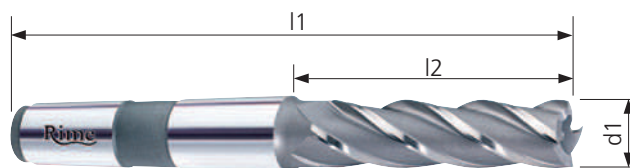


Rime

SERIE G

FRESE PER FINITURA

NORM	TIPO-TYPE	Z4+8
UNI 8251 DIN 845B ISO 1641/II	SHORT NORMAL LONG EXTRALONG	



HSS-E C08	90°	
N	≈30°	DIN 228 A

LUNGA

G9

- FRESE PER FINITURA - 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 longa - Encabadouro Morse
- Фреза концевая для чистовой обработки. Хвостовик конус Морзе с резьбой. Удлиненная серия

CODE (Co 8%)	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €	
G9/01	16	63	148	2	4	•	•	■
G9/02	18	63	148	2	4	•	•	■
G9/03	20	75	177	3	4	•	•	■
G9/04	22	75	177	3	4	•	•	■
G9/05	24	90	192	3	5	•	•	■
G9/06	25	90	192	3	5	•	•	■
G9/07	26	90	192	3	5	•	•	■
G9/08	28	90	192	3	5	•	•	■
G9/09	30	90	192	3	6	•	•	■
G9/10	32	106	231	4	6	•	•	■
G9/11	34	106	231	4	6	•	•	■
G9/12	35	106	231	4	6	•	•	■
G9/13	36	106	231	4	6	•	•	■
G9/14	38	125	250	4	6	•	•	■
G9/15	40	125	250	4	8	•	•	■
G9/16	45	125	250	4	8	•	•	■
G9/17	50	150	308	5	8	•	•	■

Rime

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

Ulteriori diametri a richiesta
Other diameters on demand

COATING **SUPREME**

CODE
G9/.../S

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☒	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	☐
---------------------------	------------------------------	------------------------	------------------	------------------	--------------------------

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

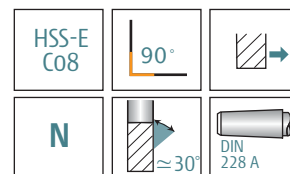
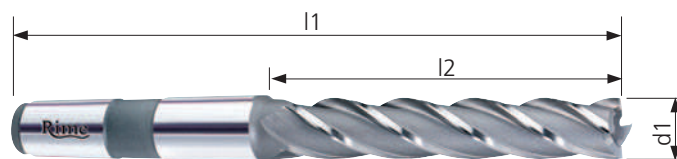
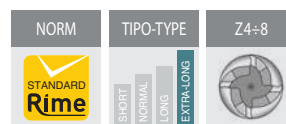
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE G

FRESE PER FINITURA



EXTRA-LUNGA

G10

- FRESE PER FINITURA - 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. Ультрадлинная серия

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
G10/01	16	90	175	2	4	•
G10/02	18	100	202	3	4	•
G10/03	20	110	212	3	4	•
G10/04	22	110	212	3	4	•
G10/05	25	125	250	4	5	•
G10/06	28	135	260	4	5	•
G10/07	30	140	265	4	6	•
G10/08	32	150	275	4	6	•
G10/09	35	150	275	4	6	•
G10/10	36	150	275	4	6	•
G10/11	38	180	305	4	6	•
G10/12	40	180	305	4	8	•

Rime

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

Ulteriori diametri a richiesta
Other diameters on demand

Parametri
Cutting data
pag. 199-222

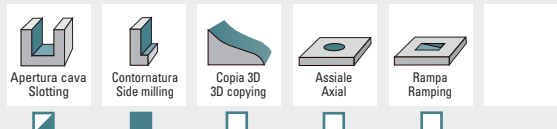
Suggerimenti
Suggestion

SGROSSATURA - ROUGHING ☐ ☐ ☐ ☐

SEMIFINITURA - SEMIFINISHING ☐ ☐ ☐ ☐

FINITURA - FINISHING ☒ ☒ ☒ ☒

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

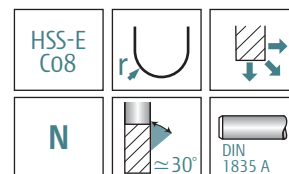
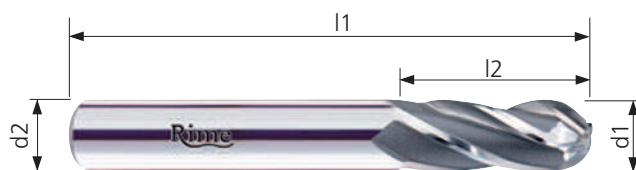
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED ☒

ACCETTABILE
ACCEPTABLE ☒

SCONSIGLIATO
NOT RECOMMENDED ☐



NORMALE

G11

- FRESE PER FINITURA A TESTA SEMISFERICA - 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 jusqu'au centre - Queue cylindrique
- HALBRUNDKOPFFRÄSER - 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

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
G11/03	4	11	55	6	4	•
G11/04	5	13	57	6	4	•
G11/05	6	13	57	6	4	•
G11/06	8	19	69	10	4	•
G11/07	10	22	72	10	4	•
G11/08	12	26	83	12	4	•
G11/09	14	26	83	12	4	•
G11/10	15	32	92	16	4	•
G11/11	16	32	92	16	4	•
G11/12	18	32	92	16	4	•
G11/13	20	38	104	20	4	•
G11/14	22	38	104	20	4	•
G11/15	24	45	121	25	5	•
G11/16	25	45	121	25	5	•
G11/17	26	45	121	25	5	•
G11/18	28	45	121	25	5	•
G11/19	30	45	121	25	6	•
G11/20	32	53	133	32	6	•

Rime



THREADED
DIN 1835 D

su richiesta
on request



WELDON
DIN 1835 B

su richiesta
on request



Toll. reale sul Ø
Real Tol. on Ø

+0 +0,03



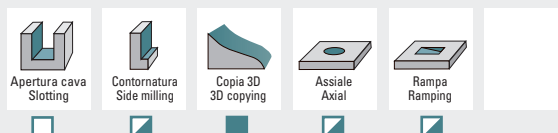
Ulteriori diametri a richiesta
Other diameters on demand

Parametri
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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING				
SEMIFINITURA - SEMIFINISHING				
FINITURA - FINISHING				

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

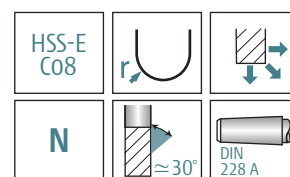
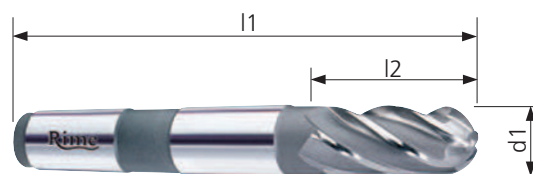
ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED



NORMALE

G12

- FRESE PER FINITURA A TESTA SEMISFERICA - 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 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

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
G12/01	16	32	117	2	4	•
G12/01/1	18	32	117	2	4	•
G12/02	20	38	140	3	4	•
G12/03	22	38	140	3	4	•
G12/04	24	45	147	3	5	•
G12/05	25	45	147	3	5	•
G12/05/1	26	45	147	3	5	•
G12/06	28	45	147	3	5	•
G12/07	30	53	155	3	6	•
G12/08	32	53	178	4	6	•

Rime

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

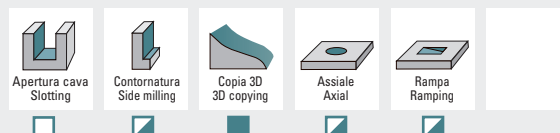
Ulteriori diametri a richiesta
Other diameters on demand

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Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings



Materiali
Materials

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

Rime

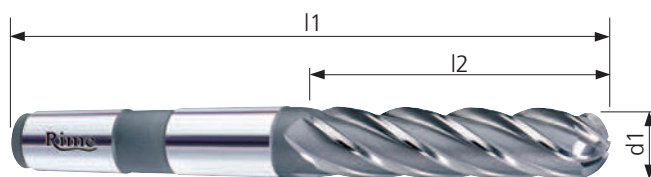
SERIE G

LUNGA

G13

FRESE PER FINITURA A TESTA SEMISFERICA

NORM	TIPO-TYPE	Z4÷6
ISO 1641/1	SHORT NORMAL LONG EXTRALONG	



HSS-E C08		
N		

- FRESE PER FINITURA A TESTA SEMISFERICA - 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 HÉMI-SPHÉRIQUE - 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 cilíndricas boleadas longas de quatro navalhas que cortam ao centro - Encabadouro cone Morse com taladro roscado
- Фреза концевая для чистовой обработки. Сферический торец. Хвостовик конус Морзе с резьбой. Удлиненная серия

CODE	d1 mm js14	L2 mm	L1 mm	CM-MK	Z	Co 8% €
G13/01	16	63	148	2	4	•
G13/01/1	18	63	148	2	4	•
G13/02	20	75	177	3	4	•
G13/03	22	75	177	3	4	•
G13/04	24	90	192	3	5	•
G13/05	25	90	192	3	5	•
G13/05/1	26	90	192	3	5	•
G13/06	28	90	192	3	5	•
G13/07	30	90	192	3	6	•
G13/08	32	106	231	4	6	•

Rime

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

Ulteriori diametri a richiesta
Other diameters on demand

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

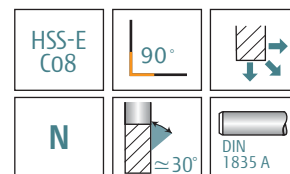
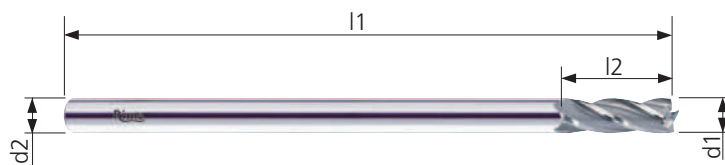
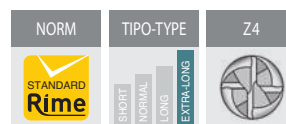
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE G

FRESE PER FINITURA EXTRA-LUNGA



EXTRA-LUNGA

G14

- FRESE PER FINITURA EXTRA-LUNGA - Due denti frontali taglienti fino al centro - Codolo cilindrico
- COPY MILLING CUTTERS FOR FINISHING - Two end teeth cutting up to the centre - Straight shank
- FRAISES POUR FINITION 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 - Dos navalhas que cortam ao centro - Encabadouro cilíndrico
- Фреза концевая с режущим торцем. Цилиндрический хвостовик. Ультралонг серия

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
G14/01	6	25	180	6	4	•
G14/02	8	25	180	8	4	•
G14/03	10	30	200	10	4	•
G14/04	12	30	200	12	4	•
G14/06	16	35	200	16	4	•
G14/08	20	35	200	20	4	•

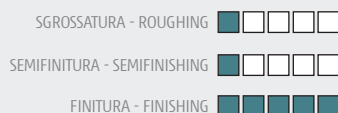
Rime

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

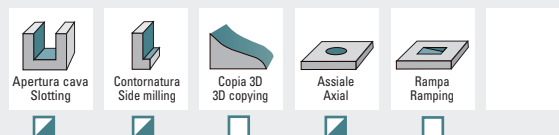
Ulteriori diametri a richiesta
Other diameters on demand

Parametri
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Suggerimenti
Suggestion



Lavorazioni
Workings



Materiali
Materials

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



Rime
advanced tools production

SERIE UMAX

Frese per sgrossatura e finitura

Roughing and finishing end mills

		pag.
UM0		110
UM1		111
UM4		112
UM5		113
UM7		114
UM8		115

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.

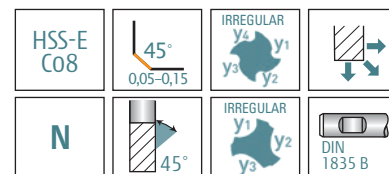
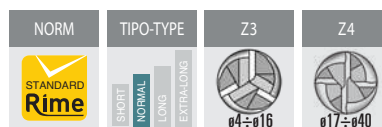
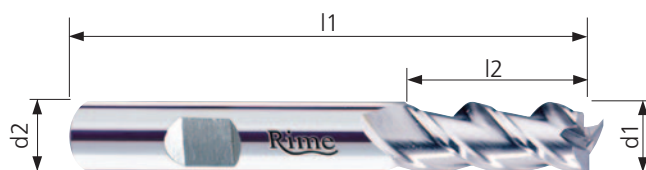
The main characteristics of **UMAX** end mills are as follows:

- 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.

Rime

SERIE Umax

FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI



NORMALE

UM0

- FRESE CILINDRICHE FRONTALI - 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-Spannfläche
- FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha - División irregular - Mango Weldon
- FRESAS CILINDRICAS FRONTALIS - 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

CODE (Co 8%)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
UM0/01	4	11	55	6	3	•	•
UM0/02	5	13	57	6	3	•	•
UM0/03	6	13	57	6	3	•	•
UM0/04	7	16	66	10	3	•	•
UM0/05	8	20	69	10	3	•	•
UM0/06	9	20	69	10	3	•	•
UM0/07	10	22	72	10	3	•	•
UM0/08	11	26	83	12	3	•	•
UM0/09	12	26	83	12	3	•	•
UM0/10	13	26	83	12	3	•	•
UM0/11	14	26	83	12	3	•	•
UM0/12	15	36	92	16	3	•	•
UM0/13	16	36	92	16	3	•	•
UM0/14	17	40	100	16	4	•	•
UM0/15	18	40	100	16	4	•	•
UM0/15/1	19	40	100	16	4	•	•
UM0/16	20	45	110	20	4	•	•
UM0/17	22	45	110	20	4	•	•
UM0/18	25	50	125	25	4	•	•
UM0/19	28	56	125	25	4	•	•
UM0/20	30	63	140	25	4	•	•
UM0/21	32	63	140	32	4	•	•
UM0/22	35	70	160	32	4	•	•
UM0/23	38	70	160	32	4	•	•
UM0/24	40	70	160	32	4	•	•

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

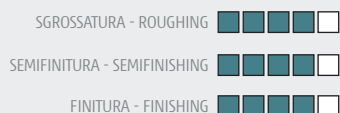
Ulteriori diametri a richiesta
Other diameters on demand

COATING **SUPREME**

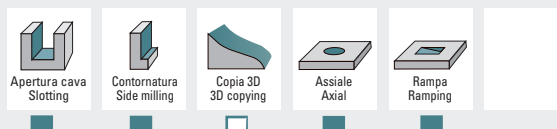
CODE
UM0/.../S

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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

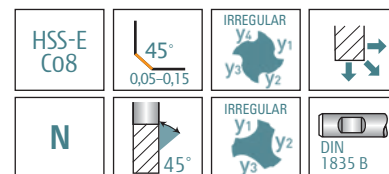
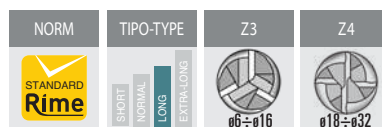
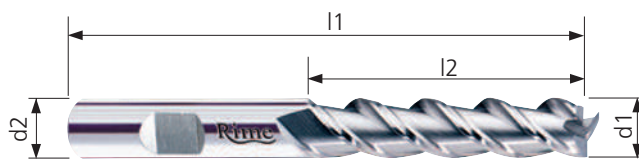
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE Umax

FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI



LUNGA

UM1

- FRESE CILINDRICHE FRONTALI - 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 - Weldon - Spannfläche
- FRESAS CILINDRICAS FRONTALES - Dos labios que cortan hasta el centro - Hélice derecha 45° - División irregular - Mango Weldon
- FRESAS CILINDRICAS FRONTAIS - Três navalhas de corte ao centro longa - Encabadouro Weldon
- Фреза концевая с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик Weldon. Удлиненная серия

