

Rime

Frese e alesatori in HSS-E & PM

HSS-E & PM cutting mills and reamers

Catalogo HSS-E e PM



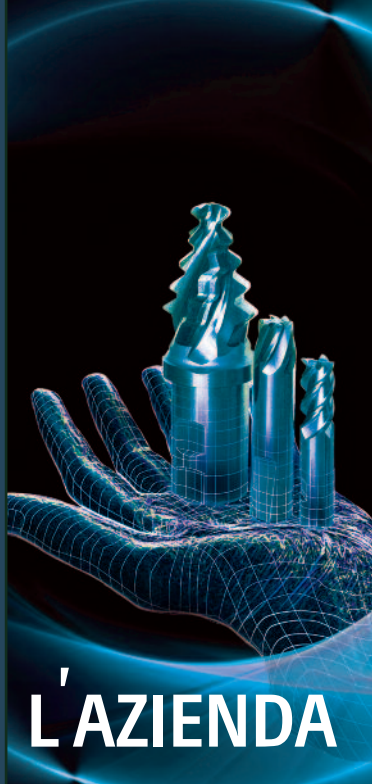
**FRESE E ALESATORI IN HSS-Co8
E ACCIAI DA POLVERI**

**HSS-Co8 AND POWDER-STEEL
CUTTING MILLS AND REAMERS**

**FRAISES ET ALÉSOIRS EN HSS-Co8
ET ACIERS POUDRES**

**FRÄSER UND REIBAHLEN AUS
HSS-Co8 UND PULVERSTAHL**

Rime



L'AZIENDA



Dal 1962,
una storia di qualità



Utilizzo delle migliori materie prime
Costante innovazione di prodotto
Produzioni di serie e a disegno
Standard di qualità altissimi
Tecnologie produttive d'avanguardia
Prodotti sempre disponibili a magazzino
Assistenza costante e dialogo con il cliente

The best raw material

Continuous product innovation

Standard and on drawing production

Highest standard levels

Highest technologies

Big stock

Assistance post-sales

Rime nasce nel 1962 per iniziativa di Massimiliano Etori.

Durante i primi anni l'attività si sviluppa nella costruzione di frese speciali per il settore armiero, per poi evolversi nei primi anni '70 nella produzione di frese ed alesatori in HSS e HSS-Co.

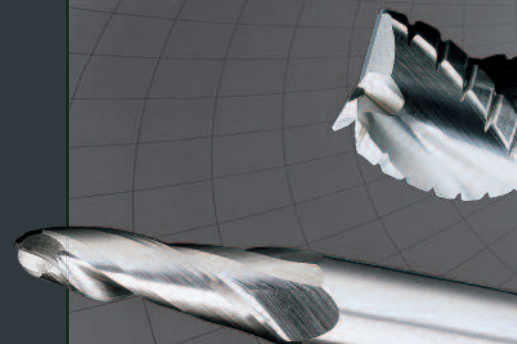
E' dei primi anni '80 il primo catalogo Rime di frese ed alesatori HSS e HSS-Co ed acciaio sinte-

Con gli anni 90 inizia la produzione di frese in metallo duro con i rivestimenti Tin, TiCN, TiAlN, Supreme e Prodige.

E' in quegli anni che Rime si insedia nell'attuale stabilimento produttivo. La nuova struttura ha permesso una migliore razionalizzazione del ciclo produttivo, per soddisfare le sempre crescenti esigenze del mercato.

L'esperienza acquisita in più di 50 anni di attività e le più avanzate e sofisticate tecnologie, consentono alla nostra azienda di farsi apprezzare in tutti quei settori della meccanica di precisione dove è necessario l'utilizzo di utensili di alta qualità.

La Rime è oggi guidata da Andrea Etori, figlio di Massimiliano, che sostiene e rafforza costantemente la *mission* aziendale: fornire prodotti innovativi con standard produttivi di alto livello, mirando sempre a soddisfare le esigenze della clientela.

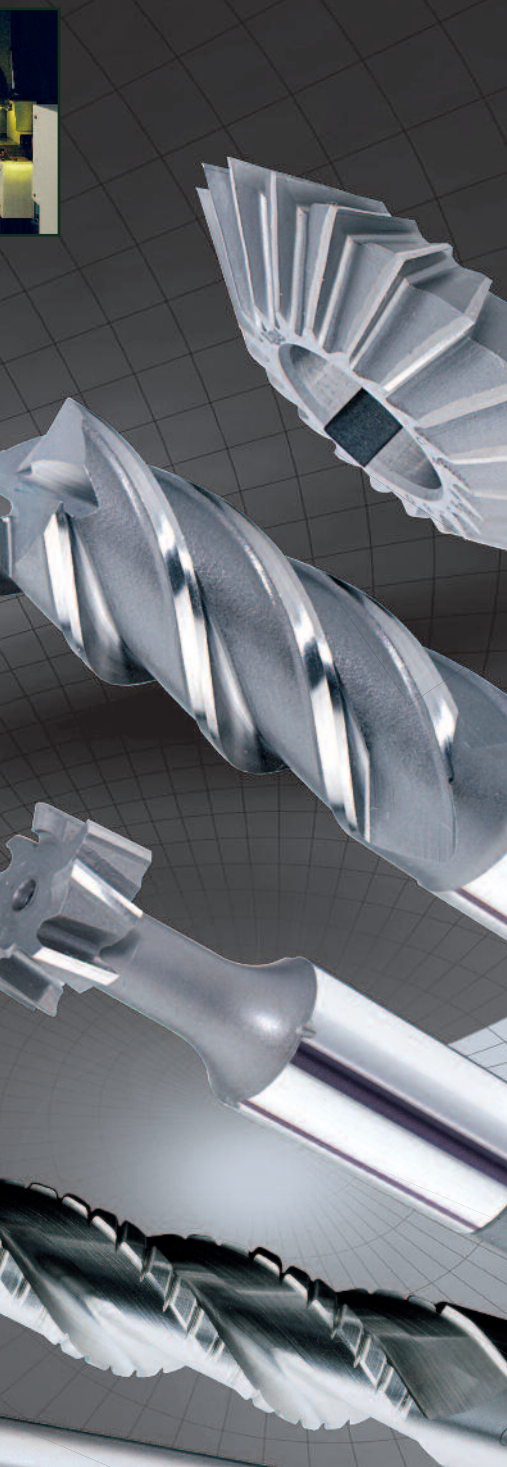




The factory



Made in Italy



RIME srl was established in 1962 in Italy by Mr. Massimiliano Etori, who thanks to his personal experience matured abroad in companies specialised in cutting tools' manufacturing, starts to produce special cutting tools for army sector and then in 70's begins to manufacture HSS and HSS-Co end mills.

During the 80's Rime issued its own first catalogue of end mills and reamers in HSS, HSS-Co5, HSS-Co8 and end mills in synthesized steel (ASP).

In 90's begins the production of end mills in solid carbide with Tin, Tico, Tialn, Supreme and Prodigie coatings.

In those years Rime builds the new and current factory with the highest world know how CNC & greatest robot centres which allow manufacturing cutting tools according to the highest and most innovated & sophisticated technology applications.

Nowadays Rime's structure is made of a 100% technology advanced quality control through its own specialized and experienced professional working staff.

The company is today led by Andrea Etori, son of Massimiliano, who following the teaching of his father is everyday strongly engagement to improve the production towards new technologies solutions and new markets.



Tutti i nostri prodotti sono progettati e realizzati in Italia.

All our products are designed and manufactured in Italy.



Rime



La nostra produzione di utensili standard e speciali è molto ricca e articolata, e fornisce soluzioni di qualità assoluta in tutti i settori delle lavorazioni meccaniche con asportazione di truciolo in cui sono richieste elevate prestazioni.

La nostra produzione di utensili standard si riepiloga su 3 cataloghi.

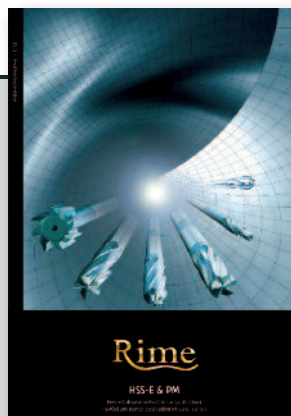
- frese e alesatori in HSS Co-PM
- frese e alesatori in Metallo Duro
- frese per il settore Stampo

We manufacture standard and special end mills and reamers for all those sectors of mechanical workings with chip removal where highest performances are a "must"

Our standard production range is divided on three catalogues:

- *end mills and reamers in HSSCo-PM*
- *end mills and reamers in Solid Carbide*
- *Solid Carbide end mills for Moulds*

Fresa e alesatori in HSS Co-PM *HSS Co-PM end mills and reamers*



Il catalogo di utensili in HSS-E e PM è ad oggi uno dei più completi per numero di articoli e per la gamma offerta. L'ottima qualità dei prodotti abbinata ad una elevata disponibilità di articoli a magazzino ci consente di poter offrire un eccellente servizio alla nostra clientela.

Our HSSCo-PM catalogue offers a very wide range of end mills and reamers. High quality and wide stock allow us to offer an excellent service to our customers.

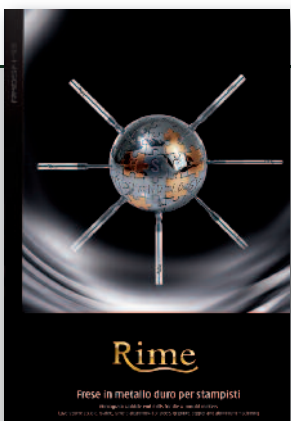
Frese e alesatori in Metallo Duro *Solid Carbide end mills and reamers*



Il catalogo di utensili in Metallo Duro si arricchisce in continuazione sia per tipologia di utensili che per misure. La vasta gamma di prodotti, la consegna immediata e l'elevata qualità sono le caratteristiche che i nostri clienti ci riconoscono.

Our catalogue of solid carbide cutting tools is constantly updated both for new end mills and diameters. The key elements of our success are the wide range, the prompt delivery and the excellent quality of our cutting tools: these are the strengths that we strive daily to keep to the highest level.

Frese per stampisti *End mills for mould makers*



Il catalogo dedicato a chi lavora stampi è un condensato di utensili specifici per questo settore. Si possono trovare frese per acciai bonificati e temprati, frese per lavorazione di rame e alluminio e frese rivestite diamante per la lavorazione della grafite.

Years of experience, research and application allowed us to achieve a full range of end mills for mould makers. You can find end mills for machining quenched and tempered steels, for hardened steels, for aluminium and copper, and diamond coating end mill for graphite machining. Top performance is guaranteed by a perfect mixture of solid carbide type, geometry and coating.

Frese Speciali *Special Milling Cutters*



Mezzo secolo di esperienza e molte collaborazioni con aziende nazionali e internazionali di rilievo ci hanno permesso di raggiungere un elevato standard qualitativo.

Oggi progettiamo utensili per dare soluzioni innovative in applicazioni dove sono richieste un elevato grado di specializzazione, qualità e affidabilità. Grazie ad un moderno e sempre aggiornato parco macchine siamo in grado di realizzare utensili di ogni tipo per vari settori, sia in piccole sia in grandi serie. Realizziamo utensili partendo da materie prime diverse, Metallo Duro, HSS-Co e ASP (acciaio sinterizzato da polveri). Tra gli utensili prodotti troviamo frese a candela, frese di forma, frese a manicotto, frese a disco, frese a "T", microfresse, punte cilindriche, punte a gradino, punte coniche, alesatori di forma, frese e alesatori in Metallo Duro saldo brasati, allargatori, stozzatori, lamatori, piccole brocche, punzoni, bulini, ecc.

Negli anni la nostra azienda si è specializzata in alcuni ambiti e in particolare:

- ▶ **Settore Energia**
- ▶ **Settore Automotive**
- ▶ **Settore Armiero**
- ▶ **Settore Aeronautico**
- ▶ **Settore Stampi e Matrici**

Years of experience and a lot of collaborations with national and international companies have enabled Rime of achieving a very high level of quality of its products.

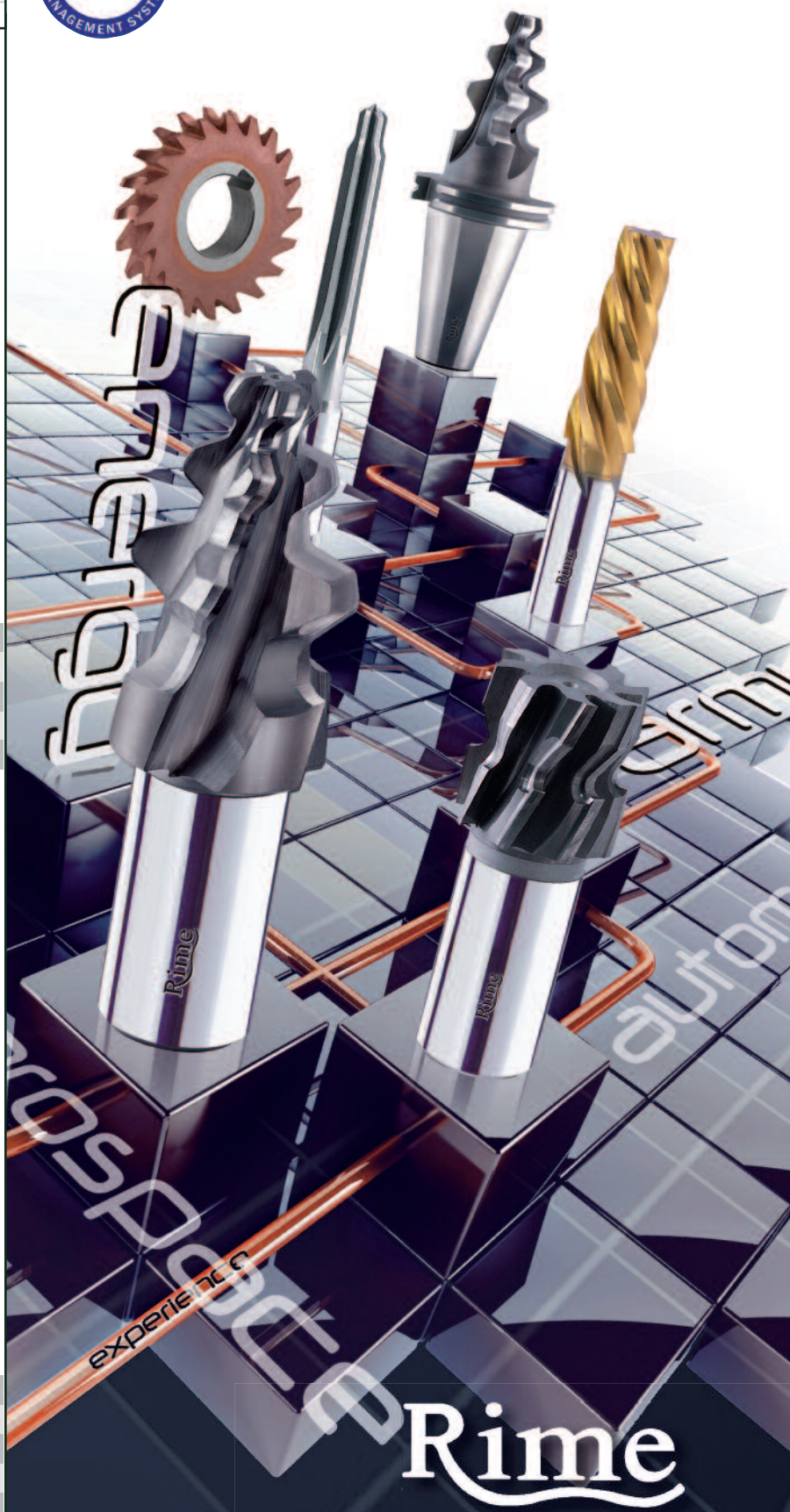
Today, thanks to a very modern and updated park machines, we are capable of manufacturing cutting tools of each type for various sectors, both in small and large series, designed to meet solutions where it is required a high degree of specialization, quality and reliability.

We manufacture cutting tools in HSS-Co, ASP (sintered powder steel) and in Solid Carbide as well.

We produce milling cutters, form cutters, milling cutters sleeve, disc cutters, conical spot facers, "T" shape cutters, micro-end mills, step drills, taper drills, reamers shape cutters and reamers brazed, countersinks, shaper, small broaches, punches, chisels, etc..

Over the years, Rime has specialized in certain sectors, in particular:

- ▶ **Energy**
- ▶ **Automotive**
- ▶ **Army**
- ▶ **Aeronautical**
- ▶ **Moulds and Dies**



Rime

MATERIALI DI BASE - RAW MATERIAL

Materiali utilizzati per la costruzione delle frese RIME

HSS/Co5 AISI M35

*

Acciaio ad elevato rendimento, permette una buona elasticità di lavorazione. Adatto per utensili soggetti ad urti.

HSS/Co8 AISI M42

Acciaio più utilizzato nella costruzione di frese; la sua elevata durezza, unita ad una buona tenacità e resilienza, consente la lavorazione degli acciai ad alta resistenza. Ottimo impiego nelle lavorazioni difficili con i rivestimenti TICN, TIALN e SUPREME di nuova generazione.

EMP3 PM Co8,5

Acciaio super rapido ottenuto con la metallurgia delle polveri; la struttura molto sottile di questo acciaio offre elevata tenacità ed elevata resistenza all'usura. Ottimo rendimento con i rivestimenti TICN, TIALN e SUPREME di nuova generazione.

EMP6 PM

Acciaio super rapido ottenuto con la metallurgia delle polveri con ottime caratteristiche di resistenza all'usura e durezza a caldo. Il suo altissimo tenore di leghe gli consente prestazioni eccellenti nelle lavorazioni più difficili. Associato ai rivestimenti TICN, TIALN e SUPREME dà il massimo del rendimento.

Raw material used to manufacture RIME end mills

HSS/Co5 AISI M35

*

High-efficiency steel allowing a good cutting speed and a good machining elasticity. Suitable for tools subjected to shocks.

HSS/Co8 AISI M42

Steel mainly used in manufacturing of end mills. Its great hardness along with its good toughness and impact resistance allows to machine high-resistance steels. Very good efficiency with TICN, TIALN and SUPREME coatings of the new generation.

EMP3 PM-Co8,5

PM sintered high-speed steel. Its very thin shape offers a great toughness and wear resistance. Very good efficiency with TICN, TIALN and SUPREME coatings of the new generation.

EMP6 PM

High-speed steel got by powder metallurgy. Characteristic of very good wear resistance and hot hardness. Its very high alloy content allows very good performances in the most difficult machinings. When TICN, TIALN and SUPREME coated, it gives the top performances.

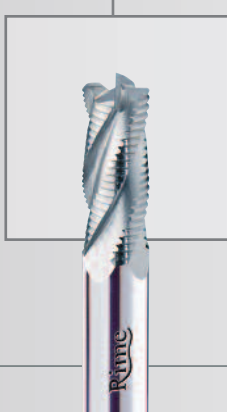
HSS-C08



EMP3



EMP6



SUPREME



TICN-TIALN



RIVESTIMENTI - COATINGS - REVÊTEMENTS

Particolare attenzione riserviamo ai rivestimenti che oggi proponiamo alla nostra clientela.

Tali processi rappresentano il massimo dell'espressione evolutiva della nuova generazione.

A particular care is paid to those coatings proposed to our customers. Our working "processes" represent the highest evolution in the field of coatings of the last generation.

Nous réservons une particulière attention aux revêtements que nous proposons aujourd'hui à notre clientèle.

Ce principe représente le maximum de l'expression évolutive de la nouvelle génération des revêtements pour tous les outils que nous produisons.



SUPREME

Rivestimento di nuova generazione adatto alla lavorazione di tutti i tipi di acciai legati e non, con o senza adduzione di lubrorefrigerante nelle operazioni di finitura e sgrossatura anche con velocità di taglio elevate. Conferisce all'utensile ottima resistenza all'usura grazie alla sua durezza superficiale elevata 3200HV e al suo basso coefficiente d'attrito. Resiste a temperature fino a 1100°C.

SUPREME

This is a new generation coating, suitable for any kind of steel and different machining condition: finishing or roughing, with or without coolant, and high speed cutting. The surface hardness 3200 HV and low friction coefficient that the mill has with the SUPREME coating permit to get an excellent wear protection. It can bear very high working temperatures, till 1100°C.

SUPREME

Revêtement de nouvelle génération approprié et très valable à tous les types d'acier allié ou non allié, avec ou sans adduction de lubrorefrigerant dans les opérations de finition et de dégrossissage même avec une vitesse de coupe très élevée. Il donne à l'outil une excellente résistance à l'usure grâce à sa dureté superficielle élevée à 3200HV et à son bas coefficient de friction. Il résiste à des températures jusqu'à 1100°C



ALU SUPREME

Rivestimento adatto alla lavorazione di alluminio e leghe leggere con o senza adduzione di lubrorefrigerante, che abbina alla resistenza all'usura un'ottima capacità di scorrevolezza e distacco del truciolo.

ALU SUPREME

The suitable coating to machining aluminium and light alloys with or without coolant. This new evolution coating matches a good wear resistance and low friction coefficient.

ALU SUPREME

Revêtement très approprié aux travaux d'aluminium et d'alliages légers avec ou sans adduction de lubrorefrigerant, qu'il jumelle à la résistance et à l'usure une excellente capacité de fluidité et un détachement du copeaux.



TICN

(Disponibile solo su richiesta) CARBONITRURO DI TITANIO

Ottimo rivestimento per la fresatura di acciai e di materiali abrasivi a media velocità di taglio con uso di liquidi refrigeranti. La durezza è di 3000 HV con un coefficiente di attrito particolarmente basso. La temperatura massima di utilizzo degli utensili è di circa 450°C.

TICN

(available only upon requirements) TITANIUM CARBONITRIDE

Excellent coating to mill steels and abrasive materials at an average cut speed and using coolants. Hardness is 3000 HV having a very low friction coefficient. Max. working temperature of the tools is about 450°C.

TICN

CARBONITRURE DE TITANE ET ALUMINIUM

C'est l'évolution naturelle du revêtement TIN. L'idéal dans les travaux de fraisage humide d'aciers et de matériels abrasif sur les centres de travail avec des paramètres élevés. La dureté est de 3000 HV avec un coefficient de friction particulièrement bas. La température la plus grande d'utilisation des outils est d'environ 450°C.



TIALN

(Disponibile solo su richiesta) NITRURO DI TITANIO E ALLUMINIO

Gli utensili con questo rivestimento possono essere utilizzati ad elevate velocità di taglio ed elevati avanzamenti. La durezza superficiale è di 2700 HV; consigliato per lavorazioni con forte sviluppo di calore al tagliente. Sopporta temperature di lavoro fino a 900°C.

TIALN

(available only upon requirements) TITANIUM AND ALUMINIUM NITRIDE

The tools with such a coating can be used at high cut speed and quick progressing. Surface hardness is 2700 HV, particularly suggested for machinings with high heat degree at the cutting edge. The max working temperature is 900 °C.

TIALN

NITRURE DE TITANE ET ALUMINIUM

Les outils avec ce revêtement peuvent être utilisés à vitesse de coupe et d'avances très élevées. La dureté superficielle est de 2700 HV; conseillé pour des travaux avec fort développement de chaleur au coupant. Il supporte des températures de travail très hautes: 900°C. Particulièrement conseillé pour le fraisage à sec

Condizioni di lavoro consigliato / Suggested machining conditions / Conditions de travail conseillée



- Scarsità di refrigerante o refrigerazione con nebulizzatore (aria + olio).
- Low rate of coolant or with spray mixed (air+oil).
- Peu de lubrification, conseillons pulvérisation (air+huile).



- Presenza di lubrorefrigerante (lavorazione a umido).
- With coolant.
- Avec lubrification (humide).

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Materiali lavorabili consigliati - Suggested workpiece material

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
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CONSIGLIATO RECOMMENDED	▲
ACCETTABILE ACCEPTABLE	▶
SCONSIGLIATO NOT RECOMMENDED	▼

SERIE A

- Frese in HSS Co8 a due tagli per cave. Ideali per lavorazioni di acciai e ghise
- HSS Co8 slotting two flutes end mills. For steel and cast iron machining

COD. PAG.

			A1	19
			A1H7	20
			A2	21
			A3	22
			A5	23
			A6	24
			A7	25
			A8	26
			A9	27
			A10	28
			A11	28
















SERIE B

- Frese in HSS Co8 a tre tagli Per lavorazioni di acciai e ghise
- HSS Co8 three flutes end mills. For steel and cast iron machining

COD. PAG.

			B0	31
			B1	32
			B2	33


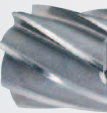

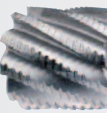



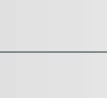
COD. PAG.

			B3	34
			B4	35
			B5	36
			B10	37
			B11	38

SERIE C

- Frese in HSS Co5-Co8 a disco, a manicotto, prismatiche per lavorazioni di acciai e ghise
- HSS Co5-Co8 shell end mills, side and face milling cutters, angular cutters. For steel and cast iron machining

COD. PAG.

Co5 *		C2	41
Co5 *		C3	41
		C5/A	42
		C5/B	43
		C6/A	42
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Co5 *		C7	44 45
Co5 *		C8	46 47
Co5 *		C9	48







new Nuovo prodotto/ New product

new Ampliamento di gamma/ Widening range

COD. PAG.

Co5 *			C13	49
Co5 *			C14	50

























COD. PAG.























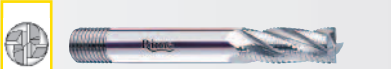



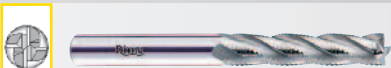

		E14	62
		E15	63
		E16	64

SERIE E-F

- Frese in HSS Co8 per sgrossatura e semifinitura. Ideali per lavorazioni di acciai e ghise
- HSS Co8 roughing and semifinishing end mills. For steel and cast iron machining

COD. PAG.

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Materiali lavorabili consigliati - Suggested workpiece material

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
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CONSIGLIATO RECOMMENDED	▲
ACCETTABILE ACCEPTABLE	▶
SCONSIGLIATO NOT RECOMMENDED	▼

			COD.	PAG.
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			F15	78
			F16	79
			F17	80
			F18	81

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			G10	95
			G11	96
			G12	96
			G13	97
			G14	98

SERIE G

- Frese in HSS Co8 per finitura. Ideali per lavorazioni di acciai e ghise
- HSS Co8 finishing end mills. For steel and cast iron machining

			COD.	PAG.
			G0	85
			G1	86
			G2	87
			G3	88
			G4	89
			G5	90
			G6	91
			G7	92
			G8	93

SERIE UMAX

- Frese in HSS Co8 a 45° divisione irregolare per sgrossatura e finitura
- HSS Co8 end mills, helix 45° with irregular division, for roughing and finishing

			COD.	PAG.
			UM0	101
			UM1	102
			UM2	103
			UM3	104
			UM4	105
			UM5	106
			UM7	107
			UM8	108

SERIE R-S

- Frese in HSS Co5-Co8 a "T", lamatori, svasatori e frese coniche
- HSS Co5-Co8 "T" slot cutters, woodruff and conical cutters

COD. PAG.

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			R4	113
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			S4	118
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			SC2	120
			SC3	121

SERIE AL

- Alesatori a mano e a macchina in HSS Co5-Co8
- HSS Co5-Co8% cylinder reamers

COD. PAG.

				AL0	125
Co5 *				AL6	126
				AL7	127
				AL8	128
Co5 *				AL9	129
Co5 *				AL10	130

SERIE L

- Frese in HSS Co8 e HSS CoPM per leghe leggere, rame, bronzo, ottone e materiali plastici
- HSS Co8 and HSS CoPM end mills for light alloys, copper, brass, bronze and plastic material

COD. PAG.

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				L3	135
				L4	136
				L5	137
				L6	138
				L7	139

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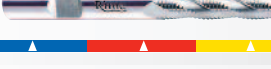















Materiali lavorabili consigliati - Suggested workpiece material

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
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CONSIGLIATO RECOMMENDED	▲
ACCETTABILE ACCEPTABLE	▶
SCONSIGLIATO NOT RECOMMENDED	▼



















			COD.	PAG.				COD.	PAG.
			L8	140				MG6	159
			L9	141				MG7	160
			L10	142				MG8	161
			L12	143				MG9	162
			L13	144				MG10	163
			L14	145				MG11	164
			L15	146				MG12	165
			L17	147				MG13	166
			L18	148				MG14	167
			L19	148				MG15	168
HSS *			L20	149				MG16	169
<h3>SERIE MG EMP3</h3> <ul style="list-style-type: none"> • Frese in EMP3 (PM-Co8,5) per cave, per finitura, semi-finitura e sgrossatura • EMP3 (PM-Co8,5) end mills for slotting, for roughing, semifinishing and finishing 									
			COD.	PAG.				MG0	154
								MG1	155
								MG3	156
								MG4	157
								MG5	158
								MG19	172
								MG20	172
								MG21	173
								MG22	174
								MG23	175

SOMMARIO - SUMMARY

			COD.	PAG.
			MG24	176
			MG25	177
			MG26	178
			MG27	179
			MG28	180
			MG29	181
			MG30	182
			MG31	183
			MG32	184

SERIE MR EMP6

- Frese in EMP6 (PM-Co8,5) per cave, per finitura, semifinitura e sgrossatura
- EMP6 (PM-Co8,5) end mills for slotting, for roughing, semifinishing and finishing

			COD.	PAG.
			MR1	187
			MR2	188
			MR3	189
			MR4	190
			MR8	191
			MR12	192

SERIE

PAG.

SERIE A

17

frese a 2 denti
two-flutes end mills

SERIE B

29

frese a 3 denti
three-flutes end mills

SERIE C

39

frese a manicotto,
a disco a tre tagli, ad angolo
shell end mills, side and face milling
cutters, angular cutters

SERIE E-F

51

frese per sgrossatura
e semifinitura
roughing and semifinishing end mills

SERIE G

83

frese per finitura
finishing end mills

SERIE UMAX

99

frese serie "umax" elica 45°
series "umax" end mills 45° spiral

SERIE R-S

109

frese a "t" - frese per sede viti
frese coniche per stampi
"t" end mills - mills for screw seats
taper end mills for dies

SERIE AL

123

alesatori cilindrici
a mano ed a macchina
manual and mechanical
cylinder reamers

SERIE L

131

frese per alluminio e leghe leggere
end mills for aluminium and light alloys

SERIE MG

151

frese in EMP3 (PM)
end mills in EMP3 (PM)

SERIE MR

185

frese in EMP6 (PM)
end mills in EMP6 (PM)

CONDIZIONI DI VENDITA - SALES CONDITIONS

PREZZI: sono indicativi e non impegnativi. In ogni caso avranno valore quelli vigenti al momento della spedizione.

SPEDIZIONI: la merce, salvo espressa pattuizione contraria, viene fornita franco nostro stabilimento o deposito; essa viaggia sempre in ogni caso ad esclusivo rischio e pericolo del Committente.

Per esigenze di costi di magazzino e di fatturazione, non consegnamo merce per importi inferiori a € 160 .

TERMINI DI CONSEGNA: sono approssimativi e comunque mai impegnativi. Essi sono inoltre subordinati al normale rifornimento delle materie prime nonché ad impedimenti di produzione per cause di forza maggiore. I giorni si intendono lavorativi e decorrenti dalla data della nostra accettazione dell'ordine.

RECLAMI: dovranno pervenire per iscritto entro gli otto giorni dal ricevimento della merce.

GARANZIA: in normale uso. Provvederemo a sostituire gratuitamente gli utensili da noi riconosciuti difettosi. La stessa non si estende agli utensili che presentino una normale usura, segni di manomissione o di errato impiego.

FORO COMPETENTE: per ogni controversia viene riconosciuta la esclusiva competenza del Foro di Brescia.

PRICES: are indicative and not binding. In any case the rate will be the one commonly in use at the sending time.

SHIPMENTS: the goods, except different agreement, is provided ex our works and is transported at risk and danger of the purchaser. We don't deliver order less than € 160 because of the invoicing and stock costs.

DELIVERY CONDITIONS: are approximated and not binding. The delivery is subjected to usual raw materials supplying and unforeseen event during the production.

COMPLAINTS: it must be written and sent withing 8 days since the goods receiving.

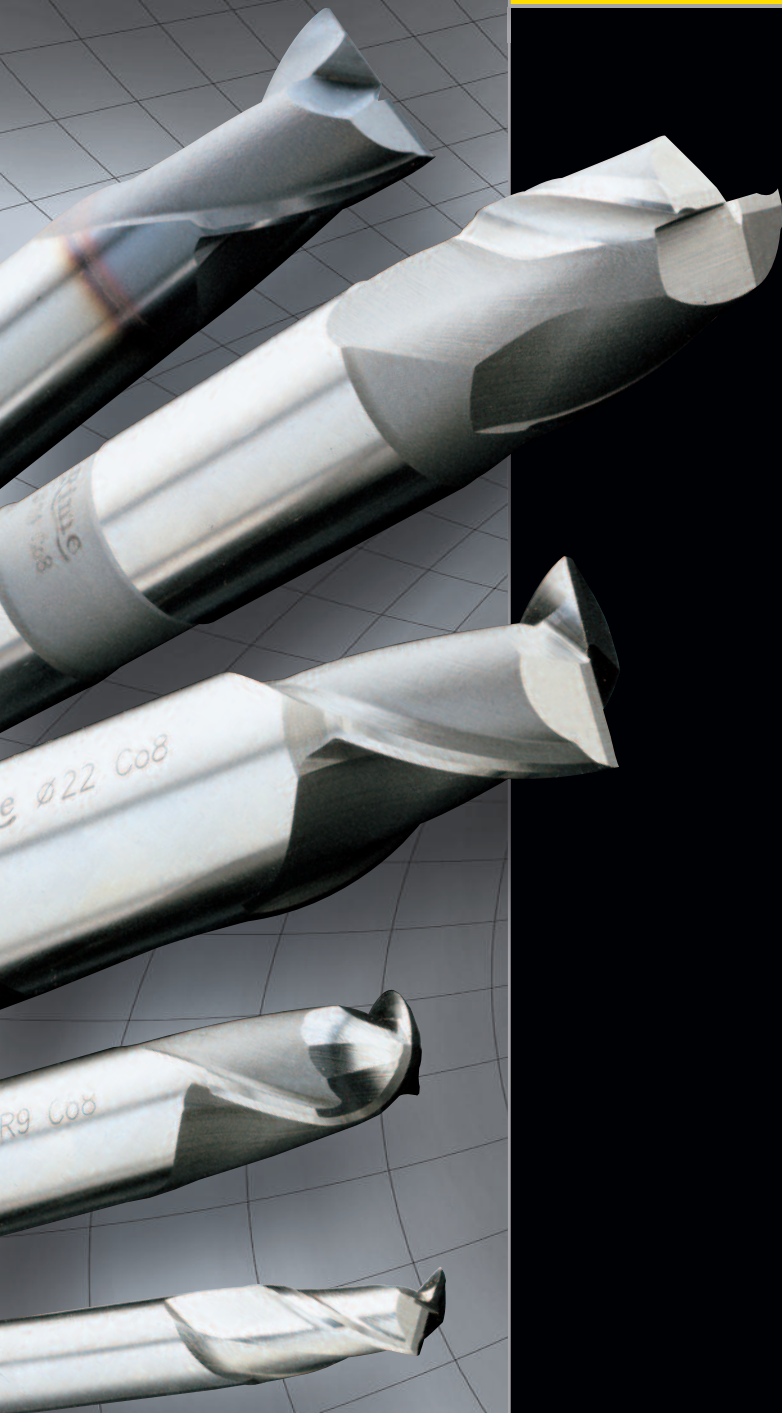
GUARANTEE: normally in use. Free replacement when the tool is acknowledged defective. The guarantee doesn't apply in case of usual wear, wrong use and proof of tampering.

JURISDICTION: any controversy is subjected to the Court of Brescia's jurisdiction.

Catalogo HSS-E e PM

SERIE A

FRESE A DUE DENTI PER CAVE
TWO-FLUTES SLOT END MILLS



Rime
UTENSILERIA

INDEX


SERIE A

FRESE A DUE DENTI PER CAVE TWO-FLUTES SLOT END MILLS

	COD.	PAG.
	A1	19
	A1H7	20
	A2	21
	A3	22
	A5	23
	A6	24
	A7	25
	A8	26
	A9	27
	A10	28
	A11	28

FRESE A DUE DENTI PER CAVE • SERIE CORTA

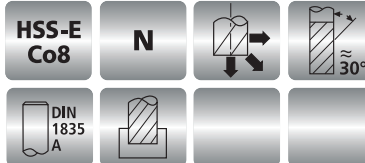
A1


 Un dente frontale tagliente fino al centro - Codolo cilindrico
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Straight shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico
 FRESAS DE DUAS NAVALHAS - Encabadouro cilíndrico
 Фреза 2-х зубая. Режущий торец. Цилиндрический хвостовик. Короткая серия

**SERIE
A**

NORM.

UNI 8254
DIN 327B
ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
A1/01	1	3	47	6	2	20,74
A1/02	1.5	3	47	6	2	18,12
A1/03	2	4	48	6	2	14,91
A1/04	2.5	5	49	6	2	16,22
A1/05	3	5	49	6	2	11,80
A1/06	3.5	6	50	6	2	11,80
A1/07	4	7	51	6	2	11,08
A1/08	4.5	7	51	6	2	11,08
A1/09	5	8	52	6	2	11,08
A1/10	5.5	8	52	6	2	11,08
A1/11	6	8	52	6	2	11,08
A1/12	6.5	10	60	10	2	14,32
A1/13	7	10	60	10	2	14,32
A1/14	7.5	10	60	10	2	15,65
A1/15	8	11	61	10	2	14,32
A1/16	8.5	11	61	10	2	17,57
A1/17	9	11	61	10	2	17,57
A1/18	9.5	13	63	10	2	18,30
A1/19	10	13	63	10	2	16,97
A1/20	10.5	13	70	12	2	21,95
A1/21	11	13	70	12	2	20,60
A1/21/1	11.5	16	73	12	2	21,33
A1/22	12	16	73	12	2	21,33
A1/22/1	12.5	16	73	12	2	22,55
A1/23	13	16	73	12	2	22,55
A1/24	14	16	73	12	2	25,26
A1/25	15	19	79	16	2	27,95
A1/26	16	19	79	16	2	28,57
A1/27	17	19	79	16	2	31,27
A1/28	18	19	79	16	2	35,20
A1/29	19	22	88	20	2	41,21
A1/30	20	22	88	20	2	44,96
A1/31	21	22	88	20	2	51,96
A1/32	22	22	88	20	2	63,99
A1/33	23	22	98	25	2	79,41
A1/34	24	26	102	25	2	79,41
A1/35	25	26	102	25	2	79,41
A1/36	26	26	102	25	2	86,77
A1/37	28	26	102	25	2	91,32
A1/38	30	26	102	25	2	101,81
A1/39	32	32	112	32	2	118,15
A1/40	34	32	112	32	2	128,47
A1/41	35	32	112	32	2	140,24
A1/42	36	32	112	32	2	154,49
A1/43	38	38	118	32	2	174,98
A1/44	40	38	118	32	2	196,21

Ulteriori diametri a richiesta
Other diameters on demand

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE

▼ SCONSIGLIATO
NOT RECOMMENDED



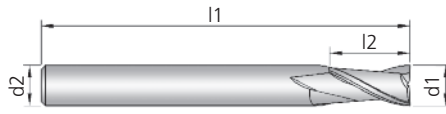
FRESE A DUE DENTI PER CAVE - TOLL. H7 • SERIE CORTA

SERIE
A

A1H7

Un dente frontale tagliente fino al centro - Codolo cilindrico - Tolleranza H7
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Straight shank - Tol H7
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique - Tol H7
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zylinderschaft - Tol H7
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico - Tol H7
 FRESAS DE DUAS NAVALHAS - Encabadouro cilíndrico - Tol H7
 Фреза 2-х зубая. Режущий торец. Цилиндрический хвостовик. Короткая серия - Tol H7

SHORT
NORMAL
LONG
EXTRA-LONG



HSS-E Co8

N

DIN 1835 A

NORM.

CODE	d1 mm H7	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
A1/03/H7	2	4	48	6	2	17,84	24,89
A1/05/H7	3	5	49	6	2	15,58	22,51
A1/07/H7	4	7	51	6	2	15,53	22,51
A1/09/H7	5	8	52	6	2	14,86	22,50
A1/11/H7	6	8	52	6	2	14,86	22,50
A1/13/H7	7	10	60	10	2	19,98	31,33
A1/15/H7	8	11	61	10	2	19,04	30,39
A1/17/H7	9	11	61	10	2	23,75	35,55
A1/19/H7	10	13	63	10	2	22,56	34,37
A1/21/H7	11	13	70	12	2	29,90	42,29
A1/22/H7	12	16	73	12	2	28,24	41,23
A1/23/H7	13	16	73	12	2	34,65	48,16
A1/24/H7	14	16	73	12	2	32,95	46,43
A1/26/H7	16	19	79	16	2	37,40	54,56

Ulteriori diametri
a richiesta
Other diameters
on demand

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▶	▶



FRESE A DUE DENTI PER CAVE • SERIE CORTA

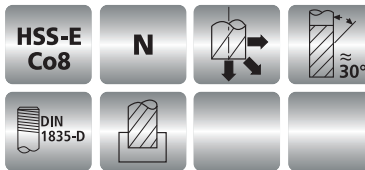
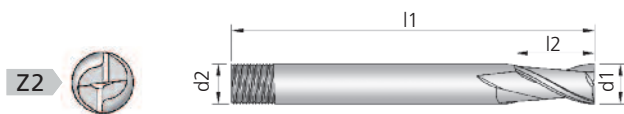
A2


 Un dente frontale tagliente fino al centro - Codolo cilindrico filettato
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Threaded shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique filetée
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico roscado
 FRESAS DE DUAS NAVALHAS - Encabadouro cilíndrico roscado
 Фреза 2-х зубая. Режущий торец. Цилиндрический хвостовик с резьбой. Короткая серия

SERIE A

NORM.

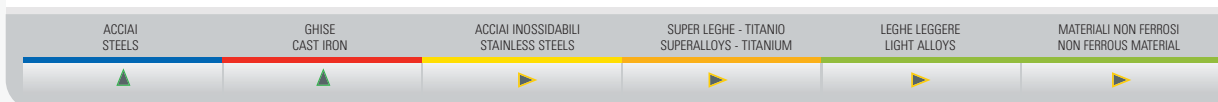
UNI 8256
 DIN 327H
 ISO 1641/1



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
A2/00	2	4	48	6	2	19,08
A2/01	2.5	5	49	6	2	19,08
A2/02	3	5	49	6	2	15,05
A2/03	3.5	6	50	6	2	15,05
A2/04	4	7	51	6	2	14,44
A2/05	4.5	7	51	6	2	14,44
A2/06	5	8	52	6	2	14,44
A2/07	5.5	8	52	6	2	14,44
A2/08	6	8	52	6	2	14,44
A2/09	6.5	10	60	10	2	19,85
A2/10	7	10	60	10	2	19,85
A2/11	7.5	10	60	10	2	19,85
A2/12	8	11	61	10	2	19,26
A2/13	8.5	11	61	10	2	22,63
A2/14	9	11	61	10	2	22,03
A2/15	9.5	13	63	10	2	22,63
A2/16	10	13	63	10	2	22,03
A2/17	10.5	13	70	12	2	27,23
A2/18	11	13	70	12	2	26,49
A2/18/1	11.5	16	73	12	2	25,13
A2/19	12	16	73	12	2	27,96
A2/19/1	12.5	16	73	12	2	27,23
A2/20	13	16	73	12	2	28,57
A2/21	14	16	73	12	2	30,79
A2/22	15	19	79	16	2	34,21
A2/23	16	19	79	16	2	35,68
A2/24	17	19	79	16	2	38,37
A2/25	18	19	79	16	2	42,67
A2/26	19	22	82	16	2	51,02
A2/27	20	22	82	16	2	48,92
A2/28	21	22	88	20	2	62,69
A2/29	22	22	88	20	2	83,34
A2/30	23	22	98	25	2	95,67
A2/31	24	26	102	25	2	95,67
A2/32	25	26	102	25	2	95,67
A2/33	26	26	102	25	2	102,93
A2/34	28	26	102	25	2	109,96
A2/35	30	26	102	25	2	119,31
A2/36	32	32	112	32	2	141,41
A2/37	34	32	112	32	2	151,44
A2/38	35	32	112	32	2	164,67
A2/39	36	32	112	32	2	178,76
A2/40	38	38	118	32	2	201,87
A2/41	40	38	118	32	2	221,79

Ulteriori diametri
 a richiesta
 Other diameters
 on demand




 CONSIGLIATO
 RECOMMENDED


 ACCETTABILE
 ACCEPTABLE



 SCONSIGLIATO
 NOT RECOMMENDED



FRESE A DUE DENTI PER CAVE • SERIE CORTA

**SERIE
A**

A3


 Un dente frontale tagliente fino al centro - Attacco Weldon
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique Weldon
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS DE DUAS NAVALHAS - Encabadouro Weldon
 Фреза 2-х зубая. Режущий торец. Хвостовик Weldon. Короткая серия



HSS-E
Co8

N



NORM.

UNI 8258
DIN 327D
ISO 1641/I

DIN
1835
B



CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
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Ulteriori diametri
a richiesta
Other diameters
on demand

A3/00	2	4	48	6	2	16,81	23,86
A3/01	2.5	5	49	6	2	16,81	23,86
A3/02	3	5	49	6	2	15,05	21,98
A3/03	3.5	6	50	6	2	14,32	21,98
A3/04	4	7	51	6	2	13,00	20,81
A3/05	4.5	7	51	6	2	13,73	21,38
A3/06	5	8	52	6	2	13,00	20,79
A3/07	5.5	8	52	6	2	13,00	20,79
A3/08	6	8	52	6	2	13,00	20,79
A3/09	6.5	10	60	10	2	17,57	28,92
A3/10	7	10	60	10	2	17,57	28,92
A3/11	7.5	10	60	10	2	17,57	28,92
A3/12	8	11	61	10	2	17,57	28,92
A3/13	8.5	11	61	10	2	20,21	32,01
A3/14	9	11	61	10	2	20,21	32,01
A3/15	9.5	13	63	10	2	20,94	32,72
A3/16	10	13	63	10	2	19,61	31,42
A3/17	10.5	13	70	12	2	23,90	36,29
A3/18	11	13	70	12	2	23,30	35,69
A3/18/1	11.5	16	73	12	2	23,30	35,69
A3/19	12	16	73	12	2	23,90	36,89
A3/19/1	12.5	16	73	12	2	23,90	36,89
A3/20	13	16	73	12	2	26,61	40,12
A3/21	14	16	73	12	2	28,57	42,05
A3/22	15	19	79	16	2	31,27	48,38
A3/23	16	19	79	16	2	33,24	50,30
A3/24	17	19	79	16	2	35,20	58,56
A3/25	18	19	79	16	2	39,24	62,41
A3/26	19	22	88	20	2	47,82	70,66
A3/27	20	22	88	20	2	45,86	68,87
A3/28	21	22	88	20	2	57,65	86,19
A3/29	22	22	88	20	2	76,57	104,40
A3/30	23	22	98	25	2	88,14	122,40
A3/31	24	26	102	25	2	88,14	122,40
A3/32	25	26	102	25	2	88,14	122,40
A3/33	26	26	102	25	2	96,57	136,41
A3/34	28	26	102	25	2	102,49	142,17
A3/35	30	26	102	25	2	110,77	150,64
A3/36	32	32	112	32	2	130,07	173,27
A3/37	34	32	112	32	2	136,33	194,19
A3/38	35	32	112	32	2	153,62	210,62
A3/39	36	32	112	32	2	161,61	218,89
A3/40	38	38	118	32	2	187,63	252,46
A3/41	40	38	118	32	2	208,13	273,38

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▶	▶



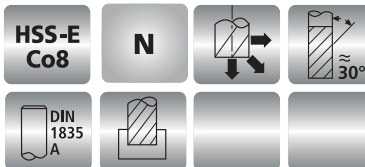
FRESE A DUE DENTI PER CAVE • SERIE LUNGA

A5


 Un dente frontale tagliente fino al centro - Codolo cilindrico
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Straight shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico
 FRESAS DE DUAS NAVALHAS - Encabadouro cilíndrico
 Фреза 2-х зубая. Режущий торец. Цилиндрический хвостовик. Удлиненная серия

**SERIE
A**

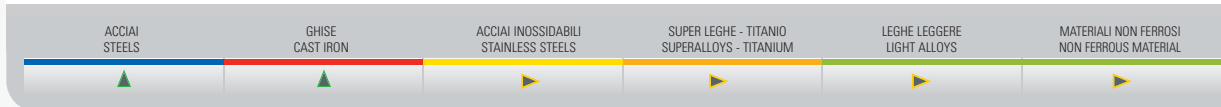
NORM.



SHORT
 NORMAL
 LONG
 EXTRA LONG

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
A5/00	2	9	54	6	2	16,97
A5/01	3	9	60	6	2	16,97
A5/02	3.5	13	67	6	2	16,97
A5/03	4	13	67	6	2	16,97
A5/04	4.5	13	68	6	2	16,97
A5/05	5	16	70	6	2	16,97
A5/06	5.5	16	76	6	2	16,97
A5/07	6	16	76	6	2	15,65
A5/08	6.5	16	76	10	2	20,94
A5/09	7	19	79	10	2	20,94
A5/10	7.5	19	79	10	2	20,94
A5/11	8	19	79	10	2	20,94
A5/12	8.5	22	83	10	2	24,20
A5/13	9	22	83	10	2	24,20
A5/14	9.5	22	83	10	2	24,20
A5/15	10	22	83	10	2	22,13
A5/16	10.5	25	95	12	2	29,92
A5/17	11	25	95	12	2	29,92
A5/18	12	28	98	12	2	28,57
A5/19	13	28	98	12	2	37,89
A5/20	14	32	102	12	2	35,92
A5/21	15	32	108	16	2	41,21
A5/22	16	32	108	16	2	41,21
A5/23	17	35	114	16	2	49,91
A5/24	18	35	114	16	2	48,56
A5/25	19	38	132	20	2	62,53
A5/26	20	38	132	20	2	58,49
A5/27	21	38	132	20	2	66,06
A5/28	22	41	141	25	2	93,52
A5/29	23	41	141	25	2	100,98
A5/30	24	41	152	25	2	106,92
A5/31	25	44	159	25	2	104,02
A5/32	26	44	159	25	2	119,13
A5/33	28	44	159	25	2	134,42
A5/34	30	50	159	25	2	144,34
A5/35	32	52	165	32	2	171,80

Ulteriori diametri
 a richiesta
 Other diameters
 on demand



▲ CONSIGLIATO RECOMMENDED

▶ ACCETTABILE ACCEPTABLE








▼ SCONSIGLIATO NOT RECOMMENDED



FRESE A DUE DENTI PER CAVE • SERIE LUNGA





SERIE
A





A6

 Un dente frontale tagliente fino al centro - Codolo cilindrico filettato
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Threaded shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique fileté
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico roscado
 FRESAS DE DUAS NAVALHAS - Encabadouro cilíndrico roscado
 Фреза 2-х зубая. Режущий торец. Цилиндрический хвостовик с резьбой. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA LONG



NORM.



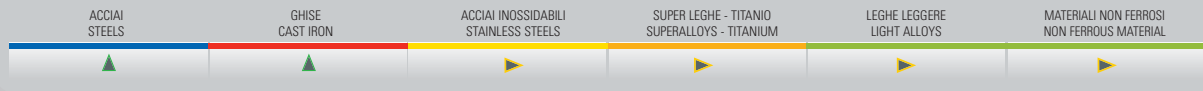
Ulteriori diametri a richiesta
Other diameters on demand

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
A6/01	3	9	60	6	2	20,60
A6/02	3.5	13	67	6	2	20,60
A6/03	4	13	67	6	2	20,60
A6/04	4.5	13	68	6	2	20,60
A6/05	5	16	70	6	2	20,60
A6/06	5.5	16	76	6	2	20,60
A6/07	6	16	76	6	2	20,60
A6/08	6.5	16	76	10	2	24,67
A6/09	7	19	79	10	2	24,67
A6/10	7.5	19	79	10	2	24,06
A6/11	8	19	79	10	2	24,06
A6/12	8.5	22	83	10	2	28,76
A6/13	9	22	83	10	2	28,76
A6/14	9.5	22	83	10	2	28,04
A6/15	10	22	83	10	2	26,72
A6/16	10.5	25	95	12	2	36,30
A6/17	11	25	95	12	2	36,30
A6/18	12	28	98	12	2	33,48
A6/19	13	28	98	12	2	41,82
A6/20	14	32	102	12	2	41,21
A6/21	15	32	108	16	2	48,92
A6/22	16	32	108	16	2	48,92
A6/23	17	35	114	16	2	57,27
A6/24	18	35	114	16	2	55,92
A6/25	19	38	132	20	2	71,25
A6/26	20	38	132	20	2	71,25
A6/27	21	38	132	20	2	79,67
A6/28	22	41	141	25	2	117,67
A6/29	23	41	141	25	2	117,67
A6/30	24	41	152	25	2	117,67
A6/31	25	44	159	25	2	116,29
A6/32	26	44	159	25	2	133,14
A6/33	28	44	159	25	2	151,56
A6/34	30	50	159	25	2	163,75
A6/35	32	52	165	32	2	187,05

▲
CONSIGLIATO
RECOMMENDED


▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



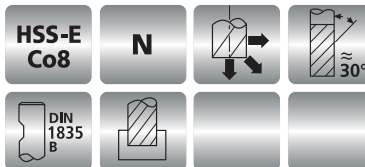
FRESE A DUE DENTI PER CAVE • SERIE LUNGA

A7


 Un dente frontale tagliente fino al centro - Attacco Weldon
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique Weldon
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS DE DUAS NAVALHAS - Encabadoiro Weldon
 Фреза 2-х зубая. Режущий торец. Хвостовик Weldon. Удлиненная серия

**SERIE
A**

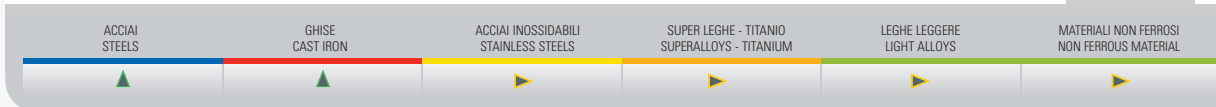
NORM.



SHORT
 NORMAL
 LONG
 EXTRA LONG

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
A7/00	2	9	54	6	2	18,90	26,33
A7/01	3	9	60	6	2	18,90	26,33
A7/02	3.5	13	67	6	2	18,90	28,22
A7/03	4	13	67	6	2	18,90	28,22
A7/04	4.5	13	68	6	2	18,90	28,22
A7/05	5	16	70	6	2	18,90	28,22
A7/06	5.5	16	76	6	2	18,90	30,11
A7/07	6	16	76	6	2	18,90	28,92
A7/08	6.5	16	76	10	2	22,13	33,89
A7/09	7	19	79	10	2	22,13	38,96
A7/10	7.5	19	79	10	2	22,13	38,96
A7/11	8	19	79	10	2	21,54	38,25
A7/12	8.5	22	83	10	2	26,72	43,34
A7/13	9	22	83	10	2	26,12	42,75
A7/14	9.5	22	83	10	2	26,12	42,75
A7/15	10	22	83	10	2	24,79	41,45
A7/16	10.5	25	95	12	2	32,63	51,03
A7/17	11	25	95	12	2	32,63	51,03
A7/18	12	28	98	12	2	31,27	49,70
A7/19	13	28	98	12	2	39,85	59,29
A7/20	14	32	102	12	2	38,50	57,37
A7/21	15	32	108	16	2	45,25	68,87
A7/22	16	32	108	16	2	45,25	68,87
A7/23	17	35	114	16	2	53,82	82,89
A7/24	18	35	114	16	2	52,48	82,17
A7/25	19	38	132	20	2	69,77	100,00
A7/26	20	38	132	20	2	68,54	98,81
A7/27	21	38	132	20	2	74,49	125,15
A7/28	22	41	141	25	2	101,81	161,49
A7/29	23	41	141	25	2	111,47	199,37
A7/30	24	41	152	25	2	109,95	198,03
A7/31	25	44	159	25	2	106,92	195,88
A7/32	26	44	159	25	2	122,11	229,00
A7/33	28	44	159	25	2	142,06	262,65
A7/34	30	50	159	25	2	153,67	274,38
A7/35	32	52	165	32	2	174,98	296,55

Ulteriori diametri
 a richiesta
 Other diameters
 on demand



▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED



FRESE A DUE DENTI PER CAVE • SERIE NORMALE

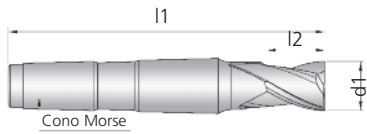
**SERIE
A**

A8


 Un dente frontale tagliente fino al centro - Codolo conico Morse con foro filettato
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Morse taper shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue au cône Morse à trou fileté
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango conico Morse con taladro roscado
 FRESAS DE DUAS NAVALHAS - Encabadouro cone Morse
 Фреза 2-х зубая. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

SHORT
 NORMAL
 LONG
 EXTRA-LONG

Z2



HSS-E
Co8

N



DIN
228-A



NORM.

