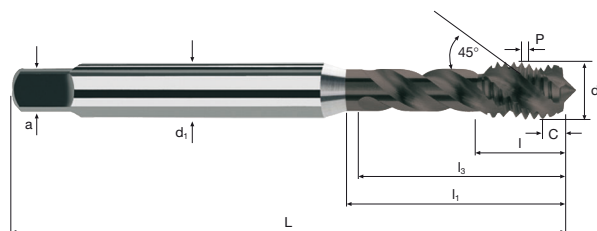
5/16	-18	7.938	1.411	16	640	903	14	560	790	13	520	734
3/8	-16	9.525	1.588	16	535	850	14	470	746	13	435	691

UNC 2B

HSS PM/F

DIN 371

Form C



Al
Aluminium

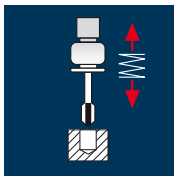
Cu
Copper

Plastic
Thermoplast

Esempio: N° Ordine											INTEGRAL		
Articolo EI1652 Codice-ø .701											EI1652		
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	l ₃	d ₁	a			€	
.701	Nr. 2	-56	2.184	45	9	14.5	12.5	2.8	2.1	3	1.85	39.20	
.702	Nr. 3	-48	2.515	50	9	15.0	13.0	2.8	2.1	3	2.10	32.20	
.703	Nr. 4	-40	2.845	56	5	18.0	16.0	3.5	2.7	3	2.35	32.20	
.704	Nr. 5	-40	3.175	56	5	18.0	16.0	3.5	2.7	3	2.65	32.20	
.705	Nr. 6	-32	3.505	56	6	20.0	18.0	4.0	3.0	3	2.85	32.20	
.706	Nr. 8	-32	4.166	63	7	21.0	19.0	4.5	3.4	3	3.50	32.20	
.707	Nr. 10	-24	4.826	70	8	25.0	23.0	6.0	4.9	3	3.90	32.80	
.708	Nr. 12	-24	5.486	80	10	30.0	28.0	6.0	4.9	3	4.50	32.80	
.709	1/4	-20	6.350	80	10	30.0	28.0	7.0	5.5	3	5.10	34.30	
.710	5/16	-18	7.938	90	13	35.0	33.0	8.0	6.2	3	6.60	41.30	
.711	3/8	-16	9.525	100	15	39.0	37.0	10.0	8.0	3	8.00	48.90	

UN

Applicazione



Materiale

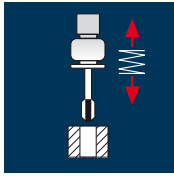
Leg. a base di nichel non indurite

Leg. a base di nichel indurite

UNJC	ø [mm]	P [mm]	1.0 x d			1.5 x d			
			v_c [min ⁻¹]	n [100%]	v_f [100%]	v_c [min ⁻¹]	n [100%]	v_f [100%]	
4	-40	2.845	0.635	2	225	143	1.5	170	108
6	-32	3.505	0.794	2	180	143	1.5	135	107
8	-32	4.166	0.794	2	155	123	1.5	115	91
10	-24	4.826	1.058	2	130	138	1.5	100	106
1/4	-20	4.350	1.270	2	145	184	1.5	110	140
5/16	-18	7.938	1.411	2	80	113	1.5	60	85
3/8	-16	9.525	1.588	2	65	103	1.5	50	79

4	-40	2.845	0.635	1.5	170	108	1.5	170	108
6	-32	3.505	0.794	1.5	135	107	1.5	135	107
8	-32	4.166	0.794	1.5	115	91	1.5	115	91
10	-24	4.826	1.058	1.5	100	106	1.5	100	106
1/4	-20	4.350	1.270	1.5	110	140	1.5	110	140
5/16	-18	7.938	1.411	1.5	60	85	1.5	60	85
3/8	-16	9.525	1.588	1.5	50	79	1.5	50	79

Applicazione



Materiale

Leg. a base di nichel non indurite

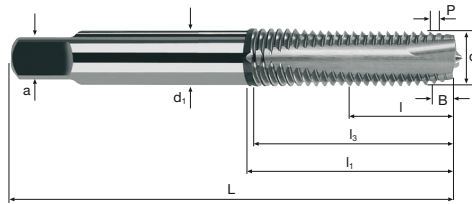
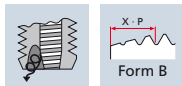
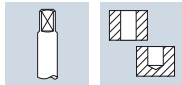
Leg. a base di nichel indurite

UNJC	ø [mm]	P [mm]	1.0 x d			1.5 x d			
			v_c [min ⁻¹]	n [100%]	v_f [100%]	v_c [min ⁻¹]	n [100%]	v_f [100%]	
4	-40	2.845	0.635	2	225	143	1.5	170	108
6	-32	3.505	0.794	2	180	143	1.5	135	107
8	-32	4.166	0.794	2	155	123	1.5	115	91
10	-24	4.826	1.058	2	130	138	1.5	100	106
1/4	-20	4.350	1.270	2	145	184	1.5	110	140
5/16	-18	7.938	1.411	2	80	113	1.5	60	85
3/8	-16	9.525	1.588	2	65	103	1.5	50	79

4	-40	2.845	0.635	1.5	170	108	1.5	170	108
6	-32	3.505	0.794	1.5	135	107	1.5	135	107
8	-32	4.166	0.794	1.5	115	91	1.5	115	91
10	-24	4.826	1.058	1.5	100	106	1.5	100	106
1/4	-20	4.350	1.270	1.5	110	140	1.5	110	140
5/16	-18	7.938	1.411	1.5	60	85	1.5	60	85
3/8	-16	9.525	1.588	1.5	50	79	1.5	50	79



UNJC **3B**

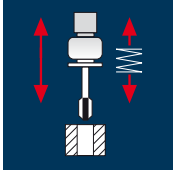


Ni
Nickel

Esempio:		Articolo		Codice-ø								E1699	
N° Ordine		E1699		.703									
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	l ₃	d ₁	a			€	
.703	Nr. 4	-40	2.845	48	11	18	16	3.5	2.7	3	2.40*	27.70	
.705	Nr. 6	-32	3.505	50	12	20	18	4.0	3.0	3	2.90	27.70	
.706	Nr. 8	-32	4.166	53	13	21	19	4.5	3.4	3	3.60*	27.70	
.707	Nr. 10	-24	4.826	58	15	24	22	6.0	4.9	3	4.00	28.20	
.709	1/4	-20	6.350	66	17	30	28	7.0	5.5	3	5.40*	29.50	
.710	5/16	-18	7.938	72	20	36	34	8.0	6.2	3	6.80	35.50	
.711	3/8	-16	9.525	80	22	39	37	10.0	8.0	3	8.20	41.10	
* La dimensione data è fuori norma													

UN

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

UNF	ø	P	v _c	n	v _f	2.0 x d			3.0 x d			
						[mm]	[mm]	[min']	[100%]	[min']	[100%]	[min']
6	-40	3.505	0.635	25	2270	1441	20	1815	1153	15	1360	864
8	-36	4.166	0.706	25	1910	1348	20	1530	1080	15	1145	808
10	-32	4.826	0.794	25	1650	1310	20	1320	1048	15	990	786
12	-28	5.486	0.907	25	1450	1315	20	1160	1052	15	870	789
1/4	-28	6.350	0.907	25	1255	1138	20	1005	912	15	750	680
5/16	-24	7.938	1.058	25	1005	1064	20	800	847	15	600	635
3/8	-24	9.525	1.058	25	835	883	20	670	709	15	500	529
7/16	-20	11.113	1.270	25	715	908	20	575	730	15	430	546
1/2	-20	12.700	1.270	25	625	794	20	500	635	15	375	476

Acciaio
500 - 850 N/mm²

9/16	-18	14.288	1.411	25	555	783	20	445	628	15	335	473
5/8	-18	15.875	1.411	25	500	706	20	400	564	15	300	423
3/4	-16	19.050	1.588	25	420	667	20	335	532	15	250	397
7/8	-14	22.225	1.814	25	360	653	20	285	517	15	215	390
1"	-12	25.400	2.117	25	315	667	20	250	529	15	190	402

Acciaio
850 - 1100 N/mm²

6	-40	3.505	0.635	20	1815	1153	15	1360	864	12	1090	692
8	-36	4.166	0.706	20	1530	1080	15	1145	808	12	915	646
10	-32	4.826	0.794	20	1320	1048	15	990	786	12	790	627
12	-28	5.486	0.907	20	1160	1052	15	870	789	12	695	630
1/4	-28	6.350	0.907	20	1005	912	15	750	680	12	600	544
5/16	-24	7.938	1.058	20	800	847	15	600	635	12	480	508
3/8	-24	9.525	1.058	20	670	709	15	500	529	12	400	423
7/16	-20	11.113	1.270	20	575	730	15	430	546	12	345	438
1/2	-20	12.700	1.270	20	500	635	15	375	476	12	300	381

Acciaio
850 - 1100 N/mm²

9/16	-18	14.288	1.411	20	445	628	15	335	473	12	265	374
5/8	-18	15.875	1.411	20	400	564	15	300	423	12	240	339
3/4	-16	19.050	1.588	20	335	532	15	250	397	12	200	318
7/8	-14	22.225	1.814	20	285	517	15	215	390	12	170	308
1"	-12	25.400	2.117	20	250	529	15	190	402	12	150	318

Materiale

Acciaio
1100 - 1300 N/mm²



UNF	ø	P	v _c	n	v _f	2.0 x d			3.0 x d			
						[mm]	[mm]	[min']	[100%]	[min']	[100%]	[min']
6	-40	3.505	0.635	7	635	403	4	365	232			
8	-36	4.166	0.706	7	535	377	4	305	215			
10	-32	4.826	0.794	7	460	365	4	265	210			
12	-28	5.486	0.907	7	405	367	4	230	209			
1/4	-28	6.350	0.907	7	350	317	4	200	181			
5/16	-24	7.938	1.058	7	280	296	4	160	169			
3/8	-24	9.525	1.058	7	235	249	4	135	143			
7/16	-20	11.113	1.270	7	200	254	4	115	146			
1/2	-20	12.700	1.270	7	175	222	4	100	127			

Acciaio
1100 - 1300 N/mm²



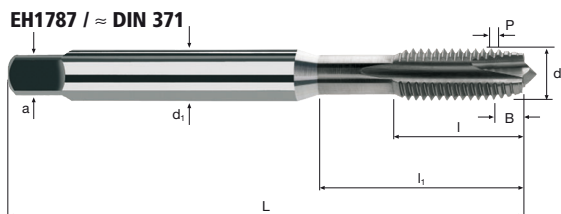
9/16	-18	14.288	1.411	7	155	219	4	90	127			
5/8	-18	15.875	1.411	7	140	198	4	80	113			
3/4	-16	19.050	1.588	7	115	183	4	65	103			
7/8	-14	22.225	1.814	7	100	181	4	55	100			
1"	-12	25.400	2.117	7	90	191	4	50	106			

UNF **2B**

HSS
PM/F

DIN
371/374

X - P
Form B



EH1788 / ≈ DIN 374



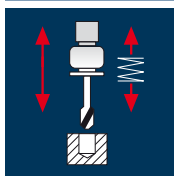
Rm 850-1100 N/mm ²	Rm 1100-1300 N/mm ²	Rm 500-850 N/mm ²
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Esempio: N° Ordine		Articolo		Codice-ø								TiCN	
		EH1787		.756								EH1787	
ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€		
.756	Nr. 6	-40	3.505	56	12	20	4.0	3.0	3	2.95	36.60		
.757	Nr. 8	-36	4.166	63	13	21	4.5	3.4	3	3.50	36.60		
.758	Nr. 10	-32	4.826	70	15	25	6.0	4.9	3	4.10	37.20		
.759	Nr. 12	-28	5.486	80	17	30	6.0	4.9	3	4.60	37.20		
.760	1/4	-28	6.350	80	17	30	7.0	5.5	3	5.50	38.90		
.761	5/16	-24	7.938	90	20	35	8.0	6.2	3	6.90	46.90		
.762	3/8	-24	9.525	100	22	39	10.0	8.0	3	8.50	54.20		

UN

Esempio: N° Ordine		Articolo		Codice-ø								TiCN	
		EH1788		.763								EH1788	
ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€		
.763	7/16	-20	11.113	100	22	39	8.0	6.2	3	9.90	63.00		
.764	1/2	-20	12.700	100	22	39	9.0	7.0	3	11.50	78.00		
.765	9/16	-18	14.288	100	22	39	11.0	9.0	3	12.90	86.00		
.766	5/8	-18	15.875	100	22	39	12.0	9.0	3	14.50	102.00		
.767	3/4	-16	19.050	110	25	45	14.0	11.0	4	17.50	143.00		
.768	7/8	-14	22.225	125	26	50	18.0	14.5	4	20.40	187.00		
.769	1"	-12	25.400	140	32	52	18.0	14.5	5	23.30	235.00		

Applicazione



Materiale

Acciaio
500 - 850 N/mm²

Acciaio
500 - 850 N/mm²

Acciaio
850 - 1100 N/mm²

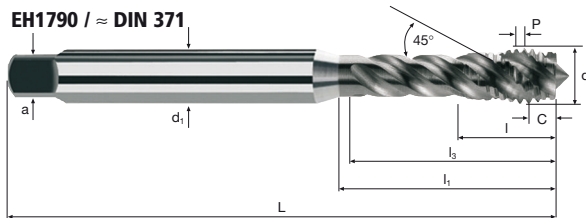
Acciaio
850 - 1100 N/mm²

UNF	ø	P	1.0 x d			1.5 x d			2.0 x d			
			v_c	n	v_f	v_c	n	v_f	v_c	n	v_f	
	[mm]	[mm]	[1.0 x d]	[min ⁻¹]	[100%]	[1.5 x d]	[min ⁻¹]	[100%]	[2.0 x d]	[min ⁻¹]	[100%]	
6	-40	3.505	0.635	32	2905	1845	28	2545	1616	22	2000	1270
8	-36	4.166	0.706	32	2445	1725	28	2140	1510	22	1680	1185
10	-32	4.826	0.794	32	2110	1675	28	1845	1465	22	1450	1151
12	-28	5.486	0.907	32	1855	1683	28	1625	1474	22	1275	1157
1/4	-28	6.350	0.907	32	1605	1456	28	1405	1274	22	1105	1002
5/16	-24	7.938	1.058	32	1285	1360	28	1125	1191	22	880	931
3/8	-24	9.525	1.058	32	1070	1132	28	935	989	22	735	778
7/16	-20	11.113	1.270	32	915	1162	28	800	1016	22	630	800
1/2	-20	12.700	1.270	32	800	1016	28	700	889	22	550	699
9/16	-18	14.288	1.411	32	715	1009	28	625	882	22	490	691
5/8	-18	15.875	1.411	32	640	903	28	560	790	22	440	621
3/4	-16	19.050	1.588	32	535	849	28	470	746	22	370	587
7/8	-14	22.225	1.814	32	460	835	28	400	726	22	315	572
1"	-12	25.400	2.117	32	400	847	28	350	741	22	275	582
6	-40	3.505	0.635	20	1815	1153	16	1455	924	10	910	578
8	-36	4.166	0.706	20	1530	1080	16	1225	864	10	765	540
10	-32	4.826	0.794	20	1320	1048	16	1055	837	10	660	524
12	-28	5.486	0.907	20	1160	1052	16	930	844	10	580	526
1/4	-28	6.350	0.907	20	1005	912	16	800	726	10	500	454
5/16	-24	7.938	1.058	20	800	847	16	640	677	10	400	423
3/8	-24	9.525	1.058	20	670	709	16	535	566	10	335	354
7/16	-20	11.113	1.270	20	575	730	16	460	584	10	285	362
1/2	-20	12.700	1.270	20	500	635	16	400	508	10	250	318
9/16	-18	14.288	1.411	20	445	628	16	355	501	10	225	317
5/8	-18	15.875	1.411	20	400	564	16	320	452	10	200	282
3/4	-16	19.050	1.588	20	335	532	16	265	421	10	165	262
7/8	-14	22.225	1.814	20	285	517	16	230	417	10	145	263
1"	-12	25.400	2.117	20	250	529	16	200	423	10	125	265

UNF **2B**

HSS PM/F

Form C



EH1791 / ≈ DIN 374



Rm
850-1100 N/mm²

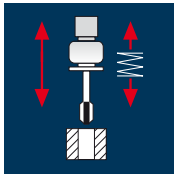
Rm
500-850 N/mm²

Esempio: N° Ordine		Articolo		Codice-ø									TiCN	
		EH1790		.756									EH1790	
ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			€		
.756	Nr. 6	-40	3.505	56	6	20	18	4.0	3.0	3	2.95	41.20		
.757	Nr. 8	-36	4.166	63	7	21	19	4.5	3.4	3	3.50	41.20		
.758	Nr. 10	-32	4.826	70	8	25	23	6.0	4.9	3	4.10	42.00		
.759	Nr. 12	-28	5.486	80	10	30	28	6.0	4.9	3	4.60	42.00		
.760	1/4	-28	6.350	80	10	30	28	7.0	5.5	3	5.50	43.90		
.761	5/16	-24	7.938	90	13	35	33	8.0	6.2	3	6.90	53.00		
.762	3/8	-24	9.525	100	15	39	37	10.0	8.0	3	8.50	63.00		

UN

Esempio: N° Ordine		Articolo		Codice-ø									TiCN	
		EH1791		.763									EH1791	
ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			€		
.763	7/16	-20	11.113	100	15	39	37	8.0	6.2	4	9.90	71.00		
.764	1/2	-20	12.700	100	15	39	37	9.0	7.0	4	11.50	88.00		
.765	9/16	-18	14.288	100	15	39	37	11.0	9.0	4	12.90	96.00		
.766	5/8	-18	15.875	100	15	39	37	12.0	9.0	4	14.50	115.00		
.767	3/4	-16	19.050	110	17	50	48	14.0	11.0	4	17.50	159.00		
.768	7/8	-14	22.225	125	18	65	63	18.0	14.5	5	20.40	205.00		
.769	1"	-12	25.400	140	24	72	70	18.0	14.5	5	23.30	259.00		

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



UNF	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d			
			v_c [min ⁻¹]	n	v_f [100%]	v_c [min ⁻¹]	n	v_f [100%]	v_c [min ⁻¹]	n	v_f [100%]	
6	-40	3.505	0.635	12	1090	692	10	910	578	8	725	460
8	-36	4.166	0.706	12	915	646	10	765	540	8	610	430
10	-32	4.826	0.794	12	790	627	10	660	524	8	530	421
12	-28	5.486	0.907	12	695	630	10	580	526	8	465	422
1/4	-28	6.350	0.907	12	600	544	10	500	454	8	400	363
5/16	-24	7.938	1.058	12	480	508	10	400	423	8	320	339
3/8	-24	9.525	1.058	12	400	423	10	335	354	8	265	280
7/16	-20	11.113	1.270	12	345	438	10	285	362	8	230	292
1/2	-20	12.700	1.270	12	300	381	10	250	318	8	200	254
9/16	-18	14.288	1.411	12	265	374	10	225	317	8	180	254
5/8	-18	15.875	1.411	12	240	339	10	200	282	8	160	226
3/4	-16	19.050	1.588	12	200	318	10	165	262	8	135	214
7/8	-14	22.225	1.814	12	170	308	10	145	263	8	115	209
1"	-12	25.400	2.117	12	150	318	10	125	265	8	100	212
6	-40	3.505	0.635	7	635	403	5	455	289	4	365	232
8	-36	4.166	0.706	7	535	377	5	380	268	4	305	215
10	-32	4.826	0.794	7	460	365	5	330	262	4	265	210
12	-28	5.486	0.907	7	405	367	5	290	263	4	230	209
1/4	-28	6.350	0.907	7	350	317	5	250	227	4	200	181
5/16	-24	7.938	1.058	7	280	296	5	200	212	4	160	169
3/8	-24	9.525	1.058	7	235	249	5	165	175	4	135	143
7/16	-20	11.113	1.270	7	200	254	5	145	184	4	115	146
1/2	-20	12.700	1.270	7	175	222	5	125	159	4	100	127
9/16	-18	14.288	1.411	7	155	219	5	110	155	4	90	127
5/8	-18	15.875	1.411	7	140	198	5	100	141	4	80	113
3/4	-16	19.050	1.588	7	115	183	5	85	135	4	65	103
7/8	-14	22.225	1.814	7	100	181	5	70	127	4	55	100
1"	-12	25.400	2.117	7	90	191	5	65	138	4	50	106

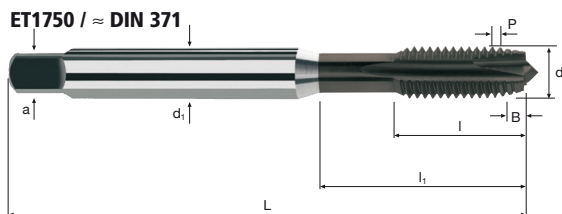
UNF	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d			
			v_c [min ⁻¹]	n	v_f [100%]	v_c [min ⁻¹]	n	v_f [100%]	v_c [min ⁻¹]	n	v_f [100%]	
6	-40	3.505	0.635	8	725	460	6	545	346	5	455	289
8	-36	4.166	0.706	8	610	430	6	460	325	5	380	268
10	-32	4.826	0.794	8	530	421	6	395	314	5	330	262
12	-28	5.486	0.907	8	465	422	6	350	317	5	290	263
1/4	-28	6.350	0.907	8	400	363	6	300	272	5	250	227
5/16	-24	7.938	1.058	8	320	339	6	240	254	5	200	212
3/8	-24	9.525	1.058	8	265	280	6	200	212	5	165	175
7/16	-20	11.113	1.270	8	230	292	6	170	216	5	145	184
1/2	-20	12.700	1.270	8	200	254	6	150	191	5	125	159
9/16	-18	14.288	1.411	8	180	254	6	135	190	5	110	155
5/8	-18	15.875	1.411	8	160	226	6	120	169	5	100	141
3/4	-16	19.050	1.588	8	135	214	6	100	159	5	85	135
7/8	-14	22.225	1.814	8	115	209	6	85	154	5	70	127
1"	-12	25.400	2.117	8	100	212	6	75	159	5	65	138
6	-40	3.505	0.635	5	455	289	4	365	232	3	270	171
8	-36	4.166	0.706	5	380	268	4	305	215	3	230	162
10	-32	4.826	0.794	5	330	262	4	265	210	3	200	159
12	-28	5.486	0.907	5	290	263	4	230	209	3	175	159
1/4	-28	6.350	0.907	5	250	227	4	200	181	3	150	136
5/16	-24	7.938	1.058	5	200	212	4	160	169	3	120	127
3/8	-24	9.525	1.058	5	165	175	4	135	143	3	100	106
7/16	-20	11.113	1.270	5	145	184	4	115	146	3	85	108
1/2	-20	12.700	1.270	5	125	159	4	100	127	3	75	95
9/16	-18	14.288	1.411	5	110	155	4	90	127	3	65	92
5/8	-18	15.875	1.411	5	100	141	4	80	113	3	60	85
3/4	-16	19.050	1.588	5	85	135	4	65	103	3	50	79
7/8	-14	22.225	1.814	5	70	127	4	55	100	3	45	82
1"	-12	25.400	2.117	5	65	138	4	50	106	3	40	85

UNF **2B**

HSS PM/F

DIN 371/374

Form B



ET1751 / ≈ DIN 374



Inox
Stainless

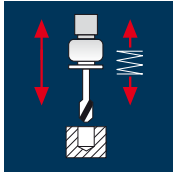
Esempio: N° Ordine											TRIBO	
Articolo ET1750 Codice-Ø .756											ET1750	
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€	
.756	Nr. 6	-40	3.505	56	12	20	4.0	3.0	3	3.00	37.10	
.757	Nr. 8	-36	4.166	63	13	21	4.5	3.4	3	3.60	37.10	
.758	Nr. 10	-32	4.826	70	15	25	6.0	4.9	3	4.20*	37.70	
.759	Nr. 12	-28	5.486	80	17	30	6.0	4.9	3	4.70	37.70	
.760	1/4	-28	6.350	80	17	30	7.0	5.5	3	5.60*	39.50	
.761	5/16	-24	7.938	90	20	35	8.0	6.2	3	7.00	47.60	
.762	3/8	-24	9.525	100	22	39	10.0	8.0	3	8.60	55.00	

UN

Esempio: N° Ordine											TRIBO	
Articolo ET1751 Codice-Ø .763											ET1751	
Ø Code	d	P(TPI)	d (mm)	L	l	l ₁	d ₁	a			€	
.763	7/16	-20	3.505	100	22	39	8.0	6.2	3	10.00	64.00	
.764	1/2	-20	4.166	100	22	39	9.0	7.0	3	11.60	79.00	
.765	9/16	-18	4.826	100	22	39	11.0	9.0	3	13.00	87.00	
.766	5/8	-18	5.486	100	22	39	12.0	9.0	3	14.70*	103.00	
.767	3/4	-16	6.350	110	25	45	14.0	11.0	4	17.70*	145.00	
.768	7/8	-14	7.938	125	26	50	18.0	14.5	4	20.70*	190.00	
.769	1"	-12	9.525	140	32	52	18.0	14.5	4	23.50	238.00	

* La dimensione data è fuori norma

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



Acciaio inossidabile
[Cr-Ni/1.4301]



Materiale

Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]



Acciaio resistente
al calore
[17-4 PH]



Acciaio resistente
al calore
[17-4 PH]



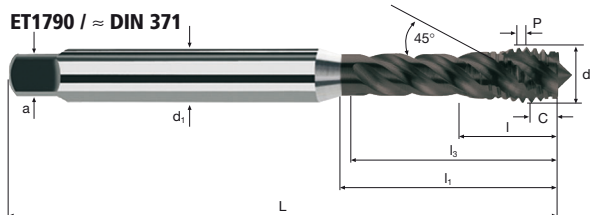
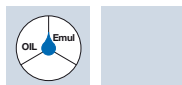
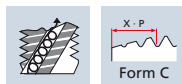
UNF	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d			
			v _c [min ⁻¹]	n	v _f [100%]	v _c [min ⁻¹]	n	v _f [100%]	v _c [min ⁻¹]	n	v _f [100%]	
6	-40	3.505	0.635	10	910	578	8	725	460	6	545	346
8	-36	4.166	0.706	10	765	540	8	610	430	6	460	325
10	-32	4.826	0.794	10	660	524	8	530	421	6	395	314
12	-28	5.486	0.907	10	580	526	8	465	422	6	350	317
1/4	-28	6.350	0.907	10	500	454	8	400	363	6	300	272
5/16	-24	7.938	1.058	10	400	423	8	320	339	6	240	254
3/8	-24	9.525	1.058	10	335	354	8	265	280	6	200	212
7/16	-20	11.113	1.270	10	285	362	8	230	292	6	170	216
1/2	-20	12.700	1.270	10	250	318	8	200	254	6	150	191
9/16	-18	14.288	1.411	10	225	317	8	180	254	6	135	190
5/8	-18	15.875	1.411	10	200	282	8	160	226	6	120	169
3/4	-16	19.050	1.588	10	165	262	8	135	214	6	100	159
7/8	-14	22.225	1.814	10	145	263	8	115	209	6	85	154
1"	-12	25.400	2.117	10	125	265	8	100	212	6	75	159
6	-40	3.505	0.635	5	455	289	4	365	232	3	270	171
8	-36	4.166	0.706	5	380	268	4	305	215	3	230	162
10	-32	4.826	0.794	5	330	262	4	265	210	3	200	159
12	-28	5.486	0.907	5	290	263	4	230	209	3	175	159
1/4	-28	6.350	0.907	5	250	227	4	200	181	3	150	136
5/16	-24	7.938	1.058	5	200	212	4	160	169	3	120	127
3/8	-24	9.525	1.058	5	165	175	4	135	143	3	100	106
7/16	-20	11.113	1.270	5	145	184	4	115	146	3	85	108
1/2	-20	12.700	1.270	5	125	159	4	100	127	3	75	95
9/16	-18	14.288	1.411	5	110	155	4	90	127	3	65	92
5/8	-18	15.875	1.411	5	100	141	4	80	113	3	60	85
3/4	-16	19.050	1.588	5	85	135	4	65	103	3	50	79
7/8	-14	22.225	1.814	5	70	127	4	55	100	3	45	82
1"	-12	25.400	2.117	5	65	138	4	50	106	3	40	85

UNF	ø [mm]	P [mm]	1.0 x d			1.5 x d			2.0 x d			
			v _c [min ⁻¹]	n	v _f [100%]	v _c [min ⁻¹]	n	v _f [100%]	v _c [min ⁻¹]	n	v _f [100%]	
6	-40	3.505	0.635	6	545	346	5	455	289	4	365	232
8	-36	4.166	0.706	6	460	325	5	380	268	4	305	215
10	-32	4.826	0.794	6	395	314	5	330	262	4	265	210
12	-28	5.486	0.907	6	350	317	5	290	263	4	230	209
1/4	-28	6.350	0.907	6	300	272	5	250	227	4	200	181
5/16	-24	7.938	1.058	6	240	254	5	200	212	4	160	169
3/8	-24	9.525	1.058	6	200	212	5	165	175	4	135	143
7/16	-20	11.113	1.270	6	170	216	5	145	184	4	115	146
1/2	-20	12.700	1.270	6	150	191	5	125	159	4	100	127
9/16	-18	14.288	1.411	6	135	190	5	110	155	4	90	127
5/8	-18	15.875	1.411	6	120	169	5	100	141	4	80	113
3/4	-16	19.050	1.588	6	100	159	5	85	135	4	65	103
7/8	-14	22.225	1.814	6	85	154	5	70	127	4	55	100
1"	-12	25.400	2.117	6	75	159	5	65	138	4	50	106
6	-40	3.505	0.635	4	365	232	3	270	171			
8	-36	4.166	0.706	4	305	215	3	230	162			
10	-32	4.826	0.794	4	265	210	3	200	159			
12	-28	5.486	0.907	4	230	209	3	175	159			
1/4	-28	6.350	0.907	4	200	181	3	150	136			
5/16	-24	7.938	1.058	4	160	169	3	120	127			
3/8	-24	9.525	1.058	4	135	143	3	100	106			
7/16	-20	11.113	1.270	4	115	146	3	85	108			
1/2	-20	12.700	1.270	4	100	127	3	75	95			
9/16	-18	14.288	1.411	4	90	127	3	65	92			
5/8	-18	15.875	1.411	4	80	113	3	60	85			
3/4	-16	19.050	1.588	4	65	103	3	50	79			
7/8	-14	22.225	1.814	4	55	100	3	45	82			
1"	-12	25.400	2.117	4	50	106	3	40	85			



UNF **2B**

HSS PM/F



ET1791 / ≈ DIN 374



Inox
Stainless

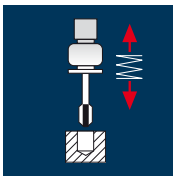
Esempio: N° Ordine												TRIBO	
Articolo ET1790 Codice-Ø .756												ET1790	
Ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			€	
.756	Nr. 6	-40	3.505	56	6	20	18	4.0	3.0	3	3.00	41.80	
.757	Nr. 8	-36	4.166	63	7	21	19	4.5	3.4	3	3.60	41.80	
.758	Nr. 10	-32	4.826	70	8	25	23	6.0	4.9	3	4.20*	42.70	
.759	Nr. 12	-28	5.486	80	10	30	28	6.0	4.9	3	4.70	42.70	
.760	1/4	-28	6.350	80	10	30	28	7.0	5.5	3	5.60*	44.60	
.761	5/16	-24	7.938	90	13	35	33	8.0	6.2	3	7.00	53.70	
.762	3/8	-24	9.525	100	15	39	37	10.0	8.0	3	8.60	64.00	

UN

Esempio: N° Ordine												TRIBO	
Articolo ET1791 Codice-Ø .763												ET1791	
Ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			€	
.763	7/16	-20	11.113	100	15	39	37	8.0	6.2	4	10.00	72.00	
.764	1/2	-20	12.700	100	15	39	37	9.0	7.0	4	11.60	89.00	
.765	9/16	-18	14.288	100	15	39	37	11.0	9.0	4	13.00	97.00	
.766	5/8	-18	15.875	100	15	39	37	12.0	9.0	4	14.70*	117.00	
.767	3/4	-16	19.050	110	17	50	48	14.0	11.0	4	17.70*	162.00	
.768	7/8	-14	22.225	125	18	65	63	18.0	14.5	5	20.70*	208.00	
.769	1"	-12	25.400	140	24	72	70	18.0	14.5	5	23.50	263.00	

* La dimensione data è fuori norma

Applicazione



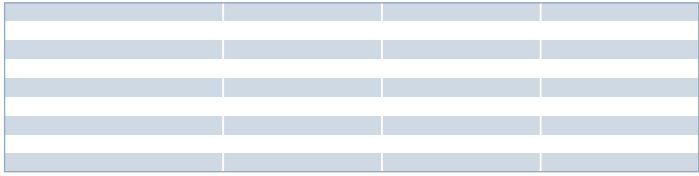
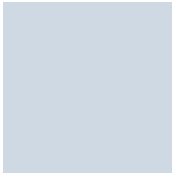
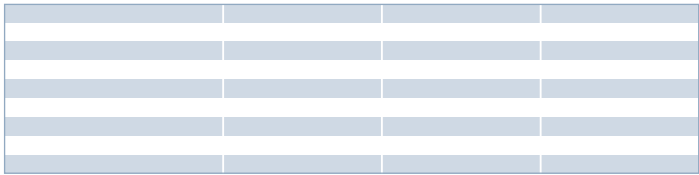
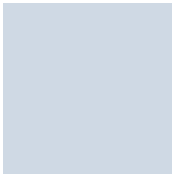
Materiale

Leg. a base di nichel non indurite

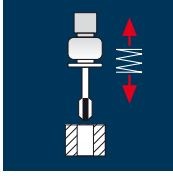
UNJF	ø [mm]	P [mm]	v_c			v_f			
			$1.0 \times d$	n [min ⁻¹]	v_f [100%]	$1.5 \times d$	n [min ⁻¹]	v_f [100%]	
6	-40	3.505	0.635	3	270	171	2	180	114
8	-36	4.166	0.706	3	230	162	2	155	109
10	-32	4.826	0.794	3	200	159	2	130	103
1/4	-28	6.350	0.907	3	150	136	2	100	91
5/16	-24	7.938	1.058	3	120	127	2	80	85
3/8	-24	9.525	1.058	3	100	106	2	65	69

Leg. a base di nichel indurite

6	-40	3.505	0.635	2	180	114	2	180	114
8	-36	4.166	0.706	2	155	109	2	155	109
10	-32	4.826	0.794	2	130	103	2	130	103
1/4	-28	6.350	0.907	2	100	91	2	100	91
5/16	-24	7.938	1.058	2	80	85	2	80	85
3/8	-24	9.525	1.058	2	65	69	2	65	69



Applicazione



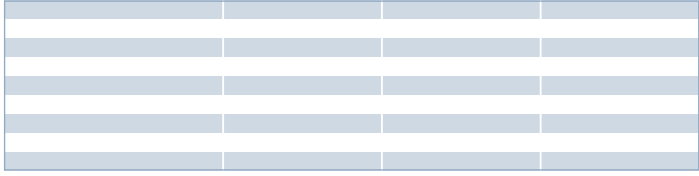
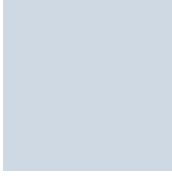
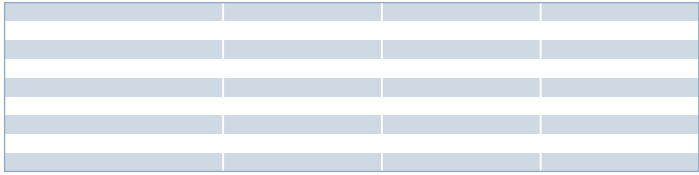
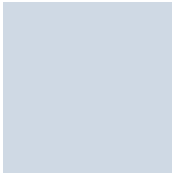
Materiale

Leg. a base di nichel non indurite

UNJF	ø [mm]	P [mm]	v_c			v_f			
			$1.0 \times d$	n [min ⁻¹]	v_f [100%]	$1.5 \times d$	n [min ⁻¹]	v_f [100%]	
6	-40	3.505	0.635	3	270	171	2	180	114
8	-36	4.166	0.706	3	230	162	2	155	109
10	-32	4.826	0.794	3	200	159	2	130	103
1/4	-28	6.350	0.907	3	150	136	2	100	91
5/16	-24	7.938	1.058	3	120	127	2	80	85
3/8	-24	9.525	1.058	3	100	106	2	65	69

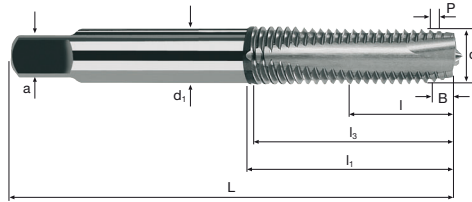
Leg. a base di nichel indurite

6	-40	3.505	0.635	2	180	114	2	180	114
8	-36	4.166	0.706	2	155	109	2	155	109
10	-32	4.826	0.794	2	130	103	2	130	103
1/4	-28	6.350	0.907	2	100	91	2	100	91
5/16	-24	7.938	1.058	2	80	85	2	80	85
3/8	-24	9.525	1.058	2	65	69	2	65	69





UNJF	3B
	HSS PM/F
	Form B












Ni
Nickel

Esempio: N° Ordine E1799 Articolo .756 Codice-ø .756												E1799		
Ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			€		
.756	Nr. 6	-40	3.505	50	12	20	18	4.0	3.0	3	3.05	31.20		
.757	Nr. 8	-36	4.166	53	13	21	19	4.5	3.4	3	3.60	31.20		
.758	Nr. 10	-32	4.826	58	15	24	22	6.0	4.9	3	4.20	31.70		
.760	1/4	-28	6.350	66	17	30	28	7.0	5.5	3	5.60	33.20		
.761	5/16	-24	7.938	72	20	36	34	8.0	6.2	3	7.10	40.00		
.762	3/8	-24	9.525	80	22	39	37	10.0	8.0	3	8.70*	46.30		
* La dimensione data è fuori norma														

UN

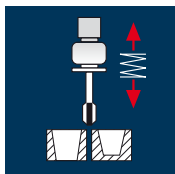


Filettatura americana gas conica NPT / NPTF

NPT		Mat.	Code	
N° ET1830		HSS-E Co5	Inox Stainless 	 353
N° E11820		HSS-E Co5	Uni- versal 	 355
NPTF		Mat.	Code	
N° E11846		HSS-E Co5	Uni- versal 	 357

**NPT
NPTF**

Applicazione



Materiale

Acciaio inossidabile
ferritico/martensitico



Acciaio inossidabile
[Cr-Ni/1.4301]



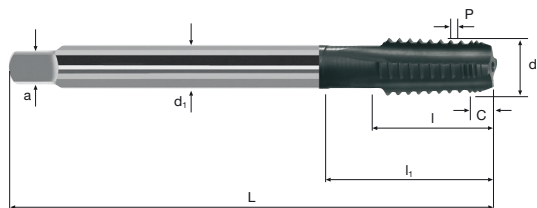
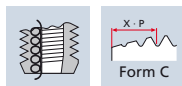
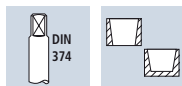
Acciaio inossidabile
[Cr-Ni-Mo-.../1.4571]