CODE (Co 8%)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
UM1/01	6	26	68	6	3	•	•
UM1/02	8	38	88	10	3	•	•
UM1/03	10	45	95	10	3	•	•
UM1/04	12	50	100	12	3	•	•
UM1/05	14	50	100	12	3	•	•
UM1/06	16	56	110	16	3	•	•
UM1/07	18	63	125	16	4	•	•
UM1/08	20	70	140	20	4	•	•
UM1/09	22	70	140	20	4	•	•
UM1/10	25	80	156	25	4	•	•
UM1/11	28	90	166	25	4	•	•
UM1/12	30	90	166	25	4	•	•
UM1/13	32	90	166	32	4	•	•

Rime

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

Ulteriori diametri a richiesta
Other diameters on demand

COATING **SUPREME**

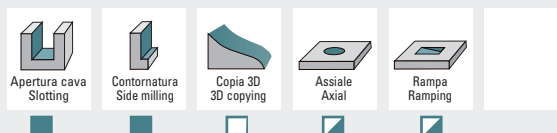
CODE
UM1/.../S

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SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

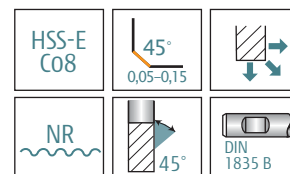
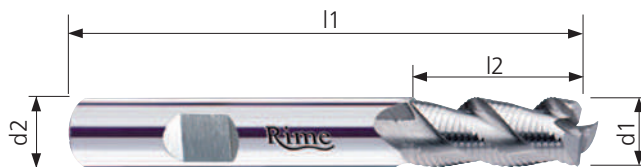
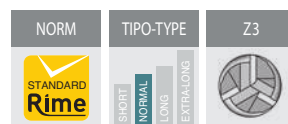
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE Umax

FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI



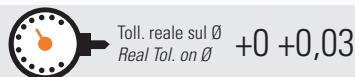
NORMALE

UM4

- FRESE CILINDRICHE FRONTALI - 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
- SCHAFTFRÄSER - Schrägschneiden mit voll eingeschliffenem Spanbrecher - Eine Schneide mit Zentrumschnitt - 45° rechts spiralgenutet - Weldon-Spannfläche
- FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranque 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 торец. Хвостовик Weldon. Средняя серия

CODE (Co 8%)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €	SUPREME €
UM4/00	5	13	57	6	3	•	•
UM4/01	6	13	57	6	3	•	•
UM4/02	7	16	66	10	3	•	•
UM4/03	8	19	69	10	3	•	•
UM4/04	9	19	69	10	3	•	•
UM4/05	10	22	72	10	3	•	•
UM4/06	11	22	79	12	3	•	•
UM4/07	12	26	83	12	3	•	•
UM4/08	13	26	83	12	3	•	•
UM4/09	14	26	83	12	3	•	•
UM4/10	15	32	92	16	3	•	•
UM4/11	16	32	92	16	3	•	•
UM4/12	17	32	92	16	3	•	•
UM4/13	18	32	92	16	3	•	•
UM4/14	20	38	104	20	3	•	•

Rime

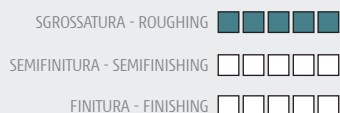


COATING **SUPREME**

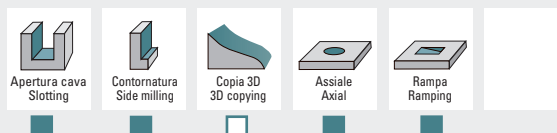


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ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

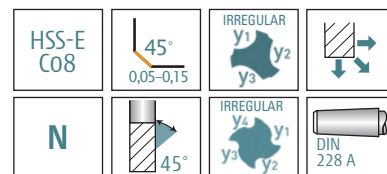
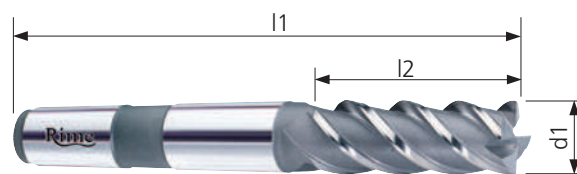
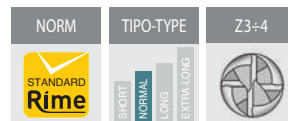
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE Umax

FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI



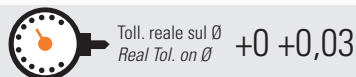
NORMALE

UM5

- FRESE CILINDRICHE FRONTALI - 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

CODE (Co 8%)	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €	SUPREME €
UM5/01	16	36	115	2	3	•	•
UM5/02	18	40	120	2	4	•	•
UM5/03	20	45	145	3	4	•	•
UM5/04	22	45	145	3	4	•	•
UM5/05	24	50	150	3	4	•	•
UM5/06	25	50	150	3	4	•	•
UM5/07	26	56	155	3	4	•	•
UM5/08	28	56	155	3	4	•	•
UM5/09	30	63	165	3	4	•	•
UM5/10	32	63	185	4	4	•	•
UM5/11	34	70	195	4	4	•	•
UM5/12	35	70	195	4	4	•	•
UM5/13	36	70	195	4	4	•	•
UM5/14	38	70	195	4	4	•	•
UM5/15	40	70	195	4	4	•	•
UM5/16	45	80	205	4	4	•	•
UM5/17	50	90	215	4	4	•	•

Rime



COATING **SUPREME**

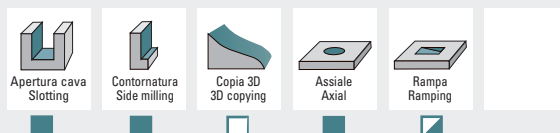


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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

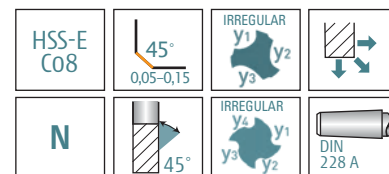
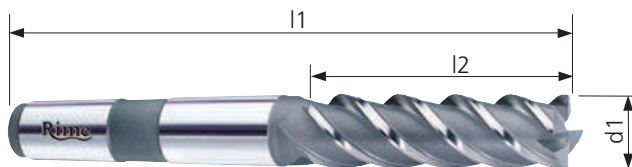
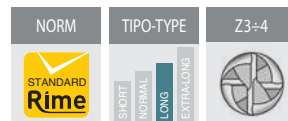
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE Umax

FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI



LUNGA

UM7

- FRESE CILINDRICHE FRONTALI - 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 - Morse-kegelschaft 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

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
UM7/01	16	56	135	2	3	•
UM7/02	18	63	145	2	4	•
UM7/03	20	70	170	3	4	•
UM7/04	22	70	170	3	4	•
UM7/05	24	80	180	3	4	•
UM7/06	25	80	180	3	4	•
UM7/07	26	80	180	3	4	•
UM7/08	28	90	215	4	4	•
UM7/09	30	90	215	4	4	•
UM7/10	32	100	225	4	4	•
UM7/11	34	110	235	4	4	•
UM7/12	35	110	235	4	4	•
UM7/13	36	110	235	4	4	•
UM7/14	38	110	235	4	4	•
UM7/15	40	110	235	4	4	•
UM7/16	45	120	245	4	4	•
UM7/17	50	140	265	4	4	•

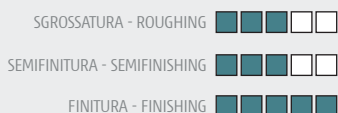
Rime



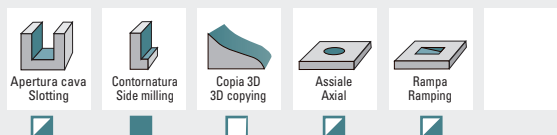
Toll. reale sul Ø
Real Tol. on Ø +0 +0,03

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Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

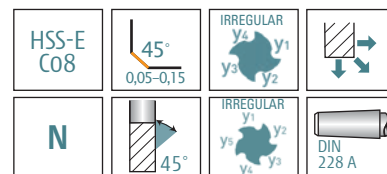
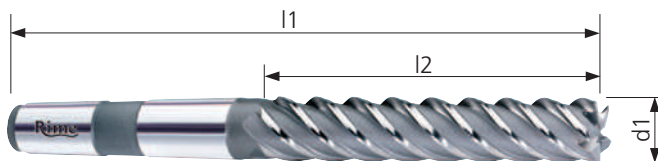
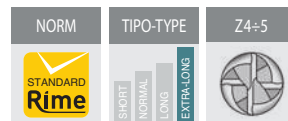
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE Umax

FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI



EXTRA-LUNGA

UM8

- FRESE CILINDRICHE FRONTALI - 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 - Morse-kegelschaft 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. Ультратонкая серия

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	Co 8% €
UM8/01	16	90	170	2	4	•
UM8/02	18	100	200	3	4	•
UM8/03	20	110	210	3	4	•
UM8/04	22	110	210	3	4	•
UM8/05	25	125	225	3	5	•
UM8/06	28	140	265	4	5	•
UM8/07	30	140	265	4	5	•
UM8/08	32	160	285	4	5	•
UM8/09	35	180	305	4	5	•
UM8/10	40	200	335	4	5	•

Rime



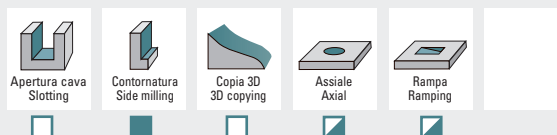
Toll. reale sul Ø
Real Tol. on Ø +0 +0,03

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Suggestion



Lavorazioni
Workings



Materiali
Materials

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

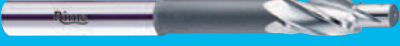
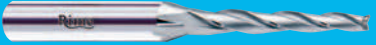


Rime
advanced tools production

SERIE R-S

Frese a "T" e di forma

"T" slot cutters, woodruff,
conical and form cutters

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S3		127
S4		128
SC1		129
SC2		130
SC3		131

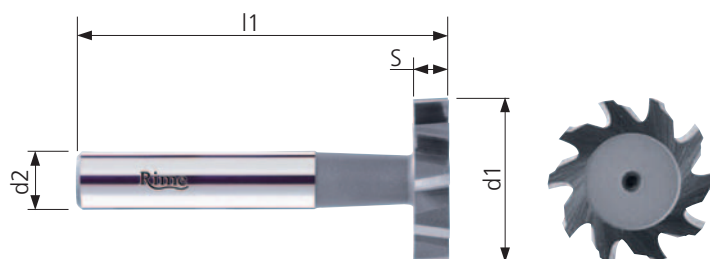


advanced tools production

design and technology

FRESE PER SEDI DI LINGUETTE AMERICANE

NORM	TIPO-TYPE	Z8÷12
UNI 8263 DIN 850B	SHORT NORMAL LONG EXTRA-LONG	



HSS-E Co8	90°	
N		DIN 1835 A

RO

- FRESE PER SEDI DI LINGUETTE AMERICANE - Denti elicoidali alternati - Codo 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 - Encabadouro cilíndrico
- Фреза "Т-образная" с разнонаправленными зубьями. Цилиндрический хвостовик

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



THREADED
DIN 1835 D

su richiesta
on request



WELDON
DIN 1835 B

su richiesta
on request



Toll. reale sullo
spessore
Real Tol. on
thickness

+0 -0,02



Toll. reale sul Ø
Real Tol. on Ø

+0,05 -0

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☒	☒	☒	☒
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

☒	☒	☒	☒	☒	☒

Materials
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

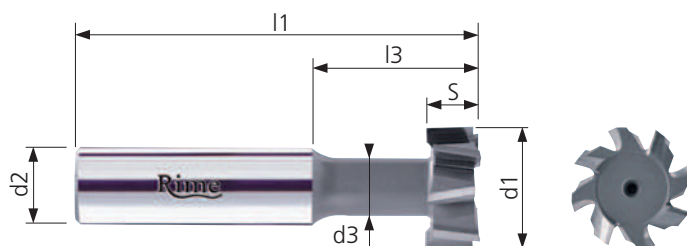
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE R-S

FRESE PER SCANALATURE A "T"



NORM	TIPO-TYPE	Z8
UNI 7339A DIN 851AA ISO 3337	SHORT NORMAL LONG EXTRALONG	

HSS-E Co8	90°	
N		DIN 1835 A

R1

- FRESE PER SCANALATURE A "T" - 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 helicoidais alternados - Encabadouro cilíndrico
- Фреза "Т-образная" с разнонаправленными зубьями. Цилиндрический хвостовик

CODE	d1 x s mm	l1 mm	l3 mm	d2 mm h6	d3 mm h6	Z	Co 8% €
R1/01	12.5x6	57	17	10	5,8	8	•
R1/02	16x8	62	22	10	7,0	8	•
R1/03	18x8	70	25	12	7,5	8	•
R1/04	19x9	70	26	12	8,0	8	•
R1/05	21x9	74	29	12	9,5	8	•
R1/06	22x10	74	30	12	10,0	8	•
R1/07	25x11	82	34	16	12,0	8	•
R1/08	28x12	85	37	16	13,0	8	•
R1/09	32x14	90	42	16	15,0	8	•

Rime



THREADED
DIN 1835 D su richiesta
on request



WELDON
DIN 1835 B su richiesta
on request



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



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

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	Cava a "T" "T" slotting
-----------------------------------	--------------------------------------	--------------------------------	--------------------------	--------------------------	------------------------------------

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

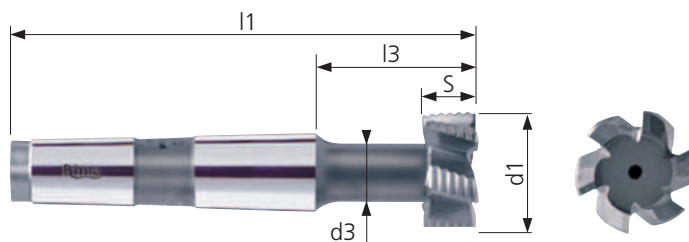
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SCANALATURE A "T" PER SGROSSATURA

NORM	TIPO-TYPE	Z5÷10
DIN 851B ISO 3337	SHORT NORMAL LONG EXTRA-LONG	



HSS-E C08	45°	
NR		DIN 228 A

R2

-  FRESE PER SCANALATURE A "T" PER SGROSSATURA - Denti elicoidali con rompitriciolo 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 DE-GROSSIR - Denture hélicoïdale avec brise-copeaux dépoli 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 aranca de viruta completamente rectificado - Mango cónico Morse taladro roscado
-  FRESAS PARA RANHURAS EM "T" PARA DESBASTE - Cinco navalhas helicoidal com quebra apar - Encabadouro cone Morse con taladro roscado
-  Фреза "Т-образная" для черновой обработки. Хвостовик конус Морзе с резьбой

CODE	d1 x s mm	d3 mm h6	L1 mm	L3 mm	CM-MK	Z	Co 8% €
R2/03	18x8	7,5	82	25	1	5	•
R2/04	19x9	8,0	82	25	1	5	•
R2/05	21x9	9,5	102	33	2	5	•
R2/06	22x10	10,0	102	33	2	5	•
R2/07	25x11	12,0	104	35	2	5	•
R2/08	28x12	13,5	106	37	2	6	•
R2/09	32x14	15,0	111	42	2	6	•
R2/10	36x16	17,0	133	47	3	8	•
R2/11	40x18	19,0	140	54	3	8	•
R2/12	45x20	20,5	143	57	3	8	•
R2/13	50x22	27,0	177	68	4	8	•
R2/14	56x24	27,0	182	70	4	10	•

Rime

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

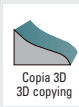
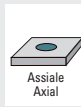
 Toll. reale sul Ø
Real Tol. on Ø **+0,05 -0**

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings

 Apertura cava Slotting	 Contornatura Side milling	 Copia 3D 3D copying	 Assiale Axial	 Rampa Ramping	 Cava a "T" "T" slotting
--	--	--	--	--	--

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

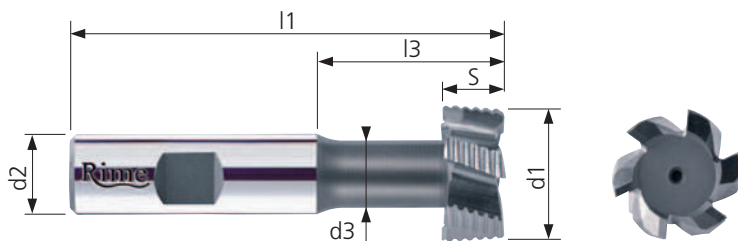
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SCANALATURE A "T" PER SGROSSATURA