UNI 8260A
 DIN 326D
 ISO 1641/II

CODE	d1 mm e8	l2 mm	l1 mm	CM-MK	Z	Co 8% €
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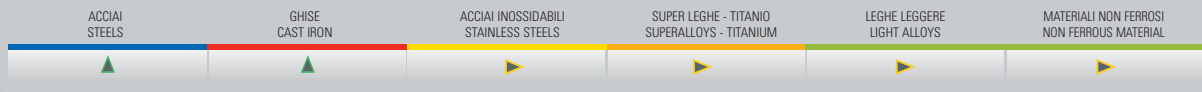
A8/01	16	19	104	2	2	57,66
A8/02	18	19	104	2	2	57,66
A8/03	20	22	124	3	2	82,35
A8/04	22	22	124	3	2	85,53
A8/05	24	26	128	3	2	94,85
A8/06	25	26	128	3	2	95,39
A8/07	26	26	128	3	2	106,08
A8/08	28	26	128	3	2	119,62
A8/09	30	32	134	3	2	134,64
A8/10	32	32	157	4	2	167,19
A8/11	34	32	157	4	2	182,37
A8/12	35	32	157	4	2	199,74
A8/13	36	32	157	4	2	199,74
A8/14	38	38	163	4	2	222,24
A8/15	40	38	163	4	2	245,69

Ulteriori diametri
 a richiesta
 Other diameters
 on demand

CONSIGLIATO
 RECOMMENDED

ACCETTABILE
 ACCEPTABLE

SCONSIGLIATO
 NOT RECOMMENDED



FRESE A DUE DENTI A TESTA SEMISFERICA • SERIE NORMALE

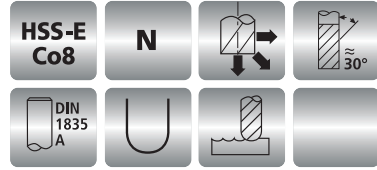
A9

Due denti frontali taglienti fino al centro - Codolo cilindrico
 BALL-NOSED TWO-FLUTES END MILLS - Two end teeth cutting up to the centre - Straight shank
 FRAISES DEUX DENTS RADIIÉES À BOUT HÉMISPHERIQUE - Deux dents bout coupantes jusqu'au centre - Queue cylindrique
 HALBRUNDKOPFFRÄSER, ZWEISCHNEIDER - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS DE DOS LABIOS - Cabeza semiesférica - Dos labios que cortan hasta el centro - Mango cilíndrico
 FRESAS BOLEADA DE DUAS NAVALHAS - Encabadouro cilíndrico
 Фреза 2-х зубая. Сферический торец. Цилиндрический хвостовик. Средняя серия

SERIE
A

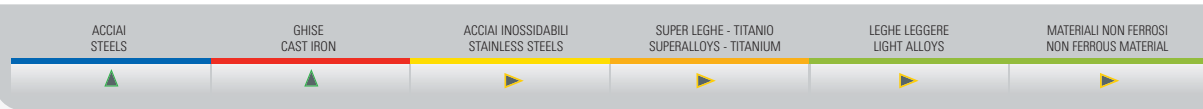
NORM.

UNI
DIN
ISO 1641/1



CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
A9/00	1	3	47	6	2	31,00
A9/00/1	1.5	3	47	6	2	27,77
A9/01	2	4	48	6	2	22,65
A9/02	3	5	49	6	2	18,90
A9/03	4	7	51	6	2	17,57
A9/04	5	8	52	6	2	17,57
A9/05	6	8	52	6	2	17,57
A9/06	7	10	60	10	2	22,13
A9/07	8	11	61	10	2	22,13
A9/08	9	11	61	10	2	26,12
A9/09	10	13	63	10	2	26,12
A9/10	11	13	70	12	2	31,10
A9/11	12	16	73	12	2	31,85
A9/12	13	16	73	12	2	33,86
A9/13	14	16	73	12	2	37,96
A9/14	15	19	79	16	2	41,35
A9/15	16	19	79	16	2	42,71
A9/15/1	17	19	79	16	2	52,82
A9/16	18	19	79	16	2	52,82
A9/17	20	22	88	20	2	64,31
A9/18	22	22	88	20	2	95,15

Ulteriori diametri
a richiesta
Other diameters
on demand



▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE

▼ SCONSIGLIATO
NOT RECOMMENDED



FRESE A DUE DENTI A TESTA SEMISFERICA • SERIE LUNGA

**SERIE
A**

A10

Due denti frontali taglienti fino al centro - Codolo cilindrico
 BALL-NOSED TWO-FLUTES END MILLS - Two end teeth cutting up to the centre - Straight shank
 FRAISES DEUX DENTS RADIIÉES À BOUT HÉMISPHERIQUE - Deux dents bout coupantes jusqu'au centre - Queue cylindrique
 HALBRUNDKOPFFRÄSER, ZWEISCHNEIDER - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS DE DOS LABIOS - Cabeza semiesférica - Dos labios que cortan hasta el centro - Mango cilíndrico
 FRESAS BOLEADA DE DUAS NAVALHAS - Encabadouro cilíndrico
 Фреза 2-х зубая. Сферический торец. Цилиндрический хвостовик. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



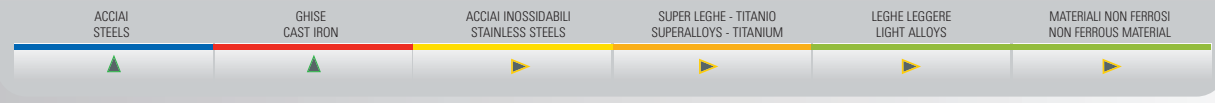
HSS-E Co8
 N
 DIN 1835 A



Ulteriori diametri a richiesta
 Other diameters on demand

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
A10/00	2	9	54	6	2	29,92
A10/01	3	9	60	6	2	24,66
A10/03	4	13	67	6	2	24,66
A10/05	5	16	70	6	2	24,66
A10/07	6	16	76	6	2	23,30
A10/09	7	19	79	10	2	30,53
A10/11	8	19	79	10	2	30,53
A10/13	9	22	83	10	2	35,20
A10/15	10	22	83	10	2	32,63
A10/17	11	25	95	12	2	42,71
A10/18	12	28	98	12	2	40,59
A10/19	13	28	98	12	2	54,20
A10/20	14	32	102	12	2	51,46
A10/21	15	32	108	16	2	59,33
A10/22	16	32	108	16	2	59,33
A10/24	18	35	114	16	2	69,81
A10/26	20	38	132	20	2	83,92
A10/28	22	41	141	25	2	138,82

CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED



FRESE PER MACCHINE A COPIARE • SERIE EXTRA-LUNGA

**SERIE
A**

A11

Un dente frontale tagliente fino al centro - Codolo cilindrico
 COPY MILLING CUTTERS - One end tooth cutting up to the centre - Straight shank
 FRAISES POUR MACHINES À COPIER - Une dent bout coupante jusqu'au centre - Queue cylindrique
 NACHFORMFRÄSER - Eine Schneide mit Zentrumschnitt - Zylinderschaft
 FRESAS EN COPIADO - Un labio que corta hasta el centro - Mango cilíndrico
 FRESAS DE COPIA - Encabadouro cilíndrico
 Фреза 2-х зубая. Режущий торец. Цилиндрический хвостовик. Ультрадлинная серия

SHORT
NORMAL
LONG
EXTRA-LONG



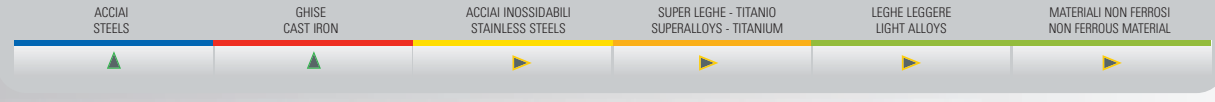
HSS-E Co8
 N
 DIN 1835 A



Ulteriori diametri a richiesta
 Other diameters on demand

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
A11/01	6	25	180	6	2	42,72
A11/02	8	25	180	8	2	43,98
A11/03	10	30	200	10	2	53,47
A11/04	12	30	200	12	2	58,97
A11/05	16	35	200	16	2	90,82
A11/06	20	35	200	20	2	122,68

CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED

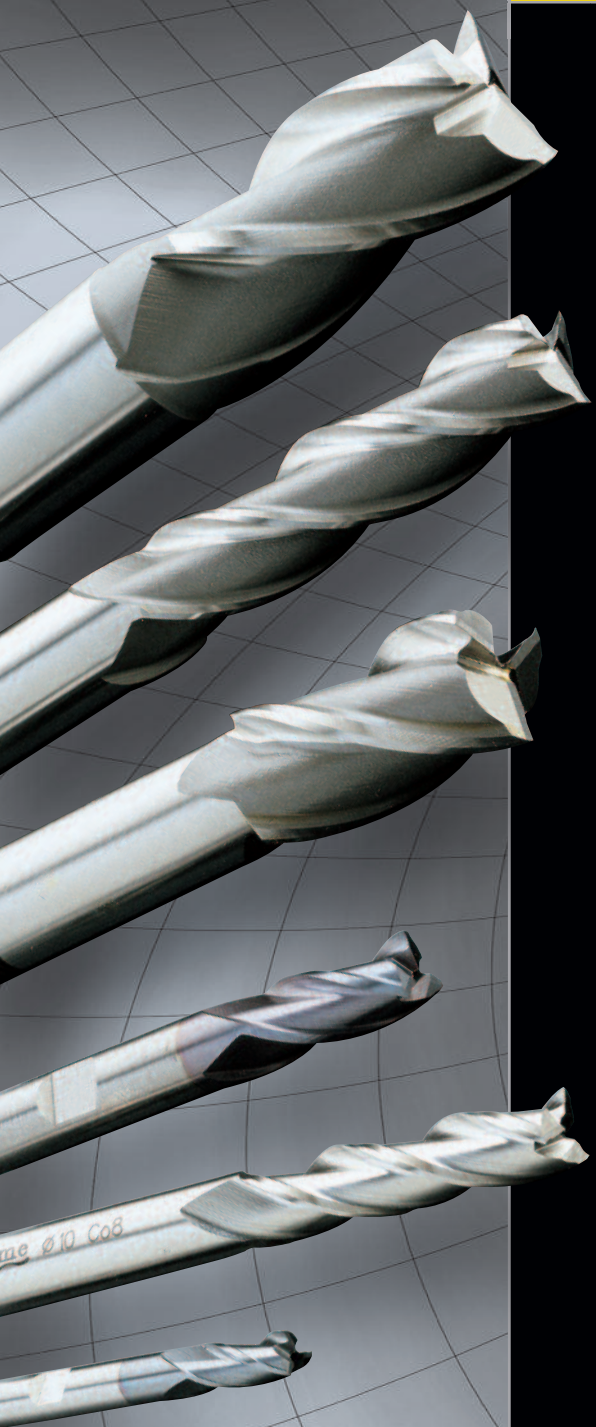


Catalogo HSS-E e PM

SERIE B

FRESE A TRE DENTI

THREE-FLUTES END MILLS




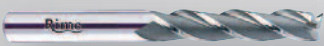






Rime
UTENSILERIA

INDEX


SERIE B

FRESE A TRE DENTI THREE-FLUTES END MILLS

	COD.	PAG.
	B0	31
	B1	32
	B2	33
	B3	34
	B4	35
	B5	36
	B10	37
	B11	38

FRESE A TRE DENTI • SERIE NORMALE

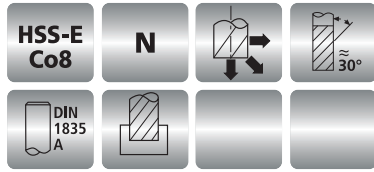
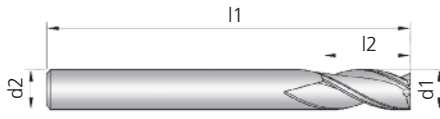
B0


 Un dente frontale tagliente fino al centro - Codolo cilindrico
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Straight shank
 FRAISES À CYLINDRES FRONTALES À TROIS TAILLES - Une dent bout coupante jusqu'au centre - Queue cylindrique
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS DE TRÉS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico
 FRESAS DE TRÉS NAVALHAS - Encabadouro cilíndrico
 Фреза 3-х зубая. Режущий торец. Цилиндрический хвостовик. Средняя серия

**SERIE
B**

NORM.

UNI 8244
DIN 844A
ISO 1641/1

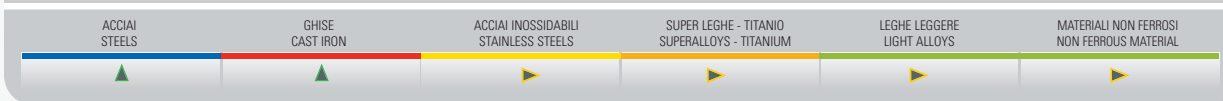


SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
B0/01	2	7	51	6	3	17,41
B0/02	2.5	8	52	6	3	16,81
B0/03	3	8	52	6	3	14,91
B0/04	3.5	10	54	6	3	15,50
B0/05	4	11	55	6	3	14,91
B0/06	4.5	11	55	6	3	15,50
B0/07	5	13	57	6	3	13,60
B0/08	5.5	13	57	6	3	14,19
B0/09	6	13	57	6	3	13,60
B0/10	6.5	16	66	10	3	20,21
B0/11	7	16	66	10	3	20,21
B0/11/1	7.5	19	69	10	3	20,21
B0/12	8	19	69	10	3	18,30
B0/12/1	8.5	19	69	10	3	20,21
B0/13	9	19	69	10	3	20,94
B0/13/1	9.5	22	72	10	3	20,21
B0/14	10	22	72	10	3	20,21
B0/14/1	10.5	22	79	12	3	25,26
B0/15	11	22	79	12	3	25,26
B0/16	12	26	83	12	3	25,26
B0/17	13	26	83	12	3	28,57
B0/18	14	26	83	12	3	27,95
B0/19	15	32	92	16	3	33,98
B0/20	16	32	92	16	3	35,20
B0/21	17	32	92	16	3	41,21
B0/22	18	32	92	16	3	41,94
B0/23	19	38	104	20	3	50,52
B0/24	20	38	104	20	3	48,56
B0/25	22	38	104	20	3	66,71
B0/26	24	45	121	25	3	94,22
B0/27	25	45	121	25	3	94,22
B0/28	26	45	121	25	3	112,91
B0/29	28	45	121	25	3	112,91
B0/30	30	45	121	25	3	137,02
B0/31	32	53	133	32	3	141,00

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03



▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED



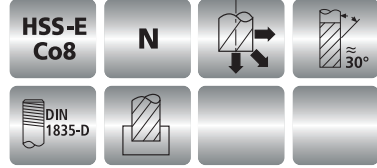
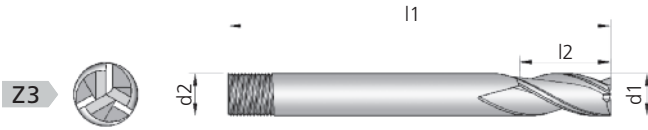
FRESE A TRE DENTI • SERIE NORMALE

**SERIE
B**

B1


 Un dente frontale tagliente fino al centro - Codolo cilindrico filettato
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Threaded shank
 FRAISES À CYLINDRES FRONTALES À TROIS TAILLES - Une dent bout coupante jusqu'au centre - Queue cylindrique fileté
 SCHAFTFRÄSER - Eine Schneide mit Zentrumschnitt - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS DE TRÉS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico roscado
 FRESAS DE TRÉS NAVALHAS - Encabadoiro cilíndrico roscado
 Фреза 3-х зубая. Режущий торец. Цилиндрический хвостовик с резьбой. Средняя серия

SHORT
 NORMAL
 LONG
 EXTRA-LONG



NORM.

UNI 8246
 DIN 844D
 ISO 1641/I

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø

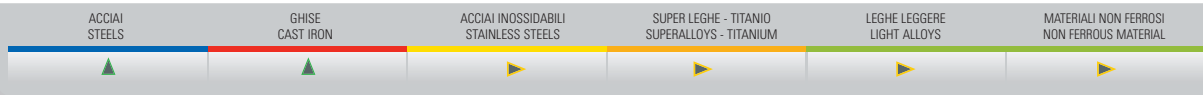
+0,-0,03

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
B1/01	2	7	51	6	3	20,99
B1/02	2.5	8	52	6	3	20,40
B1/03	3	8	52	6	3	17,04
B1/04	3.5	10	54	6	3	17,64
B1/05	4	11	55	6	3	17,04
B1/06	4.5	11	55	6	3	17,04
B1/07	5	13	57	6	3	17,04
B1/08	5.5	13	57	6	3	17,64
B1/09	6	13	57	6	3	17,04
B1/10	6.5	16	66	10	3	24,67
B1/11	7	16	66	10	3	24,67
B1/11/1	7.5	19	69	10	3	24,06
B1/12	8	19	69	10	3	24,06
B1/12/1	8.5	19	69	10	3	26,00
B1/13	9	19	69	10	3	27,43
B1/13/1	9.5	22	72	10	3	26,72
B1/14	10	22	72	10	3	26,00
B1/14/1	10.5	22	79	12	3	34,21
B1/15	11	22	79	12	3	34,21
B1/16	12	26	83	12	3	32,13
B1/17	13	26	83	12	3	36,30
B1/18	14	26	83	12	3	34,21
B1/19	15	32	92	16	3	43,29
B1/20	16	32	92	16	3	41,82
B1/21	17	32	92	16	3	52,36
B1/22	18	32	92	16	3	49,53
B1/23	19	38	98	16	3	57,27
B1/24	20	38	104	20	3	55,92
B1/25	22	38	114	25	3	107,61
B1/26	24	45	121	25	3	120,29
B1/27	25	45	121	25	3	107,61
B1/28	26	45	121	25	3	115,29
B1/29	28	45	121	25	3	125,78
B1/30	30	45	121	25	3	166,72
B1/31	32	53	133	32	3	170,87

CONSIGLIATO
RECOMMENDED


ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED



FRESE A TRE DENTI • SERIE NORMALE

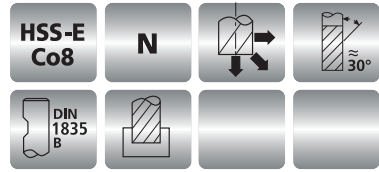
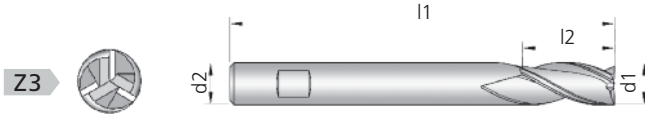
B2


 Un dente frontale tagliente fino al centro - Attacco Weldon
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES FRONTALES À TROIS TAILLES - Une dent bout coupante jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS DE TRÉS LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS DE TRÉS NAVALHAS - Encabadouro Weldon
 Фреза 3-х зубая. Режущий торец. Хвостовик Weldon. Средняя серия

SERIE
B

NORM.

UNI 8248
DIN 844B
ISO 1641/1

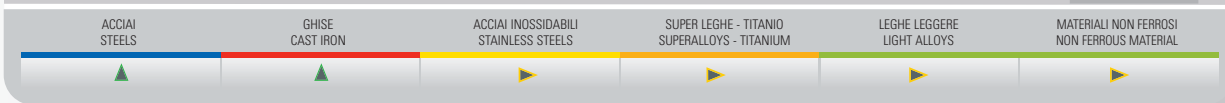


SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
B2/01	2	7	51	6	3	19,43	26,91
B2/02	2.5	8	52	6	3	19,43	26,91
B2/03	3	8	52	6	3	15,50	23,16
B2/04	3.5	10	54	6	3	15,50	23,16
B2/05	4	11	55	6	3	15,27	22,45
B2/06	4.5	11	55	6	3	15,50	23,16
B2/07	5	13	57	6	3	14,19	21,87
B2/08	5.5	13	57	6	3	14,91	22,45
B2/09	6	13	57	6	3	14,19	21,87
B2/10	6.5	16	66	10	3	22,86	34,59
B2/11	7	16	66	10	3	22,86	34,59
B2/11/1	7.5	19	69	10	3	23,46	32,75
B2/12	8	19	69	10	3	21,54	33,89
B2/12/1	8.5	19	69	10	3	23,46	33,31
B2/13	9	19	69	10	3	24,79	36,38
B2/13/1	9.5	22	72	10	3	24,20	35,18
B2/14	10	22	72	10	3	22,86	34,59
B2/14/1	10.5	22	79	12	3	29,30	42,05
B2/15	11	22	79	12	3	30,53	43,96
B2/16	12	26	83	12	3	28,57	42,05
B2/17	13	26	83	12	3	33,98	49,70
B2/18	14	26	83	12	3	32,63	47,19
B2/19	15	32	92	16	3	39,85	61,81
B2/20	16	32	92	16	3	39,24	61,21
B2/21	17	32	92	16	3	48,56	71,39
B2/22	18	32	92	16	3	45,86	68,87
B2/23	19	38	104	20	3	54,56	77,13
B2/24	20	38	104	20	3	52,48	75,22
B2/25	22	38	104	20	3	72,41	99,60
B2/26	24	45	121	25	3	104,02	143,62
B2/27	25	45	121	25	3	100,98	140,80
B2/28	26	45	121	25	3	106,79	150,36
B2/29	28	45	121	25	3	118,28	158,50
B2/30	30	45	121	25	3	141,00	185,45
B2/31	32	53	133	32	3	159,48	206,75

Ulteriori diametri
a richiesta
Other diameters
on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03



▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



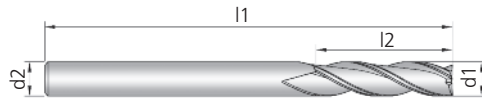
FRESE A TRE DENTI • SERIE LUNGA

SERIE
B

B3

Un dente frontale tagliente fino al centro - Codolo cilindrico
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Straight shank
 FRAISES À CYLINDRES FRONTALES À TROIS TAILLES - Une dent bout coupante jusqu'au centre - Queue cylindrique
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS DE TRÉS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico
 FRESAS DE TRÉS NAVALHAS - Encabadouro cilíndrico
 Фреза 3-х зубая. Режущий торец. Цилиндрический хвостовик. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



HSS-E Co8
 N

 DIN 1835 A

NORM.

UNI 8245
 DIN 844A
 ISO 1641/I

Ulteriori diametri a richiesta
 Other diameters on demand

Toll. reale sul Ø
 Real Tol. on Ø
 +0 -0,03

CONSIGLIATO
 RECOMMENDED

ACCETTABILE
 ACCEPTABLE








SCONSIGLIATO
 NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
B3/01	2	10	54	6	3	18,90
B3/02	3	12	56	6	3	17,57
B3/03	4	19	63	6	3	16,97
B3/04	5	24	68	6	3	16,38
B3/05	6	24	68	6	3	15,05
B3/06	7	30	80	10	3	27,95
B3/07	8	38	88	10	3	26,61
B3/08	10	45	95	10	3	25,26
B3/09	12	53	110	12	3	31,10
B3/10	14	53	110	12	3	35,85
B3/11	16	63	123	16	3	43,96
B3/12	18	63	123	16	3	52,20
B3/13	20	75	141	20	3	60,94
B3/14	22	75	141	20	3	80,10



FRESE A TRE DENTI • SERIE LUNGA

B4

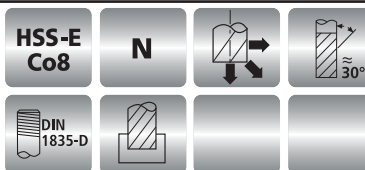
 Un dente frontale tagliente fino al centro - Codolo cilindrico filettato
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Threaded shank
 FRAISES À CYLINDRES FRONTALES À TROIS TAILLES - Une dent bout coupante jusqu'au centre - Queue cylindrique filetée
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS DE TRÉS LABIOS - Un labio que corta hasta el centro - Mango cilíndrico roscado
 FRESAS DE TRÉS NAVALHAS - Encabadouro cilíndrico roscado
 Фреза 3-х зубая. Режущий торец. Цилиндрический хвостовик с резьбой. Удлиненная серия

SERIE B

NORM.

UNI 8247
 DIN 844D
 ISO 1641/1

Z3



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
B4/01	2	10	54	6	3	22,63
B4/02	3	12	56	6	3	22,03
B4/03	4	19	63	6	3	21,19
B4/04	5	24	68	6	3	20,60
B4/05	6	24	68	6	3	19,85
B4/06	7	30	80	10	3	33,48
B4/07	8	38	88	10	3	31,40
B4/08	10	45	95	10	3	30,03
B4/09	12	53	110	12	3	36,97
B4/10	14	53	110	12	3	42,59
B4/11	16	63	123	16	3	51,96
B4/12	18	63	123	16	3	61,06
B4/13	20	75	141	20	3	71,06
B4/14	22	75	141	20	3	96,18

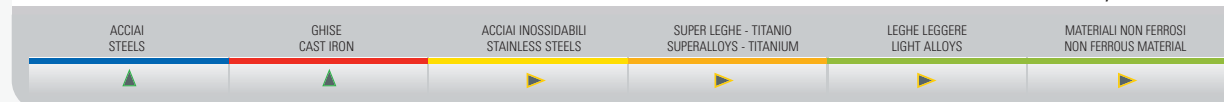
Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED



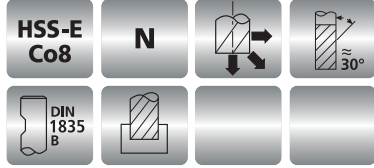
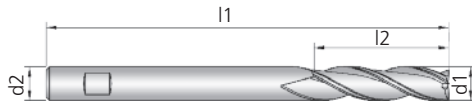
FRESE A TRE DENTI • SERIE LUNGA

SERIE
B

B5


 Un dente frontale tagliente fino al centro - Attacco Weldon
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES FRONTALES À TROIS TAILLES - Une dent bout coupante jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS DE TRÉS LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS DE TRÉS NAVALHAS - Encabadouro Weldon
 Фреза 3-х зубая. Режущий торец. Хвостовик Weldon. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI 8249
DIN 844B
ISO 1641/I

Ulteriori diametri
a richiesta
Other diameters
on demand

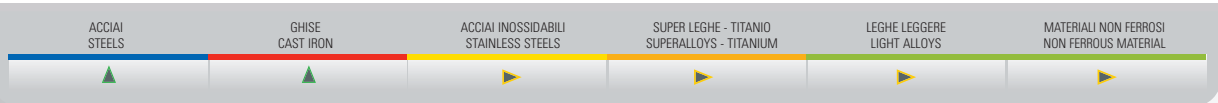
Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03

CONSIGLIATO
RECOMMENDED

ACCETTABILE
ACCEPTABLE








SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
B5/01	2	10	54	6	3	21,54
B5/02	3	12	56	6	3	20,94
B5/03	4	19	63	6	3	19,61
B5/04	5	24	68	6	3	18,90
B5/05	6	24	68	6	3	20,21
B5/06	7	30	80	10	3	31,27
B5/07	8	38	88	10	3	29,92
B5/07/1	9	45	95	10	3	29,30
B5/08	10	45	95	10	3	28,57
B5/08/1	11	53	110	12	3	35,85
B5/09	12	53	110	12	3	35,85
B5/09/1	13	53	110	12	3	41,35
B5/10	14	53	110	12	3	39,96
B5/10/1	15	63	123	16	3	50,83
B5/11	16	63	123	16	3	50,08
B5/12	18	63	123	16	3	58,20
B5/13	20	75	141	20	3	67,69
B5/14	22	75	141	20	3	88,68



FRESE A TRE DENTI • SERIE NORMALE

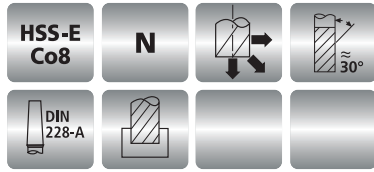
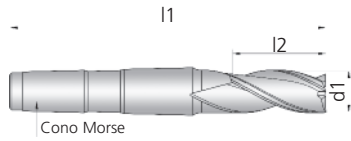
B10

 Un dente frontale tagliente fino al centro - Codolo conico Morse con foro filettato
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Morse taper shank
 FRAISES À CYLINDRES FRONTALES À TROIS TAILLES - Une dent bout coupante jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS DE TRÉS LABIOS - Un labio que corta hasta el centro - Mango conico Morse con taladro roscado
 FRESAS DE TRÉS NAVALHAS - Encabadouro cone Morse con taladro roscado
 Фреза 3-х зубая. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

**SERIE
B**

NORM.

UNI 8250
DIN 845B
ISO 1641/II



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
B10/01	16	32	117	2	3	67,75
B10/02	18	32	117	2	3	67,75
B10/03	20	38	140	3	3	95,46
B10/04	22	38	140	3	3	102,91
B10/05	24	45	147	3	3	112,98
B10/06	25	45	147	3	3	114,73
B10/07	26	45	147	3	3	122,92
B10/08	28	45	147	3	3	130,77
B10/09	30	53	155	3	3	152,15
B10/10	32	53	178	4	3	174,21
B10/11	34	53	178	4	3	191,22
B10/12	35	53	178	4	3	198,58
B10/13	36	53	178	4	3	213,18
B10/14	38	63	188	4	3	224,09
B10/15	40	63	188	4	3	266,71

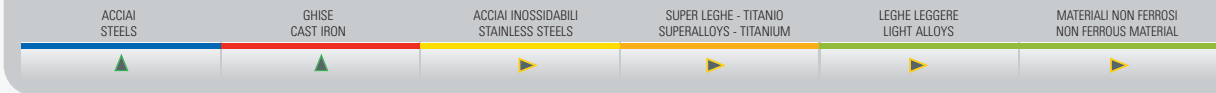
Ulteriori diametri
a richiesta
Other diameters
on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE A TRE DENTI • SERIE LUNGA

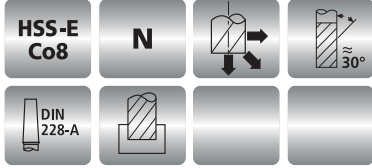
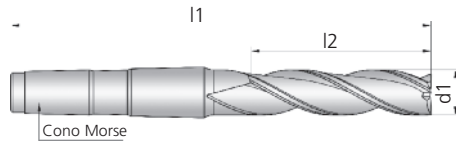
SERIE
B

B11

Un dente frontale tagliente fino al centro - Codolo conico Morse con foro filettato
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Morse taper shank
 FRAISES À CYLINDRES FRONTALES À TROIS TAILLES - Une dent bout coupante jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS DE TRÉS LABIOS - Un labio que corta hasta el centro - Mango conico Morse con taladro roscado
 FRESAS DE TRÉS NAVALHAS - Cone Morse con taladro roscado
 Фреза 3-х зубая. Режущий торец. Хвостовик конус Морзе с резьбой. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG

Z3



NORM.

UNI 8251
DIN 845B
ISO 1641/II

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø

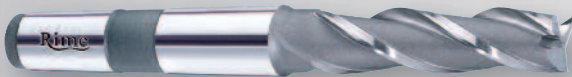
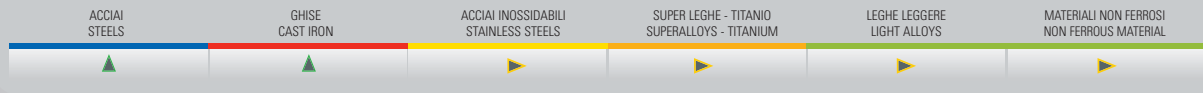
+0 -0,03

CONSIGLIATO
RECOMMENDED

ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
B11/01	16	63	148	2	3	86,22
B11/02	18	63	148	2	3	86,22
B11/03	20	75	177	3	3	114,64
B11/04	22	75	177	3	3	125,53
B11/05	24	90	192	3	3	159,33
B11/06	25	90	192	3	3	159,88
B11/07	26	90	192	3	3	171,20
B11/08	28	90	192	3	3	182,24
B11/09	30	90	192	3	3	194,91
B11/10	32	106	231	4	3	274,23



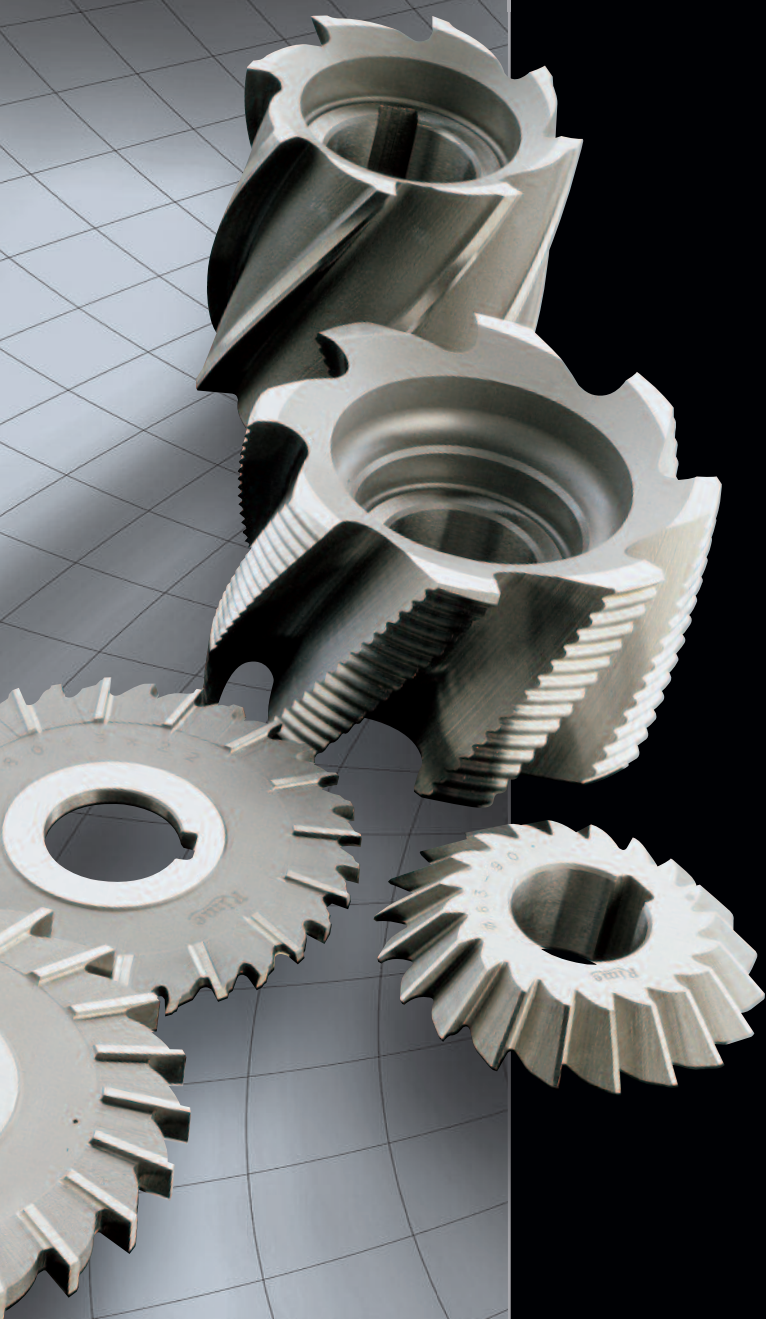
Catalogo HSS-E e PM

SERIE C

**FRESE A MANICOTTO,
A DISCO A TRE TAGLI,
AD ANGOLO**

**SHELL END MILLS,
SIDE AND FACE
MILLING CUTTERS,
ANGULAR CUTTERS**

Rime
UTENSILERIA



INDEX








SERIE C

FRESE A MANICOTTO, A DISCO A TRE TAGLI, AD ANGOLO
SHELL END MILLS, SIDE AND FACE MILLING CUTTERS, ANGULAR CUTTERS

	COD.	PAG.		COD.	PAG.
	C2	41		C7	44 45
	C3	41		C8	46 47
	C5/A	42		C9	48
	C6/A	42		C13	49
	C5/B	43		C14	50
	C6/B	43			

FRESE FRONTALI

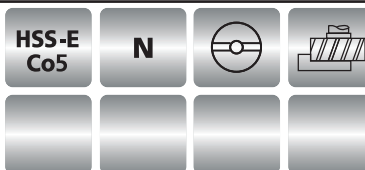
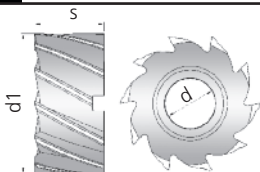
C2

-  Denti elicoidali rinforzati - Cava trascinamento trasversale
-  SHELL END MILLS - Reinforced helical teeth - Slot for transverse dragging
-  FRAISES À CYLINDRES FRONTALES - Denture hélicoïdale renforcée - Fente de traînement transversal
-  WALZENSTIRNFRÄSER - Verstärkte Spiralzähne - Mitnehmerquernut Schlitz
-  FRESAS CILINDRICAS FRONTALES - Labios helicoidales reforzados - Agujero conduciimiento trasversal
-  FRESAS CILINDRICAS FRONTAIS
-  Фреза торцевая с усиленным зубом

SERIE C

NORM.

UNI 3903
DIN 841-1880
ISO 2586



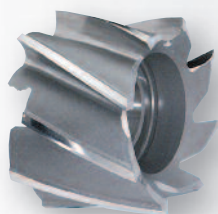
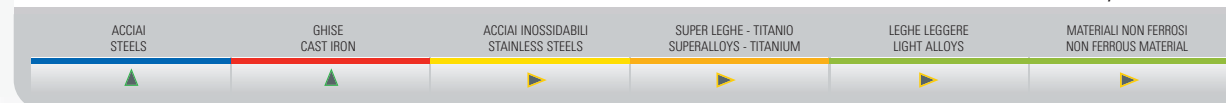
CODE	d1 mm js16	s mm k16	d mm H7	Z	Co 5% €
C2/01	40	32	16	8	91,52
C2/02	50	36	22	8	119,40
C2/03	63	40	27	8	171,72
C2/04	80	45	27	10	262,94
C2/05	100	50	32	12	439,85
C2/06	125	56	40	14	727,01

Toll. reale sul Ø
Real Tol. on Ø
+0,05 -0

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE FRONTALI

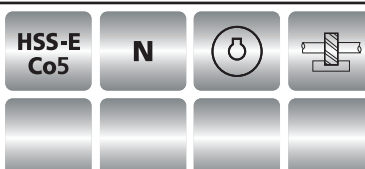
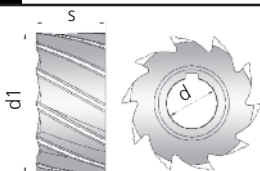
C3

-  Denti elicoidali rinforzati - Spacco longitudinale
-  SHELL END MILLS - Reinforced helical teeth - Longitudinal slot
-  FRAISES À CYLINDRES FRONTALES - Denture hélicoïdale renforcée - Fente longitudinale
-  WALZENSTIRNFRÄSER - Verstärkte Spiralzähne - Mitnehmerlängsnut
-  FRESAS CILINDRICAS FRONTALES - Labios helicoidales reforzados - Hendidura longitudinal
-  FRESAS CILINDRICAS FRONTAIS
-  Фреза торцевая с усиленным зубом. Шпоночный паз

SERIE C

NORM.

UNI 3903
DIN 841-1880
ISO 2586



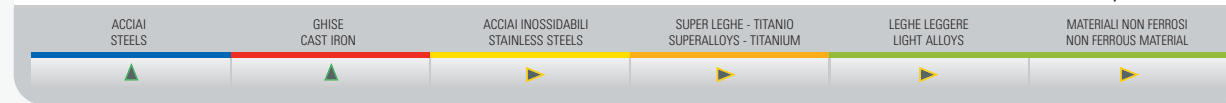
CODE	d1 mm js16	s mm k16	d mm H7	Z	Co 5% €
C3/01	30	30	13	8	86,83
C3/02	35	35	16	8	94,62
C3/03	40	20	16	8	102,77
C3/04	40	40	16	8	111,05
C3/05	50	25	22	8	124,57
C3/06	50	50	22	8	164,57
C3/07	60	30	27	8	182,67
C3/08	60	60	27	8	228,32
C3/09	75	35	27	10	301,83
C3/10	75	75	27	10	379,16
C3/11	90	35	27	12	448,86
C3/12	110	35	32	14	621,35

Toll. reale sul Ø
Real Tol. on Ø
+0,05 -0

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

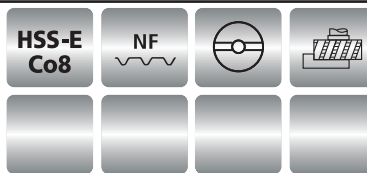
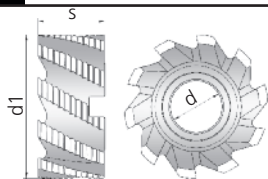


FRESE FRONTALI

SERIE C

C5/A


 Denti elicoidali con rompitrucciolo spogliato completamente rettificato. Esecuzione per semifinitura - Cava trascinamento trasversale
 SHELL END MILLS - Helical teeth with form relieved entirely ground chip-breaker. Semifinishing type - Slot for transverse dragging
 FRAISES À CYLINDRES FRONTALES - Denture hélicoïdale avec brise-copeaux dépolié entièrement rectifié. Exécution pour demi-fini - Fente de traînement transversal
 WALZENSTIRNFRÄSER - Schrägschneiden mit voll eingeschliffenem Mitnehmerquernut. Ausführung zur Halbbearbeitung - Querbetriebs Schlitz
 FRESAS CILINDRICAS FRONTALES - Labios helicoidal con arranca de viruta completamente rettificado para semiacabado - Agujero conducimiento trasversal
 FRESAS CILINDRICAS FRONTAIS - Fresa concha com navalha reforçada normal
 Фреза торцевая для полуцишовой обработки со стружколомом, с усиленным зубом



NORM.

UNI 3903
DIN 841-1880
ISO 2586

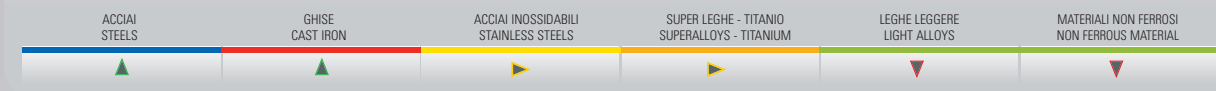
CODE	d1 mm js16	s mm k16	d mm H7	Z	Co 8% €
C5/01/A	40	32	16	6	124,88
C5/02/A	50	36	22	6	162,22
C5/03/A	63	40	27	8	228,47
C5/04/A	80	45	27	8	372,32
C5/05/A	100	50	32	10	575,30
C5/06/A	125	56	40	12	921,15

Toll. reale sul Ø
Real Tol. on Ø
±0,05

CONSIGLIATO
RECOMMENDED

ACCETTABILE
ACCEPTABLE


SCONSIGLIATO
NOT RECOMMENDED

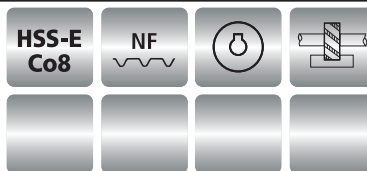
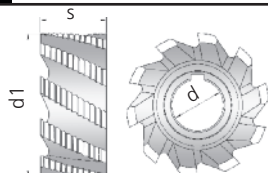


FRESE FRONTALI

SERIE C

C6/A


 Denti elicoidali con rompitrucciolo spogliato completamente rettificato. Esecuzione per semifinitura - Spacco longitudinale
 SHELL END MILLS - Helical teeth with form relieved entirely ground chip-breaker. Semifinishing type - Longitudinal slot
 FRAISES À CYLINDRES FRONTALES - Denture hélicoïdale avec brise-copeaux dépolié entièrement rectifié. Exécution pour demi-fini - Fente longitudinale
 WALZENSTIRNFRÄSER - Schrägschneiden mit voll eingeschliffenem Mitnehmerlängsnut. Ausführung zur Halbbearbeitung - Longitudinaler Schlitz
 FRESAS CILINDRICAS FRONTALES - Labios helicoidal con arranca de viruta completamente rettificado para semiacabado - Hendidura longitudinal
 FRESAS CILINDRICAS FRONTAIS - Ripa fina
 Фреза торцевая для полуцишовой обработки со стружколомом, с усиленным зубом. Шпоночный паз



NORM.

UNI 3903
DIN 841-1880
ISO 2586

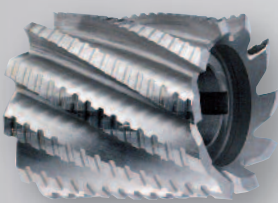
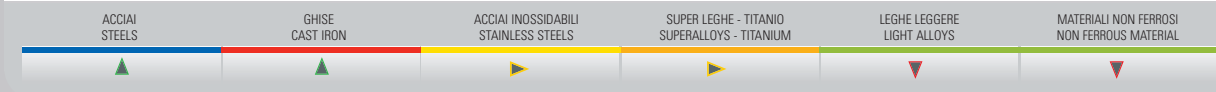
CODE	d1 mm js16	s mm k16	d mm H7	Z	Co 8% €
C6/01/A	30	30	13	6	102,86
C6/02/A	35	35	16	6	116,33
C6/03/A	40	20	16	8	125,18
C6/04/A	40	40	16	6	138,16
C6/05/A	50	25	22	8	141,53
C6/06/A	50	50	22	8	172,39
C6/07/A	60	30	27	10	245,83
C6/08/A	60	60	27	10	284,88
C6/09/A	75	35	27	10	353,85
C6/10/A	75	75	27	10	489,73

Toll. reale sul Ø
Real Tol. on Ø
±0,05

CONSIGLIATO
RECOMMENDED








ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED



FRESE FRONTALI

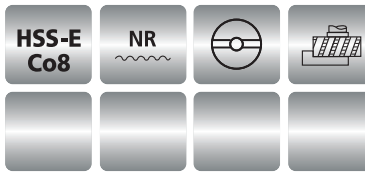
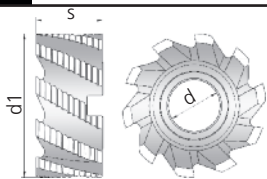
C5/B

-  Denti elicoidali con rompitruciolo spogliato completamente rettificato. Esecuzione per sgrossatura - Cava trascinamento trasversale
-  SHELL END MILLS - Helical teeth with form relieved entirely ground chip-breaker. Roughing type - Slot for transverse dragging
-  FRAISES À CYLINDRES FRONTALES - Denture hélicoïdale avec brise-copeaux dépolié entièrement rectifié. Exécution pour dégrossir - Fente de traînement transversal
-  WALZENSTIRNFRÄSER - Schrägschneiden mit voll eingeschliffenem Mitnehmerquernut. Ausführung zum Schruppen - Querbetriebs Schlitz
-  FRESAS CILINDRICAS FRONTALES - Labios helicoidal con arranca de viruta completamente rectificado para desbaste - Agujero conducimiento trasversal
-  FRESAS CILINDRICAS FRONTAIS - Fresa concha com quebra-apara normal
-  Фреза торцевая для черновой обработки

SERIE
C

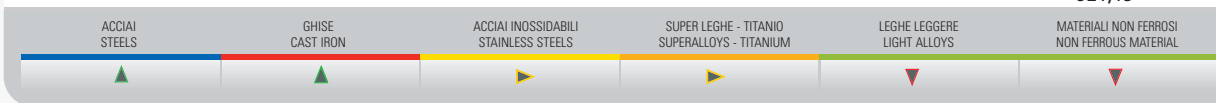
NORM.




UNI 3903
DIN 841-1880
ISO 2586



CODE	d1 mm js16	s mm k16	d mm H7	Z	Co 8% €
C5/01/B	40	32	16	6	124,88
C5/02/B	50	36	22	6	162,22
C5/03/B	63	40	27	8	228,47
C5/04/B	80	45	27	8	372,32
C5/05/B	100	50	32	10	575,30
C5/06/B	125	56	40	12	921,15

Toll. reale sul Ø
Real Tol. on Ø
±0,05










-  CONSIGLIATO
RECOMMENDED
-  ACCETTABILE
ACCEPTABLE
-  SCONSIGLIATO
NOT RECOMMENDED



FRESE FRONTALI

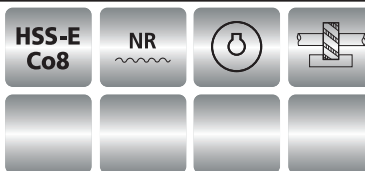
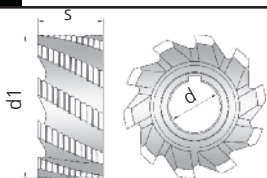
C6/B

-  Denti elicoidali con rompitruciolo spogliato completamente rettificato. Esecuzione per sgrossatura - Spacco longitudinale
-  SHELL END MILLS - Helical teeth with form relieved entirely ground chip-breaker. Roughing type - Longitudinal slot
-  FRAISES À CYLINDRES FRONTALES - Denture hélicoïdale avec brise-copeaux dépolié entièrement rectifié. Exécution pour dégrossir - Fente longitudinale
-  WALZENSTIRNFRÄSER - Schrägschneiden mit voll eingeschliffenem Mitnehmerlängsnut. Ausführung zum Schruppen - Longitudinaler Schlitz
-  FRESAS CILINDRICAS FRONTALES - Labios helicoidal con arranca de viruta completamente rectificado para desbaste - Hendidura longitudinal
-  FRESAS CILINDRICAS FRONTAIS - Fresa concha com quebra-apara normal
-  Фреза торцевая для черновой обработки. Шпоночный паз

SERIE
C

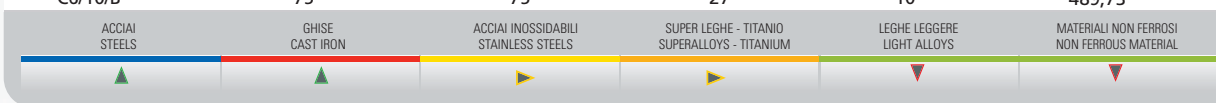
NORM.




UNI 3903
DIN 841-1880
ISO 2586



CODE	d1 mm js16	s mm k16	d mm H7	Z	Co 8% €
C6/01/B	30	30	13	6	102,86
C6/02/B	35	35	16	6	116,33
C6/03/B	40	20	16	8	125,18
C6/04/B	40	40	16	6	138,16
C6/05/B	50	25	22	8	141,53
C6/06/B	50	50	22	8	172,39
C6/07/B	60	30	27	10	245,83
C6/08/B	60	60	27	10	284,88
C6/09/B	75	35	27	10	353,85
C6/10/B	75	75	27	10	489,73

Toll. reale sul Ø
Real Tol. on Ø
±0,05




-  CONSIGLIATO
RECOMMENDED
-  ACCETTABILE
ACCEPTABLE
-  SCONSIGLIATO
NOT RECOMMENDED

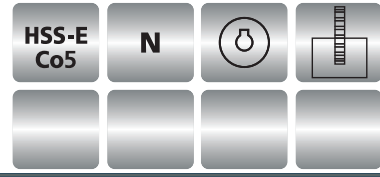
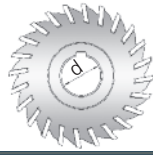


FRESE A DISCO A TRE TAGLI

**SERIE
C**

C7


 Denti dritti
 SIDE AND FACE MILLING CUTTERS - Straight teeth
 FRAISSES EN DISQUE À TROIS TAILLES - Denture droite
 SCHEIBENFRÄSER - Geradverzähnt
 FRESAS A DISCO DE TRES LABIOS - Labios derechos
 FRESAS DE TRÊS NAVALHAS - Topo direito
 Фреза дисковая прямозубая с тремя режущими гранями



NORM.

UNI 3905B
 DIN 885B
 ISO 2587

CODE	d1 mm js16	s mm k11	d mm H7	Z	Co 5% €
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Toll. reale sul Ø
Real Tol. on Ø
+0,05 -0

C7/01	50	4	16	20	69,38
C7/02	50	5	16	20	69,38
C7/03	50	6	16	20	74,12
C7/04	50	7	16	18	78,76
C7/05	50	8	16	18	78,76
C7/06	50	9	16	18	88,24
C7/07	50	10	16	18	93,00
C7/08	63	4	22	20	78,76
C7/09	63	5	22	20	83,48
C7/10	63	6	22	20	83,48
C7/11	63	7	22	20	88,24
C7/12	63	8	22	20	93,00
C7/13	63	9	22	20	97,74
C7/14	63	10	22	18	102,50
C7/15	63	12	22	18	107,24
C7/16	63	14	22	18	111,85
C7/17	63	16	22	18	120,62
C7/18	63	18	22	18	125,23
C7/19	63	20	22	18	134,75
C7/20	80	4	22	24	102,50
C7/20/1	80	4	27	24	102,50
C7/21	80	5	22	24	107,24
C7/21/1	80	5	27	24	107,24
C7/22	80	6	22	24	111,85
C7/22/1	80	6	27	24	111,85
C7/23	80	7	22	22	115,87
C7/23/1	80	7	27	22	115,87
C7/24	80	8	22	22	115,87
C7/24/1	80	8	27	22	115,87
C7/25	80	9	22	22	120,62
C7/25/1	80	9	27	22	120,62
C7/26	80	10	22	20	125,23
C7/26/1	80	10	27	20	125,23
C7/27	80	12	22	20	134,75
C7/27/1	80	12	27	20	134,75
C7/28	80	14	22	20	144,24
C7/28/1	80	14	27	20	144,24
C7/29	80	16	22	20	153,73
C7/29/1	80	16	27	20	153,73
C7/30	80	18	22	20	163,08
C7/30/1	80	18	27	20	163,08
C7/31	80	20	22	20	171,72
C7/31/1	80	20	27	20	171,72



FRESE A DISCO A TRE TAGLI

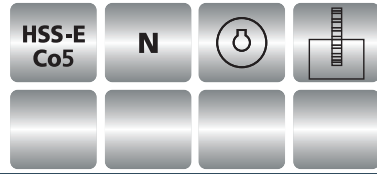
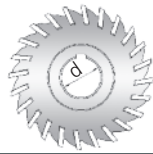
C7

-  Denti dritti
-  SIDE AND FACE MILLING CUTTERS - Straight teeth
-  FRAISES EN DISQUE À TROIS TAILLES - Denture droite
-  SCHEIBENFRÄSER - Geradverzähnt
-  FRESAS A DISCO DE TRES LABIOS - Labios derechos
-  FRESAS DE TRÊS NAVALHAS - Topo direito
-  Фреза дисковая прямозубая с тремя режущими гранями

**SERIE
C**

NORM.

UNI 3905B
DIN 885B
ISO 2587



CODE	d1 mm js16	s mm k11	d mm H7	Z	Co 5% €
C7/32	100	4	27	26	134,75
C7/32/1	100	4	32	26	134,75
C7/33	100	5	27	26	139,49
C7/33/1	100	5	32	26	139,49
C7/34	100	6	27	24	144,24
C7/34/1	100	6	32	24	144,24
C7/35	100	7	27	24	153,73
C7/35/1	100	7	32	24	153,73
C7/36	100	8	27	22	158,33
C7/36/1	100	8	32	22	158,33
C7/37	100	9	27	22	167,12
C7/37/1	100	9	32	22	167,12
C7/38	100	10	27	22	171,72
C7/38/1	100	10	32	22	171,72
C7/39	100	12	27	22	185,98
C7/39/1	100	12	32	22	185,98
C7/40	100	14	27	22	200,24
C7/40/1	100	14	32	22	200,24
C7/41	100	15	27	22	204,83
C7/41/1	100	15	32	22	204,83
C7/42	100	16	27	22	209,59
C7/42/1	100	16	32	22	209,59
C7/43	100	18	27	22	223,82
C7/43/1	100	18	32	22	223,82
C7/44	100	20	27	20	237,22
C7/44/1	100	20	32	20	237,22
C7/45	100	22	27	20	270,32
C7/45/1	100	22	32	20	270,32
C7/46	100	25	27	20	326,18
C7/46/1	100	25	32	20	326,18
C7/47	125	5	32	30	200,24
C7/48	125	6	32	30	200,24
C7/49	125	8	32	28	213,61
C7/50	125	10	32	28	228,58
C7/51	125	12	32	28	247,44
C7/52	125	14	32	26	266,29
C7/53	125	16	32	26	289,19
C7/54	125	18	32	26	321,56
C7/55	125	20	32	26	349,94

Toll. reale sul Ø
Real Tol. on Ø
+0,05 -0

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▶	▶

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE

▼ SCONSIGLIATO
NOT RECOMMENDED

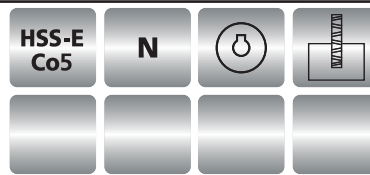


FRESE A DISCO A TRE TAGLI

**SERIE
C**

C8


Denti alternati
 SIDE AND FACE MILLING CUTTERS - Staggered teeth
 FRAISSES EN DISQUE À TROIS TAILLES - Denture alternée
 SCHEIBENFRÄSER - Kreuzverzahnt
 FRESAS A DISCO DE TRÉS LABIOS - Labios alternados
 FRESAS DE TRÉS NAVALHAS - Topo alternado
 Фреза дисковая с тремя режущими гранями с разнонаправленными зубьями



NORM.