Acciaio resistente
al calore
[17-4 PH]



NPT	ø [mm]	P [mm]	v_c	n [min ⁻¹]	v_f [100%]		
1/16	-27	6.25	0.941	2	100	94	
1/8	-27	8.50	0.941	2	75	71	
1/4	-18	11.10	1.411	2	55	78	
3/8	-18	14.70	1.411	2	45	63	
1/2	-14	18.00	1.814	2	35	63	
3/4	-14	23.25	1.814	2	25	45	
1"	-11.5	29.25	2.209	2	20	44	
1/16	-27	6.25	0.941	2	100	94	
1/8	-27	8.50	0.941	2	75	71	
1/4	-18	11.10	1.411	2	55	78	
3/8	-18	14.70	1.411	2	45	63	
1/2	-14	18.00	1.814	2	35	63	
3/4	-14	23.25	1.814	2	25	45	
1"	-11.5	29.25	2.209	2	20	44	
1/16	-27	6.25	0.941	1.5	75	71	
1/8	-27	8.50	0.941	1.5	55	52	
1/4	-18	11.10	1.411	1.5	45	63	
3/8	-18	14.70	1.411	1.5	30	42	
1/2	-14	18.00	1.814	1.5	25	45	
3/4	-14	23.25	1.814	1.5	20	36	
1"	-11.5	29.25	2.209	1.5	15	33	

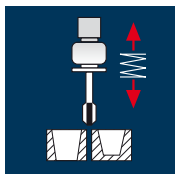


Inox
Stainless

										TRIBO	
										ET1830	
Esempio: N° Ordine											
Articolo ET1830 Codice-ø .840											
Ø Code	d	P(TPI)	L	l	l ₁	d ₁	a			€	
.840	1/16	-27	80	17.5	27	7	5.5	3		62.00	
.841	1/8	-27	90	19.0	30	8	6.2	4		68.00	
.842	1/4	-18	100	27.0	40	11	9.0	4		91.00	
.843	3/8	-18	110	27.0	40	14	11.0	4		130.00	
.844	1/2	-14	125	35.0	48	18	14.5	5		194.00	
.845	3/4	-14	140	35.0	50	20	16.0	5		284.00	
.846	1"	-11.5	170	44.5	60	28	22.0	5		451.00	

NPT
NPTF

Applicazione



Materiale

Acciaio
< 500 N/mm²



NPT	ø [mm]	P [mm]	v _c	n [min ⁻¹]	v _f [100%]	
1/16	-27	6.25	0.941	8	405	381
1/8	-27	8.50	0.941	8	300	282
1/4	-18	11.10	1.411	8	230	325
3/8	-18	14.70	1.411	8	175	247
1/2	-14	18.00	1.814	8	140	254
3/4	-14	23.25	1.814	8	110	200
1"	-11.5	29.25	2.209	8	85	188

Acciaio
500 - 850 N/mm²



1/16	-27	6.25	0.941	6	305	287
1/8	-27	8.50	0.941	6	225	212
1/4	-18	11.10	1.411	6	170	240
3/8	-18	14.70	1.411	6	130	183
1/2	-14	18.00	1.814	6	105	190
3/4	-14	23.25	1.814	6	80	145
1"	-11.5	29.25	2.209	6	65	144

Acciaio
850 - 1100 N/mm²



1/16	-27	6.25	0.941	5	255	240
1/8	-27	8.50	0.941	5	185	174
1/4	-18	11.10	1.411	5	145	205
3/8	-18	14.70	1.411	5	110	155
1/2	-14	18.00	1.814	5	90	163
3/4	-14	23.25	1.814	5	70	127
1"	-11.5	29.25	2.209	5	55	121

Alluminio malleabile
Si < 6%
temprato



1/16	-27	6.25	0.941	10	510	480
1/8	-27	8.50	0.941	10	375	353
1/4	-18	11.10	1.411	10	285	402
3/8	-18	14.70	1.411	10	215	303
1/2	-14	18.00	1.814	10	175	317
3/4	-14	23.25	1.814	10	135	245
1"	-11.5	29.25	2.209	10	110	243

Materiale

Ghisa
GG(G)



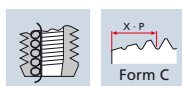
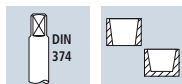
NPT	ø [mm]	P [mm]	v _c	n [min ⁻¹]	v _f [100%]	
1/16	-27	6.25	0.941	6	305	287
1/8	-27	8.50	0.941	6	225	212
1/4	-18	11.10	1.411	6	170	240
3/8	-18	14.70	1.411	6	130	183
1/2	-14	18.00	1.814	6	105	190
3/4	-14	23.25	1.814	6	80	145
1"	-11.5	29.25	2.209	6	65	144



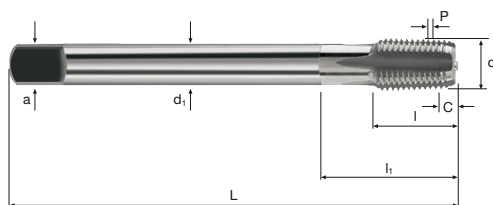
NPT



**HSS-E
Co5**



Form C

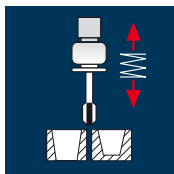


Rm < 850 N/mm ²	Rm 850-1100 N/mm ²	Al Aluminium	GG(G) Cast iron	Cu Copper
--------------------------------------	---	------------------------	---------------------------	---------------------

Esempio: N° Ordine		Articolo E11820		Codice-ø .840								E11820	
Ø Code	d	P(TPI)	L	l	l ₁	d ₁	a			€			
.840	1/16	-27	80	14	27	7	5.5	3		35.20			
.841	1/8	-27	90	14	30	8	6.2	4		38.40			
.842	1/4	-18	100	20	40	11	9.0	4		51.50			
.843	3/8	-18	110	20	40	14	11.0	4		73.00			
.844	1/2	-14	125	26	48	18	14.5	5		110.00			
.845	3/4	-14	140	26	50	20	16.0	5		161.00			
.846	1"	-11.5	170	31	60	28	22.0	5		255.00			

**NPT
NPTF**

Applicazione



Materiale

Acciaio
< 500 N/mm²



NPTF	ø [mm]	P [mm]	v _c	n [min ⁻¹]	v _f [100%]		
1/16	-27	6.25	0.941	8	405	381	
1/8	-27	8.50	0.941	8	300	282	
1/4	-18	11.10	1.411	8	230	325	
3/8	-18	14.70	1.411	8	175	247	
1/2	-14	18.00	1.814	8	140	254	
3/4	-14	23.25	1.814	8	110	200	
1"	-11.5	29.25	2.209	8	85	188	

Acciaio
500 - 850 N/mm²



1/16	-27	6.25	0.941	6	305	287	
1/8	-27	8.50	0.941	6	225	212	
1/4	-18	11.10	1.411	6	170	240	
3/8	-18	14.70	1.411	6	130	183	
1/2	-14	18.00	1.814	6	105	190	
3/4	-14	23.25	1.814	6	80	145	
1"	-11.5	29.25	2.209	6	65	144	

Acciaio
850 - 1100 N/mm²



1/16	-27	6.25	0.941	5	255	240	
1/8	-27	8.50	0.941	5	185	174	
1/4	-18	11.10	1.411	5	145	205	
3/8	-18	14.70	1.411	5	110	155	
1/2	-14	18.00	1.814	5	90	163	
3/4	-14	23.25	1.814	5	70	127	
1"	-11.5	29.25	2.209	5	55	121	

Alluminio malleabile
Si < 6%
temprato



1/16	-27	6.25	0.941	10	510	480	
1/8	-27	8.50	0.941	10	375	353	
1/4	-18	11.10	1.411	10	285	402	
3/8	-18	14.70	1.411	10	215	303	
1/2	-14	18.00	1.814	10	175	317	
3/4	-14	23.25	1.814	10	135	245	
1"	-11.5	29.25	2.209	10	110	243	

Materiale

Ghisa
GG(G)



NPTF	ø [mm]	P [mm]	v _c	n [min ⁻¹]	v _f [100%]		
1/16	-27	6.25	0.941	6	305	287	
1/8	-27	8.50	0.941	6	225	212	
1/4	-18	11.10	1.411	6	170	240	
3/8	-18	14.70	1.411	6	130	183	
1/2	-14	18.00	1.814	6	105	190	
3/4	-14	23.25	1.814	6	80	145	
1"	-11.5	29.25	2.209	6	65	144	



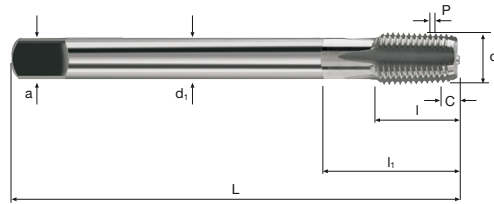
NPTF



**HSS-E
Co5**



Form C



Rm < 850 N/mm ²	Rm 850-1100 N/mm ²	Al Aluminium	GG(G) Cast iron	Cu Copper
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Esempio: N° Ordine										Articolo E11846		Codice- ϕ .840	
\emptyset Code	d	P(TPI)	L	l	l ₁	d ₁	a			€			
.840	1/16	-27	80	17.5	27	7	5.5	3		37.30			
.841	1/8	-27	90	19.0	30	8	6.2	4		40.80			
.842	1/4	-18	100	27.0	40	11	9.0	4		54.90			
.843	3/8	-18	110	27.0	40	14	11.0	4		78.00			
.844	1/2	-14	125	35.0	48	18	14.5	5		117.00			
.845	3/4	-14	140	35.0	50	20	16.0	5		172.00			
.846	1"	-11.5	170	44.5	60	28	22.0	5		273.00			

**NPT
NPTF**



Filettatura metrica per inserti EG M



Tolleranza 6H mod

N° E11970 / E11971

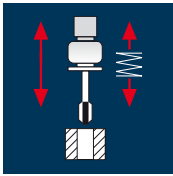


N° E11980 / E11981



		Mat.	Code	
HSS PM/F+	Uni- versal	U		361
				363

Applicazione



Materiale

Alluminio non legato

EG-M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [1/min]	v _f [mm/min]	v _c [m/min]	n [1/min]	v _f [mm/min]	v _c [m/min]	n [1/min]	v _f [mm/min]
EGM 2	2.520	0.40	12	1515	606	10	1265	506	8	1010	404
EGM 2.5	3.084	0.45	12	1240	558	10	1030	464	8	825	371
EGM 3	3.650	0.50	12	1045	523	10	870	435	8	700	350
EGM 4	4.910	0.70	12	780	546	10	650	455	8	520	364
EGM 5	6.040	0.80	12	630	504	10	525	420	8	420	336
EGM 6	7.300	1.00	12	525	525	10	435	435	8	350	350
EGM 8	9.624	1.25	12	395	494	10	330	413	8	265	331
EGM 10	11.948	1.50	12	320	480	10	265	398	8	215	323
EGM 12	14.274	1.75	12	270	473	10	225	394	8	180	315

Alluminio non legato

EGM 14	16.598	2.00	12	230	460	10	190	380	8	155	310
EGM 16	18.598	2.00	12	205	410	10	170	340	8	135	270

Alluminio malleabile
Si < 6%
non temprato

EGM 2	2.520	0.40	14	1770	708	12	1515	606	10	1265	506
EGM 2.5	3.084	0.45	14	1445	650	12	1240	558	10	1030	464
EGM 3	3.650	0.50	14	1220	610	12	1045	523	10	870	435
EGM 4	4.910	0.70	14	910	637	12	780	546	10	650	455
EGM 5	6.040	0.80	14	740	592	12	630	504	10	525	420
EGM 6	7.300	1.00	14	610	610	12	525	525	10	435	435
EGM 8	9.624	1.25	14	465	581	12	395	494	10	330	413
EGM 10	11.948	1.50	14	375	563	12	320	480	10	265	398
EGM 12	14.274	1.75	14	310	543	12	270	473	10	225	394

Alluminio malleabile
Si < 6%
non temprato

EGM 14	16.598	2.00	14	270	540	12	230	460	10	190	380
EGM 16	18.598	2.00	14	240	480	12	205	410	10	170	340

Materiale

Alluminio malleabile
Si < 6%
temprato

EG-M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [1/min]	v _f [mm/min]	v _c [m/min]	n [1/min]	v _f [mm/min]	v _c [m/min]	n [1/min]	v _f [mm/min]
EGM 2	2.520	0.40	11	1390	556	9	1135	454	7	885	354
EGM 2.5	3.084	0.45	11	1135	511	9	930	419	7	720	324
EGM 3	3.650	0.50	11	960	480	9	785	393	7	610	305
EGM 4	4.910	0.70	11	715	500	9	585	410	7	455	319
EGM 5	6.040	0.80	11	580	464	9	475	380	7	370	296
EGM 6	7.300	1.00	11	480	480	9	390	390	7	305	305
EGM 8	9.624	1.25	11	365	456	9	300	375	7	230	288
EGM 10	11.948	1.50	11	295	443	9	240	360	7	185	278
EGM 12	14.274	1.75	11	245	429	9	200	350	7	155	271

Alluminio malleabile
Si < 6%
temprato

EGM 14	16.598	2.00	11	210	420	9	175	350	7	135	270
EGM 16	18.598	2.00	11	190	380	9	155	310	7	120	240

Rame non legato

EGM 2	2.520	0.40	12	1515	606	10	1265	506	8	1010	404
EGM 2.5	3.084	0.45	12	1240	558	10	1030	464	8	825	371
EGM 3	3.650	0.50	12	1045	523	10	870	435	8	700	350
EGM 4	4.910	0.70	12	780	546	10	650	455	8	520	364
EGM 5	6.040	0.80	12	630	504	10	525	420	8	420	336
EGM 6	7.300	1.00	12	525	525	10	435	435	8	350	350
EGM 8	9.624	1.25	12	395	494	10	330	413	8	265	331
EGM 10	11.948	1.50	12	320	480	10	265	398	8	215	323
EGM 12	14.274	1.75	12	270	473	10	225	394	8	180	315

Rame non legato

EGM 14	16.598	2.00	12	230	460	10	190	380	8	155	310
EGM 16	18.598	2.00	12	205	410	10	170	340	8	135	270

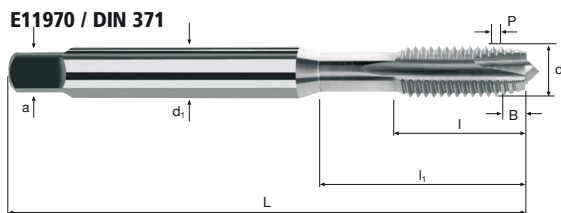
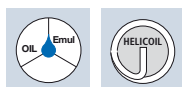


EG M **6H mod**

HSS PM/F+

DIN 371/376

Form B



E11971 / DIN 376



Al
Aluminium

Cu
Copper

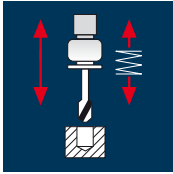
Plastic
Thermoplast

Esempio: N° Ordine		Articolo		Codice-Ø							E11970	
		E11970	.034						€			
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.034	EGM 2	0.40	50	9	15	2.8	2.1	2	2.15	18.60		
.040	EGM 2.5	0.45	56	12	18	3.5	2.7	3	2.65	18.60		
.044	EGM 3	0.50	63	13	21	4.5	3.0	3	3.15	18.60		
.058	EGM 4	0.70	70	15	25	6.0	4.9	3	4.20	18.90		
.084	EGM 5	0.80	80	17	30	6.0	4.9	3	5.25	19.80		
.088	EGM 6	1.00	90	20	35	8.0	6.2	3	6.30	21.80		
.160	EGM 8	1.25	100	22	39	10.0	8.0	3	8.40	27.60		

EG

Esempio: N° Ordine		Articolo		Codice-Ø							E11971	
		E11971	.174						€			
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.174	EGM10	1.50	110	24	40	9.0	7.0	3	10.40	34.40		
.240	EGM12	1.75	110	26	40	11.0	9.0	3	12.50	43.50		
.244	EGM14	2.00	110	27	40	12.0	9.0	4	14.50	58.20		
.246	EGM16	2.00	125	30	65	14.0	11.0	4	16.50	73.00		

Applicazione



Materiale

Alluminio non legato

EG-M	ø [mm]	P [mm]	v_c	n	v_f	v_c	n	v_f	v_c	n	v_f
			1.0 x d [min ⁻¹]	[100%]	1.5 x d [min ⁻¹]	[100%]	2.0 x d [min ⁻¹]	[100%]			
EGM 2	2.520	0.40	10	1265	506	9	1135	454	8	1010	404
EGM 2.5	3.084	0.45	10	1030	464	9	930	419	8	825	371
EGM 3	3.650	0.50	10	870	435	9	785	393	8	700	350
EGM 4	4.910	0.70	10	650	455	9	585	410	8	520	364
EGM 5	6.040	0.80	10	525	420	9	475	380	8	420	336
EGM 6	7.300	1.00	10	435	435	9	390	390	8	350	350
EGM 8	9.624	1.25	10	330	413	9	300	375	8	265	331
EGM 10	11.948	1.50	10	265	398	9	240	360	8	215	323
EGM 12	14.274	1.75	10	225	394	9	200	350	8	180	315

Alluminio non legato

EGM 14	16.598	2.00	10	190	380	9	175	350	8	155	310
EGM 16	18.598	2.00	10	170	340	9	155	310	8	135	270

Alluminio malleabile
Si < 6%
non temprato

EGM 2	2.520	0.40	8	1010	404	7	885	354	6	760	304
EGM 2.5	3.084	0.45	8	825	371	7	720	324	6	620	279
EGM 3	3.650	0.50	8	700	350	7	610	305	6	525	263
EGM 4	4.910	0.70	8	520	364	7	455	319	6	390	273
EGM 5	6.040	0.80	8	420	336	7	370	296	6	315	252
EGM 6	7.300	1.00	8	350	350	7	305	305	6	260	260
EGM 8	9.624	1.25	8	265	331	7	230	288	6	200	250
EGM 10	11.948	1.50	8	215	323	7	185	278	6	160	240
EGM 12	14.274	1.75	8	180	315	7	155	271	6	135	236

Alluminio malleabile
Si < 6%
non temprato

EGM 14	16.598	2.00	8	155	310	7	135	270	6	115	230
EGM 16	18.598	2.00	8	135	270	7	120	240	6	105	210

Materiale

Alluminio malleabile
Si < 6%
temprato

EG-M	ø [mm]	P [mm]	v_c	n	v_f	v_c	n	v_f	v_c	n	v_f
			1.0 x d [min ⁻¹]	[100%]	1.5 x d [min ⁻¹]	[100%]	2.0 x d [min ⁻¹]	[100%]			
EGM 2	2.520	0.40	7	885	354	6	760	304	6	760	304
EGM 2.5	3.084	0.45	7	720	324	6	620	279	6	620	279
EGM 3	3.650	0.50	7	610	305	6	525	263	6	525	263
EGM 4	4.910	0.70	7	455	319	6	390	273	6	390	273
EGM 5	6.040	0.80	7	370	296	6	315	252	6	315	252
EGM 6	7.300	1.00	7	305	305	6	260	260	6	260	260
EGM 8	9.624	1.25	7	230	288	6	200	250	6	200	250
EGM 10	11.948	1.50	7	185	278	6	160	240	6	160	240
EGM 12	14.274	1.75	7	155	271	6	135	236	6	135	236

Alluminio malleabile
Si < 6%
temprato

EGM 14	16.598	2.00	7	135	270	6	115	230	6	115	230
EGM 16	18.598	2.00	7	120	240	6	105	210	6	105	210

Rame non legato

EGM 2	2.520	0.40	10	1265	506	9	1135	454	8	1010	404
EGM 2.5	3.084	0.45	10	1030	464	9	930	419	8	825	371
EGM 3	3.650	0.50	10	870	435	9	785	393	8	700	350
EGM 4	4.910	0.70	10	650	455	9	585	410	8	520	364
EGM 5	6.040	0.80	10	525	420	9	475	380	8	420	336
EGM 6	7.300	1.00	10	435	435	9	390	390	8	350	350
EGM 8	9.624	1.25	10	330	413	9	300	375	8	265	331
EGM 10	11.948	1.50	10	265	398	9	240	360	8	215	323
EGM 12	14.274	1.75	10	225	394	9	200	350	8	180	315

Rame non legato

EGM 14	16.598	2.00	10	190	380	9	175	350	8	155	310
EGM 16	18.598	2.00	10	170	340	9	155	310	8	135	270

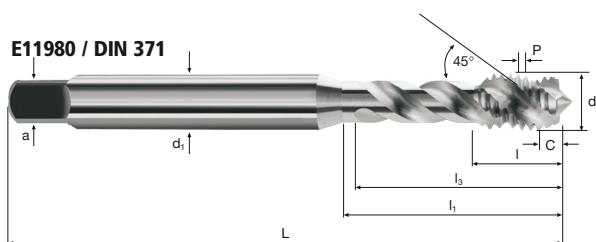
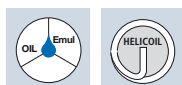


EG M **6H mod**

60°
HSS PM/F+

DIN 371/376

X-P
Form C



E11981 / DIN 376













Al Aluminium
Cu Copper
Plastic Thermoplast



Esempio: N° Ordine		Articolo		Codice-Ø								E11980	
		E11980		.034								€	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.034	EGM 2	0.40	50	9.0	15	13	2.8	2.1	3	2.15	21.00		
.040	EGM 2.5	0.45	56	4.0	18	16	3.5	2.7	3	2.65	21.00		
.044	EGM 3	0.50	63	5.6	21	19	4.5	3.0	3	3.15	21.00		
.058	EGM 4	0.70	70	6.4	25	23	6.0	4.9	3	4.20	21.40		
.084	EGM 5	0.80	80	8.0	30	28	6.0	4.9	3	5.25	22.30		
.088	EGM 6	1.00	90	10.0	35	33	8.0	6.2	3	6.30	24.30		
.160	EGM 8	1.25	100	12.0	39	37	10.0	8.0	3	8.40	31.90		





EG

Esempio: N° Ordine		Articolo		Codice-Ø								E11981	
		E11981		.174								€	
Ø Code	d	P	L	l	l1	l3	d1	a			€		
.174	EGM10	1.50	110	14.0	50	48	9.0	7.0	3	10.40	40.50		
.240	EGM12	1.75	110	16.0	58	56	11.0	9.0	4	12.50	48.60		
.244	EGM14	2.00	110	16.0	58	56	12.0	9.0	4	14.50	65.00		
.246	EGM16	2.00	125	20.0	65	63	14.0	11.0	4	16.50	81.00		

Maschi a rullare M

Tolleranza ISO 2 (6H)		Mat.	Code	
N° EF10060 / EF10061		HSS PM/F	Al Aluminium 	 367
N° EH6100 / EH6101		HM MG10		 371
N° EH10070 / EH10071		HSS PM/F	Steel 	 373
N° EH10072 / EH10073				 377

Tolleranza ISO 3 (6G)		Mat.	Code	
N° EF10064 / EF10065		HSS PM/F	Al Aluminium 	 379
N° EH10074 / EH10075			Steel 	 381

Tolleranza 7G		Mat.	Code	
N° EF10068		HSS PM/F	Al Aluminium 	 383
N° EH10078			Steel 	 385

Maschi a rullare MF

Tolleranza ISO 2 (6H)

N° EF11260 / EF11261



N° EH11270 / EH11271



	Mat.	Code		
HSS PM/F	Al Aluminium			387
	Steel			389

Maschi a rullare EG M

Per inserti, tolleranza 6H mod

N° EF11960 / EF11961

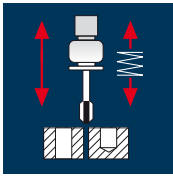


N° EH11950 / EH11951



	Mat.	Code		
HSS PM/F	Al Aluminium			391
	Steel			393

Applicazione



Materiale

Alluminio non legato

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 1	1.0	0.25	25	7960	1990	20	6365	1591	15	4775	1194
M 1.2	1.2	0.25	25	6630	1658	20	5305	1326	15	3980	995
M 1.4	1.4	0.30	25	5685	1706	20	4545	1364	15	3410	1023
M 1.6	1.6	0.35	25	4975	1741	20	3980	1393	15	2985	1045
M 1.8	1.8	0.35	25	4420	1547	20	3535	1237	15	2655	929
M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
M 2.2	2.2	0.45	25	3615	1627	20	2895	1303	15	2170	977
M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795

Alluminio non legato

M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
M10	10.0	1.50	25	795	1193	20	635	953	15	475	713

Alluminio malleabile
Si < 6%
non temprato

M 1	1.0	0.25	30	9550	2388	25	7960	1990	20	6365	1591
M 1.2	1.2	0.25	30	7960	1990	25	6630	1658	20	5305	1326
M 1.4	1.4	0.30	30	6820	2046	25	5685	1706	20	4545	1364
M 1.6	1.6	0.35	30	5970	2090	25	4975	1741	20	3980	1393
M 1.8	1.8	0.35	30	5305	1857	25	4420	1547	20	3535	1237
M 2	2.0	0.40	30	4775	1910	25	3980	1592	20	3185	1274
M 2.2	2.2	0.45	30	4340	1953	25	3615	1627	20	2895	1303
M 2.5	2.5	0.45	30	3820	1719	25	3185	1433	20	2545	1145
M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060

Alluminio malleabile
Si < 6%
non temprato

M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953

Materiale

Rame non legato

M	ø [mm]	P [mm]	V _c			n			V _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 1	1.0	0.25	15	4775	1194	10	3185	796	10	3185	796
M 1.2	1.2	0.25	15	3980	995	10	2655	664	10	2655	664
M 1.4	1.4	0.30	15	3410	1023	10	2275	683	10	2275	683
M 1.6	1.6	0.35	15	2985	1045	10	1990	697	10	1990	697
M 1.8	1.8	0.35	15	2655	929	10	1770	620	10	1770	620
M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530

Rame non legato

M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
M10	10.0	1.50	15	475	713	10	320	480	10	320	480

Metalli non ferrosi
A_s > 15%

M 1	1.0	0.25	15	4775	1194	10	3185	796	10	3185	796
M 1.2	1.2	0.25	15	3980	995	10	2655	664	10	2655	664
M 1.4	1.4	0.30	15	3410	1023	10	2275	683	10	2275	683
M 1.6	1.6	0.35	15	2985	1045	10	1990	697	10	1990	697
M 1.8	1.8	0.35	15	2655	929	10	1770	620	10	1770	620
M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530

Metalli non ferrosi
A_s > 15%

M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
M10	10.0	1.50	15	475	713	10	320	480	10	320	480

Maschi a rullare

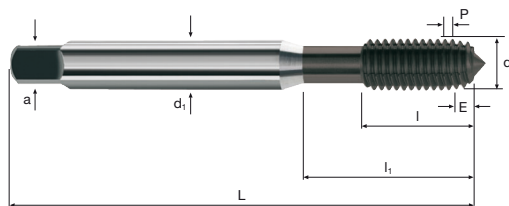


M ISO 2 (6H)

HSS PM/F

DIN 371

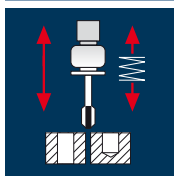
Form E



Al Aluminium
Cu Copper

Esempio: N° Ordine EF10060 .010											F-DLC	
											EF10060	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	⌘	€		
.010	M 1	0.25	40	5.5	7.5	2.5	2.1	3	0.87	33.50		
.012	M 1.2	0.25	40	5.5	7.5	2.5	2.1	3	1.07	33.50		
.020	M 1.4	0.30	40	7.0	10.0	2.5	2.1	3	1.25	33.50		
.022	M 1.6	0.35	40	8.0	11.0	2.5	2.1	3	1.42	33.50		
.026	M 1.8	0.35	40	8.0	11.0	2.5	2.1	3	1.62	33.50		
.034	M 2	0.40	45	8.0	12.5	2.8	2.1	3	1.80	27.20		
.036	M 2.2	0.45	45	9.0	14.5	2.8	2.1	3	2.00	27.20		
.040	M 2.5	0.45	50	9.0	15.0	2.8	2.1	3	2.30	27.20		
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.80	22.40		
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	3	3.70	22.40		
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	4	4.60	22.80		
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	4	5.50	23.80		
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	4	7.40	28.70		
.174	M10	1.50	100	22.0	39.0	10.0	8.0	4	9.30	33.30		
≤ M 1.4 Tolleranza ISO1 (4H)												
Dimensioni superiori vedere articolo EF10061, pagina 369												

Applicazione



Materiale

Alluminio non legato

Alluminio malleabile
Si < 6%
non temprato

Rame non legato



Metalli non ferrosi
A_s > 15%

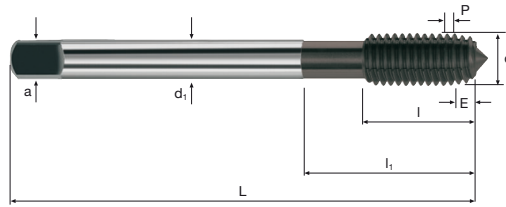


M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
			[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
M16	16.0	2.00	25	495	990	20	400	800	15	300	600
M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928
M14	14.0	2.00	30	680	1360	25	570	1140	20	455	910
M16	16.0	2.00	30	595	1190	25	495	990	20	400	800
M12	12.0	1.75	15	400	700	10	265	464	10	265	464
M14	14.0	2.00	15	340	680	10	225	450	10	225	450
M16	16.0	2.00	15	300	600	10	200	400	10	200	400
M12	12.0	1.75	15	400	700	10	265	464	10	265	464
M14	14.0	2.00	15	340	680	10	225	450	10	225	450
M16	16.0	2.00	15	300	600	10	200	400	10	200	400

Maschi a rullare



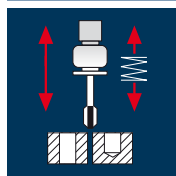
M	ISO 2 (6H)
	HSS PM/F
	Form E



Al Aluminium	Cu Copper
------------------------	---------------------

Esempio: N° Ordine											F-DLC	
Articolo EF10061 Codice-ø .240											EF10061	
Ø Code	d	P	L	l	l ₁	d ₁	a			€		
.240	M12	1.75	110	24	40	9	7	5	11.20	41.50		
.244	M14	2.00	110	26	40	11	9	5	13.10	52.50		
.246	M16	2.00	110	27	40	12	9	5	15.10	62.00		

Applicazione



Materiale

Alluminio non legato

M	ø [mm]	P [mm]	v_c			n			v_f		
			$1.0 \times d$	[min ⁻¹]	[100%]	$1.5 \times d$	[min ⁻¹]	[100%]	$2.0 \times d$	[min ⁻¹]	[100%]
M 3	3.0	0.50	50	5305	2653	40	4245	2123	30	3185	1593
M 4	4.0	0.70	50	3980	2786	40	3185	2230	30	2385	1670
M 5	5.0	0.80	50	3185	2548	40	2545	2036	30	1910	1528
M 6	6.0	1.00	50	2655	2655	40	2120	2120	30	1590	1590
M 8	8.0	1.25	50	1990	2488	40	1590	1988	30	1195	1494
M10	10.0	1.50	50	1590	2385	40	1275	1913	30	955	1433
M12	12.0	1.75	50	1325	2319	40	1060	1855	30	795	1391

Alluminio malleabile
Si < 6%
non temprato

M 3	3.0	0.50	80	8490	4245	60	6365	3183	40	4245	2123
M 4	4.0	0.70	80	6365	4456	60	4775	3343	40	3185	2230
M 5	5.0	0.80	80	5095	4076	60	3820	3056	40	2545	2036
M 6	6.0	1.00	80	4245	4245	60	3185	3185	40	2120	2120
M 8	8.0	1.25	80	3185	3981	60	2385	2981	40	1590	1988
M10	10.0	1.50	80	2545	3818	60	1910	2865	40	1275	1913
M12	12.0	1.75	80	2120	3710	60	1590	2783	40	1060	1855

Rame non legato

M 3	3.0	0.50	60	6365	3183	40	4245	2123	30	3185	1593
M 4	4.0	0.70	60	4775	3343	40	3185	2230	30	2385	1670
M 5	5.0	0.80	60	3820	3056	40	2545	2036	30	1910	1528
M 6	6.0	1.00	60	3185	3185	40	2120	2120	30	1590	1590
M 8	8.0	1.25	60	2385	2981	40	1590	1988	30	1195	1494
M10	10.0	1.50	60	1910	2865	40	1275	1913	30	955	1433
M12	12.0	1.75	60	1590	2783	40	1060	1855	30	795	1391



Metalli non ferrosi
 $A_S > 15\%$

M 3	3.0	0.50	50	5305	2653	30	3185	1593	25	2655	1328
M 4	4.0	0.70	50	3980	2786	30	2385	1670	25	1990	1393
M 5	5.0	0.80	50	3185	2548	30	1910	1528	25	1590	1272
M 6	6.0	1.00	50	2655	2655	30	1590	1590	25	1325	1325
M 8	8.0	1.25	50	1990	2488	30	1195	1494	25	995	1244
M10	10.0	1.50	50	1590	2385	30	955	1433	25	795	1193
M12	12.0	1.75	50	1325	2319	30	795	1391	25	665	1164



Materiale

Acciaio
< 850 N/mm²
 $A_S > 10\%$

M	ø [mm]	P [mm]	v_c			n			v_f		
			$1.0 \times d$	[min ⁻¹]	[100%]	$1.5 \times d$	[min ⁻¹]	[100%]	$2.0 \times d$	[min ⁻¹]	[100%]
M 3	3.0	0.50	35	3715	1858	30	3185	1593	25	2655	1328
M 4	4.0	0.70	35	2785	1949	30	2385	1670	25	1990	1393
M 5	5.0	0.80	35	2230	1784	30	1910	1528	25	1590	1272
M 6	6.0	1.00	35	1855	1855	30	1590	1590	25	1325	1325
M 8	8.0	1.25	35	1395	1744	30	1195	1494	25	995	1244
M10	10.0	1.50	35	1115	1673	30	955	1433	25	795	1193
M12	12.0	1.75	35	930	1628	30	795	1391	25	665	1164

Acciaio
850 - 1100 N/mm²
 $A_S > 10\%$

M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953
M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928



Acciaio inossidabile
[Cr-Ni/1.4301]

M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953
M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928



Maschi a rullare duroform

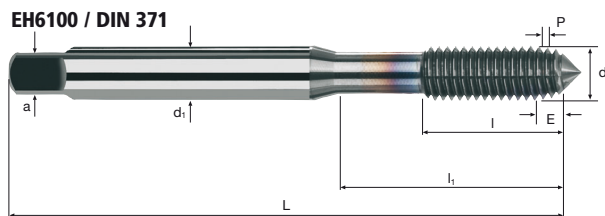


M ISO 2 (6H)

60° **HM** MG10

DIN 371/376

Form E



EH6101 / DIN 376



Al
Aluminium

Rm
< 850 N/mm²

Rm
850-1100 N/mm²

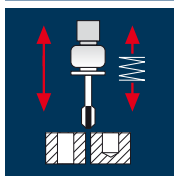
Inox
Stainless

Cu
Copper

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH6100		.044							EH6100	
Ø Code	d	P	L	I	l ₁	d ₁	a	○	⌘	€		
.044	M 3	0.50	56	12	18	3.5	2.7	3	2.80	105.00		
.058	M 4	0.70	63	13	21	4.5	3.4	4	3.70	105.00		
.084	M 5	0.80	70	15	25	6.0	4.9	4	4.60	106.00		
.088	M 6	1.00	80	17	30	6.0	4.9	4	5.50	111.00		
.160	M 8	1.25	90	20	35	8.0	6.2	5	7.40	135.00		
.174	M10	1.50	100	22	39	10.0	8.0	5	9.30	165.00		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH6101		.240							EH6101	
Ø Code	d	P	L	I	l ₁	d ₁	a	○	⌘	€		
.240	M12	1.75	110	24	50	9.0	7.0	7	11.20	204.00		

Applicazione



Materiale

Acciaio
< 850 N/mm²
A_S > 10%

M	ø	P	v _c			n			v _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 1.2	1.2	0.25	20	5305	1326	15	3980	995	10	2655	664
M 1.4	1.4	0.30	20	4545	1364	15	3410	1023	10	2275	683
M 1.6	1.6	0.35	20	3980	1393	15	2985	1045	10	1990	697
M 1.8	1.8	0.35	20	3535	1237	15	2655	929	10	1770	620
M 2	2.0	0.40	20	3185	1274	15	2385	954	10	1590	636
M 2.2	2.2	0.45	20	2895	1303	15	2170	977	10	1445	650
M 2.5	2.5	0.45	20	2545	1145	15	1910	860	10	1275	574
M 3	3.0	0.50	20	2120	1060	15	1590	795	10	1060	530

Acciaio
< 850 N/mm²
A_S > 10%

M 4	4.0	0.70	20	1590	1113	15	1195	837	10	795	557
M 5	5.0	0.80	20	1275	1020	15	955	764	10	635	508
M 6	6.0	1.00	20	1060	1060	15	795	795	10	530	530
M 8	8.0	1.25	20	795	994	15	595	744	10	400	500
M10	10.0	1.50	20	635	953	15	475	713	10	320	480

Acciaio
850 - 1100 N/mm²
A_S > 10%



M1	1.0	0.25	15	4775	1194	10	3185	796			
M1.2	1.2	0.25	15	3980	995	10	2655	664			
M1.4	1.4	0.30	15	3410	1023	10	2275	683			
M1.6	1.6	0.35	15	2985	1045	10	1990	697			
M1.8	1.8	0.35	15	2655	929	10	1770	620			
M2	2.0	0.40	15	2385	954	10	1590	636			
M2.2	2.2	0.45	15	2170	977	10	1445	650			
M2.5	2.5	0.45	15	1910	860	10	1275	574			
M3	3.0	0.50	15	1590	795	10	1060	530			

Acciaio
850 - 1100 N/mm²
A_S > 10%



M4	4.0	0.70	15	1195	837	10	795	557			
M5	5.0	0.80	15	955	764	10	635	508			
M6	6.0	1.00	15	795	795	10	530	530			
M8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			

Materiale

Acciaio inossidabile
ferritico/martensitico
A_S > 10%



M	ø	P	v _c			n			v _f		
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 1	1.0	0.25	15	4775	1194	10	3185	796			
M 1.2	1.2	0.25	15	3980	995	10	2655	664			
M 1.4	1.4	0.30	15	3410	1023	10	2275	683			
M 1.6	1.6	0.35	15	2985	1045	10	1990	697			
M 1.8	1.8	0.35	15	2655	929	10	1770	620			
M 2	2.0	0.40	15	2385	954	10	1590	636			
M 2.2	2.2	0.45	15	2170	977	10	1445	650			
M 2.5	2.5	0.45	15	1910	860	10	1275	574			
M 3	3.0	0.50	15	1590	795	10	1060	530			

Acciaio inossidabile
ferritico/martensitico
A_S > 10%



M 4	4.0	0.70	15	1195	837	10	795	557			
M 5	5.0	0.80	15	955	764	10	635	508			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			

Acciaio inossidabile
[Cr-Ni/1.4301]