NORM	TIPO-TYPE	Z4+8
DIN 851B ISO 3337	SHORT NORMAL LONG EXTRALONG	



HSS-E Co8	45°	
NR		DIN 1835 B

R4

- FRESE PER SCANALATURE A "T" PER SGROSSATURA - Denti elicoidali con rompitrucciolo 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 DE-GROSSIR - Denture hélicoïdale avec brise-copeaux dépouillé entièrement rectifié - Queue cylindrique Weldon
- SCHAFTSCHRUPPFÄRER FÜR T-NUTEN - Schrägschneiden mit voll eingeschliffenem Spanbrecher - Weldon-Spanfläche
- FRESAS PARA RANURAS EN "T" PARA DESBASTE - Labios helicoidal con arranque de viruta completamente rectificado - Mango Weldon
- FRESAS PARA RANHURAS EM "T" PARA DESBASTE - Cinco navalhas helicoidal com quebra aparas - Encabadouro Weldon
- Фреза "Т-образная" для черновой обработки. Хвостовик Weldon

CODE	d1 x s mm	l1 mm	l3 mm	d2 mm h6	d3 mm h6	Z	Co 8% €
R4/01	12.5x6	57	17	10	5,8	4	•
R4/02	16x8	62	24	10	8,0	5	•
R4/03	18x8	70	25	12	7,5	5	•
R4/04	19x9	70	25	12	8,0	5	•
R4/05	21x9	74	29	12	9,5	5	•
R4/06	22x10	74	33	12	10,0	5	•
R4/07	25x11	82	35	16	12,0	5	•
R4/08	28x12	85	37	16	13,5	6	•
R4/09	32x14	90	42	16	15,0	6	•
R4/10	36x16	108	47	25	17,0	6	•
R4/11	40x18	108	54	25	19,0	8	•

Rime

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

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

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

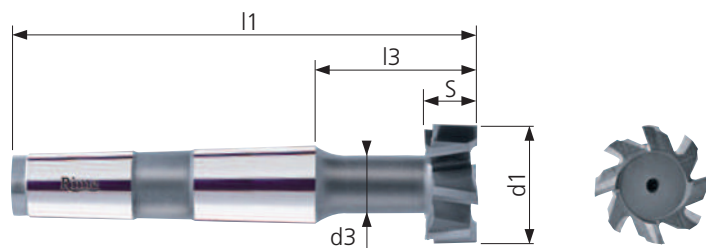
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SCANALATURE A "T"

NORM	TIPO-TYPE	Z8÷10
UNI 7339B DIN 851B ISO 3337	SHORT NORMAL LONG EXTRA-LONG	



HSS-E Co8		
N		DIN 228 A

R3

- FRESE PER SCANALATURE A "T" - 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

CODE	d1 x s mm	d3 mm h6	l1 mm	l3 mm	CM-MK	Z	Co 8% €
R3/01	12.5x6	5,8	72	15,5	1	8	•
R3/02	16x8	7,0	77	20,0	1	8	•
R3/03	18x8	7,5	82	25,0	1	8	•
R3/04	19x9	8,0	82	25,0	1	8	•
R3/05	21x9	9,5	102	33,0	2	8	•
R3/06	22x10	10,0	102	33,0	2	8	•
R3/07	25x11	12,0	104	35,0	2	8	•
R3/08	28x12	13,5	106	37,0	2	8	•
R3/09	32x14	15,0	111	42,00	2	8	•
R3/10	36x16	17,0	133	47,00	3	8	•
R3/11	40x18	19,0	140	54,00	3	8	•
R3/12	45x20	20,5	143	57,00	3	8	•
R3/13	50x22	27,0	177	68,00	4	10	•
R3/14	56x24	27,0	182	70,00	4	10	•

Rime

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

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

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

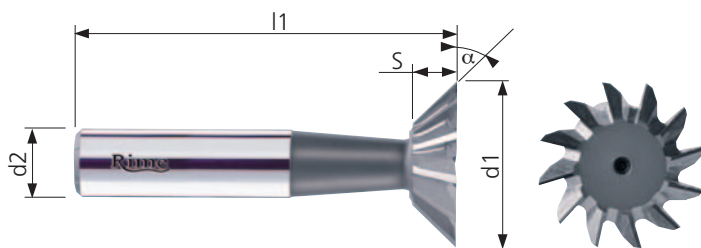
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE AD ANGOLO DIVERGENTE

NORM	TIPO-TYPE	Z10÷12
UNI 8262-A DIN 1833-A ISO 3859	SHORT NORMAL LONG EXTRALONG	



HSS-E Co5		
N		DIN 1835 A

R5A

- FRESE AD ANGOLO DIVERGENTE - 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

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

Rime

Toll. reale sull'angolo
Real Tol. on angle $\pm 30'$

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

☐	☐	☐	☐	☐	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

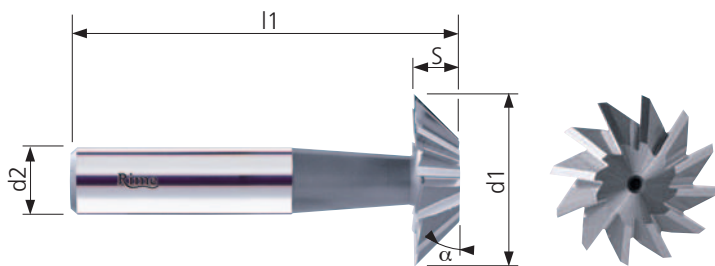
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE R-S

FRESE AD ANGOLO CONVERGENTE



NORM	TIPO-TYPE	Z10÷12
UNI 8262-B DIN 1833-B ISO 3859	SHORT NORMAL LONG EXTRA-LONG	

HSS-E CO5		
N		DIN 1835 A

R5B

- FRESE AD ANGOLO CONVERGENTE - 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

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

Rime

Toll. reale sull'angolo
Real Tol. on angle $\pm 30'$

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	Cava ad angolo Angle slotting
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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

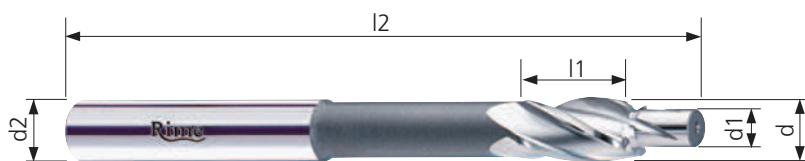
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE PER SEDI DI VITI

NORM	TIPO-TYPE	Z4
UNI 6841 DIN 373	SHORT NORMAL LONG EXTRALONG	



HSS-E Co5		
N		

S2

- FRESE PER SEDI DI VITI - 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 - Schrägverzahnt mit Führung - Zylinderschaft
- FRESAS ALOJAMIENTO TORNILLOS - Para tornillos cabeza cilíndrica con hexágono encajado - Labios helicoidales con guía - Mango cilíndrico
- FRESAS PARA PARAFUSOS DE CABAÇA CILÍNDRICA (TIPO UMBRAKO) - Encabadouro cilíndrico
- Зенкер с направляющей. Цилиндрический хвостовик

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	•
S2/02	M4	7	4	7.4	4.3	12	70	8	4	•
S2/03	M5	9	5	9.4	5.3	14	90	10	4	•
S2/04	M6	10	6	10.4	6.4	16	100	10	4	•
S2/05	M8	13	8	13.5	8.4	20	115	12	4	•
S2/06	M10	16	10	16.5	10.5	25	120	12	4	•
S2/07	M12	18	12	19	13	25	120	16	4	•
S2/08	M14	22	14	23	15	30	130	16	4	•
S2/09	M16	24	16	25	17	35	155	20	4	•
S2/10	M18	27	18	28	19	40	160	20	4	•
S2/11	M20	30	20	31	21	50	180	20	4	•
S2/12	M22	33	22	34	23	50	185	22	4	•
S2/13	M24	36	24	37	25	50	200	22	4	•

Rime

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☐

Lavorazioni
Workings

☐	☐	☐	☒	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

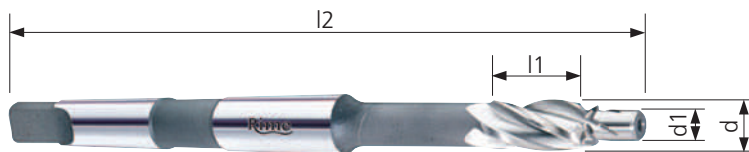
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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back to index

FRESE PER SEDI DI VITI

NORM	TIPO-TYPE	Z4
UNI 6842 DIN 375	SHORT NORMAL LONG EXTRA-LONG	



HSS-E Co5		
N		DIN 228 B

S3

- FRESE PER SEDI DI VITI - 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 Austreibklappen
- FRESAS ALOJAMIENTO 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

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	•
S3/02	M4	7	4	7.4	4.3	12	105	1	4	•
S3/03	M5	9	5	9.4	5.3	14	118	1	4	•
S3/04	M6	10	6	10.4	6.4	16	125	1	4	•
S3/05	M8	13	8	13.5	8.4	20	140	1	4	•
S3/06	M10	16	10	16.5	10.5	25	160	2	4	•
S3/07	M12	18	12	19	13	25	160	2	4	•
S3/08	M14	22	14	23	15	30	170	2	4	•
S3/09	M16	24	16	25	17	35	180	2	4	•
S3/10	M18	27	18	28	19	40	180	2	4	•
S3/11	M20	30	20	31	21	50	215	3	4	•
S3/12	M22	33	22	34	23	50	220	3	4	•
S3/13	M24	36	24	37	25	50	230	3	4	•

Rime

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☐

Lavorazioni
Workings

☐	☐	☐	☒	☐	☐

Materiali
Materials

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

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FRESE DI FORMA A QUARTO
DI CERCHIO CONCAVO

NORM	TIPO-TYPE	Z4÷6
UNI 8264 DIN 6518A	SHORT NORMAL LONG EXTRALONG	



HSS-E Co8		
N		DIN 1835 A

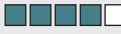
S4

-  FRESE DI FORMA A QUARTO DI CERCHIO CONCAVO - Denti dritti - Codolo cilindrico
-  CORNER ROUNDING END MILLS - Straight toothing - Straight shank
-  FRAISES CONCAVES 1/4 DE CERCLE - Denture droite - Queue cylindrique
-  VIERTELROUND - PROFILFRÄSER - Geradverzähnt - 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

CODE	r mm H11	d1 max mm	l1 mm	d2 mm h6	Z	Co 8% €
S4/01	1	10	60	10	4	•
S4/02	1.5	10	60	10	4	•
S4/03	2	10	60	10	4	•
S4/04	2.5	10	60	10	4	•
S4/05	3	12	60	12	4	•
S4/05/1	3.5	15	60	12	4	•
S4/06	4	15	60	12	4	•
S4/06/1	4.5	18	70	12	4	•
S4/07	5	18	70	16	4	•
S4/07/1	5.5	21	70	16	4	•
S4/08	6	21	70	16	4	•
S4/08/1	6.5	24	70	16	4	•
S4/09	7	24	70	16	4	•
S4/09/1	7.5	24	70	16	4	•
S4/10	8	24	70	16	4	•
S4/11	9	28	85	20	4	•
S4/12	10	28	85	20	4	•
S4/13	11	35	90	20	4	•
S4/14	12	35	100	20	4	•
S4/15	12.5	35	100	20	4	•
S4/16	13	42	100	25	4	•
S4/17	14	42	100	25	4	•
S4/18	15	48	105	25	5	•
S4/19	16	48	105	25	5	•
S4/20	18	52	115	32	5	•
S4/21	20	60	115	32	6	•

Rime

WELDON su richiesta
DIN 1835 B on requestUlteriori raggi a richiesta
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Cutting data
pag. 199-222Suggerimenti
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SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

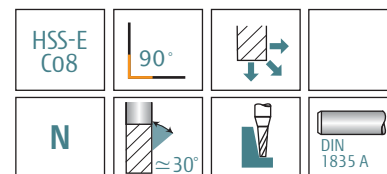
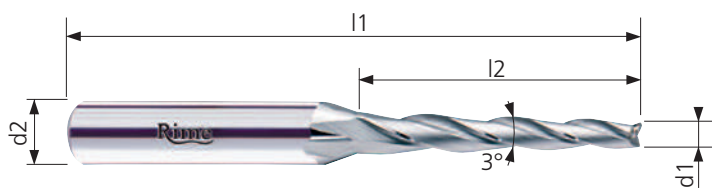
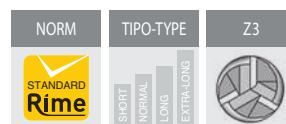
Lavorazioni
Workings

Materiali
MaterialsACCIAI
STEELSGHISE
CAST IRONACCIAI INOSSIDABILI
STAINLESS STEELSSUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUMLEGHE LEGGERE
LIGHT ALLOYSMATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE CONICHE 1°30' (3° TOTALI)



SC1

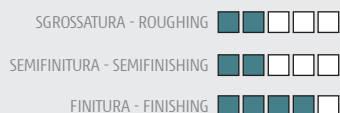
- FRESE CONICHE - Conicità 1°30' laterali - Tre denti elicoidali - Codolo cilindrico
- TAPER END MILLS - Taper 1°30' - Three helical flutes - Straight shank
- FRAISES CONIQUES - Conicité 1°30' - Denture hélicoïdale trois dents - Queue cylindrique
- KONISCHE FRÄSER - Kegel 1°30' - Dreischneider - Zylinderschaft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

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
SC1/01	2.5	30	70	6	3	•
SC1/02	2.5	40	80	8	3	•
SC1/03	3	30	75	8	3	•
SC1/04	3	40	85	8	3	•
SC1/05	3	50	95	10	3	•
SC1/06	3.5	30	75	8	3	•
SC1/07	3.5	40	85	8	3	•
SC1/08	4.5	30	75	8	3	•
SC1/09	4.5	40	85	10	3	•

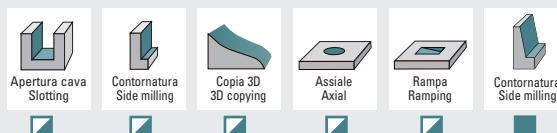
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Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

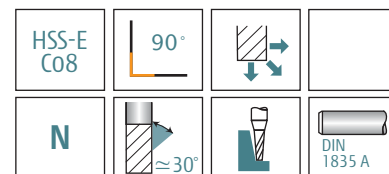
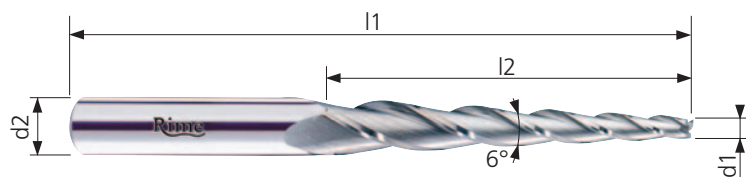
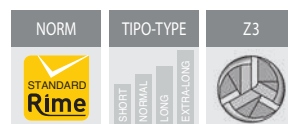
SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE CONICHE 3° (6° TOTALI)



SC2

- FRESE CONICHE - 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 - Cónico 3° lateral - Tres labios helicoidales - Mango cilíndrico
- FRESAS CONICAS - Conico 3° lateral - Três navalhas helicoidales - Encabudo cilíndrico
- Фреза 3-зубая коническая для штампов и прессформ. Цилиндрический хвостовик