UNI 3905A
 DIN 885A
 ISO 2587

Toll. reale sul Ø
Real Tol. on Ø

+0,05 -0

CODE	d1 mm js16	s mm k11	d mm H7	Z	Co 5% €
C8/01	50	4	16	18	69,38
C8/02	50	5	16	18	69,38
C8/03	50	6	16	18	74,12
C8/04	50	7	16	18	78,02
C8/05	50	8	16	18	78,02
C8/06	50	9	16	16	88,24
C8/07	50	10	16	16	92,28
C8/08	63	4	22	22	78,02
C8/09	63	5	22	20	83,48
C8/10	63	6	22	20	83,48
C8/11	63	7	22	20	88,24
C8/12	63	8	22	20	92,28
C8/13	63	9	22	18	96,86
C8/14	63	10	22	18	102,50
C8/15	63	12	22	18	106,37
C8/16	63	14	22	18	111,13
C8/17	63	16	22	16	120,62
C8/18	63	18	22	16	125,23
C8/19	63	20	22	14	134,75
C8/20	80	4	22	24	102,50
C8/20/1	80	4	27	24	102,50
C8/21	80	5	22	22	106,37
C8/21/1	80	5	27	22	106,37
C8/22	80	6	22	22	111,13
C8/22/1	80	6	27	22	111,13
C8/23	80	7	22	20	115,87
C8/23/1	80	7	27	20	115,87
C8/24	80	8	22	20	115,87
C8/24/1	80	8	27	20	115,87
C8/25	80	9	22	20	121,34
C8/25/1	80	9	27	20	121,34
C8/26	80	10	22	18	125,23
C8/26/1	80	10	27	18	125,23
C8/27	80	12	22	18	134,75
C8/27/1	80	12	27	18	134,75
C8/28	80	14	22	18	144,24
C8/28/1	80	14	27	18	144,24
C8/29	80	16	22	16	152,88
C8/29/1	80	16	27	16	152,88
C8/30	80	18	22	16	163,08
C8/30/1	80	18	27	16	163,08
C8/31	80	20	22	16	171,72
C8/31/1	80	20	27	16	171,72
C8/32	100	4	27	26	134,75
C8/32/1	100	4	32	26	134,75
C8/33	100	5	27	26	138,77
C8/33/1	100	5	32	26	138,77
C8/34	100	6	27	24	144,24
C8/34/1	100	6	32	24	144,24
C8/35	100	7	27	24	152,88
C8/35/1	100	7	32	24	152,88
C8/36	100	8	27	22	157,61
C8/36/1	100	8	32	22	157,61
C8/37	100	9	27	22	167,12
C8/37/1	100	9	32	22	167,12
C8/38	100	10	27	22	171,72
C8/38/1	100	10	32	22	171,72



FRESE A DISCO A TRE TAGLI

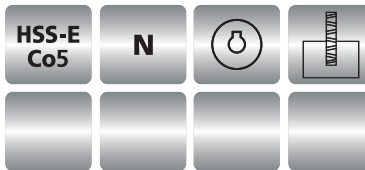
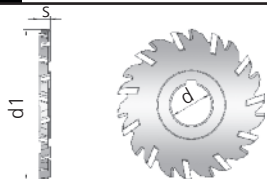
C8

-  Denti alternati
-  SIDE AND FACE MILLING CUTTERS - Staggered teeth
-  FRAISES EN DISQUE À TROIS TAILLES - Denture alternée
-  SCHEIBENFRÄSER - Kreuzverzahnt
-  FRESAS A DISCO DE TRÉS LABIOS - Labios alternados
-  FRESAS DE TRÉS NAVALHAS - Topo alternado
-  Фреза дисковая с тремя режущими гранями с разнонаправленными зубьями

**SERIE
C**

NORM.

UNI 3905A
DIN 885A
ISO 2587



CODE	d1 mm js16	s mm k11	d mm H7	Z	Co 5% €
C8/39	100	12	27	20	185,98
C8/39/1	100	12	32	20	185,98
C8/40	100	14	27	18	199,36
C8/40/1	100	14	32	18	199,36
C8/41	100	15	27	18	204,83
C8/41/1	100	15	32	18	204,83
C8/42	100	16	27	18	209,59
C8/42/1	100	16	32	18	209,59
C8/43	100	18	27	18	223,82
C8/43/1	100	18	32	18	223,82
C8/44	100	20	27	18	237,22
C8/44/1	100	20	32	18	237,22
C8/45	100	22	27	18	269,46
C8/45/1	100	22	32	18	269,46
C8/46	100	25	27	18	326,17
C8/46/1	100	25	32	18	326,17
C8/47	125	5	32	30	199,36
C8/48	125	6	32	30	199,36
C8/48/1	125	7	32	28	213,61
C8/49	125	8	32	28	213,61
C8/49/1	125	9	32	24	227,72
C8/50	125	10	32	24	227,72
C8/51	125	12	32	22	246,56
C8/52	125	14	32	22	265,57
C8/53	125	16	32	20	288,47
C8/54	125	18	32	20	320,71
C8/55	125	20	32	20	349,06
C8/56	125	22	32	20	405,05
C8/57	125	25	32	18	461,76
C8/58	160	6	32	30	297,82
C8/59	160	8	32	28	315,96
C8/60	160	10	32	26	339,55
C8/61	160	12	32	26	362,45
C8/62	160	14	32	24	390,80
C8/63	160	16	32	24	419,16
C8/64	160	18	32	22	447,66
C8/65	160	20	32	22	475,18
C8/66	160	22	32	22	535,91
C8/67	160	25	32	22	647,74
C8/68	200	8	40	34	502,51
C8/69	200	10	40	32	502,51
C8/70	200	12	40	30	535,63
C8/71	200	14	40	30	579,37
C8/72	200	16	40	28	627,11
C8/73	200	18	40	28	678,84
C8/74	200	20	40	26	737,08
C8/75	200	22	40	26	804,32
C8/76	200	25	40	24	890,05
C8/77	200	28	40	24	954,78
C8/78	200	32	40	22	1086,62
C8/79	250	20	50	34	1110,12
C8/80	250	30	50	26	1699,09

Toll. reale sul Ø
Real Tol. on Ø
+0,05 -0

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▶	▶

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED

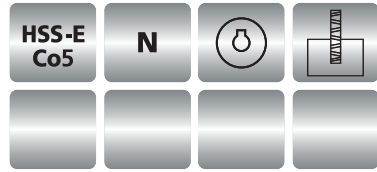
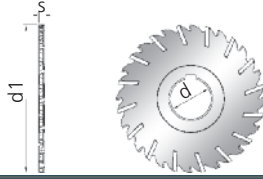


SEGHE CIRCOLARI A TRE TAGLI

**SERIE
C**

C9


 Denti elicoidali alternati
 THREE-FLUTED CIRCULAR SAWS - Staggered teeth
 SCIES CIRCULAIRES TROIS TAILLES - Denture alternée
 KREISSÄGEN - Schräg-Kreuzverzahnt
 SIERRA CIRCULAR DE TRÉS LABIOS - Labios helicoidales alternados
 SERRA CIRCULAR DE TRÉS NAVALHAS - Navalhas helicoidales alternada
 Фреза дисковая с тремя режущими гранями с разнонаправленными зубьями



NORM.



CODE	d1 mm js16	s mm k11	d mm H7	Z	Co 5% €
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Toll. reale sul Ø
Real Tol. on Ø

+0,05 -0

C9/01	63	1.6	22	32	120,51
C9/02	63	2	22	32	120,51
C9/03	63	2.5	22	32	120,51
C9/04	63	3	22	28	120,51
C9/05	63	3.5	22	28	120,51
C9/06	80	2	22	32	155,90
C9/07	80	2.5	22	32	155,90
C9/08	80	3	22	32	155,90
C9/09	80	3.5	22	32	155,90
C9/10	100	2	27	40	188,76
C9/11	100	2.5	27	40	188,76
C9/12	100	3	27	40	188,76
C9/13	100	3.5	27	40	188,76
C9/14	125	2	32	44	269,99
C9/15	125	2.5	32	44	269,99
C9/16	125	3	32	44	269,99
C9/17	125	3.5	32	40	269,99
C9/18	125	4	32	40	269,99
C9/19	160	3	32	50	410,87
C9/19/1	160	3.5	32	50	410,87
C9/20	160	4	32	50	410,87
C9/21	160	5	32	50	410,87

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼



FRESE AD ANGOLO PRISMATICHE

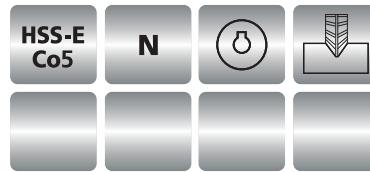
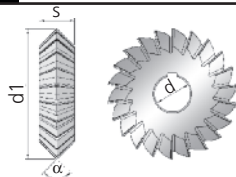
C13


 Frese ad angolo prismatiche
 DOUBLE EQUAL-ANGLE CUTTERS
 FRAISES D'ANGLE PRISMATIQUES
 PRISMENFRÄSER
 FRESAS DE ANGULO PRISMATICO
 FRESAS DE ANGULO PRISMATICO
 Фреза дисковая угловая

SERIE C

NORM.

UNI 3907
 DIN 847
 ISO 6108



CODE	d1 mm js16	α 0°+1°	s mm k11	d mm H7	Z	Co 5% €
C13/01	56		10	16	24	97,14
C13/02	63	45°	12	22	22	134,95
C13/03	80		16	22	26	200,24
C13/04	100		18	27	30	289,94
C13/05	56		12	16	22	103,97
C13/06	63	60°	16	22	20	135,77
C13/07	80		20	22	24	205,17
C13/08	100		25	27	26	309,95
C13/09	56		14	16	22	108,35
C13/10	63	90°	18	22	20	149,50
C13/11	80		22	22	22	223,26
C13/12	100		28	27	24	333,03

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▶	▶

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

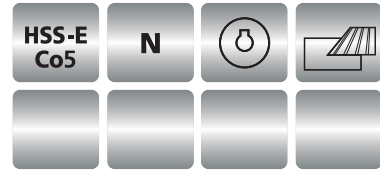
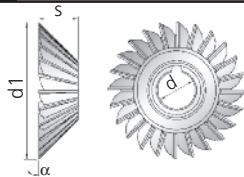


FRESE FRONTALI AD ANGOLO

**SERIE
C**

C14


 Frese frontali ad angolo
 SINGLE ANGLE CUTTERS
 FRAISES FRONTALES D'ANGLE
 WINKELSTIRNFRÄSER
 FRESAS FRONTALES D'ANGULO
 FRESAS DE ANGULO FRONTAIS
 ФРЕЗА ТОРЦЕВАЯ С ОБРАТНЫМ КОЛУСОМ



NORM.

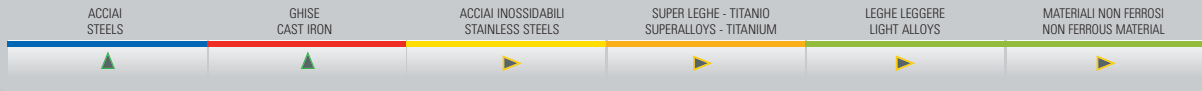
UNI 3908
DIN 842A

CODE	d1 mm js16	α $\pm 25'$	s mm k16	d mm H7	Z	Co 5% €
C14/01	40		12	10	18	97,46
C14/02	50		15	13	20	121,80
C14/03	63	45°	18	16	20	166,69
C14/04	80		23	22	24	268,59
C14/05	100		30	27	24	447,49
C14/08	40		13	10	16	97,46
C14/09	50		16	13	18	121,80
C14/10	63	50°	20	16	20	167,37
C14/11	80		25	22	22	268,59
C14/12	100		32	27	26	447,49
C14/15	40		13	10	18	97,46
C14/16	50		16	13	18	121,80
C14/17	63	60°	20	16	18	167,37
C14/18	80		25	22	20	268,59
C14/19	100		32	27	22	447,49

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



Catalogo HSS-E e PM

SERIE E-F



**FRESE PER
SGROSSATURA E
SEMIFINITURA**

**ROUGHING AND
SEMIFINISHING
END MILLS**

Rime
UTENSILERIA








INDEX

SERIE E-F FRESE PER SGROSSATURA E SEMIFINITURA ROUGHING AND SEMIFINISHING END MILLS

	COD.	PAG.		COD.	PAG.
	E0	53		F0	67
	E1	53		F1	68
	E2	54		F2	69
	E4	55		F4	70
	E5	55		F5	70
	E6	56		F6	71
	E7	57		F7	72
	E8	58		F8	73
	E10	59		F10	74
	E11	60		F11	75
	E12	61		F12	76
	E13	62		F13	77
	E14	62		F14	77
	E15	63		F15	78
	E16	64		F16	79
	E17	65		F17	80
	E18	66		F18	81

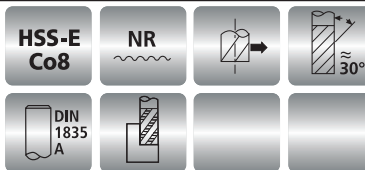
FRESE PER SGROSSATURA • SERIE NORMALE

E0

-  Denti elicoidali con romptruciolo spogliato completamente rettificato - Codolo cilindrico
-  ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Straight shank
-  FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Queue cylindrique
-  SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher
-  FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranque de viruta completamente rectificado - Mango cilíndrico
-  FRESAS DE DESBASTE FRONTAL - Fresa cilíndrica sem corte ao centro com quebra-apara - Encabadouro cilíndrico
-  Фреза концевая для черновой обработки. Цилиндрический хвостовик. Средняя серия

SERIE E-F

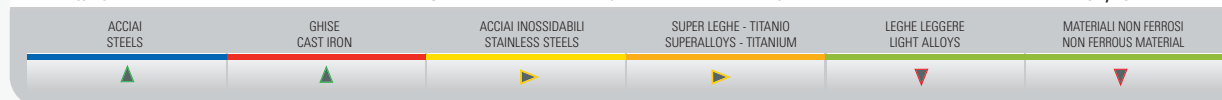
NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E0/01	6	16	60	6	3	25,87
E0/02	8	22	64	10	4	40,77
E0/03	10	28	70	10	4	40,06
E0/04	12	32	80	12	4	44,09
E0/05	14	32	80	12	4	47,21
E0/06	15	36	90	16	4	53,21
E0/07	16	36	90	16	4	53,21
E0/08	18	40	100	16	4	61,79
E0/09	20	45	110	20	4	74,52
E0/10	22	45	110	20	4	82,78

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
±0,05










▲ CONSIGLIATO RECOMMENDED
▶ ACCETTABILE ACCEPTABLE
▼ SCONSIGLIATO NOT RECOMMENDED



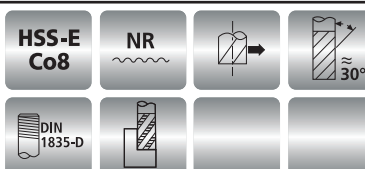
FRESE PER SGROSSATURA • SERIE NORMALE

E1

-  Denti elicoidali con romptruciolo spogliato completamente rettificato - Codolo cilindrico filettato
-  ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Threaded shank
-  FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Queue cylindrique fileté
-  SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zylinderschaft mit Gewinde
-  FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranque de viruta completamente rectificado - Mango cilíndrico roscado
-  FRESAS DE DESBASTE FRONTAL - Fresa cilíndrica sem corte ao centro com quebra-apar - Encabadouro cilíndrico roscado
-  Фреза концевая для черновой обработки. Цилиндрический хвостовик с резьбой. Средняя серия

SERIE E-F

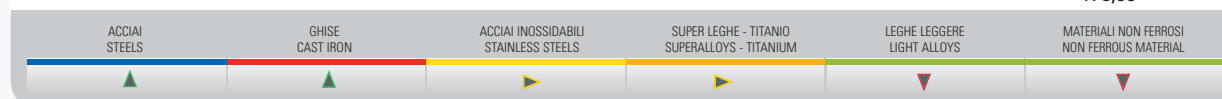
NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E1/01	6	16	60	6	3	30,53
E1/02	8	22	64	10	4	47,56
E1/03	10	28	70	10	4	46,25
E1/04	12	32	80	12	4	51,15
E1/05	14	32	80	12	4	54,44
E1/06	15	36	90	16	4	62,16
E1/07	16	36	90	16	4	62,16
E1/08	18	40	100	16	4	74,06
E1/09	20	45	110	20	4	86,97
E1/10	22	45	110	20	4	94,86
E1/11	24	45	120	25	5	116,71
E1/12	25	50	125	25	5	127,95
E1/13	26	50	125	25	5	140,37
E1/14	28	50	125	25	5	145,80
E1/15	30	63	135	25	5	168,96
E1/16	32	63	145	32	5	178,99

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
±0,05




▲ CONSIGLIATO RECOMMENDED
▶ ACCETTABILE ACCEPTABLE
▼ SCONSIGLIATO NOT RECOMMENDED



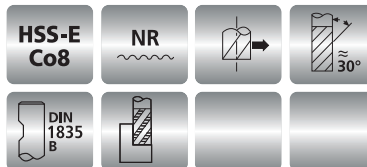
FRESE PER SGROSSATURA • SERIE NORMALE

**SERIE
E-F**

E2


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Weldon shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente rectificado - Weldon
 FRESAS FRONTAIS PARA DESBASTE - Fresa sem corte ao centro com quebra-apara - Encabadouro Weldon
 Фреза концевая для черновой обработки. Хвостовик Weldon. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

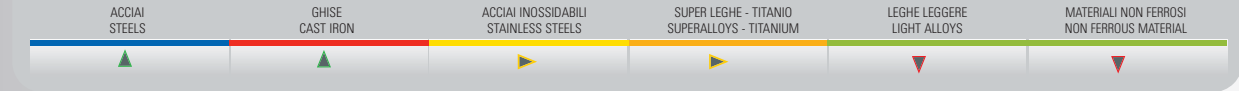


Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
±0,05








 CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E2/01	6	16	60	6	3	27,77
E2/02	8	22	64	10	4	43,27
E2/03	10	28	70	10	4	42,68
E2/04	12	32	80	12	4	47,37
E2/05	14	32	80	12	4	50,52
E2/06	15	36	90	16	4	57,88
E2/07	16	36	90	16	4	57,88
E2/08	18	40	100	16	4	77,12
E2/09	20	45	110	20	4	79,98
E2/10	22	45	110	20	4	86,84
E2/11	24	45	120	25	5	108,36
E2/12	25	50	125	25	5	118,30
E2/13	26	50	125	25	5	130,73
E2/14	28	50	125	25	5	135,22
E2/15	30	63	135	25	5	157,16
E2/16	32	63	145	32	5	180,72



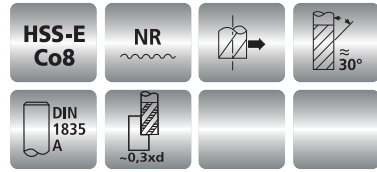
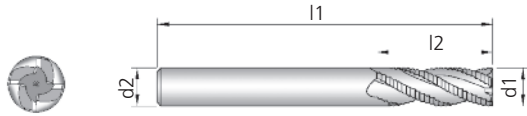
FRESE PER SGROSSATURA • SERIE LUNGA

E4

-  Denti elicoidali con romptruciolo spogliato completamente rettificato - Codolo cilindrico
-  ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Straight shank
-  FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Queue cylindrique
-  SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifffem Spannbrecher - Zylinderschaft
-  FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente rectificado - Mango cilíndrico
-  FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa sem corte ao centro com quebra-apara - Encabadouro cilíndrico
-  Фреза концевая для черновой обработки. Цилиндрический хвостовик. Удлиненная серия

SERIE E-F

NORM.

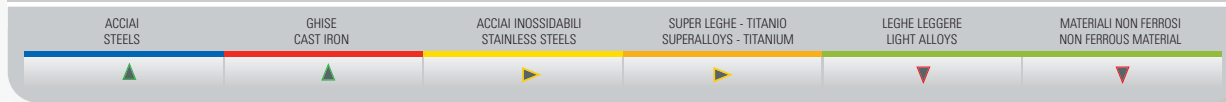


SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E4/01	8	35	85	10	4	48,53
E4/02	10	42	90	10	4	49,83
E4/03	12	48	95	12	4	56,61
E4/04	14	48	100	12	4	68,54
E4/05	15	54	104	16	4	70,50
E4/06	16	54	104	16	4	70,50
E4/07	18	60	120	16	4	78,47
E4/08	20	62	128	20	4	88,24
E4/09	22	64	130	20	4	100,71

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
±0,05



CONSIGLIATO
RECOMMENDED








ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED



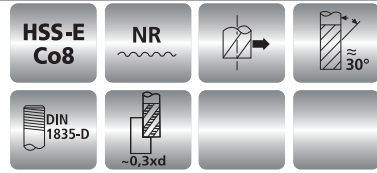
FRESE PER SGROSSATURA • SERIE LUNGA

E5

-  Denti elicoidali con romptruciolo spogliato completamente rettificato - Codolo cilindrico filettato
-  ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Threaded shank
-  FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Queue cylindrique fileté
-  SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifffem Spannbrecher - Zylinderschaft mit Gewinde
-  FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente rectificado - Mango cilíndrico roscado
-  FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa sem corte ao centro com quebra-apara - Encabadouro cilíndrico roscado
-  Фреза концевая для черновой обработки. Цилиндрический хвостовик с резьбой. Удлиненная серия

SERIE E-F

NORM.

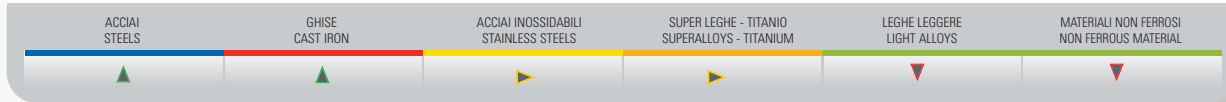


SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E5/01	8	35	85	10	4	54,96
E5/02	10	42	90	10	4	56,38
E5/03	12	48	95	12	4	63,64
E5/04	14	48	100	12	4	77,50
E5/05	15	54	104	16	4	79,57
E5/06	16	54	104	16	4	79,57
E5/07	18	60	120	16	4	88,77
E5/08	20	62	128	20	4	102,10
E5/09	22	64	130	20	4	115,07
E5/10	24	66	135	25	5	150,94
E5/11	25	70	145	25	5	150,94
E5/12	28	70	145	25	5	176,67
E5/13	30	80	155	25	5	209,19
E5/14	32	80	160	32	5	233,71

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
±0,05



CONSIGLIATO
RECOMMENDED

ACCETTABILE
ACCEPTABLE


SCONSIGLIATO
NOT RECOMMENDED

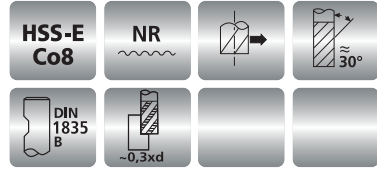
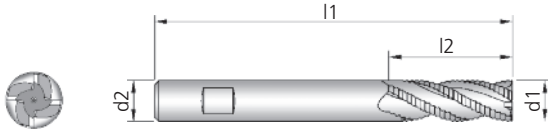


FRESE PER SGROSSATURA • SERIE LUNGA

**SERIE
E-F**

E6


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Weldon shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Weldon
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa sem corte ao centro com quebra-apara - Weldon
 Фреза концевая для черновой обработки. Хвостовик Weldon. Удлиненная серия



NORM.



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E6/01	8	35	85	10	4	51,02
E6/02	10	42	90	10	4	52,33
E6/03	12	48	95	12	4	59,26
E6/04	14	48	100	12	4	73,20
E6/05	15	54	104	16	4	75,77
E6/06	16	54	104	16	4	75,77
E6/07	18	60	120	16	4	83,74
E6/08	20	62	128	20	4	95,10
E6/09	22	64	130	20	4	107,58
E6/10	24	66	135	25	5	142,96
E6/11	25	70	145	25	5	142,96
E6/12	28	70	145	25	5	165,28
E6/13	30	80	155	25	5	195,37
E6/14	32	80	160	32	5	218,27

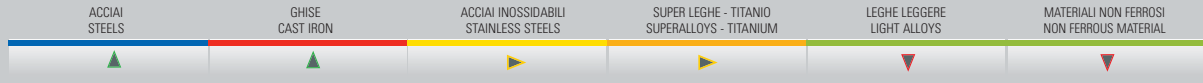
Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
±0,05


 CONSIGLIATO
 RECOMMENDED









 ACCETTABILE
 ACCEPTABLE


 SCONSIGLIATO
 NOT RECOMMENDED



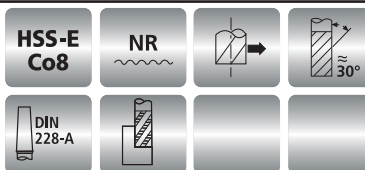
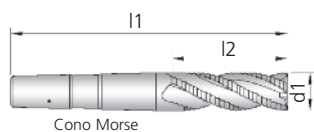
FRESE PER SGROSSATURA • SERIE NORMALE

E7

 Denti elicoidali con rompitriciolo spogliato completamente rettificato - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifffnem Spannbrecher - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa sem corte ao centro com quebra-apara - Encabadouro cone Morse con taladro roscado
 Фреза концевая для черновой обработки. Хвостовик конус Морзе с резьбой. Средняя серия

SERIE E-F

NORM.



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
E7/01	16	36	115	2	4	79,38
E7/02	18	40	120	2	4	80,82
E7/03	20	45	125	2	4	92,44
E7/04	22	45	125	2	4	101,97
E7/05	24	50	150	3	5	131,08
E7/06	25	50	150	3	5	133,96
E7/07	26	56	155	3	5	143,93
E7/08	28	56	155	3	5	149,13
E7/09	30	63	165	3	5	166,93
E7/10	32	63	188	4	5	201,46
E7/11	34	70	195	4	5	222,34
E7/12	35	70	195	4	6	233,39
E7/13	36	70	195	4	6	239,82
E7/14	38	70	195	4	6	256,60
E7/15	40	70	195	4	6	281,31
E7/16	45	80	205	4	6	413,55
E7/17	50	90	215	4	7	491,64
E7/18	50	90	250	5	7	541,03

Toll. reale sul Ø
Real Tol. on Ø
±0,05

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

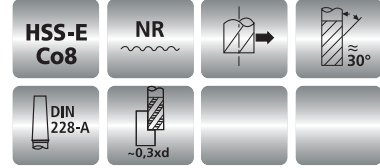
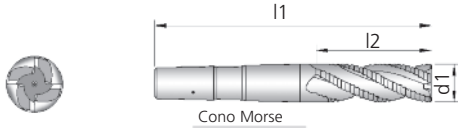


FRESE PER SGROSSATURA • SERIE LUNGA

SERIE
E-F

E8


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa sem corte ao centro com quebra-apara - Encabadouro cone Morse
 Фреза концевая для черновой обработки. Хвостовик конус Морзе с резьбой. Удлиненная серия



NORM.



Toll. reale sul Ø
Real Tol. on Ø

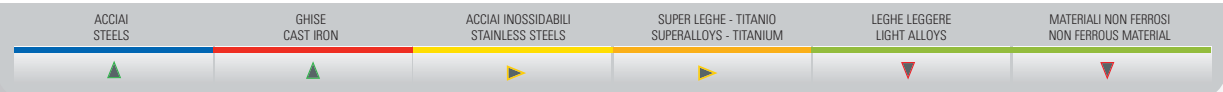
±0,05

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
E8/01	16	55	140	2	4	97,14
E8/02	18	60	145	2	4	97,14
E8/03	20	65	148	2	4	108,46
E8/04	22	65	166	3	4	138,17
E8/05	24	70	171	3	5	148,81
E8/06	25	70	171	3	5	153,18
E8/07	26	70	176	3	5	161,16
E8/08	28	80	186	3	5	181,55
E8/09	30	85	210	4	5	229,99
E8/10	32	90	215	4	5	250,73
E8/11	34	90	215	4	5	279,61
E8/12	35	90	215	4	6	299,83
E8/13	36	90	215	4	6	316,99
E8/14	38	95	220	4	6	376,72
E8/15	40	95	220	4	6	428,72
E8/16	45	100	225	4	6	497,64
E8/17	50	110	235	4	7	605,38
E8/18	50	120	275	5	7	699,28

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER SGROSSATURA • SERIE NORMALE

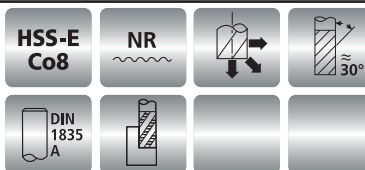
E10

🇮🇹 Denti elicoidali con rompitruciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo cilindrico
🇬🇧 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Straight shank
🇫🇷 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusqu'au centre - Queue cylindrique
🇩🇪 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
🇪🇸 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranque de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango cilíndrico
🇵🇹 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro cilíndrico
🇷🇺 Фреза концевая для черновой обработки. Режущий торец. Цилиндрический хвостовик. Средняя серия

SERIE E-F

NORM.

UNI 8244
 DIN 844A
 ISO 1641/I



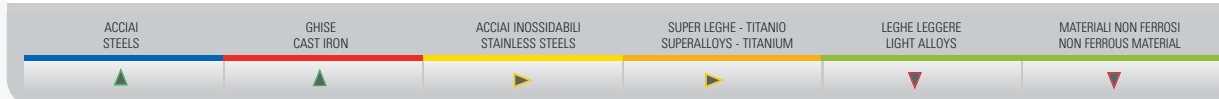
CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E10/01	6	13	57	6	3	23,75
E10/02	8	19	69	10	4	36,84
E10/03	10	22	72	10	4	36,84
E10/04	12	26	83	12	4	40,77
E10/05	14	26	83	12	4	43,68
E10/06	15	32	92	16	4	50,90
E10/07	16	32	92	16	4	50,90
E10/08	18	32	92	16	4	54,14
E10/09	20	38	104	20	4	66,56
E10/10	22	38	104	20	4	77,19

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

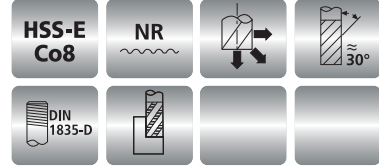


FRESE PER SGROSSATURA • SERIE NORMALE

**SERIE
E-F**

E11


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo cilindrico filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Threaded shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusqu'au centre - Queue cylindrique fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango cilíndrico roscado
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro cilíndrico roscado
 Фреза концевая для черновой обработки. Режущий торец. Цилиндрический хвостовик с резьбой. Средняя серия



NORM.

UNI 8244
DIN 844D
ISO 1641/1

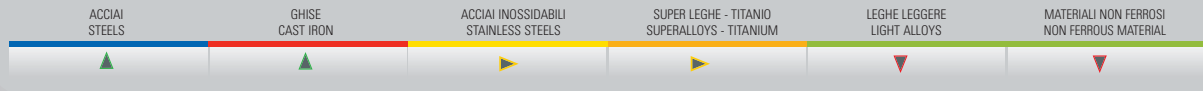
CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E11/01	6	13	57	6	3	28,22
E11/02	8	19	69	10	4	42,98
E11/03	10	22	72	10	4	42,98
E11/04	12	26	83	12	4	48,16
E11/05	14	26	83	12	4	50,68
E11/06	15	32	92	16	4	59,70
E11/07	16	32	92	16	4	59,70
E11/08	18	32	92	16	4	62,46
E11/09	20	38	104	20	4	78,23
E11/10	22	38	104	20	4	88,37
E11/11	24	45	121	25	5	128,81
E11/12	25	45	121	25	5	126,02
E11/13	26	45	121	25	5	135,25
E11/14	28	45	121	25	5	142,78
E11/15	30	45	121	25	5	154,11
E11/16	32	53	133	32	5	181,05

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED







▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER SGROSSATURA • SERIE NORMALE

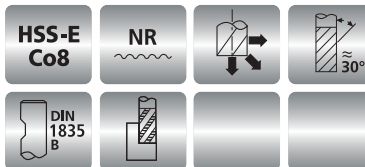
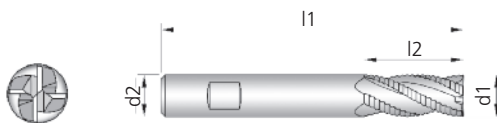
E12


 Denti elicoidali con rompitruciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank

 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon

 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon-Spannfläche

 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranque de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango Weldon

 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro Weldon

 Фреза концевая для черновой обработки. Режущий торцев. Хвостовик Weldon. Средняя серия

SERIE E-F

NORM.

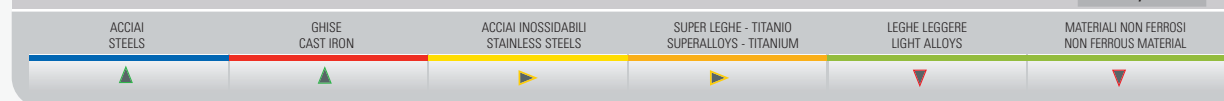
UNI 8244
 DIN 844B
 ISO 1641/1



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
E12/00	5	13	57	6	3	26,92	34,59
E12/01	6	13	57	6	3	25,75	33,57
E12/02	7	16	66	10	3	39,31	50,01
E12/03	8	19	69	10	4	38,02	47,73
E12/04	9	19	69	10	4	39,31	48,87
E12/05	10	22	72	10	4	38,02	47,73
E12/06	11	22	79	12	4	44,11	56,02
E12/07	12	26	83	12	4	42,32	53,68
E12/08	13	26	83	12	4	49,59	62,83
E12/09	14	26	83	12	4	47,66	60,93
E12/10	15	32	92	16	4	58,44	78,22
E12/11	16	32	92	16	4	55,48	75,33
E12/12	17	32	92	16	4	60,64	81,71
E12/13	18	32	92	16	4	58,72	79,83
E12/13/1	19	38	104	20	4	76,40	97,63
E12/14	20	38	104	20	4	72,52	93,23
E12/15	22	38	104	20	4	81,38	109,88
E12/16	24	45	121	25	5	120,67	153,32
E12/17	25	45	121	25	5	117,23	150,10
E12/18	26	45	121	25	5	127,32	163,99
E12/19	28	45	121	25	5	133,80	170,15
E12/20	30	45	121	25	5	144,48	180,30
E12/21	32	53	133	32	5	168,10	206,24
E12/22	36	53	133	32	6	199,59	301,00
E12/23	40	63	143	32	6	235,43	336,42

Toll. reale sul Ø
 Real Tol. on Ø
 ±0,05




▲ CONSIGLIATO
 RECOMMENDED
 ► ACCETTABILE
 ACCEPTABLE
 ▼ SCONSIGLIATO
 NOT RECOMMENDED

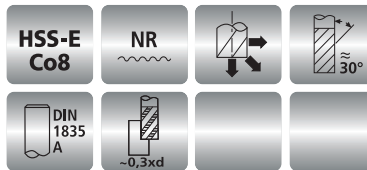


FRESE PER SGROSSATURA • SERIE LUNGA

SERIE E-F

E13


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo cilindrico
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Straight shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusq'au centre - Queue cylindrique
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango cilíndrico
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro cilíndrico
 Фреза концевая для черновой обработки. Режущий торец. Цилиндрический хвостовик. Удлиненная серия



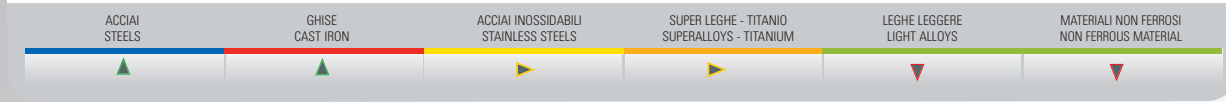
NORM.	
UNI	8245
DIN	844A
ISO	1641/I

SHORT
NORMAL
LONG
EXTRA-LONG

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED
▶
ACCETTABILE
ACCEPTABLE
▼
SCONSIGLIATO
NOT RECOMMENDED


CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E13/01	8	38	88	10	4	49,12
E13/02	10	45	95	10	4	50,42
E13/03	12	53	110	12	4	58,71
E13/04	14	53	110	12	4	61,21
E13/05	15	63	123	16	4	71,20
E13/06	16	63	123	16	4	71,20
E13/07	18	63	123	16	4	78,36
E13/08	20	75	141	20	4	91,42
E13/09	22	75	141	20	4	108,36

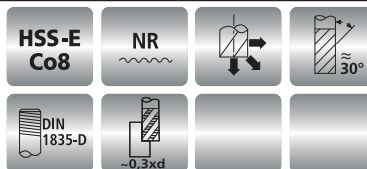


FRESE PER SGROSSATURA • SERIE LUNGA

SERIE E-F

E14


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo cilindrico filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Threaded shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusq'au centre - Queue cylindrique fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango cilíndrico roscado
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro roscado
 Фреза концевая для черновой обработки. Режущий торец. Цилиндрический хвостовик с резьбой. Удлиненная серия.



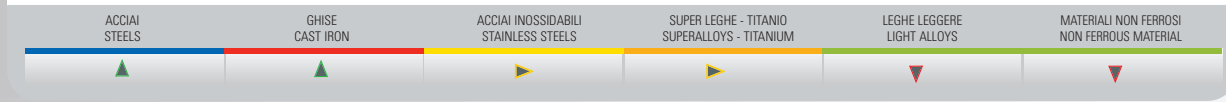
NORM.	
UNI	8245
DIN	844D
ISO	1641/I

SHORT
NORMAL
LONG
EXTRA-LONG

Toll. reale sul Ø
Real Tol. on Ø
±0,05








▲
CONSIGLIATO
RECOMMENDED
▶
ACCETTABILE
ACCEPTABLE
▼
SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
E14/01	8	38	88	10	4	55,67
E14/02	10	45	95	10	4	57,70
E14/03	12	53	110	12	4	66,44
E14/04	14	53	110	12	4	70,59
E14/05	15	63	123	16	4	81,63
E14/06	16	63	123	16	4	81,63
E14/07	18	63	123	16	4	87,94
E14/08	20	75	141	20	4	98,91
E14/09	22	75	141	20	4	123,37
E14/10	24	90	166	25	5	170,25
E14/11	25	90	166	25	5	170,25
E14/12	28	90	166	25	5	192,79
E14/13	30	90	166	25	5	214,46
E14/14	32	106	186	32	5	269,33



FRESE PER SGROSSATURA • SERIE LUNGA

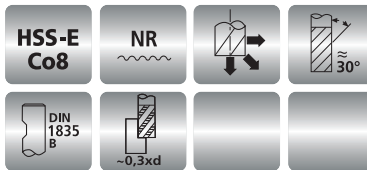
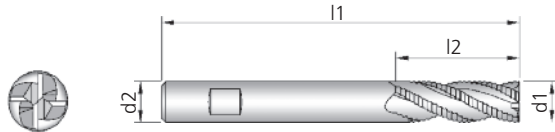
E15

 Denti elicoidali con rompitriciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranque de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro Weldon
 Фреза концевая для черновой обработки. Режущий торцев. Хвостовик Weldon. Удлиненная серия

SERIE E-F

NORM.

UNI 8245
 DIN 844B
 ISO 1641/II



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
E15/00	6	24	68	6	3	36,24	43,58
E15/00/1	7	30	80	10	3	53,65	67,43
E15/01	8	38	88	10	4	51,73	65,59
E15/01/1	9	45	95	10	4	54,96	68,71
E15/02	10	45	95	10	4	52,33	66,28
E15/02/1	11	53	110	12	4	65,22	79,83
E15/03	12	53	110	12	4	61,97	76,64
E15/03/1	13	53	110	12	4	68,51	84,99
E15/04	14	53	110	12	4	64,51	81,78
E15/05	15	63	123	16	4	75,07	97,63
E15/06	16	63	123	16	4	75,07	97,63
E15/06/1	17	63	123	16	4	86,98	115,38
E15/07	18	63	123	16	4	82,37	110,99
E15/08	20	75	141	20	4	96,78	125,35
E15/09	22	75	141	20	4	114,76	165,04
E15/10	24	90	166	25	5	159,29	237,40
E15/11	25	90	166	25	5	159,29	237,40
E15/12	28	90	166	25	5	180,72	276,57
E15/13	30	90	166	25	5	202,02	296,88
E15/14	32	106	186	32	5	246,86	357,65
E15/15	36	106	186	32	6	294,02	402,24
E15/16	40	125	205	32	6	354,35	471,55

Toll. reale sul Ø
 Real Tol. on Ø
 ±0,05


 CONSIGLIATO
 RECOMMENDED


 ACCETTABILE
 ACCEPTABLE



 SCONSIGLIATO
 NOT RECOMMENDED



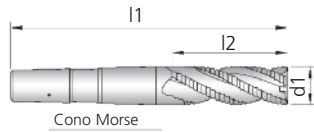
FRESE PER SGROSSATURA • SERIE NORMALE





SERIE
E-F



E16


 Denti elicoidali con rompitruciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro cone Morse
 Фреза концевая для черновой обработки. Режущий торцев. Хвостовик конус Морзе с резьбой. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI 8250-8251
DIN 845B
ISO 1641/II

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €
E16/01	16	32	117	2	4	75,07	103,50
E16/02	18	32	117	2	4	75,07	106,80
E16/03	20	38	140	3	4	101,18	164,40
E16/04	22	38	140	3	4	108,50	171,16
E16/05	24	45	147	3	5	120,11	181,97
E16/06	25	45	147	3	5	125,20	197,47
E16/07	26	45	147	3	5	133,55	206,76
E16/08	28	45	147	3	5	143,27	245,36
E16/09	30	53	155	3	5	158,83	259,74
E16/10	32	53	178	4	5	188,22	337,99
E16/11	34	53	178	4	5	203,77	362,88
E16/12	35	53	178	4	6	211,42	370,04
E16/13	36	53	178	4	6	217,84	375,86
E16/14	38	63	188	4	6	244,47	408,19
E16/15	40	63	188	4	6	272,98	433,47
E16/16	45	63	188	4	6	382,44	541,54
E16/17	50	75	200	4	7	444,68	601,29

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼



Toll. reale sul Ø
Real Tol. on Ø

±0,05


▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SGROSSATURA • SERIE LUNGA

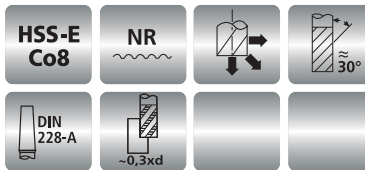
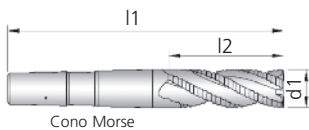
E17


 Denti elicoidali con romptruciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifffem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro cone Morse
 Фреза концевая для черновой обработки. Режущий торцев. Хвостовик конус Морзе с резьбой. Удлиненная серия

SERIE E-F

NORM.

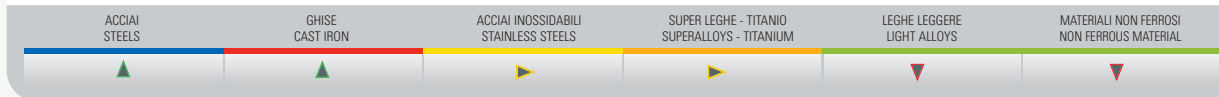
UNI 8250-8251
 DIN 845B
 ISO 1641/II



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €
E17/01	16	63	148	2	4	99,31	128,89
E17/02	18	63	148	2	4	99,31	134,12
E17/03	20	75	177	3	4	143,17	221,17
E17/04	22	75	177	3	4	148,17	237,77
E17/05	24	90	192	3	5	181,78	273,75
E17/06	25	90	192	3	5	187,43	278,98
E17/07	26	90	192	3	5	196,86	285,65
E17/08	28	90	192	3	5	208,49	296,45
E17/09	30	90	192	3	5	221,68	316,05
E17/10	32	106	231	4	5	282,00	420,26
E17/11	34	106	231	4	5	308,74	441,00
E17/12	35	106	231	4	6	323,38	467,47
E17/13	36	106	231	4	6	333,35	483,11
E17/14	38	125	250	4	6	400,25	544,83
E17/15	40	125	250	4	6	439,23	577,79
E17/16	45	125	250	4	6	524,76	673,72
E17/17	50	150	275	4	7	654,19	785,42

Toll. reale sul Ø
 Real Tol. on Ø
 ±0,05



▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED



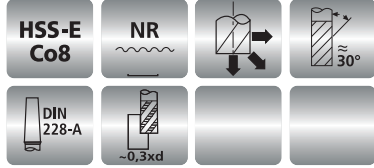
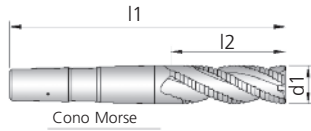
FRESE PER SGROSSATURA • SERIE EXTRA-LUNGA

**SERIE
E-F**

E18


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Fresa com corte ao centro com quebra-apara - Encabadouro cone Morse con taladro roscado
 Фреза концевая для черновой обработки. Режущий торец. Хвостовик конус Морзе с резьбой. Ультрадлинная серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.



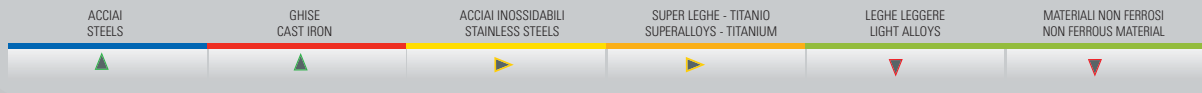
CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
E18/03	20	110	212	3	4	190,75
E18/04	22	110	212	3	4	196,63
E18/05	24	125	227	3	5	244,01
E18/06	25	125	250	4	5	308,65
E18/07	26	125	250	4	5	334,26
E18/08	28	135	260	4	5	350,24
E18/09	30	140	265	4	5	370,99
E18/10	32	150	275	4	6	397,33
E18/11	34	150	275	4	6	430,32
E18/12	35	150	275	4	6	454,12
E18/13	36	150	275	4	6	469,17
E18/14	38	180	305	4	6	563,87
E18/15	40	180	305	4	6	615,87
E18/16	45	190	315	4	7	724,68
E18/17	50	200	360	5	7	1045,23

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



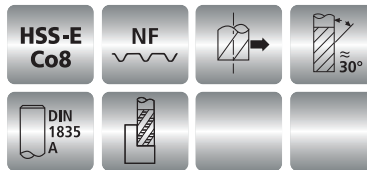
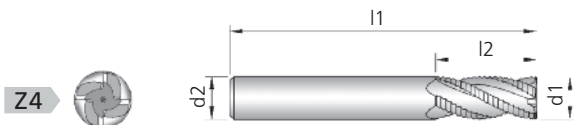
FRESE PER SEMIFINITURA • SERIE NORMALE

F0

 Denti elicoidali con rompitruciolo spogliato completamente rettificato - Codolo cilindrico
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Straight shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Queue cylindrique
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zylinderschaft
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranque de viruta completamente retificado - Mango cilíndrico
 FRESAS CILINDRICAS FRONTAIS PARA SEMI ACABAMENTO - Fresa sem corte ao centro com quebra-apara - Encabadouro cilíndrico
 Фреза для полустойковой обработки со стружколомом. Цилиндрический хвостовик. Средняя серия

SERIE E-F

NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F0/01	6	16	60	6	3	25,87
F0/02	8	22	64	10	4	40,77
F0/03	10	28	70	10	4	40,06
F0/04	12	32	80	12	4	44,09
F0/05	14	32	80	12	4	47,21
F0/06	15	36	90	16	4	53,21
F0/07	16	36	90	16	4	53,21
F0/08	18	40	100	16	4	61,79
F0/09	20	45	110	20	4	74,52
F0/10	22	45	110	20	4	82,78

ACCAI/ STEELS

GHISE/ CAST IRON




ACCAI INOSSIDABILI/ STAINLESS STEELS

SUPER LEGHE - TITANIO/ SUPERALLOYS - TITANIUM

LEGHE LEGGERE/ LIGHT ALLOYS

MATERIALI NON FERROSI/ NON FERROUS MATERIAL

Toll. reale sul Ø
Real Tol. on Ø
±0,05


 CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED



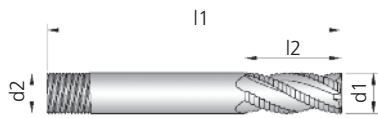
FRESE PER SEMIFINITURA • SERIE NORMALE





**SERIE
E-F**



F1


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Codolo cilindrico filettato
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Threaded shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Queue cylindrique filetée
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranque de viruta completamente retificado - Mango cilíndrico roscado
 FRESAS CILINDRICAS FRONTAIS PARA SEMI ACABAMENTO - Fresa sem corte ao centro com quebra-apara - Encabadouro cilíndrico roscado
 Фреза для полуступенчатой обработки со стружколомом. Цилиндрический хвостовик с резьбой. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F1/01	6	16	60	6	3	30,53
F1/02	8	22	64	10	4	47,56
F1/03	10	28	70	10	4	46,25
F1/04	12	32	80	12	4	51,15
F1/05	14	32	80	12	4	54,44
F1/06	15	36	90	16	4	62,16
F1/07	16	36	90	16	4	62,16
F1/08	18	40	100	16	4	74,06
F1/09	20	45	110	20	4	86,97
F1/10	22	45	110	20	4	94,86
F1/11	24	45	120	25	5	116,71
F1/12	25	50	125	25	5	127,95
F1/13	26	50	125	25	5	140,37
F1/14	28	50	125	25	5	145,80
F1/15	30	63	135	25	5	168,96
F1/16	32	63	145	32	5	178,99

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED


▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



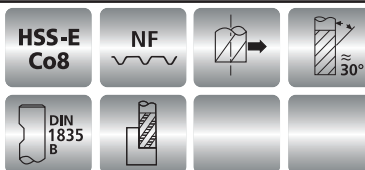
FRESE PER SEMIFINITURA • SERIE NORMALE

F2


 Denti elicoidali con rompitriciolo spogliato completamente rettificato - Attacco Weldon
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Weldon shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente rectificado - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS PARA SEMI ACABAMENTO - Fresa sem corte ao centro com quebra-apara - Encabadouro Weldon
 Фреза для полустойковой обработки со стружколомом. Хвостовик Weldon. Средняя серия

SERIE E-F

NORM.



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F2/01	6	16	60	6	3	27,77
F2/02	8	22	64	10	4	43,27
F2/03	10	28	70	10	4	42,68
F2/04	12	32	80	12	4	47,37
F2/05	14	32	80	12	4	50,52
F2/06	15	36	90	16	4	57,88
F2/07	16	36	90	16	4	57,88
F2/08	18	40	100	16	4	77,12
F2/09	20	45	110	20	4	79,98
F2/10	22	45	110	20	4	86,84
F2/11	24	45	120	25	5	108,36
F2/12	25	50	125	25	5	118,30
F2/13	26	50	125	25	5	130,73
F2/14	28	50	125	25	5	135,22
F2/15	30	63	135	25	5	157,16
F2/16	32	63	145	32	5	180,72

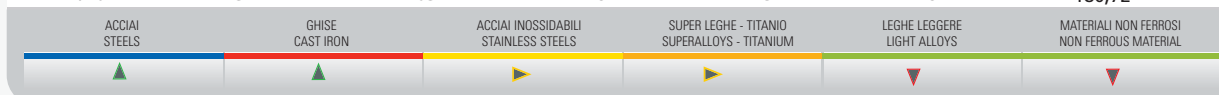
Ulteriori diametri
 a richiesta
 Other diameters
 on demand

Toll. reale sul Ø
 Real Tol. on Ø
 ±0,05


 CONSIGLIATO
 RECOMMENDED


 ACCETTABILE
 ACCEPTABLE









 SCONSIGLIATO
 NOT RECOMMENDED



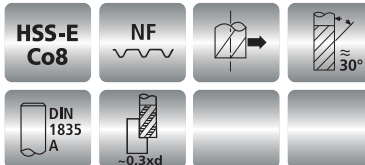
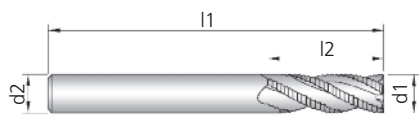
FRESE PER SEMIFINITURA • SERIE LUNGA

SERIE E-F

F4

-  Denti elicoidali con rompitruciolo spogliato completamente rettificato - Codolo cilindrico
-  ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Straight shank
-  FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Queue cylindrique
-  SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zylinderschaft
-  FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente rectificado - Mango cilíndrico
-  FRESAS CILINDRICAS FRONTAIS PARA SEMI ACABAMENTO - Fresa sem corte ao centro com quebra-apara - Encabadouro cilíndrico
-  Фреза для полуступицовой обработки со стружколомом. Цилиндрический хвостовик. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.



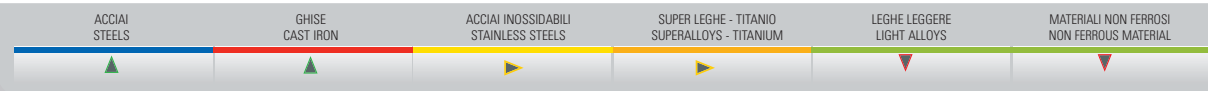
CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F4/01	8	35	85	10	4	48,53
F4/02	10	42	90	10	4	49,83
F4/03	12	48	95	12	4	56,61
F4/04	14	48	100	12	4	68,54
F4/05	15	54	104	16	4	70,50
F4/06	16	54	104	16	4	70,50
F4/07	18	60	120	16	4	78,47
F4/08	20	62	128	20	4	88,24
F4/09	22	64	130	20	4	100,71

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE








▼
SCONSIGLIATO
NOT RECOMMENDED



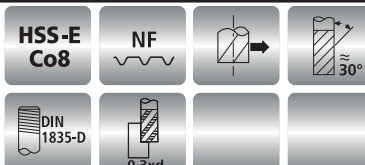
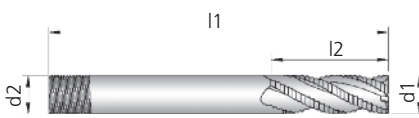
FRESE PER SEMIFINITURA • SERIE LUNGA

SERIE E-F

F5

-  Denti elicoidali con rompitruciolo spogliato completamente rettificato - Codolo cilindrico filettato
-  ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Straight shank
-  FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Queue cylindrique
-  SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zylinderschaft
-  FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente rectificado - Mango cilíndrico roscado
-  FRESAS CILINDRICAS FRONTAIS PARA SEMI ACABAMENTO - Fresa sem corte ao centro com quebra-apara - Encabadouro cilíndrico roscado
-  Фреза для полуступицовой обработки со стружколомом. Цилиндрический хвостовик с резьбой. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.