M 1	1.0	0.25	15	4775	1194	10	3185	796			
M 1.2	1.2	0.25	15	3980	995	10	2655	664			
M 1.4	1.4	0.30	15	3410	1023	10	2275	683			
M 1.6	1.6	0.35	15	2985	1045	10	1990	697			
M 1.8	1.8	0.35	15	2655	929	10	1770	620			
M 2	2.0	0.40	15	2385	954	10	1590	636			
M 2.2	2.2	0.45	15	2170	977	10	1445	650			
M 2.5	2.5	0.45	15	1910	860	10	1275	574			
M 3	3.0	0.50	15	1590	795	10	1060	530			

Acciaio inossidabile
[Cr-Ni/1.4301]



M 4	4.0	0.70	15	1195	837	10	795	557			
M 5	5.0	0.80	15	955	764	10	635	508			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			

Maschi a rullare

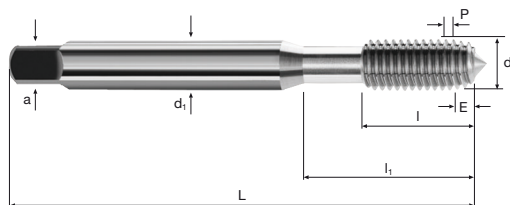
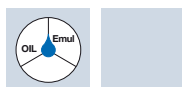


M ISO 2 (6H)

HSS PM/F

DIN 371

Form E



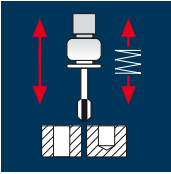
Rm
< 850 N/mm²

Rm
850-1100 N/mm²

Inox
Stainless

Esempio: N° Ordine EH10070 .010											TiCN
											EH10070
Ø Code	d	P	L	l	l ₁	d ₁	a	○	⌘	€	
.010 *	M 1	0.25	40	5.5	7.5	2.5	2.1	3	0.87	32.50	
.012 *	M 1.2	0.25	40	5.5	7.5	2.5	2.1	3	1.07	32.50	
.020 *	M 1.4	0.30	40	7.0	10.0	2.5	2.1	3	1.25	32.50	
.022 *	M 1.6	0.35	40	8.0	11.0	2.5	2.1	3	1.42	32.50	
.026 *	M 1.8	0.35	40	8.0	11.0	2.5	2.1	3	1.62	32.50	
.034	M 2	0.40	45	8.0	12.5	2.8	2.1	3	1.80	26.40	
.036	M 2.2	0.45	45	9.0	14.5	2.8	2.1	3	2.00	26.40	
.040	M 2.5	0.45	50	9.0	15.0	2.8	2.1	3	2.30	26.40	
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.80	21.70	
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	4	3.70	21.70	
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	4	4.60	22.10	
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	4	5.50	23.10	
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	5	7.40	27.90	
.174	M10	1.50	100	22.0	39.0	10.0	8.0	5	9.30	32.20	
≤ M 1.4 Tolleranza ISO1 (4H)											
* senza canali di lubrificazione											
Dimensioni superiori vedere articolo EG10071, pagina 375											

Applicazione



Materiale

Acciaio
< 850 N/mm²
A₅ > 10%



Acciaio
850 - 1100 N/mm²
A₅ > 10%



Acciaio inossidabile
ferritico/martensitico
A₅ > 10%



Acciaio inossidabile
[Cr-Ni/1.4301]

M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
			[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M12	12.0	1.75	20	530	928	15	400	700	10	265	464
M14	14.0	2.00	20	455	910	15	340	680	10	225	450
M16	16.0	2.00	20	400	800	15	300	600	10	200	400
M12	12.0	1.75	15	400	700	10	265	464			
M14	14.0	2.00	15	340	680	10	225	450			
M16	16.0	2.00	15	300	600	10	200	400			
M12	12.0	1.75	15	400	700	10	265	464			
M14	14.0	2.00	15	340	680	10	225	450			
M16	16.0	2.00	15	300	600	10	200	400			

Maschi a rullare

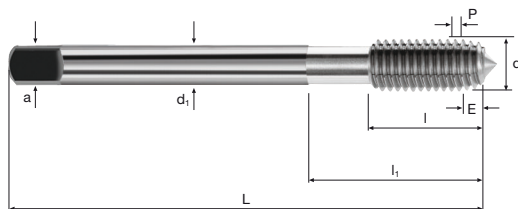
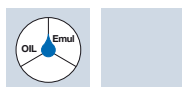


M **ISO 2 (6H)**

HSS PM/F

DIN 376

Form E



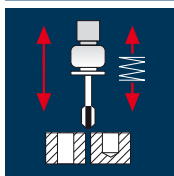
Rm
 < 850 N/mm²

Rm
 850-1100 N/mm²

Inox
 Stainless

Esempio: N° Ordine											TiCN	
											EH10071	
Ø Code	d	P	L	I	I ₁	d ₁	a			€		
.240	M12	1.75	110	24	40	9	7	7	11.20	40.30		
.244	M14	2.00	110	26	40	11	9	7	13.10	50.90		
.246	M16	2.00	110	27	40	12	9	7	15.10	60.00		

Applicazione



Materiale

Acciaio
< 850 N/mm²
A_S > 10%



Acciaio inossidabile
ferritico/martensitico
A_S > 10%



Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]
M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
M16	16.0	2.00	25	495	990	20	400	800	15	300	600
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			
M12	12.0	1.75	15	400	700	10	265	464			
M14	14.0	2.00	15	340	680	10	225	450			
M16	16.0	2.00	15	300	600	10	200	400			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			
M12	12.0	1.75	15	400	700	10	265	464			
M14	14.0	2.00	15	340	680	10	225	450			
M16	16.0	2.00	15	300	600	10	200	400			

Maschi a rullare

Incool

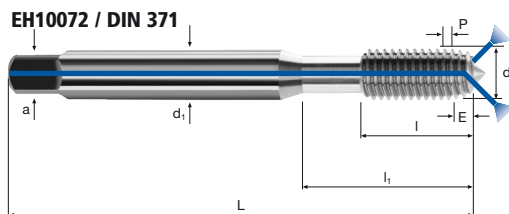
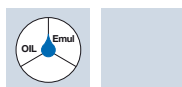


M ISO 2 (6H)

60° **HSS PM/F**

DIN 371/376

Form E



Rm
< 850 N/mm²

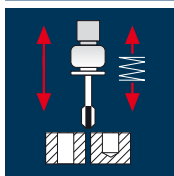
Rm
850-1100 N/mm²

Inox
Stainless

Esempio: N° Ordine EH10072 .088										TiCN	
										EH10072	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	∩	€	
.088	M 6	1.00	80	17	30	6	4.9	4	5.50	33.20	
.160	M 8	1.25	90	20	35	8	6.2	5	7.40	40.10	
.174	M10	1.50	100	22	39	10	8.0	5	9.30	46.40	

Esempio: N° Ordine EH10073 .240										TiCN	
										EH10073	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	∩	€	
.240	M12	1.75	110	24	50	9	7.0	7	11.20	57.90	
.244	M14	2.00	110	26	58	11	9.0	7	13.10	73.00	
.246	M16	2.00	110	27	58	12	9.0	7	15.10	87.00	

Applicazione



Materiale

Alluminio non legato

M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [100%]	v _f [100%]	v _c [m/min]	n [100%]	v _f [100%]
M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
M 2.2	2.2	0.45	25	3615	1627	20	2895	1303	15	2170	977
M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
M10	10.0	1.50	25	795	1193	20	635	953	15	475	713

Alluminio non legato

M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
M16	16.0	2.00	25	495	990	20	400	800	15	300	600

Alluminio malleabile
Si < 6%
non temprato

M 2	2.0	0.40	30	4775	1910	25	3980	1592	20	3185	1274
M 2.2	2.2	0.45	30	4340	1953	25	3615	1627	20	2895	1303
M 2.5	2.5	0.45	30	3820	1719	25	3185	1433	20	2545	1145
M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953

Alluminio malleabile
Si < 6%
non temprato

M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928
M14	14.0	2.00	30	680	1360	25	570	1140	20	455	910
M16	16.0	2.00	30	595	1190	25	495	990	20	400	800

Materiale

Rame non legato

M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [100%]	v _f [100%]	v _c [m/min]	n [100%]	v _f [100%]
M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
M10	10.0	1.50	15	475	713	10	320	480	10	320	480

Rame non legato

M12	12.0	1.75	15	400	700	10	265	464	10	265	464
M14	14.0	2.00	15	340	680	10	225	450	10	225	450
M16	16.0	2.00	15	300	600	10	200	400	10	200	400

Metalli non ferrosi
A_s > 15%

M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
M10	10.0	1.50	15	475	713	10	320	480	10	320	480

Metalli non ferrosi
A_s > 15%

M12	12.0	1.75	15	400	700	10	265	464	10	265	464
M14	14.0	2.00	15	340	680	10	225	450	10	225	450
M16	16.0	2.00	15	300	600	10	200	400	10	200	400

Maschi a rullare

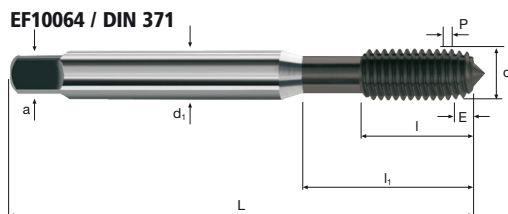
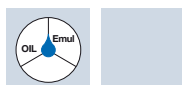


M ISO 3 (6G)

60°
HSS PM/F

DIN 371/376

X-P
Form E



EF10065 / DIN 376

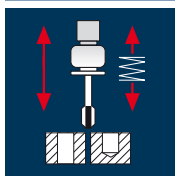


Al Aluminium
Cu Copper

Esempio: N° Ordine											F-DLC	
Articolo EF10064 Codice-Ø .034											EF10064	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	⌘	€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	3	1.80	32.60		
.036	M 2.2	0.45	45	9	14.5	2.8	2.1	3	2.00	32.60		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	3	2.30	32.60		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.80	26.90		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.70	26.90		
.084	M 5	0.80	70	15	25.0	6.0	4.9	4	4.60	27.40		
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.50	28.60		
.160	M 8	1.25	90	20	35.0	8.0	6.2	4	7.40	34.50		
.174	M10	1.50	100	22	39.0	10.0	8.0	4	9.30	39.90		

Esempio: N° Ordine											F-DLC	
Articolo EF10065 Codice-Ø .240											EF10065	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	⌘	€		
.240	M12	1.75	110	24	40.0	9.0	7.0	5	11.20	49.80		
.244	M14	2.00	110	26	40.0	11.0	9.0	5	13.10	63.00		
.246	M16	2.00	110	27	40.0	12.0	9.0	5	15.10	75.00		

Applicazione



Materiale

Acciaio
< 850 N/mm²
A_S > 10%

M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [mm/min]	v _c [m/min]	n [min ⁻¹]	v _f [mm/min]	v _c [m/min]	n [min ⁻¹]	v _f [mm/min]
M 2	2.0	0.40	20	3185	1274	15	2385	954	10	1590	636
M 2.2	2.2	0.45	20	2895	1303	15	2170	977	10	1445	650
M 2.5	2.5	0.45	20	2545	1145	15	1910	860	10	1275	574
M 3	3.0	0.50	20	2120	1060	15	1590	795	10	1060	530
M 4	4.0	0.70	20	1590	1113	15	1195	837	10	795	557
M 5	5.0	0.80	20	1275	1020	15	955	764	10	635	508
M 6	6.0	1.00	20	1060	1060	15	795	795	10	530	530
M 8	8.0	1.25	20	795	994	15	595	744	10	400	500
M10	10.0	1.50	20	635	953	15	475	713	10	320	480

Acciaio
< 850 N/mm²
A_S > 10%

M12	12.0	1.75	20	530	928	15	400	700	10	265	464
M14	14.0	2.00	20	455	910	15	340	680	10	225	450
M16	16.0	2.00	20	400	800	15	300	600	10	200	400

Acciaio
850 - 1100 N/mm²
A_S > 10%



M 2	2.0	0.40	15	2385	954	10	1590	636			
M 2.2	2.2	0.45	15	2170	977	10	1445	650			
M 2.5	2.5	0.45	15	1910	860	10	1275	574			
M 3	3.0	0.50	15	1590	795	10	1060	530			
M 4	4.0	0.70	15	1195	837	10	795	557			
M 5	5.0	0.80	15	955	764	10	635	508			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			

Acciaio
850 - 1100 N/mm²
A_S > 10%



M12	12.0	1.75	15	400	700	10	265	464			
M14	14.0	2.00	15	340	680	10	225	450			
M16	16.0	2.00	15	300	600	10	200	400			

Materiale

Acciaio inossidabile
ferritico/martensitico
A_S > 10%



M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [mm/min]	v _c [m/min]	n [min ⁻¹]	v _f [mm/min]	v _c [m/min]	n [min ⁻¹]	v _f [mm/min]
M 2	2.0	0.40	15	2385	954	10	1590	636			
M 2.2	2.2	0.45	15	2170	977	10	1445	650			
M 2.5	2.5	0.45	15	1910	860	10	1275	574			
M 3	3.0	0.50	15	1590	795	10	1060	530			
M 4	4.0	0.70	15	1195	837	10	795	557			
M 5	5.0	0.80	15	955	764	10	635	508			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			

Acciaio inossidabile
ferritico/martensitico
A_S > 10%



M12	12.0	1.75	15	400	700	10	265	464			
M14	14.0	2.00	15	340	680	10	225	450			
M16	16.0	2.00	15	300	600	10	200	400			

Acciaio inossidabile
[Cr-Ni/1.4301]



M 2	2.0	0.40	15	2385	954	10	1590	636			
M 2.2	2.2	0.45	15	2170	977	10	1445	650			
M 2.5	2.5	0.45	15	1910	860	10	1275	574			
M 3	3.0	0.50	15	1590	795	10	1060	530			
M 4	4.0	0.70	15	1195	837	10	795	557			
M 5	5.0	0.80	15	955	764	10	635	508			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			

Acciaio inossidabile
[Cr-Ni/1.4301]



M12	12.0	1.75	15	400	700	10	265	464			
M14	14.0	2.00	15	340	680	10	225	450			
M16	16.0	2.00	15	300	600	10	200	400			

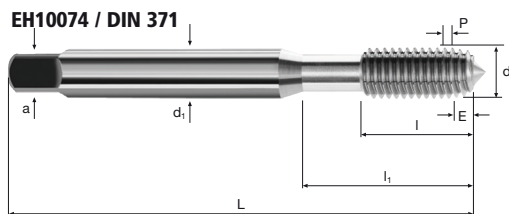


M ISO 3 (6G)

60°
HSS PM/F

DIN 371/376

X-P
Form E



EH10075 / DIN 376



Rm
< 850 N/mm²

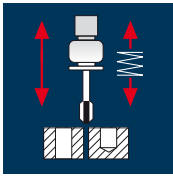
Rm
850-1100 N/mm²

Inox
Stainless

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH10074		.034							EH10074	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	∩	€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	3	1.80	31.30		
.036	M 2.2	0.45	45	9	14.5	2.8	2.1	3	2.00	31.30		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	3	2.30	31.30		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.80	25.80		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.70	25.80		
.084	M 5	0.80	70	15	25.0	6.0	4.9	4	4.60	26.30		
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.50	27.50		
.160	M 8	1.25	90	20	35.0	8.0	6.2	5	7.40	33.10		
.174	M10	1.50	100	22	39.0	10.0	8.0	5	9.30	38.30		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH10075		.240							EH10075	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	∩	€		
.240	M12	1.75	110	24	40	9.0	7.0	7	11.20	47.80		
.244	M14	2.00	110	26	40	11.0	9.0	7	13.10	60.00		
.246	M16	2.00	110	27	40	12.0	9.0	7	15.10	72.00		

Applicazione



Materiale

Alluminio non legato

M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v_c	n	v_f	v_c	n	v_f	v_c	n	v_f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
M 2.2	2.2	0.45	25	3615	1627	20	2895	1303	15	2170	977
M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
M10	10.0	1.50	25	795	1193	20	635	953	15	475	713

Alluminio malleabile
Si < 6%
non temprato

M 2	2.0	0.40	30	4775	1910	25	3980	1592	20	3185	1274
M 2.2	2.2	0.45	30	4340	1953	25	3615	1627	20	2895	1303
M 2.5	2.5	0.45	30	3820	1719	25	3185	1433	20	2545	1145
M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953

Rame non legato



M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
M10	10.0	1.50	15	475	713	10	320	480	10	320	480

Metalli non ferrosi
 $A_s > 15\%$



M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
M10	10.0	1.50	15	475	713	10	320	480	10	320	480

Maschi a rullare

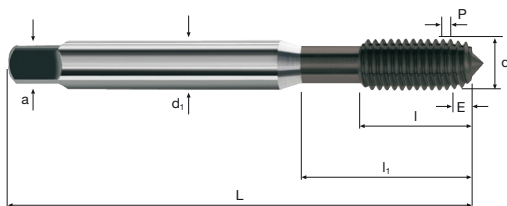


M 7G

60° HSS PM/F

DIN 371

Form E

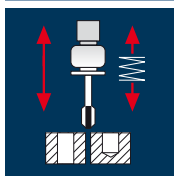


Al
Aluminium

Cu
Copper

Esempio: N° Ordine EF10068 .034											F-DLC	
											EF10068	
Ø Code	d	P	L	l	l ₁	d ₁	a	⊘	⌘	€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	3	1.80	32.60		
.036	M 2.2	0.45	45	9	14.5	2.8	2.1	3	2.00	32.60		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	3	2.30	32.60		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.80	26.90		
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.70	26.90		
.084	M 5	0.80	70	15	25.0	6.0	4.9	4	4.60	27.40		
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.50	28.60		
.160	M 8	1.25	90	20	35.0	8.0	6.2	4	7.40	34.50		
.174	M10	1.50	100	22	39.0	10.0	8.0	4	9.30	39.90		

Applicazione



Materiale

Acciaio
< 850 N/mm²
A_S > 10%



Acciaio inossidabile
ferritico/martensitico
A_S > 10%



Acciaio inossidabile
[Cr-Ni/1.4301]



M	ø	P	1.5 x d			2.0 x d			3.0 x d		
			v _c	n	v _f	v _c	n	v _f	v _c	n	v _f
	[mm]	[mm]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]	[m/min]	[min ⁻¹]	[100%]
M 2	2.0	0.40	20	3185	1274	15	2385	954	10	1590	636
M 2.2	2.2	0.45	20	2895	1303	15	2170	977	10	1445	650
M 2.5	2.5	0.45	20	2545	1145	15	1910	860	10	1275	574
M 3	3.0	0.50	20	2120	1060	15	1590	795	10	1060	530
M 4	4.0	0.70	20	1590	1113	15	1195	837	10	795	557
M 5	5.0	0.80	20	1275	1020	15	955	764	10	635	508
M 6	6.0	1.00	20	1060	1060	15	795	795	10	530	530
M 8	8.0	1.25	20	795	994	15	595	744	10	400	500
M10	10.0	1.50	20	635	953	15	475	713	10	320	480
M 2	2.0	0.40	15	2385	954	10	1590	636			
M 2.2	2.2	0.45	15	2170	977	10	1445	650			
M 2.5	2.5	0.45	15	1910	860	10	1275	574			
M 3	3.0	0.50	15	1590	795	10	1060	530			
M 4	4.0	0.70	15	1195	837	10	795	557			
M 5	5.0	0.80	15	955	764	10	635	508			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			
M 2	2.0	0.40	15	2385	954	10	1590	636			
M 2.2	2.2	0.45	15	2170	977	10	1445	650			
M 2.5	2.5	0.45	15	1910	860	10	1275	574			
M 3	3.0	0.50	15	1590	795	10	1060	530			
M 4	4.0	0.70	15	1195	837	10	795	557			
M 5	5.0	0.80	15	955	764	10	635	508			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			
M 2	2.0	0.40	15	2385	954	10	1590	636			
M 2.2	2.2	0.45	15	2170	977	10	1445	650			
M 2.5	2.5	0.45	15	1910	860	10	1275	574			
M 3	3.0	0.50	15	1590	795	10	1060	530			
M 4	4.0	0.70	15	1195	837	10	795	557			
M 5	5.0	0.80	15	955	764	10	635	508			
M 6	6.0	1.00	15	795	795	10	530	530			
M 8	8.0	1.25	15	595	744	10	400	500			
M10	10.0	1.50	15	475	713	10	320	480			

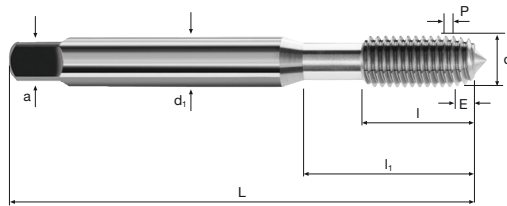
Maschi a rullare



M 7G

HSS PM/F

Form E



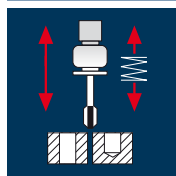
Rm
< 850 N/mm²

Rm
850-1100 N/mm²

Inox
Stainless

Esempio: N° Ordine											TiCN	
Articolo EH10078 Codice-ø .034											EH10078	
Ø Code	d	P	L	l	li	d1	a			€		
.034	M 2	0.40	45	8	12.5	2.8	2.1	3	1.80	31.30		
.036	M 2.2	0.45	45	9	14.5	2.8	2.1	3	2.00	31.30		
.040	M 2.5	0.45	50	9	15.0	2.8	2.1	3	2.30	31.30		
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.80	25.80		
.058	M 4	0.70	63	13	21.0	4.5	3.4	4	3.70	25.80		
.084	M 5	0.80	70	15	25.0	6.0	4.9	4	4.60	26.30		
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.50	27.50		
.160	M 8	1.25	90	20	35.0	8.0	6.2	5	7.40	33.10		
.174	M10	1.50	100	22	39.0	10.0	8.0	5	9.30	38.30		

Applicazione



Materiale

Alluminio non legato

MF	ø [mm]	P [mm]	V_c			n			V_f		
			$1.5 \times d$	[min ⁻¹]	[100%]	$2.0 \times d$	[min ⁻¹]	[100%]	$3.0 \times d$	[min ⁻¹]	[100%]
M 4	4.0	0.50	25	1990	995	20	1590	795	15	1195	598
M 5	5.0	0.50	25	1590	795	20	1275	638	15	955	478
M 6	6.0	0.50	25	1325	663	20	1060	530	15	795	398
M 6	6.0	0.75	25	1325	994	20	1060	795	15	795	596
M 8	8.0	0.75	25	995	746	20	795	596	15	595	446
M10	10.0	0.75	25	795	596	20	635	476	15	475	356
M 8	8.0	1.00	25	995	995	20	795	795	15	595	595
M10	10.0	1.00	25	795	795	20	635	635	15	475	475
M10	10.0	1.25	25	795	994	20	635	794	15	475	594

Alluminio non legato

M12	12.0	1.00	25	665	665	20	530	530	15	400	400
M14	14.0	1.00	25	570	570	20	455	455	15	340	340
M16	16.0	1.00	25	495	495	20	400	400	15	300	300
M12	12.0	1.25	25	665	831	20	530	663	15	400	500
M12	12.0	1.50	25	665	998	20	530	795	15	400	600
M14	14.0	1.50	25	570	855	20	455	683	15	340	510
M16	16.0	1.50	25	495	743	20	400	600	15	300	450
M20	20.0	1.50	25	400	600	20	320	480	15	240	360

Alluminio malleabile
Si < 6%
non temprato

M 4	4.0	0.50	30	2385	1193	25	1990	995	20	1590	795
M 5	5.0	0.50	30	1910	955	25	1590	795	20	1275	638
M 6	6.0	0.50	30	1590	795	25	1325	663	20	1060	530
M 6	6.0	0.75	30	1590	1193	25	1325	994	20	1060	795
M 8	8.0	0.75	30	1195	896	25	995	746	20	795	596
M10	10.0	0.75	30	955	716	25	795	596	20	635	476
M 8	8.0	1.00	30	1195	1195	25	995	995	20	795	795
M10	10.0	1.00	30	955	955	25	795	795	20	635	635
M10	10.0	1.25	30	955	1194	25	795	994	20	635	794

Alluminio malleabile
Si < 6%
non temprato

M12	12.0	1.00	30	795	795	25	665	665	20	530	530
M14	14.0	1.00	30	680	680	25	570	570	20	455	455
M16	16.0	1.00	30	595	595	25	495	495	20	400	400
M12	12.0	1.25	30	795	994	25	665	831	20	530	663
M12	12.0	1.50	30	795	1193	25	665	998	20	530	795
M14	14.0	1.50	30	680	1020	25	570	855	20	455	683
M16	16.0	1.50	30	595	893	25	495	743	20	400	600
M20	20.0	1.50	30	475	713	25	400	600	20	320	480

Materiale

Rame non legato



MF	ø [mm]	P [mm]	V_c			n			V_f		
			$1.5 \times d$	[min ⁻¹]	[100%]	$2.0 \times d$	[min ⁻¹]	[100%]	$3.0 \times d$	[min ⁻¹]	[100%]
M 4	4.0	0.50	15	1195	598	10	795	398	10	795	398
M 5	5.0	0.50	15	955	478	10	635	318	10	635	318
M 6	6.0	0.50	15	795	398	10	530	265	10	530	265
M 6	6.0	0.75	15	795	596	10	530	398	10	530	398
M 8	8.0	0.75	15	595	446	10	400	300	10	400	300
M10	10.0	0.75	15	475	356	10	320	240	10	320	240
M 8	8.0	1.00	15	595	595	10	400	400	10	400	400
M10	10.0	1.00	15	475	475	10	320	320	10	320	320
M10	10.0	1.25	15	475	594	10	320	400	10	320	400

Rame non legato



M12	12.0	1.00	15	400	400	10	265	265	10	265	265
M14	14.0	1.00	15	340	340	10	225	225	10	225	225
M16	16.0	1.00	15	300	300	10	200	200	10	200	200
M12	12.0	1.25	15	400	500	10	265	331	10	265	331
M12	12.0	1.50	15	400	600	10	265	398	10	265	398
M14	14.0	1.50	15	340	510	10	225	338	10	225	338
M16	16.0	1.50	15	300	450	10	200	300	10	200	300
M20	20.0	1.50	15	240	360	10	160	240	10	160	240

Metalli non ferrosi
A_s > 15%



M 4	4.0	0.50	15	1195	598	10	795	398	10	795	398
M 5	5.0	0.50	15	955	478	10	635	318	10	635	318
M 6	6.0	0.50	15	795	398	10	530	265	10	530	265
M 6	6.0	0.75	15	795	596	10	530	398	10	530	398
M 8	8.0	0.75	15	595	446	10	400	300	10	400	300
M10	10.0	0.75	15	475	356	10	320	240	10	320	240
M 8	8.0	1.00	15	595	595	10	400	400	10	400	400
M10	10.0	1.00	15	475	475	10	320	320	10	320	320
M10	10.0	1.25	15	475	594	10	320	400	10	320	400

Metalli non ferrosi
A_s > 15%

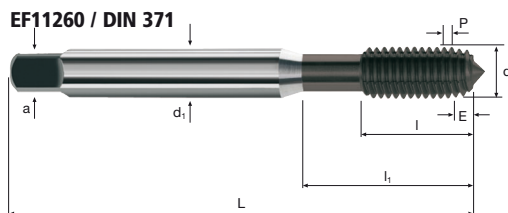
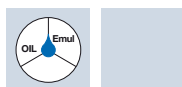
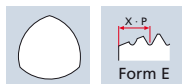


M12	12.0	1.00	15	400	400	10	265	265	10	265	265
M14	14.0	1.00	15	340	340	10	225	225	10	225	225
M16	16.0	1.00	15	300	300	10	200	200	10	200	200
M12	12.0	1.25	15	400	500	10	265	331	10	265	331
M12	12.0	1.50	15	400	600	10	265	398	10	265	398
M14	14.0	1.50	15	340	510	10	225	338	10	225	338
M16	16.0	1.50	15	300	450	10	200	300	10	200	300
M20	20.0	1.50	15	240	360	10	160	240	10	160	240

Maschi a rullare



MF ISO 2 (6H)



EF11261 / DIN 374



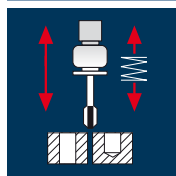
Al
Aluminium

Cu
Copper

Esempio: N° Ordine EF11260 .046										F-DLC	
Articolo EF11260 Codice- \varnothing .046										EF11260	
\varnothing Code	d	P	L	l	l ₁	d ₁	a			€	
.046	M 4	0.50	63	13	21	4.5	3.4	3	3.80	25.40	
.048	M 5	0.50	70	15	25	6.0	4.9	4	4.80	25.90	
.050	M 6	0.50	80	17	30	6.0	4.9	4	5.80	27.00	
.064	M 6	0.75	80	17	30	6.0	4.9	4	5.65	27.00	
.066	M 8	0.75	90	20	35	8.0	6.2	4	7.65	32.60	
.068	M10	0.75	100	22	39	10.0	8.0	4	9.65	37.70	
.090	M 8	1.00	90	20	35	8.0	6.2	4	7.55	32.60	
.092	M10	1.00	100	22	39	10.0	8.0	4	9.55	37.70	
.162	M10	1.25	100	22	39	10.0	8.0	4	9.40	37.70	

Esempio: N° Ordine EF11261 .094										F-DLC	
Articolo EF11261 Codice- \varnothing .094										EF11261	
\varnothing Code	d	P	L	l	l ₁	d ₁	a			€	
.094	M12	1.00	100	18	39	9.0	7.0	5	11.50	47.00	
.096	M14	1.00	100	18	39	11.0	9.0	5	13.50	59.50	
.098	M16	1.00	100	18	39	12.0	9.0	5	15.50	71.00	
.164	M12	1.25	100	22	39	9.0	7.0	5	11.40	47.00	
.176	M12	1.50	100	22	39	9.0	7.0	5	11.30	47.00	
.178	M14	1.50	100	22	39	11.0	9.0	5	13.30	59.50	
.182	M16	1.50	100	22	39	12.0	9.0	5	15.30	71.00	
.184	M20	1.50	125	26	50	16.0	12.0	6	19.30	109.00	

Applicazione



Materiale

Acciaio
< 850 N/mm²
A_S > 10%

MF	ø [mm]	P [mm]	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 4	4.0	0.50	20	1590	795	15	1195	598	10	795	398
M 5	5.0	0.50	20	1275	638	15	955	478	10	635	318
M 6	6.0	0.50	20	1060	530	15	795	398	10	530	265
M 6	6.0	0.75	20	1060	795	15	795	596	10	530	398
M 8	8.0	0.75	20	795	596	15	595	446	10	400	300
M10	10.0	0.75	20	635	476	15	475	356	10	320	240
M 8	8.0	1.00	20	795	795	15	595	595	10	400	400
M10	10.0	1.00	20	635	635	15	475	475	10	320	320
M10	10.0	1.25	20	635	794	15	475	594	10	320	400

Acciaio
< 850 N/mm²
A_S > 10%

M12	12.0	1.00	20	530	530	15	400	400	10	265	265
M14	14.0	1.00	20	455	455	15	340	340	10	225	225
M16	16.0	1.00	20	400	400	15	300	300	10	200	200
M12	12.0	1.25	20	530	663	15	400	500	10	265	331
M12	12.0	1.50	20	530	795	15	400	600	10	265	398
M14	14.0	1.50	20	455	683	15	340	510	10	225	338
M16	16.0	1.50	20	400	600	15	300	450	10	200	300
M20	20.0	1.50	20	320	480	15	240	360	10	160	240

Acciaio
850 - 1100 N/mm²
A_S > 10%



M 4	4.0	0.50	15	1195	598	10	795	398			
M 5	5.0	0.50	15	955	478	10	635	318			
M 6	6.0	0.50	15	795	398	10	530	265			
M 6	6.0	0.75	15	795	596	10	530	398			
M 8	8.0	0.75	15	595	446	10	400	300			
M10	10.0	0.75	15	475	356	10	320	240			
M 8	8.0	1.00	15	595	595	10	400	400			
M10	10.0	1.00	15	475	475	10	320	320			
M10	10.0	1.25	15	475	594	10	320	400			

Acciaio
850 - 1100 N/mm²
A_S > 10%



M12	12.0	1.00	15	400	400	10	265	265			
M14	14.0	1.00	15	340	340	10	225	225			
M16	16.0	1.00	15	300	300	10	200	200			
M12	12.0	1.25	15	400	500	10	265	331			
M12	12.0	1.50	15	400	600	10	265	398			
M14	14.0	1.50	15	340	510	10	225	338			
M16	16.0	1.50	15	300	450	10	200	300			
M20	20.0	1.50	15	240	360	10	160	240			

Materiale

Acciaio inossidabile
ferritico/martensitico
A_S > 10%



MF	ø [mm]	P [mm]	V _c	n	V _f	V _c	n	V _f	V _c	n	V _f
			1.5 x d	[min ⁻¹]	[100%]	2.0 x d	[min ⁻¹]	[100%]	3.0 x d	[min ⁻¹]	[100%]
M 4	4.0	0.50	15	1195	598	10	795	398			
M 5	5.0	0.50	15	955	478	10	635	318			
M 6	6.0	0.50	15	795	398	10	530	265			
M 6	6.0	0.75	15	795	596	10	530	398			
M 8	8.0	0.75	15	595	446	10	400	300			
M10	10.0	0.75	15	475	356	10	320	240			
M 8	8.0	1.00	15	595	595	10	400	400			
M10	10.0	1.00	15	475	475	10	320	320			
M10	10.0	1.25	15	475	594	10	320	400			

Acciaio inossidabile
ferritico/martensitico
A_S > 10%



M12	12.0	1.00	15	400	400	10	265	265			
M14	14.0	1.00	15	340	340	10	225	225			
M16	16.0	1.00	15	300	300	10	200	200			
M12	12.0	1.25	15	400	500	10	265	331			
M12	12.0	1.50	15	400	600	10	265	398			
M14	14.0	1.50	15	340	510	10	225	338			
M16	16.0	1.50	15	300	450	10	200	300			
M20	20.0	1.50	15	240	360	10	160	240			

Acciaio inossidabile
[Cr-Ni/1.4301]



M 4	4.0	0.50	15	1195	598	10	795	398			
M 5	5.0	0.50	15	955	478	10	635	318			
M 6	6.0	0.50	15	795	398	10	530	265			
M 6	6.0	0.75	15	795	596	10	530	398			
M 8	8.0	0.75	15	595	446	10	400	300			
M10	10.0	0.75	15	475	356	10	320	240			
M 8	8.0	1.00	15	595	595	10	400	400			
M10	10.0	1.00	15	475	475	10	320	320			
M10	10.0	1.25	15	475	594	10	320	400			

Acciaio inossidabile
[Cr-Ni/1.4301]



M12	12.0	1.00	15	400	400	10	265	265			
M14	14.0	1.00	15	340	340	10	225	225			
M16	16.0	1.00	15	300	300	10	200	200			
M12	12.0	1.25	15	400	500	10	265	331			
M12	12.0	1.50	15	400	600	10	265	398			
M14	14.0	1.50	15	340	510	10	225	338			
M16	16.0	1.50	15	300	450	10	200	300			
M20	20.0	1.50	15	240	360	10	160	240			

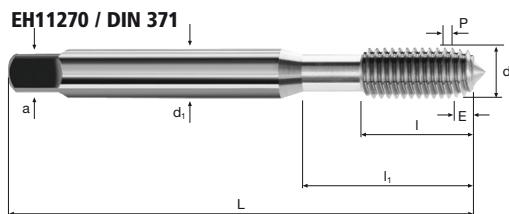


MF ISO 2
(6H)

HSS
PM/F

DIN
371/374

X-P
Form E



EH11271 / DIN 374



Rm
< 850 N/mm²

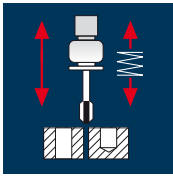
Rm
850-1100 N/mm²

Inox
Stainless

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH11270		.046							EH11270	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	∩	€		
.046	M 4	0.50	63	13	21	4.5	2.1	4	3.80	24.50		
.048	M 5	0.50	70	15	25	6.0	2.7	4	4.80	24.90		
.050	M 6	0.50	80	17	30	6.0	3.4	4	5.80	26.00		
.064	M 6	0.75	80	17	30	6.0	3.4	4	5.65	26.00		
.066	M 8	0.75	90	20	35	8.0	4.9	5	7.65	31.40		
.068	M10	0.75	100	22	39	10.0	5.5	5	9.65	36.30		
.090	M 8	1.00	90	20	35	8.0	4.9	5	7.55	31.40		
.092	M10	1.00	100	22	39	10.0	5.5	5	9.55	36.30		
.162	M10	1.25	100	22	39	10.0	5.5	5	9.40	36.30		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH11271		.094							EH11271	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	∩	€		
.094	M12	1.00	100	18	39	9.0	7.0	7	11.50	45.30		
.096	M14	1.00	100	18	39	11.0	9.0	7	13.50	57.30		
.098	M16	1.00	100	18	39	12.0	9.0	7	15.50	68.00		
.164	M12	1.25	100	22	39	9.0	7.0	7	11.40	45.30		
.176	M12	1.50	100	22	39	9.0	7.0	7	11.30	45.30		
.178	M14	1.50	100	22	39	11.0	9.0	7	13.30	57.30		
.180	M16	1.50	100	22	39	12.0	9.0	7	15.30	68.00		
.184	M20	1.50	125	26	50	16.0	12.0	7	19.30	105.00		

Applicazione



Materiale

Alluminio non legato

EG-M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]	v _c [m/min]	n [min ⁻¹]	v _f [100%]
EGM 3	3.650	0.50	25	2180	1090	20	1745	873	15	1310	655
EGM 4	4.910	0.70	25	1620	1134	20	1295	906	15	970	679
EGM 5	6.040	0.80	25	1320	1056	20	1055	844	15	790	632
EGM 6	7.300	1.00	25	1090	1090	20	870	870	15	655	655
EGM 8	9.624	1.25	25	825	1031	20	660	825	15	495	619
EGM 10	11.948	1.50	25	665	998	20	535	803	15	400	600
EGM 12	14.274	1.75	25	555	971	20	445	779	15	335	586

Alluminio malleabile
Si < 6%
non temprato

EGM 3	3.650	0.50	30	2615	1308	25	2180	1090	20	1745	873
EGM 4	4.910	0.70	30	1945	1362	25	1620	1134	20	1295	906
EGM 5	6.040	0.80	30	1580	1264	25	1320	1056	20	1055	844
EGM 6	7.300	1.00	30	1310	1310	25	1090	1090	20	870	870
EGM 8	9.624	1.25	30	990	1238	25	825	1031	20	660	825
EGM 10	11.948	1.50	30	800	1200	25	665	998	20	535	803
EGM 12	14.274	1.75	30	670	1173	25	555	971	20	445	779

Rame non legato



EGM 3	3.650	0.50	15	1310	655	10	870	435	10	870	435
EGM 4	4.910	0.70	15	970	679	10	650	455	10	650	455
EGM 5	6.040	0.80	15	790	632	10	525	420	10	525	420
EGM 6	7.300	1.00	15	655	655	10	435	435	10	435	435
EGM 8	9.624	1.25	15	495	619	10	330	413	10	330	413
EGM 10	11.948	1.50	15	400	600	10	265	398	10	265	398
EGM 12	14.274	1.75	15	335	586	10	225	394	10	225	394