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
SC2/01	2.5	20	65	6	3	•
SC2/02	2.5	25	70	8	3	•
SC2/03	2.5	30	75	8	3	•
SC2/04	2.5	40	85	8	3	•
SC2/05	3	20	65	8	3	•
SC2/06	3	25	70	8	3	•
SC2/07	3	30	75	8	3	•
SC2/08	3	40	85	8	3	•
SC2/09	3	50	95	10	3	•
SC2/10	3.5	20	65	8	3	•
SC2/11	3.5	25	70	8	3	•
SC2/12	3.5	30	75	8	3	•
SC2/13	3.5	40	85	10	3	•
SC2/14	3.5	50	100	10	3	•
SC2/15	4	30	75	10	3	•
SC2/16	4.5	20	65	8	3	•
SC2/17	4.5	25	70	10	3	•
SC2/18	4.5	30	75	10	3	•
SC2/19	4.5	40	85	10	3	•
SC2/20	4.5	70	120	12	3	•
SC2/21	4.5	80	140	14	3	•
SC2/22	6.5	70	125	14	3	•
SC2/23	6.5	100	165	20	3	•

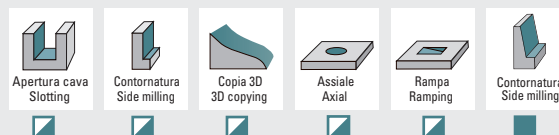
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Suggestion

SGROSSATURA - ROUGHING
SEMIFINITURA - SEMIFINISHING
FINITURA - FINISHING

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

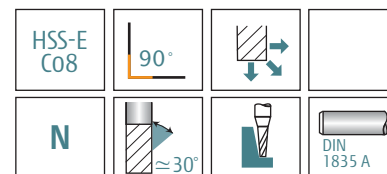
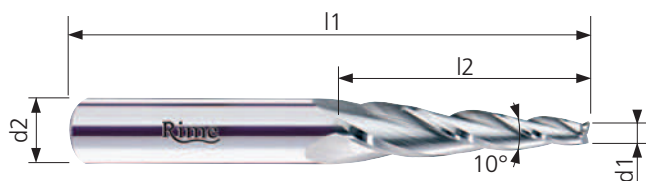
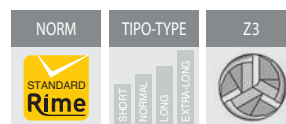
SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE CONICHE 5° (10° TOTALI)



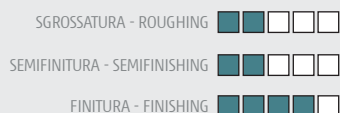
SC3

- FRESE CONICHE - 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 - Conico 5° lateral - Tres labios helicoidales - Mango cilíndrico
- FRESAS CONICAS - Conico 5° lateral - Três navalhas helicoidais - Encabodouro cilíndrico
- Фреза 3-зубая коническая для штампов и прессформ. Цилиндрический хвостовик

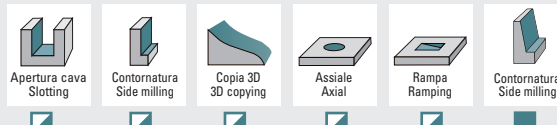
CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
SC3/01	2.5	20	65	8	3	•
SC3/02	2.5	25	70	8	3	•
SC3/03	2.5	30	75	10	3	•
SC3/04	2.5	40	85	10	3	•
SC3/05	2.5	50	100	12	3	•
SC3/06	3	20	65	8	3	•
SC3/07	3	25	70	8	3	•
SC3/08	3	30	75	10	3	•
SC3/09	3	40	85	10	3	•
SC3/10	3	50	95	12	3	•
SC3/11	3.5	20	65	8	3	•
SC3/12	3.5	25	70	8	3	•
SC3/13	3.5	30	75	10	3	•
SC3/14	3.5	40	90	12	3	•
SC3/15	3.5	50	100	14	3	•
SC3/16	4	35	85	12	3	•
SC3/17	4.5	20	65	10	3	•
SC3/18	4.5	25	70	10	3	•
SC3/19	4.5	30	80	12	3	•
SC3/20	4.5	40	90	12	3	•
SC3/21	4.5	50	105	16	3	•
SC3/22	4.5	60	115	16	3	•
SC3/23	4.5	66	125	16	3	•
SC3/24	4.5	85	145	20	3	•
SC3/25	5.5	20	65	10	3	•
SC3/26	5.5	25	70	12	3	•
SC3/27	5.5	30	80	12	3	•
SC3/28	5.5	40	90	14	3	•
SC3/29	5.5	50	105	16	3	•
SC3/30	5.5	60	115	16	3	•
SC3/31	6.5	40	90	14	3	•
SC3/32	6.5	54	110	16	3	•
SC3/33	6.5	60	115	16	3	•
SC3/34	6.5	70	125	20	3	•
SC3/35	6.5	80	140	20	3	•
SC3/36	6.5	100	165	20	3	•
SC3/37	6.5	100	215	20	3	•

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Suggerimenti
Suggestion



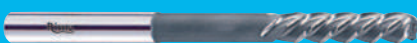
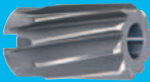
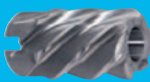
Lavorazioni
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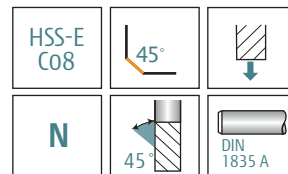
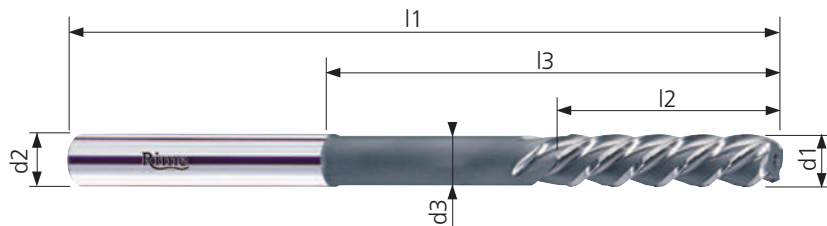


SERIE AL

Alesatori

Reamers

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AL8		137
AL9		138
AL10		139



NORMALE

AL0

- ALESATORI CILINDRICI - 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 - Três navalhas hélice esquerda 45° - Encabadouro cilíndrico
- Развертка. Левая спираль 45°. Цилиндрический хвостовик. Средняя серия

CODE	d1 mm H7	l2 mm	l1 mm	l3 mm	d2 mm h6	d3 mm	Z	Co 8% €
AL0/01	2	11	49	24	2	1.9	3	•
AL0/02	2.5	14	57	29	2.5	2.4	3	•
AL0/03	3	15	61	33	3	2.9	3	•
AL0/04	3.5	18	70	40	3.5	3.4	3	•
AL0/05	4	19	75	43	4	3.7	3	•
AL0/06	4.5	21	80	45	4.5	4.2	3	•
AL0/07	5	23	86	51	5	4.7	3	•
AL0/08	5.5	26	93	55	5.5	5.2	3	•
AL0/09	6	26	93	55	6	5.6	3	•
AL0/10	6.5	28	101	61	6.5	6.1	3	•
AL0/11	7	31	109	67	7	6.6	3	•
AL0/12	8	33	117	72	8	7.6	3	•
AL0/13	9	36	125	75	9	8.4	3	•
AL0/14	10	38	133	83	10	9.4	4	•
AL0/15	11	41	142	90	11	10.3	4	•
AL0/16	12	44	151	96	12	11.3	4	•
AL0/17	13	44	151	96	13	12.2	4	•
AL0/18	14	47	160	100	14	12.8	4	•
AL0/19	15	50	162	102	15	13.8	4	•
AL0/20	16	52	170	107	16	14.8	4	•

Rime



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

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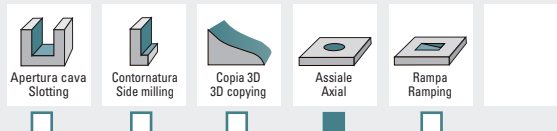
Suggerimenti
Suggestion

SGROSSATURA - ROUGHING ☐ ☐ ☐ ☐

SEMIFINITURA - SEMIFINISHING ☐ ☐ ☐ ☐

FINITURA - FINISHING ☒ ☒ ☒ ☒

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

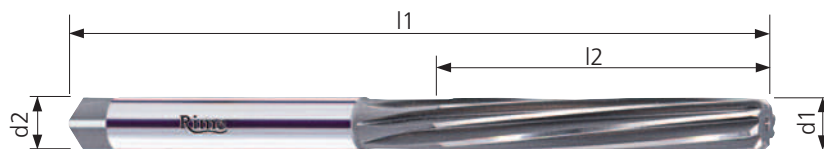
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED ☒

ACCETTABILE
ACCEPTABLE ☒

SCONSIGLIATO
NOT RECOMMENDED ☐

NORM	TIPO-TYPE	Z4÷Z8
UNI 6852 DIN 206B ISO 236/1	SHORT NORMAL LONG EXTRA-LONG	



HSS-E Co5	45°	
N	≈10°	

NORMALE

AL6

- ALESATORI A MANO - 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
- ALÉSOIRS 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 helicoidais esquerda, cortante direito - Encabadouro cilíndrico com quadro - Para agujeros cilíndricos
- Развертка ручная. Левая спираль, правое вращение. Средняя серия

CODE	d1 mm H7	l2 mm	l1 mm	d2 mm h6	Z	Co 5% €
AL6/00	2	25	50	2	4	•
AL6/01	3	31	62	3	4	•
AL6/02	4	38	76	4	5	•
AL6/03	5	44	87	5	5	•
AL6/04	6	47	93	6	5	•
AL6/05	7	54	107	7	6	•
AL6/06	8	58	115	8	6	•
AL6/07	9	62	124	9	6	•
AL6/08	10	66	133	10	6	•
AL6/09	11	71	142	11	8	•
AL6/10	12	76	152	12	8	•
AL6/11	13	76	152	13	8	•
AL6/12	14	81	163	14	8	•
AL6/13	15	81	163	15	8	•
AL6/14	16	87	175	16	8	•
AL6/15	17	87	175	17	8	•
AL6/16	18	93	188	18	8	•
AL6/17	19	93	188	19	8	•
AL6/18	20	100	201	20	8	•

Rime



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

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

 Apertura cava Slotting	 Contornatura Side milling	 Copia 3D 3D copying	 Assiale Axial	 Rampa Ramping	
☐	☐	☐	☒	☐	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

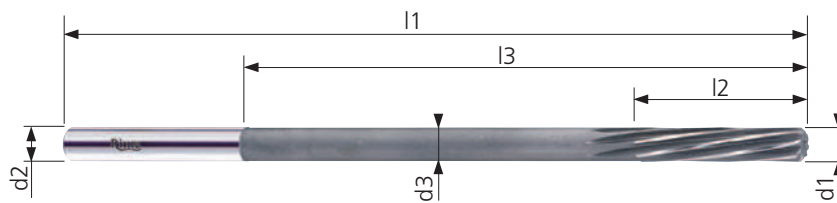
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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ALESATORI A MACCHINA

NORM	TIPO-TYPE	Z4-Z8
DIN 212D ISO 521	SHORT NORMAL LONG EXTRA-LONG	



HSS-E C08	45°	
N	≈10°	DIN 1835 A

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	•
AL7/02	2.5	20	120	80	2.5	2.4	4	•
AL7/03	3	20	120	80	3	2.9	4	•
AL7/04	3.5	30	150	110	3.5	3.4	6	•
AL7/05	4	30	150	110	4	3.9	6	•
AL7/06	4.5	35	180	135	4.5	4.4	6	•
AL7/07	5	35	180	135	5	4.9	6	•
AL7/08	5.5	40	200	150	5.5	5.4	6	•
AL7/09	6	40	200	150	6	5.9	6	•
AL7/10	6.5	45	200	150	6.5	6.4	6	•
AL7/11	7	45	200	150	7	6.9	6	•
AL7/12	8	45	200	150	8	7.9	6	•
AL7/13	9	50	220	160	9	8.9	6	•
AL7/14	10	50	220	160	10	9.8	6	•
AL7/15	11	55	250	190	11	10.8	8	•
AL7/16	12	55	250	190	12	11.8	8	•

- ALESATORI A MACCHINA - 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. Ультралонная серия

Rime

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

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

					☐
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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

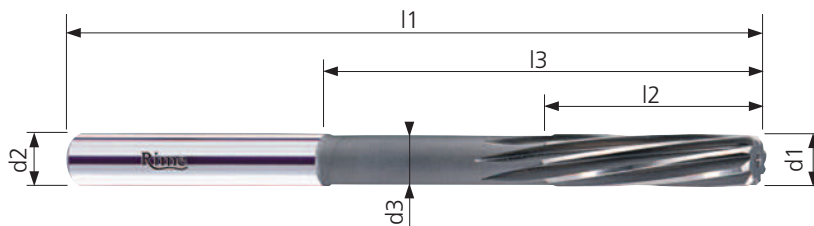
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
 ACCETTABILE
ACCEPTABLE
 SCONSIGLIATO
NOT RECOMMENDED

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back to index

NORM	TIPO-TYPE	Z5+88
UNI 6853 DIN 212D ISO 521	SHORT NORMAL LONG EXTRA-LONG	



HSS-E Co8	45°	
N	≈10°	DIN 1835 A

NORMALE

AL8

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

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	•
AL8/02	2.5	14	57	29	2.5	2.4	5	•
AL8/03	3	15	61	33	3	2.9	5	•
AL8/04	3.5	18	70	39	3.5	3.4	5	•
AL8/05	4	19	75	43	4	3.7	5	•
AL8/06	4.5	21	80	45	4.5	4.2	5	•
AL8/07	5	23	86	51	5	4.7	5	•
AL8/08	5.5	26	93	55	5.5	5.2	6	•
AL8/09	6	26	93	55	6	5.6	6	•
AL8/10	6.5	28	101	61	6.5	6.1	6	•
AL8/11	7	31	109	67	7	6.6	6	•
AL8/12	8	33	117	72	8	7.6	6	•
AL8/13	9	36	125	75	9	8.4	6	•
AL8/14	10	38	133	83	10	9.4	6	•
AL8/15	11	41	142	90	11	10.3	8	•
AL8/16	12	44	151	96	12	11.3	8	•
AL8/17	13	44	151	96	13	12.2	8	•
AL8/18	14	47	160	100	14	12.8	8	•
AL8/19	15	50	162	102	15	13.8	8	•
AL8/20	16	52	170	107	16	14.8	8	•

Rime

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

					
Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	
☐	☐	☐	☒	☐	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

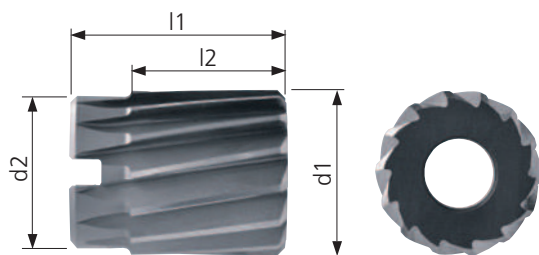
SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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ALESATORI A MACCHINA
TIPO MANICOTTO

NORM	TIPO-TYPE	Z10÷Z16
UNI 6855 DIN 219B ISO 2402	SHORT NORMAL LONG EXTRALONG	

HSS-E Co5	45°	
N	≈10°	

AL9

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

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	•
AL9/02	25	32	45	23	13	10	•
AL9/03	26	32	45	24	13	10	•
AL9/04	27	32	45	25	13	10	•
AL9/05	28	32	45	26	13	10	•
AL9/06	29	32	45	27	13	10	•
AL9/07	30	32	45	28	13	10	•
AL9/08	31	36	50	28	16	10	•
AL9/09	32	36	50	29	16	10	•
AL9/10	33	36	50	30	16	10	•
AL9/11	34	36	50	31	16	10	•
AL9/12	35	36	50	32	16	10	•
AL9/13	36	40	56	33	19	12	•
AL9/14	37	40	56	34	19	12	•
AL9/15	38	40	56	35	19	12	•
AL9/16	39	40	56	36	19	12	•
AL9/17	40	40	56	37	19	12	•
AL9/18	42	40	56	39	19	12	•
AL9/19	44	45	63	40	22	12	•
AL9/20	45	45	63	41	22	12	•
AL9/21	46	45	63	42	22	14	•
AL9/22	48	45	63	44	22	14	•
AL9/23	49	45	63	45	22	14	•
AL9/24	50	45	63	46	22	14	•
AL9/25	52	50	71	48	27	14	•
AL9/26	55	50	71	51	27	14	•
AL9/27	58	50	71	54	27	14	•
AL9/28	60	50	71	56	27	16	•