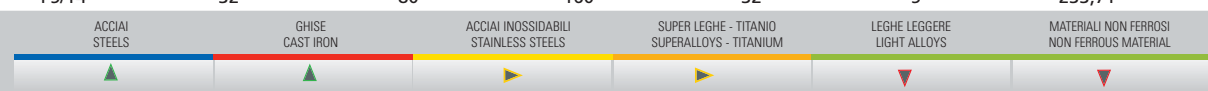
CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F5/01	8	35	85	10	4	54,96
F5/02	10	42	90	10	4	56,38
F5/03	12	48	95	12	4	63,64
F5/04	14	48	100	12	4	77,50
F5/05	15	54	104	16	4	79,57
F5/06	16	54	104	16	4	79,57
F5/07	18	60	120	16	4	88,77
F5/08	20	62	128	20	4	102,10
F5/09	22	64	130	20	4	115,85
F5/10	24	66	135	25	5	150,94
F5/11	25	70	145	25	5	150,94
F5/12	28	70	145	25	5	176,67
F5/13	30	80	155	25	5	209,19
F5/14	32	80	160	32	5	233,71

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED







▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



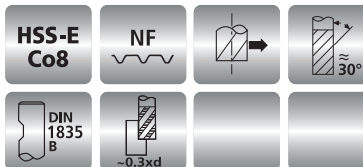
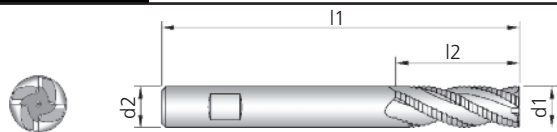
FRESE PER SEMIFINITURA • SERIE LUNGA

F6

 Denti elicoidali con rompitruciolo spogliato completamente rettificato - Attacco Weldon
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Weldon shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifffem Spannbrecher - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente rectificado - Mango Weldon
 Фреза для полустойковой обработки со стружколомом. Хвостовик Weldon. Удлиненная серия

SERIE E-F

NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F6/01	8	35	85	10	4	51,02
F6/02	10	42	90	10	4	52,33
F6/03	12	48	95	12	4	59,26
F6/04	14	48	100	12	4	73,20
F6/05	15	54	104	16	4	75,77
F6/06	16	54	104	16	4	75,77
F6/07	18	60	120	16	4	83,74
F6/08	20	62	128	20	4	95,10
F6/09	22	64	130	20	4	107,58
F6/10	24	66	135	25	5	142,96
F6/11	25	70	145	25	5	142,96
F6/12	28	70	145	25	5	165,28
F6/13	30	80	155	25	5	195,37
F6/14	32	80	160	32	5	218,27

Toll. reale sul Ø
Real Tol. on Ø
±0,05

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

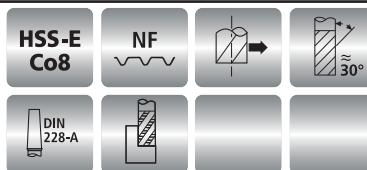
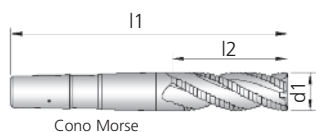


FRESE PER SEMIFINITURA • SERIE NORMALE

**SERIE
E-F**

F7


 Denti elicoidali con rompitrucciolo spogliato completamente rettificato - Codolo conico Morse con foro filettato
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranque de viruta completamente rectificado - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA SEMI ACABAMENTO - Fresa sem corte ao centro com quebra-apara - Encabadouro cone Morse com taladro roscado
 Фреза для лучистой обработки со стружколомом. Хвостовик конус Морзе с резьбой. Средняя серия



NORM.



CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
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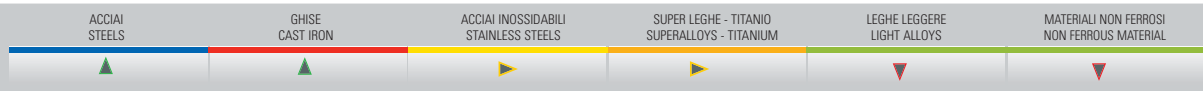
Toll. reale sul Ø
Real Tol. on Ø
±0,05

F7/01	16	36	115	2	4	79,38
F7/02	18	40	120	2	4	88,92
F7/03	20	45	125	2	4	92,44
F7/04	22	45	125	2	4	101,97
F7/05	24	50	150	3	5	131,08
F7/06	25	50	150	3	5	133,96
F7/07	26	56	155	3	5	143,93
F7/08	28	56	155	3	5	149,13
F7/09	30	63	165	3	5	166,93
F7/10	32	63	188	4	5	201,46
F7/11	34	70	195	4	5	222,34
F7/12	35	70	195	4	6	233,39
F7/13	36	70	195	4	6	239,82
F7/14	38	70	195	4	6	256,60
F7/15	40	70	195	4	6	281,31
F7/16	45	80	205	4	6	413,55
F7/17	50	90	215	4	7	491,64

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



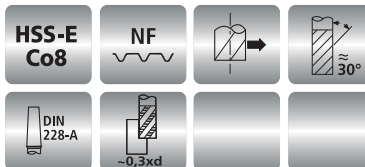
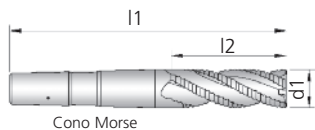
FRESE PER SEMIFINITURA • SERIE LUNGA

F8

 Denti elicoidali con rompitrucciolo spogliato completamente rettificato - Codolo conico Morse con foro filettato
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranque de viruta completamente rectificado - Mango conico Morse taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa sem corte ao centro com quebra-apara - Encabadouro cone Morse roscado
 Фреза для полустойковой обработки со стружколомом. Хвостовик конус Морзе с резьбой. Удлиненная серия

SERIE E-F

NORM.



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
F8/01	16	55	140	2	4	97,14
F8/02	18	60	145	2	4	97,14
F8/03	20	65	148	2	4	108,46
F8/04	22	65	166	3	4	138,17
F8/05	24	70	171	3	5	148,81
F8/06	25	70	171	3	5	153,18
F8/07	26	70	176	3	5	161,16
F8/08	28	80	186	3	5	181,55
F8/09	30	85	210	4	5	229,99
F8/10	32	90	215	4	5	250,73
F8/11	34	90	215	4	5	279,61
F8/12	35	90	215	4	6	299,83
F8/13	36	90	215	4	6	316,99
F8/14	38	95	220	4	6	376,72
F8/15	40	95	220	4	6	428,72
F8/16	45	100	225	4	6	497,64
F8/17	50	110	235	4	7	605,38

ACCAI
STEELS

▲

GHISE
CAST IRON

▲

ACCAI INOSSIDABILI
STAINLESS STEELS

▶

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

▶

LEGHE LEGGERE
LIGHT ALLOYS

▼

MATERIALI NON FERROSI
NON FERROUS MATERIAL

▼

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED



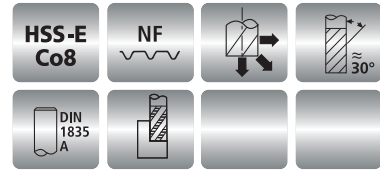
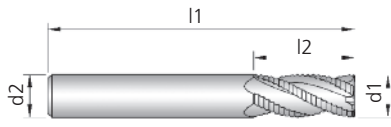
FRESE PER SEMIFINITURA • SERIE NORMALE

SERIE
E-F

F10


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo cilindrico
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Straight shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jusqu'au centre - Queue cylindrique
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente rectificado - Dos labios que cortan hasta el centro - Mango cilíndrico
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro cilíndrico
 Фреза для полуступовой обработки со стружколомом. Режущий торец. Цилиндрический хвостовик. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI 8244
DIN 844A
ISO 1641/II

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F10/01	6	13	57	6	3	23,75
F10/02	8	19	69	10	4	36,84
F10/03	10	22	72	10	4	36,84
F10/04	12	26	83	12	4	40,77
F10/05	14	26	83	12	4	43,68
F10/06	15	32	92	16	4	50,90
F10/07	16	32	92	16	4	50,90
F10/08	18	32	92	16	4	54,14
F10/09	20	38	104	20	4	66,56
F10/10	22	38	104	20	4	77,19

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼



Toll. reale sul Ø
Real Tol. on Ø
±0,05


▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SEMIFINITURA • SERIE NORMALE

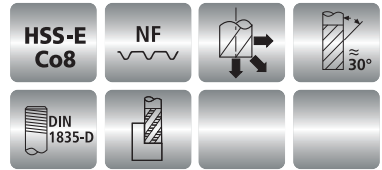
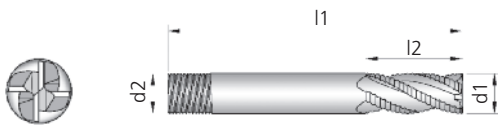
F11


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo cilindrico filettato
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Threaded shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jusqu'au centre - Queue cylindrique fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranque de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango cilíndrico roscado
 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro cilíndrico roscado
 Фреза для полуступицовой обработки со стружколомом. Режущий торец. Цилиндрический хвостовик с резьбой. Средняя серия

SERIE E-F

NORM.

UNI 8244
DIN 844D
ISO 1641/II



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F11/01	6	13	57	6	3	28,22
F11/02	8	19	69	10	4	43,69
F11/03	10	22	72	10	4	43,69
F11/04	12	26	83	12	4	47,56
F11/05	14	26	83	12	4	50,68
F11/06	15	32	92	16	4	59,70
F11/07	16	32	92	16	4	59,70
F11/08	18	32	92	16	4	62,46
F11/09	20	38	104	20	4	78,23
F11/10	22	38	104	20	4	88,37
F11/11	24	45	121	25	5	129,68
F11/12	25	45	121	25	5	126,02
F11/13	26	45	121	25	5	136,05
F11/14	28	45	121	25	5	142,65
F11/15	30	45	121	25	5	154,11
F11/16	32	53	133	32	5	181,05

ACCAI
STEELS

GHISE
CAST IRON

ACCAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

Toll. reale sul Ø
Real Tol. on Ø
±0,05


▲ CONSIGLIATO
RECOMMENDED
▶ ACCETTABILE
ACCEPTABLE
▼ SCONSIGLIATO
NOT RECOMMENDED

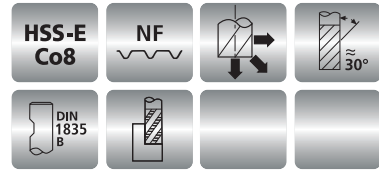
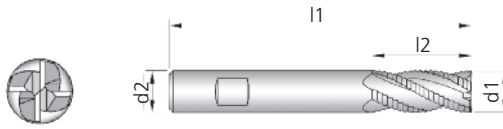


FRESE PER SEMIFINITURA • SERIE NORMALE

SERIE
E-F

F12


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranque de viruta completamente rectificado - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro Weldon
 Фреза для полуступенчатой обработки со стружколомом. Режущий торец. Хвостовик Weldon. Средняя серия



NORM.

UNI 8244
DIN 844B
ISO 1641/II

SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
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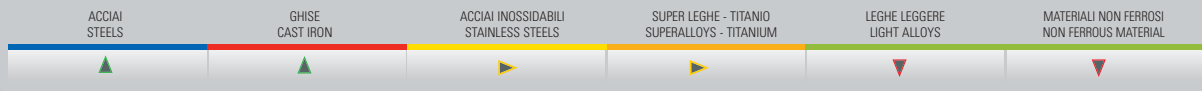
Toll. reale sul Ø
Real Tol. on Ø
±0,05

F12/01	6	13	57	6	3	25,75	33,57
F12/02	7	16	66	10	3	39,31	50,01
F12/03	8	19	69	10	4	38,02	47,73
F12/04	9	19	69	10	4	39,31	48,87
F12/05	10	22	72	10	4	38,02	47,73
F12/06	11	22	79	12	4	44,11	56,02
F12/07	12	26	83	12	4	42,32	53,68
F12/08	13	26	83	12	4	49,59	62,83
F12/09	14	26	83	12	4	47,66	60,93
F12/10	15	32	92	16	4	58,44	78,22
F12/11	16	32	92	16	4	55,48	75,33
F12/12	17	32	92	16	4	60,64	81,71
F12/13	18	32	92	16	4	58,72	79,83
F12/13/1	19	38	104	20	4	76,40	97,63
F12/14	20	38	104	20	4	72,52	93,23
F12/15	22	38	104	20	4	81,38	109,88
F12/16	24	45	121	25	5	120,67	153,32
F12/17	25	45	121	25	5	117,23	150,10
F12/18	26	45	121	25	5	127,32	163,99
F12/19	28	45	121	25	5	133,80	170,15
F12/20	30	45	121	25	5	144,48	180,30
F12/21	32	53	133	32	5	168,10	206,24
F12/22	36	53	133	32	6	199,59	301,00
F12/23	40	63	143	32	6	235,43	336,42

▲
CONSIGLIATO
RECOMMENDED


▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER SEMIFINITURA • SERIE LUNGA

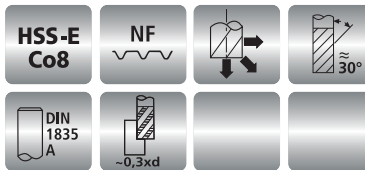
F13


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo cilindrico
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Straight shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jusqu'au centre - Queue cylindrique
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango cilíndrico
 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro cilíndrico
 Фреза для полуцирковой обработки со стружколомом. Режущий торец. Цилиндрический хвостовик. Удлиненная серия

SERIE E-F

NORM.

UNI 8254
DIN 844A
ISO 1641/I



SHORT
NORMAL
LONG
EXTRA-LONG

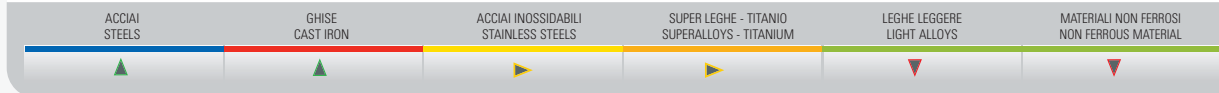
CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F13/01	8	38	88	10	4	49,12
F13/02	10	45	95	10	4	50,42
F13/03	12	53	110	12	4	58,71
F13/04	14	53	110	12	4	61,21
F13/05	15	63	123	16	4	71,20
F13/06	16	63	123	16	4	71,20
F13/07	18	63	123	16	4	78,36
F13/08	20	75	141	20	4	91,42
F13/09	22	75	141	20	4	108,36

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED


▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER SEMIFINITURA • SERIE LUNGA

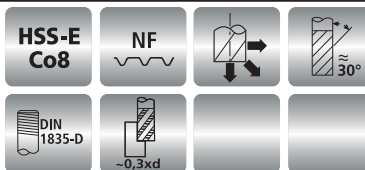
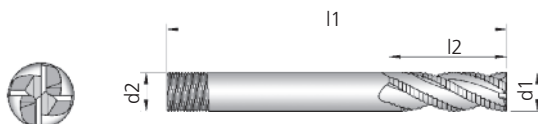
F14


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo cilindrico filettato
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Threaded shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jusqu'au centre - Queue cylindrique filetée
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango cilíndrico roscado
 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro cilíndrico roscado
 Фреза для полуцирковой обработки со стружколомом. Режущий торец. Цилиндрический хвостовик с резьбой. Удлиненная серия

SERIE E-F

NORM.

UNI 8254
DIN 844D
ISO 1641/I



SHORT
NORMAL
LONG
EXTRA-LONG

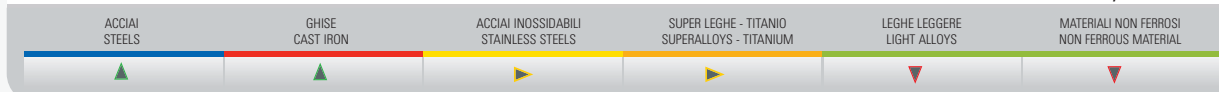
CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
F14/01	8	38	88	10	4	55,67
F14/02	10	45	95	10	4	57,70
F14/03	12	53	110	12	4	66,44
F14/04	14	53	110	12	4	70,59
F14/05	15	63	123	16	4	81,63
F14/06	16	63	123	16	4	81,63
F14/07	18	63	123	16	4	87,94
F14/08	20	75	141	20	4	98,91
F14/09	22	75	141	20	4	123,37
F14/10	24	90	166	25	5	170,25
F14/11	25	90	166	25	5	170,25
F14/12	28	90	166	25	5	192,92
F14/13	30	90	166	25	5	214,46
F14/14	32	106	186	32	5	269,33

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

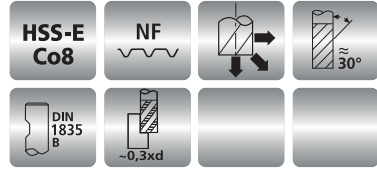
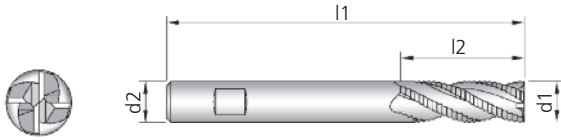


FRESE PER SEMIFINITURA • SERIE LUNGA

SERIE
E-F

F15


 Denti elicoidali con rompitrucciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifffem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente rettificado - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro Weldon
 Фреза для полуступовой обработки со стружколомом. Режущий торец. Хвостовик Weldon. Удлиненная серия



NORM.

UNI 8245
DIN 844B
ISO 1641/II

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
F15/00	6	24	68	6	3	36,24	43,58
F15/00/1	7	30	80	10	3	53,65	67,43
F15/01	8	38	88	10	4	51,73	65,59
F15/01/1	9	45	95	10	4	54,96	68,71
F15/02	10	45	95	10	4	52,33	66,28
F15/02/1	11	53	110	12	4	65,22	79,83
F15/03	12	53	110	12	4	61,97	76,64
F15/03/1	13	53	110	12	4	68,51	84,99
F15/04	14	53	110	12	4	64,51	81,78
F15/05	15	63	123	16	4	75,07	97,63
F15/06	16	63	123	16	4	75,07	97,63
F15/06/1	17	63	123	16	4	86,98	115,38
F15/07	18	63	123	16	4	81,63	114,49
F15/08	20	75	141	20	4	96,78	125,35
F15/09	22	75	141	20	4	114,76	165,04
F15/10	24	90	166	25	5	159,29	237,40
F15/11	25	90	166	25	5	159,29	237,40
F15/12	28	90	166	25	5	180,72	276,57
F15/13	30	90	166	25	5	202,02	296,88
F15/14	32	106	186	32	5	246,86	353,76
F15/15	36	106	186	32	6	294,02	402,24
F15/16	40	125	205	32	6	354,35	471,55

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼



Toll. reale sul Ø
Real Tol. on Ø
±0,05








▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SEMIFINITURA • SERIE NORMALE

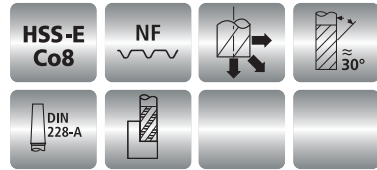
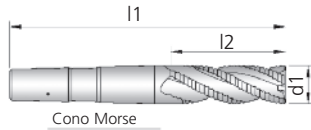
F16

 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente rectificado - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro cone Morse con taladro roscado
 Фреза для полустойковой обработки со стружколомом. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

SERIE
E-F

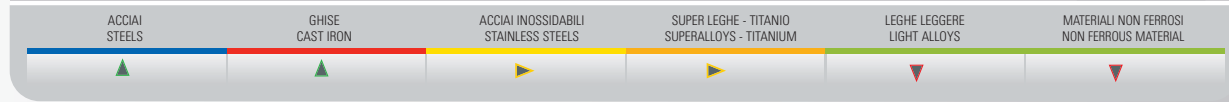
NORM.

UNI 8250-8251
DIN 845B
ISO 1641/II



CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €
F16/01	16	32	117	2	4	75,07	103,50
F16/02	18	32	117	2	4	75,07	106,80
F16/03	20	38	140	3	4	101,18	164,40
F16/04	22	38	140	3	4	108,50	171,16
F16/05	24	45	147	3	5	120,11	181,97
F16/06	25	45	147	3	5	125,20	197,47
F16/07	26	45	147	3	5	133,55	206,76
F16/08	28	45	147	3	5	143,27	245,36
F16/09	30	53	155	3	5	158,83	259,74
F16/10	32	53	178	4	5	188,22	337,99
F16/11	34	53	178	4	5	203,77	370,04
F16/12	35	53	178	4	6	211,42	370,04
F16/13	36	53	178	4	6	217,84	375,86
F16/14	38	63	188	4	6	244,47	408,19
F16/15	40	63	188	4	6	272,98	433,47
F16/16	45	63	188	4	6	382,44	541,54
F16/17	50	75	200	4	7	444,68	599,82

Toll. reale sul Ø
Real Tol. on Ø
±0,05




 CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED

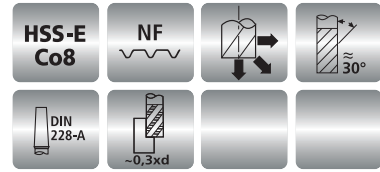
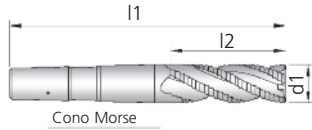


FRESE PER SEMIFINITURA • SERIE LUNGA

SERIE
E-F

F17


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jus'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliftenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente rectificado - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro cone Morse con taladro roscado
 Фреза для полуступенчатой обработки со стружколомом. Режущий торец. Хвостовик конус Морзе с резьбой. Удлиненная серия



NORM.

UNI 8250-8251
DIN 845B
ISO 1641/II

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €
F17/01	16	63	148	2	4	99,31	128,89
F17/02	18	63	148	2	4	99,31	134,12
F17/03	20	75	177	3	4	143,17	221,17
F17/04	22	75	177	3	4	148,17	237,77
F17/05	24	90	192	3	5	181,78	273,75
F17/06	25	90	192	3	5	187,43	278,98
F17/07	26	90	192	3	5	196,86	285,65
F17/08	28	90	192	3	5	208,49	296,45
F17/09	30	90	192	3	5	221,68	316,05
F17/10	32	106	231	4	5	282,00	420,26
F17/11	34	106	231	4	5	308,74	441,00
F17/12	35	106	231	4	6	323,38	467,09
F17/13	36	106	231	4	6	333,35	483,11
F17/14	38	125	250	4	6	400,25	544,83
F17/15	40	125	250	4	6	439,23	577,79
F17/16	45	125	250	4	6	524,76	673,72
F17/17	50	150	275	4	7	654,19	785,42

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼



Toll. reale sul Ø
Real Tol. on Ø

±0,05

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED

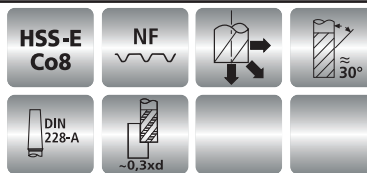
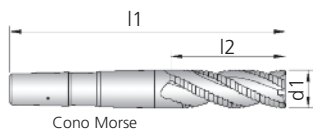
FRESE PER SEMIFINITURA • SERIE EXTRA-LUNGA

F18

🇮🇹 Denti elicoidali con rompitrucciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
🇬🇧 ROUGHING AND SEMIFINISHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
🇫🇷 FRAISES FRONTALES ÉBAUCHE - SEMI FINITION - Denture hélicoïdale avec brise-copeaux profil plat - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
🇩🇪 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifffem Spannbrecher - Zwei Schneiden mit Zentrumschnitt Morsekegelschaft und Anzugsgewinde
🇪🇸 FRESAS CILINDRICAS FRONTALES PARA SEMIACABADO - Labios helicoidal con arranca de viruta completamente retificado - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
🇵🇹 FRESAS CILINDRICAS FRONTAIS PARA SEMIACABAMENTO - Fresa com corte ao centro com quebra-apara - Encabadouro cone Morse con taladro roscado
🇷🇺 Фреза для полуступицовой обработки со стружколомом. Режущий торец. Хвостовик конус Морзе с резьбой. Ультрадлинная серия

SERIE E-F

NORM.



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
F18/03	20	110	212	3	4	190,75
F18/04	22	110	212	3	4	196,63
F18/05	24	125	227	3	5	244,01
F18/06	25	125	250	4	5	308,65
F18/07	26	125	250	4	5	334,26
F18/08	28	135	260	4	5	350,24
F18/09	30	140	265	4	5	370,99
F18/10	32	150	275	4	6	397,33
F18/11	34	150	275	4	6	430,32
F18/12	35	150	275	4	6	454,12
F18/13	36	150	275	4	6	469,17
F18/14	38	180	305	4	6	563,87
F18/15	40	180	305	4	6	615,87
F18/16	45	190	315	4	7	724,68
F18/17	50	200	360	5	7	1045,23

Toll. reale sul Ø
 Real Tol. on Ø
 ±0,05

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED







Catalogo HSS-E e PM

SERIE G

FRESE PER FINITURA

FINISHING END MILLS

Rime
UTENSILERIA

INDEX








SERIE G

FRESE PER FINITURA
FINISHING END MILLS

	COD.	PAG.		COD.	PAG.
	G0	85		G10	95
	G1	86		G11	96
	G2	87		G12	96
	G3	88		G13	97
	G4	89		G14	98
	G5	90			
	G6	91			
	G7	92			
	G8	93			
	G9	94			

FRESE PER FINITURA • SERIE NORMALE

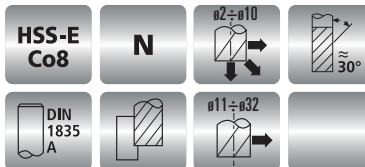
GO

 Codolo cilindrico
 END MILLS - Straight shank
 FRAISES À CYLINDRES - Queue cylindrique
 SCHAFTFRÄSER - Zylinderschaft
 FRESAS CILINDRICAS FRONTALES - Mango cilíndrico
 FRESAS FRONTAIS - Encabadouro cilíndrico
 Фреза концевая для чистовой обработки. Цилиндрический хвостовик. Средняя серия

SERIE G

NORM.

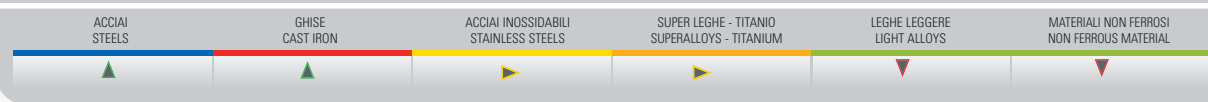
UNI 8244
 DIN 844A
 ISO 1641/1



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
G0/01	2	7	51	6	4	15,65
G0/02	2.5	8	52	6	4	15,65
G0/03	3	8	52	6	4	12,40
G0/04	3.5	10	54	6	4	12,40
G0/05	4	11	55	6	4	11,80
G0/06	4.5	11	55	6	4	12,75
G0/07	5	13	57	6	4	11,39
G0/08	5.5	13	57	6	4	12,13
G0/09	6	13	57	6	4	11,39
G0/10	6.5	16	66	10	4	18,64
G0/11	7	16	66	10	4	18,64
G0/12	8	19	69	10	4	17,91
G0/13	9	19	69	10	4	19,98
G0/14	10	22	72	10	4	18,64
G0/15	11	22	79	12	4	25,50
G0/16	12	26	83	12	4	24,12
G0/17	13	26	83	12	4	28,83
G0/18	14	26	83	12	4	26,86
G0/19	15	32	92	16	4	32,93
G0/20	16	32	92	16	4	31,56
G0/21	17	32	92	16	4	40,97
G0/22	18	32	92	16	4	38,96
G0/23	19	38	104	20	4	47,80
G0/24	20	38	104	20	4	44,96
G0/25	22	38	104	20	4	60,46
G0/26	24	45	121	25	5	87,38
G0/27	25	45	121	25	5	87,38
G0/28	26	45	121	25	5	94,58
G0/29	28	45	121	25	5	104,93
G0/30	30	45	121	25	6	120,25
G0/31	32	53	133	32	6	141,04

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03



▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED

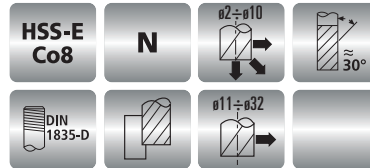


FRESE PER FINITURA • SERIE NORMALE

SERIE G

G1


 Codolo cilindrico filettato
 END MILLS - Threaded shank
 FRAISES À CYLINDRES - Queue cylindrique filetée
 SCHAFTFRÄSER - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES - Mango cilíndrico roscado
 FRESAS FRONTAIS - Encabadouro cilíndrico roscado
 Фреза концевая для чистовой обработки. Цилиндрический хвостовик с резьбой. Средняя серия



NORM.

UNI 8246
 DIN 844D
 ISO 1641/I

SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
G1/01	2	7	51	6	4	19,01
G1/02	2.5	8	52	6	4	17,53
G1/03	3	8	52	6	4	16,80
G1/04	3.5	10	54	6	4	16,80
G1/05	4	11	55	6	4	15,34
G1/06	4.5	11	55	6	4	17,27
G1/07	5	13	57	6	4	15,12
G1/08	5.5	13	57	6	4	17,27
G1/09	6	13	57	6	4	15,12
G1/10	6.5	16	66	10	4	24,10
G1/11	7	16	66	10	4	24,10
G1/12	8	19	69	10	4	22,86
G1/13	9	19	69	10	4	25,60
G1/14	10	22	72	10	4	24,10
G1/15	11	22	79	12	4	32,56
G1/16	12	26	83	12	4	31,15
G1/17	13	26	83	12	4	34,72
G1/18	14	26	83	12	4	33,32
G1/19	15	32	92	16	4	41,33
G1/20	16	32	92	16	4	39,79
G1/21	17	32	92	16	4	49,37
G1/22	18	32	92	16	4	47,16
G1/23	19	38	98	16	4	56,02
G1/24	20	38	98	16	4	54,54
G1/25	22	38	104	20	4	76,15
G1/26	24	45	121	25	5	114,41
G1/27	25	45	121	25	5	114,41
G1/28	26	45	121	25	5	122,73
G1/29	28	45	121	25	5	130,55
G1/30	30	45	121	25	6	151,31
G1/31	32	53	133	32	6	175,97

ACCAI
STEELS

▲

GHISE
CAST IRON

▲

ACCAI INOSSIDABILI
STAINLESS STEELS

▶

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

▶

LEGHE LEGGERE
LIGHT ALLOYS

▼








MATERIALI NON FERROSI
NON FERROUS MATERIAL

▼



FRESE PER FINITURA • SERIE NORMALE

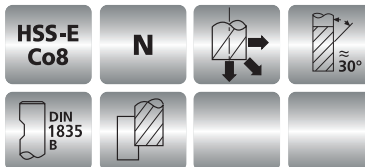
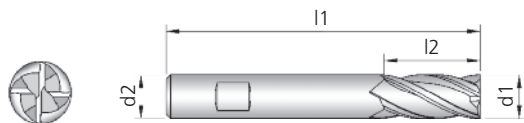
G2

 Due denti frontali taglienti fino al centro - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jus'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS FRONTAIS - Duas navalhas que cortam ao centro - Encabadouro Weldon
 Фреза концевая для чистовой обработки. Режущий торец. Хвостовик Weldon. Средняя серия

SERIE G

NORM.

UNI 8248
 DIN 844B
 ISO 1641/I



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
G2/01	2	7	51	6	4	17,61	24,42
G2/02	2.5	8	52	6	4	15,05	20,79
G2/03	3	8	52	6	4	13,73	20,79
G2/04	3.5	10	54	6	4	13,73	20,79
G2/05	4	11	55	6	4	13,00	20,07
G2/06	4.5	11	55	6	4	14,12	21,29
G2/07	5	13	57	6	4	12,75	19,95
G2/08	5.5	13	57	6	4	14,12	21,29
G2/09	6	13	57	6	4	12,75	19,95
G2/10	6.5	16	66	10	4	20,60	31,87
G2/11	7	16	66	10	4	20,60	31,87
G2/12	8	19	69	10	4	19,26	30,54
G2/12/1	8.5	19	69	10	4	21,33	32,47
G2/13	9	19	69	10	4	21,95	33,19
G2/14	10	22	72	10	4	20,60	31,87
G2/14/1	10.5	22	79	12	4	26,86	37,97
G2/15	11	22	79	12	4	28,21	41,11
G2/16	12	26	83	12	4	26,86	39,89
G2/17	13	26	83	12	4	30,81	43,78
G2/18	14	26	83	12	4	28,83	41,84
G2/19	15	32	92	16	4	35,52	56,58
G2/20	16	32	92	16	4	34,29	55,38
G2/21	17	32	92	16	4	43,75	64,92
G2/22	18	32	92	16	4	40,97	62,21
G2/23	19	38	104	20	4	50,52	73,12
G2/24	20	38	104	20	4	47,03	69,73
G2/25	22	38	104	20	4	65,56	96,62
G2/26	24	45	121	25	5	98,32	136,22
G2/27	25	45	121	25	5	98,32	136,22
G2/28	26	45	121	25	5	104,93	146,73
G2/29	28	45	121	25	5	111,43	152,02
G2/30	30	45	121	25	6	134,40	173,85
G2/31	32	53	133	32	6	155,35	197,30
G2/32	36	53	133	32	6	173,72	231,16
G2/33	40	63	143	32	8	199,67	304,32

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

▲ CONSIGLIATO RECOMMENDED

▶ ACCETTABILE ACCEPTABLE


▼ SCONSIGLIATO NOT RECOMMENDED

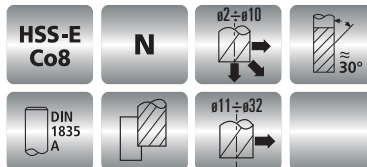
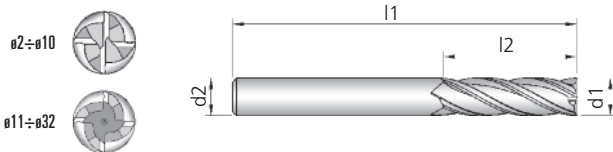


FRESE PER FINITURA • SERIE LUNGA

**SERIE
G**

G3


 Codolo cilindrico
 END MILLS - Straight shank
 FRAISES À CYLINDRES - Queue cylindrique
 SCHAFTFRÄSER - Zylinderschaft
 FRESAS CILINDRICAS FRONTALES - Mango cilíndrico
 FRESAS CILINDRICAS FRONTALIS - Encabadouro cilíndrico
 Фреза концевая для чистовой обработки. Цилиндрический хвостовик. Удлиненная серия



NORM.

UNI 8245
 DIN 844A
 ISO 1641/I

SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
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Ulteriori diametri
 a richiesta
 Other diameters
 on demand

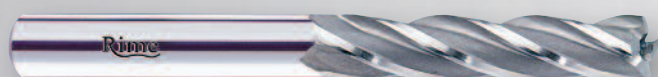
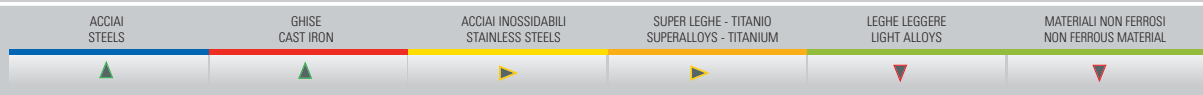
Toll. reale sul Ø
 Real Tol. on Ø
 +0,+0,03

G3/01	2	10	54	6	4	18,54
G3/02	3	12	56	6	4	17,29
G3/03	4	19	63	6	4	16,69
G3/04	5	24	68	6	4	15,94
G3/05	6	24	68	6	4	14,59
G3/06	7	30	80	10	4	27,10
G3/07	8	38	88	10	4	25,11
G3/08	10	45	95	10	4	23,73
G3/09	12	53	110	12	4	31,02
G3/10	14	53	110	12	4	34,47
G3/10/1	15	63	123	16	4	42,10
G3/11	16	63	123	16	4	42,10
G3/12	18	63	123	16	4	50,52
G3/13	20	75	141	20	4	59,86
G3/14	22	75	141	20	4	83,05
G3/15	24	90	166	25	5	117,02
G3/16	25	90	166	25	5	117,02
G3/17	26	90	166	25	5	126,67
G3/18	28	90	166	25	5	137,02
G3/19	30	90	166	25	6	158,58
G3/20	32	106	186	32	6	196,14


 CONSIGLIATO
 RECOMMENDED









 ACCETTABILE
 ACCEPTABLE


 SCONSIGLIATO
 NOT RECOMMENDED



FRESE PER FINITURA • SERIE LUNGA

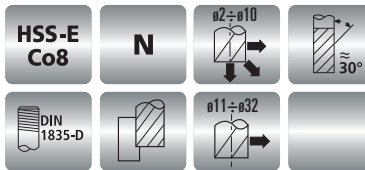
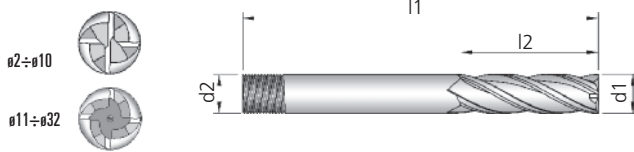
G4

 Codolo cilindrico filettato
 END MILLS - Threaded shank
 FRAISES À CYLINDRES - Queue cylindrique fileté
 SCHAFTFRÄSER - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES - Mango cilíndrico roscado
 FRESAS CILINDRICAS FRONTAIS - Encabadouro cilíndrico roscado
 Фреза концевая для чистовой обработки. Цилиндрический хвостовик с резьбой. Удлиненная серия

SERIE
G

NORM.

UNI 8247
DIN 844D
ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
G4/01	2	10	54	6	4	25,60
G4/02	3	12	56	6	4	21,99
G4/03	4	19	63	6	4	21,37
G4/04	5	24	68	6	4	20,60
G4/05	6	24	68	6	4	19,99
G4/06	7	30	80	10	4	33,32
G4/07	8	38	88	10	4	31,15
G4/08	10	45	95	10	4	30,39
G4/09	12	53	110	12	4	38,00
G4/10	14	53	110	12	4	42,44
G4/10/1	15	63	123	16	4	52,10
G4/11	16	63	123	16	4	52,10
G4/12	18	63	123	16	4	61,33
G4/13	20	75	141	20	4	75,92
G4/14	22	75	141	20	4	101,63
G4/15	24	90	166	25	5	142,60
G4/16	25	90	166	25	5	142,60
G4/17	26	90	166	25	5	153,51
G4/18	28	90	166	25	5	165,66
G4/19	30	90	166	25	6	189,57
G4/20	32	106	186	32	6	236,02

Ulteriori diametri
a richiesta
Other diameters
on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED



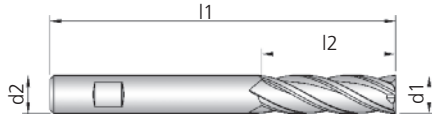
FRESE PER FINITURA • SERIE LUNGA

SERIE
G

G5


 Due denti frontali taglienti fino al centro - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusq'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS - Quatro navalhas que cortam ao centro longa - Encabadouro Weldon
 Фреза концевая для чистовой обработки. Режущий торец, Хвостовик Weldon. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



HSS-E
Co8

N



DIN
1835
B



NORM.

UNI 8249
DIN 844B
ISO 1641/I

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
G5/01	2	10	54	6	4	22,13	30,78
G5/02	3	12	56	6	4	19,26	28,03
G5/03	4	19	63	6	4	18,64	27,43
G5/04	5	24	68	6	4	17,91	26,71
G5/05	6	24	68	6	4	17,29	28,62
G5/06	7	30	80	10	4	29,84	46,52
G5/07	8	38	88	10	4	28,47	45,20
G5/07/1	9	45	95	10	4	29,84	45,91
G5/08	10	45	95	10	4	27,10	43,26
G5/08/1	11	53	110	12	4	37,89	55,33
G5/09	12	53	110	12	4	34,47	51,97
G5/09/1	13	53	110	12	4	42,09	60,51
G5/10	14	53	110	12	4	38,65	57,91
G5/10/1	15	63	123	16	4	48,96	73,01
G5/11	16	63	123	16	4	46,16	71,78
G5/11/1	17	63	123	16	4	59,73	90,51
G5/12	18	63	123	16	4	55,45	87,25
G5/13	20	75	141	20	4	67,05	99,00
G5/14	22	75	141	20	4	90,51	143,80
G5/15	24	90	166	25	5	128,82	213,53
G5/16	25	90	166	25	5	128,82	213,53
G5/17	26	90	166	25	5	137,02	240,37
G5/18	28	90	166	25	5	149,14	251,70
G5/19	30	90	166	25	6	169,53	273,65
G5/20	32	106	186	32	6	212,01	329,05

Ulteriori diametri
a richiesta
Other diameters
on demand

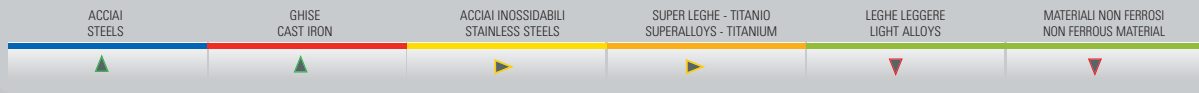
Toll. reale sul Ø
Real Tol. on Ø

+0,+0,03

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER FINITURA • SERIE EXTRA-LUNGA

G6

 Due denti frontali taglienti fino al centro - Codolo cilindrico
 END MILLS - Two end teeth cutting up to the centre - Straight shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jus'au centre - Queue cylindrique
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Mango cilíndrico
 FRESAS CILINDRICAS FRONTAIS - Quatro navalhas que cortam ao centro extra longa - Encabadouro cilíndrico
 Фреза концевая для чистовой обработки. Режущий торец. Цилиндрический хвостовик. Ультралинная серия

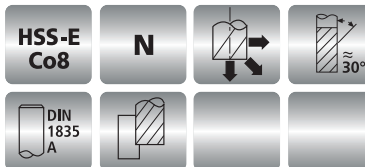
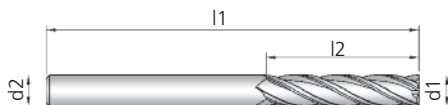
SERIE G

G

NORM.



Z4



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
G6/01	6	56	106	10	4	53,93
G6/02	8	63	113	10	4	52,38
G6/03	10	70	120	10	4	49,25
G6/04	12	80	137	12	4	61,76
G6/05	14	80	137	12	4	68,98
G6/06	16	90	150	16	4	80,55
G6/07	18	100	166	20	4	98,03
G6/08	20	110	176	20	4	122,33
G6/09	22	110	176	20	4	147,37

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

▲ CONSIGLIATO RECOMMENDED

▶ ACCETTABILE ACCEPTABLE


▼ SCONSIGLIATO NOT RECOMMENDED



FRESE PER FINITURA • SERIE EXTRA-LUNGA

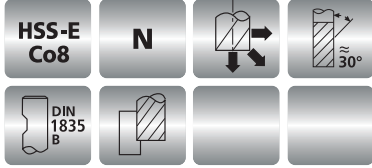
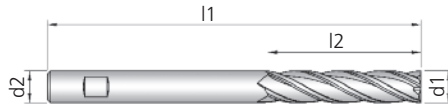
SERIE
G

G7


 Due denti frontali taglienti fino al centro - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jus'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS - Quatro navalhas que cortam ao centro extra longa - Encabadouro Weldon
 Фреза концевая для чистовой обработки. Режущий торец. Хвостовик Weldon. Ультрадлинная серия

SHORT
NORMAL
LONG
EXTRA-LONG

Z4



NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
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Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø

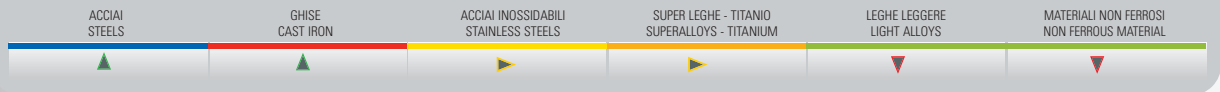
+0 +0,03

G7/01	6	56	106	10	4	57,76
G7/02	8	63	113	10	4	56,20
G7/03	10	70	120	10	4	52,38
G7/04	12	80	137	12	4	65,37
G7/05	14	80	137	12	4	73,41
G7/06	16	90	150	16	4	85,29
G7/07	18	100	166	20	4	104,50
G7/08	20	110	176	20	4	129,58
G7/09	22	110	176	20	4	155,22

CONSIGLIATO
RECOMMENDED

ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED



FRESE PER FINITURA • SERIE NORMALE

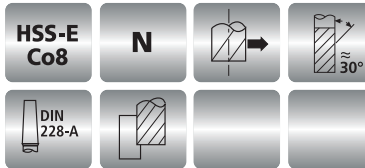
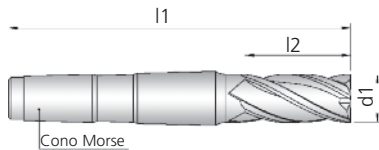
G8

- Codolo conico Morse con foro filettato
- END MILLS - Morse taper shank
- FRAISES À CYLINDRES - Queue au cône Morse à trou fileté
- SCHAFTFRÄSER - Morsekegelschaft und Anzugsgewinde
- FRESAS CILINDRICAS FRONTALES - Mango conico Morse con taladro roscado
- FRESAS CILINDRICAS FRONTAIS - Quatro navalhas sem corte ao centro normal - Encabadoiro Morse con taladro roscado
- Фреза концевая для чистовой обработки. Хвостовик конус Морзе с резьбой. Средняя серия

SERIE G

NORM.

UNI 8250
DIN 845B
ISO 1641/II



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €
G8/01	16	32	117	2	4	63,14	95,05
G8/02	18	32	117	2	4	63,14	95,05
G8/03	20	38	140	3	4	89,26	157,18
G8/04	22	38	140	3	4	102,09	168,88
G8/05	24	45	147	3	5	116,29	181,90
G8/06	25	45	147	3	5	119,32	196,29
G8/07	26	45	147	3	5	126,21	203,88
G8/08	28	45	147	3	5	130,17	211,21
G8/09	30	53	155	3	6	149,02	256,44
G8/10	32	53	178	4	6	177,34	335,76
G8/11	34	53	178	4	6	194,47	366,11
G8/12	35	53	178	4	6	201,14	372,05
G8/13	36	53	178	4	6	207,49	377,97
G8/14	38	63	188	4	6	232,01	402,52
G8/15	40	63	188	4	8	261,89	429,86
G8/16	45	63	188	4	8	365,15	533,58
G8/17	50	75	233	5	8	475,54	664,60

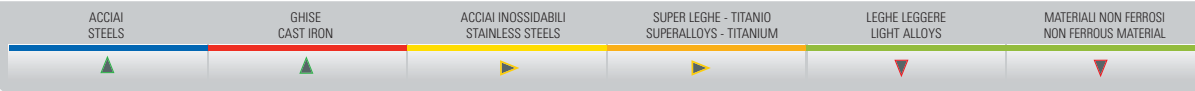
Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE








▼
SCONSIGLIATO
NOT RECOMMENDED



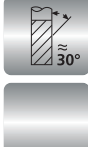
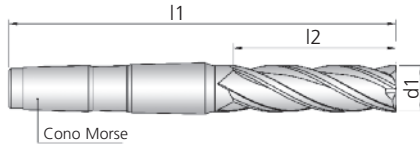
FRESE PER FINITURA • SERIE LUNGA

SERIE
G

G9

 Codolo conico Morse con foro filettato
 END MILLS - Morse taper shank
 FRAISES À CYLINDRES - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTALIS - Quatro navalhas sem corte ao centro longa - Encabadouro Morse
 Фреза концевая для чистовой обработки. Хвостовик конус Морзе с резьбой. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI 8251
DIN 845B
ISO 1641/II

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø

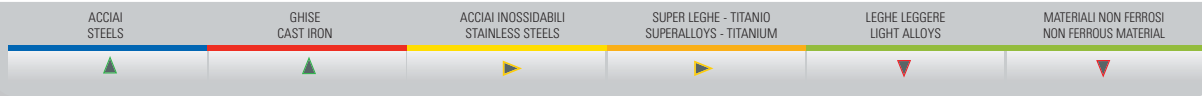
+0 +0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €
G9/01	16	63	148	2	4	82,95	116,89
G9/02	18	63	148	2	4	82,95	116,89
G9/03	20	75	177	3	4	110,08	210,78
G9/04	22	75	177	3	4	122,37	222,21
G9/05	24	90	192	3	5	156,99	254,06
G9/06	25	90	192	3	5	156,99	254,06
G9/07	26	90	192	3	5	169,26	266,78
G9/08	28	90	192	3	5	183,14	279,34
G9/09	30	90	192	3	6	197,74	300,87
G9/10	32	106	231	4	6	279,77	434,56
G9/11	34	106	231	4	6	309,73	465,45
G9/12	35	106	231	4	6	326,44	488,07
G9/13	36	106	231	4	6	338,20	500,85
G9/14	38	125	250	4	6	406,79	571,05
G9/15	40	125	250	4	8	420,81	574,19
G9/16	45	125	250	4	8	506,43	672,64
G9/17	50	150	308	5	8	726,04	902,08



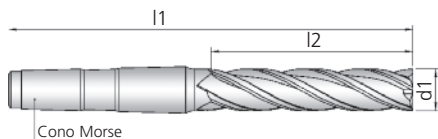
FRESE PER FINITURA • SERIE EXTRA-LUNGA

G10

- Codolo conico Morse con foro filettato
- END MILLS - Morse taper shank
- FRAISES À CYLINDRES - Queue au cône Morse à trou fileté
- SCHAFTFRÄSER - Morsekegelschaft und Anzugsgewinde
- FRESAS CILINDRICAS FRONTALES - Mango conico Morse con taladro roscado
- FRESAS CILINDRICAS FRONTAIS - Quatro navalhas sem corte ao centro extra longa - Encabadouro Morse con taladro roscado
- Фреза концевая для чистовой обработки. Хвостовик конус Морзе с резьбой. Ультралинная серия

SERIE G

NORM.



HSS-E
Co8

N



CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
G10/01	16	90	175	2	4	99,51
G10/02	18	100	202	3	4	151,00
G10/03	20	110	212	3	4	166,26
G10/04	22	110	212	3	4	175,78
G10/05	25	125	250	4	5	252,05
G10/06	28	135	260	4	5	296,04
G10/07	30	140	265	4	6	314,07
G10/08	32	150	275	4	6	344,34
G10/09	35	150	275	4	6	387,39
G10/10	36	150	275	4	6	403,26
G10/11	38	180	305	4	6	459,48
G10/12	40	180	305	4	8	486,12

Ulteriori diametri
a richiesta
*Other diameters
on demand*

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED


ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼



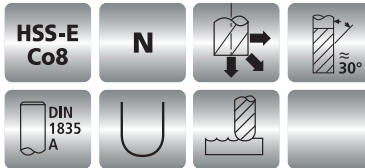
FRESE PER FINITURA A TESTA SEMISFERICA • SERIE NORMALE

SERIE G

G11


 Due denti frontali taglienti fino al centro - Codolo cilindrico
 BALL-NOSED END MILLS - Two end teeth cutting up to the centre - Straight shank
 FRAISES À CYLINDRES À BOUT HÉMISPHERIQUE - Deux dents bout coupantes jusq'au centre - Queue cylindrique
 HALBRUNDKOPFRÄSER - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA - Dos labios que cortan hasta el centro - Mango cilíndrico
 FRESAS CILINDRICAS FRONTAIS BOLEADAS - Quatro navalhas que cortam ao centro normal - Encabadouro cilíndrico
 Фреза концевая для чистовой обработки. Сферический торец. Цилиндрический хвостовик. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI
DIN
ISO 1641/I

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
G11/03	4	11	55	6	4	19,33
G11/04	5	13	57	6	4	17,93
G11/05	6	13	57	6	4	17,93
G11/06	8	19	69	10	4	28,34
G11/07	10	22	72	10	4	28,99
G11/08	12	26	83	12	4	37,12
G11/09	14	26	83	12	4	40,72
G11/10	15	32	92	16	4	50,91
G11/11	16	32	92	16	4	47,97
G11/12	18	32	92	16	4	59,24
G11/13	20	38	104	20	4	67,74
G11/14	22	38	104	20	4	96,01
G11/15	24	45	121	25	5	130,90
G11/16	25	45	121	25	5	130,90
G11/17	26	45	121	25	5	140,26
G11/18	28	45	121	25	5	156,11
G11/19	30	45	121	25	6	177,83
G11/20	32	53	133	32	6	206,85

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø

+0,+0,03

CONSIGLIATO
RECOMMENDED

ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED



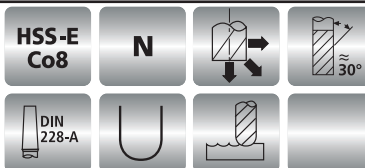
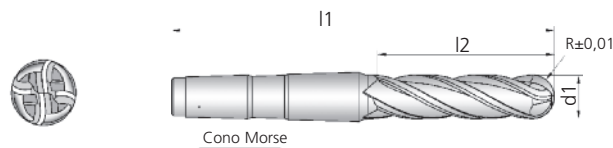
FRESE PER FINITURA A TESTA SEMISFERICA • SERIE NORMALE

SERIE G

G12


 Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 BALL-NOSED END MILLS - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES À CYLINDRES À BOUT HÉMISPHERIQUE - Deux dents bout coupantes jusq'au centre - Queue au cône Morse à trou fileté
 HALBRUNDKOPFRÄSER - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS BOLEADAS - Quatro navalhas que cortam ao centro normal - Encabadouro cone Morse con taladro roscado
 Фреза концевая для чистовой обработки. Сферический торец. Хвостовик конус Морзе с резьбой. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI
DIN
ISO 1641/I

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
G12/01	16	32	117	2	4	93,14
G12/01/1	18	32	117	2	4	96,30
G12/02	20	38	140	3	4	128,66
G12/03	22	38	140	3	4	146,50
G12/04	24	45	147	3	5	166,73
G12/05	25	45	147	3	5	169,85
G12/05/1	26	45	147	3	5	180,21
G12/06	28	45	147	3	5	198,96
G12/07	30	53	155	3	6	210,02
G12/08	32	53	178	4	6	251,43

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø

+0,+0,03

CONSIGLIATO
RECOMMENDED








ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED



FRESE PER FINITURA A TESTA SEMISFERICA • SERIE LUNGA

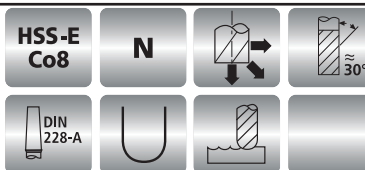
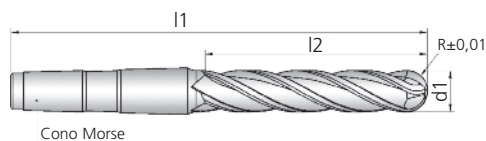
G13

 Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 BALL-NOSED END MILLS - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES À CYLINDRES À BOUT HÉMISPHERIQUE - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 HALBRUNDKOPFFRÄSER - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS BOLEADAS LONGAS DE QUATRO NAVALHAS QUE CORTAM AO CENTRO - Encabadouro cone Morse con taladro roscado
 Фреза концевая для чистовой обработки. Сферический торец. Хвостовик конус Морзе с резьбой. Удлиненная серия

SERIE G

NORM.

UNI
DIN
ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
G13/01	16	63	148	2	4	121,21
G13/01/1	18	63	148	2	4	135,74
G13/02	20	75	177	3	4	163,49
G13/03	22	75	177	3	4	180,33
G13/04	24	90	192	3	5	223,93
G13/05	25	90	192	3	5	223,93
G13/05/1	26	90	192	3	5	260,45
G13/06	28	90	192	3	5	260,45
G13/07	30	90	192	3	6	280,34
G13/08	32	106	231	4	6	386,89

ACCAI/ STEELS	GHISE/ CAST IRON	ACCAI INOSSIDABILI/ STAINLESS STEELS	SUPER LEGHE - TITANIO/ SUPERALLOYS - TITANIUM	LEGHE LEGGERE/ LIGHT ALLOYS	MATERIALI NON FERROSI/ NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE








▼ SCONSIGLIATO
NOT RECOMMENDED



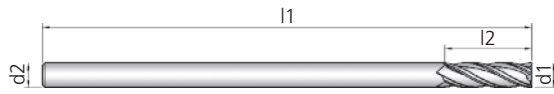
FRESE PER MACCHINE A COPIARE • SERIE EXTRA-LUNGA









SERIE
G

G14

 Due denti frontali taglienti fino al centro - Codolo cilindrico
 COPY MILLING CUTTERS - Two end teeth cutting up to the centre - Straight shank
 FRAISES POUR MACHINES À COPIER - Deux dents bout coupantes jusqu'au centre - Queue cylindrique
 NACHFORMFRÄSER - Zwei Schneiden mit Zentrumschnitt - Zylinderschaft
 FRESAS EN COPIADO - Dos labios que cortan hasta el centro - Mango cilíndrico
 FRESAS DE COPIA - Quatro navalhas que cortam ao centro - Encabadouro cilíndrico
 Фреза концевая с режущим торцем. Цилиндрический хвостовик. Ультралонкая серия

SHORT
NORMAL
LONG
EXTRA-LONG



 HSS-E Co8
 N

 30°
 DIN 1835 A




NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
G14/01	6	25	180	6	4	42,72
G14/02	8	25	180	8	4	43,98
G14/03	10	30	200	10	4	53,47
G14/04	12	30	200	12	4	59,59
G14/06	16	35	200	16	4	90,82
G14/08	20	35	200	20	4	122,68

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø

+0 +0,03

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



Catalogo HSS-E e PM

SERIE UMAX

FRESE SERIE
UMAX ELICA 45°


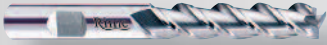






SERIES "UMAX"
END MILLS
45° HELIX FLUTE



Rime
UTENSILERIA

SERIE UMAX

FRESE SERIE UMAX ELICA 45° SERIES "UMAX" END MILLS 45° HELIX FLUTE

	COD.	PAG.
	UM0	101
	UM1	102
	UM2	103
	UM3	104
	UM4	105
	UM5	106
	UM7	107
	UM8	108

Serie UMAX

La fresa **UMAX** è una fresa universale pertanto può eseguire lavori sia di sgrossatura sia di finitura.

Principali caratteristiche della fresa **UMAX**:

- 1) grande capacità di asportazione di truciolo anche da materiali molto difficili
- 2) con la stessa fresa si ottiene un'ottima finitura.

UMAX Series

UMAX end mills are universal mills, which can carry out different roughing and finishing workings.