Metalli non ferrosi
A_s > 15%

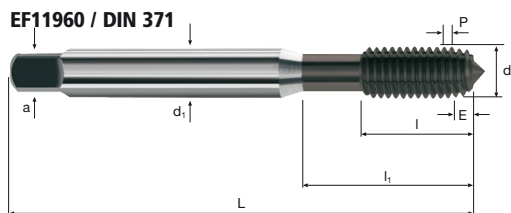
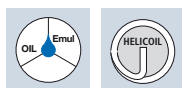
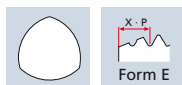


EGM 3	3.650	0.50	15	1310	655	10	870	435	10	870	435
EGM 4	4.910	0.70	15	970	679	10	650	455	10	650	455
EGM 5	6.040	0.80	15	790	632	10	525	420	10	525	420
EGM 6	7.300	1.00	15	655	655	10	435	435	10	435	435
EGM 8	9.624	1.25	15	495	619	10	330	413	10	330	413
EGM 10	11.948	1.50	15	400	600	10	265	398	10	265	398
EGM 12	14.274	1.75	15	335	586	10	225	394	10	225	394

Maschi a rullare



EG M **6H mod**



EF11961 / DIN 376



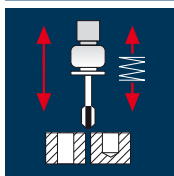
Al
Aluminium

Cu
Copper

Esempio: N° Ordine EF11960 Articolo .044 Codice-Ø										F-DLC	
										EF11960	
Ø Code	d	P	L	l	l ₁	d ₁	a	⊘	⌘	€	
.044	EGM 3	0.50	63	13	21	4.5	3.4	3	3.40	29.90	
.058	EGM 4	0.70	70	15	25	6.0	4.9	4	4.60	30.40	
.084	EGM 5	0.80	80	17	30	6.0	4.9	4	5.70	31.80	
.088	EGM 6	1.00	90	20	35	8.0	6.2	4	6.80	35.00	
.160	EGM 8	1.25	100	22	39	10.0	8.0	4	9.00	44.30	

Esempio: N° Ordine EF11961 Articolo .174 Codice-Ø										F-DLC	
										EF11961	
Ø Code	d	P	L	l	l ₁	d ₁	a	⊘	⌘	€	
.174	EGM10	1.50	110	25	50	9.0	7.0	5	11.20	55.40	
.240	EGM12	1.75	110	26	58	11.0	9.0	5	13.40	70.00	

Applicazione



Materiale

Acciaio
< 850 N/mm²
A_S > 10%



Acciaio
850 - 1100 N/mm²
A_S > 10%

Acciaio inossidabile
ferritico/martensitico
A_S > 10%



Acciaio inossidabile
[Cr-Ni/1.4301]



EG-M	ø [mm]	P [mm]	1.5 x d			2.0 x d			3.0 x d		
			v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]	v _c [min ⁻¹]	n [100%]	v _f [100%]
EGM 3	3.650	0.50	20	1745	873	15	1310	655	10	870	435
EGM 4	4.910	0.70	20	1295	906	15	970	679	10	650	455
EGM 5	6.040	0.80	20	1055	844	15	790	632	10	525	420
EGM 6	7.300	1.00	20	870	870	15	655	655	10	435	435
EGM 8	9.624	1.25	20	660	825	15	495	619	10	330	413
EGM 10	11.948	1.50	20	535	803	15	400	600	10	265	398
EGM 12	14.274	1.75	20	445	779	15	335	586	10	225	394
EGM 3	3.650	0.50	15	1310	655	10	870	435			
EGM 4	4.910	0.70	15	970	679	10	650	455			
EGM 5	6.040	0.80	15	790	632	10	525	420			
EGM 6	7.300	1.00	15	655	655	10	435	435			
EGM 8	9.624	1.25	15	495	619	10	330	413			
EGM 10	11.948	1.50	15	400	600	10	265	398			
EGM 12	14.274	1.75	15	335	586	10	225	394			
EGM 3	3.650	0.50	15	1310	655	10	870	435			
EGM 4	4.910	0.70	15	970	679	10	650	455			
EGM 5	6.040	0.80	15	790	632	10	525	420			
EGM 6	7.300	1.00	15	655	655	10	435	435			
EGM 8	9.624	1.25	15	495	619	10	330	413			
EGM 10	11.948	1.50	15	400	600	10	265	398			
EGM 12	14.274	1.75	15	335	586	10	225	394			

Maschi a rullare

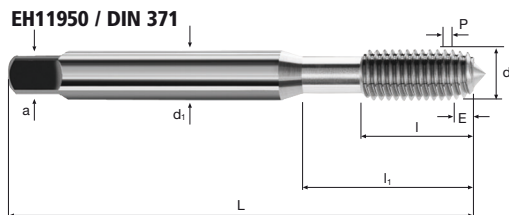
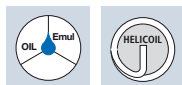


EG M **6H mod**

HSS PM/F

DIN 371/376

Form E



EH11951 / DIN 376



Rm
< 850 N/mm²

Rm
850-1100 N/mm²

Inox
Stainless

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH11950		.044							EH11950	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	∩	€		
.044	EGM 3	0.50	63	13	21	4.5	3.4	3	3.40	28.50		
.058	EGM 4	0.70	70	15	25	6.0	4.9	4	4.60	29.00		
.084	EGM 5	0.80	80	17	30	6.0	4.9	5	5.70	30.40		
.088	EGM 6	1.00	90	20	35	8.0	6.2	5	6.80	33.40		
.160	EGM 8	1.25	100	22	39	10.0	8.0	5	9.00	42.30		

Esempio: N° Ordine		Articolo		Codice-Ø							TiCN	
		EH11951		.174							EH11951	
Ø Code	d	P	L	l	l ₁	d ₁	a	○	∩	€		
.174	EGM10	1.50	110	25	40	9.0	7.0	7	11.20	52.80		
.240	EGM12	1.75	110	28	40	11.0	9.0	7	13.40	67.00		

Frese a filettare M / MF / G / UNC / UNF / UN / NPT / NPTF

Frese a forare e filettare con smusso a 45°

N° E22200



M

1.5xd

397

N° E22300



M

2xd

399

Frese a filettare con smusso a 45°

N° EH24200



M

1.5xd



401

N° EH24300



M

2xd



403

N° EH24220



MF

1.5xd



405

N° EH24320



MF

2xd



407

N° EH24340



G

2xd



409

N° EH24360



UNC

2xd



411

N° EH24370



UNF

2xd



413

Frese a filettare

N° EU2010



N° EU2060







N° EU2110



N° EU2200 / EU2210



M	1.5xd		415
G	1.5xd		417
UN	1.5xd		419
NPT NPTF			421



Frese a filettare multirange

N° EH26020



N° EH26040



M			423
G			425

Turbofilettatrici

N° E28500



M	3xd		427
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Materiale

Ghisa GG(G)

Alluminio malleabile Si < 6%

Ottone a truciolo corto CuZn

M	d2 [mm]	v_c [m/min]	f [mm]	L_K [mm]	n [min ⁻¹]	v_f [mm/min]
M 4	3.30	100	0.050	7.4	9645	480
M 5	4.20	100	0.065	9.4	7580	495
M 6	5.00	100	0.075	11.7	6365	475
M 8	6.80	100	0.100	14.7	4680	470
M 10	8.50	100	0.125	19.3	3745	470
M 12	10.20	100	0.150	22.2	3120	470
M 16	14.00	100	0.210	27.8	2275	480

M 4	3.30	200	0.060	7.4	19290	1155
M 5	4.20	200	0.075	9.4	15160	1135
M 6	5.00	200	0.090	11.7	12735	1145
M 8	6.80	200	0.120	14.7	9360	1125
M 10	8.50	200	0.150	19.3	7490	1125
M 12	10.20	200	0.180	22.2	6240	1125
M 16	14.00	200	0.250	27.8	4545	1135

M 4	3.30	250	0.060	7.4	24115	1445
M 5	4.20	250	0.075	9.4	18950	1420
M 6	5.00	250	0.090	11.7	15915	1430
M 8	6.80	250	0.120	14.7	11705	1405
M 10	8.50	250	0.150	19.3	9360	1405
M 12	10.20	250	0.180	22.2	7800	1405
M 16	14.00	250	0.250	27.8	5685	1420

Parametri di taglio degli utensili con rivestimento TiCN



Materiale

Ghisa GG(G)

Alluminio malleabile Si < 6%

Ottone a truciolo corto CuZn

M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [min ⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
M 4	3.20	0.70	2	100	0.025	9945	99	495
M 5	4.00	0.80	2	100	0.030	7960	96	480
M 6	4.75	1.00	2	100	0.035	6700	98	470
M 8	6.35	1.25	2	100	0.050	5015	103	500
M 10	7.95	1.50	2	100	0.060	4005	98	480
M 12	9.95	1.75	2	100	0.075	3200	82	480
M 16	13.20	2.00	2	100	0.100	2410	84	480

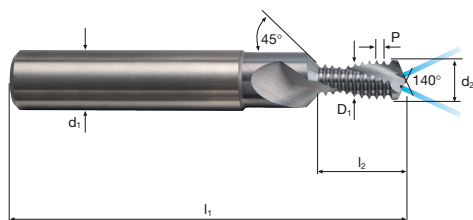
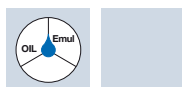
M 4	3.20	0.70	2	200	0.030	19895	239	1195
M 5	4.00	0.80	2	200	0.035	15915	223	1115
M 6	4.75	1.00	2	200	0.045	13405	251	1205
M 8	6.35	1.25	2	200	0.060	10025	249	1205
M 10	7.95	1.50	2	200	0.070	8010	230	1120
M 12	9.95	1.75	2	200	0.090	6400	196	1150
M 16	13.20	2.00	2	200	0.120	4825	203	1160

M 4	3.20	0.70	2	250	0.030	24870	298	1490
M 5	4.00	0.80	2	250	0.035	19895	279	1395
M 6	4.75	1.00	2	250	0.045	16755	315	1510
M 8	6.35	1.25	2	250	0.060	12530	310	1505
M 10	7.95	1.50	2	250	0.070	10010	287	1400
M 12	9.95	1.75	2	250	0.090	8000	246	1440
M 16	13.20	2.00	2	250	0.120	6030	253	1445

Parametri di taglio degli utensili con rivestimento TiCN

Frese a forare e filettare

1.5xd, smusso a 45°, Incool



GG(G)
Cast iron

Al
Aluminium

CuZn
Brass

Esempio: N° Ordine EH22200 .058										TiCN	
										E22200	EH22200
Ø Code	d	P	l1	l2	d1 h6	d2	D1	Rk 6H		€	€
.058	M 4	0.70	48	6.9	6	3.3	3.20	1.560	2	404.00	431.00
.084	M 5	0.80	54	8.8	6	4.2	4.00	1.950	2	395.00	426.00
.088	M 6	1.00	62	10.9	8	5.0	4.75	2.315	2	384.00	429.00
.160	M 8	1.25	74	13.7	10	6.8	6.35	3.095	2	460.00	504.00
.174	M10	1.50	80	18.0	12	8.5	7.95	3.875	2	539.00	574.00
.240	M12	1.75	90	20.9	14	10.2	9.95	4.855	2	707.00	751.00
.246	M16	2.00	102	26.0	18	14.0	13.20	6.440	2	1027.00	1072.00



Materiale

Ghisa GG(G)

M	d2 [mm]	v _c [m/min]	f [mm]	L _K [mm]	n [min ⁻¹]	v _f [mm/min]
M 4	3.30	100	0.050	9.5	9645	480
M 5	4.20	100	0.065	11.8	7580	495
M 6	5.00	100	0.075	14.7	6365	475
M 8	6.80	100	0.100	19.7	4680	470
M 10	8.50	100	0.125	23.8	3745	470
M 12	10.20	100	0.150	27.4	3120	470
M 16	14.00	100	0.210	37.8	2275	480

Alluminio malleabile
Si < 6%

M 4	3.30	200	0.060	9.5	19290	1155
M 5	4.20	200	0.075	11.8	15160	1135
M 6	5.00	200	0.090	14.7	12735	1145
M 8	6.80	200	0.120	19.7	9360	1125
M 10	8.50	200	0.150	23.8	7490	1125
M 12	10.20	200	0.180	27.4	6240	1125
M 16	14.00	200	0.250	37.8	4545	1135

Ottone a truciolo corto
CuZn

M 4	3.30	250	0.060	9.5	24115	1445
M 5	4.20	250	0.075	11.8	18950	1420
M 6	5.00	250	0.090	14.7	15915	1430
M 8	6.80	250	0.120	19.7	11705	1405
M 10	8.50	250	0.150	23.8	9360	1405
M 12	10.20	250	0.180	27.4	7800	1405
M 16	14.00	250	0.250	37.8	5685	1420

Parametri di taglio degli utensili con rivestimento TiCN



Materiale

Ghisa GG(G)

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 4	3.20	0.70	2	100	0.020	9945	80	400
M 5	4.00	0.80	2	100	0.025	7960	80	400
M 6	4.75	1.00	2	100	0.030	6700	83	400
M 8	6.35	1.25	2	100	0.040	5015	83	400
M 10	7.95	1.50	2	100	0.055	4005	90	440
M 12	9.95	1.75	2	100	0.065	3200	71	415
M 16	13.20	2.00	2	100	0.090	2410	76	435

Alluminio malleabile
Si < 6%

M 4	3.20	0.70	2	200	0.025	19895	199	995
M 5	4.00	0.80	2	200	0.030	15915	191	955
M 6	4.75	1.00	2	200	0.035	13405	196	940
M 8	6.35	1.25	2	200	0.050	10025	207	1005
M 10	7.95	1.50	2	200	0.060	8010	197	960
M 12	9.95	1.75	2	200	0.075	6400	164	960
M 16	13.20	2.00	2	200	0.100	4825	169	965

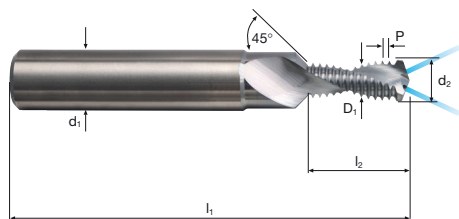
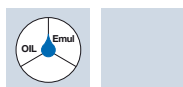
Ottone a truciolo corto
CuZn

M 4	3.20	0.70	2	250	0.025	24870	249	1245
M 5	4.00	0.80	2	250	0.030	19895	239	1195
M 6	4.75	1.00	2	250	0.035	16755	245	1175
M 8	6.35	1.25	2	250	0.050	12530	259	1255
M 10	7.95	1.50	2	250	0.060	10010	246	1200
M 12	9.95	1.75	2	250	0.075	8000	205	1200
M 16	13.20	2.00	2	250	0.100	6030	211	1205

Parametri di taglio degli utensili con rivestimento TiCN

Frese a forare e filettare

2.0xd, smusso a 45°, Incool



GG(G)
Cast iron

Al
Aluminium

CuZn
Brass

Esempio: N° Ordine EH22300 .058 <small>Articolo Codice-ø</small>										TiCN	
										E22300	EH22300
Ø Code	d	P	l1	l2	d1 h6	d2	D1	Rk 6H		€	€
.058	M 4	0.70	48	9.0	6	3.3	3.20	1.560	2	404.00	431.00
.084	M 5	0.80	54	11.2	6	4.2	4.00	1.950	2	395.00	426.00
.088	M 6	1.00	62	13.9	8	5.0	4.75	2.315	2	384.00	429.00
.160	M 8	1.25	74	18.7	10	6.8	6.35	3.095	2	460.00	504.00
.174	M10	1.50	80	22.5	12	8.5	7.95	3.875	2	539.00	574.00
.240	M12	1.75	90	26.1	14	10.2	9.95	4.855	2	707.00	751.00
.246	M16	2.00	102	36.0	18	14.0	13.20	6.440	2	1027.00	1072.00

Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 3	2.30	0.50	3	80	0.0060	5.7	11070	47	200
M 4	3.00	0.70	3	80	0.0075	8.0	8490	48	190
M 5	4.00	0.80	3	80	0.0100	9.8	6365	38	190
M 6	4.80	1.00	3	80	0.0120	11.3	5305	38	190
M 8	6.40	1.25	3	80	0.0160	14.1	3980	38	190
M 10	7.95	1.50	4	80	0.0200	18.6	3205	52	255
M 12	9.95	1.75	4	80	0.0250	21.4	2560	44	255
M 16	12.80	2.00	4	80	0.0320	29.0	1990	51	255

Acciaio
1300 - 1500 N/mm²

M 3	2.30	0.50	3	50	0.0050	5.7	6920	25	105
M 4	3.00	0.70	3	50	0.0065	8.0	5305	26	105
M 5	4.00	0.80	3	50	0.0090	9.8	3980	21	105
M 6	4.80	1.00	3	50	0.0105	11.3	3315	21	105
M 8	6.40	1.25	3	50	0.0140	14.1	2485	21	105
M 10	7.95	1.50	4	50	0.0175	18.6	2000	29	140
M 12	9.95	1.75	4	50	0.0220	21.4	1600	24	140
M 16	12.80	2.00	4	50	0.0285	29.0	1245	28	140

Acciaio da utensile
temperato
48 - 52 HRC

M 3	2.30	0.50	3	30	0.0040	5.7	4150	12	50
M 4	3.00	0.70	3	30	0.0050	8.0	3185	13	50
M 5	4.00	0.80	3	30	0.0065	9.8	2385	9	45
M 6	4.80	1.00	3	30	0.0080	11.3	1990	10	50
M 8	6.40	1.25	3	30	0.0105	14.1	1490	9	45
M 10	7.95	1.50	4	30	0.0135	18.6	1200	13	65
M 12	9.95	1.75	4	30	0.0165	21.4	960	11	65
M 16	12.80	2.00	4	30	0.0215	29.0	745	13	65

Acciaio inossidabile
[Cr-Ni/1.4301]

M 3	2.30	0.50	3	50	0.0040	5.7	6920	20	85
M 4	3.00	0.70	3	50	0.0050	8.0	5305	20	80
M 5	4.00	0.80	3	50	0.0065	9.8	3980	16	80
M 6	4.80	1.00	3	50	0.0080	11.3	3315	16	80
M 8	6.40	1.25	3	50	0.0105	14.1	2485	16	80
M 10	7.95	1.50	4	50	0.0135	18.6	2000	23	110
M 12	9.95	1.75	4	50	0.0165	21.4	1600	18	105
M 16	12.80	2.00	4	50	0.0215	29.0	1245	21	105

Materiale

Ghisa
GG(G)

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 3	2.30	0.50	3	120	0.0060	5.7	16610	70	300
M 4	3.00	0.70	3	120	0.0075	8.0	12735	71	285
M 5	4.00	0.80	3	120	0.0100	9.8	9550	57	285
M 6	4.80	1.00	3	120	0.0120	11.3	7960	57	285
M 8	6.40	1.25	3	120	0.0160	14.1	5970	57	285
M 10	7.95	1.50	4	120	0.0200	18.6	4805	79	385
M 12	9.95	1.75	4	120	0.0250	21.4	3840	66	385
M 16	12.80	2.00	4	120	0.0320	29.0	2985	76	380

Alluminio malleabile
Si < 6%

M 3	2.30	0.50	3	150	0.0080	5.7	20760	117	500
M 4	3.00	0.70	3	150	0.0105	8.0	15915	125	500
M 5	4.00	0.80	3	150	0.0140	9.8	11935	100	500
M 6	4.80	1.00	3	150	0.0170	11.3	9945	101	505
M 8	6.40	1.25	3	150	0.0225	14.1	7460	101	505
M 10	7.95	1.50	4	150	0.0280	18.6	6005	138	675
M 12	9.95	1.75	4	150	0.0350	21.4	4800	114	670
M 16	12.80	2.00	4	150	0.0450	29.0	3730	134	670

Getti d'alluminio

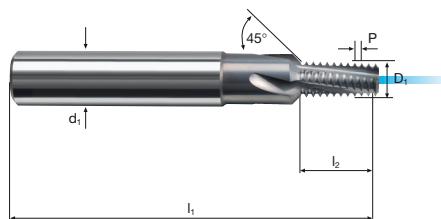
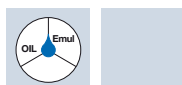
M 3	2.30	0.50	3	200	0.0080	5.7	27680	155	665
M 4	3.00	0.70	3	200	0.0105	8.0	21220	168	670
M 5	4.00	0.80	3	200	0.0140	9.8	15915	134	670
M 6	4.80	1.00	3	200	0.0170	11.3	13265	135	675
M 8	6.40	1.25	3	200	0.0225	14.1	9945	134	670
M 10	7.95	1.50	4	200	0.0280	18.6	8010	183	895
M 12	9.95	1.75	4	200	0.0350	21.4	6400	153	895
M 16	12.80	2.00	4	200	0.0450	29.0	4975	179	895

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

M 3	2.30	0.50	3	40	0.0040	5.7	5535	15	65
M 4	3.00	0.70	3	40	0.0050	8.0	4245	16	65
M 5	4.00	0.80	3	40	0.0065	9.8	3185	12	60
M 6	4.80	1.00	3	40	0.0080	11.3	2655	13	65
M 8	6.40	1.25	3	40	0.0105	14.1	1990	13	65
M 10	7.95	1.50	4	40	0.0135	18.6	1600	17	85
M 12	9.95	1.75	4	40	0.0165	21.4	1280	15	85
M 16	12.80	2.00	4	40	0.0215	29.0	995	17	85

Frese a filettare

1.5xd, smusso a 45°, Incool



HRC < 56	GG(G) Cast iron	Al Aluminium	Ti Titanium	Inox Stainless
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Esempio: N° Ordine EH24200 .044										TiCN	
										EH24200	
Ø Code	d	P	l1	l2	d1 h6	D1	Rk 6H		€		
.044*	M 3	0.50	48	5.3	6	2.30	1.125	3	234.00		
.058	M 4	0.70	48	7.4	6	3.00	1.465	3	223.00		
.084	M 5	0.80	54	9.2	6	4.00	1.960	3	223.00		
.088	M 6	1.00	62	10.5	8	4.80	2.350	3	245.00		
.160	M 8	1.25	74	13.1	10	6.40	3.138	3	294.00		
.174	M10	1.50	80	17.3	12	7.95	3.900	4	344.00		
.240	M12	1.75	90	20.1	14	9.95	4.887	4	488.00		
.246	M16	2.00	102	27.0	18	12.80	6.300	4	718.00		
* Senza adduzione interna del refrigerante											

Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 3	2.30	0.50	3	80	0.0055	7.2	11070	43	185
M 4	3.00	0.70	3	80	0.0070	9.4	8490	45	180
M 5	4.00	0.80	3	80	0.0090	11.4	6365	34	170
M 6	4.80	1.00	3	80	0.0110	14.3	5305	35	175
M 8	6.40	1.25	3	80	0.0145	19.1	3980	35	175
M 10	7.95	1.50	4	80	0.0180	23.1	3205	47	230
M 12	9.95	1.75	4	80	0.0225	26.7	2560	39	230
M 16	12.80	2.00	4	80	0.0290	37.0	1990	46	230

Acciaio
1300 - 1500 N/mm²

M 3	2.30	0.50	3	50	0.0045	7.2	6920	22	95
M 4	3.00	0.70	3	50	0.0060	9.4	5305	24	95
M 5	4.00	0.80	3	50	0.0080	11.4	3980	19	95
M 6	4.80	1.00	3	50	0.0095	14.3	3315	19	95
M 8	6.40	1.25	3	50	0.0125	19.1	2485	19	95
M 10	7.95	1.50	4	50	0.0160	23.1	2000	27	130
M 12	9.95	1.75	4	50	0.0200	26.7	1600	22	130
M 16	12.80	2.00	4	50	0.0255	37.0	1245	25	125

Acciaio da utensile
temperato
48 - 52 HRC

M 3	2.30	0.50	3	30	0.0035	7.2	4150	11	45
M 4	3.00	0.70	3	30	0.0045	9.4	3185	11	45
M 5	4.00	0.80	3	30	0.0060	11.4	2385	9	45
M 6	4.80	1.00	3	30	0.0070	14.3	1990	8	40
M 8	6.40	1.25	3	30	0.0095	19.1	1490	8	40
M 10	7.95	1.50	4	30	0.0120	23.1	1200	12	60
M 12	9.95	1.75	4	30	0.0150	26.7	960	10	60
M 16	12.80	2.00	4	30	0.0195	37.0	745	12	60

Acciaio inossidabile
[Cr-Ni/1.4301]

M 3	2.30	0.50	3	50	0.0035	7.2	6920	18	75
M 4	3.00	0.70	3	50	0.0045	9.4	5305	18	70
M 5	4.00	0.80	3	50	0.0060	11.4	3980	14	70
M 6	4.80	1.00	3	50	0.0070	14.3	3315	14	70
M 8	6.40	1.25	3	50	0.0095	19.1	2485	14	70
M 10	7.95	1.50	4	50	0.0120	23.1	2000	19	95
M 12	9.95	1.75	4	50	0.0150	26.7	1600	16	95
M 16	12.80	2.00	4	50	0.0195	37.0	1245	19	95

Materiale

Ghisa
GG(G)

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 3	2.30	0.50	3	120	0.0055	7.2	16610	64	275
M 4	3.00	0.70	3	120	0.0070	9.4	12735	66	265
M 5	4.00	0.80	3	120	0.0090	11.4	9550	52	260
M 6	4.80	1.00	3	120	0.0110	14.3	7960	53	265
M 8	6.40	1.25	3	120	0.0145	19.1	5970	52	260
M 10	7.95	1.50	4	120	0.0180	23.1	4805	71	345
M 12	9.95	1.75	4	120	0.0225	26.7	3840	59	345
M 16	12.80	2.00	4	120	0.0290	37.0	2985	69	345

Alluminio malleabile
Si < 6%

M 3	2.30	0.50	3	150	0.0070	7.2	20760	102	435
M 4	3.00	0.70	3	150	0.0095	9.4	15915	114	455
M 5	4.00	0.80	3	150	0.0125	11.4	11935	90	450
M 6	4.80	1.00	3	150	0.0155	14.3	9945	92	460
M 8	6.40	1.25	3	150	0.0205	19.1	7460	92	460
M 10	7.95	1.50	4	150	0.0250	23.1	6005	123	600
M 12	9.95	1.75	4	150	0.0315	26.7	4800	103	605
M 16	12.80	2.00	4	150	0.0405	37.0	3730	121	605

Getti d'alluminio

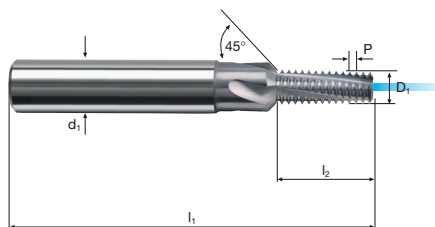
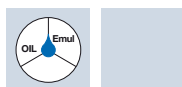
M 3	2.30	0.50	3	200	0.0070	7.2	27680	135	580
M 4	3.00	0.70	3	200	0.0095	9.4	21220	151	605
M 5	4.00	0.80	3	200	0.0125	11.4	15915	119	595
M 6	4.80	1.00	3	200	0.0155	14.3	13265	123	615
M 8	6.40	1.25	3	200	0.0205	19.1	9945	122	610
M 10	7.95	1.50	4	200	0.0250	23.1	8010	164	800
M 12	9.95	1.75	4	200	0.0315	26.7	6400	138	805
M 16	12.80	2.00	4	200	0.0405	37.0	4975	161	805

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

M 3	2.30	0.50	3	40	0.0035	7.2	5535	14	60
M 4	3.00	0.70	3	40	0.0045	9.4	4245	14	55
M 5	4.00	0.80	3	40	0.0060	11.4	3185	11	55
M 6	4.80	1.00	3	40	0.0070	14.3	2655	11	55
M 8	6.40	1.25	3	40	0.0095	19.1	1990	11	55
M 10	7.95	1.50	4	40	0.0120	23.1	1600	15	75
M 12	9.95	1.75	4	40	0.0150	26.7	1280	13	75
M 16	12.80	2.00	4	40	0.0195	37.0	995	16	80

Frese a filettare

2.0xd, smusso a 45°, Incool



HRC < 52	GG(G) Cast iron	Al Aluminium	Ti Titanium	Inox Stainless
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Esempio: N° Ordine EH24300 .044										TiCN	
										EH24300	
Ø Code	d	P	l1	l2	d1 h6	D1	Rk 6H		€		
.044*	M 3	0.50	48	6.8	6	2.30	1.125	3	234.00		
.058	M 4	0.70	48	8.8	6	3.00	1.465	3	223.00		
.084	M 5	0.80	54	10.8	6	4.00	1.960	3	223.00		
.088	M 6	1.00	62	13.5	8	4.80	2.350	3	245.00		
.160	M 8	1.25	74	18.1	10	6.40	3.138	3	294.00		
.174	M10	1.50	80	21.8	12	7.95	3.900	4	344.00		
.240	M12	1.75	90	25.4	14	9.95	4.887	4	488.00		
.246	M16	2.00	102	35.0	18	12.80	6.300	4	718.00		
* Senza adduzione interna del refrigerante											

Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

MF	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 4	3.00	0.50	3	80	0.0075	7.9	8490	48	190
M 5	4.00	0.50	3	80	0.0100	9.4	6365	38	190
M 6	4.80	0.50	3	80	0.0120	10.6	5305	38	190
M 6	4.80	0.75	3	80	0.0120	10.8	5305	38	190
M 8	6.40	0.75	3	80	0.0160	14.1	3980	38	190
M 8	6.40	1.00	3	80	0.0160	14.5	3980	38	190
M 10	7.95	1.00	4	80	0.0200	17.8	3205	52	255
M 10	7.95	1.25	4	80	0.0200	18.2	3205	52	255
M 12	9.95	1.00	4	80	0.0250	20.8	2560	44	255

Acciaio
850 - 1100 N/mm²

M 12	9.95	1.50	4	80	0.0250	21.6	2560	44	255
M 14	11.20	1.50	4	80	0.0280	25.1	2275	51	255
M 16	12.80	1.50	4	80	0.0320	28.3	1990	51	255

Acciaio
1300 - 1500 N/mm²

M 4	3.00	0.50	3	50	0.0065	7.9	5305	26	105
M 5	4.00	0.50	3	50	0.0090	9.4	3980	21	105
M 6	4.80	0.50	3	50	0.0105	10.6	3315	21	105
M 6	4.80	0.75	3	50	0.0105	10.8	3315	21	105
M 8	6.40	0.75	3	50	0.0140	14.1	2485	21	105
M 8	6.40	1.00	3	50	0.0140	14.5	2485	21	105
M 10	7.95	1.00	4	50	0.0175	17.8	2000	29	140
M 10	7.95	1.25	4	50	0.0175	18.2	2000	29	140
M 12	9.95	1.00	4	50	0.0220	20.8	1600	24	140

Acciaio
1300 - 1500 N/mm²

M 12	9.95	1.50	4	50	0.0220	21.6	1600	24	140
M 14	11.20	1.50	4	50	0.0250	25.1	1420	28	140
M 16	12.80	1.50	4	50	0.0285	28.3	1245	28	140

Materiale

Alluminio malleabile
Si < 6%

MF	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 4	3.00	0.50	3	150	0.0105	7.9	15915	125	500
M 5	4.00	0.50	3	150	0.0140	9.4	11935	100	500
M 6	4.80	0.50	3	150	0.0170	10.6	9945	101	505
M 6	4.80	0.75	3	150	0.0170	10.8	9945	101	505
M 8	6.40	0.75	3	150	0.0225	14.1	7460	101	505
M 8	6.40	1.00	3	150	0.0225	14.5	7460	101	505
M 10	7.95	1.00	4	150	0.0280	17.8	6005	138	675
M 10	7.95	1.25	4	150	0.0280	18.2	6005	138	675
M 12	9.95	1.00	4	150	0.0350	20.8	4800	114	670

Alluminio malleabile
Si < 6%

M 12	9.95	1.50	4	150	0.0350	21.6	4800	114	670
M 14	11.20	1.50	4	150	0.0395	25.1	4265	135	675
M 16	12.80	1.50	4	150	0.0450	28.3	3730	134	670

Ghisa
GG(G)

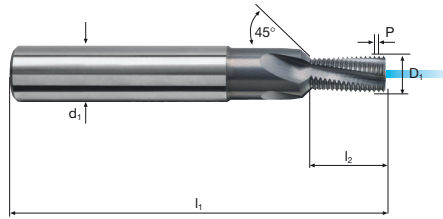
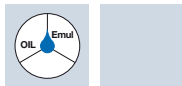
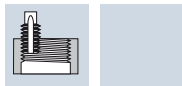
M 4	3.00	0.50	3	120	0.0075	7.9	12735	71	285
M 5	4.00	0.50	3	120	0.0100	9.4	9550	57	285
M 6	4.80	0.50	3	120	0.0120	10.6	7960	57	285
M 6	4.80	0.75	3	120	0.0120	10.8	7960	57	285
M 8	6.40	0.75	3	120	0.0160	14.1	5970	57	285
M 8	6.40	1.00	3	120	0.0160	14.5	5970	57	285
M 10	7.95	1.00	4	120	0.0200	17.8	4805	79	385
M 10	7.95	1.25	4	120	0.0200	18.2	4805	79	385
M 12	9.95	1.00	4	120	0.0250	20.8	3840	66	385

Ghisa
GG(G)

M 12	9.95	1.50	4	120	0.0250	21.6	3840	66	385
M 14	11.20	1.50	4	120	0.0280	25.1	3410	76	380
M 16	12.80	1.50	4	120	0.0320	28.3	2985	76	380

Frese a filettare

1.5xd, smusso a 45°, Incool



HRC
< 52

GG(G)
Cast iron

Al
Aluminium

Ti
Titanium

Inox
Stainless

Esempio: N° Ordine										TiCN	
Articolo EH24220 Codice-ø .046										EH24220	
Ø Code	d	P	l1	l2	d1 h6	D1	Rk 6H		€		
.046	M 4	0.50	48	7.3	6	3.00	1.475	3	305.00		
.048	M 5	0.50	54	8.8	6	4.00	1.975	3	305.00		
.050	M 6	0.50	62	9.8	8	4.80	2.375	3	361.00		
.064	M 6	0.75	62	10.1	8	4.80	2.363	3	290.00		
.066	M 8	0.75	74	13.1	10	6.40	3.163	3	319.00		
.090	M 8	1.00	74	13.5	10	6.40	3.150	3	325.00		
.092	M10	1.00	80	16.5	12	7.95	3.925	4	387.00		
.162	M10	1.25	80	16.9	12	7.95	3.913	4	383.00		
.094	M12	1.00	90	19.5	14	9.95	4.925	4	529.00		
.176	M12	1.50	90	20.3	14	9.95	4.900	4	529.00		
.178	M14	1.50	102	23.3	16	11.20	5.525	4	575.00		
.180	M16	1.50	102	26.3	18	12.80	6.325	4	752.00		



Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

MF	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 4	3.00	0.50	3	80	0.0070	9.4	8490	45	180
M 5	4.00	0.50	3	80	0.0090	11.4	6365	34	170
M 6	4.80	0.50	3	80	0.0110	13.6	5305	35	175
M 6	4.80	0.75	3	80	0.0110	13.9	5305	35	175
M 8	6.40	0.75	3	80	0.0145	17.9	3980	35	175
M 8	6.40	1.00	3	80	0.0145	18.5	3980	35	175
M 10	7.95	1.00	4	80	0.0180	22.8	3205	47	230
M 10	7.95	1.25	4	80	0.0180	23.2	3205	47	230
M 12	9.95	1.00	4	80	0.0225	26.8	2560	39	230

Acciaio
850 - 1100 N/mm²

M 12	9.95	1.50	4	80	0.0225	27.6	2560	39	230
M 14	11.20	1.50	4	80	0.0250	32.6	2275	46	230
M 16	12.80	1.50	4	80	0.0290	35.8	1990	46	230

Acciaio
1300 - 1500 N/mm²

M 4	3.00	0.50	3	50	0.0060	9.4	5305	24	95
M 5	4.00	0.50	3	50	0.0080	11.4	3980	19	95
M 6	4.80	0.50	3	50	0.0095	13.6	3315	19	95
M 6	4.80	0.75	3	50	0.0095	13.9	3315	19	95
M 8	6.40	0.75	3	50	0.0125	17.9	2485	19	95
M 8	6.40	1.00	3	50	0.0125	18.5	2485	19	95
M 10	7.95	1.00	4	50	0.0160	22.8	2000	27	130
M 10	7.95	1.25	4	50	0.0160	23.2	2000	27	130
M 12	9.95	1.00	4	50	0.0200	26.8	1600	22	130

Acciaio
1300 - 1500 N/mm²

M 12	9.95	1.50	4	50	0.0200	27.6	1600	22	130
M 14	11.20	1.50	4	50	0.0225	32.6	1420	26	130
M 16	12.80	1.50	4	50	0.0255	35.8	1245	25	125

Materiale

Alluminio malleabile
Si < 6%

MF	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 4	3.00	0.50	3	150	0.0095	9.4	15915	114	455
M 5	4.00	0.50	3	150	0.0125	11.4	11935	90	450
M 6	4.80	0.50	3	150	0.0155	13.6	9945	92	460
M 6	4.80	0.75	3	150	0.0155	13.9	9945	92	460
M 8	6.40	0.75	3	150	0.0205	17.9	7460	92	460
M 8	6.40	1.00	3	150	0.0205	18.5	7460	92	460
M 10	7.95	1.00	4	150	0.0250	22.8	6005	123	600
M 10	7.95	1.25	4	150	0.0250	23.2	6005	123	600
M 12	9.95	1.00	4	150	0.0315	26.8	4800	103	605

Alluminio malleabile
Si < 6%

M 12	9.95	1.50	4	150	0.0315	27.6	4800	103	605
M 14	11.20	1.50	4	150	0.0355	32.6	4265	121	605
M 16	12.80	1.50	4	150	0.0405	35.8	3730	121	605

Ghisa
GG(G)

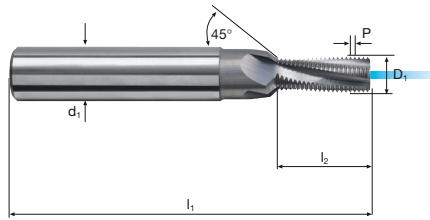
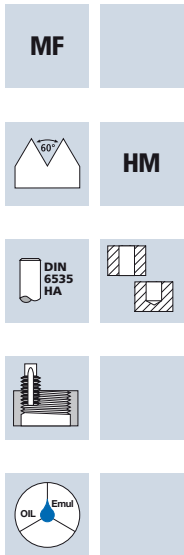
M 4	3.00	0.50	3	120	0.0070	9.4	12735	66	265
M 5	4.00	0.50	3	120	0.0090	11.4	9550	52	260
M 6	4.80	0.50	3	120	0.0110	13.6	7960	53	265
M 6	4.80	0.75	3	120	0.0110	13.9	7960	53	265
M 8	6.40	0.75	3	120	0.0145	17.9	5970	52	260
M 8	6.40	1.00	3	120	0.0145	18.5	5970	52	260
M 10	7.95	1.00	4	120	0.0180	22.8	4805	71	345
M 10	7.95	1.25	4	120	0.0180	23.2	4805	71	345
M 12	9.95	1.00	4	120	0.0225	26.8	3840	59	345

Ghisa
GG(G)

M 12	9.95	1.50	4	120	0.0225	27.6	3840	59	345
M 14	11.20	1.50	4	120	0.0250	32.6	3410	68	340
M 16	12.80	1.50	4	120	0.0290	35.8	2985	69	345