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

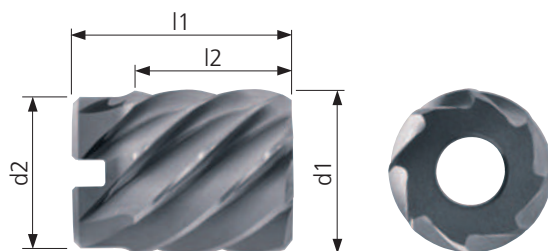
Parametri
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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

☐	☐	☐	☒	☐

ALESATORI A MACCHINA
TIPO MANICOTTO

NORM	TIPO-TYPE	Z5÷Z10
UNI 6855 DIN 219 ISO 2402		

HSS-E Co5		
N		

AL10

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

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	•
AL10/02	25	32	45	23	13	5	•
AL10/03	26	32	45	24	13	5	•
AL10/04	27	32	45	25	13	5	•
AL10/05	28	32	45	26	13	5	•
AL10/06	29	32	45	27	13	6	•
AL10/07	30	32	45	28	13	6	•
AL10/08	31	36	50	28	16	6	•
AL10/09	32	36	50	29	16	6	•
AL10/10	33	36	50	30	16	7	•
AL10/11	34	36	50	31	16	7	•
AL10/12	35	36	50	32	16	7	•
AL10/13	36	40	56	33	19	8	•
AL10/14	37	40	56	34	19	8	•
AL10/15	38	40	56	35	19	8	•
AL10/16	39	40	56	36	19	8	•
AL10/17	40	40	56	37	19	8	•
AL10/18	42	40	56	39	19	8	•
AL10/19	44	45	63	40	22	8	•
AL10/20	45	45	63	41	22	8	•
AL10/21	46	45	63	42	22	8	•
AL10/22	48	45	63	44	22	8	•
AL10/23	49	45	63	45	22	8	•
AL10/24	50	45	63	46	22	8	•
AL10/25	52	50	71	48	27	8	•
AL10/26	55	50	71	51	27	8	•
AL10/27	58	50	71	54	27	10	•
AL10/28	60	50	71	56	27	10	•



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

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

 Apertura cava Slotting	 Contornatura Side milling	 Copia 3D 3D copying	 Assiale Axial	 Rampa Ramping	☐
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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

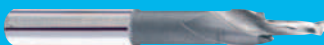
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED



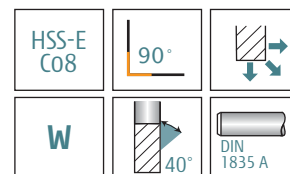
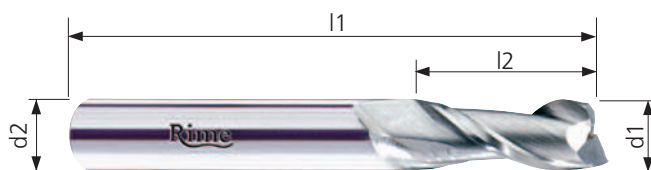
SERIE L

Frese per alluminio e leghe leggere

End mills for aluminium and light alloys

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L4		144
L5		145
L6		146
L7		147
L8		148
L9		149
L12		150
L13		151
L17		152
L18		153
L19		154
L20		155

NORM	TIPO-TYPE	Z2
UNI 8244 8245 DIN 844A ISO 1641/1	SHORT NORMAL LONG EXTRALONG	



NORMALE

L1

- FRESE A DUE DENTI - 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

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
L1/01	2	7	51	6	2	•
L1/01/1	2.5	8	52	6	2	•
L1/02	3	8	52	6	2	•
L1/03	4	11	55	6	2	•
L1/04	5	13	57	6	2	•
L1/05	6	13	57	6	2	•
L1/06	7	16	66	10	2	•
L1/07	8	19	69	10	2	•
L1/08	9	19	69	10	2	•
L1/09	10	22	72	10	2	•
L1/10	11	22	79	12	2	•
L1/11	12	26	83	12	2	•
L1/12	13	26	83	12	2	•
L1/13	14	26	83	12	2	•
L1/14	15	32	92	16	2	•
L1/15	16	32	92	16	2	•
L1/16	18	32	92	16	2	•
L1/17	20	38	104	20	2	•

Rime



Toll. reale sul Ø
Real Tol. on Ø

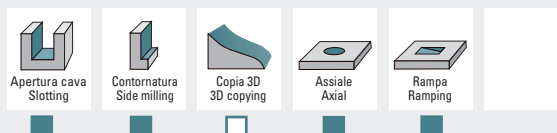
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Parametri
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pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒	☐
SEMIFINITURA - SEMIFINISHING	☒	☒	☒	☒	☐
FINITURA - FINISHING	☒	☒	☒	☒	☐

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

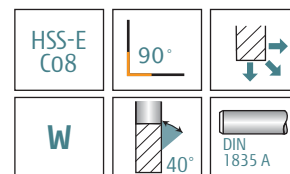
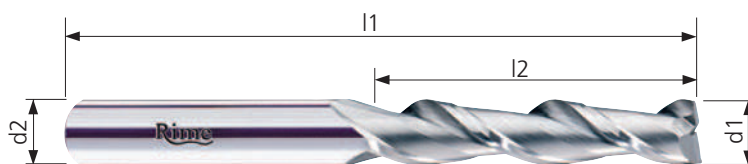
SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

NORM	TIPO-TYPE	Z2
UNI 8244 8245 DIN 844A ISO 1641/1	SHORT NORMAL LONG EXTRA-LONG	



LUNGA

L2

- FRESE A DUE DENTI - 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

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	Co 8% €
L2/01	3	12	56	6	2	•
L2/02	4	19	63	6	2	•
L2/03	5	24	68	6	2	•
L2/04	6	24	68	6	2	•
L2/05	7	30	80	10	2	•
L2/06	8	38	88	10	2	•
L2/07	9	38	88	10	2	•
L2/08	10	45	95	10	2	•
L2/09	11	45	102	12	2	•
L2/10	12	53	110	12	2	•
L2/11	13	53	110	12	2	•
L2/12	14	53	110	12	2	•
L2/13	15	63	123	16	2	•
L2/14	16	63	123	16	2	•
L2/15	18	63	123	16	2	•
L2/16	20	75	141	20	2	•

Rime



Toll. reale sul Ø
Real Tol. on Ø

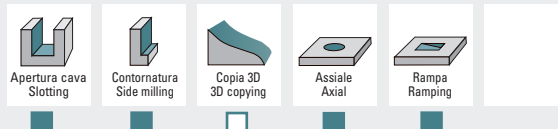
+0 -0,03

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒	☐
SEMIFINITURA - SEMIFINISHING	☒	☒	☒	☒	☐
FINITURA - FINISHING	☒	☒	☒	☒	☐

Lavorazioni
Workings

Materiali
MaterialsACCIAI
STEELSGHISE
CAST IRONACCIAI INOSSIDABILI
STAINLESS STEELSSUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUMLEGHE LEGGERE
LIGHT ALLOYSMATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE A DUE DENTI

NORM	TIPO-TYPE	Z2
UNI 8244 DIN 844A ISO 1641/1	SHORT NORMAL LONG EXTRALONG	



EMP3 (PM)	90°	
W	40°	DIN 1835 A

NORMALE

L4

- FRESE A DUE DENTI - 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
L4/01	2	7	51	6	2	•
L4/02	3	8	52	6	2	•
L4/03	4	11	55	6	2	•
L4/04	5	13	57	6	2	•
L4/05	6	13	57	6	2	•
L4/06	7	16	66	10	2	•
L4/07	8	19	69	10	2	•
L4/08	9	19	69	10	2	•
L4/09	10	22	72	10	2	•
L4/10	11	22	79	12	2	•
L4/11	12	26	83	12	2	•
L4/12	13	26	83	12	2	•
L4/13	14	26	83	12	2	•
L4/14	15	32	92	16	2	•
L4/15	16	32	92	16	2	•
L4/16	18	32	92	16	2	•
L4/17	20	38	104	20	2	•

Rime



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

Parametri
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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	

Materiali
Materials

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

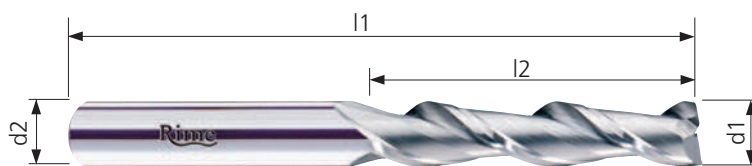
Rime

SERIE L

LUNGA

L5

FRESE A DUE DENTI



NORM	TIPO-TYPE	Z2
UNI 8244 8245 DIN 844A ISO 1641/1	SHORT NORMAL LONG EXTRA-LONG	

EMP3 (PM)	90°	
W	40°	DIN 1835 A

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
L5/01	3	12	56	6	2	•
L5/02	4	19	63	6	2	•
L5/03	5	24	68	6	2	•
L5/04	6	24	68	6	2	•
L5/05	7	30	80	10	2	•
L5/06	8	38	88	10	2	•
L5/07	9	38	88	10	2	•
L5/08	10	45	95	10	2	•
L5/09	11	45	102	12	2	•
L5/10	12	53	110	12	2	•
L5/11	13	53	110	12	2	•
L5/12	14	53	110	12	2	•
L5/13	15	63	123	16	2	•
L5/14	16	63	123	16	2	•
L5/15	18	63	123	16	2	•
L5/16	20	75	141	20	2	•

- FRESE A DUE DENTI - 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 cilíndricas dos labios - Un labio que cortan hasta el centro - Para mecanizar el aluminio y ligas ligeras - Mango cilíndrico
- Fresas cilíndricas 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

Rime



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

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

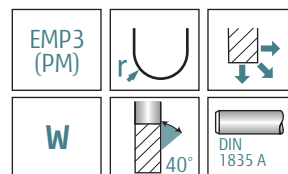
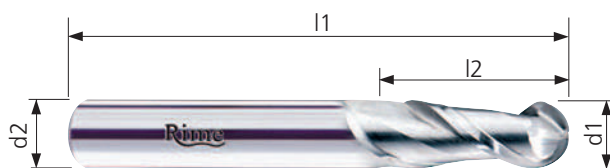
ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED



NORMALE

L6

FRESE A DUE DENTI A TESTA SEMISFERICA - 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

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
L6/00	2	7	51	6	2	•
L6/00/1	3	8	52	6	2	•
L6/01	4	11	55	6	2	•
L6/02	5	13	57	6	2	•
L6/03	6	13	57	6	2	•
L6/04	7	16	66	10	2	•
L6/05	8	19	69	10	2	•
L6/06	9	19	69	10	2	•
L6/07	10	22	72	10	2	•
L6/08	11	22	79	12	2	•
L6/09	12	26	83	12	2	•
L6/10	13	26	83	12	2	•
L6/11	14	26	83	12	2	•
L6/12	15	32	92	16	2	•
L6/13	16	32	92	16	2	•
L6/14	18	32	92	16	2	•
L6/15	20	38	104	20	2	•

Rime



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

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

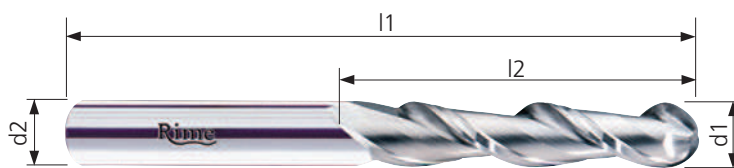
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE A DUE DENTI A TESTA SEMISFERICA

NORM	TIPO-TYPE	Z2
ISO 1641/1	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)		
W		DIN 1835 A

- FRESE A DUE DENTI A TESTA SEMISFERICA - 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

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
L7/00	2	11	54	6	2	•
L7/00/1	3	12	56	6	2	•
L7/01	4	19	63	6	2	•
L7/02	5	24	68	6	2	•
L7/03	6	24	68	6	2	•
L7/04	7	30	80	10	2	•
L7/05	8	38	88	10	2	•
L7/06	9	38	88	10	2	•
L7/07	10	45	95	10	2	•
L7/08	11	45	102	12	2	•
L7/09	12	53	110	12	2	•
L7/10	13	53	110	12	2	•
L7/11	14	53	110	12	2	•
L7/12	15	63	123	16	2	•
L7/13	16	63	123	16	2	•
L7/14	18	63	123	16	2	•
L7/15	20	75	141	20	2	•

Rime



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

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

☒	☒	☒	☒	☒	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

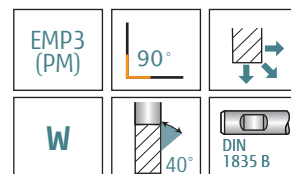
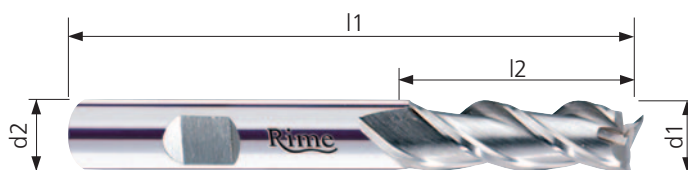
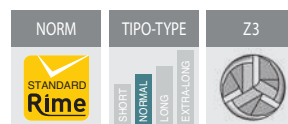
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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Rime

SERIE L

FRESE A TRE DENTI



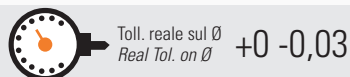
NORMALE

L8

- FRESE A TRE DENTI - 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	ALU SUPREME €
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L8/01	3	14	58	6	3	•	•
L8/02	4	18	62	6	3	•	•
L8/03	5	20	64	6	3	•	•
L8/04	6	22	66	6	3	•	•
L8/05	7	22	72	10	3	•	•
L8/06	8	25	75	10	3	•	•
L8/07	9	25	75	10	3	•	•
L8/08	10	28	78	10	3	•	•
L8/09	12	32	89	12	3	•	•
L8/10	14	32	89	12	3	•	•
L8/11	16	36	96	16	3	•	•
L8/12	18	40	100	16	3	•	•
L8/13	20	45	110	20	3	•	•
L8/14	22	45	110	20	3	•	•
L8/15	25	50	125	25	3	•	•
L8/16	28	56	132	25	3	•	•
L8/17	30	63	140	25	3	•	•
L8/18	32	63	143	32	3	•	•

Rime

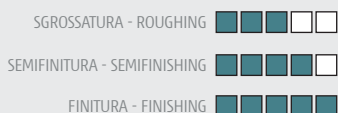


COATING **ALU-SUPREME**

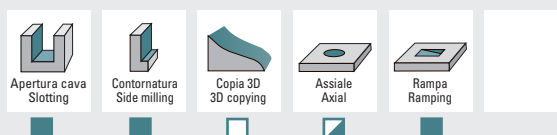


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Suggestion



Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

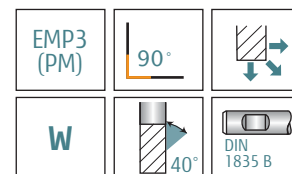
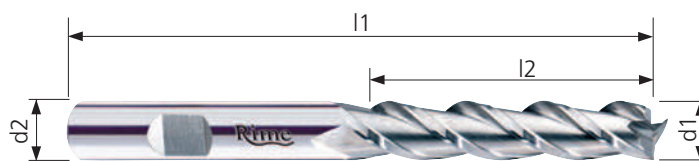
ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED



LUNGA

L9

- FRESE A TRE DENTI - 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 TRÊS 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. Удлиненная серия

CODE	d1 mm js14	L2 mm	L1 mm	d2 mm h6	Z	EMP3 €
L9/00	2	12	54	6	3	•
L9/01	3	18	62	6	3	•
L9/02	4	22	65	6	3	•
L9/03	5	26	70	6	3	•
L9/04	6	30	75	6	3	•
L9/05	7	34	84	10	3	•
L9/06	8	34	84	10	3	•
L9/07	9	40	90	10	3	•
L9/08	10	40	90	10	3	•
L9/09	12	56	113	12	3	•
L9/10	14	63	120	12	3	•
L9/11	16	63	123	16	3	•
L9/12	18	71	131	16	3	•
L9/13	20	71	137	20	3	•
L9/14	22	80	146	20	3	•
L9/15	25	80	156	25	3	•
L9/16	28	90	166	25	3	•
L9/17	30	90	166	25	3	•
L9/18	32	90	170	32	3	•