The main characteristics of **UMAX** end mills are as follows:

- 1) they can easily remove shaving also from very difficult materials
- 2) a very good finishing degree can be granted by using the same end mill.

UMAX Série

La fraise **UMAX** est une fraise universelle, en effet elle peut faire des travaux de dégrossissage et de finissage.

Les principales caractéristiques sont comme suite:

- 1) grande capacité d'enlèvement de copeaux, aussi de matériaux très difficiles
- 2) la même fraise peut donner une finissage excellente.

UMAX Serie








Die **UMAX** Fräser sind universelle Fräser, die verschiedenen Schrapp- bzw. Feinbearbeitungen durchführen können.

Die Haupteigenschaften der **UMAX** Fräser sind:

- 1) sehr gute Spanabhebungsfähigkeit, auch aus sehr schwierigen Metallen
- 2) eine sehr gute Feinbearbeitung mit gleichem Fräser.

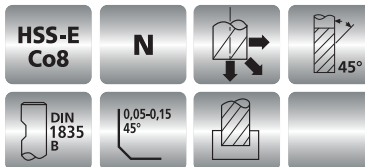
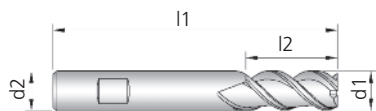
FRESE CILINDRICHE FRONTALI • SERIE NORMALE

UM0

 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige Teilung - Weldon-Spanfläche
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha - División irregular - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS - Duas navalhas de corte ao centro normal - Encabadouro Weldon
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик Weldon. Средняя серия

SERIE
Umax

NORM.



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
UM0/01	4	11	55	6	3	15,35	22,12
UM0/02	5	13	57	6	3	14,59	21,79
UM0/03	6	13	57	6	3	14,59	21,79
UM0/04	7	16	66	10	3	21,95	33,35
UM0/05	8	20	69	10	3	20,60	32,02
UM0/06	9	20	69	10	3	23,81	35,18
UM0/07	10	22	72	10	3	23,30	34,55
UM0/08	11	26	83	12	3	30,95	44,50
UM0/09	12	26	83	12	3	30,42	43,85
UM0/10	13	26	83	12	3	33,99	47,64
UM0/11	14	26	83	12	3	33,68	47,34
UM0/12	15	36	92	16	3	41,01	62,75
UM0/13	16	36	92	16	3	39,31	61,08
UM0/14	17	40	100	16	4	49,67	72,62
UM0/15	18	40	100	16	4	46,95	69,83
UM0/15/1	19	40	100	16	4	57,18	87,74
UM0/16	20	45	110	20	4	53,38	83,84
UM0/17	22	45	110	20	4	74,29	104,99
UM0/18	25	50	125	25	4	102,91	139,63
UM0/19	28	56	125	25	4	123,69	163,57
UM0/20	30	63	140	25	4	146,65	204,71
UM0/21	32	63	140	32	4	163,94	280,82
UM0/22	35	70	160	32	4	194,59	310,02
UM0/23	38	70	160	32	4	226,62	325,70
UM0/24	40	70	160	32	4	244,19	342,36

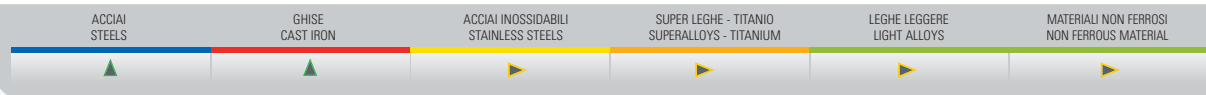
Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

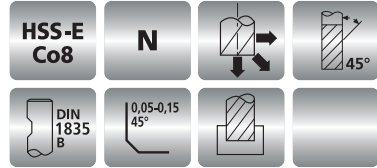
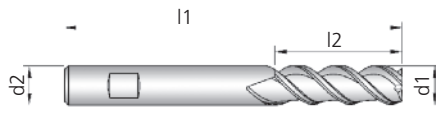
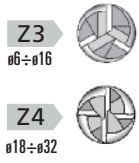


FRESE CILINDRICHE FRONTALI • SERIE LUNGA

SERIE
Umax


UM1



 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneides mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige Teilung - Spannfläche
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango Weldon
 ФРЕЗА КОНЦЕВАЯ С НЕПОСТОЯННЫМ ШАГОМ ЗУБА. Угол винтовой канавки 45°. Режущий торцев. Хвостовик Weldon. Удлиненная серия




Ulteriori diametri
a richiesta
*Other diameters
on demand*

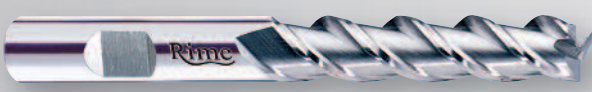
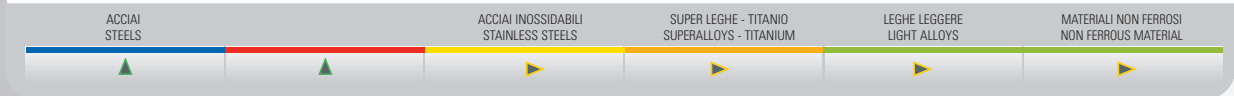
 Toll. reale sul Ø
Real Tol. on Ø
+0,03

 CONSIGLIATO
RECOMMENDED

 ACCETTABILE
ACCEPTABLE








 SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
UM1/01	6	26	68	6	3	19,62	31,26
UM1/02	8	38	88	10	3	29,11	46,34
UM1/03	10	45	95	10	3	30,96	48,06
UM1/04	12	50	100	12	3	37,22	55,71
UM1/05	14	50	100	12	3	43,00	63,27
UM1/06	16	56	110	16	3	52,39	79,24
UM1/07	18	63	125	16	4	63,58	97,06
UM1/08	20	70	140	20	4	70,64	104,66
UM1/09	22	70	140	20	4	90,64	145,47
UM1/10	25	80	156	25	4	125,29	212,87
UM1/11	28	90	166	25	4	151,31	254,00
UM1/12	30	90	166	25	4	172,81	271,24
UM1/13	32	90	166	32	4	197,46	309,11



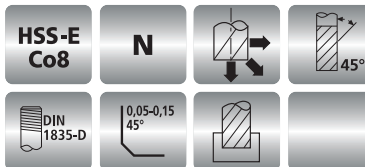
FRESE CILINDRICHE FRONTALI • SERIE NORMALE

UM2

 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Codolo cilindrico filettato
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Threaded shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique fileté
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige Teilung - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango cilíndrico roscado
 FRESAS CILINDRICAS FRONTAIS - Duas navalhas de corte ao centro normal - Encabadouro cilíndrico roscado
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Цилиндрический хвостовик с резьбой. Средняя серия

SERIE
Umax

NORM.



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm h14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
UM2/01	6	13	57	6	3	16,07
UM2/02	8	20	69	10	3	24,01
UM2/03	10	22	72	10	3	26,25
UM2/04	12	26	83	12	3	34,27
UM2/05	14	26	83	12	3	38,08
UM2/06	16	36	92	16	3	44,08
UM2/07	18	40	100	16	4	47,91
UM2/08	20	45	110	20	4	57,88
UM2/09	22	45	110	20	4	81,90
UM2/10	25	50	125	25	4	107,53
UM2/11	28	56	125	25	4	129,48
UM2/12	30	63	140	25	4	153,28
UM2/13	32	63	140	32	4	171,44
UM2/14	35	70	160	32	4	203,66
UM2/15	38	70	160	32	4	243,13
UM2/16	40	70	160	32	4	262,19

Ulteriori diametri a richiesta
Other diameters on demand

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED

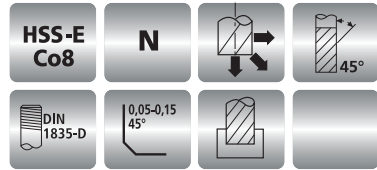
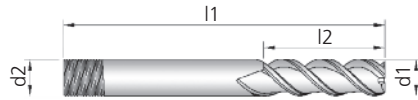


FRESE CILINDRICHE FRONTALI • SERIE LUNGA

SERIE
Umax

UM3


 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Codolo cilindrico filettato
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Threaded shank
 FRAISES À CYLINDRES Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique fileté
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige Teilung - Zylinderschaft mit Gewinde
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango cilíndrico roscado
 FRESAS CILINDRICAS FRONTAIS - Duas navalhas de corte ao centro longa - Encabadouro cilíndrico roscado
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Цилиндрический хвостовик с резьбой. Удлиненная серия



NORM.



SHORT
NORMAL
LONG
EXTRA-LONG

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE



▼
SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
UM3/01	10	45	95	10	3	36,68
UM3/02	12	50	100	12	3	43,04
UM3/03	14	50	100	12	3	49,25
UM3/04	16	56	110	16	3	60,85
UM3/05	18	63	125	16	4	72,66
UM3/06	20	70	140	20	4	79,08
UM3/07	22	70	140	20	4	108,06
UM3/08	25	80	156	25	4	143,45
UM3/09	28	90	166	25	4	169,47
UM3/10	30	90	166	25	4	200,27



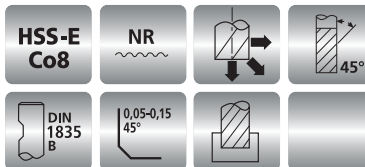
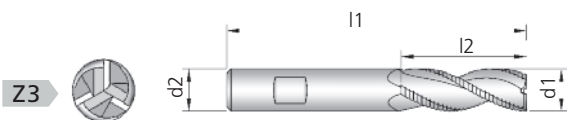
FRESE CILINDRICHE FRONTALI PER SGROSSATURA • SERIE NORMALE

UM4


 Denti elicoidali con rompitruciolo spogliato completamente rettificato - Un dente frontale tagliente fino al centro - Elica destra 45° - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - One end tooth cutting up to the centre - 45° right hand spiral - Weldon shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Une dent bout coupante jusqu'au centre - Hélice 45° à droite - Queue cylindrique Weldon
 SCHAFFFRÄSER - Schrägschneiden mit voll eingeschliffenem Spanbrecher - Eine Schneide mit Zentrumschnitt - 45° rechts spiralgenutet - Weldon-Spanfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta - Un labio que corta hasta el centro - Hélice derecha 45° - Mango Weldon
 FRESAS DE TRÊS NAVALHAS COM QUEBRA APARA E CORTE AO CENTRO NORMAL - Encabadouro Weldon

 Фреза концевая для черновой обработки с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торцев. Хвостовик Weldon. Средняя серия

SERIE
Umax

NORM.



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
UM4/00	5	13	57	6	3	29,68	36,19
UM4/01	6	13	57	6	3	29,68	36,19
UM4/02	7	16	66	10	3	39,47	50,06
UM4/03	8	19	69	10	3	38,15	48,76
UM4/04	9	19	69	10	3	39,47	50,06
UM4/05	10	22	72	10	3	42,68	53,12
UM4/06	11	22	79	12	3	44,41	56,56
UM4/07	12	26	83	12	3	46,33	58,45
UM4/08	13	26	83	12	3	51,20	63,21
UM4/09	14	26	83	12	3	52,23	64,12
UM4/10	15	32	92	16	3	57,88	77,81
UM4/11	16	32	92	16	3	56,81	76,63
UM4/12	17	32	92	16	3	61,22	82,25
UM4/13	18	32	92	16	3	59,44	80,41
UM4/14	20	38	104	20	3	69,77	90,42

ACCAI
STEELS

GHISE
CAST IRON

ACCAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03


▲ CONSIGLIATO
RECOMMENDED
▶ ACCETTABILE
ACCEPTABLE
▼ SCONSIGLIATO
NOT RECOMMENDED

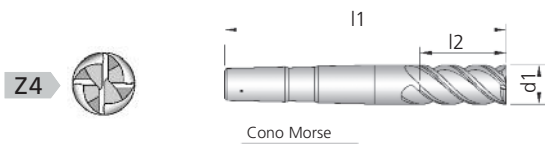








FRESE CILINDRICHE FRONTALI • SERIE NORMALE

SERIE
Umax

UM5





 Due denti frontali taglienti fino al centro - Elica destra 45° Divisione irregolare - Codolo conico Morse con foro filettato
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Morse taper shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige Teilung - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango cónico Morse con taladro roscado
 FRESAS DE TRÊS NAVALHAS - Corte ao centro normal - Encabadouro cone Morse con taladro roscado
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия



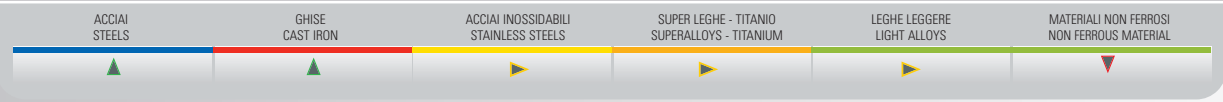
HSS-E Co8 **N**  
   

NORM.


Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03



 CONSIGLIATO
 RECOMMENDED

 ACCETTABILE
 ACCEPTABLE

 SCONSIGLIATO
 NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €
UM5/01	16	36	115	2	3	61,93	93,94
UM5/02	18	40	120	2	4	65,25	101,54
UM5/03	20	45	145	3	4	86,96	158,78
UM5/04	22	45	145	3	4	88,53	161,81
UM5/05	24	50	150	3	4	107,65	181,26
UM5/06	25	50	150	3	4	107,65	181,26
UM5/07	26	56	155	3	4	123,41	216,48
UM5/08	28	56	155	3	4	127,70	221,11
UM5/09	30	63	165	3	4	142,78	258,81
UM5/10	32	63	185	4	4	176,32	346,34
UM5/11	34	70	195	4	4	188,89	361,87
UM5/12	35	70	195	4	4	198,35	372,81
UM5/13	36	70	195	4	4	207,37	378,86
UM5/14	38	70	195	4	4	232,05	413,99
UM5/15	40	70	195	4	4	255,69	435,14
UM5/16	45	80	205	4	4	358,86	557,49
UM5/17	50	90	215	4	4	493,96	699,43



FRESE CILINDRICHE FRONTALI • SERIE LUNGA

UM7

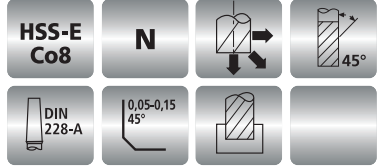
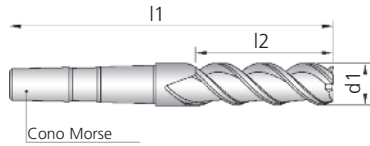

 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Codolo conico Morse con foro filettato
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Morse taper shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige Teilung - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango cónico Morse taladro roscado
 FRESAS DE TRÊS NAVALHAS - Corte ao centro longa - Encabadouro cone Morse con taladro roscado
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик конус Морзе с резьбой. Удлиненная серия

SERIE
Umax

NORM.



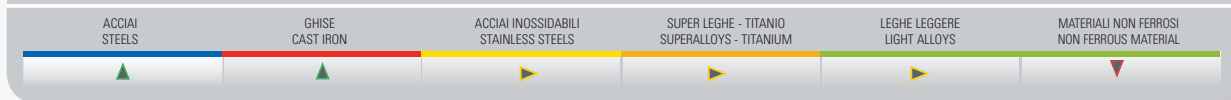
Z4



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
UM7/01	16	56	135	2	3	77,61
UM7/02	18	63	145	2	4	83,43
UM7/03	20	70	170	3	4	105,23
UM7/04	22	70	170	3	4	120,76
UM7/05	24	80	180	3	4	151,65
UM7/06	25	80	180	3	4	155,93
UM7/07	26	80	180	3	4	161,10
UM7/08	28	90	215	4	4	195,64
UM7/09	30	90	215	4	4	206,57
UM7/10	32	100	225	4	4	267,08
UM7/11	34	110	235	4	4	306,51
UM7/12	35	110	235	4	4	314,85
UM7/13	36	110	235	4	4	319,23
UM7/14	38	110	235	4	4	372,16
UM7/15	40	110	235	4	4	398,25
UM7/16	45	120	245	4	4	504,56
UM7/17	50	140	265	4	4	713,23

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03



▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED



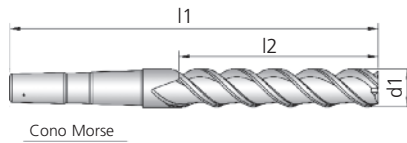
FRESE CILINDRICHE FRONTALI • SERIE EXTRA-LUNGA







SERIE
Umax

UM8


 Due denti frontali taglienti fino al centro - Elica destra 45° Divisione irregolare - Codolo conico Morse con foro filettato
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Morse taper shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusq'au centre - Hélice 45° à droite - Division irrégulière - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige Teilung - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango cónico Morse con taladro roscado
 FRESAS DE TRÊS NAVALHAS - Corte ao centro extra longa - Encabadouro cone Morse con taladro roscado
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик конус Морзе с резьбой. Ультралинная серия

SHORT
NORMAL
LONG
EXTRA-LONG



HSS-E Co8 **N**  
   

NORM.



CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
UM8/01	16	90	170	2	4	101,89
UM8/02	18	100	200	3	4	156,65
UM8/03	20	110	210	3	4	171,91
UM8/04	22	110	210	3	4	180,67
UM8/05	25	125	225	3	5	257,86
UM8/06	28	140	265	4	5	317,32
UM8/07	30	140	265	4	5	345,79
UM8/08	32	160	285	4	5	371,13
UM8/09	35	180	305	4	5	490,53
UM8/10	40	200	335	4	5	576,74

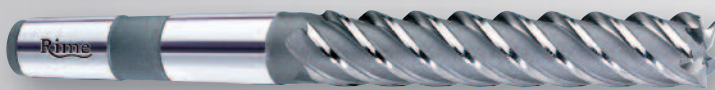
ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▶	▼

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED

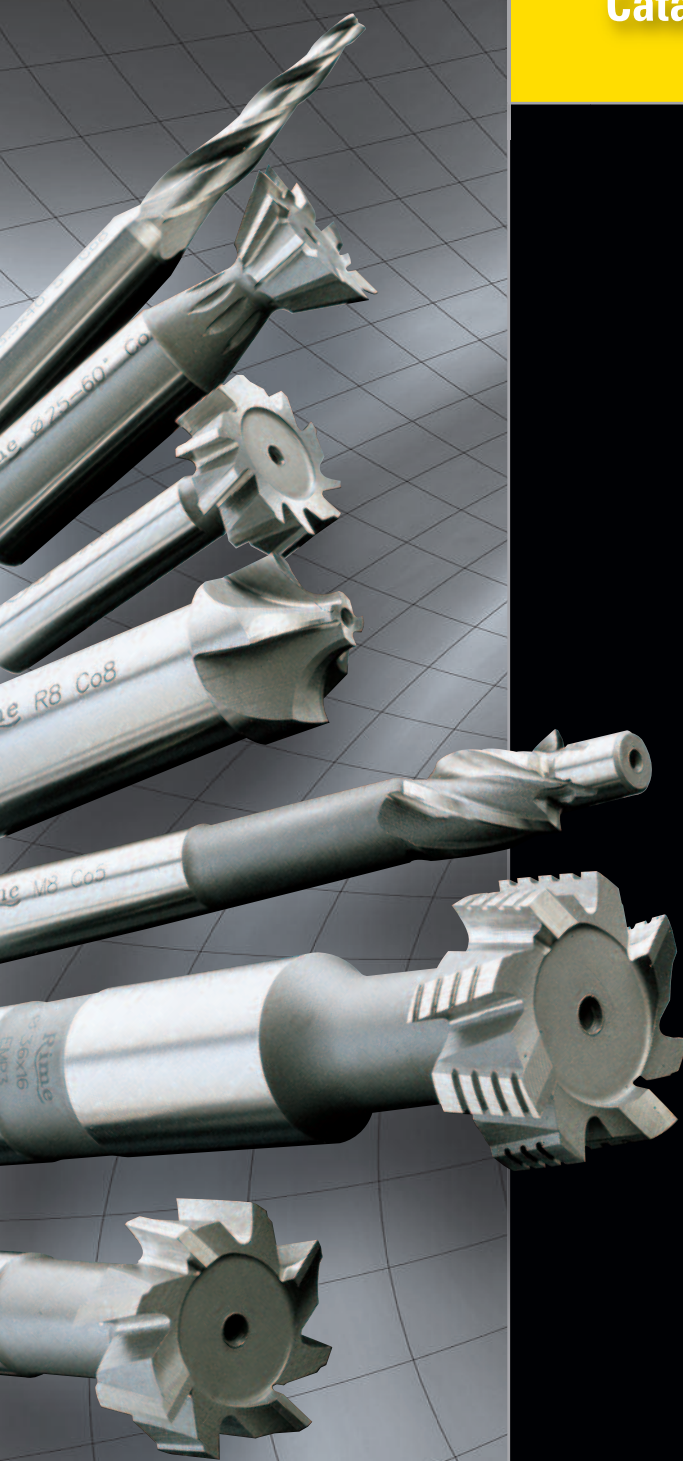


Catalogo HSS-E e PM

SERIE R-S

FRESE A "T"
E DI FORMA

"T" SLOT CUTTERS,
WOODRUFF CUTTERS AND
FORM CUTTERS



Rime
UTENSILERIA

INDEX


SERIE R-S

FRESE A "T" E DI FORMA "T" SLOT CUTTERS, WOODRUFF CUTTERS AND FORM CUTTERS

	COD.	PAG.		COD.	PAG.
	R0	111		SC1	119
	R1	112		SC2	120
	R2	113		SC3	121
	R4	113			
	R3	114			
	R5/A	115			
	R5/B	115			
	S2	116			
	S3	117			
	S4	118			

FRESE PER SEDI DI LINGUETTE AMERICANE

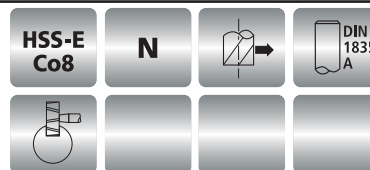
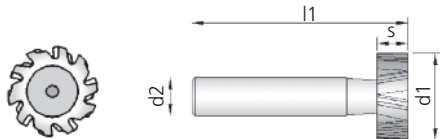
R0


 Denti elicoidali alternati - Codolo cilindrico
 WOODRUFF KEYSEAT CUTTERS - Staggered helical teeth - Straight shank
 FRAISES POUR CLAVETTES WOODRUFF - Denture hélicoïdale alternée - Queue cylindrique
 SCHLITZFRÄSER FÜR SCHEIBENFEDERNUTEN - Kreuzverzahnt - Zylinderschaft
 FRESAS WOODRUFF - Labios helicoidales alternados - Mango cilíndrico
 FRESAS WOODRUFF - Oito navalhas helicoidales alternados - Encabadoiro cilíndrico
 Фреза "Т-образная" с разнонаправленными зубьями. Цилиндрический хвостовик

SERIE R-S

NORM.

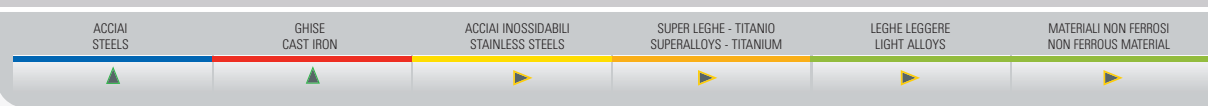
UNI 8263
DIN 850B
ISO



CODE	d1 x s mm	l1 mm	d2 mm h6	Z	Co 8% €
R0/01	10.5x2	50	6	8	37,96
R0/02	10.5x2.5	50	6	8	37,96
R0/03	10.5x3	50	6	8	37,96
R0/04	13.5x2	56	10	8	42,74
R0/05	13.5x3	56	10	8	42,74
R0/06	13.5x4	56	10	8	42,74
R0/07	16.5x3	56	10	8	49,91
R0/08	16.5x4	56	10	8	49,91
R0/09	16.5x5	56	10	8	49,91
R0/10	16.5x6	56	10	8	49,91
R0/11	19.5x3	63	10	8	57,26
R0/12	19.5x4	63	10	8	57,26
R0/13	19.5x5	63	10	8	57,26
R0/14	19.5x6	63	10	8	57,26
R0/15	22.5x4	63	10	10	67,54
R0/16	22.5x5	63	10	10	67,54
R0/17	22.5x6	63	10	10	67,54
R0/18	22.5x8	63	10	10	67,54
R0/19	25.5x5	63	10	10	77,23
R0/20	25.5x6	63	10	10	77,23
R0/21	25.5x7	63	10	10	77,23
R0/22	25.5x8	63	10	10	77,23
R0/23	28.5x6	63	10	10	93,46
R0/24	28.5x7	63	10	10	93,46
R0/25	28.5x8	63	10	10	93,46
R0/26	28.5x10	71	12	10	93,46
R0/27	32.5x6	71	12	10	109,00
R0/28	32.5x7	71	12	10	109,00
R0/29	32.5x8	71	12	10	109,00
R0/30	32.5x10	71	12	10	109,00
R0/31	45.5x10	71	12	12	153,19

Toll. reale sullo spessore
Real Tol. on thickness
+0 -0,02

Toll. reale sul Ø
Real Tol. on Ø
+0,05 -0




▲ CONSIGLIATO RECOMMENDED
▶ ACCETTABILE ACCEPTABLE
▼ SCONSIGLIATO NOT RECOMMENDED

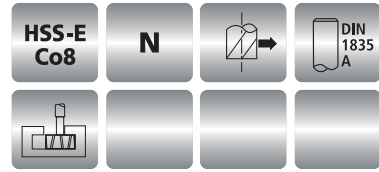
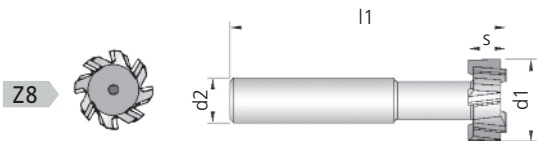


FRESE PER SCANALATURE A "T"

**SERIE
R-S**

R1


 Denti elicoidali alternati - Codolo cilindrico
 "T"-SLOT CUTTERS - Staggered helical teeth - Straight shank
 FRAISES POUR RAINURES À "T" - Denture hélicoïdale alternée - Queue cylindrique
 SCHAFTFRÄSER FÜR T-NUTEN - Kreuzverzahnt - Zylinderschaft
 FRESAS EN "T"- Labios helicoidales alternados - Mango cilíndrico
 FRESAS EN "T" - Oito navalhas helicoidales alternados - Encabadouro cilíndrico
 Фреза "Т-образная" с разнонаправленными зубьями. Цилиндрический хвостовик



NORM.

UNI 7339A
 DIN 851AA
 ISO 3337

CODE	d1 x s mm	l1 mm	d2 mm h6	Z	Co 8% €
R1/01	12.5x6	57	10	8	56,19
R1/02	16x8	62	10	8	65,69
R1/03	18x8	70	12	8	72,44
R1/04	19x9	70	12	8	75,17
R1/05	21x9	74	12	8	84,87
R1/06	22x10	74	12	8	87,67
R1/07	25x11	82	16	8	101,41
R1/08	28x12	85	16	8	115,28
R1/09	32x14	90	16	8	133,85








Toll. reale sullo spessore
Real Tol. on thickness
 +0 -0,02

Toll. reale sul Ø
Real Tol. on Ø
 -0 +0,05



FRESE PER SCANALATURE A "T" PER SGROSSATURA

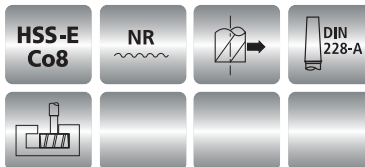
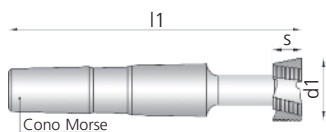
R2

 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Codolo conico Morse con foro filettato
 "T"-SLOT ROUGHING CUTTERS - Helical teeth with form relieved entirely ground chip-breaker - Morse taper shank
 FRAISES POUR RAINURES À "T" À DEGROSSIR - Denture hélicoïdale avec brise-copeaux dépolié entièrement rectifié - Queue au cône Morse à trou fileté
 SCHAFTSCHRUPPFÄSER FÜR T-NUTEN - Schrägschneiden mit voll eingeschliffenem Spanbrecher - Morsekegelschaft und Anzugsgewinde
 FRESAS PARA RANURAS EN "T" PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Mango cónico Morse taladro roscado
 FRESAS PARA RANHURAS EM "T" PARA DESBASTE - Cinco navalhas helicoidal com quebra apara - Encabadouro cone Morse con taladro roscado
 Фреза "Т-образная" для черновой обработки. Хвостовик конус Морзе с резьбой

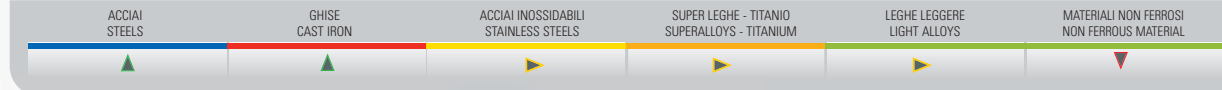
SERIE R-S

NORM.

UNI
DIN 851B
ISO 3337



CODE	d1 x s mm	l1 mm	CM-MK	Z	Co 8% €
R2/03	18x8	82	1	5	87,41
R2/04	19x9	82	1	5	94,78
R2/05	21x9	102	2	5	98,91
R2/06	22x10	102	2	5	108,39
R2/07	25x11	104	2	5	121,26
R2/08	28x12	106	2	6	145,62
R2/09	32x14	111	2	6	163,23
R2/10	36x16	133	3	8	222,16
R2/11	40x18	140	3	8	248,51
R2/12	45x20	143	3	8	283,73
R2/13	50x22	177	4	8	347,42
R2/14	56x24	182	4	10	438,82



Toll. reale sullo spessore
Real Tol. on thickness
+0 -0,02

Toll. reale sul Ø
Real Tol. on Ø
±0,05








▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE

▼ SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SCANALATURE A "T" PER SGROSSATURA

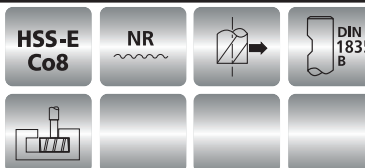
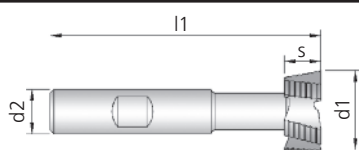
R4

 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Attacco Weldon
 "T"-SLOT ROUGHING CUTTERS - Helical teeth with form relieved entirely ground chip-breaker - Weldon shank
 FRAISES POUR RAINURES À "T" À DEGROSSIR - Denture hélicoïdale avec brise-copeaux dépolié entièrement rectifié - Queue cylindrique Weldon
 SCHAFTSCHRUPPFÄSER FÜR T-NUTEN - Schrägschneiden mit voll eingeschliffenem Spanbrecher - Weldon-Spanfläche
 FRESAS PARA RANURAS EN "T" PARA DESBASTE - Labios helicoidal con arranca de viruta completamente retificado - Mango Weldon
 FRESAS PARA RANHURAS EM "T" PARA DESBASTE - Cinco navalhas helicoidal com quebra apara - Encabadouro Weldon
 Фреза "Т-образная" для черновой обработки. Хвостовик Weldon

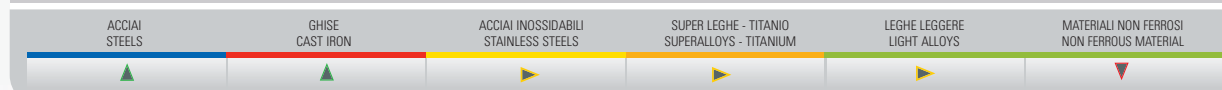
SERIE R-S

NORM.

UNI
DIN 851B
ISO 3337



CODE	d1 x s mm	l1 mm	d2 mm h6	Z	Co 8% €
R4/01	12.5x6	57	10	4	63,72
R4/02	16x8	62	10	5	71,16
R4/03	18x8	70	12	5	81,19
R4/04	19x9	70	12	5	85,88
R4/05	21x9	74	12	5	89,97
R4/06	22x10	74	12	5	98,63
R4/07	25x11	82	16	5	113,36
R4/08	28x12	85	16	6	138,88
R4/09	32x14	90	16	6	153,11
R4/10	36x16	108	25	6	211,31
R4/11	40x18	108	25	8	230,90



Toll. reale sullo spessore
Real Tol. on thickness
+0 -0,02

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲ CONSIGLIATO
RECOMMENDED


▶ ACCETTABILE
ACCEPTABLE

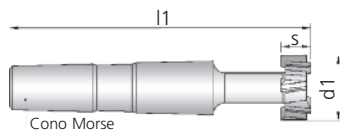
▼ SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SCANALATURE A "T"

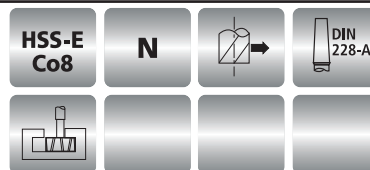
**SERIE
R-S**

R3


 Denti elicoidali alternati - Codolo conico Morse con foro filettato
 "T"-SLOT CUTTERS - Staggered helical teeth - Morse taper shank
 FRAISES POUR RAINURES À "T" - Denture hélicoïdale alternée - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER FÜR T-NUTEN - Kreuzverzahnt - Morsekegelschaft und Anzugsgewinde
 FRESAS PARA RANURAS EN "T" - Labios helicoidales alternados - Mango cónico Morse con taladro roscado
 FRESAS PARA RANHURAS EN "T" - Oito navalhas helicoidales alternados - Encabadouro cone Morse con taladro roscado
 Фреза "Т-образная" с разнонаправленными зубьями. Хвостовик конус Морзе с резьбой



Cono Morse



NORM.

UNI 7339B
 DIN 851B
 ISO 3337

CODE	d1 x s mm	l1 mm	CM-MK	Z	Co 8% €
R3/01	12.5x6	72	1	8	66,07
R3/02	16x8	77	1	8	75,13
R3/03	18x8	82	1	8	81,48
R3/04	19x9	82	1	8	84,99
R3/05	21x9	102	2	8	94,05
R3/06	22x10	102	2	8	99,15
R3/07	25x11	104	2	8	112,18
R3/08	28x12	106	2	8	129,64
R3/09	32x14	111	2	8	155,85
R3/10	36x16	133	3	8	173,44
R3/11	40x18	140	3	8	185,80
R3/12	45x20	143	3	8	229,47
R3/13	50x22	177	4	10	291,40
R3/14	56x24	182	4	10	375,22

Toll. reale sullo spessore
Real Tol. on thickness

+0 -0,02

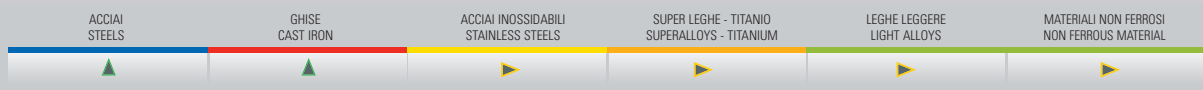
Toll. reale sul Ø
Real Tol. on Ø

+0,05 -0

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE AD ANGOLO DIVERGENTE

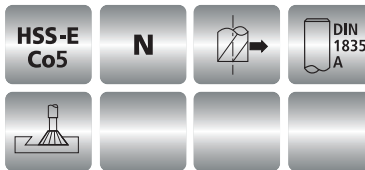
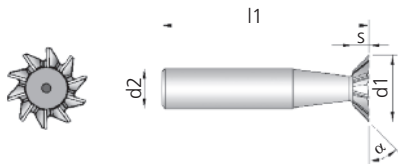
R5/A

-  Forma "A" divergente - Codolo cilindrico
-  ANGLE CUTTER - Straight shank
-  FRAISES D'ANGLE - Queue cylindrique
-  WINKELFRÄSER - Zylinderschaft
-  FRESAS EN ANGULO - Mango cilíndrico
-  FRESAS EN ANGULO - Encabadouro cilíndrico
-  Фреза с обратным конусом. Цилиндрический хвостовик

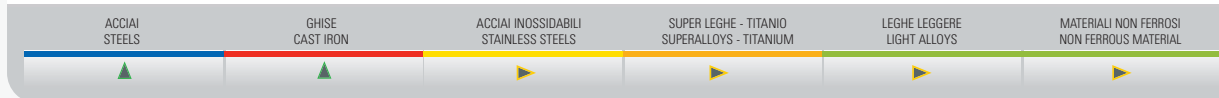
SERIE R-S

NORM.

UNI 8262-A
DIN 1833-A
ISO 3859



CODE	d1 mm js16	α $\pm 30'$	s mm	l1 mm	d2 mm h6	Z	Co 5% €
R5A/01	16		4	60	12	10	45,13
R5A/02	20	45°	5	63	12	10	58,72
R5A/03	25		6.3	67	16	10	72,30
R5A/04	32		8	71	16	12	104,50
R5A/05	16		6.3	60	12	10	45,13
R5A/06	20	60°	8	63	12	10	58,72
R5A/07	25		10	67	16	10	72,30
R5A/08	32		12.5	71	16	12	104,50










Toll. reale sull'angolo
Real Tol. on angle
 $\pm 20'$

▲ CONSIGLIATO RECOMMENDED
▶ ACCETTABILE ACCEPTABLE
▼ SCONSIGLIATO NOT RECOMMENDED

FRESE AD ANGOLO CONVERGENTE

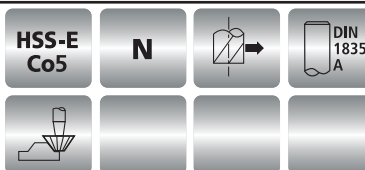
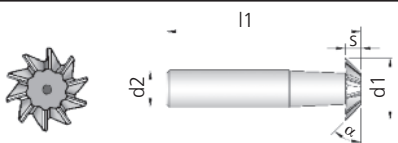
R5/B

-  Forma "B" convergente - Codolo cilindrico
-  ANGLE CUTTER - Straight shank
-  FRAISES D'ANGLE - Queue cylindrique
-  WINKELFRÄSER - Zylinderschaft
-  FRESAS EN ANGULO - Mango cilíndrico
-  FRESAS EN ANGULO - Encabadouro cilíndrico
-  Фреза с прямым конусом. Цилиндрический хвостовик

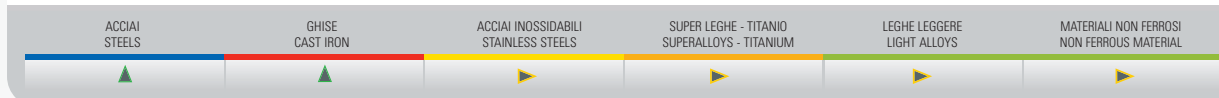
SERIE R-S

NORM.

UNI 8262-B
DIN 1833-B
ISO 3859



CODE	d1 mm js16	α $\pm 30'$	s mm	l1 mm	d2 mm h6	Z	Co 5% €
R5B/01	16		4	60	12	10	45,13
R5B/02	20	45°	5	63	12	10	58,72
R5B/03	25		6.3	67	16	10	72,30
R5B/04	32		8	71	16	12	104,50
R5B/05	16		6.3	60	12	10	45,13
R5B/06	20	60°	8	63	12	10	58,72
R5B/07	25		10	67	16	10	72,30
R5B/08	32		12.5	71	16	12	104,50




Toll. reale sull'angolo
Real Tol. on angle
 $\pm 20'$

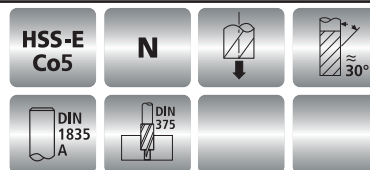
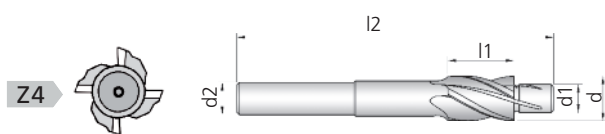
▲ CONSIGLIATO RECOMMENDED
▶ ACCETTABILE ACCEPTABLE
▼ SCONSIGLIATO NOT RECOMMENDED

FRESE PER SEDI DI VITI

**SERIE
R-S**

S2





 Per viti a testa cilindrica con esagono incassato - Denti elicoidali con guida - Codolo cilindrico
 COUNTERBORES WITH SOLID PILOT - For screws with cylindrical head - Helical teeth - Straight shank
 FRAISES À PIVOT FIXE - Pour vis tête cylindrique - Denture hélicoïdale avec guide - Queue cylindrique
 FLACHSENKER - Für Zylinderschrauben mit Innensechskant - Schrägverzahnung mit Führung - Zylinderschaft
 FRESAS ALOJAMIENTO TORNILLOS - Para tornillos cabeza cilíndrica con hexágono encajado - Labios helicoidales con guía - Mango cilíndrico
 FRESAS PARA PARAFUSOS DE CABEÇA CILÍNDRICA (TIPO UMBRAKO) - Encabadouro cilíndrico
 Зенкер с направляющей. Цилиндрический хвостовик

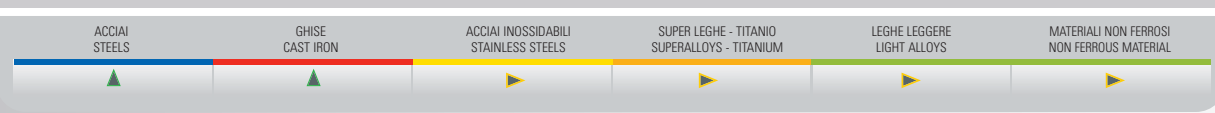


NORM.

UNI 6841
DIN ISO

CODE	d vite	D vite	h vite	d mm h8	d1 mm h8	l1 mm	l2 mm	d2 mm h6	Z	Co 5% €
S2/01	M3	5.5	3	5.9	3.2	12	70	6	4	27,62
S2/02	M4	7	4	7.4	4.3	12	70	8	4	27,62
S2/03	M5	9	5	9.4	5.3	14	90	10	4	29,65
S2/04	M6	10	6	10.4	6.4	16	100	10	4	31,61
S2/05	M8	13	8	13.5	8.4	20	115	12	4	39,38
S2/06	M10	16	10	16.5	10.5	25	120	12	4	49,22
S2/07	M12	18	12	19	13	25	120	16	4	61,80
S2/08	M14	22	14	23	15	30	130	16	4	84,35
S2/09	M16	24	16	25	17	35	155	20	4	106,32
S2/10	M18	27	18	28	19	40	160	20	4	133,26
S2/11	M20	30	20	31	21	50	180	20	4	158,10
S2/12	M22	33	22	34	23	50	185	22	4	211,99
S2/13	M24	36	24	37	25	50	200	22	4	234,08

 CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED



FRESE PER SEDI DI VITI

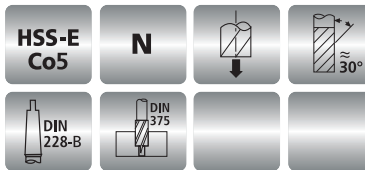
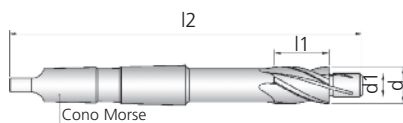
S3

🇮🇹 Per viti a testa cilindrica con esagono incassato - Denti elicoidali con guida - Codolo conico Morse con tenone
🇬🇧 COUNTERBORES WITH SOLID PILOT - For screws with cylindrical head - Helical teeth - Straight shank
🇫🇷 FRAISES À PIVOT FIXE - Pour vis tête cylindrique - Denture hélicoïdale avec guide - Queue au cône Morse avec tenon
🇩🇪 FLACHSENKER - Für Zylinderschrauben mit Innensechskant - Schrägverzahnt mit Führung - Morsekegelschaft mit Austreiblappen
🇪🇸 FRESAS ALQJAMIENTO TORNILLOS - Para tornillos cabeza cilíndrica con hexágono encajado - Labios helicoidales con guía - Mango cónico Morse con tentona
🇵🇹 FRESAS PARA PARAFUSOS DE CABEÇA CILINDRICA (TIPO UMBRAKO) - Encabadouro Morse
🇷🇺 Зенкер с направляющей. Хвостовик конус Морзе

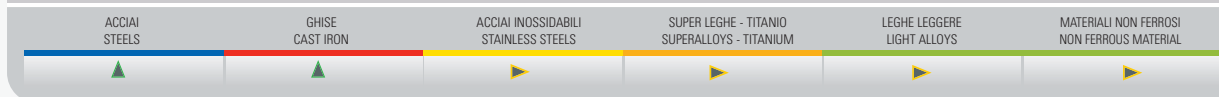
SERIE R-S

NORM.

UNI 6842



CODE	d vite	D vite	h vite	d mm h8	d1 mm h8	l1 mm	l2 mm	CM-MK	Z	Co 5% €
S3/01	M3	5.5	3	5.9	3.2	12	105	1	4	36,53
S3/02	M4	7	4	7.4	4.3	12	105	1	4	36,53
S3/03	M5	9	5	9.4	5.3	14	118	1	4	38,61
S3/04	M6	10	6	10.4	6.4	16	125	1	4	40,39
S3/05	M8	13	8	13.5	8.4	20	140	1	4	46,01
S3/06	M10	16	10	16.5	10.5	25	160	2	4	55,95
S3/07	M12	18	12	19	13	25	160	2	4	69,42
S3/08	M14	22	14	23	15	30	170	2	4	94,51
S3/09	M16	24	16	25	17	35	180	2	4	118,36
S3/10	M18	27	18	28	19	40	180	2	4	142,18
S3/11	M20	30	20	31	21	50	215	3	4	173,42
S3/12	M22	33	22	34	23	50	220	3	4	245,36
S3/13	M24	36	24	37	25	50	230	3	4	300,50




▲ CONSIGLIATO RECOMMENDED
▶ ACCETTABILE ACCEPTABLE
▼ SCONSIGLIATO NOT RECOMMENDED

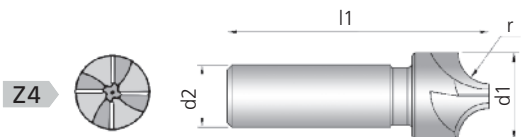


FRESE DI FORMA A QUARTO DI CERCHIO CONCAVO

**SERIE
R-S**

S4

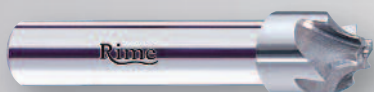
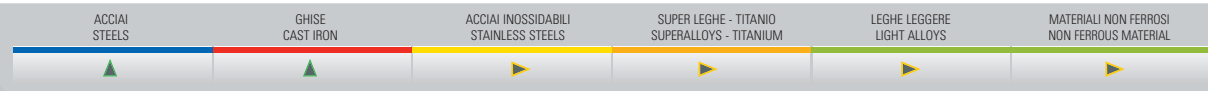

 Denti dritti - Codolo cilindrico
 CORNER ROUNDING END MILLS - Straight toothing - Straight shank
 FRAISES CONCAVES 1/4 DE CERCLE - Denture droite - Queue cylindrique
 VIERTELRUND - PROFILFRÄSER - Geradverzahn - Zylinderschaft
 FRESAS DE FORMAS DE UN CUARTO DE CIRCULO - Labios derechos - Mango cilíndrico
 FRESAS UM QUARTO DE CIRCULO - Quatro navalhas direitas - Encabadouro cilíndrico
 Фреза для снятия радиусных фасок. Цилиндрический хвостовик



NORM.
UNI 8264
DIN 6518A
ISO

Ulteriori raggi
su richiesta
*Other radius on
requirements*

CODE	r mm H11	d1 max mm	l1 mm	d2 mm h6	Z	Co 8% €
S4/01	1	10	60	10	4	30,76
S4/02	1.5	10	60	10	4	30,76
S4/03	2	10	60	10	4	30,76
S4/04	2.5	10	60	10	4	30,76
S4/05	3	12	60	12	4	47,91
S4/05/1	3.5	15	60	12	4	49,93
S4/06	4	15	60	12	4	49,93
S4/06/1	4.5	18	70	12	4	53,33
S4/07	5	18	70	16	4	53,33
S4/07/1	5.5	21	70	16	4	67,29
S4/08	6	21	70	16	4	67,29
S4/08/1	6.5	24	70	16	4	75,87
S4/09	7	24	70	16	4	75,87
S4/09/1	7.5	24	70	16	4	75,87
S4/10	8	24	70	16	4	75,87
S4/11	9	28	85	20	4	86,77
S4/12	10	28	85	20	4	86,77
S4/13	11	35	90	20	4	112,91
S4/14	12	35	100	20	4	112,91
S4/15	12.5	35	100	20	4	125,91
S4/16	13	42	100	25	4	190,51
S4/17	14	42	100	25	4	190,51
S4/18	15	48	105	25	5	241,21
S4/19	16	48	105	25	5	241,21
S4/20	18	52	115	32	5	334,02
S4/21	20	60	115	32	6	445,34



 **CONSIGLIATO**
 RECOMMENDED
 **ACCETTABILE**
 ACCEPTABLE
 **SCONSIGLIATO**
 NOT RECOMMENDED

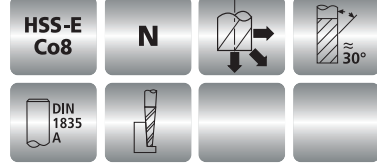
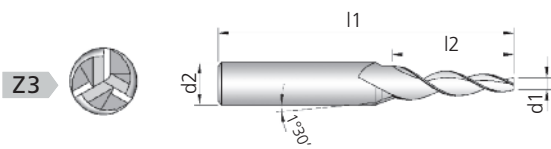
FRESE CONICHE PER STAMPI

SC1

Conicità 1°30' laterali - Tre denti elicoidali - Codolo cilindrico
 TAPER END MILLS - Taper 1°30' - Three helical flutes - Straight shank
 FRAISES CONIQUES - Conicité 1°30' - Denture hélicoïdale trois dents - Queue cylindrique
 KONISCHE FRÄSER - Kegel 1°30' - Dreischneider - Zylinderschaft
 FRESAS CONICAS PARA MOLDES - Cónico 1°30' lateral - Tres labios helicoidales - Mango cilíndrico
 FRESAS CONICAS PARA MOLDES - Cónico 1°30' lateral - Três navalhas helicoidales - Encabadouro cilíndrico
 Фреза 3-зубая коническая для штампов и прессформ. Цилиндрический хвостовик

SERIE R-S

NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
SC1/01	2.5	30	70	6	3	37,98
SC1/02	2.5	40	80	8	3	44,64
SC1/03	3	30	75	8	3	37,98
SC1/04	3	40	85	8	3	47,89
SC1/05	3	50	95	10	3	68,57
SC1/06	3.5	30	75	8	3	37,98
SC1/07	3.5	40	85	8	3	43,02
SC1/08	4.5	30	75	8	3	40,50
SC1/09	4.5	40	85	10	3	46,26

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▼	▼

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED



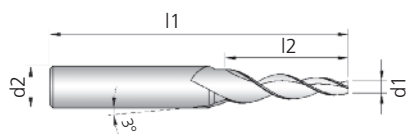
FRESE CONICHE PER STAMPI

**SERIE
R-S**

SC2


 Conicità 3° laterali- Tre denti elicoidali - Codolo cilindrico
 TAPER END MILLS - Taper 3° - Three helical flutes - Straight shank
 FRAISES CONIQUES - Conicité 3° - Denture hélicoïdale trois dents - Queue cylindrique
 KONISCHE FRÄSER - Kegel 3° - Dreischneider - Zylinderschaft
 FRESAS CONICAS PARA MOLDES - Cónico 3° lateral - Tres labios helicoidales - Mango cilíndrico
 FRESAS CONICAS PARA MOLDES - Conico 3° lateral - Três navalhas helicoidales - Encabadoiro cilíndrico
 Фреза 3-зубая коническая для штампов и прессформ. Цилиндрический хвостовик

Z3



HSS-E
Co8

N



DIN
1835
A

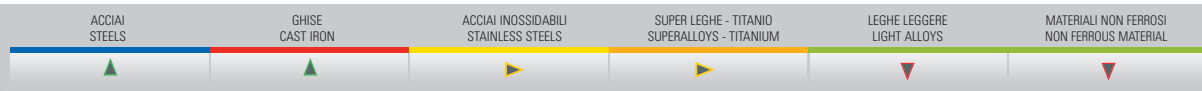


NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
------	---------------	----------	----------	-------------	---	------------

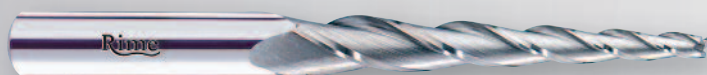
SC2/01	2.5	20	65	6	3	36,99
SC2/02	2.5	25	70	8	3	36,99
SC2/03	2.5	30	75	8	3	41,90
SC2/04	2.5	40	85	8	3	46,64
SC2/05	3	20	65	8	3	36,99
SC2/06	3	25	70	8	3	36,99
SC2/07	3	30	75	8	3	41,90
SC2/08	3	40	85	8	3	46,64
SC2/09	3	50	95	10	3	69,09
SC2/10	3.5	20	65	8	3	36,14
SC2/11	3.5	25	70	8	3	36,14
SC2/12	3.5	30	75	8	3	41,90
SC2/13	3.5	40	85	10	3	50,67
SC2/14	3.5	50	100	10	3	69,09
SC2/15	4	30	75	10	3	43,48
SC2/16	4.5	20	65	8	3	36,99
SC2/17	4.5	25	70	10	3	39,45
SC2/18	4.5	30	75	10	3	43,48
SC2/19	4.5	40	85	10	3	50,67
SC2/20	4.5	70	120	12	3	96,60
SC2/21	4.5	80	140	14	3	115,88
SC2/22	6.5	70	125	14	3	105,22
SC2/23	6.5	100	165	20	3	155,31



CONSIGLIATO
RECOMMENDED








ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED



FRESE CONICHE PER STAMPI

SC3

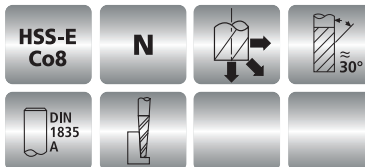
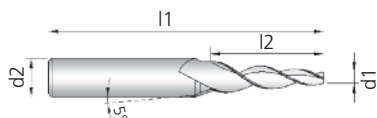
 Conicità 5° laterali - Tre denti elicoidali - Codolo cilindrico
 TAPER END MILIS - Taper 5° - Three helical flutes - Straight shank
 FRAISES CONIQUES - Conicité 5° - Denture hélicoïdale trois dents - Queue cylindrique
 KONISCHE FRÄSER - Kegel 5° - Dreischneider - Zylinderschaft
 FRESAS CONICAS PARA MOLDES - Conico 5° lateral - Tres labios helicoidales - Mango cilíndrico
 FRESAS CONICAS PARA MOLDES - Conico 5° lateral - Três navalhas helicoidales - Encabadouro cilíndrico
 Фреза 3-зубая коническая для штампов и прессформ. Цилиндрический хвостовик

SERIE R-S

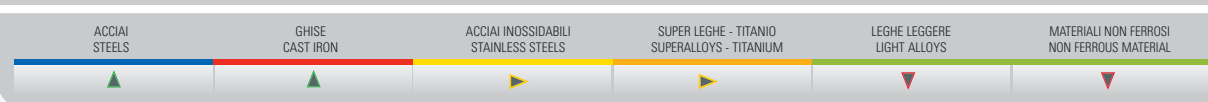
NORM.