Frese a filettare

2.0xd, smusso a 45°, Incool



HRC < 48	GG(G) Cast iron	Al Aluminium	Ti Titanium	Inox Stainless
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Esempio: N° Ordine EH24320 .046										TiCN	
										EH24320	
Ø Code	d	P	l1	l2	d1 h6	D1	Rk 6H		€		
.046	M 4	0.50	48	8.8	6	3.00	1.475	3	305.00		
.048	M 5	0.50	54	10.8	6	4.00	1.975	3	305.00		
.050	M 6	0.50	62	12.8	8	4.80	2.375	3	361.00		
.064	M 6	0.75	62	13.1	8	4.80	2.363	3	290.00		
.066	M 8	0.75	74	16.9	10	6.40	3.163	3	319.00		
.090	M 8	1.00	74	17.5	10	6.40	3.150	3	325.00		
.092	M10	1.00	80	21.5	12	7.95	3.925	4	378.00		
.162	M10	1.25	80	21.9	12	7.95	3.913	4	370.00		
.094	M12	1.00	90	25.5	14	9.95	4.925	4	529.00		
.176	M12	1.50	90	26.3	14	9.95	4.900	4	544.00		
.178	M14	1.50	102	30.8	16	11.20	5.525	4	575.00		
.180	M16	1.50	102	33.8	18	12.80	6.325	4	719.00		

Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

Acciaio
1300 - 1500 N/mm²

Acciaio da utensile
temperato
48 - 52 HRC

Acciaio inossidabile
[Cr-Ni/1.4301]

Materiale

Ghisa
GG(G)

Alluminio malleabile
Si < 6%

Getti d'alluminio

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]


G	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
G 1/8	7.95	28	4	80	0.0180	22.4	3205	42	230
G 1/4	10.50	19	4	80	0.0240	30.4	2425	47	235
G 3/8	13.60	19	4	80	0.0310	37.3	1870	42	230
G 1/8	7.95	28	4	50	0.0160	22.4	2000	24	130
G 1/4	10.50	19	4	50	0.0210	30.4	1515	25	125
G 3/8	13.60	19	4	50	0.0275	37.3	1170	24	130
G 1/8	7.95	28	4	30	0.0120	22.4	1200	11	60
G 1/4	10.50	19	4	30	0.0160	30.4	910	12	60
G 3/8	13.60	19	4	30	0.0205	37.3	700	10	55
G 1/8	7.95	28	4	50	0.0120	22.4	2000	17	95
G 1/4	10.50	19	4	50	0.0160	30.4	1515	19	95
G 3/8	13.60	19	4	50	0.0205	37.3	1170	17	95


G	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
G 1/8	7.95	28	4	120	0.0180	22.4	4805	63	345
G 1/4	10.50	19	4	120	0.0240	30.4	3640	71	350
G 3/8	13.60	19	4	120	0.0310	37.3	2810	64	350
G 1/8	7.95	28	4	150	0.0250	22.4	6005	110	600
G 1/4	10.50	19	4	150	0.0335	30.4	4545	123	610
G 3/8	13.60	19	4	150	0.0430	37.3	3510	111	605
G 1/8	7.95	28	4	200	0.0250	22.4	8010	146	800
G 1/4	10.50	19	4	200	0.0335	30.4	6065	165	815
G 3/8	13.60	19	4	200	0.0430	37.3	4680	148	805
G 1/8	7.95	28	4	40	0.0120	22.4	1600	14	75
G 1/4	10.50	19	4	40	0.0160	30.4	1215	16	80
G 3/8	13.60	19	4	40	0.0205	37.3	935	14	75


Frese a filettare

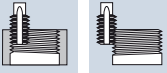
2.0xd, smusso a 45°, Incool


G



HM

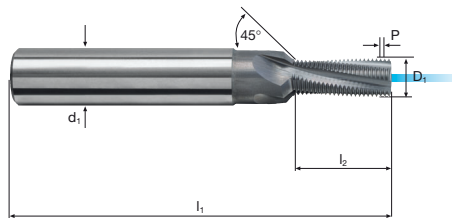

DIN 6535 HA












HRC
< 52

GG(G)
Cast iron

Al
Aluminium

Ti
Titanium

Inox
Stainless

									TiCN	
Esempio: Articolo Codice-ø N° Ordine EH24340 .551									EH24340	
Ø Code	d	P(TPI)	l1	l2	d1 h6	D1	Rk		€	
.551	G 1/8	28	80	21.3	12	7.95	3.930	4	382.00	
.552	G 1/4	19	90	28.7	14	9.95	5.183	4	550.00	
.553	G 3/8	19	102	35.4	18	13.60	6.733	4	782.00	



Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

UNC	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
1/4	4.80	20	3	80	0.0110	15.5	5305	43	175
5/16	5.95	18	3	80	0.0135	18.8	4280	44	175
3/8	7.10	16	4	80	0.0160	22.9	3585	59	230
7/16	7.95	14	4	80	0.0180	26.4	3205	65	230
1/2	9.95	13	4	80	0.0225	30.0	2560	50	230

Acciaio
1300 - 1500 N/mm²

1/4	4.80	20	3	50	0.0095	15.5	3315	23	95
5/16	5.95	18	3	50	0.0120	18.8	2675	24	95
3/8	7.10	16	4	50	0.0145	22.9	2240	33	130
7/16	7.95	14	4	50	0.0160	26.4	2000	37	130
1/2	9.95	13	4	50	0.0200	30.0	1600	28	130

Acciaio da utensile
temperato
48 - 52 HRC

1/4	4.80	20	3	30	0.0075	15.5	1990	11	45
5/16	5.95	18	3	30	0.0090	18.8	1605	11	45
3/8	7.10	16	4	30	0.0110	22.9	1345	15	60
7/16	7.95	14	4	30	0.0120	26.4	1200	17	60
1/2	9.95	13	4	30	0.0150	30.0	960	13	60

Acciaio inossidabile
[Cr-Ni/1.4301]

1/4	4.80	20	3	50	0.0075	15.5	3315	18	75
5/16	5.95	18	3	50	0.0090	18.8	2675	18	70
3/8	7.10	16	4	50	0.0110	22.9	2240	25	100
7/16	7.95	14	4	50	0.0120	26.4	2000	27	95
1/2	9.95	13	4	50	0.0150	30.0	1600	21	95

Materiale

Ghisa
GG(G)

UNC	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
1/4	4.80	20	3	120	0.0110	15.5	7960	65	265
5/16	5.95	18	3	120	0.0135	18.8	6420	65	260
3/8	7.10	16	4	120	0.0160	22.9	5380	88	345
7/16	7.95	14	4	120	0.0180	26.4	4805	98	345
1/2	9.95	13	4	120	0.0225	30.0	3840	75	345

Alluminio malleabile
Si < 6%

1/4	4.80	20	3	150	0.0150	15.5	9945	110	450
5/16	5.95	18	3	150	0.0190	18.8	8025	114	455
3/8	7.10	16	4	150	0.0225	22.9	6725	154	605
7/16	7.95	14	4	150	0.0250	26.4	6005	171	600
1/2	9.95	13	4	150	0.0315	30.0	4800	131	605

Getti d'alluminio









1/4	4.80	20	3	200	0.0150	15.5	13265	145	595
5/16	5.95	18	3	200	0.0190	18.8	10700	153	610
3/8	7.10	16	4	200	0.0225	22.9	8965	205	805
7/16	7.95	14	4	200	0.0250	26.4	8010	228	800
1/2	9.95	13	4	200	0.0315	30.0	6400	174	805

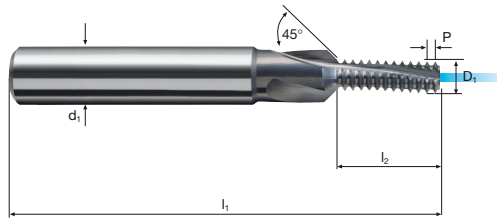
Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

1/4	4.80	20	3	40	0.0075	15.5	2655	15	60
5/16	5.95	18	3	40	0.0090	18.8	2140	15	60
3/8	7.10	16	4	40	0.0110	22.9	1795	20	80
7/16	7.95	14	4	40	0.0120	26.4	1600	21	75
1/2	9.95	13	4	40	0.0150	30.0	1280	16	75


Frese a filettare

2.0xd, smusso a 45°, Incool

- UNC** 
-  **HM**
-  
-  
-  



- HRC**
< 52
- GG(G)**
Cast iron
- Al**
Aluminium
- Ti**
Titanium
- Inox**
Stainless

										TiCN	
Esempio: N° Ordine Articolo EH24360 Codice-ø .709										EH24360	
Ø Code	d	P(TPI)	l1	l2	d1 h6	D1	Rk 2B		€		
.709	1/4	20	62	14.6	8	4.80	2.337	3	274.00		
.710	5/16	18	74	17.6	10	5.95	2.904	3	319.00		
.711	3/8	16	80	21.4	12	7.10	3.471	4	372.00		
.712	7/16	14	80	24.5	12	7.95	3.884	4	372.00		
.713	1/2	13	90	28.3	14	9.95	4.877	4	565.00		

II

Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

UNF	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
1/4	4.80	28	3	80	0.0110	15.0	5305	43	175
5/16	5.95	24	3	80	0.0135	18.7	4280	44	175
3/8	7.95	24	4	80	0.0180	21.6	3205	38	230
7/16	7.95	20	4	80	0.0180	26.7	3205	65	230
1/2	9.95	20	4	80	0.0225	29.0	2560	50	230

Acciaio
1300 - 1500 N/mm²

1/4	4.80	28	3	50	0.0095	15.0	3315	23	95
5/16	5.95	24	3	50	0.0120	18.7	2675	24	95
3/8	7.95	24	4	50	0.0160	21.6	2000	21	130
7/16	7.95	20	4	50	0.0160	26.7	2000	37	130
1/2	9.95	20	4	50	0.0200	29.0	1600	28	130

Acciaio da utensile
temperato
48 - 52 HRC

1/4	4.80	28	3	30	0.0075	15.0	1990	11	45
5/16	5.95	24	3	30	0.0090	18.7	1605	11	45
3/8	7.95	24	4	30	0.0120	21.6	1200	10	60
7/16	7.95	20	4	30	0.0120	26.7	1200	17	60
1/2	9.95	20	4	30	0.0150	29.0	960	13	60

Acciaio inossidabile
[Cr-Ni/1.4301]

1/4	4.80	28	3	50	0.0075	15.0	3315	18	75
5/16	5.95	24	3	50	0.0090	18.7	2675	18	70
3/8	7.95	24	4	50	0.0120	21.6	2000	16	95
7/16	7.95	20	4	50	0.0120	26.7	2000	27	95
1/2	9.95	20	4	50	0.0150	29.0	1600	21	95

Materiale

Ghisa
GG(G)

UNF	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	L _K [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
1/4	4.80	28	3	120	0.0110	15.0	7960	65	265
5/16	5.95	24	3	120	0.0135	18.7	6420	65	260
3/8	7.95	24	4	120	0.0180	21.6	4805	57	345
7/16	7.95	20	4	120	0.0180	26.7	4805	98	345
1/2	9.95	20	4	120	0.0225	29.0	3840	75	345

Alluminio malleabile
Si < 6%

1/4	4.80	28	3	150	0.0150	15.0	9945	110	450
5/16	5.95	24	3	150	0.0190	18.7	8025	114	455
3/8	7.95	24	4	150	0.0250	21.6	6005	99	600
7/16	7.95	20	4	150	0.0250	26.7	6005	171	600
1/2	9.95	20	4	150	0.0315	29.0	4800	131	605

Getti d'alluminio

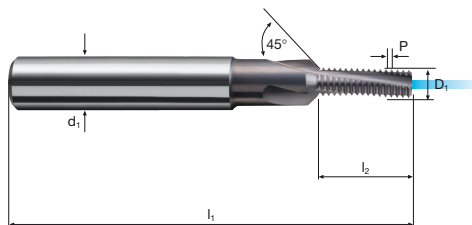
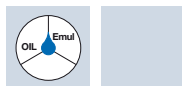
1/4	4.80	28	3	200	0.0150	15.0	13265	145	595
5/16	5.95	24	3	200	0.0190	18.7	10700	153	610
3/8	7.95	24	4	200	0.0250	21.6	8010	132	800
7/16	7.95	20	4	200	0.0250	26.7	8010	228	800
1/2	9.95	20	4	200	0.0315	29.0	6400	174	805

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

1/4	4.80	28	3	40	0.0075	15.0	2655	15	60
5/16	5.95	24	3	40	0.0090	18.7	2140	15	60
3/8	7.95	24	4	40	0.0120	21.6	1600	12	75
7/16	7.95	20	4	40	0.0120	26.7	1600	21	75
1/2	9.95	20	4	40	0.0150	29.0	1280	16	75

Frese a filettare

2.0xd, smusso a 45°, Incool



HRC < 52	GG(G) Cast iron	Al Aluminium	Ti Titanium	Inox Stainless
--------------------	---------------------------	------------------------	-----------------------	--------------------------

Esempio: N° Ordine									TiCN	
Articolo Codice-ø									EH24370	
Ø Code	d	P(TPI)	l1	l2	d1 h6	D1	Rk 2B		€	
.760	1/4	28	62	14.1	8	4.80	2.355	3	313.00	
.761	5/16	24	74	17.5	10	5.95	2.922	3	356.00	
.762	3/8	24	80	20.6	12	7.95	3.922	4	408.00	
.763	7/16	20	80	24.8	12	7.95	3.912	4	408.00	
.764	1/2	20	90	27.3	14	9.95	4.911	4	554.00	

Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 1.6	1.00	0.35	3	30	0.0015	9550	17	45
M 2	1.30	0.40	3	30	0.0020	7345	16	45
M 2.5	1.50	0.45	3	30	0.0025	6365	20	50
M 3	2.10	0.50	3	30	0.0035	4545	15	50
M 4	2.60	0.70	3	30	0.0065	3675	25	70
M 5	3.60	0.80	3	30	0.0090	2655	20	70
M 6	4.00	1.00	3	30	0.0100	2385	23	70
M 8	5.00	1.25	3	30	0.0125	1910	26	70
M 10	5.90	1.50	5	30	0.0150	1620	49	120

Acciaio
850 - 1100 N/mm²

M 12	7.90	1.75	5	30	0.0200	1210	41	120
M 16	9.90	2.00	5	30	0.0250	965	46	120

Acciaio
1100 - 1300 N/mm²

M 1.6	1.00	0.35	3	20	0.0015	6365	11	30
M 2	1.30	0.40	3	20	0.0020	4895	11	30
M 2.5	1.50	0.45	3	20	0.0025	4245	12	30
M 3	2.10	0.50	3	20	0.0035	3030	9	30
M 4	2.60	0.70	3	20	0.0065	2450	18	50
M 5	3.60	0.80	3	20	0.0090	1770	14	50
M 6	4.00	1.00	3	20	0.0100	1590	17	50
M 8	5.00	1.25	3	20	0.0125	1275	19	50
M 10	5.90	1.50	5	20	0.0150	1080	33	80

Acciaio
1100 - 1300 N/mm²

M 12	7.90	1.75	5	20	0.0200	805	27	80
M 16	9.90	2.00	5	20	0.0250	645	31	80

Materiale

Alluminio malleabile
Si < 6%

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc} [mm/min]	v _f [mm/min]
M 1.6	1.00	0.35	3	60	0.0015	19100	32	85
M 2	1.30	0.40	3	60	0.0020	14690	32	90
M 2.5	1.50	0.45	3	60	0.0025	12735	38	95
M 3	2.10	0.50	3	60	0.0035	9095	29	95
M 4	2.60	0.70	3	60	0.0065	7345	51	145
M 5	3.60	0.80	3	60	0.0090	5305	41	145
M 6	4.00	1.00	3	60	0.0100	4775	48	145
M 8	5.00	1.25	3	60	0.0125	3820	54	145
M 10	5.90	1.50	5	60	0.0150	3235	100	245

Alluminio malleabile
Si < 6%

M 12	7.90	1.75	5	60	0.0200	2420	82	240
M 16	9.90	2.00	5	60	0.0250	1930	92	240

Ghisa
GG(G)

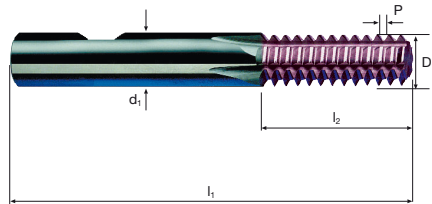
M 1.6	1.00	0.35	3	50	0.0015	15915	26	70
M 2	1.30	0.40	3	50	0.0020	12245	26	75
M 2.5	1.50	0.45	3	50	0.0025	10610	32	80
M 3	2.10	0.50	3	50	0.0035	7580	24	80
M 4	2.60	0.70	3	50	0.0065	6120	42	120
M 5	3.60	0.80	3	50	0.0090	4420	34	120
M 6	4.00	1.00	3	50	0.0100	3980	40	120
M 8	5.00	1.25	3	50	0.0125	3185	45	120
M 10	5.90	1.50	5	50	0.0150	2700	84	205

Ghisa
GG(G)

M 12	7.90	1.75	5	50	0.0200	2015	68	200
M 16	9.90	2.00	5	50	0.0250	1610	76	200

Frese a filettare

1.5xd



Rm
< 1500 N/mm²

GG(G)
Cast iron

Al
Aluminium

Inox
Stainless

Ti
Titanium

Esempio: N° Ordine										UNICUT-4X	
Articolo EU2010 Codice-ø .022										EU2010	
Ø Code	d	P	l ₁	l ₂	d ₁ h6	D ₁	R _k 6H		€		
.022*	M 1.6	0.35	38	2.4	3	1.0	0.483	3	117.00		
.034*	M 2	0.40	38	3.2	3	1.3	0.630	3	117.00		
.040*	M 2.5	0.45	38	3.6	3	1.5	0.728	3	117.00		
.044*	M 3	0.50	38	4.5	3	2.1	1.025	3	117.00		
.058*	M 4	0.70	38	6.3	3	2.6	1.265	3	117.00		
.084*	M 5	0.80	42	8.0	4	3.6	1.760	3	131.00		
.088	M 6	1.00	57	9.0	6	4.0	1.950	3	201.00		
.160	M 8	1.25	57	12.5	6	5.0	2.438	3	201.00		
.174	M10	1.50	57	15.0	6	5.9	2.875	5	201.00		
.240	M12	1.75	63	19.2	8	7.9	3.863	5	248.00		
.246	M16	2.00	72	24.0	10	9.9	4.850	5	324.00		
* solo senza weldon											

Applicazione



Materiale

Acciaio
< 850 N/mm²

G	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _f [mm/min]
							dD1 3/2	dD1 2/1	dD1 3/1	dD1 4/1	dD1 > 5/1	
G1/16-G1/8	5.90	28	5	30	0.0150	1620	40	60	80	90	96	120
G1/4 -G3/8	7.90	19	5	30	0.0200	1210	40	60	80	90	96	120
G1/2 -G7/8	11.90	14	5	30	0.0300	800	40	60	80	90	96	120
G1 -G3	15.90	11	5	30	0.0400	600	40	60	80	90	96	120

Acciaio
850 - 1100 N/mm²

G1/16-G1/8	5.90	28	5	20	0.0150	1080	27	40	53	60	64	80
G1/4 -G3/8	7.90	19	5	20	0.0200	805	27	40	53	60	64	80
G1/2 -G7/8	11.90	14	5	20	0.0300	535	27	40	53	60	64	80
G1 -G3	15.90	11	5	20	0.0400	400	27	40	53	60	64	80

Acciaio inossidabile
[Cr-Ni/1.4301]

G1/16-G1/8	5.90	28	5	25	0.0100	1350	23	35	47	53	56	70
G1/4 -G3/8	7.90	19	5	25	0.0130	1005	22	33	43	49	52	65
G1/2 -G7/8	11.90	14	5	25	0.0200	670	22	33	43	49	52	65
G1 -G3	15.90	11	5	25	0.0265	500	22	33	43	49	52	65

Ghisa
GG(G)

G1/16-G1/8	5.90	28	5	50	0.0150	2700	68	103	137	154	164	205
G1/4 -G3/8	7.90	19	5	50	0.0200	2015	67	100	133	150	160	200
G1/2 -G7/8	11.90	14	5	50	0.0300	1335	67	100	133	150	160	200
G1 -G3	15.90	11	5	50	0.0400	1000	67	100	133	150	160	200

Materiale

Alluminio malleabile
Si < 6%

G	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _f [mm/min]
							dD1 3/2	dD1 2/1	dD1 3/1	dD1 4/1	dD1 > 5/1	
G1/16-G1/8	5.90	28	5	60	0.0150	3235	82	123	163	184	196	245
G1/4 -G3/8	7.90	19	5	60	0.0200	2420	80	120	160	180	192	240
G1/2 -G7/8	11.90	14	5	60	0.0300	1605	80	120	160	180	192	240
G1 -G3	15.90	11	5	60	0.0400	1200	80	120	160	180	192	240

Getti d'alluminio

G1/16-G1/8	5.90	28	5	80	0.0150	4315	108	163	217	244	260	325
G1/4 -G3/8	7.90	19	5	80	0.0200	3225	108	163	217	244	260	325
G1/2 -G7/8	11.90	14	5	80	0.0300	2140	107	160	213	240	256	320
G1 -G3	15.90	11	5	80	0.0400	1600	107	160	213	240	256	320

Rame non legato

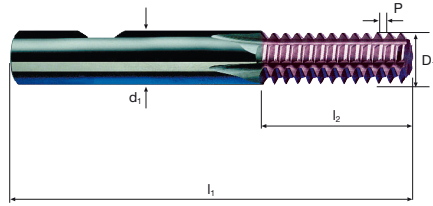
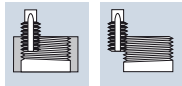
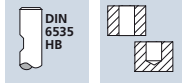
G1/16-G1/8	5.90	28	5	70	0.0150	3775	95	143	190	214	228	285
G1/4 -G3/8	7.90	19	5	70	0.0200	2820	93	140	187	210	224	280
G1/2 -G7/8	11.90	14	5	70	0.0300	1870	93	140	187	210	224	280
G1 -G3	15.90	11	5	70	0.0400	1400	93	140	187	210	224	280

Materiali termoplastici

G1/16-G1/8	5.90	28	5	100	0.0150	5395	135	203	270	304	324	405
G1/4 -G3/8	7.90	19	5	100	0.0200	4030	135	203	270	304	324	405
G1/2 -G7/8	11.90	14	5	100	0.0300	2675	133	200	267	300	320	400
G1 -G3	15.90	11	5	100	0.0400	2000	133	200	267	300	320	400

Frese a filettare

1.5xd



Rm
< 1300 N/mm²

GG(G)
Cast iron

Al
Aluminium

Inox
Stainless

Ti
Titanium

Esempio: N° Ordine									UNICUT-4X	
Articolo EU2060 Codice-Ø .550									EU2060	
Ø Code	d	P(TPI)	l1	l2	d1 h6	D1		€		
.550	G 1/16 - G1/8	28	57	14.5	6	5.9	5	201.00		
.552	G 1/4 - G3/8	19	63	18.7	8	7.9	5	248.00		
.554	G 1/2 - G7/8	14	83	29.0	12	11.9	5	399.00		
.558	G1" - G3"	11	92	34.6	16	15.9	6	588.00		



Applicazione



Materiale

Acciaio
< 850 N/mm²

Acciaio
< 850 N/mm²

Acciaio
850 - 1100 N/mm²

Acciaio
850 - 1100 N/mm²

Materiale

Alluminio malleabile
Si < 6%

Alluminio malleabile
Si < 6%

Ghisa
GG(G)

Ghisa
GG(G)

UNC	UNF	D1	P	z	v _c	f _z	n	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _f
		[mm]	(TPI)		[m/min]	[mm]	[min ⁻¹]	dD1 3/2	dD1 2/1	dD1 3/1	dD1 4/1	dD1 >5/1	[mm/min]
2	3	1.50	56	3	30	0.0025	6365	17	25	33	38	40	50
3	4	1.50	48	3	30	0.0025	6365	17	25	33	38	40	50
4-5	6	2.10	40	3	30	0.0035	4545	17	25	33	38	40	50
8	10	3.00	32	3	30	0.0050	3185	17	25	33	38	40	50
12	5/16-3/8	4.00	24	3	30	0.0065	2385	15	23	30	34	36	45
1/4	7/16-1/2	4.00	20	3	30	0.0065	2385	15	23	30	34	36	45
5/16	9/16-5/8	5.00	18	3	30	0.0085	1910	17	25	33	38	40	50
3/8	3/4	5.90	16	3	30	0.0100	1620	17	25	33	38	40	50
7/16	7/8	7.90	14	3	30	0.0130	1210	15	23	30	34	36	45

9/16	1- 1 1/2	9.90	12	3	30	0.0165	965	17	25	33	38	40	50
5/8		9.90	11	3	30	0.0165	965	17	25	33	38	40	50
3/4		11.90	10	5	30	0.0200	800	27	40	53	60	64	80
7/8		15.90	9	5	30	0.0265	600	27	40	53	60	64	80
1		15.90	8	5	30	0.0265	600	27	40	53	60	64	80
1 1/8-1 1/4		15.90	7	5	30	0.0265	600	27	40	53	60	64	80
1 3/8-1 1/2		19.90	6	5	30	0.0330	480	27	40	53	60	64	80
1 3/4		19.90	5	5	30	0.0330	480	27	40	53	60	64	80
2		19.90	5	6	30	0.0330	480	32	48	63	71	76	95

2	3	1.50	56	3	20	0.0025	4245	10	15	20	23	24	30
3	4	1.50	48	3	20	0.0025	4245	10	15	20	23	24	30
4-5	6	2.10	40	3	20	0.0035	3030	10	15	20	23	24	30
8	10	3.00	32	3	20	0.0050	2120	10	15	20	23	24	30
12	5/16-3/8	4.00	24	3	20	0.0065	1590	10	15	20	23	24	30
1/4	7/16-1/2	4.00	20	3	20	0.0065	1590	10	15	20	23	24	30
5/16	9/16-5/8	5.00	18	3	20	0.0085	1275	12	18	23	26	28	35
3/8	3/4	5.90	16	3	20	0.0100	1080	10	15	20	23	24	30
7/16	7/8	7.90	14	3	20	0.0130	805	10	15	20	23	24	30

9/16	1- 1 1/2	9.90	12	3	20	0.0165	645	10	15	20	23	24	30
5/8		9.90	11	3	20	0.0165	645	10	15	20	23	24	30
3/4		11.90	10	5	20	0.0200	535	18	28	37	41	44	55
7/8		15.90	9	5	20	0.0265	400	18	28	37	41	44	55
1		15.90	8	5	20	0.0265	400	18	28	37	41	44	55
1 1/8-1 1/4		15.90	7	5	20	0.0265	400	18	28	37	41	44	55
1 3/8-1 1/2		19.90	6	5	20	0.0330	320	18	28	37	41	44	55
1 3/4		19.90	5	5	20	0.0330	320	18	28	37	41	44	55
2		19.90	5	6	20	0.0330	320	22	33	43	49	52	65

UNC	UNF	D1	P	z	v _c	f _z	n	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _f
		[mm]	(TPI)		[m/min]	[mm]	[min ⁻¹]	dD1 3/2	dD1 2/1	dD1 3/1	dD1 4/1	dD1 >5/1	[mm/min]
2	3	1.50	56	3	50	0.0025	10610	27	40	53	60	64	80
3	4	1.50	48	3	50	0.0025	10610	27	40	53	60	64	80
4-5	6	2.10	40	3	50	0.0035	7580	27	40	53	60	64	80
8	10	3.00	32	3	50	0.0050	5305	27	40	53	60	64	80
12	5/16-3/8	4.00	24	3	50	0.0065	3980	27	40	53	60	64	80
1/4	7/16-1/2	4.00	20	3	50	0.0065	3980	27	40	53	60	64	80
5/16	9/16-5/8	5.00	18	3	50	0.0085	3185	27	40	53	60	64	80
3/8	3/4	5.90	16	3	50	0.0100	2700	27	40	53	60	64	80
7/16	7/8	7.90	14	3	50	0.0130	2015	27	40	53	60	64	80

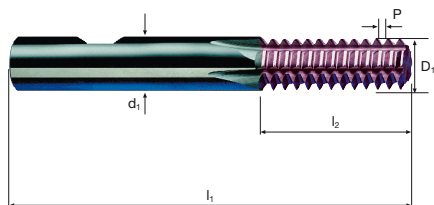
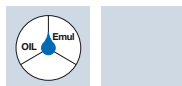
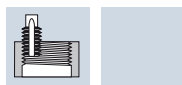
9/16	1- 1 1/2	9.90	12	3	50	0.0165	1610	27	40	53	60	64	80
5/8		9.90	11	3	50	0.0165	1610	27	40	53	60	64	80
3/4		11.90	10	5	50	0.0200	1335	45	68	90	101	108	135
7/8		15.90	9	5	50	0.0265	1000	45	68	90	101	108	135
1		15.90	8	5	50	0.0265	1000	45	68	90	101	108	135
1 1/8-1 1/4		15.90	7	5	50	0.0265	1000	45	68	90	101	108	135
1 3/8-1 1/2		19.90	6	5	50	0.0330	800	43	65	87	98	104	130
1 3/4		19.90	5	5	50	0.0330	800	43	65	87	98	104	130
2		19.90	5	6	50	0.0330	800	53	80	107	120	128	160

2	3	1.50	56	3	40	0.0025	8490	22	33	43	49	52	65
3	4	1.50	48	3	40	0.0025	8490	22	33	43	49	52	65
4-5	6	2.10	40	3	40	0.0035	6065	22	33	43	49	52	65
8	10	3.00	32	3	40	0.0050	4245	22	33	43	49	52	65
12	5/16-3/8	4.00	24	3	40	0.0065	3185	20	30	40	45	48	60
1/4	7/16-1/2	4.00	20	3	40	0.0065	3185	20	30	40	45	48	60
5/16	9/16-5/8	5.00	18	3	40	0.0085	2545	22	33	43	49	52	65
3/8	3/4	5.90	16	3	40	0.0100	2160	22	33	43	49	52	65
7/16	7/8	7.90	14	3	40	0.0130	1610	22	33	43	49	52	65

9/16	1- 1 1/2	9.90	12	3	40	0.0165	1285	22	33	43	49	52	65
5/8		9.90	11	3	40	0.0165	1285	22	33	43	49	52	65
3/4		11.90	10	5	40	0.0200	1070	35	53	70	79	84	105
7/8		15.90	9	5	40	0.0265	800	35	53	70	79	84	105
1		15.90	8	5	40	0.0265	800	35	53	70	79	84	105
1 1/8-1 1/4		15.90	7	5	40	0.0265	800	35	53	70	79	84	105
1 3/8-1 1/2		19.90	6	5	40	0.0330	640	35	53	70	79	84	105
1 3/4		19.90	5	5	40	0.0330	640	35	53	70	79	84	105
2		19.90	5	6	40	0.0330	640	42	63	83	94	100	125

Frese a filettare

1.5xd



Rm
< 1300 N/mm²

GG(G)
Cast iron

Al
Aluminium

Inox
Stainless

Ti
Titanium

Esempio: N° Ordine									UNICUT-4X	
Articolo EU2110 Codice-ø .750									EU2110	
Ø Code	UNC	UNF	P(TPI)	l ₁	l ₂	d ₁ h6	D ₁		€	
.750*		Nr. 2	64	38	3.1	3	1.5	3	117.00	
.751*	Nr. 2	Nr. 3	56	38	3.1	3	1.5	3	117.00	
.752*	Nr. 3	Nr. 4	48	38	3.7	3	1.5	3	117.00	
.753*		Nr. 5	44	38	4.6	3	2.1	3	117.00	
.754*	Nr. 4 - 5	Nr. 6	40	38	4.4	3	2.1	3	117.00	
.755*		Nr. 8	36	42	6.3	4	3.0	3	131.00	
.756*	Nr. 8	Nr. 10	32	42	6.3	4	3.0	3	131.00	
.759*		Nr. 12 - 1/4	28	42	8.1	4	3.6	3	131.00	
.761	Nr. 12	5/16 - 3/8	24	57	8.4	6	4.0	3	201.00	
.762	1/4	7/16 - 1/2	20	57	10.1	6	4.0	3	201.00	
.764	5/16	9/16 - 5/8	18	57	12.7	6	5.0	3	201.00	
.766	3/8	3/4	16	57	14.2	6	5.9	5	201.00	
.769	7/16	7/8	14	63	16.3	8	7.9	5	248.00	
.770	1/2		13	63	19.5	8	7.9	5	248.00	
.771	9/16	1" - 1 1/2	12	72	23.2	10	9.9	5	324.00	
.773	5/8		11	72	23.0	10	9.9	5	324.00	
* solo senza weldon										

Applicazione



Materiale

Acciaio
< 850 N/mm²

NPT NPTF	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _f [mm/min]	
							dD1 3/2	dD1 2/1	dD1 3/1	dD1 4/1	dD1 > 5/1		
1/16	- 1/8	5.90	27	5	30	0.0100	1620	27	40	53	60	64	80
1/4	- 3/8	7.90	18	5	30	0.0130	1210	27	40	53	60	64	80
1/2	- 3/4	11.90	14	5	30	0.0200	800	27	40	53	60	64	80
1	- 2	15.90	12	6	30	0.0265	600	32	48	63	71	76	95
2 1/2	- 4	15.90	8	6	30	0.0265	600	32	48	63	71	76	95

Acciaio
850 - 1100 N/mm²

1/16	- 1/8	5.90	27	5	20	0.0100	1080	18	28	37	41	44	55
1/4	- 3/8	7.90	18	5	20	0.0130	805	17	25	33	38	40	50
1/2	- 3/4	11.90	14	5	20	0.0200	535	18	28	37	41	44	55
1	- 2	15.90	12	6	20	0.0265	400	22	33	43	49	52	65
2 1/2	- 4	15.90	8	6	20	0.0265	400	22	33	43	49	52	65

Acciaio inossidabile
[Cr-Ni/1.4301]

1/16	- 1/8	5.90	27	5	15	0.0100	810	13	20	27	30	32	40
1/4	- 3/8	7.90	18	5	15	0.0130	605	13	20	27	30	32	40
1/2	- 3/4	11.90	14	5	15	0.0200	400	13	20	27	30	32	40
1	- 2	15.90	12	6	15	0.0265	300	17	25	33	38	40	50
2 1/2	- 4	15.90	8	6	15	0.0265	300	17	25	33	38	40	50

Ghisa
GG(G)

1/16	- 1/8	5.90	27	5	40	0.0100	2160	37	55	73	83	88	110
1/4	- 3/8	7.90	18	5	40	0.0130	1610	35	53	70	79	84	105
1/2	- 3/4	11.90	14	5	40	0.0200	1070	35	53	70	79	84	105
1	- 2	15.90	12	6	40	0.0265	800	42	63	83	94	100	125
2 1/2	- 4	15.90	8	6	40	0.0265	800	42	63	83	94	100	125

Materiale

Alluminio malleabile
Si < 6%

NPT NPTF	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _f [mm/min]	
							dD1 3/2	dD1 2/1	dD1 3/1	dD1 4/1	dD1 > 5/1		
1/16	- 1/8	5.90	27	5	50	0.0100	2700	45	68	90	101	108	135
1/4	- 3/8	7.90	18	5	50	0.0130	2015	43	65	87	98	104	130
1/2	- 3/4	11.90	14	5	50	0.0200	1335	45	68	90	101	108	135
1	- 2	15.90	12	6	50	0.0265	1000	53	80	107	120	128	160
2 1/2	- 4	15.90	8	6	50	0.0265	1000	53	80	107	120	128	160

Getti d'alluminio

1/16	- 1/8	5.90	27	5	60	0.0100	3235	53	80	107	120	128	160
1/4	- 3/8	7.90	18	5	60	0.0130	2420	52	78	103	116	124	155
1/2	- 3/4	11.90	14	5	60	0.0200	1605	53	80	107	120	128	160
1	- 2	15.90	12	6	60	0.0265	1200	63	95	127	143	152	190
2 1/2	- 4	15.90	8	6	60	0.0265	1200	63	95	127	143	152	190

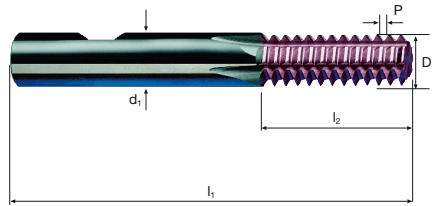
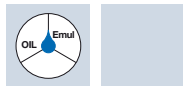
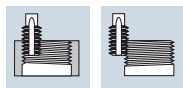
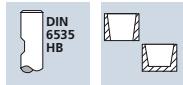
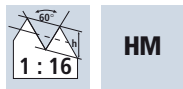
Rame non legato

1/16	- 1/8	5.90	27	5	70	0.0100	3775	63	95	127	143	152	190
1/4	- 3/8	7.90	18	5	70	0.0130	2820	62	93	123	139	148	185
1/2	- 3/4	11.90	14	5	70	0.0200	1870	62	93	123	139	148	185
1	- 2	15.90	12	6	70	0.0265	1400	75	113	150	169	180	225
2 1/2	- 4	15.90	8	6	70	0.0265	1400	75	113	150	169	180	225

Materiali termoplastici

1/16	- 1/8	5.90	27	5	90	0.0100	4855	82	123	163	184	196	245
1/4	- 3/8	7.90	18	5	90	0.0130	3625	78	118	157	176	188	235
1/2	- 3/4	11.90	14	5	90	0.0200	2405	80	120	160	180	192	240
1	- 2	15.90	12	6	90	0.0265	1800	95	143	190	214	228	285
2 1/2	- 4	15.90	8	6	90	0.0265	1800	95	143	190	214	228	285

Frese a filettare

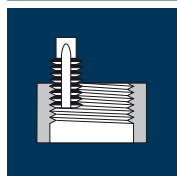


Rm < 1300 N/mm ²	GG(G) Cast iron	Al Aluminium	Inox Stainless	Ti Titanium
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Esempio: N° Ordine									UNICUT-4X
Articolo EU2200 Codice-ø .840									EU2200
Ø Code		d	P(TPI)	l ₁	l ₂	d ₁ h ₆	D ₁		€
.840	NPT	1/16 - 1/8	27	57	9.4	6	5.9	5	201.00
.842	NPT	1/4 - 3/8	18	63	14.1	8	7.9	5	248.00
.844	NPT	1/2 - 3/4	14	83	19.9	12	11.9	5	399.00
.846	NPT	1" - 2"	11.5	92	26.5	16	15.9	6	588.00

Esempio: N° Ordine									UNICUT-4X
Articolo EU2210 Codice-ø .840									EU2210
Ø Code		d	P(TPI)	l ₁	l ₂	d ₁ h ₆	D ₁		€
.840	NPTF	1/16 - 1/8	27	57	9.4	6	5.9	5	201.00
.842	NPTF	1/4 - 3/8	18	63	14.1	8	7.9	5	248.00
.844	NPTF	1/2 - 3/4	14	83	19.9	12	11.9	5	399.00
.846	NPTF	1" - 2"	11.5	92	26.5	16	15.9	6	588.00

Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc} dD1 3/2	v _{fc} dD1 2/1	v _{fc} dD1 3/1	v _{fc} dD1 4/1	v _{fc} dD1 >5/1	v _f [mm/min]
≥ M14	9.95	1.00	4	80	0.0250	2560	85	128	170	191	204	255
≥ M14	9.95	1.25	4	80	0.0250	2560	85	128	170	191	204	255
≥ M14	9.95	1.50	4	80	0.0250	2560	85	128	170	191	204	255
≥ M18	11.95	1.00	4	80	0.0300	2130	85	128	170	191	204	255
≥ M18	11.95	1.50	4	80	0.0300	2130	85	128	170	191	204	255
≥ M24	15.95	1.00	5	80	0.0400	1595	107	160	213	240	256	320
≥ M24	15.95	2.00	5	80	0.0400	1595	107	160	213	240	256	320
≥ M30	19.95	1.50	5	80	0.0500	1275	107	160	213	240	256	320
≥ M30	19.95	2.00	5	80	0.0500	1275	107	160	213	240	256	320

Acciaio
1300 - 1500 N/mm²

≥ M14	9.95	1.00	4	50	0.0200	1600	43	65	87	98	104	130
≥ M14	9.95	1.25	4	50	0.0200	1600	43	65	87	98	104	130
≥ M14	9.95	1.50	4	50	0.0200	1600	43	65	87	98	104	130
≥ M18	11.95	1.00	4	50	0.0240	1330	43	65	87	98	104	130
≥ M18	11.95	1.50	4	50	0.0240	1330	43	65	87	98	104	130
≥ M24	15.95	1.00	5	50	0.0320	1000	53	80	107	120	128	160
≥ M24	15.95	2.00	5	50	0.0320	1000	53	80	107	120	128	160
≥ M30	19.95	1.50	5	50	0.0400	800	53	80	107	120	128	160
≥ M30	19.95	2.00	5	50	0.0400	800	53	80	107	120	128	160

Acciaio da utensile
temperato
48 - 52 HRC

≥ M14	9.95	1.00	4	30	0.0165	960	22	33	43	49	52	65
≥ M14	9.95	1.25	4	30	0.0165	960	22	33	43	49	52	65
≥ M14	9.95	1.50	4	30	0.0165	960	22	33	43	49	52	65
≥ M18	11.95	1.00	4	30	0.0200	800	22	33	43	49	52	65
≥ M18	11.95	1.50	4	30	0.0200	800	22	33	43	49	52	65
≥ M24	15.95	1.00	5	30	0.0265	600	27	40	53	60	64	80
≥ M24	15.95	2.00	5	30	0.0265	600	27	40	53	60	64	80
≥ M30	19.95	1.50	5	30	0.0335	480	27	40	53	60	64	80
≥ M30	19.95	2.00	5	30	0.0335	480	27	40	53	60	64	80

Acciaio inossidabile
[Cr-Ni/1.4301]

≥ M14	9.95	1.00	4	45	0.0200	1440	38	58	77	86	92	115
≥ M14	9.95	1.25	4	45	0.0200	1440	38	58	77	86	92	115
≥ M14	9.95	1.50	4	45	0.0200	1440	38	58	77	86	92	115
≥ M18	11.95	1.00	4	45	0.0240	1200	38	58	77	86	92	115
≥ M18	11.95	1.50	4	45	0.0240	1200	38	58	77	86	92	115
≥ M24	15.95	1.00	5	45	0.0320	900	48	73	97	109	116	145
≥ M24	15.95	2.00	5	45	0.0320	900	48	73	97	109	116	145
≥ M30	19.95	1.50	5	45	0.0400	720	48	73	97	109	116	145
≥ M30	19.95	2.00	5	45	0.0400	720	48	73	97	109	116	145

Materiale

Ghisa
GG(G)

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc} dD1 3/2	v _{fc} dD1 2/1	v _{fc} dD1 3/1	v _{fc} dD1 4/1	v _{fc} dD1 >5/1	v _f [mm/min]
≥ M14	9.95	1.00	4	120	0.0250	3840	128	193	257	289	308	385
≥ M14	9.95	1.25	4	120	0.0250	3840	128	193	257	289	308	385
≥ M14	9.95	1.50	4	120	0.0250	3840	128	193	257	289	308	385
≥ M18	11.95	1.00	4	120	0.0300	3195	128	193	257	289	308	385
≥ M18	11.95	1.50	4	120	0.0300	3195	128	193	257	289	308	385
≥ M24	15.95	1.00	5	120	0.0400	2395	160	240	320	360	384	480
≥ M24	15.95	2.00	5	120	0.0400	2395	160	240	320	360	384	480
≥ M30	19.95	1.50	5	120	0.0500	1915	160	240	320	360	384	480
≥ M30	19.95	2.00	5	120	0.0500	1915	160	240	320	360	384	480

Alluminio malleabile
Si < 6%

≥ M14	9.95	1.00	4	150	0.0285	4800	182	273	363	409	436	545
≥ M14	9.95	1.25	4	150	0.0285	4800	182	273	363	409	436	545
≥ M14	9.95	1.50	4	150	0.0285	4800	182	273	363	409	436	545
≥ M18	11.95	1.00	4	150	0.0340	3995	182	273	363	409	436	545
≥ M18	11.95	1.50	4	150	0.0340	3995	182	273	363	409	436	545
≥ M24	15.95	1.00	5	150	0.0455	2995	227	340	453	510	544	680
≥ M24	15.95	2.00	5	150	0.0455	2995	227	340	453	510	544	680
≥ M30	19.95	1.50	5	150	0.0570	2395	228	343	457	514	548	685
≥ M30	19.95	2.00	5	150	0.0570	2395	228	343	457	514	548	685

Getti d'alluminio

≥ M14	9.95	1.00	4	200	0.0285	6400	243	365	487	548	584	730
≥ M14	9.95	1.25	4	200	0.0285	6400	243	365	487	548	584	730
≥ M14	9.95	1.50	4	200	0.0285	6400	243	365	487	548	584	730
≥ M18	11.95	1.00	4	200	0.0340	5330	242	363	483	544	580	725
≥ M18	11.95	1.50	4	200	0.0340	5330	242	363	483	544	580	725
≥ M24	15.95	1.00	5	200	0.0455	3990	303	455	607	683	728	910
≥ M24	15.95	2.00	5	200	0.0455	3990	303	455	607	683	728	910
≥ M30	19.95	1.50	5	200	0.0570	3190	303	455	607	683	728	910
≥ M30	19.95	2.00	5	200	0.0570	3190	303	455	607	683	728	910

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

≥ M14	9.95	1.00	4	35	0.0200	1120	30	45	60	68	72	90
≥ M14	9.95	1.25	4	35	0.0200	1120	30	45	60	68	72	90
≥ M14	9.95	1.50	4	35	0.0200	1120	30	45	60	68	72	90
≥ M18	11.95	1.00	4	35	0.0240	930	30	45	60	68	72	90
≥ M18	11.95	1.50	4	35	0.0240	930	30	45	60	68	72	90
≥ M24	15.95	1.00	5	35	0.0320	700	37	55	73	83	88	110
≥ M24	15.95	2.00	5	35	0.0320	700	37	55	73	83	88	110
≥ M30	19.95	1.50	5	35	0.0400	560	37	55	73	83	88	110
≥ M30	19.95	2.00	5	35	0.0400	560	37	55	73	83	88	110

Frese a filettare multirange

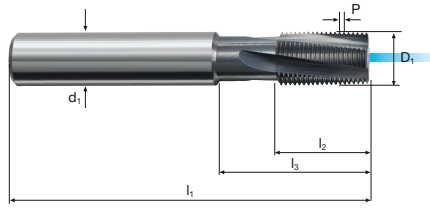
Incool

M

HM

DIN 6535 HA

Oil Emul



HRC < 52 **GG(G)** Cast iron **Al** Aluminium **Ti** Titanium **Inox** Stainless

Esempio: N° Ordine EH26020 .096 <small>Articolo Codice-Ø</small>									TiCN	
Ø Code	d min.	P	l1	l2	l3	d1 h6	D1		€	
.096	14	1.00	70	16	25	10	9.95	4	341.00	
.166	14	1.25	70	16	25	10	9.95	4	387.00	
.178	14	1.50	70	16	25	10	9.95	4	343.00	
.100	18	1.00	80	20	31	12	11.95	4	438.00	
.182	18	1.50	80	20	31	12	11.95	4	416.00	
.106	24	1.00	90	25	40	16	15.95	5	551.00	
.188	24	1.50	90	25	40	16	15.95	5	525.00	
.254	24	2.00	90	25	40	16	15.95	5	551.00	
.194	30	1.50	105	33	50	20	19.95	5	752.00	
.260	30	2.00	105	33	50	20	19.95	5	819.00	



Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

Acciaio
1300 - 1500 N/mm²

Acciaio da utensile
temperato
48 - 52 HRC

Acciaio inossidabile
[Cr-Ni/1.4301]

G	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _f [mm/min]
							dD1 3/2	dD1 2/1	dD1 3/1	dD1 4/1	dD1 >5/1	
G1/4 - G3/8	9.95	19	4	80	0.0250	2560	85	128	170	191	204	255
G1/2 - G7/8	15.95	14	5	80	0.0400	1595	107	160	213	240	256	320
G1 - G3	19.95	11	5	80	0.0500	1275	107	160	213	240	256	320
G1/4 - G3/8	9.95	19	4	50	0.0200	1600	43	65	87	98	104	130
G1/2 - G7/8	15.95	14	5	50	0.0320	1000	53	80	107	120	128	160
G1 - G3	19.95	11	5	50	0.0400	800	53	80	107	120	128	160
G1/4 - G3/8	9.95	19	4	30	0.0165	960	22	33	43	49	52	65
G1/2 - G7/8	15.95	14	5	30	0.0265	600	27	40	53	60	64	80
G1 - G3	19.95	11	5	30	0.0335	480	27	40	53	60	64	80
G1/4 - G3/8	9.95	19	4	45	0.0200	1440	38	58	77	86	92	115
G1/2 - G7/8	15.95	14	5	45	0.0320	900	48	73	97	109	116	145
G1 - G3	19.95	11	5	45	0.0400	720	48	73	97	109	116	145

Materiale

Ghisa
GG(G)

Alluminio malleabile
Si < 6%

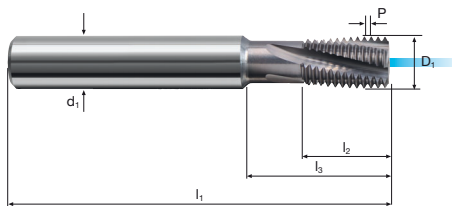
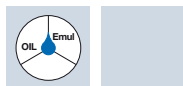
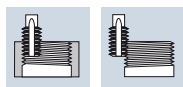
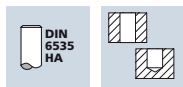
Getti d'alluminio

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

G	D1 [mm]	P (TPI)	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _{fc}	v _f [mm/min]
							dD1 3/2	dD1 2/1	dD1 3/1	dD1 4/1	dD1 >5/1	
G1/4 - G3/8	9.95	19	4	120	0.0250	3840	128	193	257	289	308	385
G1/2 - G7/8	15.95	14	5	120	0.0400	2395	160	240	320	360	384	480
G1 - G3	19.95	11	5	120	0.0500	1915	160	240	320	360	384	480
G1/4 - G3/8	9.95	19	4	150	0.0285	4800	182	273	363	409	436	545
G1/2 - G7/8	15.95	14	5	150	0.0455	2995	227	340	453	510	544	680
G1 - G3	19.95	11	5	150	0.0570	2395	228	343	457	514	548	685
G1/4 - G3/8	9.95	19	4	200	0.0285	6400	243	365	487	548	584	730
G1/2 - G7/8	15.95	14	5	200	0.0455	3990	303	455	607	683	728	910
G1 - G3	19.95	11	5	200	0.0570	3190	303	455	607	683	728	910
G1/4 - G3/8	9.95	19	4	35	0.0200	1120	30	45	60	68	72	90
G1/2 - G7/8	15.95	14	5	35	0.0320	700	37	55	73	83	88	110
G1 - G3	19.95	11	5	35	0.0400	560	37	55	73	83	88	110

Frese a filettare multirange

Incool



HRC < 52	GG(G) Cast iron	Al Aluminium	Ti Titanium	Inox Stainless
--------------------	---------------------------	------------------------	-----------------------	--------------------------

									TiCN	
Esempio: N° Ordine									EH26040	
Ø Code	d min.	P(TPI)	l ₁	l ₂	l ₃	d ₁ h ₆	D ₁		€	
.552	1/4	19	70	16	25	10	9.95	4	385.00	
.554	1/2	14	90	25	40	16	15.95	5	564.00	
.558	1"	11	105	33	50	20	19.95	5	830.00	



Applicazione



Materiale

Acciaio
850 - 1100 N/mm²

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{f_c} [mm/min]	v _f [mm/min]
M 1	0.70	0.25	3	120	0.0020	54570	98	325
M 2	1.50	0.40	3	120	0.0040	25465	76	305
M 3	2.20	0.50	3	120	0.0055	17365	76	285
M 4	3.10	0.70	3	120	0.0080	12320	66	295
M 5	3.80	0.80	3	120	0.0095	10050	68	285
M 6	4.70	1.00	3	120	0.0120	8125	64	295
M 8	5.90	1.25	5	120	0.0150	6475	127	485
M 10	7.90	1.50	5	120	0.0200	4835	102	485

Acciaio
1300 - 1500 N/mm²

M 1	0.70	0.25	3	100	0.0010	45475	41	135
M 2	1.50	0.40	3	100	0.0025	21220	40	160
M 3	2.20	0.50	3	100	0.0035	14470	40	150
M 4	3.10	0.70	3	100	0.0050	10270	35	155
M 5	3.80	0.80	3	100	0.0065	8375	40	165
M 6	4.70	1.00	3	100	0.0080	6775	36	165
M 8	5.90	1.25	5	100	0.0100	5395	71	270
M 10	7.90	1.50	5	100	0.0130	4030	55	260

Acciaio inossidabile
austenitico

M 1	0.70	0.25	3	60	0.0010	27285	24	80
M 2	1.50	0.40	3	60	0.0025	12735	24	95
M 3	2.20	0.50	3	60	0.0035	8680	24	90
M 4	3.10	0.70	3	60	0.0050	6160	20	90
M 5	3.80	0.80	3	60	0.0060	5025	22	90
M 6	4.70	1.00	3	60	0.0070	4065	18	85
M 8	5.90	1.25	5	60	0.0090	3235	38	145
M 10	7.90	1.50	5	60	0.0120	2420	30	145

Acciaio inossidabile
[Cr-Ni/1.4301]

M 1	0.70	0.25	3	80	0.0010	36380	33	110
M 2	1.50	0.40	3	80	0.0025	16975	31	125
M 3	2.20	0.50	3	80	0.0035	11575	32	120
M 4	3.10	0.70	3	80	0.0050	8215	28	125
M 5	3.80	0.80	3	80	0.0060	6700	29	120
M 6	4.70	1.00	3	80	0.0070	5420	25	115
M 8	5.90	1.25	5	80	0.0090	4315	51	195
M 10	7.90	1.50	5	80	0.0120	3225	41	195

Materiale

Alluminio malleabile
Si < 6%

M	D1 [mm]	P [mm]	z	v _c [m/min]	f _z [mm]	n [min ⁻¹]	v _{f_c} [mm/min]	v _f [mm/min]
M 1	0.70	0.25	3	150	0.0015	60000	92	305
M 2	1.50	0.40	3	150	0.0035	31830	84	335
M 3	2.20	0.50	3	150	0.0050	21705	87	325
M 4	3.10	0.70	3	150	0.0070	15405	73	325
M 5	3.80	0.80	3	150	0.0085	12565	77	320
M 6	4.70	1.00	3	150	0.0105	10160	69	320
M 8	5.90	1.25	5	150	0.0130	8095	138	525
M 10	7.90	1.50	5	150	0.0175	6045	111	530

Getti d'alluminio

M 1	0.70	0.25	3	180	0.0020	60000	147	490
M 2	1.50	0.40	3	180	0.0040	38200	115	460
M 3	2.20	0.50	3	180	0.0055	26045	115	430
M 4	3.10	0.70	3	180	0.0080	18485	100	445
M 5	3.80	0.80	3	180	0.0095	15080	103	430
M 6	4.70	1.00	3	180	0.0120	12190	95	440
M 8	5.90	1.25	5	180	0.0150	9710	192	730
M 10	7.90	1.50	5	180	0.0200	7255	152	725

Rame non legato

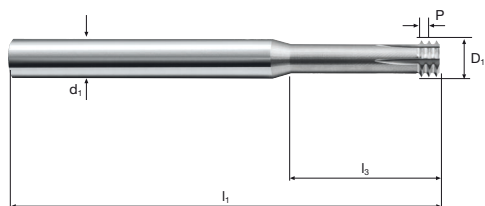
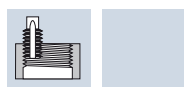
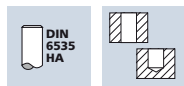
M 1	0.70	0.25	3	100	0.0015	45475	62	205
M 2	1.50	0.40	3	100	0.0030	21220	48	190
M 3	2.20	0.50	3	100	0.0045	14470	52	195
M 4	3.10	0.70	3	100	0.0060	10270	42	185
M 5	3.80	0.80	3	100	0.0075	8375	46	190
M 6	4.70	1.00	3	100	0.0095	6775	42	195
M 8	5.90	1.25	5	100	0.0120	5395	85	325
M 10	7.90	1.50	5	100	0.0160	4030	67	320

Leghe di titanio indurite
> 300 HB
[Ti6Al4V]

M 1	0.70	0.25	3	70	0.0010	31830	29	95
M 2	1.50	0.40	3	70	0.0025	14855	28	110
M 3	2.20	0.50	3	70	0.0035	10130	28	105
M 4	3.10	0.70	3	70	0.0050	7190	25	110
M 5	3.80	0.80	3	70	0.0060	5865	25	105
M 6	4.70	1.00	3	70	0.0070	4740	22	100
M 8	5.90	1.25	5	70	0.0090	3775	45	170
M 10	7.90	1.50	5	70	0.0120	2820	36	170

Turbofilettrici

3.0xd



Rm
< 1500 N/mm²

GG(G)
Cast iron

Al
Aluminium

Inox
Stainless

Ti
Titanium

Esempio: N° Ordine EU28500 .010										UNICUT-4X	
										E28500	EU28500
Ø Code	d	P	l ₁	l ₃	d ₁ h6	D ₁	R _k 6H		€	€	
.010	M 1	0.25	38	3.0	3	0.70	0.337	3	100.00	117.00	
.020	M 1.4	0.30	38	4.2	3	1.00	0.485	3	100.00	117.00	
.022	M 1.6	0.35	38	4.8	3	1.20	0.583	3	100.00	117.00	
.034	M 2	0.40	38	6.0	3	1.50	0.730	3	100.00	117.00	
.040	M 2.5	0.45	38	7.5	3	1.80	0.878	3	100.00	117.00	
.044	M 3	0.50	42	9.0	3	2.20	1.075	3	100.00	117.00	
.058	M 4	0.70	47	12.0	4	3.10	1.515	3	111.00	131.00	
.084	M 5	0.80	57	15.0	6	3.80	1.860	3	127.00	150.00	
.088	M 6	1.00	62	18.0	6	4.70	2.300	3	127.00	150.00	
.160	M 8	1.25	65	24.0	6	5.90	2.888	5	127.00	150.00	
.174	M10	1.50	86	30.0	8	7.90	3.875	5	144.00	170.00	



Fresatura di filetti

Frese a filettare

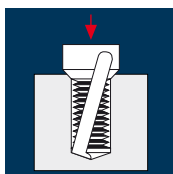


Utensile per filettature interne

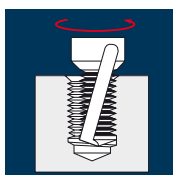


Utensile per filettature esterne

Frese per forare e filettare



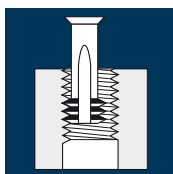
Dati di esercizio per la foratura



Dati di esercizio per la filettatura



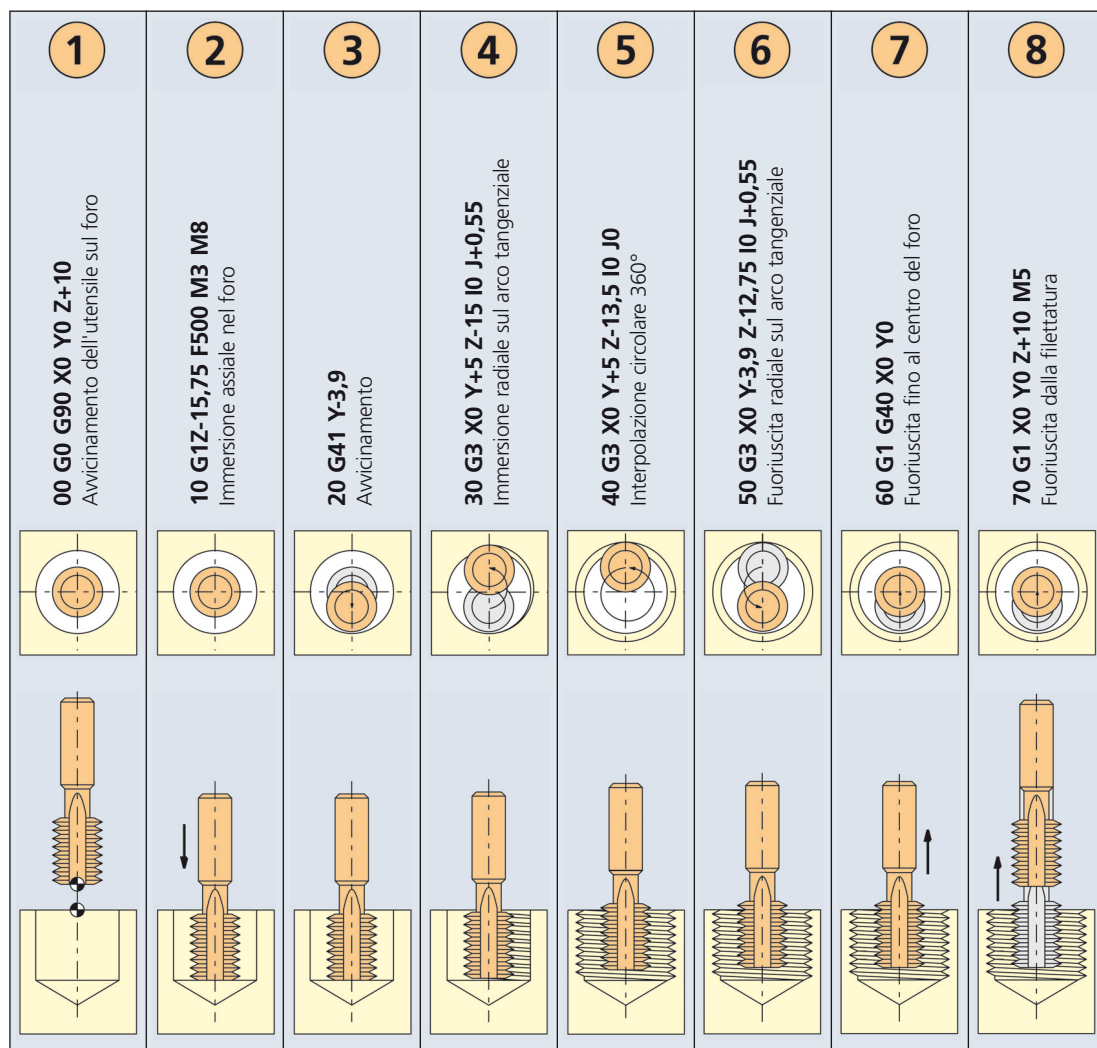
Fresatura di filetti con smusso



Turbofilettatura

Fresatura di filetti

Ciclo di fresatura del filetto per M10 in codice ISO come esempio

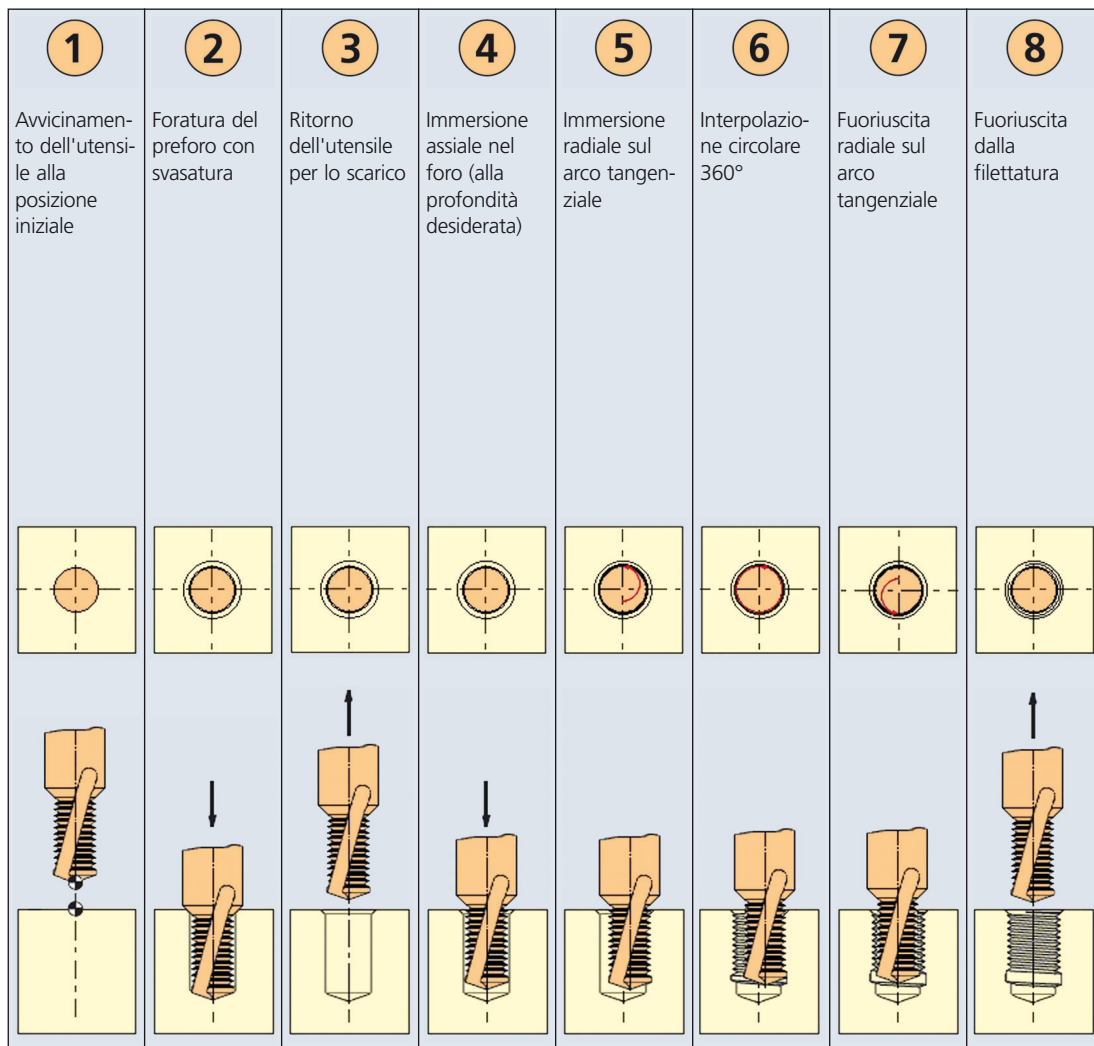


Significato dei comandi G e M impiegati

G0	G1	G3	G40	G41	G90	G91	M3	M5	M8	M9
Movimento lineare in rapido	Movimento lineare con avanzamento F in mm/min	Interpolazione arco di cerchio con centro (I,J)	Sopprimere la correzione del raggio utensile	Correzione raggio utensile (utensile a sinistra del contorno)	Programmazione con quote assolute	Programmazione incrementale	Mandrino ON (rotazione a destra)	Mandrino OFF	Raffreddamento ON	Raffreddamento OFF

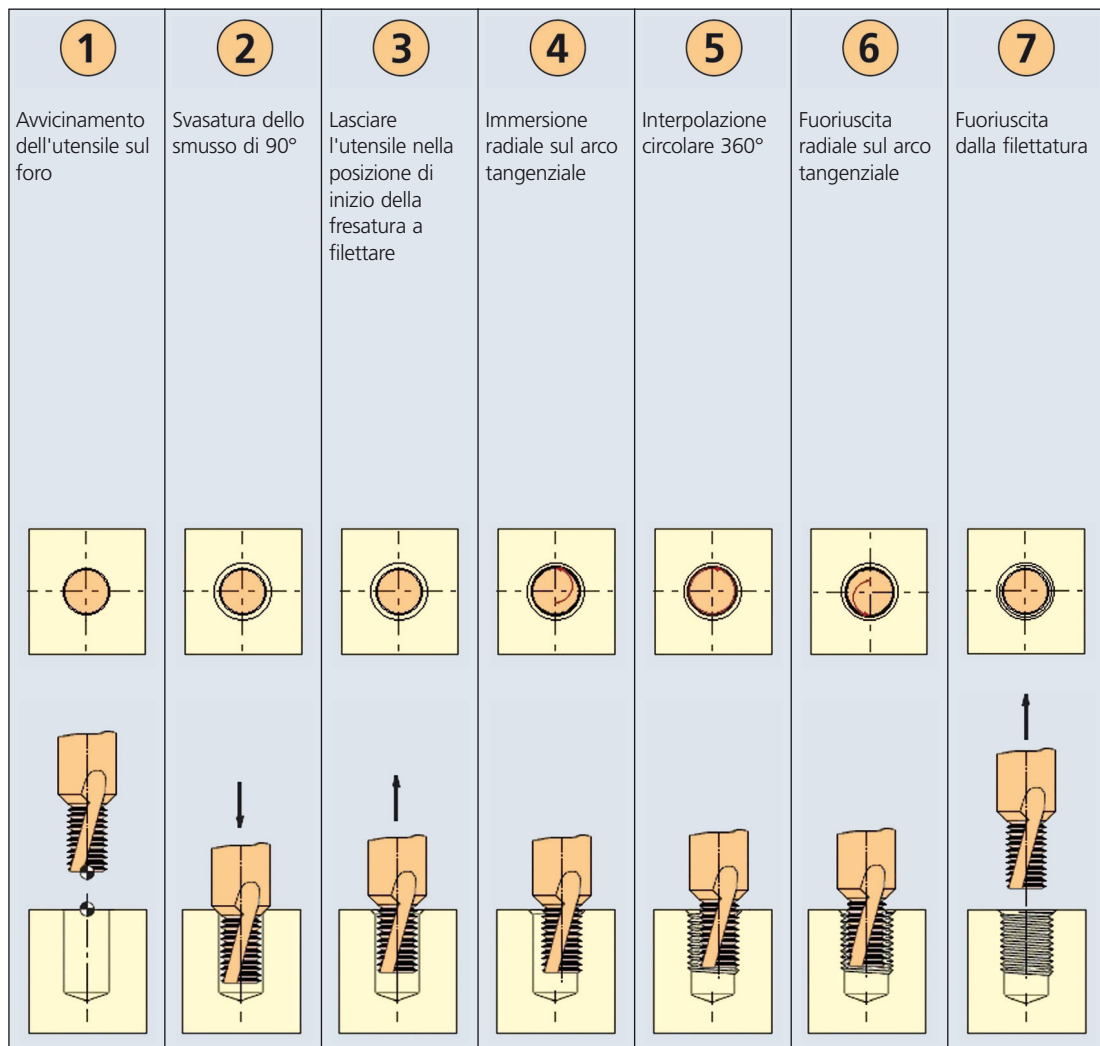
Fresatura di filetti

Ciclo di fresatura del filetto per la fresatura a forare e filettare



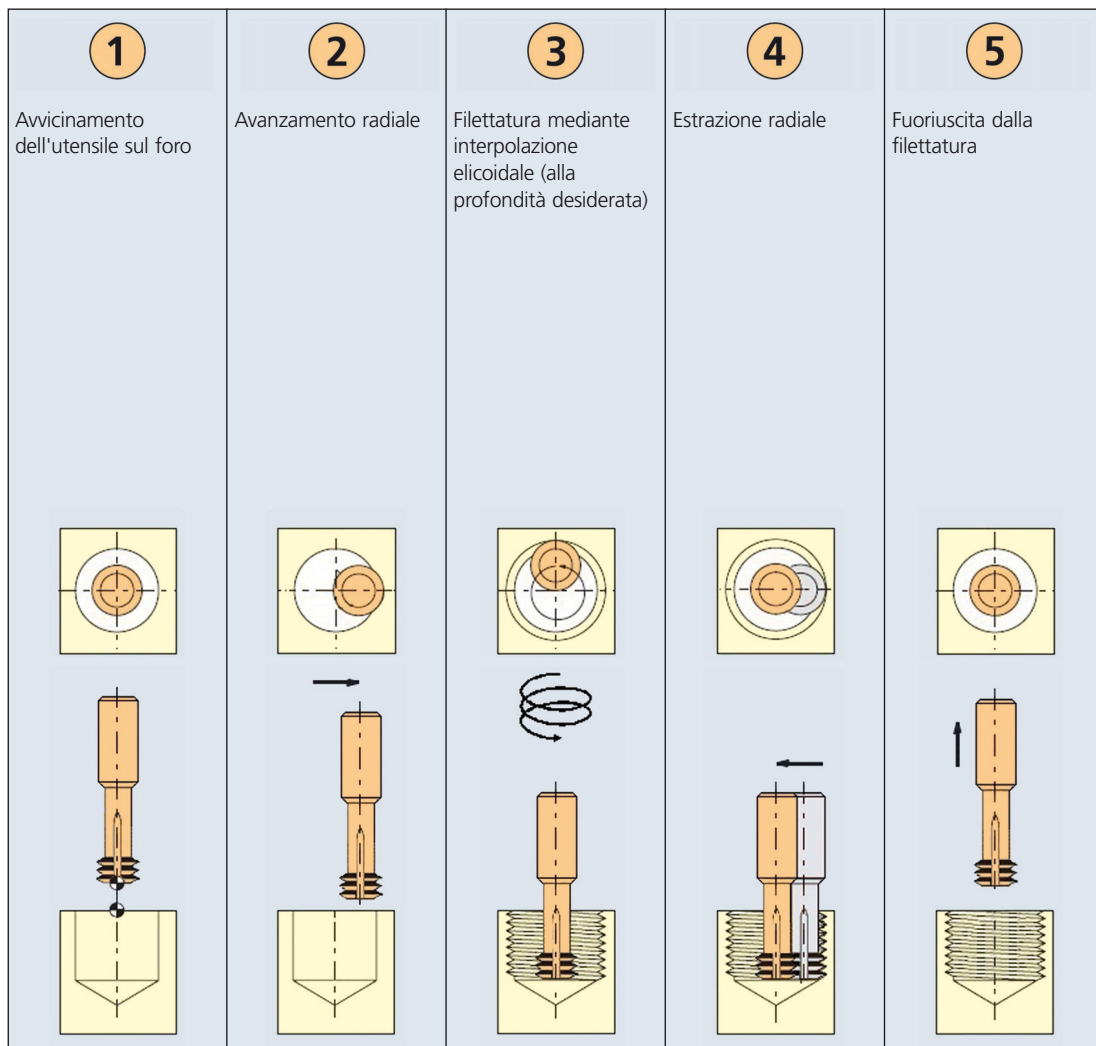
Fresatura di filetti

Ciclo di fresatura del filetto per frese a filettare con smusso



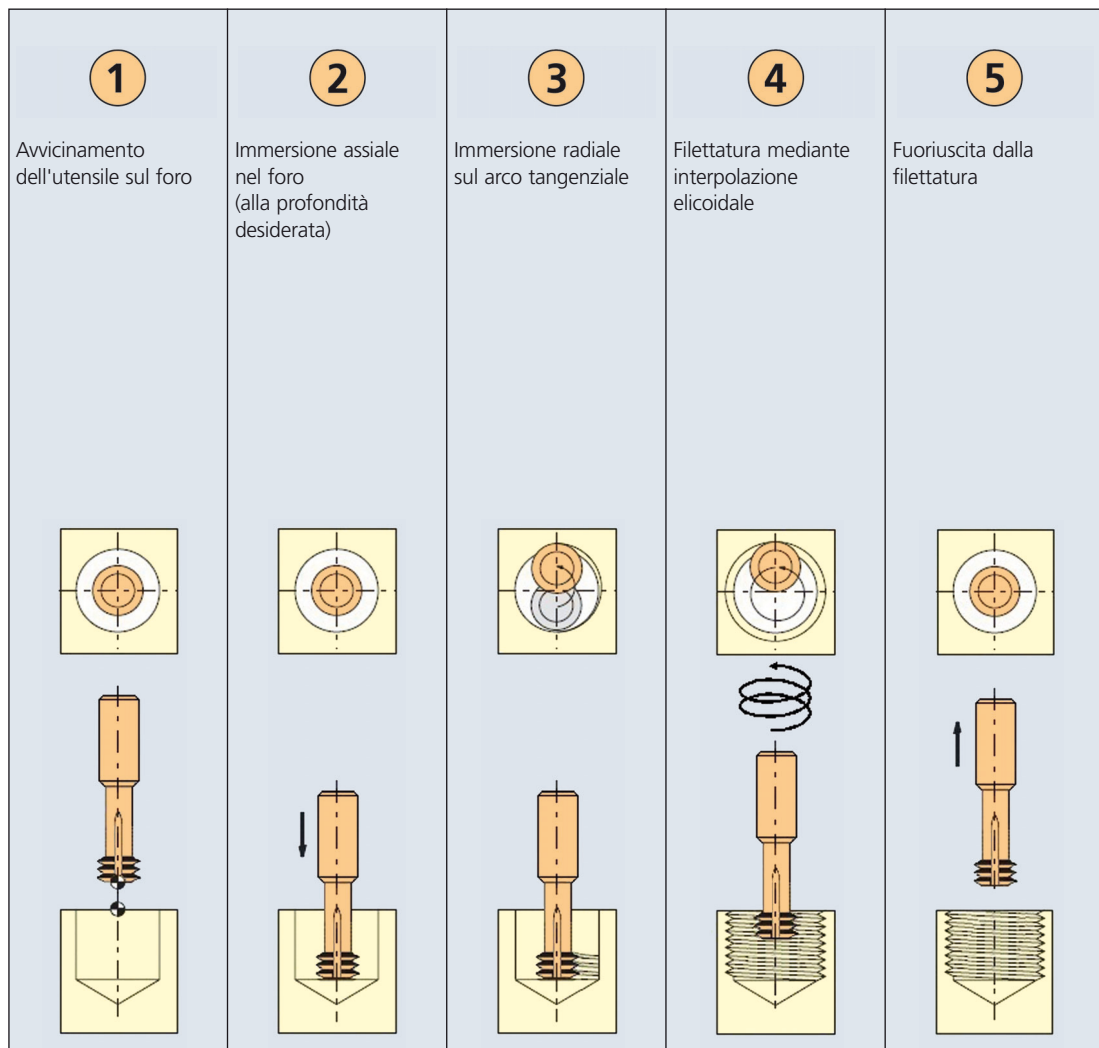
Fresatura di filetti

Ciclo per filettatura destra (discordanza) con utensile per turbofilettatrice



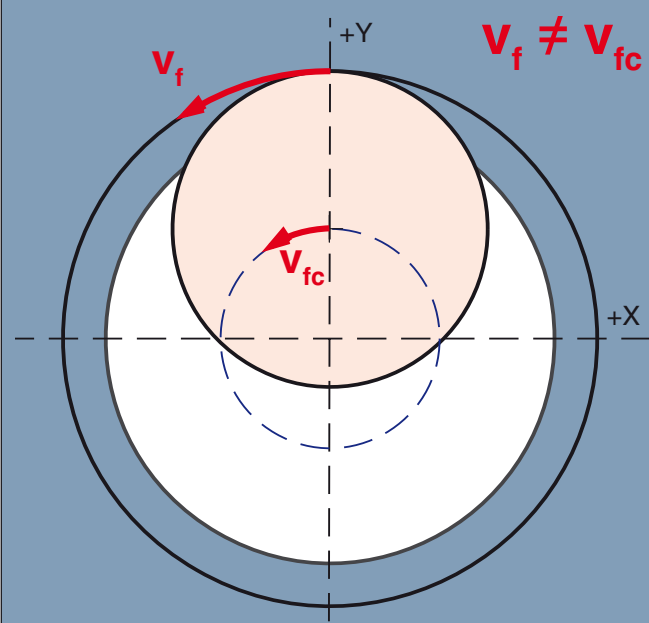
Fresatura di filetti

Ciclo per filettatura destra (concordanza) con utensile per turbofilettrice



Fresatura di filetti

Definizione della velocità di avanzamento



$V_f \neq V_{fc}$

Conversione della velocità di avanzamento desiderata sul pezzo da lavorare v_f , in velocità d'avanzamento da programmare v_{fc} sul centro dell'utensile:

Per filetto interno

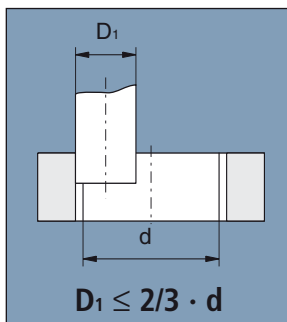
$$v_{fc} = \frac{v_f \cdot (d - D_1)}{d}$$

Per filetto esterno

$$v_{fc} = \frac{v_f \cdot (d + D_1)}{d}$$

Diametro nominale della filettatura d

Come evitare distorsioni del profilo



Per evitare distorsioni del profilo, il diametro della fresa D_1 deve essere massimo i $\frac{2}{3}$ del diametro di nocciolo della madrevite d .