Rime



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

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	
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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

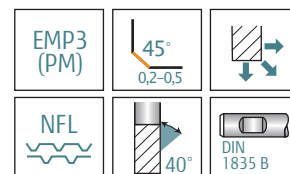
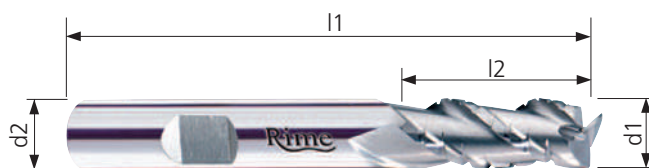
SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

NORM	TIPO-TYPE	Z3
UNI 8248 DIN 844B ISO 1641/I	SHORT NORMAL LONG EXTRALONG	



NORMALE

L12

FRESE PER SGROSSATURA - 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 aparta - Um navalha que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro Weldon

Фреза 3-х зубая для черновой обработки алюминия, легких сплавов, хрупких и пластичных материалов. Режущий торец. Хвостовик Weldon. Средняя серия

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	ALU SUPREME €
L12/01	6	13	57	6	3	•	•
L12/02	7	16	66	10	3	•	•
L12/03	8	19	69	10	3	•	•
L12/04	9	19	69	10	3	•	•
L12/05	10	22	72	10	3	•	•
L12/06	12	26	83	12	3	•	•
L12/07	14	26	83	12	3	•	•
L12/08	15	32	92	16	3	•	•
L12/09	16	32	92	16	3	•	•
L12/10	18	32	92	16	3	•	•
L12/11	20	38	104	20	3	•	•
L12/12	22	38	104	20	3	•	•
L12/13	25	45	121	25	3	•	•
L12/14	28	45	121	25	3	•	•
L12/15	30	45	121	25	3	•	•
L12/16	32	53	133	32	3	•	•
L12/17	36	53	133	32	3	•	•
L12/18	40	53	143	32	3	•	•

Rime

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

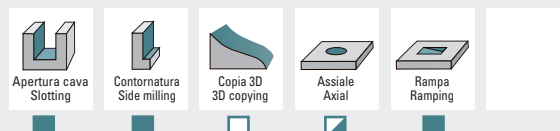
COATING ALU-SUPREME

CODE
L12/.../AS

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Cutting data
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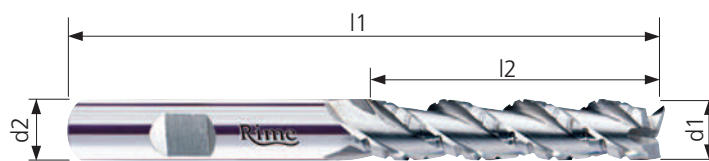
Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

FRESE PER SGROSSATURA

NORM	TIPO-TYPE	Z3
UNI 8249 DIN 844B ISO 1641/I	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)	45° 0.2-0.5	
NFL	40°	DIN 1835 B

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	ALU SUPREME €
L13/01	6	24	68	6	3	•	•
L13/02	8	38	88	10	3	•	•
L13/03	10	45	95	10	3	•	•
L13/04	12	53	110	12	3	•	•
L13/05	14	53	110	12	3	•	•
L13/06	15	63	123	16	3	•	•
L13/07	16	63	123	16	3	•	•
L13/08	18	63	123	16	3	•	•
L13/09	20	75	141	20	3	•	•
L13/10	22	75	141	20	3	•	•
L13/11	25	90	166	25	3	•	•
L13/12	28	90	166	25	3	•	•
L13/13	30	90	166	25	3	•	•
L13/14	32	106	186	32	3	•	•
L13/15	36	106	186	32	3	•	•
L13/16	40	125	205	32	3	•	•

FRESE PER SGROSSATURA - 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

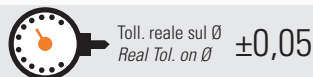
SCHAFTFRÄSER DREISCHNEIDER - Schrägschneiden mit Spanbrecher - Eine Schneide mit Zentrumschnitt - Zur Bearbeitung von Aluminium, Leichtlegierungen - Weldon Spannfläche

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 aparas - Um navalha que corta hasta el centro - Para mecanizar el aluminio y ligas ligeras - Encabadouro Weldon

Фреза 3-х зубая для черновой обработки алюминия, легких сплавов, хрупких и пластичных материалов. Режущий торец. Хвостовик Weldon. Удлиненная серия

Rime



COATING **ALU-SUPREME**



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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

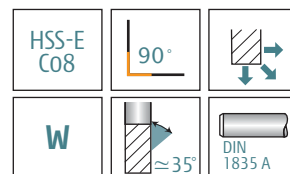
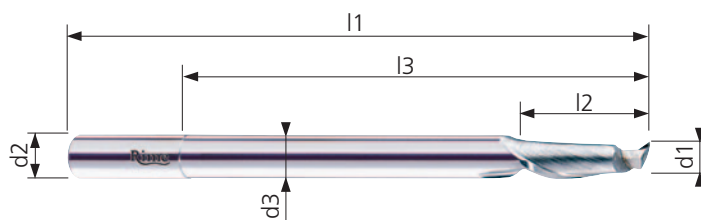
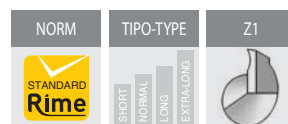
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

torna all'indice
back to index

Rime

SERIE L

FRESE MONOTAGLIANTE PER LEGHE LEGGERE



L17

CODE (Co 8%)	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	•	•
L17/02	8	120	15	100	8	7.9	•	•
L17/03	10	100	15	75	8	9.0	•	•
L17/04	10	100	15	75	10	9.9	•	•

- FRESE MONOTAGLIANTE PER LEGHE LEGGERE - Codolo cilindrico
- SINGLE-FLUTES END MILLS TO MACHINE LIGHT ALLOYS - Straight shank
- FRAISES À UNE TAILLE POUR L'USINAGE D'ALLIAGES 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

Rime

i Ulteriori diametri a richiesta
Other diameters on demand

COATING **ALU-SUPREME**

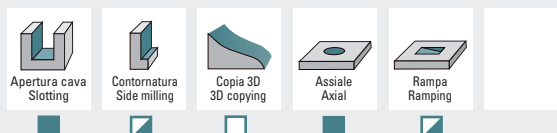
CODE
L17/.../AS

Parametri
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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

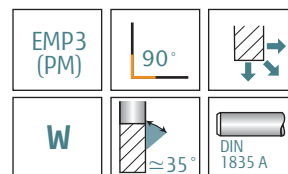
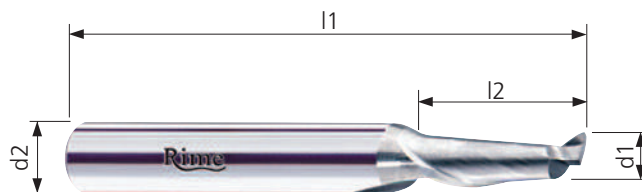
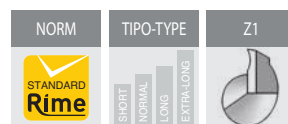
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE L

FRESE MONOTAGLIANTE PER LEGHE LEGGERE



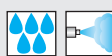
L18

- FRESE MONOTAGLIANTE PER LEGHE LEGGERE - Codolo cilindrico
- SINGLE-FLUTES END MILLS TO MACHINE LIGHT ALLOYS - Straight shank
- FRAISES À UNE TAILLE POUR L'USINAGE D'ALLIAGES LÉGERS - Queue cylindrique
- EINSCHNEIDEFRÄSER 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

CODE (EMP3)	d1 mm js14	l1 mm	l2 mm	d2 mm h6	EMP3 €	ALU SUPREME €
L18/01	4	55	11	6	•	•
L18/02	5	60	13	6	•	•
L18/03	6	57	13	6	•	•
L18/04	7	65	16	10	•	•
L18/05	8	70	19	10	•	•
L18/06	10	75	22	10	•	•
L18/07	12	80	25	12	•	•

Rime

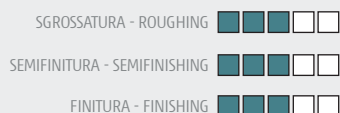
COATING **ALU-SUPREME**



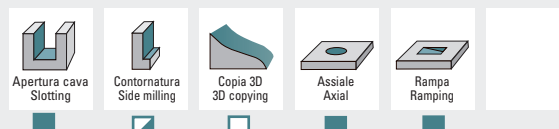
CODE
L18/.../AS

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Suggestion



Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

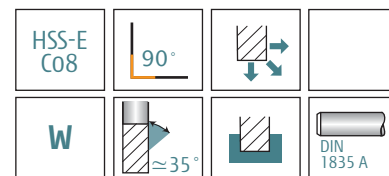
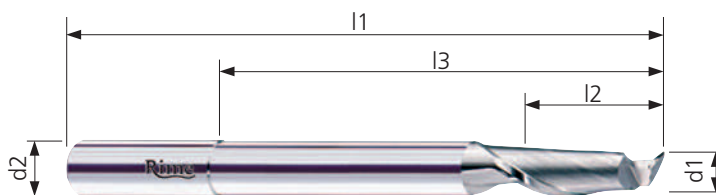
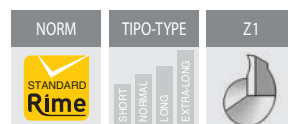
SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE MONOTAGLIANTE PER LEGHE LEGGERE



L19

- FRESE MONOTAGLIANTE PER LEGHE LEGGERE - Codolo cilindrico
- SINGLE-FLUTED END MILLS TO MACHINE LIGHT ALLOYS - Straight shank
- FRAISES À UNE TAILLE POUR L'USINAGE D'ALLIAGES LÉGERS - Queue cylindrique
- EINSCHNEIDEFRÄSER 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

CODE (Co 8%)	d1 mm js14	L1 mm	L2 mm	L3 mm	d2 mm h6	Co 8% €	ALU SUPREME €
L19/02	3	68	12	20	8	•	•
L19/03	4	68	12	20	8	•	•
L19/04	5	62	15	20	6	•	•
L19/05	5	68	15	23	8	•	•
L19/06	5	68	15	23	10	•	•
L19/07	6	68	15	23	8	•	•
L19/08	8	80	15	60	8	•	•

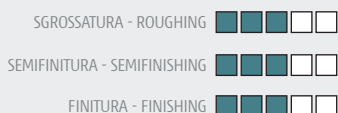
Rime

COATING **ALU-SUPREME**

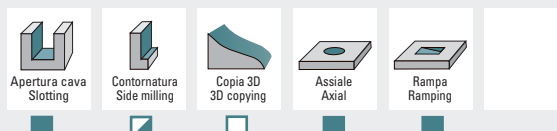


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Suggestion



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Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

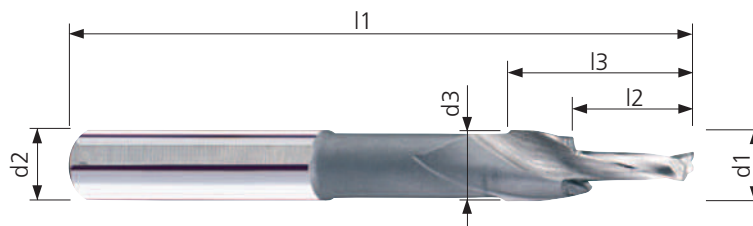
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE PER FORARE A DUE DIAMETRI

NORM	TIPO-TYPE	Z2
	SHORT NORMAL LONG EXTRA-LONG	



HSS		
W		

L20

- FRESE PER FORARE A DUE DIAMETRI - 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'ALLIAGES 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

CODE	d1 mm js14	d3 mm	l1 mm	l2 mm	l3 mm	d2 mm h6	HSS €
L20/01	6	12	85	18	30	10	•
L20/02	6.5	13.5	85	18	30	10	•
L20/03	5.5	11.5	100	18	30	10	•
L20/04	6	11.5	100	18	30	10	•
L20/05	6	12	100	18	30	12	•
L20/06	6.5	13.5	100	18	30	10	•
L20/07	7	13	100	18	30	12	•
L20/08	7	15	100	18	30	12	•
L20/09	7	18.5	100	18	30	12	•

Rime

Ulteriori diametri a richiesta
Other diameters on demand

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

☐	☐	☐	☒	☐	☐

Materiali
Materials

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



SERIE MG

Frese in PM (EMP3)

End mills in PM (EMP3)

		pag.			pag.
MG0		159	MG17		175
MG1		160	MG18		176
MG3		161	MG19		177
MG4		162	MG20		178
MG5		163	MG22		179
MG6		164	MG23		180
MG7		165	MG24		181
MG8		166	MG25		182
MG9		167	MG26		183
MG10		168	MG27		184
MG11		169	MG28		185
MG12		170	MG29		186
MG13		171	MG30		187
MG14		172	MG31		188
MG15		173	MG32		189
MG16		174			

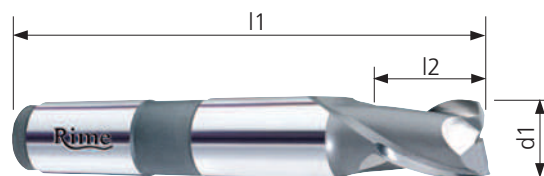


advanced tools production

design and technology

FRESE A DUE DENTI PER CAVE

NORM	TIPO-TYPE	Z2
UNI 8260A DIN 326D ISO 1641/II	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)	90°	
N		

NORMALE

MG0

- FRESE A DUE DENTI PER CAVE - 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

CODE	d1 mm e8	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG0/01	16	19	104	2	2	•
MG0/03	18	19	104	2	2	•
MG0/05	20	22	124	3	2	•
MG0/06	21	22	124	3	2	•
MG0/07	22	22	124	3	2	•
MG0/08	23	22	124	3	2	•
MG0/09	24	26	128	3	2	•
MG0/10	25	26	128	3	2	•
MG0/11	26	26	128	3	2	•
MG0/12	27	26	128	3	2	•
MG0/13	28	26	128	3	2	•
MG0/14	29	26	128	3	2	•
MG0/15	30	32	134	3	2	•
MG0/16	32	32	157	4	2	•
MG0/17	34	32	157	4	2	•
MG0/18	35	32	157	4	2	•
MG0/19	36	32	157	4	2	•
MG0/20	38	38	163	4	2	•
MG0/21	40	38	163	4	2	•
MG0/22	45	38	163	4	2	•
MG0/23	50	45	170	4	2	•

Rime

Ulteriori diametri a richiesta
Other diameters on demand

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings

 Apertura cava Slotting	 Contornatura Side milling	 Copia 3D 3D copying	 Assiale Axial	 Rampa Ramping	
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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

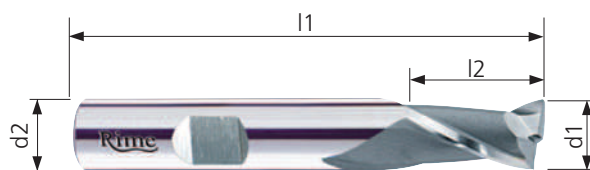
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE A DUE DENTI PER CAVE

NORM	TIPO-TYPE	Z2
UNI 8258 DIN 327D ISO 1641/1	SHORT NORMAL LONG EXTRALONG	



EMP3 (PM)	90°	
N	≈30°	DIN 1835 B

NORMALE

MG1

- FRESE A DUE DENTI PER CAVE - 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 - Encabadoiro Weldon
- Фреза 2-х зубая. Режущий торец. Хвостовик Weldon. Средняя серия