Z3



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
SC3/01	2.5	20	65	8	3	36,14
SC3/02	2.5	25	70	8	3	41,90
SC3/03	2.5	30	75	10	3	45,77
SC3/04	2.5	40	85	10	3	53,84
SC3/05	2.5	50	100	12	3	69,98
SC3/06	3	20	65	8	3	37,86
SC3/07	3	25	70	8	3	41,90
SC3/08	3	30	75	10	3	49,82
SC3/09	3	40	85	10	3	61,04
SC3/10	3	50	95	12	3	69,98
SC3/11	3.5	20	65	8	3	37,86
SC3/12	3.5	25	70	8	3	41,90
SC3/13	3.5	30	75	10	3	49,82
SC3/14	3.5	40	90	12	3	61,04
SC3/15	3.5	50	100	14	3	78,03
SC3/16	4	35	85	12	3	58,73
SC3/17	4.5	20	65	10	3	39,45
SC3/18	4.5	25	70	10	3	46,64
SC3/19	4.5	30	80	12	3	53,12
SC3/20	4.5	40	90	12	3	61,04
SC3/21	4.5	50	105	16	3	77,31
SC3/22	4.5	60	115	16	3	98,91
SC3/23	4.5	66	125	16	3	114,14
SC3/24	4.5	85	145	20	3	155,31
SC3/25	5.5	20	65	10	3	39,45
SC3/26	5.5	25	70	12	3	45,77
SC3/27	5.5	30	80	12	3	53,12
SC3/28	5.5	40	90	14	3	75,57
SC3/29	5.5	50	105	16	3	77,31
SC3/30	5.5	60	115	16	3	102,93
SC3/31	6.5	40	90	14	3	75,57
SC3/32	6.5	54	110	16	3	98,17
SC3/33	6.5	60	115	16	3	102,20
SC3/34	6.5	70	125	20	3	122,21
SC3/35	6.5	77	140	20	3	139,06
SC3/36	6.5	77	165	20	3	163,23
SC3/37	6.5	77	215	20	3	183,24



 CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED





Catalogo HSS-E e PM

SERIE AL

**ALESATORI CILINDRICI
A MANO E A MACCHINA**

CYLINDER REAMERS



Rime
UTENSILERIA








SERIE AL

ALESATORI CILINDRICI A MANO E A MACCHINA CYLINDER REAMERS

	COD.	PAG.
	AL0	125
	AL6	126
	AL7	127
	AL8	128
	AL9	129
	AL10	130

ALESATORI CILINDRICI • SERIE NORMALE

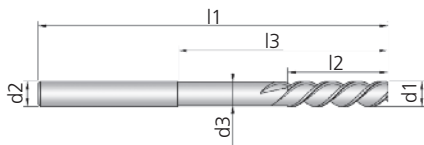
ALO





 Taglio discendente elica 45° sinistra - Codolo cilindrico
 CYLINDER REAMERS - Left-hand 45° helical teeth - Straight shank
 ALÉSOIRS À CYLINDRES - Denture hélicoïdale à 45° à gauche - Queue cylindrique
 MASCHINEN - REIBAHLEN - 45° links schrägverzahnt - Zylinderschaft
 ESCARIADORES CILÍNDRICOS - Labios hélice izquierda 45° - Mango cilíndrico
 ESCARIADORES CILÍNDRICOS - Trés navalhas hélice esquerda 45° - Encabadouro cilíndrico
 Развертка. Левая спираль 45°. Цилиндрический хвостовик. Средняя серия


SERIE AL

NORM.

DIN 212E
ISO 521












SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm H7	l2 mm	l1 mm	l3 mm	d2 mm h6	d3 mm	Z	Co 8% €
ALO/01	2	11	49	24	2	1.9	3	26,70
ALO/02	2.5	14	57	29	2.5	2.4	3	30,32
ALO/03	3	15	61	33	3	2.9	3	33,31
ALO/04	3.5	18	70	40	3.5	3.4	3	33,95
ALO/05	4	19	75	43	4	3.7	3	33,95
ALO/06	4.5	21	80	45	4.5	4.2	3	34,72
ALO/07	5	23	86	51	5	4.7	3	34,72
ALO/08	5.5	26	93	55	5.5	5.2	3	35,36
ALO/09	6	26	93	55	6	5.6	3	34,72
ALO/10	6.5	28	101	61	6.5	6.1	3	40,14
ALO/11	7	31	109	67	7	6.6	3	42,22
ALO/12	8	33	117	72	8	7.6	3	41,56
ALO/13	9	36	125	75	9	8.4	3	44,43
ALO/14	10	38	133	83	10	9.4	4	45,23
ALO/15	11	41	142	90	11	10.3	4	54,14
ALO/16	12	44	151	96	12	11.3	4	53,48
ALO/17	13	44	151	96	13	12.2	4	61,58
ALO/18	14	47	160	100	14	12.8	4	60,13
ALO/19	15	50	162	102	15	13.8	4	63,85
ALO/20	16	52	170	107	16	14.8	4	68,24


ACCAI
STEELS




GHISE
CAST IRON




ACCAI INOSSIDABILI
STAINLESS STEELS




SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM



LEGHE LEGGERE
LIGHT ALLOYS



MATERIALI NON FERROSI
NON FERROUS MATERIAL



Diametri decimali e tolleranze diverse da H7 si forniscono a richiesta
Decimal diameter and different tolerance from H7 upon requirements

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED

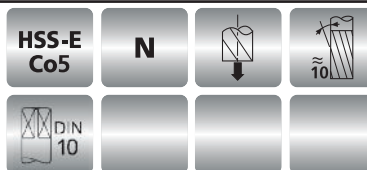
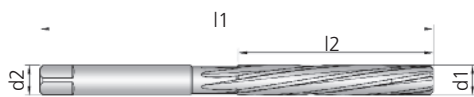


ALESATORI A MANO • SERIE NORMALE

**SERIE
AL**

AL6


 Denti elicoidali sinistri taglio destro - Codolo cilindrico con quadro - Per fori cilindrici
 HAND REAMERS - Left-hand helical teeth, right-hand cutting - Straight shank with square - For parallel holes
 ALÉSQUIRES À MAIN - Denture hélicoïdale à gauche, coupe à droite - Queue cylindrique carrée - Pour trous cylindriques
 HAND - REIBAHLEN - Spiralgenutet, rechtsschneidend, Linksdrall Zylinderschaft mit Vierkantmitnehmer - Für zylindrische Bohrungen
 ESCARIADORES A MANO - Labios helicoidales izquierda, cortante derecho - Mango cilíndrico con cuadro - Para agujeros cilíndricos
 ESCARIADORES A MANO - Navalhas helicoidales esquerda, cortante direito - Encabadouro cilíndrico con cuadro - Para agujeros cilíndricos
 Развертка ручная. Левая спираль, правое вращение. Средняя серия



NORM.

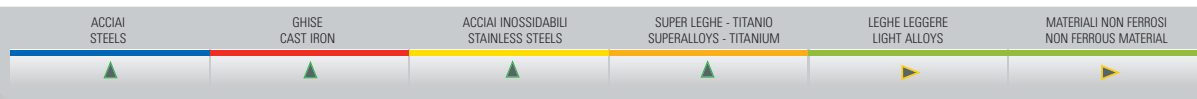
UNI 6852
 DIN 206B
 ISO 236/1

CODE	d1 mm H7	l2 mm	l1 mm	d2 mm h6	Z	Co 5% €
AL6/00	2	25	50	2	4	30,25
AL6/01	3	31	62	3	4	30,25
AL6/02	4	38	76	4	5	29,44
AL6/03	5	44	87	5	5	30,96
AL6/04	6	47	93	6	5	32,48
AL6/05	7	54	107	7	6	36,37
AL6/06	8	58	115	8	6	37,20
AL6/07	9	62	124	9	6	41,79
AL6/08	10	66	133	10	6	44,14
AL6/09	11	71	142	11	8	52,88
AL6/10	12	76	152	12	8	55,99
AL6/11	13	76	152	13	8	70,51
AL6/12	14	81	163	14	8	72,74
AL6/13	15	81	163	15	8	80,50
AL6/14	16	87	175	16	8	85,22
AL6/15	17	87	175	17	8	94,58
AL6/16	18	93	188	18	8	99,39
AL6/17	19	93	188	19	8	112,82
AL6/18	20	100	201	20	8	116,79

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



ALESATORI A MACCHINA • SERIE EXTRA-LUNGA

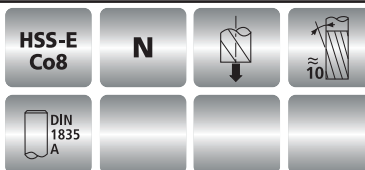
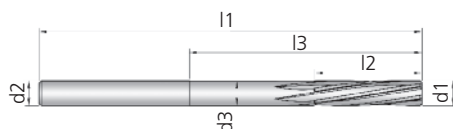
AL7

 Denti elicoidali sinistri taglio destro - Codolo cilindrico
 MACHINE REAMERS, EXTRA-LONG TYPE - Left-hand helical teeth, right-hand cutting - Straight shank
 ALESOIRS POUR MACHINES, TYP EXTRA LONG - Denture hélicoïdale à gauche, coupe à droite - Queue cylindrique
 MASCHINEN - REIBAHLEN, EXTRA LANGE AUSFÜHRUNG - Spiralgenutet, rechtsschneidend, Linksdrall - Zylinderschaft
 ESCARIADORES A MAQUINA - Labios helicoidales izquierda, cortante derecho - Mango cilíndrico
 ESCARIADORES A MANO - Navalhas helicoidais esquerda, cortante direito - Encabadouro cilíndrico
 Развертка машинная. Левая спираль, правое вращение. Цилиндрический хвостовик. Ультралинная серия

SERIE AL

NORM.

UNI
DIN 212D
ISO 521



SHORT
NORMAL
LONG
EXTRA-LONG

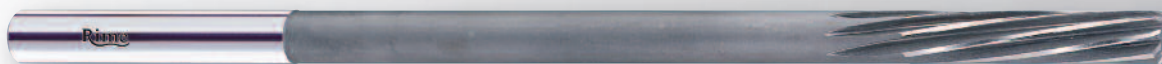
CODE	d1 mm H7	l2 mm	l1 mm	l3 mm	d2 mm h6	d3 mm	Z	Co 8% €
AL7/01	2	18	110	75	2	1.9	4	59,55
AL7/02	2.5	20	120	80	2.5	2.4	4	56,19
AL7/03	3	20	120	80	3	2.9	4	53,59
AL7/04	3.5	30	150	110	3.5	3.4	6	69,79
AL7/05	4	30	150	110	4	3.9	6	63,07
AL7/06	4.5	35	180	135	4.5	4.4	6	71,73
AL7/07	5	35	180	135	5	4.9	6	66,09
AL7/08	5.5	40	200	150	5.5	5.4	6	77,36
AL7/09	6	40	200	150	6	5.9	6	72,60
AL7/10	6.5	45	200	150	6.5	6.4	6	77,36
AL7/11	7	45	200	150	7	6.9	6	84,74
AL7/12	8	45	200	150	8	7.9	6	81,40
AL7/13	9	50	220	160	9	8.9	6	97,42
AL7/14	10	50	220	160	10	9.8	6	91,65
AL7/15	11	55	250	190	11	10.8	6	102,75
AL7/16	12	55	250	190	12	11.8	6	103,69

ACCAI/ STEELS	GHISE/ CAST IRON	ACCAI INOSSIDABILI/ STAINLESS STEELS	SUPER LEGHE - TITANIO/ SUPERALLOYS - TITANIUM	LEGHE LEGGERE/ LIGHT ALLOYS	MATERIALI NON FERROSI/ NON FERROUS MATERIAL
▲	▲	▲	▲	▶	▶

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED

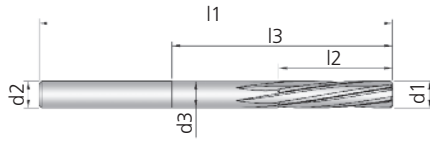






ALESATORI A MACCHINA • SERIE NORMALE


SERIE
AL

AL8


 Denti elicoidali sinistri taglio destro - Codolo cilindrico - Per fori cilindrici
 MACHINE REAMERS - Left-hand helical teeth, right-hand cutting - Straight shank. For parallel holes
 ALÉSROIRS POUR MACHINES - Denture hélicoïdale à gauche, coupe à droite - Queue cylindrique. Pour trous cylindriques
 MASCHINEN - REIBAHLEN - Spiralgenutet, rechtsschneidend, Linksdrall - Zylinderschaft. Für zylindrische Bohrungen
 ESCARIADORES A MÁQUINA - Labios helicoidales izquierda, cortante derecho - Mango cilíndrico - Para agujeros cilíndricos
 ESCARIADORES À MÁQUINA - Quatro navalhas helicoidais esquerda, cortante direito - Encabadouro cilíndrico - Para agujeros cilíndricos
 Развертка машинная. Левая спираль, правое вращение. Цилиндрический хвостовик. Средняя серия





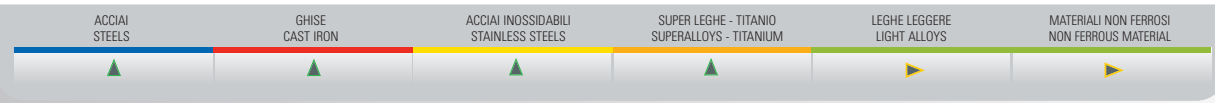
NORM.

UNI 6853
 DIN 212D
 ISO 521

Diametri decimali e tolleranze diverse da H7 si forniscono a richiesta
 Decimal diameter and different tolerance from H7 upon requirements








CODE	d1 mm H7	l2 mm	l1 mm	l3 mm	d2 mm h6	d3 mm	Z	Co 8% €
AL8/01	2	11	49	24	2	1.9	5	22,49
AL8/02	2.5	14	57	29	2.5	2.4	5	22,78
AL8/03	3	15	61	33	3	2.9	5	24,47
AL8/04	3.5	18	70	39	3.5	3.4	5	25,93
AL8/05	4	19	75	43	4	3.7	5	26,75
AL8/06	4.5	21	80	45	4.5	4.2	5	28,99
AL8/07	5	23	86	51	5	4.7	5	29,67
AL8/08	5.5	26	93	55	5.5	5.2	6	30,46
AL8/09	6	26	93	55	6	5.6	6	31,92
AL8/10	6.5	28	101	61	6.5	6.1	6	32,82
AL8/11	7	31	109	67	7	6.6	6	33,61
AL8/12	8	33	117	72	8	7.6	6	35,03
AL8/13	9	36	125	75	9	8.4	6	37,91
AL8/14	10	38	133	83	10	9.4	6	41,56
AL8/15	11	41	142	90	11	10.3	8	45,66
AL8/16	12	44	151	96	12	11.3	8	48,72
AL8/17	13	44	151	96	13	12.2	8	51,08
AL8/18	14	47	160	100	14	12.8	8	56,50
AL8/19	15	50	162	102	15	13.8	8	58,86
AL8/20	16	52	170	107	16	14.8	8	61,92

 CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED



ALESATORI A MACCHINA TIPO MANICOTTO

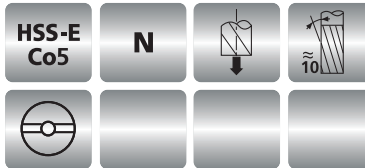
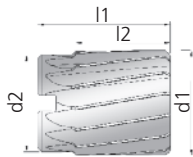
AL9

-  Foro conico 1:30 - Dentatura elicoidale 10°
-  SHELL MACHINE REAMERS - 1:30 taper hole - 10° helical teeth
-  ALÉSOIRS CREUX - Alésage conique 1:30 - Denture hélicoïdale 10°
-  AUFSTECK - REIBAHLEN - Kegelbohrung 1:30 - 10° schrägverzahnt
-  ESCARIADORES A MÁQUINA TIPO MANICOTTO - Agujero cónico 1:30 - Labios helicoidales 10°
-  ESCARIADORES A MAQUINA TIPO MANICOTTO - Agujero conico 1:30 - Navalhas helicoidales 10°
-  Развертка насадная

SERIE AL

NORM.

UNI 6855
DIN 219B
ISO 2402



CODE	d1 mm H7	l2 mm	l1 mm	d2 mm	d foro mm conicità 1:30	Z	Co 5% €
AL9/01	24	32	45	22	13	10	101,13
AL9/02	25	32	45	23	13	10	104,26
AL9/03	26	32	45	24	13	10	105,81
AL9/04	27	32	45	25	13	10	111,34
AL9/05	28	32	45	26	13	10	111,34
AL9/06	29	32	45	27	13	10	116,15
AL9/07	30	32	45	28	13	10	116,15
AL9/08	31	36	50	28	16	10	124,99
AL9/09	32	36	50	29	16	10	124,99
AL9/10	33	36	50	30	16	10	130,42
AL9/11	34	36	50	31	16	10	130,42
AL9/12	35	36	50	32	16	10	132,78
AL9/13	36	40	56	33	19	12	148,58
AL9/14	37	40	56	34	19	12	150,77
AL9/15	38	40	56	35	19	12	150,77
AL9/16	39	40	56	36	19	12	164,71
AL9/17	40	40	56	37	19	12	164,71
AL9/18	42	40	56	39	19	12	173,12
AL9/19	44	45	63	40	22	12	189,27
AL9/20	45	45	63	41	22	12	192,30
AL9/21	46	45	63	42	22	14	197,67
AL9/22	48	45	63	44	22	14	206,23
AL9/23	49	45	63	45	22	14	213,96
AL9/24	50	45	63	46	22	14	213,96
AL9/25	52	50	71	48	27	14	239,94
AL9/26	55	50	71	51	27	14	253,87
AL9/27	58	50	71	54	27	14	269,31
AL9/28	60	50	71	56	27	16	281,00

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼

▲ CONSIGLIATO
RECOMMENDED

▲ ACCETTABILE
ACCEPTABLE








▼ SCONSIGLIATO
NOT RECOMMENDED

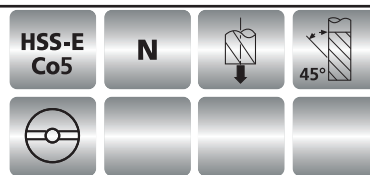
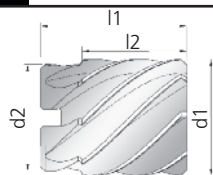


ALESATORI A MACCHINA TIPO MANICOTTO

**SERIE
AL**

AL10

-  Foro conico 1:30 - Dentatura elicoidale discendente 45°
-  SHELL MACHINE REAMERS - 1:30 taper hole - 45° helical teeth
-  ALÉSOIRS CREUX - Alésage conique 1:30 - Denture hélicoïdale 45°
-  AUFSTECK - REIBAHLEN - Kegelbohrung 1:30 - 45° schrägverzahnt
-  ESCARIADORES A MÁQUINA TIPO MANICOTTO - Agujero conico 1:30 - Labios 45°
-  ESCARIADORES A MAQUINA TIPO MANICOTTO - Agujero conico 1:30 - Labios 45°
-  Развертка насадная с углом винтовой канавки 45°



NORM.	
UNI	6855
DIN	219
ISO	2402

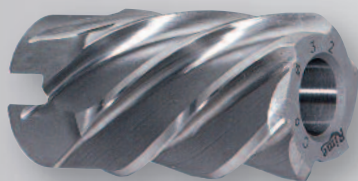
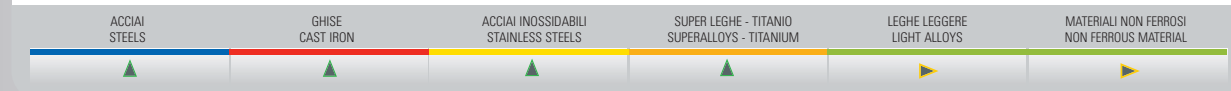
Diametri decimali e tolleranze diverse da H7 si forniscono a richiesta
Decimal diameter and different tolerance from H7 upon requirements

 CONSIGLIATO
RECOMMENDED

 ACCETTABILE
ACCEPTABLE

 SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm H7	l2 mm	l1 mm	d2 mm	d foro mm conicità 1:30	Z	Co 5% €
AL10/01	24	32	45	22	13	5	101,13
AL10/02	25	32	45	23	13	5	103,56
AL10/03	26	32	45	24	13	5	105,81
AL10/04	27	32	45	25	13	5	111,34
AL10/05	28	32	45	26	13	5	113,74
AL10/06	29	32	45	27	13	6	117,01
AL10/07	30	32	45	28	13	6	117,01
AL10/08	31	36	50	28	16	6	117,19
AL10/09	32	36	50	29	16	6	117,19
AL10/10	33	36	50	30	16	7	124,99
AL10/11	34	36	50	31	16	7	124,99
AL10/12	35	36	50	32	16	7	126,51
AL10/13	36	40	56	33	19	8	144,70
AL10/14	37	40	56	34	19	8	148,58
AL10/15	38	40	56	35	19	8	148,58
AL10/16	39	40	56	36	19	8	160,85
AL10/17	40	40	56	37	19	8	160,85
AL10/18	42	40	56	39	19	8	167,75
AL10/19	44	45	63	40	22	8	180,86
AL10/20	45	45	63	41	22	8	190,09
AL10/21	46	45	63	42	22	8	194,66
AL10/22	48	45	63	44	22	8	202,37
AL10/23	49	45	63	45	22	8	210,09
AL10/24	50	45	63	46	22	8	210,09
AL10/25	52	50	71	48	27	8	235,21
AL10/26	55	50	71	51	27	8	259,29
AL10/27	58	50	71	54	27	10	270,15
AL10/28	60	50	71	56	27	10	282,53





Catalogo HSS-E e PM

SERIE L

**FRESE PER ALLUMINIO E
LEGHE LEGGERE**














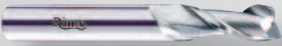



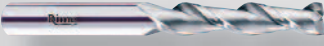















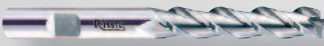


**END MILLS FOR
ALUMINIUM AND
LIGHT ALLOYS**

Rime
UTENSILERIA

INDEX








SERIE L

FRESE PER ALLUMINIO E LEGHE LEGGERE END MILLS FOR ALUMINIUM AND LIGHT ALLOYS

	COD.	PAG.		COD.	PAG.		
		L1	133			L10	142
		L2	134			L12	143
		L3	135			L13	144
		L4	136			L14	145
		L5	137			L15	146
		L6	138			L17	147
		L7	139			L18	148
		L8	140			L19	148
		L9	141			L20	149

FRESE A DUE DENTI • SERIE NORMALE

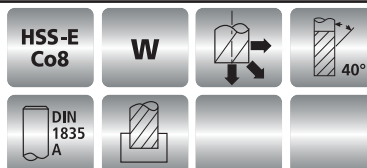
L1

 Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Codolo cilindrico
 TWO-FLUTES END MILLS - One end tooth cutting up to the centre - To machine aluminium, light alloys - Straight shank
 FRAISES À CYLINDRES DEUX DENTS - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique
 SCHAFTFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Zylinderschaft
 FRESAS CILINDRICAS DOS LABIOS - Un labio que cortan hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cilíndrico
 FRESAS CILINDRICAS DUAS NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro cilíndrico
 Фреза 2-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Режущий торец. Цилиндрический хвостовик. Средняя серия

SERIE
L

NORM.

UNI 8244-8245
DIN 844A
ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
L1/01	2	7	51	6	2	17,14
L1/01/1	2.5	8	52	6	2	16,04
L1/02	3	8	52	6	2	13,37
L1/03	4	11	55	6	2	12,74
L1/04	5	13	57	6	2	12,74
L1/05	6	13	57	6	2	12,00
L1/06	7	16	66	10	2	19,35
L1/07	8	19	69	10	2	18,58
L1/08	9	19	69	10	2	20,11
L1/09	10	22	72	10	2	18,58
L1/10	11	22	79	12	2	27,08
L1/11	12	26	83	12	2	24,76
L1/12	13	26	83	12	2	33,19
L1/13	14	26	83	12	2	27,48
L1/14	15	32	92	16	2	34,09
L1/15	16	32	92	16	2	33,19
L1/16	18	32	92	16	2	39,14
L1/17	20	38	104	20	2	49,35

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▶	▶	▲	▲


▲ CONSIGLIATO RECOMMENDED
▶ ACCETTABILE ACCEPTABLE
▼ SCONSIGLIATO NOT RECOMMENDED



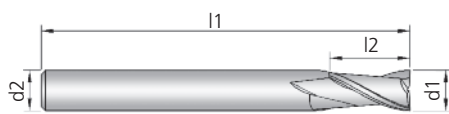
FRESE A DUE DENTI • SERIE LUNGA





SERIE
L

L2


 Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Codolo cilindrico
 TWO-FLUTES END MILLS - One end tooth cutting up to the centre - To machine aluminium, light alloys - Straight shank
 FRAISES À CYLINDRES DEUX DENTS - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique
 SCHAFTFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Zylinderschaft
 FRESAS CILINDRICAS DOS LABIOS - Un labio que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cilíndrico
 FRESAS CILINDRICAS DUAS NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro cilíndrico
 Фреза 2-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Режущий торец. Цилиндрический хвостовик. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



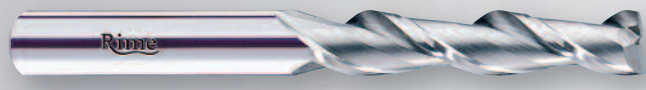
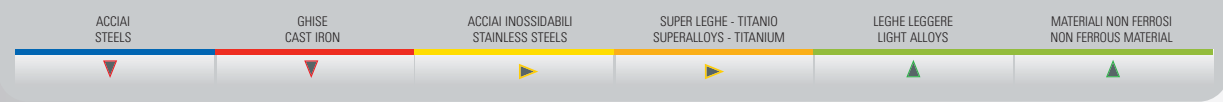
HSS-E Co8
W

 40°



NORM.
UNI 8244-8245
DIN 844A
ISO 1641/1

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03








CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
L2/01	3	12	56	6	2	18,37
L2/02	4	19	63	6	2	16,86
L2/03	5	24	68	6	2	16,24
L2/04	6	24	68	6	2	15,49
L2/05	7	30	80	10	2	28,77
L2/06	8	38	88	10	2	27,23
L2/07	9	38	88	10	2	27,87
L2/08	10	45	95	10	2	25,83
L2/09	11	45	102	12	2	34,98
L2/10	12	53	110	12	2	32,92
L2/11	13	53	110	12	2	39,14
L2/12	14	53	110	12	2	36,94
L2/13	15	63	123	16	2	47,05
L2/14	16	63	123	16	2	45,63
L2/15	18	63	123	16	2	54,95
L2/16	20	75	141	20	2	64,80

 CONSIGLIATO
RECOMMENDED
 ACCETTABILE
ACCEPTABLE
 SCONSIGLIATO
NOT RECOMMENDED



FRESE A DUE DENTI • SERIE NORMALE

L3

 Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Codolo cilindrico
 TWO-FLUTES END MILLS - One end tooth cutting up to the centre - To machine aluminium, light alloys - Straight shank
 FRAISES À CYLINDRES DEUX DENTS - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique
 SCHAFTFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Zylinderschaft
 FRESAS CILINDRICAS DOS LABIOS - Un labio que cortan hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cilíndrico
 FRESAS CILINDRICAS DUAS NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro cilíndrico
 Фреза 2-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Режущий торец. Цилиндрический хвостовик. Средняя серия

SERIE
L

NORM.

UNI 8244
DIN 844A
ISO 1641/1



EMP6
(PM)

W



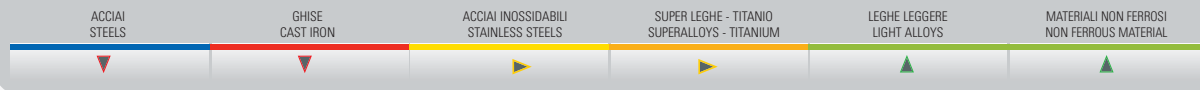
DIN
1835
A



SHORT
NORMAL
LONG
EXTRA-LONG

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L3/04	5	13	57	6	2	15,62
L3/05	6	13	57	6	2	14,87
L3/06	7	16	66	10	2	24,81
L3/07	8	19	69	10	2	23,41
L3/08	9	19	69	10	2	29,65
L3/09	10	22	72	10	2	26,22
L3/10	11	22	79	12	2	33,69
L3/11	12	26	83	12	2	31,63
L3/12	13	26	83	12	2	40,04
L3/13	14	26	83	12	2	35,90
L3/14	15	32	92	16	2	44,98
L3/15	16	32	92	16	2	43,56
L3/16	18	32	92	16	2	53,39
L3/17	20	38	104	20	2	67,95

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03



▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE

▼ SCONSIGLIATO
NOT RECOMMENDED



FRESE A DUE DENTI • SERIE NORMALE

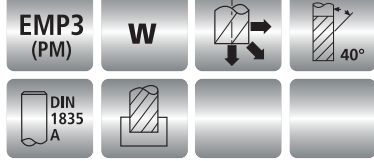
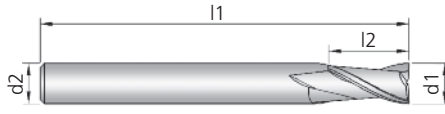
SERIE
L

L4

Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Codolo cilindrico
 TWO-FLUTES END MILLS - One end tooth cutting up to the centre - To machine aluminium, light alloys - Straight shank
 FRAISES À CYLINDRES DEUX DENTS - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique
 SCHAFTFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Zylinderschaft
 FRESAS CILINDRICAS DOS LABIOS - Un labio que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cilíndrico
 FRESAS CILINDRICAS DUAS NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro cilíndrico
 Фреза 2-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Режущий торец. Цилиндрический хвостовик. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG

Z2



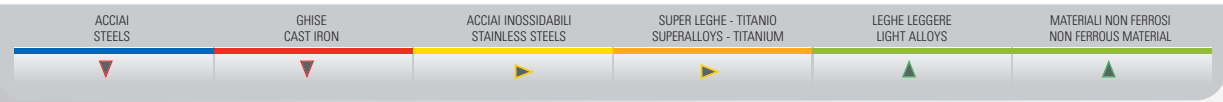
NORM.

UNI 8244
DIN 844A
ISO 1641/I

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03


▲
CONSIGLIATO
RECOMMENDED
▶
ACCETTABILE
ACCEPTABLE
▼
SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
L4/01	2	7	51	6	2	18,22
L4/02	3	8	52	6	2	14,74
L4/03	4	11	55	6	2	13,88
L4/04	5	13	57	6	2	13,88
L4/05	6	13	57	6	2	13,25
L4/06	7	16	66	10	2	22,01
L4/07	8	19	69	10	2	20,61
L4/08	9	19	69	10	2	22,01
L4/09	10	22	72	10	2	22,01
L4/10	11	22	79	12	2	29,03
L4/11	12	26	83	12	2	27,48
L4/12	13	26	83	12	2	35,81
L4/13	14	26	83	12	2	30,84
L4/14	15	32	92	16	2	37,32
L4/15	16	32	92	16	2	36,67
L4/16	18	32	92	16	2	42,91
L4/17	20	38	104	20	2	54,76



FRESE A DUE DENTI • SERIE LUNGA

L5


 Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Codolo cilindrico
 TWO-FLUTES END MILLS - One end tooth cutting up to the centre - To machine aluminium, light alloys - Straight shank
 FRAISES À CYLINDRES DEUX DENTS - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique
 SCHAFTFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Zylinderschaft
 FRESAS CILINDRICAS DOS LABIOS - Un labio que cortan hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cilíndrico
 FRESAS CILINDRICAS DUAS NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro cilíndrico
 Фреза 2-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Режущий торец. Цилиндрический хвостовик. Удлиненная серия

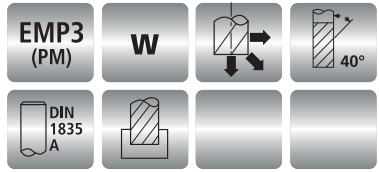
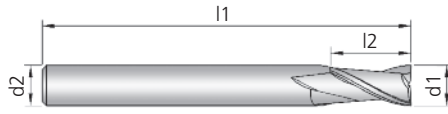
SERIE

L

NORM.

UNI 8244-8245
 DIN 844A
 ISO 1641/1

Z2



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
L5/01	3	12	56	6	2	20,24
L5/02	4	19	63	6	2	18,74
L5/03	5	24	68	6	2	18,11
L5/04	6	24	68	6	2	17,49
L5/05	7	30	80	10	2	31,94
L5/06	8	38	88	10	2	30,54
L5/07	9	38	88	10	2	31,32
L5/08	10	45	95	10	2	28,50
L5/09	11	45	102	12	2	38,37
L5/10	12	53	110	12	2	35,51
L5/11	13	53	110	12	2	43,42
L5/12	14	53	110	12	2	40,82
L5/13	15	63	123	16	2	52,36
L5/14	16	63	123	16	2	50,28
L5/15	18	63	123	16	2	60,13
L5/16	20	75	141	20	2	72,31

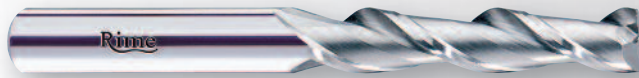
Toll. reale sul Ø
 Real Tol. on Ø
 +0 -0,03

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▼	▼	▶	▶	▲	▲

▲
 CONSIGLIATO
 RECOMMENDED

▶
 ACCETTABILE
 ACCEPTABLE

▼
 SCONSIGLIATO
 NOT RECOMMENDED



FRESE A DUE DENTI A TESTA SEMISFERICA • SERIE NORMALE

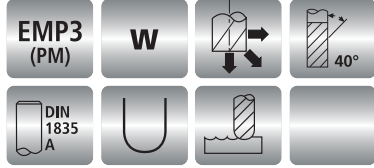
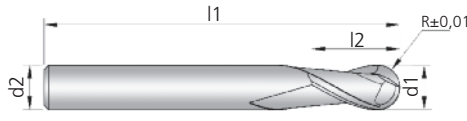
SERIE
L

L6

Due denti frontali taglienti fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Codolo cilindrico
 BALL-NOSED TWO-FLUTES END MILLS - Two end teeth cutting up to the centre - To machine aluminium, light alloys - Straight shank
 FRAISES À CYLINDRES DEUX DENTS À BOUT HÉMISPHERIQUE - Deux dents bout coupantes jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique
 HALBRUNDKOPFFRÄSER, ZWEISCHNEIDER - Zwei Schneiden mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Zylinderschaft
 FRESAS CILINDRICAS DOS LABIOS CABEZA SEMIESFÉRICA - Dos labios que cortan hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cilíndrico
 FRESAS CILINDRICAS BOLEADA DUAS NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro cilíndrico
 Фреза 2-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Сферический торец. Цилиндрический хвостовик. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG

Z2



NORM.

ISO 1641/I

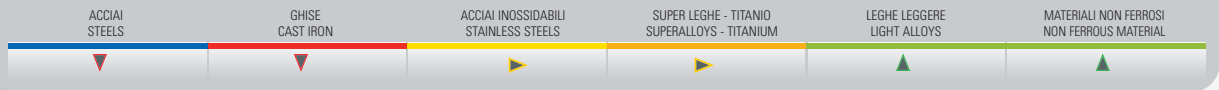
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L6/00/1	3	11	52	6	2	19,09
L6/01	4	11	55	6	2	19,09
L6/02	5	13	57	6	2	19,09
L6/03	6	13	57	6	2	18,45
L6/04	7	16	66	10	2	29,02
L6/05	8	19	69	10	2	28,12
L6/06	9	19	69	10	2	31,89
L6/07	10	22	72	10	2	29,02
L6/08	11	22	79	12	2	39,85
L6/09	12	26	83	12	2	36,15
L6/10	13	26	83	12	2	44,21
L6/11	14	26	83	12	2	40,12
L6/12	15	32	92	16	2	50,29
L6/13	16	32	92	16	2	48,82
L6/14	18	32	92	16	2	58,45
L6/15	20	38	104	20	2	74,92

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03

CONSIGLIATO
RECOMMENDED


ACCETTABILE
ACCEPTABLE

SCONSIGLIATO
NOT RECOMMENDED



FRESE A DUE DENTI A TESTA SEMISFERICA • SERIE LUNGA

L7

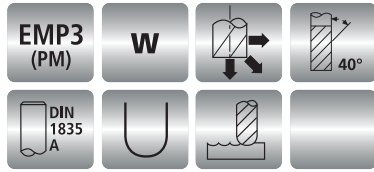
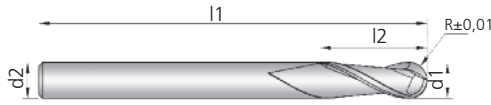

 Due denti frontali taglienti fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Codolo cilindrico
 BALL-NOSED TWO-FLUTES END MILLS - Two end teeth cutting up to the centre - To machine aluminium, light alloys - Straight shank
 FRAISES À CYLINDRES DEUX DENTS À BOUT HÉMISPHERIQUE - Deux dents bout coupantes jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique
 HALBRUNDKOPFFRÄSER, ZWEISCHNEIDER - Zwei Schneiden mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Zylinderschaft
 FRESAS CILINDRICAS DOS LABIOS CABEZA SEMIESFÉRICA - Dos labios que cortan hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cilíndrico
 FRESAS CILINDRICAS BOLEADA DUAS NAVALHAS - Duas navalhas que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro cilíndrico
 Фреза 2-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Сферический торец. Цилиндрический хвостовик. Удлиненная серия

SERIE

L

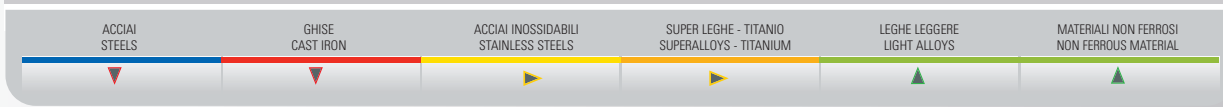
NORM.

ISO 1641/1



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
L7/00	2	11	54	6	2	29,14
L7/00/1	3	12	56	6	2	26,35
L7/01	4	19	63	6	2	26,35
L7/02	5	24	68	6	2	26,98
L7/03	6	24	68	6	2	26,35
L7/04	7	30	80	10	2	44,83
L7/05	8	38	88	10	2	43,40
L7/06	9	38	88	10	2	44,18
L7/07	10	45	95	10	2	39,78
L7/08	11	45	102	12	2	55,28
L7/09	12	53	110	12	2	50,80
L7/10	13	53	110	12	2	62,69
L7/11	14	53	110	12	2	56,88
L7/12	15	63	123	16	2	74,41
L7/13	16	63	123	16	2	71,40
L7/14	18	63	123	16	2	85,51
L7/15	20	75	141	20	2	102,70

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03




▲ CONSIGLIATO
RECOMMENDED
 ► ACCETTABILE
ACCEPTABLE
 ▼ SCONSIGLIATO
NOT RECOMMENDED



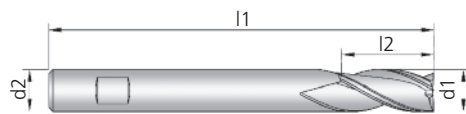
FRESE A TRE DENTI • SERIE NORMALE

SERIE
L

L8


 Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Attacco Weldon
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - To machine aluminium, light alloys - Weldon shank
 FRAISES À CYLINDRES TROIS DENTS - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique Weldon
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Weldon-Spannfläche
 FRESAS CILINDRICAS FRONTALES TRES LABIOS - Un labio que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango Weldon
 FRESAS CILINDRICAS FRONTALES TRES NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro Weldon
 Фреза 3-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Режущий торец. Хвостовик Weldon. Средняя серия

Z3



EMP3
(PM)

W



DIN
1835
B



NORM.



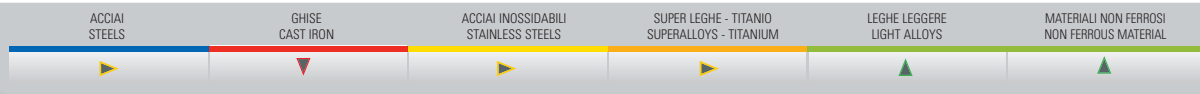
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L8/01	3	14	58	6	3	22,13	29,20
L8/02	4	18	62	6	3	20,94	27,90
L8/03	5	20	64	6	3	19,61	28,49
L8/04	6	22	66	6	3	18,90	27,90
L8/05	7	22	72	10	3	28,76	39,93
L8/06	8	25	75	10	3	28,04	39,33
L8/07	9	25	75	10	3	29,36	40,53
L8/08	10	28	78	10	3	26,72	43,17
L8/09	12	32	89	12	3	31,10	49,13
L8/10	14	32	89	12	3	35,85	50,47
L8/11	16	36	96	16	3	42,71	64,15
L8/12	18	40	100	16	3	51,45	74,00
L8/13	20	45	110	20	3	66,13	96,57
L8/14	22	45	110	20	3	84,73	114,80
L8/15	25	50	125	25	3	112,77	148,00
L8/16	28	56	132	25	3	142,51	243,35
L8/17	30	63	140	25	3	183,10	282,31
L8/18	32	63	143	32	3	199,94	313,22

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE A TRE DENTI • SERIE LUNGA

L9

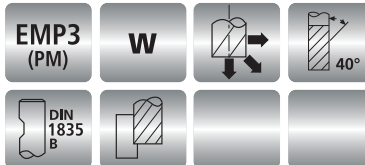
 Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Attacco Weldon
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - To machine aluminium, light alloys - Weldon shank
 FRAISES À CYLINDRES TROIS DENTS - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique Weldon
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Weldon-Spannfläche
 FRESAS CILINDRICAS FRONTALES TRES LABIOS - Un labio que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango Weldon
 FRESAS CILINDRICAS FRONTALES TRÉS NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro Weldon
 Фреза 3-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Режущий торцев. Хвостовик Weldon. Удлиненная серия

SERIE L

NORM.

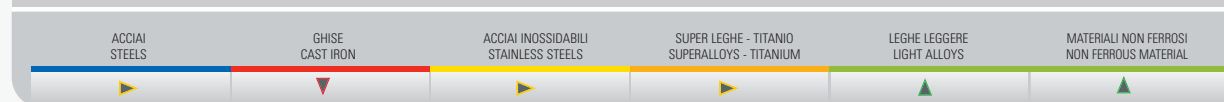


Z3



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
L9/00	2	12	54	6	3	24,52
L9/01	3	18	62	6	3	23,46
L9/02	4	22	65	6	3	22,13
L9/03	5	26	70	6	3	22,13
L9/04	6	30	75	6	3	22,13
L9/05	7	34	84	10	3	33,34
L9/06	8	34	84	10	3	32,02
L9/07	9	40	90	10	3	33,35
L9/08	10	40	90	10	3	32,63
L9/09	12	56	113	12	3	39,85
L9/10	14	63	120	12	3	46,59
L9/11	16	63	123	16	3	56,53
L9/12	18	71	131	16	3	68,97
L9/13	20	71	137	20	3	87,67
L9/14	22	80	146	20	3	111,77
L9/15	25	80	156	25	3	144,97
L9/16	28	90	166	25	3	180,71
L9/17	30	90	166	25	3	194,32
L9/18	32	90	170	32	3	225,36

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03



▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED



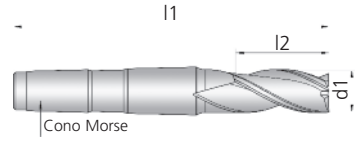
FRESE A TRE DENTI • SERIE NORMALE





SERIE
L





L10


 Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Codolo conico Morse con foro filettato
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - To machine aluminium, light alloys - Morse taper shank
 FRAISES À CYLINDRES TROIS DENTS - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES TRES LABIOS - Un labio que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cónico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTALES TRÉS NAVALHAS - Um naval que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro conico Morse taladro roscado
 Фреза 3-х зубая для работ по алюминию, легким сплавам, хрупким и пластичным материалам. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



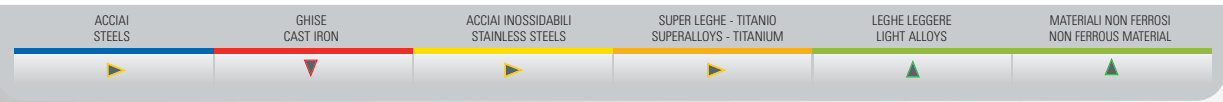
NORM.



Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03


CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP6 €
L10/01	14	32	117	2	3	89,07
L10/02	15	35	120	2	3	91,23
L10/03	16	35	120	2	3	91,23
L10/04	18	40	125	2	3	93,52
L10/05	20	45	147	3	3	136,92
L10/06	22	45	147	3	3	136,14
L10/07	24	50	152	3	3	157,92
L10/08	25	50	152	3	3	157,15
L10/09	26	56	158	3	3	176,08
L10/10	28	56	158	3	3	186,90
L10/11	30	56	165	3	3	224,56
L10/12	32	63	188	4	3	250,01
L10/13	34	70	195	4	3	302,05
L10/14	35	70	195	4	3	305,63
L10/15	36	70	195	4	3	309,44
L10/16	38	70	195	4	3	420,13
L10/17	40	70	195	4	3	432,48

 CONSIGLIATO
RECOMMENDED
 ACCETTABILE
ACCEPTABLE
 SCONSIGLIATO
NOT RECOMMENDED



FRESE PER SGROSSATURA • SERIE NORMALE

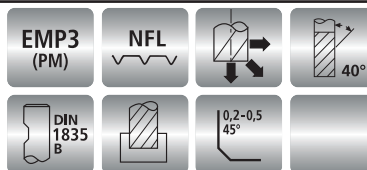
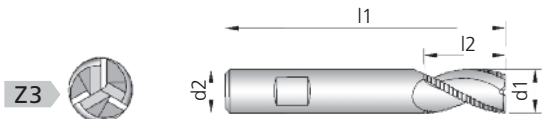
L12


 Denti elicoidali con taglio interrotto - Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with chip-breaker - One end tooth cutting up to the centre - To machine aluminium, light alloys - Weldon shank
 FRAISES À CYLINDRES À DÉGROSSIR - Denture hélicoïdale avec brise-copeaux - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique Weldon
 SCHAFTFRÄSER DREISCHNEIDER - Schrägschneiden mit Spanbrecher - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta - Un labio que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cónico Weldon
 FRESAS CILINDRICAS FRONTALES PARA DESTASTE - Navalhas helicoidal com quebra aparta - Um navalha que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadoouro Weldon
 Фреза 3-х зубая для черновой обработки алюминия, легких сплавов, хрупких и пластичных материалов. Режущий торцев. Хвостовик Weldon. Средняя серия

SERIE
L

NORM.

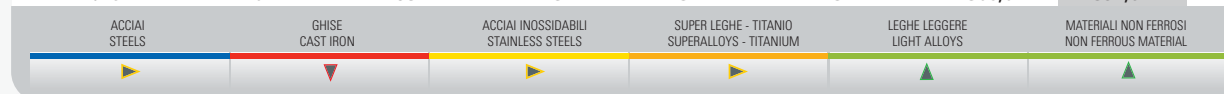
UNI 8248
DIN 844B
ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	ALU SUPREME €
L12/01	6	13	57	6	3	25,40	32,32
L12/02	7	16	66	10	3	37,79	48,88
L12/03	8	19	69	10	3	36,58	47,57
L12/04	9	19	69	10	3	37,18	48,15
L12/05	10	22	72	10	3	37,79	48,88
L12/06	12	26	83	12	3	46,70	59,59
L12/07	14	26	83	12	3	50,83	64,89
L12/08	15	32	92	16	3	60,31	81,25
L12/09	16	32	92	16	3	59,58	80,52
L12/10	18	32	92	16	3	71,02	93,39
L12/11	20	38	104	20	3	81,51	103,57
L12/12	22	38	104	20	3	105,01	135,82
L12/13	25	45	121	25	3	143,62	179,74
L12/14	28	45	121	25	3	168,56	203,88
L12/15	30	45	121	25	3	193,20	227,47
L12/16	32	53	133	32	3	218,83	255,20
L12/17	36	53	133	32	3	258,08	361,70
L12/18	40	53	143	32	3	308,07	394,81

Toll. reale sul Ø
Real Tol. on Ø
±0,05



▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED



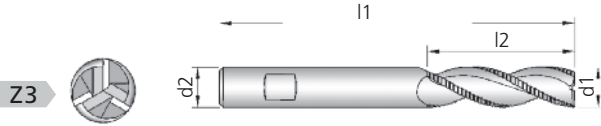
FRESE PER SGROSSATURA • SERIE LUNGA





SERIE
L



L13


 Denti elicoidali con taglio interrotto - Un dente frontale tagliente fino al centro - Lavorazione di alluminio, leghe leggere, materiali teneri e malleabili - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with chip-breaker - One end tooth cutting up to the centre - To machine aluminium, light alloys - Weldon shank
 FRAISES À CYLINDRES À DÉGROSSIR - Denture hélicoïdale avec brise-copeaux - Une dent bout coupante jusqu'au centre - Pour l'usinage de aluminium, alliages légers - Queue cylindrique Weldon
 SCHAFTFRÄSER DREISCHNEIDER - Schrägschneiden mit Spanbrecher - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranque de viruta - Un labio que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cónico Weldon
 FRESAS CILINDRICAS FRONTALES PARA DESTASTE - Navalhas helicoidal com quebra apara - Um navalha que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadoiro Weldon
 Фреза 3-х зубая для черновой обработки алюминия, легких сплавов, хрупких и пластичных материалов. Режущий торцев. Хвостовик Weldon. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



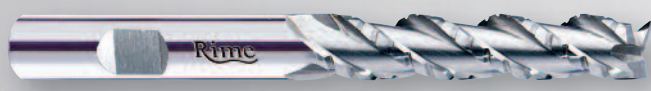
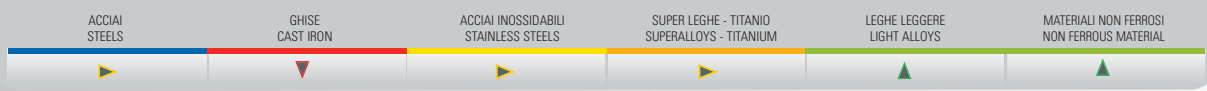
NORM.

UNI 8249
 DIN 844B
 ISO 1641/I

Toll. reale sul Ø
Real Tol. on Ø
±0,05


 CONSIGLIATO
RECOMMENDED
 ACCETTABILE
ACCEPTABLE
 SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	ALU SUPREME €
L13/01	6	24	68	6	3	32,63	41,25
L13/02	8	38	88	10	3	50,30	65,92
L13/03	10	45	95	10	3	46,33	62,12
L13/04	12	53	110	12	3	57,58	74,97
L13/05	14	53	110	12	3	65,07	83,63
L13/06	15	63	123	16	3	77,18	101,30
L13/07	16	63	123	16	3	78,55	102,68
L13/08	18	63	123	16	3	90,72	120,50
L13/09	20	75	141	20	3	104,71	133,98
L13/10	22	75	141	20	3	133,06	186,09
L13/11	25	90	166	25	3	186,68	270,78
L13/12	28	90	166	25	3	215,87	312,04
L13/13	30	90	166	25	3	235,69	331,62
L13/14	32	106	186	32	3	294,06	401,15
L13/15	36	106	186	32	3	338,66	450,54
L13/16	40	125	205	32	3	482,29	603,23



FRESE PER SGROSSATURA • SERIE NORMALE

L14

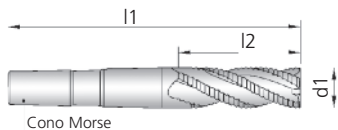

 Denti elicoidali con rompitriciolo tondo a passo grosso - Un dente frontale tagliente fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with big rounded chip-breaker - One end tooth cutting up to the centre - Morse taper shank
 FRAISES À CYLINDRES À DÉGROSSIR - Denture hélicoïdale avec brise-copeaux à pas grosse - Une dent bout coupante jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER DREISCHNEIDER - Schrägschneiden mit Spanbrecher - Eine Schneide mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta redondo paso grande - Un labio que corta hasta el centro - mango cónico Morse taladro roscado
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Navalhas helicoidais com quebra- apara paso grande - Um navalha que corta hasta el centro - Encabadouro conico Morse taladro roscado
 Фреза 3-х зубая для черновой обработки алюминия, легких сплавов, хрупких и пластичных материалов. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

SERIE L

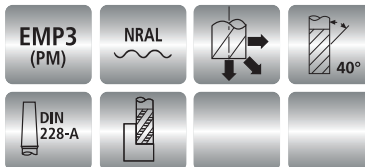
NORM.

DIN 845B
ISO 1641/II

Z3



Cono Morse



CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €	ALU SUPREME €
L14/03	20	38	140	3	3	114,00	180,59
L14/04	22	38	140	3	3	121,87	188,12
L14/06	25	45	147	3	3	147,92	223,99
L14/08	28	45	147	3	3	165,28	252,02
L14/09	30	45	147	3	3	183,72	286,32
L14/10	32	53	178	4	4	239,69	393,96

Toll. reale sul Ø
Real Tol. on Ø
±0,05

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▼	▼	▼	▲	▲

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED

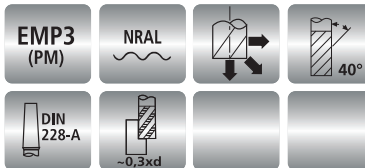
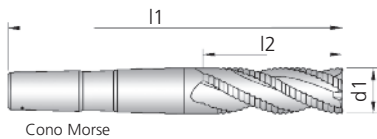


FRESE PER SGROSSATURA • SERIE LUNGA

SERIE
L

L15


 Denti elicoidali con rompitrucolo tondo a passo grosso - Un dente frontale tagliente fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with big rounded chip-breaker - One end tooth cutting up to the centre - Morse taper shank
 FRAISES À CYLINDRES À DÉGROSSIR - Denture hélicoïdale avec brise-copeaux à pas grosse - Une dent bout coupante jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER DREISCHNEIDER - Schrägschneiden mit holer Spannbrecher - Eine Schneide mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta redondo paso grande - Un labio que corta hasta el centro - mango cónico Morse taladro roscado
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Navalhas helicoidais com quebra-apara passo grande - Um navalha que corta hasta el centro - Encabadouro conico Morse taladro roscado
 Фреза 3-х зубая для черновой обработки алюминия, легких сплавов, хрупких и пластичных материалов. Режущий торец. Хвостовик конус Морзе с резьбой. Удлиненная серия



NORM.

DIN 845B
ISO 1641/II

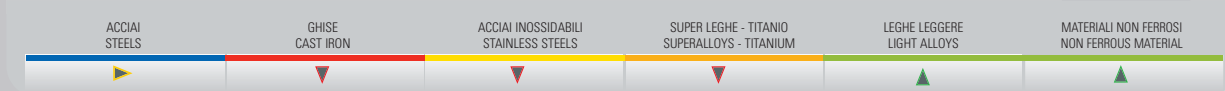
Toll. reale sul Ø
Real Tol. on Ø
±0,05

 CONSIGLIATO
RECOMMENDED

 ACCETTABILE
ACCEPTABLE








 SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €	ALU SUPREME €
L15/03	20	75	177	3	3	126,24	226,71
L15/04	22	75	177	3	3	160,15	257,68
L15/06	25	90	192	3	3	187,57	283,98
L15/08	28	90	192	3	3	224,09	320,78
L15/09	30	90	192	3	3	271,78	424,60
L15/10	32	95	220	4	3	292,38	448,49



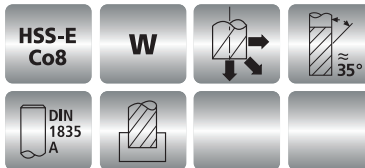
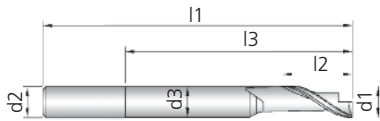
FRESE MONOTAGLIANTE PER LEGHE LEGGERE

L17

 Codolo cilindrico
 SINGLE-FLUTES END MILLS TO MACHINE LIGHT ALLOYS - Straight shank
 FRAISES À UNE TAILLE POUR L'USINAGE D'ALIAGES LÉGERS - Queue cylindrique
 EINSCHNEIDEFRÄSER ZUR BEARBEITUNG VON LEICHTMETALLE - Zylinderschaft
 FRESAS MONO CORTANTE PARA LIGAS LIGERAS - Mango cilíndrico
 FRESAS MONO CORTANTES PARA LIGAS LIGERAS - Encabadouro cilíndrico
 Фреза однозубая для обработки легких сплавов. Цилиндрический хвостовик

SERIE
L

NORM.



CODE	d1 mm js14	l1 mm	l2 mm	l3 mm	d2 mm h6	d3 mm	Co 8 €	ALU SUPREME €
L17/01	8	100	15	80	8	7.9	22,12	39,22
L17/02	8	120	15	100	8	7.9	23,39	41,83
L17/03	10	100	15	75	8	9.0	25,57	42,46
L17/04	10	100	15	75	10	9.9	27,73	44,40

Ulteriori diametri
su richiesta
*Other diameters
on requirements*



▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE

▼ SCONSIGLIATO
NOT RECOMMENDED

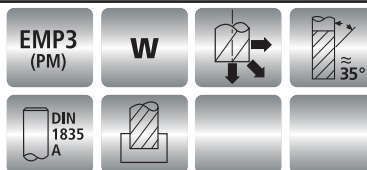
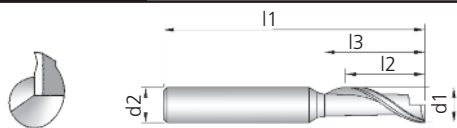


FRESE MONOTAGLIANTE PER LEGHE LEGGERE

SERIE
L

L18

Codolo cilindrico
 SINGLE-FLUTES END MILLS TO MACHINE LIGHT ALLOYS - Straight shank
 FRAISES À UNE TAILLE POUR L'USINAGE D'ALIAGES LÉGERS - Queue cylindrique
 EINSCHNEIDFRÄSER ZUR BEARBEITUNG VON LEICHTMETALLE - Zylinderschaft
 FRESAS MONO CORTANTE PARA LIGAS LIGERAS - Mango cilíndrico
 FRESAS MONO CORTANTES PARA LIGAS LIGEIRAS - Encabadouro cilíndrico
 Фреза однозубая для обработки легких сплавов. Цилиндрический хвостовик



NORM.