Il sovrametallo del foro da maschiare deve essere da 0,1 a 0,3 mm.

In questo modo il filetto viene fresato senza problemi.



Tipi di filettatura

M	Filettatura metrica ISO DIN 965 (DIN 13)
MF	Filettatura metrica fine ISO DIN 965 (DIN 13)
MJ	Filettatura MJ per industria aerospaziale secondo DIN ISO 5855
G	Filettatura gas Whitworth secondo DIN ISO 228
UNC	Filettatura americana a passo grosso secondo ASME B1.1
UNJC	Filettatura americana a passo grosso secondo SAE AS 8879
UNF	Filettatura americana a passo fino secondo ASME B1.1
UNJF	Filettatura americana a passo fino secondo SAE AS 8879
NPT	Filettatura gas conica americana secondo ANSI B1.20.1
NPTF	Filettatura gas conica americana secondo ANSI B1.20.3
EG M	Filettatura metrica per inserti secondo DIN 8140-2

Simboli

Classe d'applicazioni / Posizioni della tolleranza

ISO 2 (6H)	Gli utensili della classe applicativa 2 (ISO 2) sono concepiti per la generazione di filettature nei campi di tolleranza 4G, 5G, 6H.
ISO 1 (4H)	Gli utensili della classe applicativa 1 (ISO 1) sono concepiti per la generazione di filettature nei campi di tolleranza 4H, 5H.
ISO 3 (6G)	Gli utensili della classe applicativa 3 (ISO 3) sono concepiti per la generazione di filettature nei campi di tolleranza 6G, 7H, 8H.
7G	Gli utensili della classe applicativa 7G sono concepiti per la generazione di filettature nei campi di tolleranza 7G, 8G con successivo trattamento di tempratura con deformazioni.
ISO 2 +0,1	Gli utensili della classe applicativa 2 (ISO 2) sono concepiti per la generazione di filettature nei campi di tolleranza 4G, 5G, 6H. A scopo di successivo trattamento galvanico superficiale delle filettature con spessore di riporto di 0,025 mm, gli utensili sono concepiti con tolleranza maggiorata di 0,1 mm sulla filettatura.
4H	Gli utensili della classe applicativa 4H sono concepiti per la generazione di filettature MJ nei campi di tolleranza 4H (ASME B1.1).
2B	Gli utensili della classe applicativa 2B sono concepiti per la generazione di filettature nei campi di tolleranza 2B.
3B	Gli utensili della classe applicativa 3B sono concepiti per la generazione di filettature nei campi di tolleranza 3B.
6H mod	Gli utensili della classe applicativa 6H sono concepiti per la generazione di filettature per inserti.

Materiali per utensili

PM/F	ASR di alta resa per utensili, da metallurgia delle polveri.
PM/F+	Materiale per utensili di alte prestazioni. Leghe ASR da metallurgia delle polveri con tenacità estremamente elevata.
HSS-E Co5	Materiale per utensili di alte prestazioni. Prodotto con metallurgia convenzionale ma con contenuto di cobalto dell'5%.
HM MG10	Metallo duro micrograno, universale, durezza 1600 HV, contenuto di Co 10%.
HM	Metallo duro micrograno, universale.

Norma di filettatura



I fianchi dell'utensile rispondono alle norme indicate sotto «Tipi di filettatura».

Forma del gambo



Esecuzione cilindrica del gambo secondo la norma indicata.



Esecuzione cilindrica del gambo con spianatura laterale secondo la norma indicata.



Esecuzione cilindrica del gambo con quadro secondo la norma indicata.



Esecuzione cilindrica del gambo con quadro secondo la norma specificata.



Esecuzione cilindrica del gambo con quadro.

Forme di foro

I fori da maschiare devono avere il giusto diametro.
(Regola empirica della maschiatura: $\text{Diametro foro} = \text{Diametro interno filettatura} - \text{passo}$)



Utensile adatto alla filettatura di fori ciechi.



Utensile adatto alla filettatura di fori passanti.



Utensile adatto alla filettatura di fori ciechi e fori passanti.



Utensile adatto alla generazione di fori conici ciechi e fori conici passanti.

Forme d'imbocco / Forme d'imbocco coniche



Forme d'imbocco per maschi DIN 2197, Tabella 4: Tipo B. Il numero di passi sull'imbocco varia da 3,5 a 5.



Forme d'imbocco per maschi DIN 2197, Tabella 4: Tipo C. Il numero di passi sull'imbocco varia da 2 a 3.



Forma conica d'imbocco per maschi a rullare DIN 2175, Tabella 4: Tipo E. Lunghezza del cono d'imbocco: max. 2 passi.

Lubrorefrigeranti

Per la filettatura con maschi, e in particolare con maschi a rullare, va assicurata un'adeguata lubrificazione. Più profonda è la filettatura, tanto più importante è la lubrificazione.



Nella maschiatura si ottengono i migliori risultati con olio (effetto lubrificante). E però possibile anche la lavorazione con emulsione minimo al 5%.



Per la lavorazione è necessario olio come lubrificante.



Per la lavorazione è necessario olio come lubrificante.



Per la lavorazione è necessario olio con additivi speciali come lubrificante.
Recommendation: Ortho 400 (Motorex senza cloro) resp. Vascomill HD42 (Blaser, clorato).



Definire il diametro del foro secondo la colonna Mat. Critico, pagina 445.

Maschi a rullare



Utensile con profilo poligonale senza cave di lubrificazione.



Utensile con profilo poligonale con cave di lubrificazione.

Scarico trucioli



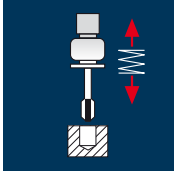
Utensile con scarico trucioli in direzione avanzamento.



Utensile con scarico trucioli in direzione contraria a quella di avanzamento.

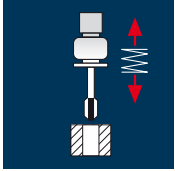


Utensile per materiali a truciolo corto.

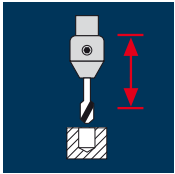


Maschiatura con mandrino di compensazione

Deve essere garantita una buona funzione di compensazione del mandrino (nessun blocco). In caso contrario, nonostante il mandrino di compensazione la filettatura potrebbe tagliarsi scorrettamente oppure potrebbero verificarsi degli errori di passo. La forza di trazione del mandrino di compensazione lineare deve essere scelta in funzione della filettatura da realizzare e del materiale da lavorare.



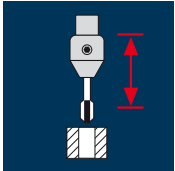
La programmazione di un numero di giri troppo elevato può dare problemi. Se il numero di giri è programmato in modo che non possa essere raggiunto (a causa del ritardo del movimento della macchina), può verificarsi una rottura prematura dell'utensile o il taglio scorretto della filettatura. Ad un'osservazione precisa, risulta che un numero di giri elevato non apporta spesso il risparmio di tempo auspicato.



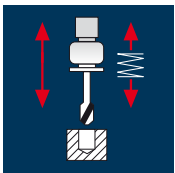
Rigid Tapping

Rigid Tapping - maschiatura rigida viene utilizzato per macchine moderne con guida sincronizzata. Tutti gli utensili dispongono di superficie laterale di serraggio e sono impiegati in pinze convenzionali.

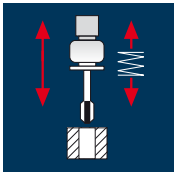
Nel taglio delle filettature con Rigid Tapping occorre programmare una distanza di sicurezza sufficiente. Se la distanza di sicurezza è insufficiente, il mandrino della macchina potrebbe non girare in sincronia con l'avanzamento prima di entrare nel foro. La conseguenza sono errori di passo della filettatura anche se si lavora in modo sincronizzato.



In diverse macchine non è possibile raggiungere la velocità di rotazione raccomandata nel funzionamento sincrono. In questi casi è necessario operare con il numero dei giri massimi dove la sincronizzazione della macchina è ancora garantita.





Maschiatura con compensazione lunghezza oppure Rigid Tapping



Simboli dei materiali

Rm < 850 N/mm ²	Acciai con resistenza a trazione inferiore a 850 N/mm ²
Rm 850-1100 N/mm ²	Acciai con resistenza a trazione da 850 a 1100 N/mm ²
Rm 1100-1500 N/mm ²	Acciai con resistenza a trazione da 1100 a 1500 N/mm ²
HRC 48 - 60	Acciai con una durezza di 48 - 60 HRC (durezza Rockwell C).
Inox Stainless	Acciaio inossidabile, resistente agli acidi e acciai refrattari
GG(G) Cast iron	Ghisa lamellare o globulare
Al Aluminium	Alluminio e lega d'alluminio
Ti Titanium	Titanio e leghe di titanio
Ni Nickel	Leghe a base di nichel
Cu Copper	Rame
CuZn Brass	Ottone

 Lo sfondo blu indica l'eccezionale adeguatezza dell'utensile a questo materiale.

 Lo sfondo azzurro indica un'adeguatezza da buona a sufficiente dell'utensile a questo materiale.

Formule e abbreviazioni

Velocità di rotazione n [min^{-1}]



$$n = \frac{v_c \cdot 1000}{d_1 \cdot \pi}$$

Velocità di taglio v_c [m/min]


$$v_c = d \cdot \pi \cdot n / 1000$$


Velocità di avanzamento v_f [mm/min]

$$v_f = P \cdot n$$


a	Dimensioni del quadro
d	Diametro nominale filettatura
d₁	Diametro del gambo
d₂	Diametro di foratura della fresa per forare e filettare
D₁	Diametro della fresa a filettare
d/D₁	Rapporto del diametro per la determinazione della velocità di avanzamento
Rk	Raggio di fresatura corretto per tolleranza del dado 6H / ISO2 (da programmare nella memoria dell'utensile)
f_z	Avanzamento per dente
l	Lunghezza della parte filettata dei maschi / maschi a rullare
l₁	Lunghezza del collarino dei maschi / maschi a rullare o lunghezza complessiva delle frese a filettare
l₂	Lunghezza della parte filettata delle frese a filettare
l₃	Lunghezza delle scanalature dei maschi o lunghezza del collarino delle frese a filettare
L	Lunghezza complessiva dei maschi / maschi a rullare
Lk	Profondità dello smusso nella fresa a filettare con smusso
n	Velocità di rotazione
P	Passo filettatura
v_c	Velocità di taglio
v_f	Velocità di avanzamento
v_{fc}	Velocità di avanzamento del centro utensile
	Numero di denti dei maschi e delle frese a filettare
	Numero di spigoli a rullare per maschi a rullare
Δ	Differenza tra diametro fianchi filettatura, diametro esterno filettatura e diametro nucleo filettatura per la classe d'impiego 2 (ISO 2) secondo DIN 22857.
R_m	Resistenza meccanica a trazione
HRC	Durezza Rockwell C
HV	Durezza Vickers
HB	Durezza Brinell


Prefori


M				
ø	P	Misura max.	Standard	Mat. critico*
1,0	0,25	0,785	0,75	0,80 *
1,2	0,25	0,985	0,95	1,00 *
1,4	0,30	1,142	1,10	1,15 *
1,6	0,35	1,321	1,25	1,30
1,7	0,35	1,421	1,35	1,40
1,8	0,35	1,521	1,45	1,50
2,0	0,40	1,679	1,60	1,70
2,2	0,45	1,838	1,75	1,85 *
2,3	0,40	1,979	1,90	1,95
2,5	0,45	2,138	2,05	2,10
2,6	0,45	2,238	2,15	2,20
3,0	0,50	2,599	2,50	2,60 *
3,5	0,60	3,010	2,90	3,00
4,0	0,70	3,422	3,30	3,40
4,5	0,75	3,878	3,75	3,90 *
5,0	0,80	4,334	4,20	4,30
6,0	1,00	5,153	5,00	5,10
7,0	1,00	6,153	6,00	6,10
8,0	1,25	6,912	6,80	6,90
10,0	1,50	8,676	8,50	8,60
12,0	1,75	10,441	10,20	10,40
14,0	2,00	12,210	12,00	12,20
16,0	2,00	14,210	14,00	14,20
18,0	2,50	15,744	15,50	15,70
20,0	2,50	17,744	17,50	17,70
22,0	2,50	19,744	19,50	19,70
24,0	3,00	21,252	21,00	21,20
27,0	3,00	24,252	24,00	24,20
30,0	3,50	26,771	26,50	26,70
33,0	3,50	29,771	29,50	29,70
36,0	4,00	32,270	32,00	32,20
39,0	4,00	35,270	35,00	35,20
42,0	4,50	37,799	37,50	37,70


MF				
ø	P	Misura max.	Standard	Mat. critico*
2,5	0,35	2,221	2,15	2,20
3,0	0,35	2,721	2,65	2,70
3,5	0,35	3,221	3,15	3,20
4,0	0,50	3,599	3,50	3,60 *
5,0	0,50	4,599	4,50	4,60 *
6,0	0,50	5,599	5,50	5,60 *
8,0	0,50	7,599	7,50	7,60 *
10,0	0,50	9,599	9,50	9,60 *
6,0	0,75	5,378	5,20	5,30
7,0	0,75	6,378	6,25	6,30
8,0	0,75	7,378	7,20	7,30
10,0	0,75	9,378	9,20	9,30
12,0	0,75	11,378	11,30	11,40 *
14,0	0,75	13,378	13,30	13,40 *
16,0	0,75	15,378	15,30	15,40 *
8,0	1,00	7,153	7,00	7,10
9,0	1,00	8,153	8,00	8,10
10,0	1,00	9,153	9,00	9,10
12,0	1,00	11,153	11,00	11,10
13,0	1,00	12,153	12,00	12,10
14,0	1,00	13,153	13,00	13,10
15,0	1,00	14,153	14,00	14,10
16,0	1,00	15,153	15,00	15,10
17,0	1,00	16,153	16,00	16,10
18,0	1,00	17,153	17,00	17,10
20,0	1,00	19,153	19,00	19,10
10,0	1,25	8,912	8,80	8,90
12,0	1,25	10,912	10,80	10,90
14,0	1,25	12,912	12,80	12,90
16,0	1,25	14,912	14,80	14,90
12,0	1,50	10,676	10,50	10,70 *
14,0	1,50	12,676	12,50	12,70 *
16,0	1,50	14,676	14,50	14,70 *
18,0	1,50	16,676	16,50	16,70 *
20,0	1,50	18,676	18,50	18,70 *
22,0	1,50	20,676	20,50	20,70 *
24,0	1,50	22,676	22,50	22,70 *


Prefori


MJ					
ø	P	Misura max.	Standard	Mat. critico*	
2,0	0,40	1,722	1,65	1,70	
2,5	0,45	2,187	2,10	2,20 *	
3,0	0,50	2,653	2,60	2,65	
4,0	0,70	3,498	3,40	3,50 *	
5,0	0,80	4,421	4,30	4,40	
6,0	1,00	5,216	5,10	5,20	
8,0	1,00	7,216	7,10	7,20	
10,0	1,25	8,994	8,90	9,00 *	


Rc		Rc 1:16 Alesatura conica del foro con alesatore 1:16				
ø	P(TPI)	ø	D max	D min	L min	
1/16	28	6,10	6,605	6,515	11,90	
1/8	28	8,10	8,615	8,525	11,90	
1/4	19	10,80	11,505	11,395	17,70	
3/8	19	14,30	15,005	14,895	18,10	
1/2	14	17,80	18,695	18,565	24,00	
3/4	14	23,00	24,185	24,055	25,30	

G					
ø	P	Misura max.	Standard	Mat. critico*	
1/8	28	8,848	8,80	8,85 *	
1/4	19	11,890	11,80	11,90 *	
3/8	19	15,395	15,25	15,40 *	
1/2	14	19,172	19,00	19,20 *	
5/8	14	21,128	21,00	21,10	
3/4	14	24,658	24,50	24,60	

BSW					
ø	P	Misura max.	Standard	Mat. critico*	
1/8	40	2,591	2,50	2,60 *	
3/16	24	3,745	3,60	3,70	
1/4	20	5,156	5,10	5,10	
5/16	18	6,588	6,50	6,60 *	
3/8	16	7,988	7,90	8,00 *	
7/16	14	9,332	9,20	9,30	
1/2	12	10,589	10,50	10,60 *	
5/8	11	13,558	13,50	13,50	
3/4	10	16,484	16,20	16,50 *	
7/8	9	19,355	19,20	19,30	
1	8	22,1492	22,00	22,10	

Rp					
ø	P	Misura max.	Standard	Mat. critico*	
1/8	28	8,637	8,60	8,60	
1/4	19	11,549	11,50	11,50	
3/8	19	15,054	15,00	15,00	
1/2	14	18,773	18,50	18,70	
3/4	14	24,259	24,00	24,20	

W_{zyl.}		Pre-foro cilindrico			
ø	P	Misura max.	Standard	Mat. critico*	
21,80	14	20,066	19,80	20,00	
24,32	14	22,586	22,30	22,50	

W_{kon.}		W kon 3:25 Alesatura conica del foro con alesatore 3:25				
ø	P(TPI)	ø	D max	D min	L min	
19,80	14	14,60	16,880	16,760	23,50	
28,80	14	22,60	25,480	25,360	28,50	

Prefori

UNC				
ø	P	Misura max.	Standard	Mat. critico*
1	64	1,582	1,55	1,60 *
2	56	1,872	1,85	1,90 *
3	48	2,146	2,10	2,15 *
4	40	2,385	2,35	2,40 *
5	40	2,697	2,65	2,70 *
6	32	2,896	2,85	2,90 *
8	32	3,531	3,50	3,50
10	24	3,962	3,90	4,00 *
12	24	4,597	4,50	4,60 *
1/4	20	5,258	5,10	5,20
5/16	18	6,731	6,60	6,70
3/8	16	8,153	8,00	8,10
7/16	14	9,550	9,40	9,50
1/2	13	11,024	10,80	11,00
9/16	12	12,446	12,20	12,40
5/8	11	13,868	13,50	13,80
3/4	10	16,840	16,50	16,80
7/8	9	19,761	19,50	19,70
1	8	22,601	22,30	22,60


UNF				
ø	P	Misura max.	Standard	Mat. critico*
0	80	1,306	1,25	1,30
1	72	1,613	1,55	1,60
2	64	1,913	1,85	1,90
3	56	2,197	2,15	2,20 *
4	48	2,459	2,40	2,45
5	44	2,741	2,70	2,75 *
6	40	3,023	2,95	3,00
8	36	3,607	3,50	3,60
10	32	4,166	4,10	4,20 *
12	28	4,727	4,60	4,70
1/4	28	5,588	5,50	5,60 *
5/16	24	7,036	6,90	7,00
3/8	24	8,636	8,50	8,60
7/16	20	10,033	9,90	10,00
1/2	20	11,608	11,50	11,60
9/16	18	13,081	12,90	13,00
5/8	18	14,681	14,50	14,70 *
3/4	16	17,678	17,50	17,70 *
7/8	14	20,675	20,50	20,70 *
1	12	23,571	23,30	23,50


UNJC				
ø	P	Misura max.	Standard	Mat. critico*
4	40	2,392	2,30	2,40 *
6	32	2,938	2,85	2,90
8	32	3,599	3,50	3,60 *
10	24	4,064	3,90	4,00
1/4	20	5,387	5,25	5,40 *
5/16	18	6,832	6,70	6,80
3/8	16	8,257	8,10	8,20

UNJF				
ø	P	Misura max.	Standard	Mat. critico*
6	40	3,053	3,00	3,05
8	36	3,662	3,55	3,60
10	32	4,254	4,15	4,20
1/4	28	5,661	5,55	5,60
5/16	24	7,109	7,00	7,10
3/8	24	8,679	8,60	8,70 *


UNEF				
ø	P	Misura max.	Standard	Mat. critico*
1/4	32	5,689	5,60	5,70 *
5/16	32	7,264	7,20	7,30 *
3/8	32	8,864	8,80	8,90 *
7/16	28	10,337	10,20	10,30
1/2	28	11,938	11,80	11,90
9/16	24	13,385	13,20	13,40 *
5/8	24	14,986	14,80	15,00 *
11/16	24	16,560	16,40	16,50
3/4	20	17,957	17,80	18,00 *
7/8	20	21,132	21,00	21,10
1	20	24,307	24,20	24,30


Prefori


NPT		1:16 Alesatura conica del foro con alesatore 1:16			
					
ø	P(TPI)	ø	D max	D min	L min
1/16	27	6,00	6,440	6,390	12,00
1/8	27	8,30	8,790	8,740	12,00
1/4	18	10,80	11,410	11,360	17,50
3/8	18	14,20	14,850	14,800	17,60
1/2	14	17,50	18,370	18,320	22,90
3/4	14	22,80	23,720	23,670	23,00
1	11,5	28,60	29,740	29,690	27,40


EG M					
					
ø	P	Misura max.	Standard	Mat. critico*	
2,0	0,40	2,177	2,15	2,20	*
2,5	0,45	2,697	2,65	2,70	*
3,0	0,50	3,220	3,15	3,20	*
4,0	0,70	4,292	4,20	4,30	*
5,0	0,80	5,334	5,25	5,30	*
6,0	1,00	6,407	6,30	6,40	*
8,0	1,25	8,483	8,40	8,50	*
10,0	1,50	10,560	10,40	10,50	*
12,0	1,75	12,644	12,50	12,60	*
14,0	2,00	14,733	14,50	14,70	*
16,0	2,00	16,733	16,50	16,70	*


NPTF		1:16 Alesatura conica del foro con alesatore 1:16			
					
ø	P(TPI)	ø	D max	D min	L min
1/16	27	6,00	6,460	6,410	12,00
1/8	27	8,30	8,810	8,760	12,00
1/4	18	10,80	11,450	11,400	17,50
3/8	18	14,20	14,890	14,840	17,60
1/2	14	17,50	18,380	18,330	22,90
3/4	14	22,80	23,730	23,680	23,00
1	11,5	28,60	29,770	29,720	27,40

EG MF					
					
ø	P	Misura max.	Standard	Mat. critico*	
8,0	1,00	8,407	8,30	8,40	*
10,0	1,00	10,407	10,30	10,40	*
12,0	1,50	12,560	12,50	12,50	*
14,0	1,50	14,560	14,50	14,50	*
16,0	1,50	16,560	16,50	16,50	*

NPSM					
					
ø	P	Misura max.	Standard	Mat. critico*	
1/8	27	9,246	9,10	9,20	*
1/4	18	12,217	12,00	12,20	*
3/8	18	15,545	15,50	15,50	*
1/2	14	19,279	19,00	19,20	*
3/4	14	24,638	24,50	24,60	*

EG UNC					
					
ø	P	Misura max.	Standard	Mat. critico*	
4	40	3,178	3,10	3,20	*
6	32	3,879	3,80	3,90	*
8	32	4,523	4,40	4,50	*
10	24	5,283	5,20	5,30	*
1/4	20	6,872	6,70	6,90	*
5/16	18	8,490	8,40	8,50	*
3/8	16	10,126	10,00	10,10	*
1/2	13	13,393	13,30	13,40	*

PG					
					
ø	P	Misura max.	Standard	Mat. critico*	
7	20	11,430	11,40	11,40	*
9	18	14,010	14,00	14,00	*
11	18	17,410	17,30	17,40	*
13,5	18	19,210	19,10	19,20	*
16	18	21,310	21,25	21,30	*

EG UNF					
					
ø	P	Misura max.	Standard	Mat. critico*	
6	40	3,815	3,70	3,80	*
8	36	4,496	4,40	4,50	*
10	32	5,184	5,10	5,20	*
1/4	28	6,720	6,60	6,70	*
5/16	24	8,351	8,30	8,40	*
3/8	24	9,931	9,80	9,90	*
7/16	20	11,587	11,50	11,60	*
1/2	20	13,176	13,10	13,20	*

Avvertenze d'impiego



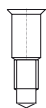
Incrudimento del foro

Durante la foratura assicurarsi di utilizzare una punta adatta e intatta. Se l'usura della punta è troppo elevata, potrebbe formarsi un indurimento della zona marginale. Una delle conseguenze di questo indurimento può essere la rottura dell'utensile per maschiare.



Indurimento e rifinitura della svasatura

Per la preparazione del foro devono essere utilizzati degli utensili buoni e adatti al materiale. Se lo svasatore è troppo usurato, la svasatura si indurisce od è ricalcata. In questo modo l'utensile per maschiare incontra dei problemi già nella prima fase di taglio. Questo può provocare rotture all'imbocco. La svasatura è importante per guidare l'utensile per maschiare.



Filettatura profonda

Per le filettature profonde devono essere utilizzati utensili con scanalature sufficientemente lunghe. In caso contrario l'utensile potrebbe rompersi in seguito all'accumulo di trucioli poiché questi ultimi non possono fuoriuscire dal foro. Nel Rigid Tapping è possibile lavorare con diversi avanzamenti di profondità per accorciare i trucioli. È importante che il raffreddamento sia sufficiente.



Funzionalità del mandrino di compensazione

Deve essere garantita una buona funzione di compensazione del mandrino (nessun blocco). In caso contrario, nonostante il mandrino di compensazione la filettatura potrebbe tagliarsi scorrettamente oppure potrebbero verificarsi degli errori di passo. La forza di trazione del mandrino di compensazione lineare deve essere scelta in funzione della filettatura da realizzare.



Getto di raffreddamento orientato in modo corretto

Nel taglio delle filettature è importante che il getto di raffreddamento sia orientato in modo corretto. L'allineamento deve essere eseguito dall'alto in direzione delle scanalature di serraggio affinché il raffreddamento sia efficace anche in profondità. Se il getto di raffreddamento non è orientato in modo corretto, all'interno del foro si forma del calore con il conseguente problema della saldatura a freddo del materiale. Tutto ciò può provocare una minore durata utile e una pessima formazione di trucioli.



Distanza di sicurezza

Nel taglio delle filettature con Rigid Tapping occorre programmare una distanza di sicurezza sufficiente. Se la distanza di sicurezza è troppo corta, il mandrino della macchina potrebbe non giare in sincronia con l'avanzamento prima di entrare nel foro. La conseguenza sono errori di passo della filettatura anche se si lavora in modo sincronizzato.



Idoneità della macchina

In diverse macchine esiste la possibilità che il numero di giri consigliato non possa essere raggiunto. In questo caso occorre programmare di conseguenza il numero di giri della macchina.



Numero di giri non costante

La programmazione di un numero di giri troppo elevato può dare problemi: se il numero di giri è programmato in modo che non possa essere raggiunto (a causa del ritardo del movimento della macchina), può verificarsi una rottura prematura dell'utensile o il taglio scorretto della filettatura. Ad un'osservazione precisa, risulta che un numero di giri elevato non apporta spesso il risparmio di tempo auspicato.

Tabella di confronto delle durezza ($R_m \rightarrow HV10 \rightarrow HB \rightarrow HRC$)

R_m [N/mm ²]	HV 10	HB	HRC	R_m [N/mm ²]	HV 10	HB	HRC
240	75	71		920	287	273	28
255	80	76		940	293	278	29
270	85	81		970	302	287	30
285	90	86		995	310	295	31
305	95	90		1020	317	301	32
320	100	95		1050	327	311	33
335	105	100		1080	336	319	34
350	110	105		1110	345	328	35
370	115	109		1140	355	337	36
385	120	114		1170	364	346	37
400	125	119		1200	373	354	38
415	130	124		1230	382	363	39
430	135	128		1260	392	372	40
450	140	133		1300	403	383	41
465	145	138		1330	413	393	42
480	150	143		1360	423	402	43
495	155	147		1400	434	413	44
510	160	152		1440	446	424	45
530	165	157		1480	458	435	46
545	170	162		1530	473	449	47
560	175	166		1570	484	460	48
575	180	171		1620	497	472	49
595	185	176		1680	514	488	50
610	190	181		1730	527	501	51
625	195	185		1790	544	517	52
640	200	190		1845	560	532	53
660	205	195		1910	578	549	54
675	210	199		1980	596	567	55
690	215	204		2050	615	584	56
705	220	209		2140	639	607	57
720	225	214			655	622	58
740	230	219			675		59
755	235	223			698		60
770	240	228			720		61
785	245	233			745		62
800	250	238	22		773		63
820	255	242	23		800		64
835	260	247	24		829		65
860	268	255	25		864		66
870	272	258	26		900		67
900	280	266	27		940		68



Servizi

Come ottimizzare l'impiego dei vostri utensili

a passion for precision



Processi

- Innovazione
- Produzione
- Controllo qualità
- Client research
- Servizio clienti
- Certificazione ISO/EN

Servizi

- Consulenza
- ToolExpert – Software dei parametri di taglio
- ConcepTool – Utensili speciali
- ToolService – Preparazione utensili
- ReTool® – Riaffilatura di utensili Fraisa
- ToolCare® – Sistemi di gestione utensili
- ToolSchool – Seminari formativi

Classi di prestazione

- X-Generation
- Base-X
- Favora
- HSS

Prodotti

- Utensili per fresatura in metallo duro/ASR
- Utensili per foratura in metallo duro/ASR
- Utensili per maschiatura in metallo duro/ASR
- Placchette ribaltabili per utensili di fresatura
- Calibri

Clienti

- oltre 10000 clienti
- oltre 1000 partner ToolCare®

Servizio completo

Servizi e prodotti ottimali per garantire al cliente il massimo vantaggio: così Fraisa definisce la propria missione. Per questo i servizi Fraisa stanno acquistando un'importanza sempre più significativa. Il servizio clienti diretto e personalizzato offre lavorazioni speciali e consulenze individuali sul campo, supporto progettuale, calcoli di redditività e allestimento dei parametri di taglio, assistendo il cliente nella razionalizzazione degli assortimenti e nella scelta dell'utensile ottimale. Il nostro concetto di «service» non si traduce solo in un fattore determinante per la fiducia e l'intesa reciproca, ma anche nella capacità di garantire ai nostri partner commerciali una maggiore produttività e quindi un successo duraturo sul mercato.

ToolSchool Tool
oolCare® Comp
eTool® ConcepTool To
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ToolCare®

Un sistema high-tech per
la gestione utensili

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ToolService

La preparazione utensili
che non conosce limiti

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ConcepTool

Utensili speciali su misura

Pagina 474

ToolSchool

Formazione e addestramento
per il transfer di know-how

Pagina 484



ToolCare®

Un sistema high-tech per
la gestione utensili

ToolCare®



S

Un sistema high-tech per la gestione utensili



L'armadio utensili sempre pronto

Fraisa ToolCare® è un sistema di gestione utensili semplice e pratico, in grado di garantire al cliente un magazzino personalizzato ai massimi livelli tecnologici. Il sistema ToolCare®, basato sull'utilizzo di un armadio utensili compatto e con diversi cassetti che il cliente installa e utilizza presso il suo stabilimento, prevede lo stoccaggio in conto deposito di tutti gli utensili impiegati in produzione. Il magazzino merci, del valore di diverse migliaia di euro, rimane così di proprietà e sotto la gestione di Fraisa. In qualsiasi momento – soprattutto in quello di maggiore necessità – l'utente ha libero accesso agli utensili di cui ha bisogno nel processo di fabbricazione.

ToolCare® migliora la posizione sul mercato

I vantaggi offerti dagli utensili in conto deposito gestiti dal sistema Fraisa sono evidenti: il cliente ToolCare® riduce costi e capitale vincolato, pagando solo gli utensili che utilizza effettivamente. Inoltre non deve dedicare tempo alle attività di ordinazione, amministrazione, manutenzione e assistenza, potendo così concentrarsi solo sul suo vero core business. Si crea così una perfetta situazione «win-win», tanto più che i nostri tecnici applicativi sono sempre disponibili a ottimizzare senza sosta gli utensili impiegati e a razionalizzare l'assortimento disponibile. Risultato: ToolCare® dimostra che l'innovazione «made by Fraisa» può migliorare sensibilmente anche la competitività dei suoi clienti!



Un sistema high-tech per la gestione utensili

Cooperazione anziché competizione

«Con ToolCare® Fraisa supera la classica ostilità basata su acquisto e vendita, passando invece a una comunità per la creazione di valore, nella quale ciascun partner svolge le mansioni verso le quali è più portato». Con questa dichiarazione Josef Maushart, CEO di Fraisa, ha fatto il punto della situazione vincendo sin dall'inizio l'intero settore: da allora oltre 1000 aziende in tutto il mondo hanno scommesso su questa nuova forma di cooperazione.

Costi ridotti del 20%

Pur comportando una notevole riduzione dei costi di processo, i vantaggi di ToolCare® non si limitano solo al potenziale risparmio che il sistema è in grado di offrire. Il successo è dato anche da aspetto altrettanto determinante, che si riassume nella seguente formula: meno capitale vincolato, meno costi di amministrazione e stoccaggio, maggiore redditività! E in più un servizio extra: previo accordo, Fraisa ritira gli utensili presso il cliente e li riconsegna dopo averli preparati.

Le prestazioni di ToolCare®

- Disponibilità 24 ore su 24
- Attrezzi di ultima generazione
- Nessun costo di approvvigionamento
- Nessun capitale vincolato
- Totale trasparenza d'impiego
- Assortimento razionalizzato
- Workshop e training
- Preparazione utensili inclusa



ToolCare®

ToolCare

S

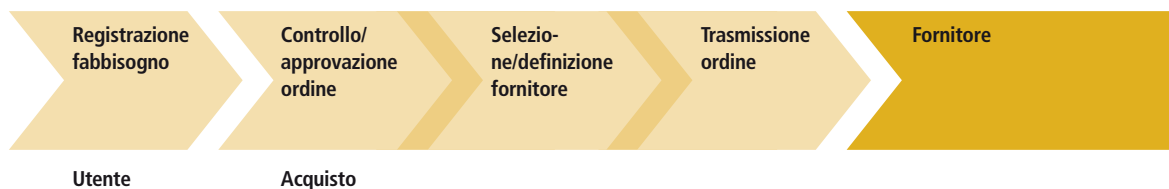


Un sistema high-tech per la gestione utensili

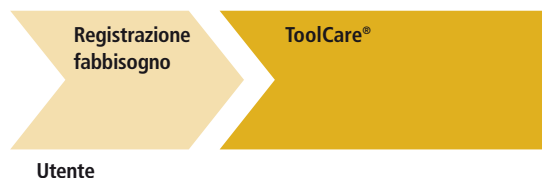
Maggiori possibilità grazie all'elettronica e al software

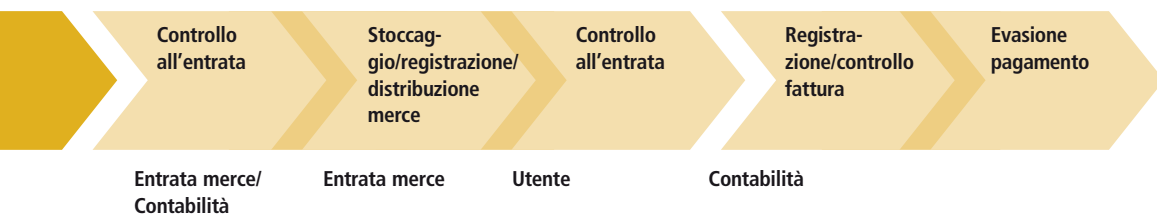
Il programma computerizzato e-ToolCare®, versione elettronica evoluta di questo geniale sistema di gestione, consente di digitalizzare tutte le mansioni amministrative, le ordinazioni, le statistiche ecc. Il programma comprende anche un catalogo elettronico contenente dati applicativi integrati. In questo modo è possibile protocollare con esattezza i prelievi di utensili per ogni armadietto, centro di costo e collaboratore. Inoltre si possono richiamare i parametri di taglio di ciascun utensile. Fraisa si occupa dell'installazione hardware e software dei programmi messi a punto internamente. Grazie a una gestione scorte computerizzata è così possibile evitare che il cliente, in caso di grossi ordinativi, si trovi improvvisamente in difficoltà con gli utensili.

Catena di approvvigionamento standardizzata senza ToolCare®



Catena di approvvigionamento standardizzata con ToolCare®







Un sistema high-tech per la gestione utensili

ToolCare® è vantaggioso anche per il portafoglio!

Il sistema ToolCare® non solo è pratico, ma offre anche un considerevole margine di risparmio. Ipotizzando un costo utensili per l'azienda pari a 100 000 euro, il risparmio potenziale è di ben 20 000 euro, cioè un quinto dell'importo. I benefici offerti da ToolCare® si ottengono grazie al minor numero di utensili ordinati nonché all'assenza di capitale da immobilizzare nel magazzino utensili e di costi di ammortamento nell'ordine di 2000 euro. Questa, infatti, è la cifra che un'azienda che non conosce il sistema di gestione ToolCare® deve sostenere, poiché di regola si ordinano – e si pagano – più utensili di quelli effettivamente necessari.