CODE (EMP3)	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €	
MG1/00	2	4	48	6	2	•	•	■
MG1/01	3	5	49	6	2	•	•	■
MG1/02	3.5	6	50	6	2	•	•	■
MG1/03	4	7	51	6	2	•	•	■
MG1/04	4.5	7	51	6	2	•	•	■
MG1/05	5	8	52	6	2	•	•	■
MG1/06	5.5	8	52	6	2	•	•	■
MG1/07	6	8	52	6	2	•	•	■
MG1/08	6.5	10	60	10	2	•	•	■
MG1/09	7	10	60	10	2	•	•	■
MG1/10	7.5	10	60	10	2	•	•	■
MG1/11	8	11	61	10	2	•	•	■
MG1/12	8.5	11	61	10	2	•	•	■
MG1/13	9	11	61	10	2	•	•	■
MG1/14	9.5	13	63	10	2	•	•	■
MG1/15	10	13	63	10	2	•	•	■
MG1/16	10.5	13	70	12	2	•	•	■
MG1/17	11	13	70	12	2	•	•	■
MG1/18	12	16	73	12	2	•	•	■
MG1/19	13	16	73	12	2	•	•	■
MG1/20	14	16	73	12	2	•	•	■
MG1/21	15	19	79	16	2	•	•	■
MG1/22	16	19	79	16	2	•	•	■
MG1/23	17	19	79	16	2	•	•	■
MG1/24	18	19	79	16	2	•	•	■
MG1/25	19	22	88	20	2	•	•	■
MG1/26	20	22	88	20	2	•	•	■
MG1/27	22	22	88	20	2	•	•	■
MG1/28	23	22	98	25	2	•	•	■
MG1/29	24	26	102	25	2	•	•	■
MG1/30	25	26	102	25	2	•	•	■
MG1/31	26	26	102	25	2	•	•	■
MG1/32	28	26	102	25	2	•	•	■
MG1/33	30	26	102	25	2	•	•	■
MG1/34	32	32	112	32	2	•	•	■

COATING SUPREME

CODE
MG1/...SParametri
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Suggestion

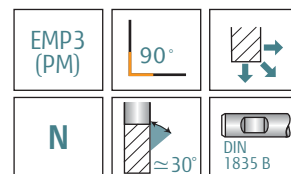
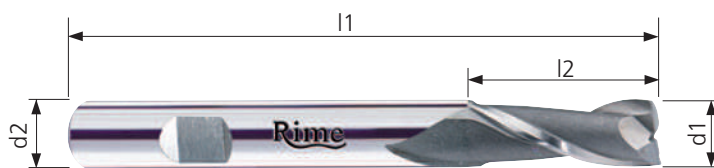
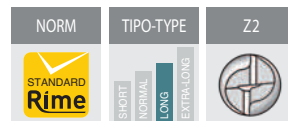
SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	

Materiali
MaterialsACCIAI
STEELSGHISE
CAST IRONACCIAI INOSSIDABILI
STAINLESS STEELSSUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUMLEGHE LEGGERE
LIGHT ALLOYSMATERIALI NON FERROSI
NON FERROUS MATERIALCONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE A DUE DENTI PER CAVE



LUNGA

MG3

- FRESE A DUE DENTI PER CAVE - 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 - Encabadoiro Weldon
- Фреза 2-х зубая. Режущий торец. Хвостовик Weldon. Удлиненная серия

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG3/01	3	9	58	6	2	•	•
MG3/02	3.5	13	67	6	2	•	•
MG3/03	4	13	67	6	2	•	•
MG3/04	4.5	13	68	6	2	•	•
MG3/05	5	16	70	6	2	•	•
MG3/06	5.5	16	76	6	2	•	•
MG3/07	6	16	76	6	2	•	•
MG3/08	6.5	16	76	10	2	•	•
MG3/09	7	19	79	10	2	•	•
MG3/10	7.5	19	79	10	2	•	•
MG3/11	8	19	79	10	2	•	•
MG3/12	8.5	22	83	10	2	•	•
MG3/13	9	22	83	10	2	•	•
MG3/14	9.5	22	83	10	2	•	•
MG3/15	10	22	83	10	2	•	•
MG3/16	10.5	25	95	12	2	•	•
MG3/17	11	25	95	12	2	•	•
MG3/18	12	28	98	12	2	•	•
MG3/19	13	28	98	12	2	•	•
MG3/20	14	32	102	12	2	•	•
MG3/21	15	32	108	16	2	•	•
MG3/22	16	32	108	16	2	•	•
MG3/23	17	35	114	16	2	•	•
MG3/24	18	35	114	16	2	•	•
MG3/25	19	38	132	20	2	•	•
MG3/26	20	38	132	20	2	•	•
MG3/27	21	38	132	20	2	•	•
MG3/28	22	41	141	25	2	•	•
MG3/29	23	41	141	25	2	•	•
MG3/30	24	41	152	25	2	•	•
MG3/31	25	44	159	25	2	•	•
MG3/32	26	44	159	25	2	•	•
MG3/33	28	44	159	25	2	•	•
MG3/34	30	50	159	25	2	•	•
MG3/35	32	52	165	32	2	•	•

COATING SUPREME

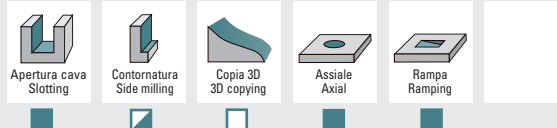


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Suggestion



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Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

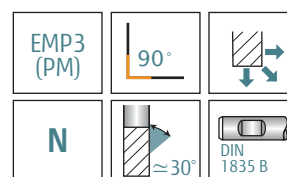
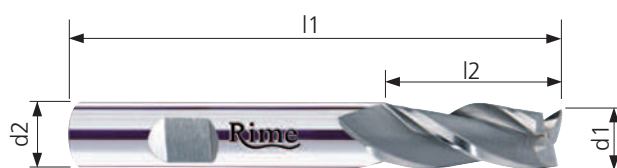
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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FRESE A TRE DENTI

NORM	TIPO-TYPE	Z3
UNI 8248 DIN 844B ISO 1641/1	SHORT NORMAL LONG EXTRALONG	



NORMALE

MG4

- FRESE A TRE DENTI - 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

CODE (EMP3)	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €	
MG4/01	2	7	51	6	3	•	•	■
MG4/02	2,5	8	52	6	3	•	•	■
MG4/03	3	8	52	6	3	•	•	■
MG4/04	3,5	10	54	6	3	•	•	■
MG4/05	4	11	55	6	3	•	•	■
MG4/06	4,5	11	55	6	3	•	•	■
MG4/07	5	13	57	6	3	•	•	■
MG4/08	5,5	13	57	6	3	•	•	■
MG4/09	6	13	57	6	3	•	•	■
MG4/10	6,5	16	66	10	3	•	•	■
MG4/11	7	16	66	10	3	•	•	■
MG4/11/1	7,5	19	69	10	3	•	•	■
MG4/12	8	19	69	10	3	•	•	■
MG4/12/1	8,5	19	69	10	3	•	•	■
MG4/13	9	19	69	10	3	•	•	■
MG4/13/1	9,5	22	72	10	3	•	•	■
MG4/14	10	22	72	10	3	•	•	■
MG4/15	11	22	79	12	3	•	•	■
MG4/16	12	26	83	12	3	•	•	■
MG4/17	13	26	83	12	3	•	•	■
MG4/18	14	26	83	12	3	•	•	■
MG4/19	15	32	92	16	3	•	•	■
MG4/20	16	32	92	16	3	•	•	■
MG4/21	17	32	92	16	3	•	•	■
MG4/22	18	32	92	16	3	•	•	■
MG4/23	19	38	104	20	3	•	•	■
MG4/24	20	38	104	20	3	•	•	■
MG4/25	22	38	104	20	3	•	•	■
MG4/26	24	45	121	25	3	•	•	■
MG4/27	25	45	121	25	3	•	•	■
MG4/28	26	45	121	25	3	•	•	■
MG4/29	28	45	121	25	3	•	•	■
MG4/30	30	45	121	25	3	•	•	■
MG4/31	32	53	133	32	3	•	•	■

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

COATING SUPREME

 CODE
MG4/...S

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐
SEMIFINITURA - SEMIFINISHING	☐
FINITURA - FINISHING	☐

Lavorazioni
Workings

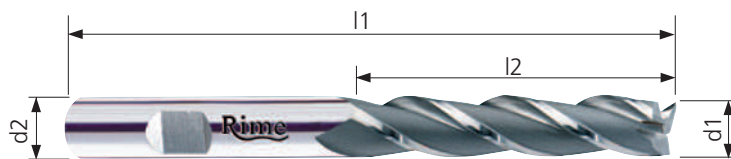
☐	☐	☐	☐	☐	☐

Materiali
MaterialsACCIAI
STEELSGHISE
CAST IRONACCIAI INOSSIDABILI
STAINLESS STEELSSUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUMLEGHE LEGGERE
LIGHT ALLOYSMATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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NORM	TIPO-TYPE	Z3
UNI 8249 DIN 844B ISO 1641/I	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)	90°	
N	≈ 30°	DIN 1835 B

LUNGA

MG5

- FRESE A TRE DENTI - 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 FRONTALIS DE TRÊS NAVALHAS - Encabadouro Weldon
- Фреза 3-х зубая. Режущий торец. Хвостовик Weldon. Удлиненная серия

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG5/01	2	10	54	6	3	•
MG5/02	3	12	56	6	3	•
MG5/03	4	19	63	6	3	•
MG5/04	5	24	68	6	3	•
MG5/05	6	24	68	6	3	•
MG5/06	7	30	80	10	3	•
MG5/07	8	38	88	10	3	•
MG5/08	10	45	95	10	3	•
MG5/09	12	53	110	12	3	•
MG5/10	14	53	110	12	3	•
MG5/11	16	63	123	16	3	•
MG5/12	18	63	123	16	3	•
MG5/13	20	75	141	20	3	•
MG5/14	22	75	141	20	3	•

Rime

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

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☐
SEMIFINITURA - SEMIFINISHING	☒	☒	☒	☐
FINITURA - FINISHING	☒	☒	☒	☐

Lavorazioni
Workings

☒	☒	☐	☒	☒	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

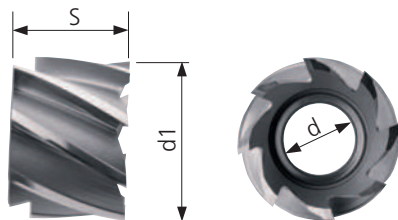
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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FRESE FRONTALI - FINITURA

NORM	TIPO-TYPE	
UNI 3903	SHORT	
DIN 1880	NORMAL	
ISO 2586	LONG	
	EXTRALONG	



EMP3 (PM)	90°	
N	≈30°	

MG6

- FRESE FRONTALI - FINITURA - 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

CODE	d1 mm js6	s mm k16	d mm H7	Z	EMP3 €
MG6/01	40	32	16	8	•
MG6/02	50	36	22	8	•
MG6/03	63	40	27	8	•
MG6/04	80	45	27	10	•
MG6/05	100	50	32	12	•
MG6/06	125	56	40	14	•

Rime



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

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	Spianatura Face milling
☐	☒	☐	☐	☐	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

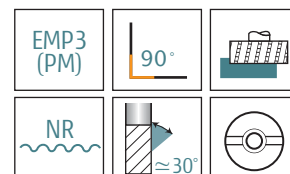
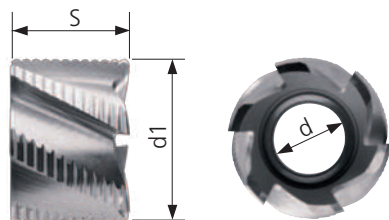
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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FRESE FRONTALI - SGROSSATURA

NORM	TIPO-TYPE	
UNI 3903	SHORT	
DIN 1880	NORMAL	
ISO 2586	LONG	
	EXTRA-LONG	



MG7

- FRESE FRONTALI - Denti elicoidali con rompitrucciolo 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 aparta
- Фреза торцевая со стружколомом

CODE	d1 mm js6	s mm k16	d mm H7	Z	EMP3 €
MG7/01	40	32	16	6	•
MG7/02	50	36	22	6	•
MG7/03	63	40	27	8	•
MG7/04	80	45	27	8	•
MG7/05	100	50	32	10	•
MG7/06	125	56	40	12	•

Rime



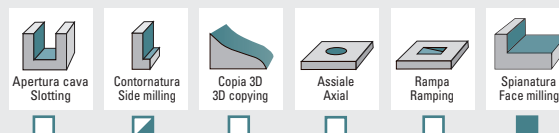
Toll. reale sul Ø
Real Tol. on Ø -0 +0,05

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

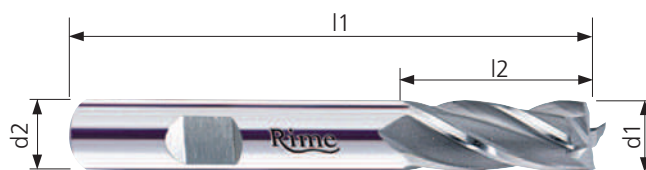
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE PER FINITURA

NORM	TIPO-TYPE	Z4+6
UNI 8248 DIN 844B ISO 1641/1	SHORT NORMAL LONG EXTRALONG	



EMP3 (PM)	90°	
N	≈30°	DIN 1835 B

NORMALE

MG8

- FRESE PER FINITURA - 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 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €	
MG8/01	2	7	51	6	4	•	•	■
MG8/01/1	2,5	8	52	6	4	•	•	■
MG8/02	3	8	52	6	4	•	•	■
MG8/02/1	3,5	10	54	6	4	•	•	■
MG8/03	4	11	55	6	4	•	•	■
MG8/03/1	4,5	11	55	6	4	•	•	■
MG8/04	5	13	57	6	4	•	•	■
MG8/04/1	5,5	13	57	6	4	•	•	■
MG8/05	6	13	57	6	4	•	•	■
MG8/05/1	6,5	16	66	10	4	•	•	■
MG8/06	7	16	66	10	4	•	•	■
MG8/06/1	7,5	19	69	10	4	•	•	■
MG8/07	8	19	69	10	4	•	•	■
MG8/07/1	8,5	19	69	10	4	•	•	■
MG8/08	9	19	69	10	4	•	•	■
MG8/09	10	22	72	10	4	•	•	■
MG8/10	11	22	79	12	4	•	•	■
MG8/11	12	26	83	12	4	•	•	■
MG8/12	13	26	83	12	4	•	•	■
MG8/13	14	26	83	12	4	•	•	■
MG8/14	15	32	92	16	4	•	•	■
MG8/15	16	32	92	16	4	•	•	■
MG8/16	17	32	92	16	4	•	•	■
MG8/17	18	32	92	16	4	•	•	■
MG8/18	19	38	104	20	4	•	•	■
MG8/19	20	38	104	20	4	•	•	■
MG8/20	22	38	104	20	4	•	•	■
MG8/21	24	45	121	25	5	•	•	■
MG8/22	25	45	121	25	5	•	•	■
MG8/23	26	45	121	25	5	•	•	■
MG8/24	28	45	121	25	5	•	•	■
MG8/25	30	45	121	25	6	•	•	■
MG8/26	32	53	133	32	6	•	•	■

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

COATING **SUPREME**

CODE
MG8/...**S**

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☒	☒	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

☒	☒	☐	☒	☒	☐

Materiali
Materials

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

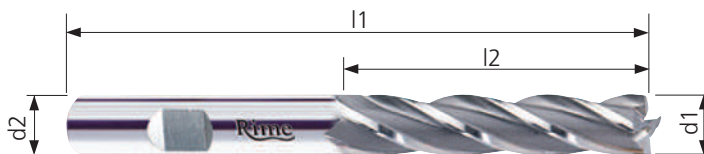
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Rime

SERIE MG

FRESE PER FINITURA

NORM	TIPO-TYPE	Z4÷6
UNI 8249 DIN 844B ISO 1641/I	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)	90°	
N		

LUNGA

MG9

- FRESE PER FINITURA - 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 CILINDRICAS 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