CODE	d1 mm js14	l1 mm	l2 mm	d2 mm h6	EMP3 €	ALU SUPREME €
L18/01	4	55	11	6	25,16	32,01
L18/02	5	60	13	6	23,24	30,11
L18/03	6	57	13	6	23,24	30,11
L18/04	7	65	16	10	30,47	41,69
L18/05	8	70	19	10	30,47	41,69
L18/06	10	75	22	10	30,47	41,69
L18/07	12	80	25	12	40,74	54,36

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED

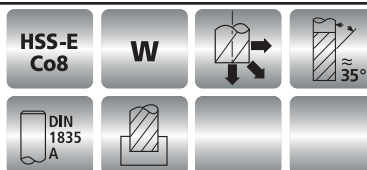
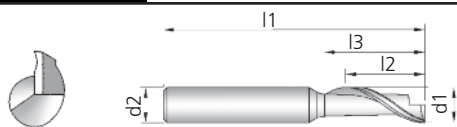


FRESE MONOTAGLIANTE PER LEGHE LEGGERE

SERIE
L

L19

Codolo cilindrico
 SINGLE-FLUTES END MILLS TO MACHINE LIGHT ALLOYS - Straight shank
 FRAISES À UNE TAILLE POUR L'USINAGE D'ALIAGES LÉGERS - Queue cylindrique
 EINSCHNEIDFRÄSER ZUR BEARBEITUNG VON LEICHTMETALLE - Zylinderschaft
 FRESAS MONO CORTANTE PARA LIGAS LIGERAS - Mango cilíndrico
 FRESAS MONO CORTANTES PARA LIGAS LIGEIRAS - Encabadouro cilíndrico
 Фреза однозубая для обработки легких сплавов. Цилиндрический хвостовик



NORM.

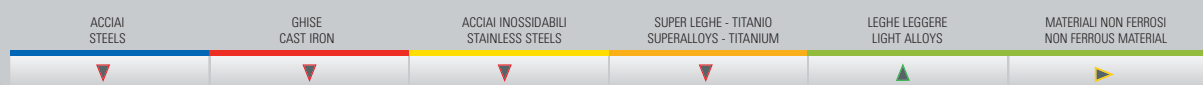


CODE	d1 mm js14	l1 mm	l2 mm	l3 mm	d2 mm h6	Co8% €	ALU SUPREME €
L19/02	3	68	12	20	8	19,26	30,69
L19/03	4	68	12	20	8	18,64	30,08
L19/04	5	62	15	20	6	19,06	30,23
L19/05	5	68	15	23	8	18,64	30,08
L19/06	5	68	15	23	10	25,53	37,52
L19/07	6	68	15	23	8	18,64	30,08
L19/08	8	80	15	60	8	18,64	35,26

▲
CONSIGLIATO
RECOMMENDED


▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



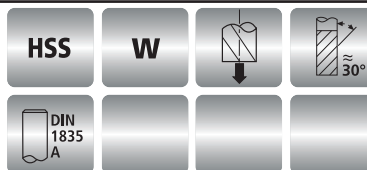
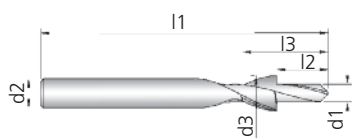
FRESE PER FORARE A DUE DIAMETRI

L20


 Due denti per lavorazione leghe leggere - Codolo cilindrico
 TWO-FLUTES END MILLS BORING TWO DIFFERENT DIAMETRES TO MACHINE LIGHT ALLOYS - Straight shank
 FRAISES À DEUX TAILLES À FORER DEUX DIAMÈTRES POUR L'USINAGE D'ALIAGES LÉGERS - Queue cylindrique
 ZWEISCHNEIDEN-STUFENFRÄSER ZUR BEARBEITUNG VON LEICHTMETALLE - Zylinderschaft
 FRESAS PARA TALADRAR CON DOS DIÁMETROS - Dos labios para mecanizar ligas ligeras - Mango cilíndrico
 FRESAS PARA TALADRAR COM DOIS DIAMETROS - Duas navalhas para mecanizar ligas ligeiras - Encabadouro cilíndrico
 Фреза-сверло ступенчатое для обработки легких сплавов. Цилиндрический хвостовик

SERIE
L

NORM.



CODE	d1 mm js14	d3 mm	l1 mm	l2 mm	l3 mm	d2 mm h6	HSS €
L20/01	6	12	85	18	30	10	50,33
L20/02	6.5	13.5	85	18	30	10	54,49
L20/03	5.5	11.5	100	18	30	10	54,49
L20/04	6	11.5	100	18	30	10	54,49
L20/05	6	12	100	18	30	12	54,49
L20/06	6.5	13.5	100	18	30	10	58,85
L20/07	7	13	100	18	30	12	58,85
L20/08	7	15	100	18	30	12	62,75
L20/09	7	18.5	100	18	30	12	72,73

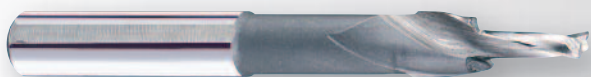
Ulteriori diametri
su richiesta
*Other diameters
on requirements*

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▼	▼	▼	▼	▲	▶







Catalogo HSS-E e PM

SERIE MG

**FRESE IN EMP3
(HSS-CoPM)**

**END MILLS IN EMP3
(HSS-CoPM)**

Rime
UTENSILERIA

INDEX


SERIE MG

FRESE IN EMP3 (HSS-CoPM)
END MILLS IN EMP3 (HSS-CoPM)

	COD.	PAG.		COD.	PAG.
	MG0	154		MG10	163
	MG1	155		MG11	164
	MG3	156		MG12	165
	MG4	157		MG13	166
	MG5	158		MG14	167
	MG6	159		MG15	168
	MG7	160		MG16	169
	MG8	161		MG17	170
	MG9	162		MG18	171

INDEX


SERIE MG

	COD.	PAG.		COD.	PAG.
	MG19	172		MG28	180
	MG20	172		MG29	181
	MG21	173		MG30	182
	MG22	174		MG31	183
	MG23	175		MG32	184
	MG24	176			
	MG25	177			
	MG26	178			
	MG27	179			

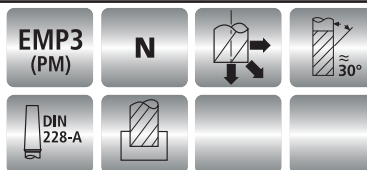
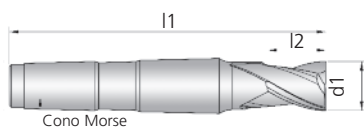
FRESE A DUE DENTI PER CAVE • SERIE NORMALE

**SERIE
MG**

MGO


 Un dente frontale tagliente fino al centro - Codolo conico Morse con foro filettato
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Morse taper shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue au cône Morse à trou fileté
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango cónico Morse con taladro roscado
 FRESAS CILINDRICAS DE DUAS NAVALHAS - Encabadouro cone Morse con taladro roscado
 Фреза 2-х зубая. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI 8260A
DIN 326D
ISO 1641/II

Ulteriori diametri
su richiesta
Other diameters
on requirements

CODE	d1 mm e8	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG0/01	16	19	104	2	2	62,35
MG0/03	18	19	104	2	2	62,35
MG0/05	20	22	124	3	2	87,75
MG0/06	21	22	124	3	2	98,50
MG0/07	22	22	124	3	2	91,60
MG0/08	23	22	124	3	2	100,36
MG0/09	24	26	128	3	2	98,88
MG0/10	25	26	128	3	2	102,64
MG0/11	26	26	128	3	2	111,61
MG0/12	27	26	128	3	2	135,48
MG0/13	28	26	128	3	2	126,22
MG0/14	29	26	128	3	2	154,65
MG0/15	30	32	134	3	2	143,06
MG0/16	32	32	157	4	2	180,02
MG0/17	34	32	157	4	2	200,02
MG0/18	35	32	157	4	2	216,99
MG0/19	36	32	157	4	2	241,68
MG0/20	38	38	163	4	2	276,23
MG0/21	40	38	163	4	2	309,92
MG0/22	45	38	163	4	2	370,09
MG0/23	50	45	170	4	2	441,62

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▶	▶



FRESE A DUE DENTI PER CAVE • SERIE NORMALE

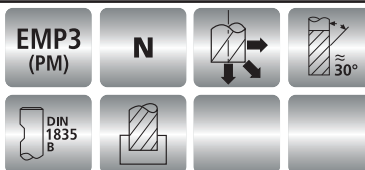
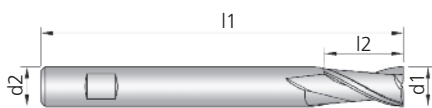
MG1


 Un dente frontale tagliente fino al centro - Attacco Weldon
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusq'au centre - Queue cylindrique Weldon
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS CILINDRICAS DE DUAS NAVALHAS - Encabadouro Weldon
 Фреза 2-х зубая. Режущий торец. Хвостовик Weldon. Средняя серия

SERIE MG

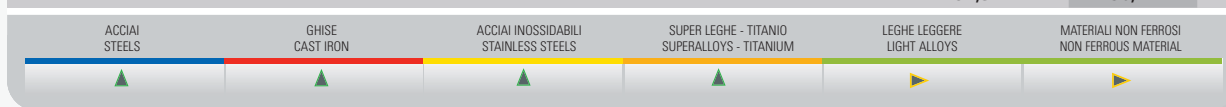
NORM.

UNI 8258
 DIN 327D
 ISO 1641/1



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG1/00	2	4	48	6	2	18,12	25,15
MG1/01	3	5	49	6	2	15,50	22,56
MG1/02	3.5	6	50	6	2	15,50	22,56
MG1/03	4	7	51	6	2	14,91	21,98
MG1/04	4.5	7	51	6	2	15,50	22,56
MG1/05	5	8	52	6	2	14,91	21,98
MG1/06	5.5	8	52	6	2	14,91	21,98
MG1/07	6	8	52	6	2	14,19	21,38
MG1/08	6.5	10	60	10	2	20,74	32,01
MG1/09	7	10	60	10	2	20,74	32,01
MG1/10	7.5	10	60	10	2	21,34	32,72
MG1/11	8	11	61	10	2	19,43	30,83
MG1/12	8.5	11	61	10	2	23,24	34,59
MG1/13	9	11	61	10	2	23,24	34,59
MG1/14	9.5	13	63	10	2	23,97	35,18
MG1/15	10	13	63	10	2	22,65	33,89
MG1/16	10.5	13	70	12	2	28,76	40,34
MG1/17	11	13	70	12	2	27,43	39,15
MG1/18	12	16	73	12	2	28,04	39,74
MG1/19	13	16	73	12	2	30,69	43,59
MG1/20	14	16	73	12	2	32,63	45,44
MG1/21	15	19	79	16	2	36,58	53,04
MG1/22	16	19	79	16	2	38,51	54,93
MG1/23	17	19	79	16	2	42,36	64,42
MG1/24	18	19	79	16	2	46,33	68,22
MG1/25	19	22	88	20	2	56,81	78,30
MG1/26	20	22	88	20	2	55,47	77,00
MG1/27	22	22	88	20	2	84,17	110,68
MG1/28	23	22	98	25	2	107,27	137,21
MG1/29	24	26	102	25	2	107,27	137,21
MG1/30	25	26	102	25	2	107,27	137,21
MG1/31	26	26	102	25	2	117,60	152,87
MG1/32	28	26	102	25	2	124,93	159,85
MG1/33	30	26	102	25	2	137,38	171,71
MG1/34	32	32	112	32	2	154,31	190,71



▲ CONSIGLIATO RECOMMENDED

▲ ACCETTABILE ACCEPTABLE


▲ SCONSIGLIATO NOT RECOMMENDED



FRESE A DUE DENTI PER CAVE • SERIE LUNGA

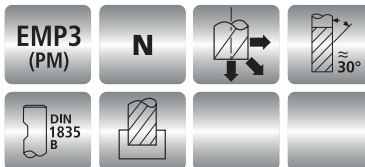
**SERIE
MG**

MG3


 Un dente frontale tagliente fino al centro - Attacco Weldon
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique Weldon
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS DE DOS LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS CILINDRICAS DE DUAS NAVALHAS - Encabadouro Weldon
 Фреза 2-х зубая. Режущий торец. Хвостовик Weldon. Удлиненная серия

SHORT
 NORMAL
 LONG
 EXTRA-LONG

Z2



NORM.

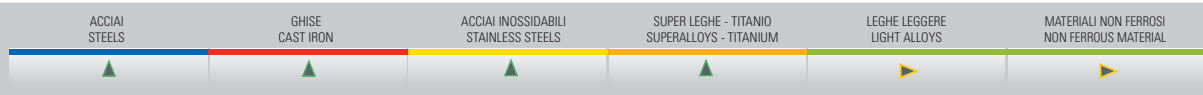


CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG3/01	3	9	58	6	2	20,74	27,63
MG3/02	3.5	13	67	6	2	20,74	29,52
MG3/03	4	13	67	6	2	19,43	28,22
MG3/04	4.5	13	68	6	2	19,43	28,22
MG3/05	5	16	70	6	2	19,43	28,22
MG3/06	5.5	16	76	6	2	19,43	30,11
MG3/07	6	16	76	6	2	19,43	30,11
MG3/08	6.5	16	76	10	2	25,16	30,11
MG3/09	7	19	79	10	2	25,16	41,45
MG3/10	7.5	19	79	10	2	25,16	41,45
MG3/11	8	19	79	10	2	24,56	40,86
MG3/12	8.5	22	83	10	2	29,68	45,81
MG3/13	9	22	83	10	2	29,09	45,22
MG3/14	9.5	22	83	10	2	28,49	44,63
MG3/15	10	22	83	10	2	27,17	43,34
MG3/16	10.5	25	95	12	2	36,93	53,63
MG3/17	11	25	95	12	2	36,93	53,63
MG3/18	12	28	98	12	2	34,87	51,74
MG3/19	13	28	98	12	2	46,16	63,71
MG3/20	14	32	102	12	2	44,09	61,82
MG3/21	15	32	108	16	2	52,72	75,69
MG3/22	16	32	108	16	2	52,72	75,69
MG3/23	17	35	114	16	2	63,90	92,19
MG3/24	18	35	114	16	2	62,55	90,88
MG3/25	19	38	132	20	2	81,03	109,14
MG3/26	20	38	132	20	2	81,03	109,14
MG3/27	21	38	132	20	2	89,85	140,65
MG3/28	22	41	141	25	2	103,06	183,46
MG3/29	23	41	141	25	2	113,74	193,68
MG3/30	24	41	152	25	2	130,90	210,02
MG3/31	25	44	159	25	2	128,80	207,97
MG3/32	26	44	159	25	2	146,99	227,45
MG3/33	28	44	159	25	2	171,92	266,55
MG3/34	30	50	159	25	2	185,22	279,13
MG3/35	32	52	165	32	2	210,92	318,45

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE A TRE DENTI • SERIE NORMALE

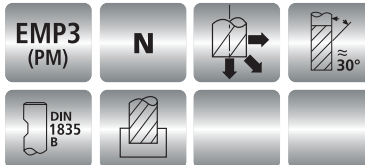
MG4

 Un dente frontale tagliente fino al centro - Attacco Weldon
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES TROIS DENTS - Une dent bout coupante jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES DE TRES LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS DE TRÊS NAVALHAS - Encabadouro Weldon
 Фреза 3-х зубая. Режущий торец. Хвостовик Weldon. Средняя серия

SERIE MG

NORM.

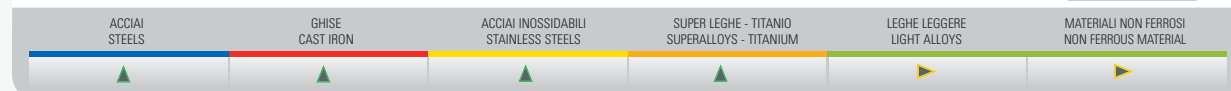
UNI 8248
 DIN 844B
 ISO 1641/I



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG4/01	2	7	51	6	3	21,92	28,92
MG4/02	2,5	8	52	6	3	21,92	28,92
MG4/03	3	8	52	6	3	17,41	24,45
MG4/04	3,5	10	54	6	3	17,41	24,45
MG4/05	4	11	55	6	3	16,81	23,86
MG4/06	4,5	11	55	6	3	17,41	24,45
MG4/07	5	13	57	6	3	16,22	23,28
MG4/08	5,5	13	57	6	3	16,81	23,86
MG4/09	6	13	57	6	3	15,50	22,56
MG4/10	6,5	16	66	10	3	25,16	36,37
MG4/11	7	16	66	10	3	25,87	37,08
MG4/11/1	7,5	19	69	10	3	28,67	39,86
MG4/12	8	19	69	10	3	24,56	35,78
MG4/12/1	8,5	19	69	10	3	27,02	38,22
MG4/13	9	19	69	10	3	27,77	38,96
MG4/13/1	9,5	22	72	10	3	30,32	41,50
MG4/14	10	22	72	10	3	25,87	43,34
MG4/15	11	22	79	12	3	34,87	47,34
MG4/16	12	26	83	12	3	31,59	44,14
MG4/17	13	26	83	12	3	37,54	51,14
MG4/18	14	26	83	12	3	35,59	49,23
MG4/19	15	32	92	16	3	44,09	64,42
MG4/20	16	32	92	16	3	42,76	63,13
MG4/21	17	32	92	16	3	55,27	76,40
MG4/22	18	32	92	16	3	51,38	72,62
MG4/23	19	38	104	20	3	59,28	80,21
MG4/24	20	38	104	20	3	61,21	82,11
MG4/25	22	38	104	20	3	86,26	115,33
MG4/26	24	45	121	25	3	108,72	143,37
MG4/27	25	45	121	25	3	113,09	147,47
MG4/28	26	45	121	25	3	123,43	161,31
MG4/29	28	45	121	25	3	135,21	172,52
MG4/30	30	45	121	25	3	157,50	187,14
MG4/31	32	53	133	32	3	185,84	224,75

Toll. reale sul Ø
 Real Tol. on Ø
 +0 -0,03



 CONSIGLIATO
 RECOMMENDED

 ACCETTABILE
 ACCEPTABLE


 SCONSIGLIATO
 NOT RECOMMENDED



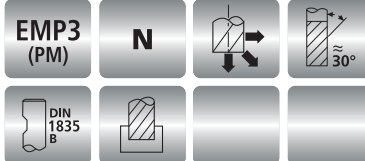
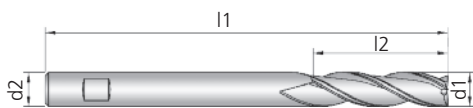
FRESE A TRE DENTI • SERIE LUNGA

**SERIE
MG**

MG5


 Un dente frontale tagliente fino al centro - Attacco Weldon
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES TROIS DENTS - Une dent bout coupante jusq'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES DE TRES LABIOS - Un labio que corta hasta el centro, mango Weldon
 FRESAS CILINDRICAS FRONTAIS DE TRÈS NAVALHAS - Encabadouro Weldon
 Фреза 3-х зубая. Режущий торец. Хвостовик Weldon. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



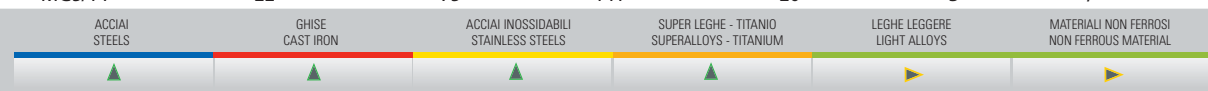
NORM.

UNI 8249
DIN 844B
ISO 1641/1

Toll. reale sul Ø
Real Tol. on Ø
+0 -0,03








CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG5/01	2	10	54	6	3	24,56
MG5/02	3	12	56	6	3	23,24
MG5/03	4	19	63	6	3	21,92
MG5/04	5	24	68	6	3	21,34
MG5/05	6	24	68	6	3	20,74
MG5/06	7	30	80	10	3	35,86
MG5/07	8	38	88	10	3	33,35
MG5/08	10	45	95	10	3	32,02
MG5/09	12	53	110	12	3	39,85
MG5/10	14	53	110	12	3	45,86
MG5/11	16	63	123	16	3	56,53
MG5/12	18	63	123	16	3	67,80
MG5/13	20	75	141	20	3	79,82
MG5/14	22	75	141	20	3	105,32

 CONSIGLIATO
RECOMMENDED
 ACCETTABILE
ACCEPTABLE
 SCONSIGLIATO
NOT RECOMMENDED



FRESE FRONTALI

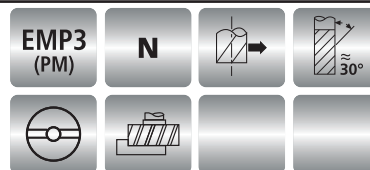
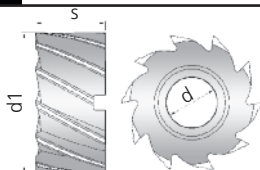
MG6

-  Denti elicoidali rinforzati - Cava trascinamento trasversale
-  SHELL END MILLS - Reinforced helical teeth
-  FRAISES À CYLINDRES FRONTALES - Denture hélicoïdale renforcée
-  WALZENFRÄSER MIT QUERNUT - Verstärkte Spiralzähne
-  FRESAS CILINDRICAS FRONTALES - Labios helicoidales reforzados
-  FRESAS CILINDRICAS FRONTAIS - Oito navalhas helicoidais
-  Фреза торцевая с усиленным зубом

SERIE MG

NORM.

UNI 3903
DIN 1880
ISO 2586



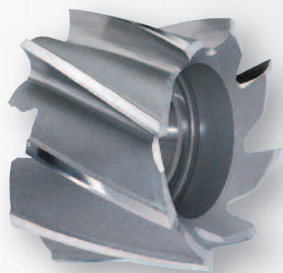
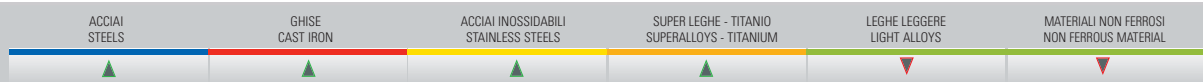
CODE	d1 mm js6	s mm k16	d mm H7	Z	EMP3 €
MG6/01	40	32	16	8	125,13
MG6/02	50	36	22	8	167,01
MG6/03	63	40	27	8	242,21
MG6/04	80	45	27	10	370,06
MG6/05	100	50	32	12	590,75
MG6/06	125	56	40	14	959,28

Toll. reale sul Ø
Real Tol. on Ø
-0 +0,05

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

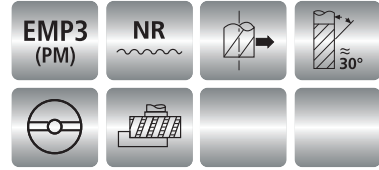
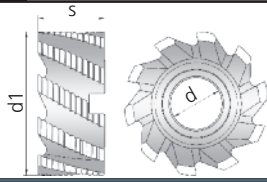


FRESE FRONTALI

**SERIE
MG**

MG7


 Denti elicoidali con romptruciolo spogliato completamente rettificato - Cava trascinamento trasversale
 SHELL END MILLS - Helical teeth with form relieved entirely ground chip-breaker
 FRAISES À CYLINDRES FRONTALES - Denture hélicoïdale avec brise-copeaux dépouillé entièrement rectifié
 WALZENFRÄSER MIT QUERNUT - Schrägschneiden mit voll eingeschliffenem Spanbrecher
 FRESAS CILINDRICAS FRONTALES - Labios helicoidales con arranca de viruta completamente rectificado
 FRESAS CILINDRICAS FRONTAIS - Seis navalhas helicoidais com quebra apara
 Фреза торцевая со стружколомом



NORM.

UNI 3903
 DIN 1880
 ISO 2586

Toll. reale sul Ø
Real Tol. on Ø
±0,05

CODE	d1 mm js6	s mm k16	d mm H7	Z	EMP3 €
MG7/01	40	32	16	6	159,72
MG7/02	50	36	22	6	221,99
MG7/03	63	40	27	8	320,08
MG7/04	80	45	27	8	510,21
MG7/05	100	50	32	10	766,46
MG7/06	125	56	40	12	1230,61

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼

▲
CONSIGLIATO
RECOMMENDED


▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER FINITURA • SERIE NORMALE

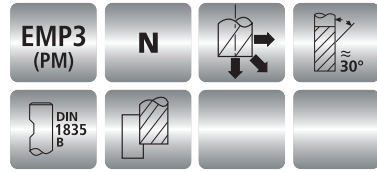
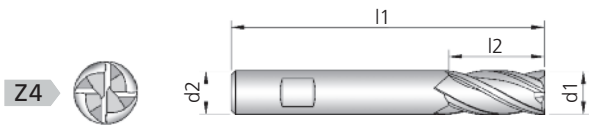
MG8


 Due denti frontali taglienti fino al centro - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusq'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS - Quatro navalhas normais com corte ao centro - Encabadouro Weldon
 Фреза концевая для чистовой обработки. Режущий торец. Хвостовик Weldon. Средняя серия

**SERIE
MG**

NORM.

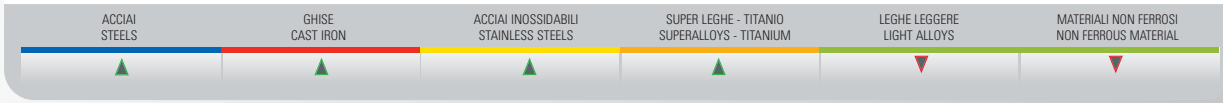
UNI 8248
DIN 844B
ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG8/01	2	7	51	6	4	18,87	23,33
MG8/01/1	2,5	8	52	6	4	17,09	26,33
MG8/02	3	8	52	6	4	16,22	21,98
MG8/02/1	3,5	10	54	6	4	16,54	23,48
MG8/03	4	11	55	6	4	14,91	21,98
MG8/03/1	4,5	11	55	6	4	16,30	23,15
MG8/04	5	13	57	6	4	14,46	21,59
MG8/04/1	5,5	13	57	6	4	16,30	23,15
MG8/05	6	13	57	6	4	14,46	21,59
MG8/05/1	6,5	16	66	10	4	24,72	35,94
MG8/06	7	16	66	10	4	23,68	34,92
MG8/06/1	7,5	19	69	10	4	24,72	35,94
MG8/07	8	19	69	10	4	23,08	34,22
MG8/07/1	8,5	19	69	10	4	25,84	37,04
MG8/08	9	19	69	10	4	25,64	36,72
MG8/09	10	22	72	10	4	23,68	34,92
MG8/10	11	22	79	12	4	32,63	45,27
MG8/11	12	26	83	12	4	30,53	43,37
MG8/12	13	26	83	12	4	35,92	49,70
MG8/13	14	26	83	12	4	32,63	53,55
MG8/14	15	32	92	16	4	39,24	59,88
MG8/15	16	32	92	16	4	40,60	61,21
MG8/16	17	32	92	16	4	51,25	72,59
MG8/17	18	32	92	16	4	47,21	68,87
MG8/18	19	38	104	20	4	59,58	80,79
MG8/19	20	38	104	20	4	55,57	76,89
MG8/20	22	38	104	20	4	85,91	115,39
MG8/21	24	45	121	25	5	123,45	157,93
MG8/22	25	45	121	25	5	122,64	157,26
MG8/23	26	45	121	25	5	135,13	169,39
MG8/24	28	45	121	25	5	145,89	183,35
MG8/25	30	45	121	25	6	159,07	196,33
MG8/26	32	53	133	32	6	189,65	228,30

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03




▲ CONSIGLIATO RECOMMENDED
 ▼ ACCETTABILE ACCEPTABLE
 ▼ SCONSIGLIATO NOT RECOMMENDED



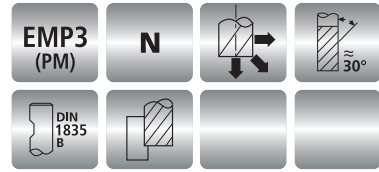
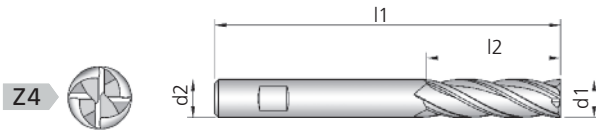
FRESE PER FINITURA • SERIE LUNGA

SERIE
MG

MG9


 Due denti frontali taglienti fino al centro - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 Fresas cilíndricas frontales - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS - Quatro navalhas longas com corte ao centro - Encabadouro Weldon
 Фреза концевая для чистовой обработки. Режущий торец. Хвостовик Weldon. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI 8249
DIN 844B
ISO 1641/I

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG9/01	2	10	54	6	4	21,13
MG9/02	3	12	56	6	4	21,74
MG9/03	4	19	63	6	4	19,80
MG9/04	5	24	68	6	4	19,08
MG9/05	6	24	68	6	4	18,47
MG9/06	7	30	80	10	4	29,43
MG9/07	8	38	88	10	4	31,27
MG9/08	10	45	95	10	4	29,30
MG9/09	12	53	110	12	4	38,59
MG9/10	14	53	110	12	4	42,71
MG9/11	16	63	123	16	4	52,82
MG9/12	18	63	123	16	4	61,69
MG9/13	20	75	141	20	4	75,16
MG9/14	22	75	141	20	4	104,13
MG9/15	24	90	166	25	5	152,01
MG9/16	25	90	166	25	5	152,01
MG9/17	26	90	166	25	5	165,53
MG9/18	28	90	166	25	5	182,83
MG9/19	30	90	166	25	6	201,72
MG9/20	32	106	186	32	6	256,08

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER FINITURA • SERIE NORMALE

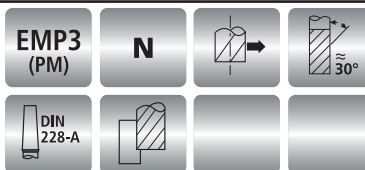
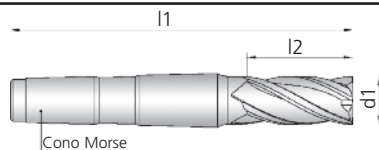
MG10

 Codolo conico Morse con foro filettato
 END MILLS - Morse taper shank
 FRAISES À CYLINDRES FRONTALES - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES - Mango cónico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS - Quatro navalhas normais - Encabadoiro cone Morse con taladro roscado
 Фреза концевая для чистовой обработки. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

SERIE MG

NORM.

UNI 8250
 DIN 845B
 ISO 1641/II



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €	SUPREME €
MG10/01	16	32	117	2	4	70,21	101,05
MG10/02	18	32	117	2	4	70,21	104,77
MG10/03	20	38	140	3	4	96,98	162,97
MG10/04	22	38	140	3	4	110,77	175,61
MG10/05	24	45	147	3	5	127,75	191,21
MG10/06	25	45	147	3	5	133,11	207,58
MG10/07	26	45	147	3	5	141,36	217,52
MG10/08	28	45	147	3	5	149,28	234,88
MG10/09	30	53	155	3	6	165,88	271,24
MG10/10	32	53	178	4	6	199,16	354,23
MG10/11	34	53	178	4	6	215,72	375,28
MG10/12	35	53	178	4	6	232,29	390,60
MG10/13	36	53	178	4	6	240,95	398,52
MG10/14	38	63	188	4	6	274,08	437,08
MG10/15	40	63	188	4	8	315,31	474,95
MG10/16	45	63	188	4	8	456,65	614,52
MG10/17	50	75	233	5	8	597,70	825,04

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼

Toll. reale sul Ø
 Real Tol. on Ø
 +0 +0,03

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

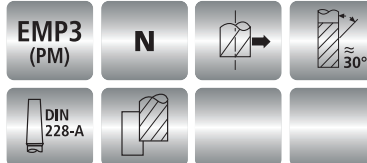
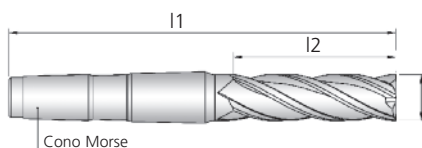


FRESE PER FINITURA • SERIE LUNGA

**SERIE
MG**

MG11


 Codolo conico Morse con foro filettato
 END MILLS - Morse taper shank
 FRAISES À CYLINDRES FRONTALES - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES - Mango cónico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS - Quatro navalhas longas - Encabadouro cone Morse con taladro roscado
 Фреза концевая для чистовой обработки. Режущий торец. Хвостовик конус Морзе с резьбой. Удлиненная серия



NORM.

UNI 8251
 DIN 845B
 ISO 1641/II

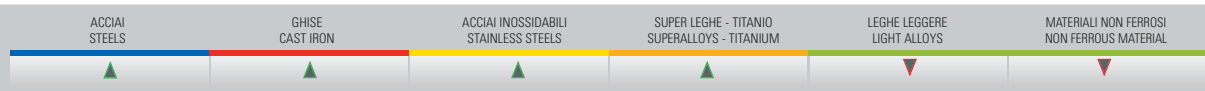
CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG11/01	16	63	148	2	4	96,41
MG11/02	18	63	148	2	4	97,11
MG11/03	20	75	177	3	4	130,09
MG11/04	22	75	177	3	4	142,37
MG11/05	24	90	192	3	5	176,99
MG11/06	25	90	192	3	5	176,99
MG11/07	26	90	192	3	5	189,65
MG11/08	28	90	192	3	5	207,79
MG11/09	30	90	192	3	6	224,35
MG11/10	32	106	231	4	6	323,53
MG11/11	34	106	231	4	6	360,74
MG11/12	35	106	231	4	6	381,80
MG11/13	36	106	231	4	6	404,47
MG11/14	38	125	250	4	6	492,83
MG11/15	40	125	250	4	8	516,87
MG11/16	45	125	250	4	8	637,85
MG11/17	50	150	308	5	8	934,82

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



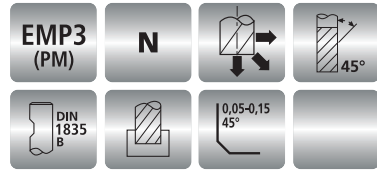
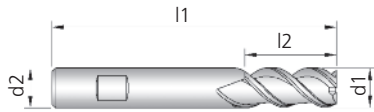
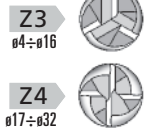
FRESE CILINDRICHE FRONTALI • SERIE NORMALE

MG12

 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Ungleiche schneidenteilung - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS - Três navalhas normais com corte ao centro - Hélice direita 45° - Divisão irregular - Encabadouro Weldon
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик Weldon. Средняя серия

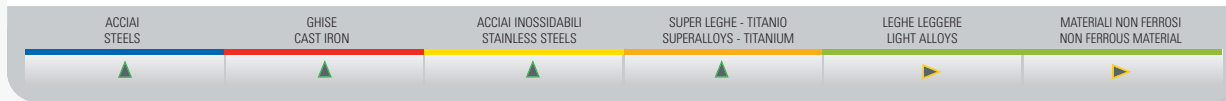
SERIE MG




NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG12/03	4	11	55	6	3	16,97	23,97
MG12/04	5	13	57	6	3	16,38	23,39
MG12/05	6	13	57	6	3	16,38	23,39
MG12/06	7	16	66	10	3	26,36	37,43
MG12/07	8	20	69	10	3	25,03	36,12
MG12/08	9	20	69	10	3	26,97	38,02
MG12/09	10	22	72	10	3	26,36	37,43
MG12/10	11	26	83	12	3	33,86	46,96
MG12/11	12	26	83	12	3	33,23	46,34
MG12/12	13	26	83	12	3	39,22	53,47
MG12/13	14	26	83	12	3	38,59	52,86
MG12/14	15	36	92	16	3	46,71	67,80
MG12/15	16	36	92	16	3	46,09	67,19
MG12/16	17	40	100	16	4	56,19	78,22
MG12/17	18	40	100	16	4	54,81	77,00
MG12/18	20	45	110	20	4	63,45	84,90
MG12/19	22	45	110	20	4	90,29	120,29
MG12/20	25	50	125	25	4	121,32	157,11
MG12/21	28	56	125	25	4	145,77	184,50
MG12/22	30	63	140	25	4	171,06	272,68
MG12/23	32	63	140	32	4	193,87	309,19

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03




 CONSIGLIATO RECOMMENDED
 ACCETTABILE ACCEPTABLE
 SCONSIGLIATO NOT RECOMMENDED



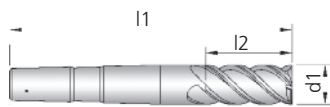
FRESE CILINDRICHE FRONTALI • SERIE NORMALE

**SERIE
MG**

MG13


 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Codolo conico Morse con foro filettato
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Morse taper shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Ungleiche schneidenteilung - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango conico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTAIS - Trés navalhas normais com corte ao centro - Hélice direita 45° - Divisão irregular - Encabadouro cone Morse con taladro roscado
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



Cono Morse

EMP3
(PM)

N



DIN
228-A



NORM.



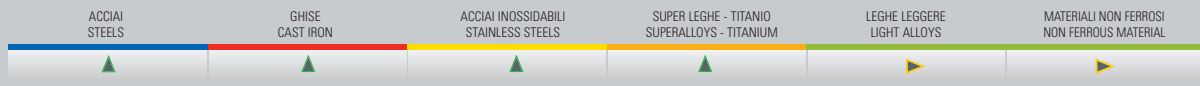
CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €	SUPREME €
MG13/01	16	36	115	2	3	80,85	110,84
MG13/02	18	40	120	2	4	80,85	114,34
MG13/03	20	45	145	3	4	112,46	176,66
MG13/04	22	45	145	3	4	125,22	202,39
MG13/05	24	50	150	3	4	141,60	223,96
MG13/06	25	50	150	3	4	146,16	228,16
MG13/07	26	56	155	3	4	153,97	237,77
MG13/08	28	56	155	3	4	160,85	251,32
MG13/09	30	63	165	3	4	181,55	285,01
MG13/10	32	63	185	4	4	221,55	373,50
MG13/11	34	70	195	4	4	246,93	402,76
MG13/12	35	70	195	4	4	256,17	411,34
MG13/13	36	70	195	4	4	266,93	429,21
MG13/14	38	70	195	4	4	306,24	465,58
MG13/15	40	70	195	4	4	349,28	505,60

Toll. reale sul Ø
Real Tol. on Ø
+0,+0,03

▲
CONSIGLIATO
RECOMMENDED


▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER SGROSSATURA • SERIE NORMALE

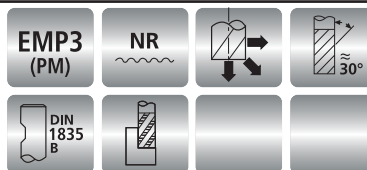
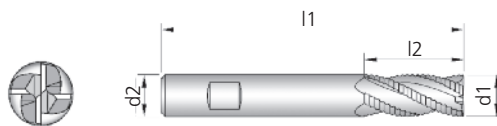
MG14


 Denti elicoidali con rompitrucciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spanbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon-Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Très navalhas normais com quebra apara com corte ao centro - Encabadouro Weldon
 Фреза концевая для черновой обработки. Резущий торец. Хвостовик Weldon. Средняя серия

SERIE MG

NORM.

UNI 8248
 DIN 844B
 ISO 1641/1



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG14/01	6	13	57	6	3	30,11	35,85
MG14/02	7	16	66	10	3	46,05	55,26
MG14/03	8	19	69	10	4	44,88	54,00
MG14/04	9	19	69	10	4	46,05	55,26
MG14/05	10	22	72	10	4	44,88	54,00
MG14/06	11	22	79	12	4	51,73	63,51
MG14/07	12	26	83	12	4	51,02	62,82
MG14/08	13	26	83	12	4	56,81	69,66
MG14/09	14	26	83	12	4	54,75	67,89
MG14/10	15	32	92	16	4	64,63	84,18
MG14/11	16	32	92	16	4	64,63	84,18
MG14/12	17	32	92	16	4	71,14	92,34
MG14/13	18	32	92	16	4	67,87	88,55
MG14/14	20	38	104	20	4	85,02	105,25
MG14/15	22	38	104	20	4	92,19	119,79
MG14/16	24	45	121	25	5	144,07	175,72
MG14/17	25	45	121	25	5	139,23	171,14
MG14/18	26	45	121	25	5	150,95	186,47
MG14/19	28	45	121	25	5	159,52	194,68
MG14/20	30	45	121	25	5	173,12	207,65
MG14/21	32	53	133	32	5	207,15	244,01
MG14/22	36	53	133	32	6	239,63	337,07
MG14/23	40	63	143	32	6	288,75	383,98

Toll. reale sul Ø
 Real Tol. on Ø
 ±0,05

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼


▲ CONSIGLIATO
 RECOMMENDED
 ▼ ACCETTABILE
 ACCEPTABLE
 ▼ SCONSIGLIATO
 NOT RECOMMENDED

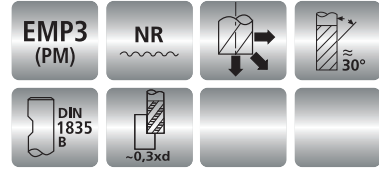
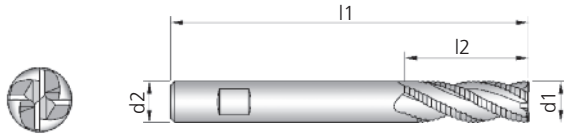


FRESE PER SGROSSATURA • SERIE LUNGA

SERIE
MG

MG15


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spanbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Quatro navalhas longas quebra apara com corte ao centro - Encabadouro Weldon
 Фреза концевая для черновой обработки. Режущий торец. Хвостовик Weldon. Удлиненная серия



NORM.

UNI 8249
DIN 844B
ISO 1641/1

SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
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Toll. reale sul Ø
Real Tol. on Ø
±0,05

MG15/01	8	38	88	10	4	58,16	71,36
MG15/02	10	45	95	10	4	59,48	72,62
MG15/03	12	53	110	12	4	71,12	86,67
MG15/04	14	53	110	12	4	74,46	91,32
MG15/05	15	63	123	16	4	87,59	109,66
MG15/06	16	63	123	16	4	87,59	110,99
MG15/07	18	63	123	16	4	96,21	123,62
MG15/08	20	75	141	20	4	113,36	140,91
MG15/09	22	75	141	20	4	132,91	181,34
MG15/10	24	90	166	25	5	186,40	261,76
MG15/11	25	90	166	25	5	189,86	265,12
MG15/12	28	90	166	25	5	212,20	304,68
MG15/13	30	90	166	25	5	243,19	333,20
MG15/14	32	106	186	32	5	301,98	402,77

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼



FRESE PER SGROSSATURA • SERIE NORMALE

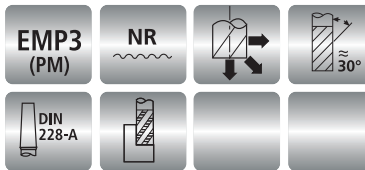
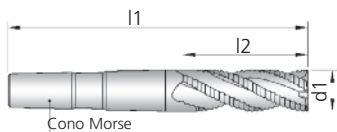
MG16


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifftem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango conico Morse taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Quatro navalhas normais quebra apara com corte ao centro - Encabadouro cone Morse con taladro roscado
 Фреза концевая для черновой обработки. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

SERIE MG

NORM.

UNI 8250-8251
 DIN 845B
 ISO 1641/II



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €	SUPREME €
MG16/01	16	32	117	2	4	86,59	113,64
MG16/02	18	32	117	2	4	91,60	121,51
MG16/03	20	38	140	3	4	121,68	182,55
MG16/04	22	38	140	3	4	130,30	190,51
MG16/05	24	45	147	3	5	144,13	203,30
MG16/06	25	45	147	3	5	150,79	220,12
MG16/07	26	45	147	3	5	157,98	226,96
MG16/08	28	45	147	3	5	173,59	252,51
MG16/09	30	53	155	3	5	193,68	287,48
MG16/10	32	53	178	4	5	225,34	372,51
MG16/11	34	53	178	4	5	250,05	398,21
MG16/12	35	53	178	4	6	259,47	406,66
MG16/13	36	53	178	4	6	268,19	414,44
MG16/14	38	63	188	4	6	306,56	461,91
MG16/15	40	63	188	4	6	340,41	488,16
MG16/16	45	63	188	4	6	493,95	635,57
MG16/17	50	75	200	4	7	621,18	758,08

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼

Toll. reale sul Ø
 Real Tol. on Ø
 ±0,05

▲
CONSIGLIATO
RECOMMENDED

▲
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED



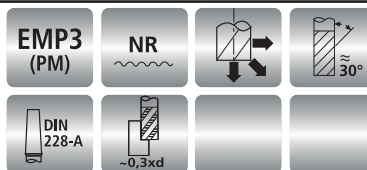
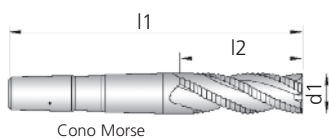
FRESE PER SGROSSATURA • SERIE LUNGA

**SERIE
MG**

MG17


 Denti elicoidali con rompitruciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifftem Spannbrecher - Zwei Schneiden mit Zentrumschnitt Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango conico Morse taladro roscado
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Quatro navalhas longas quebra apara com corte ao centro - Encabadouro cone Morse con taladro roscado
 Фреза концевая для черновой обработки. Режущий торец. Хвостовик конус Морзе с резьбой. Удлиненная серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

UNI 8250-8251
DIN 845B
ISO 1641/II

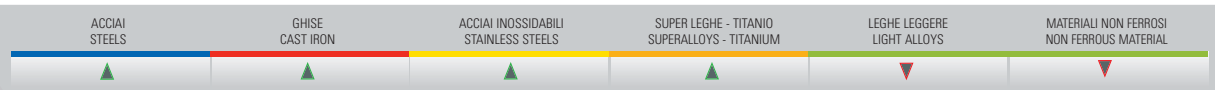
Toll. reale sul Ø
Real Tol. on Ø
±0,05

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG17/01	16	63	148	2	4	118,51
MG17/02	18	63	148	2	4	120,55
MG17/03	20	75	177	3	4	171,00
MG17/04	22	75	177	3	4	177,42
MG17/05	24	90	192	3	5	216,80
MG17/06	25	90	192	3	5	224,00
MG17/07	26	90	192	3	5	237,50
MG17/08	28	90	192	3	5	258,20
MG17/09	30	90	192	3	5	273,76
MG17/10	32	106	231	4	5	348,66
MG17/11	34	106	231	4	5	382,82
MG17/12	35	106	231	4	6	401,19
MG17/13	36	106	231	4	6	416,50
MG17/14	38	125	250	4	6	502,14
MG17/15	40	125	250	4	6	549,37
MG17/16	45	125	250	4	6	670,94
MG17/17	50	150	275	4	7	901,73

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE PER SGROSSATURA • SERIE CORTA

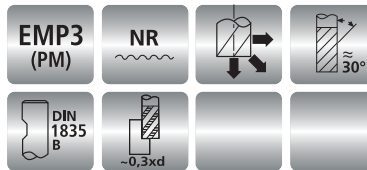
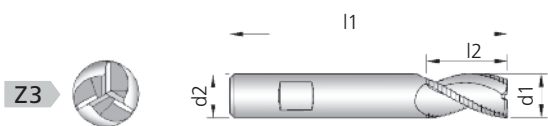
MG18

 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Un dente frontale tagliente fino al centro - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - One end tooth cutting up to the centre - Weldon shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Une dent bout coupante jusqu'au centre - Queue cylindrique Weldon
 LANGLOCHFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Eine Schneide mit Zentrumschnitt Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta - Un labio que corta hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Trés navalhas curtas quebra apara com corte ao centro - Encabadouro Weldon
 Фреза концевая для черновой обработки. Режущий торец. Хвостовик Weldon. Короткая серия

SERIE MG

NORM.

ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG18/01	6	8	52	6	3	28,82	35,59
MG18/02	8	11	61	10	3	42,31	52,96
MG18/03	10	13	63	10	3	42,31	52,96
MG18/04	12	13	73	12	3	47,87	59,94
MG18/05	14	16	73	12	3	51,76	63,86
MG18/06	15	19	79	16	3	59,26	75,00
MG18/07	16	19	79	16	3	59,26	75,00
MG18/08	18	19	79	16	3	62,81	84,28
MG18/09	20	22	88	20	3	77,94	98,74
MG18/10	22	22	88	20	3	84,21	110,25
MG18/11	25	26	102	25	3	118,96	148,13

Toll. reale sul Ø
Real Tol. on Ø
±0,05

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

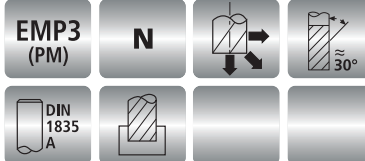


FRESE PER MACCHINE A COPIARE • SERIE EXTRA-LUNGA

**SERIE
MG**

MG19


 Un dente frontale tagliente fino al centro - Codolo cilindrico
 COPY MILLING CUTTERS - One end tooth cutting up to the centre - Straight shank
 FRAISES POUR MACHINES À COPIER - Une dent bout coupante jusqu'au centre - Queue cylindrique
 NACHFORMFRÄSER - Eine Schneide mit Zentrumschnitt - Zylinderschaft
 FRESAS EN COPIADO - Un labio que corta hasta el centro - Mango cilíndrico
 FRESAS DE COPIA EXTRA LONGAS - Um naval com corte ao centro - Encabadouro cilíndrico
 Фреза концевая. Режущий торец. Цилиндрический хвостовик. Ультралинная серия



NORM.



SHORT
 NORMAL
 LONG
 EXTRA-LONG

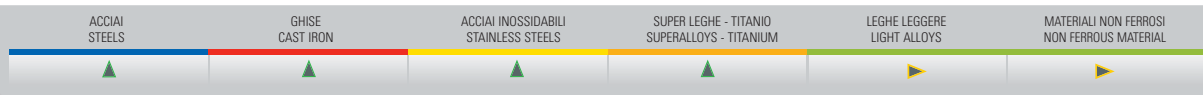
CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
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MG19/00	6	25	180	6	2	48,05
MG19/00/1	8	25	180	8	2	54,06
MG19/01	10	30	200	10	2	62,93
MG19/02	12	30	200	12	2	70,29
MG19/03	16	35	200	16	2	103,59
MG19/04	20	35	200	20	2	144,28
MG19/05	25	40	200	25	2	184,16


 CONSIGLIATO
 RECOMMENDED


 ACCETTABILE
 ACCEPTABLE



 SCONSIGLIATO
 NOT RECOMMENDED

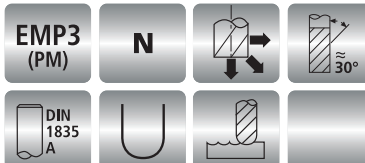


FRESE PER MACCHINE A COPIARE • SERIE EXTRA-LUNGA

**SERIE
MG**

MG20


 Due denti elicoidali testa emisferica - Codolo cilindrico
 COPY MILLING CUTTERS - Two ball-nosed helical teeth - Straight shank
 FRAISES POUR MACHINES À COPIER - Deux dents hélicoïdales à bout hémisphérique - Queue cylindrique
 NACHFORMFRÄSER - Zwei Halbrundkopf-Schrägzähne - Zylinderschaft
 FRESAS EN COPIADO - Dos labios helicoidales cabeza hemisférica - Mango cilíndrico
 FRESAS DE COPIA EXTRA LONGAS - Duas navalhas helicoidais cabeça boleada - Encabadouro cilíndrico
 Фреза концевая. Сферический торец. Цилиндрический хвостовик. Ультралинная серия.



NORM.



SHORT
 NORMAL
 LONG
 EXTRA-LONG

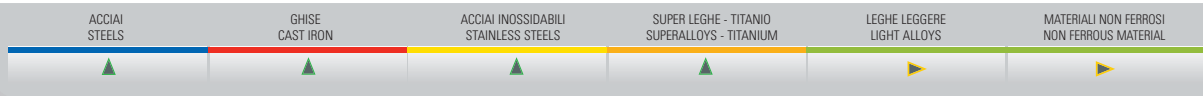
CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
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MG20/00	6	25	180	6	2	60,74
MG20/00/1	8	25	180	8	2	66,77
MG20/01	10	30	200	10	2	77,40
MG20/02	12	30	200	12	2	86,49
MG20/03	16	35	200	16	2	127,51
MG20/04	20	35	200	20	2	177,60
MG20/05	25	40	200	25	2	226,72


 CONSIGLIATO
 RECOMMENDED



 ACCETTABILE
 ACCEPTABLE


 SCONSIGLIATO
 NOT RECOMMENDED



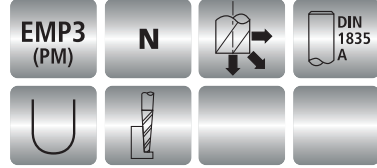
FRESE PER MACCHINE A COPIARE A TESTA SEMISFERICA • SERIE EXTRA-LUNGA

MG21


 Due denti taglienti elicoidali - Conicità 4° laterali - Codolo cilindrico
 BALL-NOSED COPY MILLING CUTTERS - Two helical cutting edges - 4° side taper - Straight shank
 FRAISES POUR MACHINES À COPIER À BOUT HÉMISPHERIQUE - Deux tailles hélicoïdales - Cône 4° lateral - Queue cylindrique
 HALBRUNDKOPF-NACHFORMFRÄSER - Zwei Schrägschneide - 4° Schneiden konisch - Zylinderschaft
 FRESAS EN COPIADO, CABEZA SEMIESFÉRICA - Dos labios cortantes helicoidales - cónico 4° lateral - Mango cilíndrico
 FRESAS DE COPIA EXTRA LONGA BOLEADA - Duas navalhas cortantes - Cone 4° lateral - Encabadouro cilíndrico
 Фреза концевая с конический режущей частью. Сферический торец. Цилиндрический хвостовик. Ультрадлинная серия

**SERIE
MG**

NORM.



CODE	R mm	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG21/01	1.5	50	180	10	2	89,67
MG21/02	2	45	180	10	2	85,92
MG21/03	2.5	38	180	10	2	82,18
MG21/04	3	45	200	12	2	95,02
MG21/05	3.5	40	200	12	2	91,19
MG21/06	4	47	200	14	2	107,30
MG21/07	5	47	200	16	2	141,10
MG21/08	6	63	200	20	2	210,08
MG21/09	8	72	200	25	2	311,71

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▶	▶


▲ CONSIGLIATO
RECOMMENDED
▶ ACCETTABILE
ACCEPTABLE
▼ SCONSIGLIATO
NOT RECOMMENDED

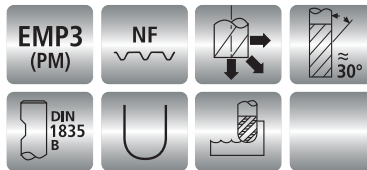
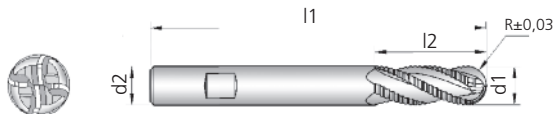


FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA • **SERIE NORMALE**

**SERIE
MG**

MG22


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING AND SEMIFINISHING BALL-NOSED END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES À CYLINDRES À BOUT HÉMISPHERIQUE À DEGROSSIR ET DEMIFINIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 HALBRUNDKOPFRÄSER - Schrägschneiden mit voll eingeschliffenem Spanbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA PARA DESBASTE Y SEMI ACABAR - Labios helicoidal con arranque de viruta - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS BOLEADAS PARA DESBASTE E SEMI ACABAMENTO - Três navalhas normais quebra aparas com corte ao centro - Encabadouro Weldon
 Фреза для черновой и полустойковой обработки со стружколомом. Сферический торец. Хвостовик Weldon. Средняя серия



NORM.
ISO 1641/II

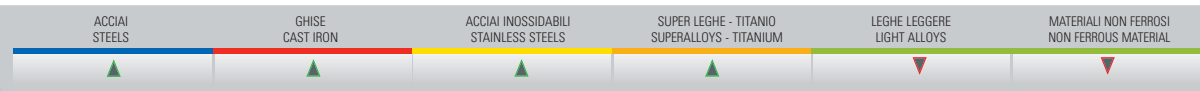
Toll. reale sul Ø
Real Tol. on Ø
±0,05

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG22/01	6	13	57	6	3	45,35
MG22/02	7	16	66	10	3	66,34
MG22/03	8	19	69	10	4	65,09
MG22/04	9	19	69	10	4	68,46
MG22/05	10	22	72	10	4	66,34
MG22/06	11	22	79	12	4	73,84
MG22/07	12	26	83	12	4	73,21
MG22/08	13	26	83	12	4	81,95
MG22/09	14	26	83	12	4	79,95
MG22/10	15	32	92	16	4	89,69
MG22/11	16	32	92	16	4	93,14
MG22/12	17	32	92	16	4	102,17
MG22/13	18	32	92	16	4	102,17
MG22/14	20	38	104	20	4	122,65
MG22/15	22	38	104	20	4	135,90
MG22/16	24	45	121	25	5	206,96
MG22/17	25	45	121	25	5	203,16
MG22/18	26	45	121	25	5	214,61
MG22/19	28	45	121	25	5	236,09
MG22/20	30	45	121	25	5	256,87
MG22/21	32	53	133	32	5	306,48
MG22/22	36	53	133	32	6	369,37
MG22/23	40	63	143	32	6	440,09

▲
CONSIGLIATO
RECOMMENDED


▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA • **SERIE LUNGA**

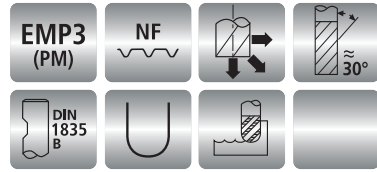
MG23


 Denti elicoidali con rompitriciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING AND SEMIFINISHING BALL-NOSED END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES À CYLINDRES À BOUT HÉMISPHERIQUE À DEGROSSIR ET DEMIFINIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 HALBRUNDKOPFRÄSER - Schrägschneiden mit voll eingeschlifffem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA PARA DESBASTE Y SEMI ACABAR - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS BOLEADAS PARA DESBASTE E SEMI ACABAMENTO - Quatro navalhas longas quebra apara com corte ao centro - Encabadouro Weldon
 Фреза для черновой и полустойковой обработки со стружколомом. Сферический торец. Хвостовик Weldon. Удлиненная серия

**SERIE
MG**

NORM.