ToolCare® consente di risparmiare almeno un quinto sul costo degli utensili

	Ordinativo tradizionale	Con ToolCare®
Consumo di utensili annuo	100 000.–	100 000.–
Numero di ordini annuo	100	12*
Costi interni di processo per ciascun ordine	200.–	100.–
Costi di processo annui **	20 000.–	2 400.–
Giacenza scorte	20 000.–	
Costi di capitale (ip 8%)	1 600.–	
Costi di ammortamento (10%)	2 000.–	
Totale costi principali	23 600.–	2 400.–

**Risparmio potenziale: ≈ 21 200.–,
vale a dire oltre il 20% del volume di acquisto**

* Ordinativi restanti per merci non stoccate con ToolCare®.

** Dati raccolti tramite un campione rappresentativo di cronologie clienti.







ToolService

La preparazione utensili
che non conosce limiti

ToolService

ToolService
WERKZEUGAUFBEREITUNG



La preparazione utensili che non conosce limiti

ToolService unlimited

Il servizio ReTool® per la preparazione degli utensili Fraisa ha da tempo conquistato nel settore fama di massima qualità e assoluta affidabilità. Con ToolService Fraisa offre le stesse identiche garanzie di competenza, perfezione e servizio anche nei confronti degli utensili per truciatura di altri produttori, garantendo una riaffilatura di massima e assoluta qualità.

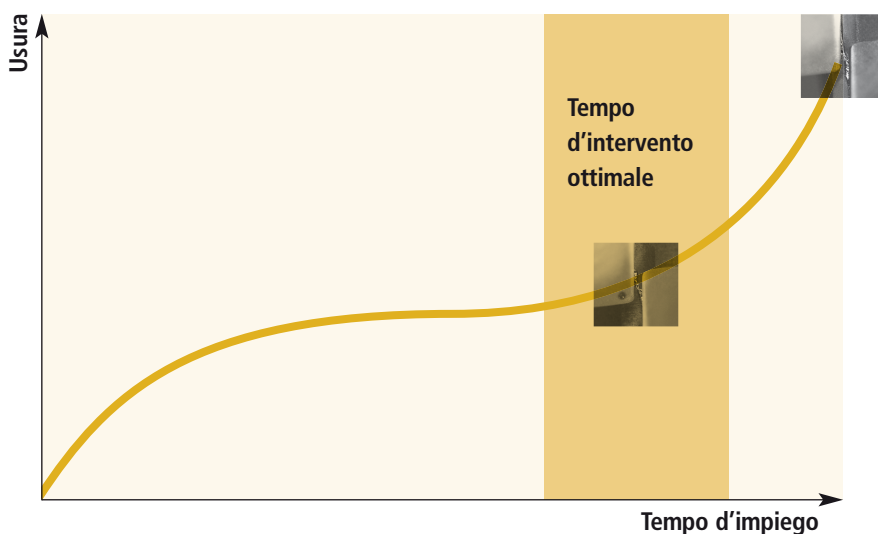


Il meglio da un unico fornitore

Con ToolService Fraisa persegue un obiettivo chiaro: alleggerire i clienti per consentire loro di concentrarsi esclusivamente sulla produzione, vero cuore business della loro attività. Affidare la preparazione e la riaffilatura a Fraisa significa mettersi nelle mani migliori, potendo contare su un'offerta ampia e qualitativamente valida. Oltre a preparare un'intera serie di utensili per fresare, siamo specializzati fra l'altro anche nell'affilatura delle punte di utensili per foratura. Ulteriori offerte sono illustrate nel catalogo generale ToolService.

Il tempo è denaro

Per imparare a ottimizzare il tempo d'intervento dei propri utensili, basta rivolgersi direttamente a uno dei nostri tecnici applicativi. Una cosa è certa: il costo degli utensili si riduce drasticamente se gli utensili per la truciolatura vengono tempestivamente riaffilati.





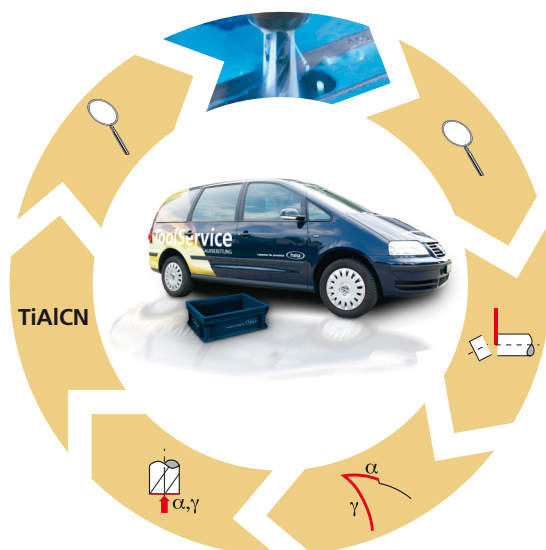
La preparazione utensili che non conosce limiti

Sicuro, rapido e diretto: un servizio di cui ci si può fidare

«Riaffilare meglio e più veloci non si può!» – è questo lo slogan con cui serviamo i clienti di tutto il mondo, offrendo un servizio rapido, pratico e semplificato. I nostri assistenti sono quotidianamente in viaggio per ritirare gli utensili dai clienti e riconsegnarli perfettamente riaffilati nell'arco di qualche giorno lavorativo. A ciò si aggiunge anche la rete Fraisa, che offre in qualsiasi momento consulenze o assistenza grazie ai nostri tecnici applicativi sempre a disposizione dei nostri clienti.

Fraisa ToolService – Il processo in sintesi

Ecco a grandi linee come funziona la preparazione: ritiro dell'utensile, controllo, ripristino della geometria di taglio, rivestimento, controllo e restituzione al cliente degli utensili preparati – anche in collaborazione con altri partner logistici.

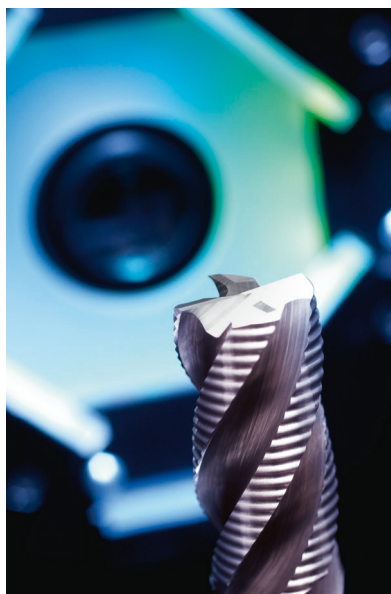


Garanzia di qualità attraverso la competenza di processo

Ultramoderne affilatrici CNC a più linee, tecnica di misurazione all'avanguardia e la sofisticata abilità artigianale dei nostri specialisti addetti alla preparazione garantiscono la massima potenzialità degli utensili riaffilati.

I vantaggi per voi

- Eccellente rapporto prezzo-prestazione
- Assenza di costi logistici
- Ineccepibile qualità Fraisa e garanzia «Soddisfatti o rimborsati»
- Tempistiche ridotte





La preparazione utensili che non conosce limiti

ReTool® – La riaffilatura di utensili Fraisa: massimi livelli di competenza e perfezione

Il servizio Fraisa per la preparazione dei propri utensili ha dimostrato da tempo la sua potenzialità all'interno del settore. I nostri clienti sanno che con ReTool® di Fraisa il valore dei loro utensili viene nuovamente re-incrementato, consentendo così ampi margini di risparmio sui relativi costi.



**Utensile nuovo dopo un percorso
d'intervento di 480 min**



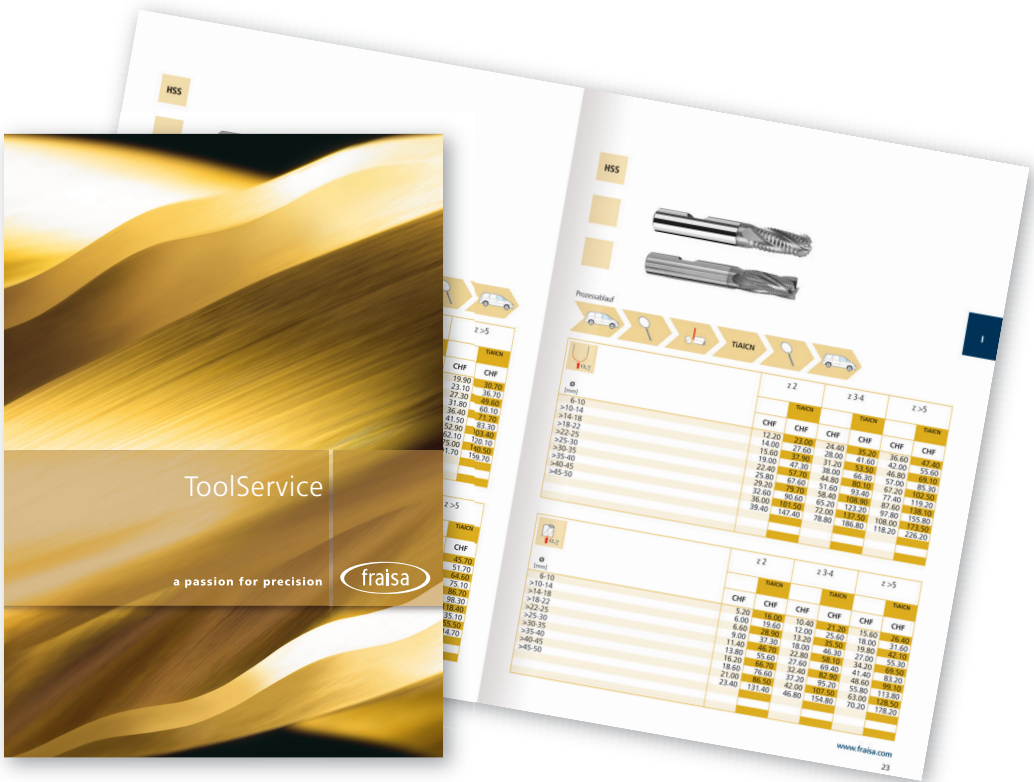
**Utensile riaffilato (ReTool®)
dopo un percorso d'intervento
di 480 min**

La gamma ReTool® riguarda tutti i prodotti Fraisa

- Utensili per fresatura
- Utensili per foratura
- Utensili per maschiatura

Offerta e prezzi di ReTool®

L'offerta completa dei servizi di riaffilatura e riparazione, unitamente al listino prezzi di facile consultazione, è contenuta nel nostro catalogo per il servizio di riaffilatura oppure nella nostra homepage www.fraisa.com.



Riduzione costi garantita!

- Potenza di truciolatura costantemente elevata per tutta la durata utile degli utensili
- Drastica riduzione del costo utensili
- Sensibile calo dei costi di lavorazione
- Elevata sicurezza di processo anche al primo impiego
- Durata equiparabile a quella degli utensili nuovi

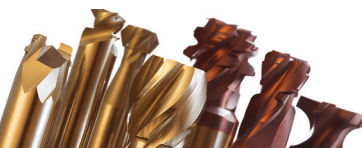




ConcepTool

Utensili speciali su misura

ConcepTool



Utensili speciali su misura

I vostri desideri sono i nostri obiettivi!

Gli utensili speciali sono quelli realizzati su misura attraverso lavorazioni particolari, nel rispetto delle vostre esigenze specifiche e delle attuali richieste di mercato. Per questo Fraisa impiega i migliori macchinari e materiali, le tecniche più avanzate e tutto il know-how della tecnologia leader. Il nostro obiettivo è contribuire a ottimizzare i vostri processi e a ridurre i vostri costi. Gli utensili speciali di Fraisa servono a fornire prestazioni altrettanto particolari. In altre parole ConcepTool ottimizza i processi, incrementa la performance e aumenta la produttività. Spesso questo accade riunendo diversi utensili standard in un utensile speciale particolarmente potente.

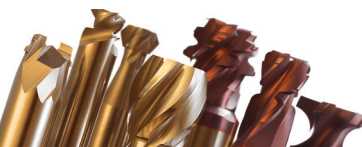
Un utensile al posto di tre fa risparmiare tempo e denaro.



Sfide nuove e complesse? Nessun problema!

Molte sono le vie che conducono a un obiettivo, il punto è individuare e scegliere quella più giusta. Per questo ai nostri clienti forniamo non solo utensili nuovi, ma anche servizi particolari di attività progettuale. In altre parole: Fraisa elabora in loco e con voi la soluzione ottimale, valuta i parametri di taglio, controlla performance e redditività e vi affianca anche nello start-up processuale. Il seguente schema mostra una panoramica della piattaforma che Fraisa mette a disposizione nel settore utensili speciali.



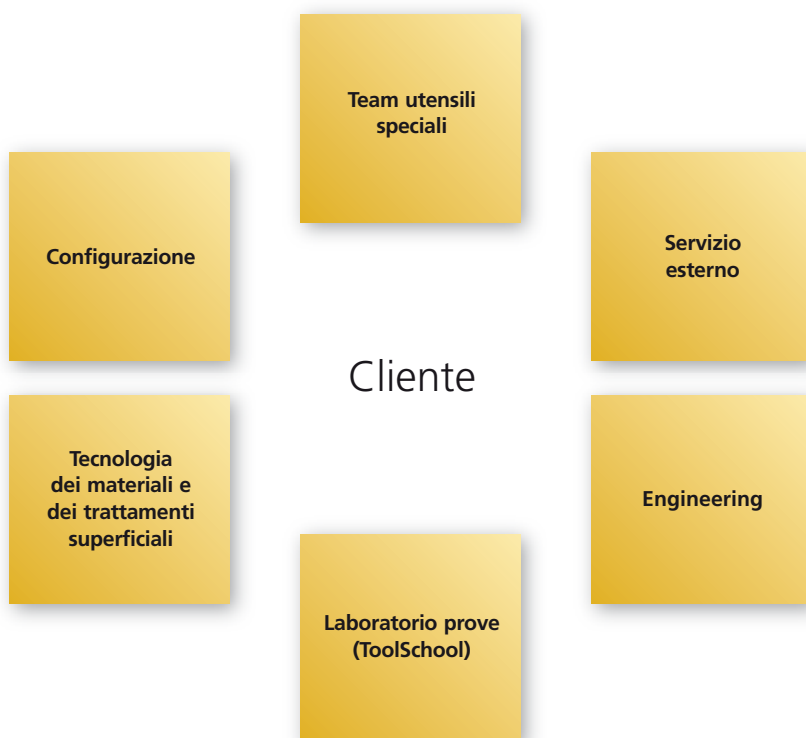


La nostra rete di assistenza, il vostro utensile speciale

La nostra rete di assistenza, il vostro utensile speciale

Noi mettiamo a punto l'utensile più adatto al vostro impiego specifico. Attraverso la nostra rete di assistenza offriamo un'ampia serie di opportunità per vincere le sfide più complesse, attingendo da un pool di partner le conoscenze più avanzate per soddisfare le vostre richieste.

Rete di assistenza Fraisa



Consulenti applicativi

I nostri addetti al servizio esterno sono altamente qualificati e in grado di fornire sempre consulenze in loco per individuare le vostre esigenze e mettere a punto strategie da tradurre in soluzioni e ottimizzazioni concrete. Basta una telefonata per richiedere la presenza di uno specialista in truciolatura.

Team utensili speciali

Il team utensili speciali è piattaforma e punto di riferimento personale. I tecnici Fraisa valutano la situazione caso per caso compiendo uno studio di fattibilità. A tal proposito chiariscono tutti i dettagli, propongono soluzioni, eseguono conteggi e forniscono offerte con prezzi e tempistiche concrete.

Engineering

Gli incarichi più complessi vengono affidati a un team progettuale che mette in campo tutto il suo know-how. Insieme al cliente esso analizza il progetto in loco, così da elaborare la migliore soluzione con il supporto del proprio laboratorio e sulla scorta di prove sperimentali.

Laboratorio prove (ToolSchool)

Materiali ad hoc del cliente, di cui non si conosce necessariamente la composizione chimica, vengono testati e analizzati nel laboratorio interno di Fraisa ricavando i dati d'impiego ideali.

Tecnologia dei materiali e dei trattamenti superficiali

Selezioniamo i substrati più opportuni, scegliendo il rivestimento e il trattamento superficiale adeguato alla rispettiva applicazione. La nostra competenza di sviluppo interna per il trattamento di materiali e superfici garantisce risultati ottimali.

Configurazione

La nostra attività di configurazione vi offre il necessario supporto visivo. Su richiesta è possibile fornire disegni quotati o rappresentazioni 3D.



Quattro vie verso lo stesso traguardo:
il vostro successo.

1 **Adattare**

Sapete esattamente di cosa avete bisogno: adattare un utensile standard acquistato dal catalogo Fraisa. Partendo da indicazioni concrete su nuove lunghezze o diametri differenti, realizziamo una soluzione adeguata alle vostre esigenze, qualitativamente ineccepibile e ottimizzata rispetto a costo/prestazione.

Piccolo dettaglio, **grande risultato!**

2 **Realizzare**

Avete una proposta concreta e una visione precisa dell'utensile speciale che vi serve. Noi definiamo la geometria di taglio ottimale rispetto al suo impiego specifico, sviluppando insieme a voi l'utensile perfetto e producendolo su misura pronto per l'uso. Ovviamente nella ben nota qualità Fraisa.

La vostra idea, il nostro prodotto!

3 **Creare**

Conoscete a grandi linee il pezzo da lavorare, ma non sapete ancora esattamente con quale utensile. Partendo dal disegno del componente e dalla struttura del vostro parco macchine, creiamo insieme a voi l'utensile speciale adatto a questa particolare lavorazione e con le caratteristiche prestazionali più adeguate a una migliore performance.

Voi sapete cosa, noi sappiamo come!



4 Riprodurre

Possedete un utensile campione e ve ne serve uno dalla forma simile, ma nuovo e di qualità più elevata. Grazie ai nostri moderni strumenti di misurazione, siamo in grado di quotare esattamente utensili già esistenti, analizzarli nel dettaglio e realizzarli al meglio. Così sarete di nuovo al passo con i tempi!

Nuova qualità per il vecchio utensile!



ConcepTool Gamma prestazioni

Tutto è possibile. E nel migliore dei modi.

Con Fraisa nulla è impossibile. In altre parole siamo in grado di progettare e realizzare su richiesta utensili ad hoc di qualsiasi forma e applicazione fra quelle non presenti nei nostri cataloghi standard. Inoltre il nostro impianto interno è in grado di adattare i rivestimenti standard disponibili a qualsiasi utensile speciale. A tal fine lavoriamo in stretta collaborazione con i nostri partner per mettere a punto nuove superfici high-tech. La nostra missione consiste nel definire la migliore geometria utensile e il rivestimento ottimale per ogni applicazione specifica.



Tecnica di fresatura

La nostra offerta di utensili per fresatura va ben oltre la gamma di articoli standard. Siamo infatti in grado di progettare e realizzare qualsiasi tipo di frese a candela e per forare. A ciò si aggiungono gli utensili con placchette ribaltabili o con placchette in metallo duro saldobrasate.

Tecnica di foratura

La nostra offerta comprende utensili per foratura, alesatura e svasatura, VHM e ASR, placchette ribaltabili o placchette in metallo duro saldobrasate. Altra specialità tipica di Fraisa sono gli utensili a posizioni multiple e gli utensili combinati per processi di lavorazione complessi.

Tecnica di maschiatura

Fraisa produce utensili per maschiatura, da utilizzare nella lavorazione a foro passante e a foro cieco, nonché maschi a rullare e per la fresatura di filetti interni ed esterni (queste ultime solo nella versione VHM).

Tecnica di controllo

Il nostro assortimento comprende calibri filettati in pregiato acciaio per calibri da impiegare nel controllo della filettatura interna ed esterna di qualsiasi tipo e tolleranza. A ciò si aggiungono i calibri cilindrici per il controllo di alesature o ondulatura nonché i calibri di registrazione per gli strumenti di misura.





ToolSchool

Formazione e addestramento
per il transfer di know-how

ToolSchool





Formazione e addestramento per il transfer di know-how

ToolSchool – Formazione e addestramento per il transfer di know-how

Anche nel settore high-tech nessuno nasce già esperto: occorre assimilare nuove conoscenze, sperimentare nuove tecnologie, provare nuovi utensili senza fermarsi mai. Per questo Fraisa non fabbrica solo nuovi utensili, ma utilizza il programma interno ToolSchool per insegnare ai nuovi utenti come sfruttarli al massimo nel lavoro quotidiano, quali sono le tecnologie più all'avanguardia e quali interventi occorre attuare per migliorare i processi produttivi del cliente e contenere i costi. Perché in un mercato sempre più agguerrito occorre assolutamente essere più rapidi, migliori e convenienti.

Il nostro servizio al vostro servizio.

Ogni anno oltre 1500 clienti sparsi in tutto il mondo frequentano il programma formativo ToolSchool di Fraisa. Si tratta non solo di consumatori finali, cioè di clienti che utilizzano quotidianamente i nostri utensili nella loro azienda, ma anche dei nostri partner di distribuzione, che attraverso il know-how di Fraisa vengono aggiornati e istruiti sulle tecniche e gli strumenti più attuali per poter trasmettere le informazioni acquisite ai propri clienti. I corsi sono tenuti in tedesco, francese, inglese e italiano.



Competenza professionale a vantaggio del professionista.

I tempi cambiano a ritmo incalzante e con loro anche i materiali, i macchinari e i processi. Aggiornamento è la parola d'ordine, il confronto con gli esperti un dovere, il collegamento tra teoria e pratica la premessa per il progresso. Ai seminari tecnici organizzati da Fraisa gli ingegneri più qualificati istruiscono specialisti e manager di settori specifici. I fabbricanti di orologi, per esempio, imparano a conoscere e a utilizzare la tecnologia delle microfresche di ultima generazione, mentre i rappresentanti dell'industria aeronautica vengono informati su tutte le rivoluzionarie novità dei rivestimenti duri da sfruttare al meglio per i loro scopi.

Prima il dovere, poi il piacere.

Chi studia molto ha bisogno di avere la mente riposata. Per questo dopo l'impegno con ToolSchool occorre un po' di svago e di relax. Noi pensiamo anche a questo, pianificando per voi il viaggio e il soggiorno, organizzando su richiesta il vostro tempo libero, mostrandovi la città e i suoi dintorni, facendo in modo che vi sentiate bene sempre e ovunque. Al termine del corso o del seminario è prevista la consegna di un certificato personale di partecipazione.

Informazioni dettagliate sulle formazioni e le date le troverete su **www.fraisa.com**.



Condizioni generali

1. Generali

- 1.1 Il contratto viene stipulato attraverso la conferma per iscritto (conferma d'ordine) di Fraisa SA o di una società collegata (di seguito definite «Fornitore») che l'ordine è stato accettato.
- 1.2 Le modifiche all'ordine d'acquisto riportate nella conferma d'ordine divengono valide solo se l'Acquirente non le rifiuta entro 5 giorni lavorativi dalla ricezione della conferma d'ordine. Le offerte, in particolare quelle nei listini prezzi, nelle brochure ecc., che non contengono termini di accettazione non sono vincolanti.
- 1.3 Le presenti condizioni di fornitura sono vincolanti se vengono dichiarate applicabili nell'offerta o nella conferma d'ordine. Le condizioni diverse richieste dall'Acquirente hanno validità solo se sono accettate esplicitamente e per iscritto dal Fornitore.
- 1.4 Tutti gli accordi e le dichiarazioni di rilevanza legale tra le Parti devono essere in forma scritta per essere considerate valide.
- 1.5 Se una o più disposizioni di queste condizioni di fornitura dovessero risultare parzialmente o completamente inefficaci, le Parti si impegnano a stipulare un accordo sostitutivo che si avvicina il più possibile all'effetto legale ed economico della disposizione eliminata.

2. Volume della fornitura e dei servizi

Le forniture e prestazioni del Fornitore figurano in modo esaustivo sulla conferma d'ordine e sugli eventuali allegati. Il Fornitore è autorizzato ad apportare modifiche di miglioria, purché queste non comportino aumenti di prezzo.

3. Brochure, cataloghi e documentazione tecnica

Le brochure e i cataloghi non sono vincolanti se non diversamente stabilito in altri accordi. Le indicazioni fornite nella documentazione tecnica sono da considerarsi vincolanti solo se ciò è espressamente garantito.

4. Prezzi

- 4.1 Tutti i prezzi sono da intendersi, ove non diversamente concordato, al netto, franco fabbrica, imballaggio escluso, in franchi svizzeri o nella valuta del Paese della società collegata a Fraisa, esclusa ogni qualsivoglia deduzione.
- 4.2 Tutti i costi accessori quali p.es. nolo, assicurazioni, permessi d'esportazione, d'importazione e simili, come pure i costi di certificazione, sono a carico dell'Acquirente.
- 4.3 L'Acquirente è tenuto a sostenere anche tutti i tipi di oneri fiscali (in particolare l'IVA), contributi, imposte, dazi doganali e simili legati al contratto oppure a rimborsare tali esborsi al Fornitore (che ne deve dimostrare l'avvenuto versamento) nel caso questi sia stato obbligato ad anticiparli.

5. Condizioni di pagamento

- 5.1 I pagamenti devono essere effettuati dall'Acquirente nel Paese del Fornitore specificato nelle condizioni di pagamento contrattuali, al netto, senza deduzione di sconti, spese, tasse, contributi imposte, tasse doganali e simili. L'obbligo di pagamento è adempiuto quando nel Paese del Fornitore è reso disponibile la somma concordata. Il termine di pagamento è 30 giorni dalla data di fattura.
- 5.2 Il termine di pagamento o le varie scadenze di pagamento concordate devono essere rispettati anche quando il trasporto, la consegna o la ricezione dei prodotti sono rimandati per motivi indipendenti dal Fornitore o quando alla fornitura mancano parti poco significative o quando si rendono necessarie delle rielaborazioni che non impediscono l'utilizzo della fornitura stessa.
- 5.3 Se l'Acquirente non rispetta il termine di pagamento o le varie scadenze concordate, è tenuto a versare, dalla scadenza in poi e senza alcun sollecito, un interesse conforme alle norme sugli interessi vigenti nel Paese dell'Acquirente e che sia tuttavia almeno maggiore del 4% rispetto al tasso di sconto della Banca Nazionale Svizzera. È fatto salvo il risarcimento per eventuali danni ulteriori.

6. Riserva di proprietà

- 6.1 Il Fornitore resta proprietario del totale della fornitura fino al ricevimento del pagamento totale concordato nel contratto.
- 6.2 L'Acquirente è tenuto a operare quanto necessario per proteggere la proprietà del Fornitore; in particolare autorizza il Fornitore alla chiusura del contratto di vendita a iscrivere, a spese dell'Acquirente, la riserva di proprietà negli appositi registri pubblici, documenti ufficiali o testi corrispondenti ai sensi della legge nazionale vigente e ad assolvere tutte le formalità rilevanti.
- 6.3 Durante la riserva di proprietà l'Acquirente s'impegna a custodire a sue spese i beni forniti, provvedendo ad assicurarli a favore del Fornitore contro furto, rottura, incendio, danni causati dall'acqua ed altri rischi. L'Acquirente prenderà tutte le misure necessarie affinché il diritto di proprietà del Fornitore non venga leso né annullato.

7. Termine di fornitura

- 7.1 Il Fornitore si impegna a rispettare il termine di fornitura stabilito nella conferma d'ordine. Il termine di fornitura è rispettato quando la notifica della spedizione è stata inviata all'Acquirente entro il suddetto termine.
- 7.2 Il rispetto del termine di fornitura presuppone l'adempimento di tutti gli obblighi contrattuali da parte dell'Acquirente.
- 7.3 Il termine di consegna si prolunga in misura adeguata quando si verificano eventi avversi che il Fornitore non riesce a evitare nonostante l'adozione delle opportu-

- ne precauzioni, indipendentemente dal fatto che tali eventi si verifichino presso il Fornitore, l'Acquirente o presso terzi. Tali eventi avversi possono includere, a mero titolo esemplificativo, epidemie, mobilitazioni, guerre, tumulti, interruzioni dell'esercizio, incidenti, conflitti lavorativi, fornitura in ritardo o errata di materie prime e prodotti semilavorati indispensabili, misure od omissioni delle autorità nonché eventi naturali.
- 7.4 Se in alternativa a un termine di consegna viene concordata una precisa scadenza, tale scadenza è da considerarsi applicabile e valida in modo analogo al precedente termine di consegna, come descritto nei punti da 7.1 a 7.3.
- 7.5 Il ritardo nella consegna non conferisce all'Acquirente alcun diritto a un rimborso dei danni o ad altre prestazioni, eccezione fatta per quanto specificato nel punto 7 o in un accordo separato. Tale limitazione non vale nel caso di atto illecito o colpa grave del Fornitore.
- 8. Resi**
Per la restituzione di merci disponibili sul mercato fino a CHF 1000.- dobbiamo calcolare una riduzione del 10% del valore della merce, in ogni caso non meno di CHF 30.- per la spesa di controllo che dobbiamo eseguire. Per resi di valore maggiore è necessario trovare un accordo con FRAISA SA. La restituzione di esecuzioni specifiche per il cliente e prodotti speciali non è prevista.
- 9. Imballaggio**
L'imballaggio è specificato come voce separata nella fattura dal Fornitore e non viene preso indietro.
- 10. Trasferimento dei benefici e dei rischi**
10.1 Vantaggi e rischi vengono assunti dall'Acquirente al più tardi all'uscita del materiale dalla fabbrica.
10.2 Se la spedizione subisce un ritardo per desiderio dell'Acquirente o per altri motivi indipendenti dal Fornitore, la responsabilità dei rischi viene assunta dall'Acquirente a partire dal momento concordato originariamente per l'uscita della fornitura dalla fabbrica. A partire da quel momento le forniture sono stoccate e assicurate a carico e rischio dell'Acquirente.
- 11. Spedizione, trasporto e assicurazione**
11.1 Richieste speciali sulla spedizione, il trasporto e l'assicurazione devono essere rese note in modo tempestivo al Fornitore. Il trasporto avviene a carico e rischio dell'Acquirente.
11.2 Le contestazioni relative alla spedizione o al trasporto devono essere rivolte immediatamente dall'Acquirente all'ultimo trasportatore non appena riceve la fornitura o i documenti di nolo.
11.3 L'assicurazione contro danni di qualsiasi genere è a carico dell'Acquirente.
- 12. Controllo e accettazione della fornitura**
12.1 L'Acquirente deve controllare le forniture e comunicare eventuali difetti per iscritto al Fornitore entro 8 giorni dalla ricezione. Trascorso tale termine la fornitura viene considerata accettata.
12.2 Il Fornitore è tenuto a correggere il prima possibile il difetto segnalato ai sensi del punto 12.1 oppure, a sua discrezione, a sostituire la merce difettosa.
12.3 Gli eventuali difetti nella fornitura non danno all'Acquirente alcun diritto, eccetto quelli espressamente citati nel punto 12 e 13 (garanzia, responsabilità per difetti).
- 13. Garanzia, responsabilità per difetti**
13.1 La durata della garanzia è di 6 mesi a decorrere dall'uscita del materiale dalla fabbrica. Per la merce sostituita o riparata la durata della garanzia ricomincia da capo e dura 6 mesi dal momento della spedizione del ricambio da parte del Fornitore. La garanzia cessa prima se l'Acquirente o una terza parte esegue delle modifiche o delle riparazioni inappropriate oppure se l'Acquirente, in caso di difetto della fornitura, non intraprende tutte le misure necessarie per contenere il danno e non dà al Fornitore l'opportunità di correggere il difetto.
13.2 Sono esclusi dalla garanzia e dalla responsabilità del Fornitore i danni che non possono essere imputati a scarsa qualità del materiale, costruzione errata o esecuzione difettosa, ad esempio i danni conseguenti alla naturale usura, a una manutenzione carente, alla mancata osservanza delle istruzioni di utilizzo, a un carico eccessivo del prodotto, a utensili d'esercizio inadeguati, a eventi chimici o elettrolitici ma anche danni generati da altre cause che sono indipendenti dal Fornitore.
13.3 L'Acquirente ha diritto esclusivamente alla sostituzione o alla riparazione della merce difettosa. L'Acquirente non vanta altri diritti, in particolare quelli relativi al rimborso di danni o di danni conseguenti. In nessun caso l'Acquirente ha diritto al rimborso di danni che non sono stati causati dalla fornitura, come interruzione della produzione, perdita di profitti, perdita di ordini, o altri danni diretti o indiretti. Tale esclusione di responsabilità non vale nel caso di atto illecito o colpa grave del Fornitore. Inoltre l'esclusione non è applicabile qualora in contrasto con una perentoria disposizione di legge.
- 14. Foro competente e diritto applicabile**
14.1 Il foro competente per l'Acquirente e il Fornitore è quello della sede del Fornitore. Il Fornitore ha comunque il diritto di perseguire l'Acquirente presso la sua sede.
14.2 Il rapporto giuridico è sottoposto esclusivamente al diritto nazionale del Fornitore. È esclusa l'applicazione della convenzione del diritto commerciale ONU (Convenzione delle Nazioni Unite sui contratti di compravendita internazionale di merci).

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Articolo: B52010

Rivestimento: U-4XD

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INDEX		senza	U-4XD	NANO-U	TRIBO-D	DURO-X	DURO-SD	DURO-D ²	DIAPLUS
Composizione chimica			TiAlCN	AlTiN	Ti-TiAlCN	TiAlN/TiN	AlTiN	AlTiN/TiN	C
Durezza [HV]			3200	3700	3200	3300	3600	3300	1000
max. temp [°C]			650	1100	650	900	880	900	600
B52010	85		●						
B52011	81		●						
B52014	45		●						
B52015	27		●						
B52020	105						●		
B52111	75						●		
B52710	131								●
B52724	133	●							
B52801	127							●	
B52915	109							●	
B52920	111							●	
B52925	113							●	
B52930	115							●	
B53010	85		●						
B53011	81		●						
B53014	45		●						
B53015	27		●						
B53020	105						●		
B53111	75						●		
B57710	135								●
B72011	65					●			
B72015	11					●			
B72020	95					●			
B92008	143		●						
B92020	141		●						
B92040	139		●						
B92300	145		●						
B92310	145		●						
B92360	144		●						
BU42015	55			●					
BU43015	55			●					

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Esempio: Articolo EI0020

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Rivestimento: INTEGRAL

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		senza	vaporizzato	TiCN	ADSC	TRIBO	INTEGRAL	F-DLC	UNICUT-4x
Composizione chimica				TiCN	TiCN	TiAlN	CrN + DLC	DLC	TiAlCN
Durezza [HV]				3000	3000	3000	2000	2800	3200
max. temp [°C]				400	400	300	400	500	650
- 0020	203						●		
- 0021	203						●		
- 0050	205						●		
- 0051	205						●		
- 0100	161			●					
- 0101	161			●					
- 0109	221			●					
- 0110	223			●					
- 0229	225			●					
- 0230	227			●					
- 0310	163				●				
- 0311	163				●				
- 0400	183					●			
- 0401	183					●			
- 0502	165			●					
- 0503	165			●					
- 0504	249			●					
- 0505	249			●					
- 0512	177			●					
- 0513	177			●					
- 0570	167			●					
- 0570	185					●			
- 0571	169			●					
- 0571	185					●			
- 0572	251			●					
- 0573	251			●					
- 0580	171			●					
- 0580	187					●			
- 0581	171			●					
- 0581	187					●			
- 0590	173			●					
- 0590	189					●			
- 0591	175			●					
- 0591	191					●			
- 0595	179			●					
- 0596	179			●					
- 0598	219	●							
- 0599	261	●							
- 0600	193			●					
- 0601	193			●					
- 0620	195			●					

Articolo		Rivestimento							
INDEX		<u>E</u>	<u>EV</u>	<u>EH</u>	<u>EA</u>	<u>ET</u>	<u>EI</u>	<u>EF</u>	<u>EU</u>
		senza	vaporizzato	TiCN	ADSC	TRIBO	INTEGRAL	F-DLC	UNICUT-4x
_ 0621	195			●					
_ 0705	213					●			
_ 0706	215					●			
_ 0755	217					●			
_ 0756	217					●			
_ 1229	287			●					
_ 1240	275					●			
_ 1241	277					●			
_ 1257	265			●					
_ 1258	267			●					
_ 1260	269			●					
_ 1260	279					●			
_ 1261	271			●					
_ 1261	281					●			
_ 1270	283			●					
_ 1271	285			●					
_ 1400	291			●					
_ 1402	311						●		
_ 1425	293				●				
_ 1429	315			●					
_ 1440	305					●			
_ 1452	313						●		
_ 1472	295			●					
_ 1475	297			●					
_ 1475	307					●			
_ 1480	309			●					
_ 1482	299			●					
_ 1495	301			●					
_ 1602	335						●		
_ 1620	327					●			
_ 1621	329					●			
_ 1652	337						●		
_ 1687	319			●					
_ 1688	321			●					
_ 1690	323			●					
_ 1690	331					●			
_ 1691	325			●					
_ 1691	333					●			
_ 1699	339	●							
_ 1750	345					●			
_ 1751	345					●			
_ 1787	341			●					
_ 1788	341			●					
_ 1790	343			●					
_ 1790	347					●			
_ 1791	343			●					
_ 1791	347					●			
_ 1799	349	●							
_ 1830	353					●			
_ 2010	415								●
_ 2060	417								●
_ 2110	419								●
_ 2200	421								●
_ 2210	421								●
_ 6100	371			●					
_ 6101	371			●					
_ 6300	207			●					
_ 6301	209			●					
_ 6350	211			●					
_ 6351	211			●					
_ 6500	197			●					
_ 6501	199			●					
_ 6550	201			●					
_ 6551	201			●					
_ 6900	181			●					
_ 6901	181			●					

Articolo		Rivestimento							
INDEX		<u>E</u>	<u>EV</u>	<u>EH</u>	<u>EA</u>	<u>ET</u>	<u>EI</u>	<u>EF</u>	<u>EU</u>
		senza	vaporizzato	TiCN	ADSC	TRIBO	INTEGRAL	F-DLC	UNICUT-4x
-	6910	273		●					
-	6911	273		●					
-	6916	303		●					
-	10060	367						●	
-	10061	369						●	
-	10064	379						●	
-	10065	379						●	
-	10068	383						●	
-	10070	373		●					
-	10071	375		●					
-	10072	377		●					
-	10073	377		●					
-	10074	381		●					
-	10075	381		●					
-	10078	385		●					
-	10102	229	●						
-	10102	229	●						
-	10103	231	●						
-	10103	231	●						
-	10110	253	●						
-	10114	257	●						
-	10115	257	●						
-	10118	245	●						
-	10119	245	●						
-	10122	241	●						
-	10123	241	●						
-	10210	233	●						
-	10210	233	●						
-	10211	235	●						
-	10211	235	●						
-	10214	255	●						
-	10218	259	●						
-	10219	259	●						
-	10220	247	●						
-	10221	247	●						
-	10222	243	●						
-	10223	243	●						
-	10340	237	●						
-	10350	239	●						
-	11260	387						●	
-	11261	387						●	
-	11270	389		●					
-	11271	389		●					
-	11820	355	●						
-	11846	357	●						
-	11950	393		●					
-	11951	393		●					
-	11960	391						●	
-	11961	391						●	
-	11970	361	●						
-	11971	361	●						
-	11980	363	●						
-	11981	363	●						
-	22200	397	●	●					
-	22300	399	●	●					
-	24200	401		●					
-	24220	405		●					
-	24300	403		●					
-	24320	407		●					
-	24340	409		●					
-	24360	411		●					
-	24370	413		●					
-	26020	423		●					
-	26040	425		●					
-	28500	427	●						●