ISO 1641/1



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG23/01	8	38	88	10	4	76,48
MG23/02	10	45	95	10	4	79,21
MG23/03	12	53	110	12	4	91,44
MG23/04	14	53	110	12	4	97,57
MG23/05	15	63	123	16	4	110,44
MG23/06	16	63	123	16	4	113,11
MG23/07	18	63	123	16	4	127,61
MG23/08	20	75	141	20	4	146,45
MG23/09	22	75	141	20	4	168,28
MG23/10	24	90	166	25	5	234,12
MG23/11	25	90	166	25	5	258,53
MG23/12	28	90	166	25	5	281,23
MG23/13	30	90	166	25	5	319,36
MG23/14	32	106	186	32	5	405,31

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED



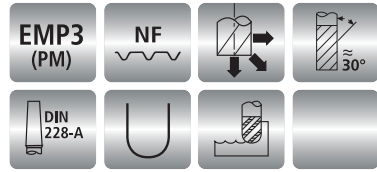
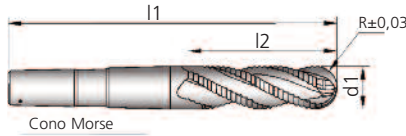
FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA • **SERIE NORMALE**

**SERIE
MG**

MG24


 Denti elicoidali con rompitrucciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper Shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA PARA DESBASTE Y SEMI ACABAR - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango cónico Morse taladro roscado
 FRESAS CILINDRICAS FRONTALES BOLEADA PARA DESBASTE E SEMI ACABAMENTO - Navalhas helicoidal com quebra apra - Duas navalhas que cortan hasta el centro - Encabadouro conico - Morse taladro roscado
 Фреза для черновой и полустойковой обработки со стружколомом. Сферический торец. Хвостовик конус Морзе с резьбой. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



NORM.

ISO 1641/II

Toll. reale sul Ø
Real Tol. on Ø
±0,05

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG24/01	16	32	117	2	4	116,33
MG24/02	18	32	117	2	4	125,66
MG24/03	20	38	140	3	4	159,16
MG24/04	22	38	140	3	4	171,29
MG24/05	24	45	147	3	5	193,41
MG24/06	25	45	147	3	5	203,23
MG24/07	26	45	147	3	5	221,04
MG24/08	28	45	147	3	5	241,89
MG24/09	30	53	155	3	5	271,36
MG24/10	32	53	178	4	5	315,92
MG24/11	34	53	178	4	5	349,26
MG24/12	35	53	178	4	6	367,38
MG24/13	36	53	178	4	6	380,60
MG24/14	38	63	188	4	6	428,61
MG24/15	40	63	188	4	6	468,99
MG24/16	45	63	188	4	6	631,69
MG24/17	50	75	200	4	7	846,42

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼



FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA • SERIE LUNGA

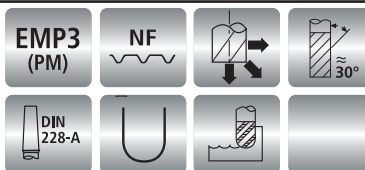
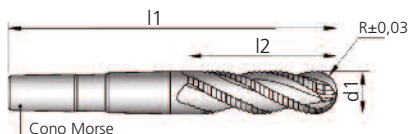
MG25


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA PARA DESBASTE Y SEMI ACABAR - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango conico Morse taladro roscado
 FRESAS CILINDRICAS FRONTALES BOLEADA PARA DESBASTE E SEMI ACABAMENTO - Navalhas helicoidal com quebra apara - Duas navalhas que cortan hasta el centro - Encabadouro conico - Morse taladro roscado
 Фреза для черновой и получистовой обработки со стружколомом. Сферический торец. Хвостовик конус Морзе с резьбой. Удлиненная серия

SERIE
MG

NORM.

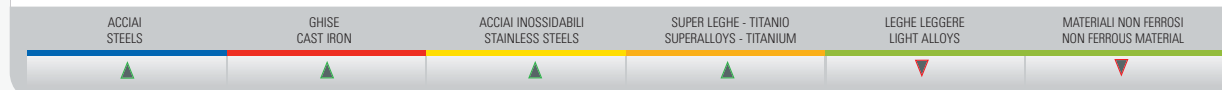
ISO 1641/II



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG25/01	16	63	148	2	4	146,66
MG25/02	18	63	148	2	4	152,48
MG25/03	20	75	177	3	4	205,52
MG25/04	22	75	177	3	4	213,65
MG25/05	24	90	192	3	5	261,11
MG25/06	25	90	192	3	5	270,02
MG25/07	26	90	192	3	5	304,38
MG25/08	28	90	192	3	5	330,38
MG25/09	30	90	192	3	5	354,84
MG25/10	32	106	231	4	5	455,94
MG25/11	34	106	231	4	5	498,49
MG25/12	35	106	231	4	6	527,94
MG25/13	36	106	231	4	6	549,14
MG25/14	38	125	250	4	6	645,59
MG25/15	40	125	250	4	6	705,69
MG25/16	45	125	250	4	6	843,51
MG25/18	50	150	275	4	7	1206,51

Toll. reale sul Ø
Real Tol. on Ø
±0,05



▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

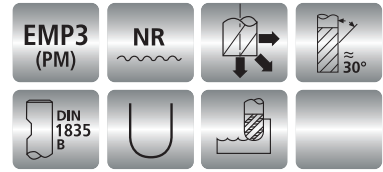
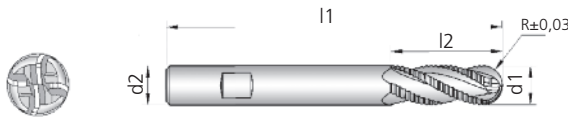


FRESE A TESTA SEMISFERICA PER SGROSSATURA • SERIE NORMALE

**SERIE
MG**

MG26


 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING BALL-NOSED END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES À CYLINDRES À BOUT HÉMISPHERIQUE À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 HALBRUNDKOPFRÄSER - Schrägschneiden mit voll eingeschlifffem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTALES BOLEADA PARA DESBASTE - Navalhas helicoidal com quebra apara - Duas navalhas que cortan hasta el centro - Encabadouro Weldon
 Фреза для черновой обработки. Сферический торец. Хвостовик Weldon. Средняя серия



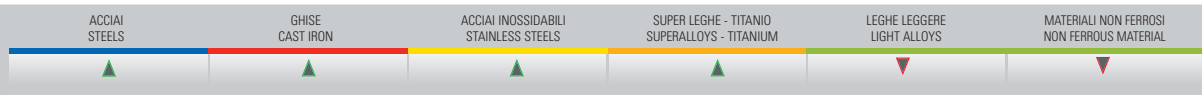
NORM.

ISO 1641/1

Toll. reale sul Ø
Real Tol. on Ø








±0,05

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG26/01	6	13	57	6	3	45,35
MG26/02	7	16	66	10	3	66,34
MG26/03	8	19	69	10	4	65,09
MG26/04	9	19	69	10	4	68,46
MG26/05	10	22	72	10	4	70,02
MG26/06	11	22	79	12	4	73,84
MG26/07	12	26	83	12	4	73,21
MG26/08	13	26	83	12	4	81,95
MG26/09	14	26	83	12	4	79,95
MG26/10	15	32	92	16	4	89,69
MG26/11	16	32	92	16	4	93,14
MG26/12	17	32	92	16	4	102,17
MG26/13	18	32	92	16	4	112,48
MG26/14	20	38	104	20	4	122,65
MG26/15	22	38	104	20	4	135,90
MG26/16	24	45	121	25	5	206,96
MG26/17	25	45	121	25	5	203,16
MG26/18	26	45	121	25	5	199,33
MG26/19	28	45	121	25	5	236,09
MG26/20	30	45	121	25	5	256,87
MG26/21	32	53	133	32	5	306,48
MG26/22	36	53	133	32	6	369,37
MG26/23	40	63	143	32	6	440,09



FRESE A TESTA SEMISFERICA PER SGROSSATURA • SERIE LUNGA

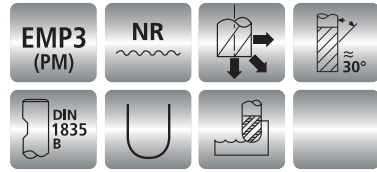
MG27

 Denti elicoidali con rompitriciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING BALL-NOSED END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES À CYLINDRES À BOUT HÉMISPHERIQUE À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 HALBRUNDKOPFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon-Spannfläche
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTALES BOLEADA PARA DESBASTE - Navalhas helicoidal com quebra apra - Duas navalhas que cortan hasta el centro - Encabadouro Weldon
 Фреза для черновой обработки. Сферический торец. Хвостовик Weldon. Удлиненная серия

SERIE MG

NORM.

ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG27/01	8	38	88	10	4	76,48
MG27/02	10	45	95	10	4	79,21
MG27/03	12	53	110	12	4	91,44
MG27/04	14	53	110	12	4	97,57
MG27/05	15	63	123	16	4	110,44
MG27/06	16	63	123	16	4	113,11
MG27/07	18	63	123	16	4	127,61
MG27/08	20	75	141	20	4	146,45
MG27/09	22	75	141	20	4	168,28
MG27/10	24	90	166	25	5	234,12
MG27/11	25	90	166	25	5	258,53
MG27/12	28	90	166	25	5	281,23
MG27/13	30	90	166	25	5	319,36
MG27/14	32	106	186	32	5	405,31

ACCAI
STEELS

▲

GHISE
CAST IRON

▲

ACCAI INOSSIDABILI
STAINLESS STEELS

▲

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

▲

LEGHE LEGGERE
LIGHT ALLOYS

▼

MATERIALI NON FERROSI
NON FERROUS MATERIAL

▼

Toll. reale sul Ø
Real Tol. on Ø
±0,05

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

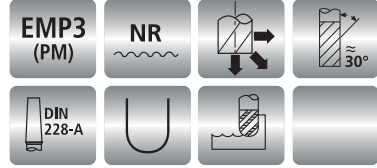
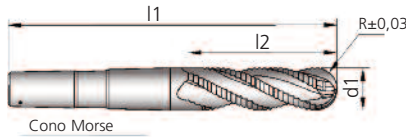


FRESE A TESTA SEMISFERICA PER SGROSSATURA • SERIE NORMALE

SERIE
MG

MG28



 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango cónico Morse con taladro roscado
 FRESAS CILINDRICAS FRONTALES BOLEADA PARA DESBASTE - Navalhas helicoidal com quebra apra - Duas navalhas que cortan hasta el centro - Encabadouro conico - Morse taladro roscado
 Фреза для черновой обработки. Сферический торец. Хвостовик конус Морзе с резьбой. Средняя серия



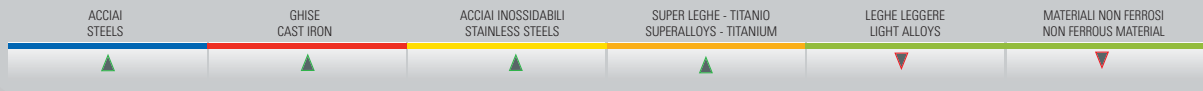
NORM.

UNI 8250-8251
DIN 845B
ISO 1641/II

Toll. reale sul Ø
Real Tol. on Ø
±0,05

 CONSIGLIATO
RECOMMENDED
 ACCETTABILE
ACCEPTABLE
 SCONSIGLIATO
NOT RECOMMENDED

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG28/01	16	32	117	2	4	116,33
MG28/02	18	32	117	2	4	125,66
MG28/03	20	38	140	3	4	159,16
MG28/04	22	38	140	3	4	171,29
MG28/05	24	45	147	3	5	193,41
MG28/06	25	45	147	3	5	203,23
MG28/07	26	45	147	3	5	221,04
MG28/08	28	45	147	3	5	244,26
MG28/09	30	53	155	3	5	271,36
MG28/10	32	53	178	4	5	315,92
MG28/11	34	53	178	4	5	349,26
MG28/12	35	53	178	4	6	367,38
MG28/13	36	53	178	4	6	380,60
MG28/14	38	63	188	4	6	428,61
MG28/15	40	63	188	4	6	468,99
MG28/16	45	63	188	4	6	631,69
MG28/17	50	75	200	4	7	846,42



FRESE A TESTA SEMISFERICA PER SGROSSATURA • SERIE LUNGA

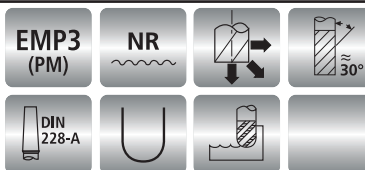
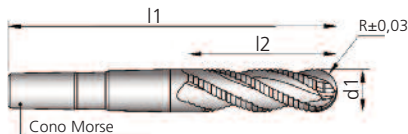
MG29

🇮🇹 Denti elicoidali con rompitrucolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Codolo conico Morse con foro filettato
🇬🇧 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Morse taper shank
🇫🇷 FRAISES FRONTALES À CYLINDRES À DEGROSSIR - Denture hélicoïdale avec brise-copeaux - Deux dents bout coupantes jusqu'au centre - Queue au cône Morse à trou fileté
🇩🇪 SCHAFTFRÄSER - Schrägschneiden mit voll eingeschlifften Spannbrecher - Zwei Schneiden mit Zentrumschnitt - Morsekegelschaft und Anzugsgewinde
🇪🇸 FRESAS CILINDRICAS FRONTALES CABEZA SEMIESFÉRICA PARA DESBASTE - Labios helicoidal con arranca de viruta - Dos labios que cortan hasta el centro - Mango cónico Morse con taladro roscado
🇵🇹 FRESAS CILINDRICAS FRONTALES BOLEADA PARA DESBASTE - Navalhas helicoidal com quebra aparra - duas navalhas que cortan hasta el centro - Encabadouro cónico - Morse taladro roscado
🇷🇺 Фреза для черновой обработки. Сферический торцев. Хвостовик конус Морзе с резьбой. Удлиненная серия

SERIE MG

NORM.

UNI 8250-8251
 DIN 845B
 ISO 1641/II



SHORT
 NORMAL
 LONG
 EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG29/01	16	63	148	2	4	162,58
MG29/02	18	63	148	2	4	152,48
MG29/03	20	75	177	3	4	205,52
MG29/04	22	75	177	3	4	213,65
MG29/05	24	90	192	3	5	261,11
MG29/06	25	90	192	3	5	270,02
MG29/07	26	90	192	3	5	304,38
MG29/08	28	90	192	3	5	330,40
MG29/09	30	90	192	3	5	354,84
MG29/10	32	106	231	4	5	455,94
MG29/11	34	106	231	4	5	498,65
MG29/12	35	106	231	4	6	527,94
MG29/13	36	106	231	4	6	549,14
MG29/14	38	125	250	4	6	645,59
MG29/15	40	125	250	4	6	705,69
MG29/16	45	125	250	4	6	696,25
MG29/17	50	150	275	4	7	1205,65

Toll. reale sul Ø
 Real Tol. on Ø
 ±0,05

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▼	▼

▲ CONSIGLIATO
RECOMMENDED

▶ ACCETTABILE
ACCEPTABLE


▼ SCONSIGLIATO
NOT RECOMMENDED

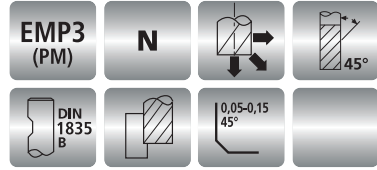
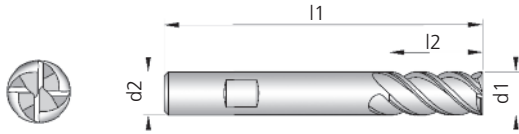


FRESE CILINDRICHE FRONTALI • SERIE NORMALE

**SERIE
MG**

MG30


 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Weldon shank
 FRAISES À CYLINDRES - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
 SCHAFTFRÄSER MIT SPANBRECHER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Ungleiche schneidenteilung - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES, DOS LABIOS QUE CORTAN HASTA EL CENTRO - Hélice derecha 45° - División irregular - Mango Weldon
 FRESAS CILINDRICAS FRONTALES - Duas navalhas que cortan hasta el centro - Hélice direita 45° - Divisão irregular - Encabadouro Weldon
 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик Weldon. Средняя серия



NORM.

UNI 8248
 DIN 844B
 ISO 1641/1

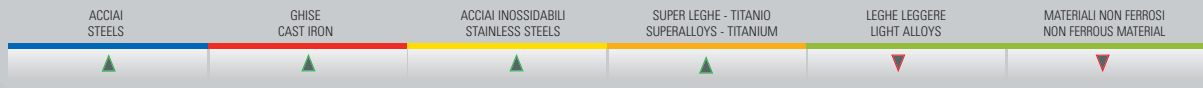
Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG30/01	6	13	57	6	3	18,30	25,39
MG30/02	8	19	69	10	4	26,72	38,02
MG30/03	10	22	72	10	4	28,76	39,93
MG30/04	12	26	83	12	4	35,23	48,30
MG30/05	14	26	83	12	4	39,23	53,47
MG30/06	16	32	92	16	4	47,47	68,54
MG30/07	18	32	92	16	4	54,22	76,28
MG30/08	20	38	104	20	4	66,30	88,44
MG30/09	22	38	104	20	4	91,83	122,28
MG30/10	25	45	121	25	4	128,25	162,26
MG30/11	28	45	121	25	6	160,03	196,24
MG30/12	30	45	121	25	6	182,76	217,86
MG30/13	32	53	133	32	6	199,54	238,11

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



FRESE A TAGLIO INTERROTTO • SERIE NORMALE

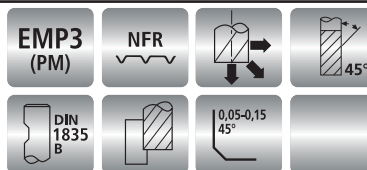
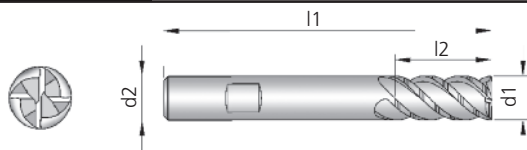
MG31

 Due denti frontali taglienti fino al centro - Elica destra 45° - Divisione irregolare - Attacco Weldon
 END MILLS WITH CHIP-BREAKER - Two end teeth cutting up to the centre - 45° right hand spiral - Irregular division - Weldon shank
 FRAISES CYLINDRES AVEC BRISE-COPEAUX - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
 SCHAFFFRÄSER MIT SPANNBRECHER - Zwei Schneiden mit Zentrumschnitt - 45° rechts spiralgenutet - Ungleiche schneidenteilung - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES CON ARRANCA DE VIRUTA - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango Weldon
 FRESAS CILINDRICAS FRONTALES COM QUEBRA APARA - Duas navalhas que cortan hasta el centro - Hélice direita 45° - Divisão irregular - Encabadouro Weldon
 Фреза концевая со стружколомом. Угол винтовой канавки 45°. Режущий торец. Хвостовик Weldon. Средняя серия

SERIE MG

NORM.

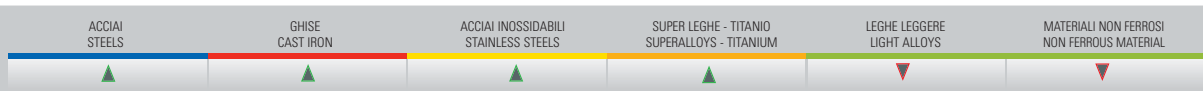
UNI 8248
DIN 844B
ISO 1641/1



SHORT
NORMAL
LONG
EXTRA-LONG

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG31/01	6	13	57	6	3	29,36	32,32
MG31/02	8	19	69	10	4	39,11	50,06
MG31/03	10	22	72	10	4	39,11	50,06
MG31/04	12	26	83	12	4	43,98	56,76
MG31/05	14	26	83	12	4	55,59	69,15
MG31/06	16	32	92	16	4	62,96	83,51
MG31/07	18	32	92	16	4	67,72	89,39
MG31/08	20	38	104	20	4	79,40	101,07
MG31/09	22	38	104	20	4	107,27	137,19
MG31/10	25	45	121	25	4	149,18	182,05
MG31/11	28	45	121	25	6	189,10	223,53
MG31/12	30	45	121	25	6	201,00	234,67
MG31/13	32	53	133	32	6	228,35	265,16

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03



▲ CONSIGLIATO RECOMMENDED

▲ ACCETTABILE ACCEPTABLE


▼ SCONSIGLIATO NOT RECOMMENDED



BARRETTE TRATTATE PER TORNITURA - BARENATURA - FRESATURA

SERIE
MG

MG32


 Barrette tonde
 TOOL BITS TREATED TO BE TURNED, BORED, MILLED - Round
 BARREAUx TRAITÉS POUR TOURNAGE, ALÉSAGE, FRAISAGE - Forme ronde
 DREHLINGE ZUM DREHEN, AUSBOHREN, FRÄSEN - Rund
 BARRETAS TRACTADAS PARA TORNITURA - Barenatura - Fresadora
 BURIS TRACTADAS PARA TORNITURA - Barenatura - Fresadora
 Заготовка-цилиндр



EMP3
(PM)

NORM.

UNI 3868
DIN
ISO

CODE	d h8	l j16	EMP3 €
MG32/01	4	100	11,13
MG32/02	6	100	13,69
MG32/03	6	200	24,82
MG32/04	8	100	18,95
MG32/05	8	200	32,61
MG32/06	10	100	21,23
MG32/07	10	200	38,83
MG32/08	12	100	25,67
MG32/09	12	200	48,44
MG32/10	14	200	61,46
MG32/11	16	200	75,90
MG32/12	18	200	90,64
MG32/13	20	200	113,33



Catalogo HSS-E e PM

SERIE MR

**FRESE IN EMP6
(HSS-CoPM)**







**END MILLS IN EMP6
(HSS-CoPM)**

Rime
UTENSILERIA










SERIE MR

FRESE IN EMP6 (HSS-CoPM)
END MILLS IN EMP6 (HSS-CoPM)

	COD.	PAG.
	MR1	187
	MR2	188
	MR3	189
	MR4	190
	MR8	191
	MR12	192

FRESE A DUE DENTI PER CAVE • SERIE NORMALE

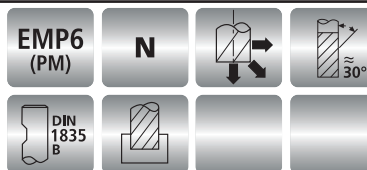
MR1

 Un dente frontale tagliente fino al centro - Attacco Weldon
 TWO-FLUTES SLOT CUTTERS - One end tooth cutting up to the centre - Weldon shank
 FRAISES À RAINURES DEUX DENTS - Une dent bout coupante jusq'au centre - Queue cylindrique Weldon
 LANGLOCHFRÄSER, ZWEISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES DE DOS LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTALES DE DUAS NAVALHAS - Um naval que corta hasta el centro - Encabadouro Weldon
 Фреза 2-х зубая. Режущий торец. Хвостовик Weldon. Средняя серия

SERIE MR

NORM.

UNI 8258
 DIN 327D
 ISO 1641/1



CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR1/02	4	7	51	6	2	16,70	23,86
MR1/03	5	8	52	6	2	16,70	23,86
MR1/04	6	8	52	6	2	16,70	23,86
MR1/05	7	10	60	10	2	22,42	33,89
MR1/06	8	11	61	10	2	22,42	33,89
MR1/07	9	11	61	10	2	25,63	37,08
MR1/08	10	13	63	10	2	25,63	37,08
MR1/09	11	13	70	12	2	30,33	42,25
MR1/10	12	16	73	12	2	30,33	42,25
MR1/11	13	16	73	12	2	34,90	47,92
MR1/12	14	16	73	12	2	37,43	50,55
MR1/13	15	19	79	16	2	42,00	58,73
MR1/14	16	19	79	16	2	43,92	60,63
MR1/15	17	19	79	16	2	48,50	70,72
MR1/16	18	19	79	16	2	53,68	75,69
MR1/17	19	22	88	20	2	69,80	91,04
MR1/18	20	22	88	20	2	65,94	87,26
MR1/19	22	22	88	20	2	97,39	122,88

ACCAI STEELS	GHISE CAST IRON	ACCAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▶	▶

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



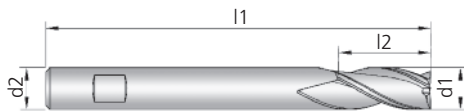
FRESE A TRE DENTI • SERIE NORMALE

SERIE
MR

MR2

Un dente frontale tagliente fino al centro - Attacco Weldon
 THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Weldon shank
 FRAISES CYLINDRIS TROIS DENTS - Une dent bout coupante jusq'au centre - Queue cylindrique Weldon
 SCHATFRÄSER, DREISCHNEIDER - Eine Schneide mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES DE TRES LABIOS - Un labio que corta hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTALES DE TRES NAVALHAS - Um naval que corta hasta el centro - Encabadouro Weldon
 Фреза 3-х зубая. Режущий торец. Хвостовик Weldon. Средняя серия

SHORT
NORMAL
LONG
EXTRA-LONG



EMP6 (PM) N

DIN 1835 B

30°

NORM.

UNI 8248
 DIN 844B
 ISO 1641/I

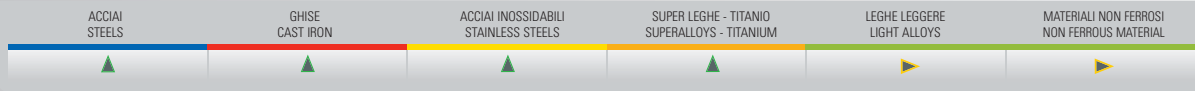
Toll. reale sul Ø
 Real Tol. on Ø
 +0 -0,03

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR2/03	4	11	55	6	3	18,61	25,74
MR2/04	5	13	57	6	3	17,88	25,15
MR2/05	6	13	57	6	3	17,28	24,45
MR2/06	7	16	66	10	3	28,85	40,14
MR2/07	8	19	69	10	3	26,94	38,25
MR2/08	10	22	72	10	3	28,14	39,55
MR2/09	12	26	83	12	3	36,57	49,23
MR2/10	14	26	83	12	3	40,45	54,34
MR2/11	16	32	92	16	3	51,50	71,91
MR2/12	18	32	92	16	3	58,67	80,21
MR2/13	20	38	104	20	3	70,46	91,48
MR2/14	22	38	104	20	3	130,33	157,50

▲
CONSIGLIATO
RECOMMENDED








▶
ACCETTABILE
ACCEPTABLE

▼
SCONSIGLIATO
NOT RECOMMENDED



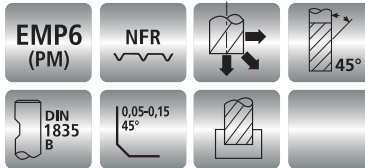
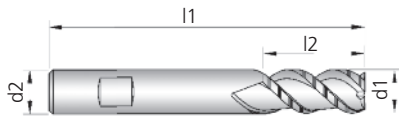
FRESE A TAGLIO INTERROTTO • SERIE NORMALE

MR3

 Un dente frontale tagliente fino al centro - Elica destra 45° - Divisione irregolare - Attacco Weldon
 END MILLS WITH CHIP-BREAKER - One end tooth cutting up to the centre - 45° right hand spiral - Irregular division - Weldon shank
 FRAISES CYLINDRIS AVEC BRISE-COPEAUX - Une dent bout coupante jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
 SCHATFRÄSER, LANGLOCH - Eine Schneide mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige - Teilung - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES CORTE INTERRUMPO - Un labio que corta hasta el centro, Hélice derecha 45° - División irregular - Mango Weldon
 FRESAS CILINDRICAS FRONTAIS CORTE INTERRUMPIDO - Um naval que corta ao centro - Hélice direita 45° - Divisão irregular - Encabadouro Weldon
 Фреза концевая со стружколомом с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торцев. Хвостовик Weldon. Средняя серия

SERIE MR

NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR3/03	6	13	57	6	3	26,98	33,95
MR3/04	8	20	69	10	3	36,23	48,15
MR3/05	10	22	72	10	3	38,15	50,06
MR3/06	12	26	83	12	3	46,72	59,57
MR3/07	14	26	83	12	3	56,04	69,80
MR3/08	16	36	90	16	3	66,55	87,08
MR3/09	18	40	100	16	4	77,50	99,06
MR3/10	20	45	110	20	4	88,54	117,58
MR3/12	25	50	125	25	4	160,58	192,95
MR3/14	30	63	140	25	4	221,92	312,31
MR3/15	32	63	140	32	4	258,37	350,16

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

ACCIAI STEELS	GHISE CAST IRON	ACCIAI INOSSIDABILI STAINLESS STEELS	SUPER LEGHE - TITANIO SUPERALLOYS - TITANIUM	LEGHE LEGGERE LIGHT ALLOYS	MATERIALI NON FERROSI NON FERROUS MATERIAL
▲	▲	▲	▲	▶	▶

▲
CONSIGLIATO
RECOMMENDED

▶
ACCETTABILE
ACCEPTABLE


▼
SCONSIGLIATO
NOT RECOMMENDED

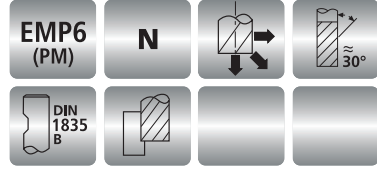
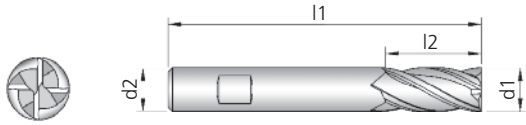


FRESE PER FINITURA • SERIE NORMALE

**SERIE
MR**

MR4


 Due denti frontali taglienti fino al centro - Attacco Weldon
 END MILLS - Two end teeth cutting up to the centre - Weldon shank
 FRAISES CYLINDRÉS - Deux dents bout coupantes jusqu'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Zwei Schneiden mit Zentrumschnitt - Weldon Spannfläche
 FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTALES - Duas navalhas que corta ao centro - Encabadouro Weldon
 Фреза для чистовой обработки. Режущий торец. Хвостовик Weldon. Средняя серия






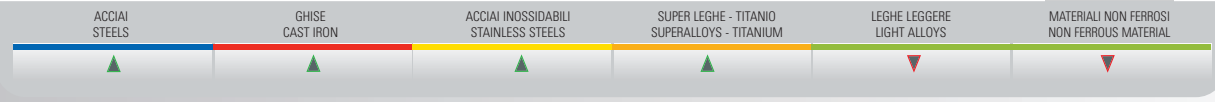
NORM.

UNI 8248
 DIN 844B
 ISO 1641/1

Toll. reale sul Ø
 Real Tol. on Ø
 +0 +0,03

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR4/01	6	13	57	6	4	15,82	22,77
MR4/02	7	16	66	10	4	26,60	37,61
MR4/03	8	19	69	10	4	23,88	35,09
MR4/04	9	19	69	10	4	28,60	33,19
MR4/05	10	22	72	10	4	26,60	37,61
MR4/06	12	26	83	12	4	33,91	45,87
MR4/07	14	26	83	12	4	39,22	52,23
MR4/07/1	15	32	92	16	4	47,41	66,95
MR4/08	16	32	92	16	4	46,01	65,63
MR4/09	18	32	92	16	4	56,86	77,13
MR4/10	20	38	104	20	4	64,89	84,49
MR4/11	22	38	104	20	4	100,15	130,59
MR4/12	25	45	121	25	5	148,98	183,47
MR4/13	28	45	121	25	5	176,30	212,52
MR4/14	30	45	121	25	6	192,72	228,07
MR4/15	32	53	133	32	6	229,68	266,96

 CONSIGLIATO
 RECOMMENDED
 ACCETTABILE
 ACCEPTABLE
 SCONSIGLIATO
 NOT RECOMMENDED



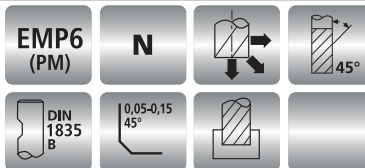
FRESE CILINDRICHE FRONTALI • SERIE NORMALE

MR8

🇮🇹 Un dente frontale tagliente fino al centro - Elica destra 45° - Divisione irregolare - Attacco Weldon
🇬🇧 END MILLS - One end tooth cutting up to the centre - 45° right hand spiral - Irregular division - Weldon shank
🇫🇷 FRAISES CYLINDRÉS - Une dent bout coupante jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
🇩🇪 SCHAFTFRÄSER - Eine Schneide mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige - Teilung - Weldon Spannfläche
🇪🇸 FRESAS CILINDRICAS FRONTALES - Un labio que corta hasta el centro - Hélice derecha 45° - División irregular - Mango Weldon
🇵🇹 FRESAS CILINDRICAS FRONTALES - Um naval que corta ao centro - Hélice direita - Divisão irregular - Encabadouro Weldon
🇷🇺 Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик Weldon. Средняя серия

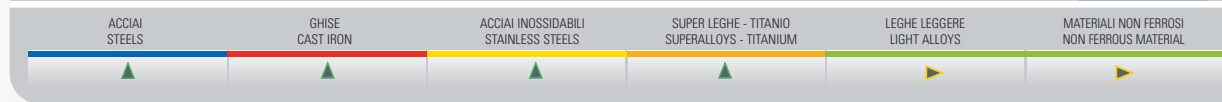
SERIE MR

NORM.



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR8/01	6	13	57	6	3	20,10	27,30
MR8/02	8	20	69	10	3	29,13	40,53
MR8/03	10	22	72	10	3	31,04	42,45
MR8/04	12	26	83	12	3	39,48	52,48
MR8/04/1	14	26	83	12	3	46,11	60,17
MR8/05	16	36	92	16	3	52,95	73,80
MR8/05/1	18	40	100	16	4	65,23	87,08
MR8/06	20	45	110	20	4	77,18	105,93
MR8/07	25	50	125	25	4	138,68	171,79
MR8/08	30	63	140	25	4	185,61	277,85
MR8/09	32	63	140	32	4	229,92	323,33

Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03




▲ CONSIGLIATO
RECOMMENDED
▶ ACCETTABILE
ACCEPTABLE
▼ SCONSIGLIATO
NOT RECOMMENDED

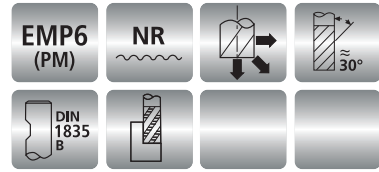
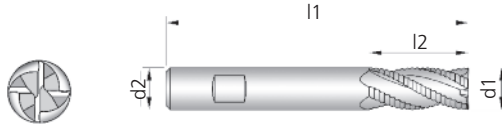


FRESE PER SGROSSATURA • SERIE NORMALE

**SERIE
MR**

MR12


 Denti elicoidali con rompitriciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
 ROUGHING END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting up to the centre - Weldon shank
 FRAISES FRONTALES ÉBAUCHE - Denture hélicoïdale avec brise-copeaux profil rond - Deux dents bout coupantes jusq'au centre - Queue cylindrique Weldon
 SCHAFTFRÄSER - Schrägschneiden mit volleingeschliffenem Spanbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon-Spanfläche
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranca de viruta completamente rectificado - Dos labios que cortan hasta el centro - Mango Weldon
 FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Navalhas helicoidal com quebra aparã - Duas navalhas corta ao centro - Encabadouro Weldon
 Фреза для черновой обработки. Режущий торец. Хвостовик Weldon. Средняя серия



NORM.

UNI 8248
 DIN 844B
 ISO 1641/I



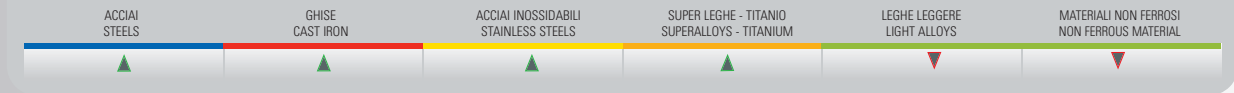
Toll. reale sul Ø
Real Tol. on Ø
+0 +0,03

 CONSIGLIATO
RECOMMENDED

 ACCETTABILE
ACCEPTABLE


 SCONSIGLIATO
NOT RECOMMENDED


CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR12/01	6	13	57	6	3	31,76	37,67
MR12/03	8	19	69	10	4	50,06	59,49
MR12/05	10	22	72	10	4	50,77	60,17
MR12/07	12	26	83	12	4	55,08	67,25
MR12/09	14	26	83	12	4	62,71	76,03
MR12/10	15	32	92	16	4	74,97	94,81
MR12/11	16	32	92	16	4	74,97	94,81
MR12/13	18	32	92	16	4	78,22	99,17
MR12/14	20	38	104	20	4	99,12	119,79
MR12/15	22	38	104	20	4	110,91	138,87
MR12/17	25	45	121	25	5	167,98	200,10
MR12/19	28	45	121	25	5	195,55	230,89
MR12/20	30	45	121	25	5	209,00	243,85
MR12/21	32	53	133	32	5	249,52	286,22





SIMBOLI - SYMBOLS


Materiale di Base Raw material

- 

Acciaio Super Rapido (AISI M2)
High Speed Steel (AISI M2)
- 


Acciaio Super Rapido 5% Co (AISI M35)
High Speed Steel 5% Co (AISI M35)
- 


Acciaio Super Rapido 8% Co (AISI M42)
High Speed Steel 8% Co (AISI M42)
- 


Acciaio Super Rapido 8.5% Co (EMP3 PM)
High Speed Steel 8.5% Co (EMP3 PM)
- 


Acciaio Super Rapido (EMP6 PM)
High Speed Steel (EMP6 PM)


Forme costruttive / Geometrie Geometry and types of cutting edges


- 


Tagliante a finire.
Finishing cutting edge profile.
- 

Geometria per lavorazione di materiali particolarmente teneri e malleabili.
Geometry for light alloys.
- 

Tagliante a sgrossare.
Roughing cutting edge profile.
- 


Tagliante a semifinire.
Semifinishing cutting edge.
- 


Tagliante interrotto a sgrossare o semifinire.
Interrupted cutting edge for roughing or semifinishing.
- 


Tagliante interrotto a sgrossare o semifinire per lavorazione di alluminio e leghe leggere.
Interrupted cutting edge for roughing or semifinishing aluminium and light alloy.
- 


Tagliante per sgrossatura alluminio.
Roughing cutting edge profile for aluminium.

Direzione di lavorazione Machining direction

- 

Adatto per lavorazione radiale, diagonale ed assiale.
Suitable for radial, diagonal and axial machining.
- 

Adatto per lavorazione radiale e diagonale.
Suitable for radial and diagonal machining.
- 

Adatto solo per lavorazione assiale.
Suitable only for axial machining.
- 

Adatto solo per lavorazione radiale.
Suitable only for radial machining.

Angolo dell'elica Spiral angle

- 

Angolo dell'elica: 30° dx
Spiral angle: 30° right
- 

Angolo dell'elica: 35° dx
Spiral angle: 35° right
- 


Angolo dell'elica: 40° dx
Spiral angle: 40° right
- 


Angolo dell'elica: 45° dx
Spiral angle: 45° right
- 


Angolo dell'elica: 10° sx
Spiral angle: 10° left
- 


Angolo dell'elica: 45° sx
Spiral angle: 45° left


Tipo di attacco Type of connection


- 


Foro cilindrico con cava di trascinamento trasversale DIN 138
Cylindrical hole and frontal tenon drive DIN 138
- 


DIN 228-B
Codolo conico Morse con dente DIN 228B
Morse taper shank DIN 228B
- 

DIN 228-A
Codolo conico Morse con foro filettato DIN 228A
Morse taper shank DIN 228A
- 

Foro cilindrico con linguetta DIN 138
Cylindrical Hole with parallel key DIN 138
- 


DIN 1835-D
Codolo cilindrico filettato DIN 1835D
Threaded shank DIN 1835D
- 


DIN 1835-A
Codolo cilindrico DIN 1835A
Straight shank DIN 1835A
- 

DIN 1835-B
Codolo cilindrico con attacco Weldon DIN 1835B
Weldon shank DIN 1835B
- 

DIN 10
Codolo cilindrico con quadro DIN 10
Shank with flat quare DIN 10


Forma dei taglienti Type of cutters

- 

Utensile cilindrico.
Square end cutters.
- 

Utensile a testa sferica.
Ball-nose cutters.

Forma dello spigolo tagliente Type of cutters

- 

0,05-0,15
45°
Utensile con smusso a 45° sullo spigolo tagliente
(la dimensione dello smusso varia a seconda del diametro).
Chanfered end cutters 45°.

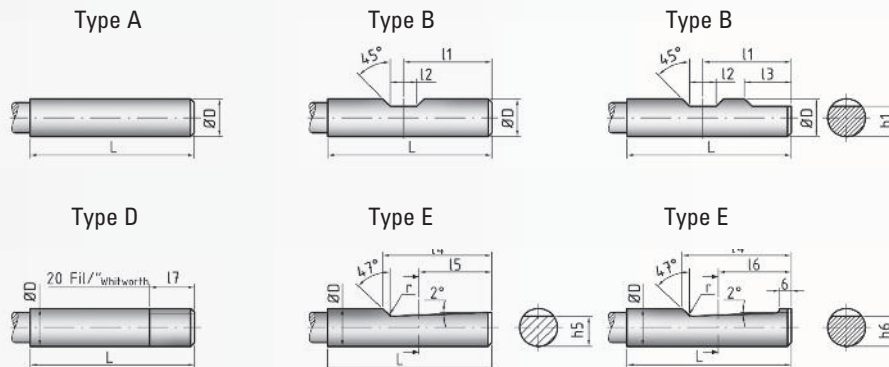
Utilizzo / Applicazione Application



CLASSIFICAZIONE MATERIALI - CLASSIFICATION OF MATERIALS

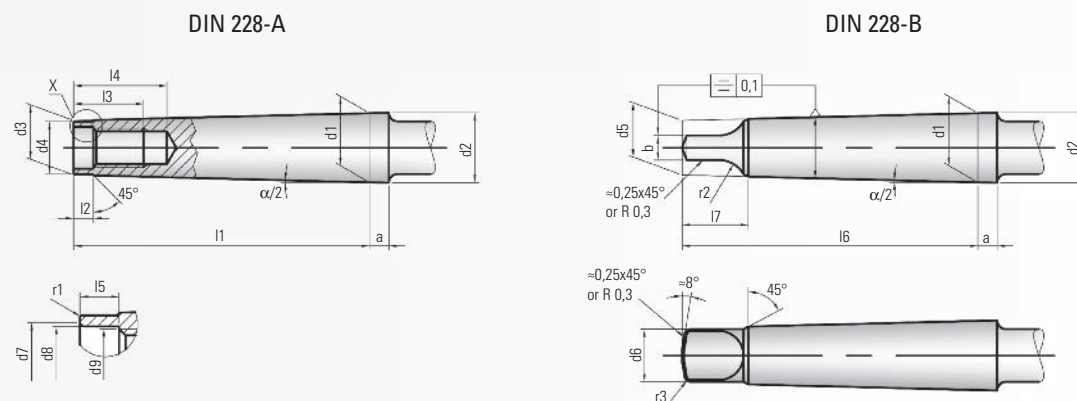
	DESCRIZIONE MATERIALI	MATERIALS DESCRIPTION	Rm (N/mm ²)	Durezza Hardness (HB)	Esempi - Example
Acciai, acciai inossidabili ferritici e martensitici Steels, ferritic and martensitic stainless steels					
P	1 Acciai molto teneri al carbonio. Acciai ferritici. Acciai non legati.	Soft carbon steel	<450	<120	S235JR; S275J2G3; C10; C15; C20; C22; 11 Mn 4Si
	2 Acciai automatici. Acciai debolmente legati.	Free-machining steel Low alloys steel	400 <700	<200	10SPb2; 11 SMn30; 15 SMn13; 11SMnPb37; C15Pb; C22Pb
	3 Acciai da costruzione. Acciai al carbonio con tenore di carbonio basso-medio (C <0,5%). Acciaio debolmente legati.	Constructions steels Carbon steel (low/medium carbon C<0,5%) Low alloys steel	450 < 850	<250	S355JR; C30E; C35E C40E; C50E; C55E
	4 Acciai con tenore di carbonio medio-alto (C >0,5%). Acciai medio-duri per trattamenti termici. Acciai legati.	Carbon steel (medium/high carbon C>0,5%) Medium/High steel for heat treatment Alloys steel	550 <850	<350 <450	13CrMo4-5; 17CrNiMo6 42CrMo4; 50CrV4; 34CrNiMo6; C60; C75
	5 Acciai da utensili. Acciai inossidabili ferritici, martensitici.	Tools steel Ferritic and martensitic stainless steel	700 <900	<250 <350	X18CrN28; X12Cr13(AISI 410); X38CrMo16; X17CrNi16-2; AISI 403; AISI 405; AISI 416; AISI 430; AISI 434; AISI 439
	6 Acciai da utensili di difficile lavorabilità. Acciai con elevata durezza. Acciai inossidabili ferritici, martensitici.	Tools steel of hard machinability High hardness steel Ferritic and martensitic stainless steel	900 <1500	>350	X40CrMoV5-1; X105CrMo17 (AISI 440C); X20Cr13(AISI 420); AISI 431; AISI 440A; AISI 440B; AISI 446; X210Cr12; HS 6-5-2; HS 2-10-1-8; HS 18-0-1
Acciaio temprato e ghisa fusa Hardened steel and chilled iron					
H	1 Acciai temprati, ghisa fusa in conchiglia.	Hardened steel, chilled cast iron	<1600	<49 HRC	X38CrMo16; X40CrMoV5-1; G-X300CrMo15-3
	2 Acciai temprati, ghisa fusa in conchiglia.	Hardened steel, chilled cast iron	>1620	>49 <55 HRC	C35E;GX200CrNiMo14-1
	3 Acciai temprati, ghisa fusa in conchiglia.	Hardened steel, chilled cast iron	>1980	>55 <60 HRC	C40E; C50E; 42CrMo4; 34CrNiMo6; X105CrMo17 (AISI 440C)
	4 Acciai temprati, ghisa fusa in conchiglia.	Hardened steel, chilled cast iron		>60 HRC	C55E; C60; G-X 300 CrMo 15 3
Acciai inossidabili automatici, austenitici e duplex Free-machining, austenitic and Duplex stainless steel					
M	1 Acciai inossidabili di facile lavorabilità. Acciai inossidabili austenitici.	Stainless steel of easy machinability Austenitic stainless steel	<850	<250	AISI 301; AISI 303; AISI 304 AISI 305; AISI 308
	2 Acciai inossidabili di media lavorabilità. Acciai inossidabili austenitici e Duplex.	Stainless steel of medium machinability Austenitic stainless steel and Duplex	<1100	<320	AISI 304L; AISI 309; AISI 310S AISI 316; AISI 321; AISI 347 H
	3 Acciai inossidabili di difficile lavorabilità. Duplex, Super Duplex e acciai inox PH	Hard machinability stainless steel Duplex, Super Duplex, inox PH	<900	<200 <275	17-7 PH; AISI 630; 15-5PH AISI 330; AISI 316LN; AISI 329 LN
Ghisa Cast iron					
K	1 Ghise malleabili. Ghise grigie.	Malleable cast iron. Grey cast iron	>500	<250	GJL-100; GJL-150; GJL-200
	2 Ghise debolmente legate. Ghise nodulari.	Low alloys cast iron. Nodular cast iron	>500 <1000	>150 <300	GJL-250; GJL-300; GJL-350
	3 Ghisa a grafite compatta.	Compacted-graphite cast iron	<700	<250	GJS-600-3; GJMB-650-2; GJS-700-2
	4 Ghise altamente legate di difficile lavorabilità. Ghise nodulari austemperate.	High alloys cast iron (hard to machine)	>700 <1000	>300 <450	GJS-800-2; GJSA-XNiCr30-3 GJSA-XNi35; GMB 65
Superleghe - Titanio Super alloys - Titanium					
S	1 Leghe a base di ferro resistente al calore	Iron alloys heat-resistant	>500 <1200	<280	Discalloy; Lapelloy; Incoloy 800; Incoloy 909; Custom 455
	2 Leghe di nichel e leghe di cobalto resistenti al calore	Nichel alloys and cobalt alloys heat-resistant	>1000 <1450	>250 <450	Hastelloy X; Ninomic 75 Inconel 600; Inconel 718; Inconel 625; Waspalloy; Nimocast 713; Udimet 500; Rene 41; Stellite 31
	3 Titanio, leghe di titanio a media durezza	Titanium, titanium alloys with medium hardness	<1100	<320	TiCu2; Ti4; TiAl3V2,5
	4 Leghe di titanio a durezza elevata	Titanium alloys with high hardness	>1100 <1400	>300 <400	TiAl6V4; TiAl5Fe2 5; TiAl6Sn2Zr4Mo2; TiAl4Mo4Sn2
Leghe leggere / Materiali non ferrosi Light alloys / Non ferrous material					
N	1 Leghe di alluminio: Si <0,5%	Aluminium alloys (Si<0,5%)	<500	<90	Al99,9; AlMg1; AlMg5; AlCuMgPb
	2 Leghe di alluminio: Si >0,5% <10%	Aluminium alloys (Si>0,5% <10%)	<400	>70 <100	AlSi9Mg; AlSi17Cu5; AlSi10Mg; AlSi7Mg
	3 Leghe di alluminio: ad alto contenuto di Si >10%	Aluminium alloys (Si >10%)	>200 <320	>60 <120	AlSi17Cu4Mg; AlSi18CuNiMg; AlSi21CuNiMg
	4 Rame e leghe di rame	Copper and copper alloys	>200 <650	>60 <200	CuZn36Pb1,5; CuSn20; CuSn2 CuNi18Zn19Pb; CuZn40Al2
	5 Materiali plastici	Plastics materials			
Grafite Graphite					
O	Grafite	Graphite	<100		

Codolo delle frese - Estratto Tab. DIN 1835 Mill shank according DIN 1835



D _{h6}	L ₋₀ ⁺²	l ₁ ₋₁ ⁺⁰	h ₁ _{h13}	l ₂ ₋₀ ^{+0,05}	l ₃ ₋₀ ⁺¹	l ₄ ₋₁ ⁺⁰	l ₅ _{nom.}	h ₅ _{h11}	l ₆ _{nom.}	h ₆ _{h13}	r _{min}	l ₇ ₋₀ ⁺²
4	28	-	-	-	-	-	-	-	-	-	-	4
6	36	18	4,8	4,2	-	25	18	4,8	18	5,3	1,2	10
8	36	18	6,6	5,5	-	25	18	6,6	18	7,1	1,2	10
10	40	20	8,4	7	-	28	20	8,4	20	8,9	1,2	10
12	45	22,5	10,4	8	-	33	22,5	10,4	22,5	10,9	1,2	10
14	45	-	-	-	-	33	22,5	-	22,5	12,4	1,2	-
16	48	24	14,2	10	-	36	24	14,2	24	14,5	1,6	10
18	48	-	-	-	-	36	24	-	24	16,2	1,6	-
20	50	25	18,2	11	-	38	25	18,2	25	18,2	1,6	15
25	56	32	23	12	17	44	32	23	32	23	1,6	15
32	60	36	30	14	19	48	35	30	35	30	1,6	15

Attacchi per utensili - Codolo secondo DIN 228 Mill shank according DIN 228

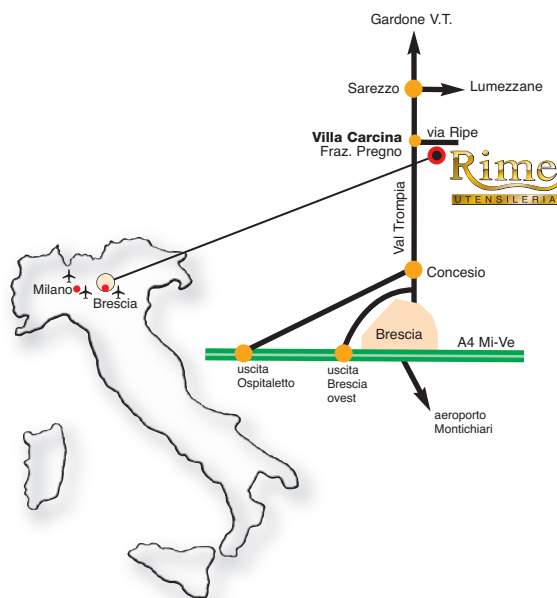


Mk	$\alpha/2$	a	b	d1	d2	d3	d4	d5	d6	d7	d8	d9	l1	l2	l3	l4	l5	l6	l7	r1	r2	r3
0	1°29'27"	3,0	3,9	9,045	9,2	6,4	6,0	6,1	6,0	-	-	-	50,0	4	-	-	-	56,5	10,5	0,2	4	1,0
1	1°25'43"	3,5	5,2	12,065	12,2	9,4	9,0	9,0	8,7	8,5	6,4	M6	53,0	5	16	22,0	4,0	62,0	13,5	0,2	5	1,2
2	1°25'50"	5,0	6,3	17,780	18,0	14,6	14,0	14,0	13,5	13,2	10,5	M10	64,0	5	24	31,5	5,0	75,0	16,0	0,2	6	1,6
3	1°26'16"	5,0	7,9	23,825	24,1	19,8	19,0	19,1	18,5	16,0	13,0	M12	81,0	7	24	33,5	5,5	94,0	20,0	0,6	7	2,0
4	1°29'15"	6,5	11,9	31,267	31,6	25,9	25,0	25,2	24,5	21,5	17,0	M16	102,5	9	32	42,5	8,2	117,5	24,0	1,0	8	2,5
5	1°30'26"	6,5	15,9	44,399	44,7	37,6	35,7	36,5	35,7	26,0	21,0	M20	129,5	10	40	52,5	10,0	149,5	29,0	2,5	10	3,0

Scostamenti previsti dalle norme UNI per le frese - valori in mm 0,001
Deviations in end mills and cutters fore seen by uni norms values in mm 0,001

Ø	mm	H7	H11	d9	d11	e8	h6	h8	h11	h12	js12	js16	k11	k16
oltre fino	1,6 3	0 +9	0 +60	-20 -45	-20 -80	-14 -28	0 -7	0 -14	0 -60	0 -100	+125 -125	+300 -300	+60 0	+600 0
oltre fino	3 6	0 +12	0 +75	-30 -60	-30 -105	-20 -38	-0 -8	0 -19	0 -75	0 -120	+150 -150	+375 -375	+75 0	+750 0
oltre fino	6 10	0 +15	0 +90	-40 -76	-40 -130	-25 -47	0 -9	0 -22	0 -90	0 -150	+180 -180	+450 -450	+90 0	+900 0
oltre fino	10 18	0 +18	0 +110	-50 -93	-50 -160	-32 -59	0 -11	0 -27	0 -110	0 -180	+215 -215	+550 -550	+110 0	+1100 0
oltre fino	18 30	0 +21	0 +130	-65 -117	-65 -195	-40 -73	0 -13	0 -33	0 -130	0 -210	+260 -260	+650 -650	+130 0	+1300 0
oltre fino	30 50	0 +25	0 +160	-80 -142	-80 -240	-50 -89	0 -16	0 -39	0 -160	0 -250	+310 -310	+800 -800	+160 0	+1600 0
oltre fino	50 80	0 +30	0 +190	-100 -174	-100 -290	-60 -106	0 -19	0 -46	0 -190	0 -300	+370 -370	+950 -950	+190 0	+1900 0
oltre fino	80 120	0 +35	0 +220	-120 -207	-120 +304	-72 -126	0 -22	0 -54	0 -220	0 -350	+435 -435	+1100 -1100	+220 0	+2200 0
oltre fino	120 180	0 +40	0 +250	-145 -243	-145 -395	-85 -148	0 -25	0 -63	0 -250	0 -400	+500 -500	+1250 -1250	+250 0	+2500 0
oltre fino											+575 -575	+1450 -1450		

LOCATION



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