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG9/01	2	10	54	6	4	•
MG9/02	3	12	56	6	4	•
MG9/03	4	19	63	6	4	•
MG9/04	5	24	68	6	4	•
MG9/05	6	24	68	6	4	•
MG9/06	7	30	80	10	4	•
MG9/07	8	38	88	10	4	•
MG9/08	10	45	95	10	4	•
MG9/09	12	53	110	12	4	•
MG9/10	14	53	110	12	4	•
MG9/11	16	63	123	16	4	•
MG9/12	18	63	123	16	4	•
MG9/13	20	75	141	20	4	•
MG9/14	22	75	141	20	4	•
MG9/15	24	90	166	25	5	•
MG9/16	25	90	166	25	5	•
MG9/17	26	90	166	25	5	•
MG9/18	28	90	166	25	5	•
MG9/19	30	90	166	25	6	•
MG9/20	32	106	186	32	6	•

Rime



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

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☒	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

 Apertura cava Slotting	 Contornatura Side milling	 Copia 3D 3D copying	 Assiale Axial	 Rampa Ramping	☐
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Materiali
Materials

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

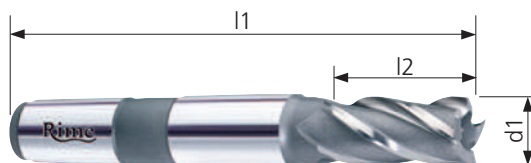
torna all'indice
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Rime

SERIE MG

FRESE PER FINITURA

NORM	TIPO-TYPE	Z4+8
UNI 8250 DIN 845B ISO 1641/II	SHORT NORMAL LONG EXTRALONG	



EMP3 (PM)	90°	
N	≈ 30°	DIN 228 A

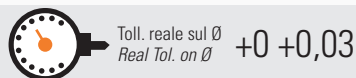
NORMALE

MG10

- FRESE PER FINITURA - 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 - Encabadouro cone Morse con taladro roscado
- Фреза концевая для чистовой обработки. Режущий торец. Хвостовик конус Морзе с резьбой. Средняя серия

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €	SUPREME €	
MG10/01	16	32	117	2	4	•	•	■
MG10/02	18	32	117	2	4	•	•	■
MG10/03	20	38	140	3	4	•	•	■
MG10/04	22	38	140	3	4	•	•	■
MG10/05	24	45	147	3	5	•	•	■
MG10/06	25	45	147	3	5	•	•	■
MG10/07	26	45	147	3	5	•	•	■
MG10/08	28	45	147	3	5	•	•	■
MG10/09	30	53	155	3	6	•	•	■
MG10/10	32	53	178	4	6	•	•	■
MG10/11	34	53	178	4	6	•	•	■
MG10/12	35	53	178	4	6	•	•	■
MG10/13	36	53	178	4	6	•	•	■
MG10/14	38	63	188	4	6	•	•	■
MG10/15	40	63	188	4	8	•	•	■
MG10/16	45	63	188	4	8	•	•	■
MG10/17	50	75	233	5	8	•	•	■

Rime



COATING **SUPREME**

CODE
MG10/.../S

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☒	☒	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

☒	☒	☐	☐	☐	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

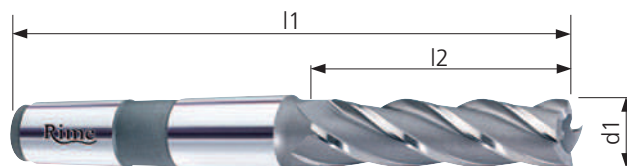
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE PER FINITURA

NORM	TIPO-TYPE	Z4+8
UNI 8251 DIN 845B ISO 1641/II	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)	90°	
N	≈ 30°	DIN 228 A

LUNGA

MG11

- FRESE PER FINITURA - 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

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG11/01	16	63	148	2	4	•
MG11/02	18	63	148	2	4	•
MG11/03	20	75	177	3	4	•
MG11/04	22	75	177	3	4	•
MG11/05	24	90	192	3	5	•
MG11/06	25	90	192	3	5	•
MG11/07	26	90	192	3	5	•
MG11/08	28	90	192	3	5	•
MG11/09	30	90	192	3	6	•
MG11/10	32	106	231	4	6	•
MG11/11	34	106	231	4	6	•
MG11/12	35	106	231	4	6	•
MG11/13	36	106	231	4	6	•
MG11/14	38	125	250	4	6	•
MG11/15	40	125	250	4	8	•
MG11/16	45	125	250	4	8	•
MG11/17	50	150	308	5	8	•

Rime



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

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☒	☐	☐	☐
FINITURA - FINISHING	☒	☒	☒	☒

Lavorazioni
Workings

					☐
Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping	

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

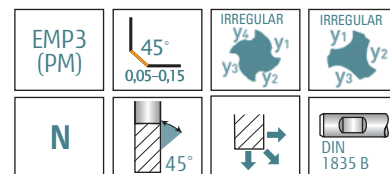
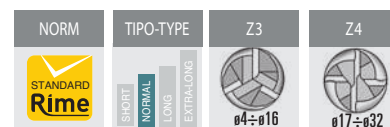
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE CILINDRICHE FRONTALI



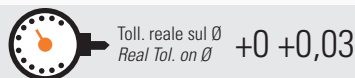
NORMALE

MG12

- FRESE CILINDRICHE FRONTALI - 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG12/03	4	11	55	6	3	•	•
MG12/04	5	13	57	6	3	•	•
MG12/05	6	13	57	6	3	•	•
MG12/06	7	16	66	10	3	•	•
MG12/07	8	20	69	10	3	•	•
MG12/08	9	20	69	10	3	•	•
MG12/09	10	22	72	10	3	•	•
MG12/10	11	26	83	12	3	•	•
MG12/11	12	26	83	12	3	•	•
MG12/12	13	26	83	12	3	•	•
MG12/13	14	26	83	12	3	•	•
MG12/14	15	36	92	16	3	•	•
MG12/15	16	36	92	16	3	•	•
MG12/16	17	40	100	16	4	•	•
MG12/17	18	40	100	16	4	•	•
MG12/18	20	45	110	20	4	•	•
MG12/19	22	45	110	20	4	•	•
MG12/20	25	50	125	25	4	•	•
MG12/21	28	56	125	25	4	•	•
MG12/22	30	63	140	25	4	•	•
MG12/23	32	63	140	32	4	•	•

Rime



+0 +0,03

COATING **SUPREME**

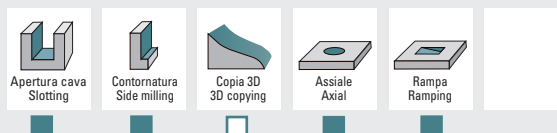


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Suggestion



Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

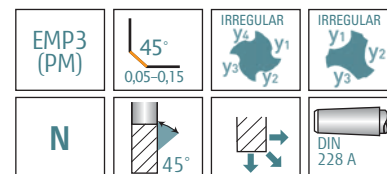
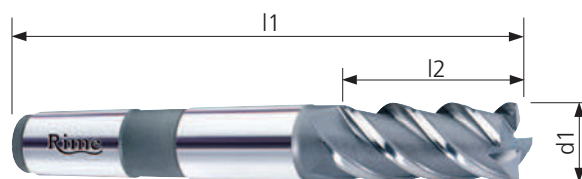
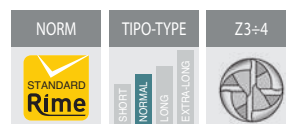
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE CILINDRICHE FRONTALI



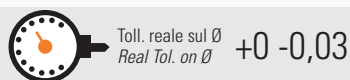
NORMALE

MG13

- FRESE CILINDRICHE FRONTALI - 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 spiralgewendet - 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €	SUPREME €
MG13/01	16	36	115	2	3	•	•
MG13/02	18	40	120	2	4	•	•
MG13/03	20	45	145	3	4	•	•
MG13/04	22	45	145	3	4	•	•
MG13/05	24	50	150	3	4	•	•
MG13/06	25	50	150	3	4	•	•
MG13/07	26	56	155	3	4	•	•
MG13/08	28	56	155	3	4	•	•
MG13/09	30	63	165	3	4	•	•
MG13/10	32	63	185	4	4	•	•
MG13/11	34	70	195	4	4	•	•
MG13/12	35	70	195	4	4	•	•
MG13/13	36	70	195	4	4	•	•
MG13/14	38	70	195	4	4	•	•
MG13/15	40	70	195	4	4	•	•

Rime

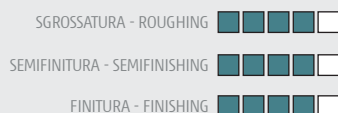


COATING **SUPREME**

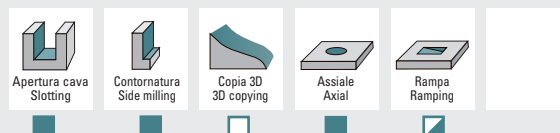


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Suggerimenti
Suggestion



Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

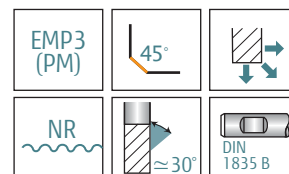
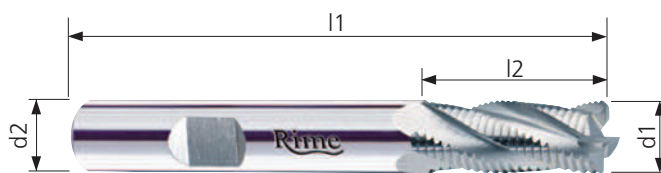
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

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FRESE PER SGROSSATURA

NORM	TIPO-TYPE	Z3÷6
UNI 8248 DIN 844B ISO 1641/1	SHORT NORMAL LONG EXTRALONG	



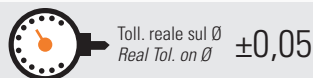
NORMALE

MG14

-  FRESE PER SGROSSATURA - 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 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-Spanfläche
-  FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con aranca de viruta - Dos labios que cortan hasta el centro - Mango Weldon
-  FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Três navalhas normais com quebra aparta com corte ao centro - Encabadouro Weldon
-  Фреза концевая для черновой обработки. Режущий торец. Хвостовик Weldon. Средняя серия

CODE (EMP3)	d1 mm js14	L2 mm	L1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG14/01	6	13	57	6	3	•	•
MG14/02	7	16	66	10	3	•	•
MG14/03	8	19	69	10	4	•	•
MG14/04	9	19	69	10	4	•	•
MG14/05	10	22	72	10	4	•	•
MG14/06	11	22	79	12	4	•	•
MG14/07	12	26	83	12	4	•	•
MG14/08	13	26	83	12	4	•	•
MG14/09	14	26	83	12	4	•	•
MG14/10	15	32	92	16	4	•	•
MG14/11	16	32	92	16	4	•	•
MG14/12	17	32	92	16	4	•	•
MG14/13	18	32	92	16	4	•	•
MG14/14	20	38	104	20	4	•	•
MG14/15	22	38	104	20	4	•	•
MG14/16	24	45	121	25	5	•	•
MG14/17	25	45	121	25	5	•	•
MG14/18	26	45	121	25	5	•	•
MG14/19	28	45	121	25	5	•	•
MG14/20	30	45	121	25	5	•	•
MG14/21	32	53	133	32	5	•	•
MG14/22	36	53	133	32	6	•	•
MG14/23	40	63	143	32	6	•	•

Rime



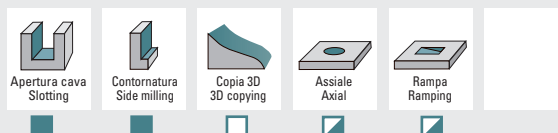
COATING SUPREME



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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
WorkingsMateriali
MaterialsACCIAI
STEELSGHISE
CAST IRONACCIAI INOSSIDABILI
STAINLESS STEELSSUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUMLEGHE LEGGERE
LIGHT ALLOYSMATERIALI NON FERROSI
NON FERROUS MATERIAL

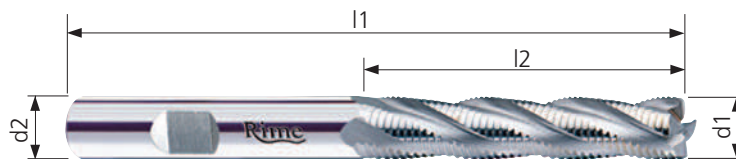
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE PER SGROSSATURA

NORM	TIPO-TYPE	Z4÷5
UNI 8249 DIN 844B ISO 1641/I	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)	45°	
NR	≈ 30°	
	DIN 1835 B	

LUNGA

MG15

- FRESE PER SGROSSATURA - 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 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 aranca de viruta - Dos labios que cortan hasta el centro - Mango Weldon
- FRESAS CILINDRICAS FRONTAIS PARA DESBASTE - Quatro navalhas longas quebra aparta com corte ao centro - Encabadouro Weldon
- Фреза концевая для черновой обработки. Режущий торец. Хвостовик Weldon. Удлиненная серия

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG15/01	8	38	88	10	4	•	•
MG15/02	10	45	95	10	4	•	•
MG15/03	12	53	110	12	4	•	•
MG15/04	14	53	110	12	4	•	•
MG15/05	15	63	123	16	4	•	•
MG15/06	16	63	123	16	4	•	•
MG15/07	18	63	123	16	4	•	•
MG15/08	20	75	141	20	4	•	•
MG15/09	22	75	141	20	4	•	•
MG15/10	24	90	166	25	5	•	•
MG15/11	25	90	166	25	5	•	•
MG15/12	28	90	166	25	5	•	•
MG15/13	30	90	166	25	5	•	•
MG15/14	32	106	186	32	5	•	•

Rime

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

COATING **SUPREME**

CODE
MG15/.../S

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Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

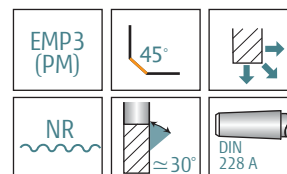
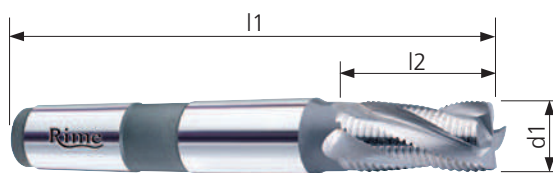
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE PER SGROSSATURA

NORM	TIPO-TYPE	Z4÷7
UNI 8250 8251 DIN 845B ISO 1641/II	SHORT NORMAL LONG EXTRALONG	



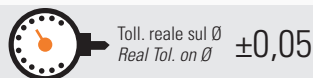
NORMALE

MG16

- FRESE PER SGROSSATURA - 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 eingeschliffenem 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €	SUPREME €
MG16/01	16	32	117	2	4	•	•
MG16/02	18	32	117	2	4	•	•
MG16/03	20	38	140	3	4	•	•
MG16/04	22	38	140	3	4	•	•
MG16/05	24	45	147	3	5	•	•
MG16/06	25	45	147	3	5	•	•
MG16/07	26	45	147	3	5	•	•
MG16/08	28	45	147	3	5	•	•
MG16/09	30	53	155	3	5	•	•
MG16/10	32	53	178	4	5	•	•
MG16/11	34	53	178	4	5	•	•
MG16/12	35	53	178	4	6	•	•
MG16/13	36	53	178	4	6	•	•
MG16/14	38	63	188	4	6	•	•
MG16/15	40	63	188	4	6	•	•
MG16/16	45	63	188	4	6	•	•
MG16/17	50	75	200	4	7	•	•

Rime



COATING **SUPREME**

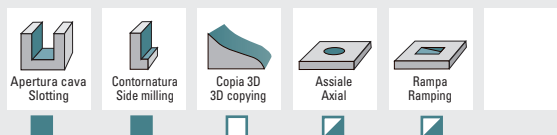


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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

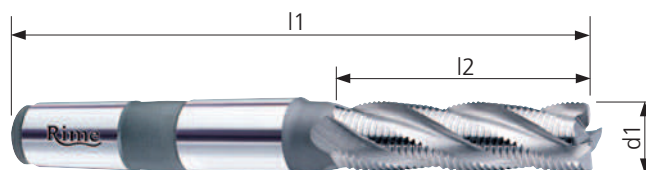
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE PER SGROSSATURA

NORM	TIPO-TYPE	Z4÷7
UNI 8250 8251 DIN 845B ISO 1641/II	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)	45°	
NR	≈ 30°	DIN 228 A

LUNGA

MG17

- FRESE PER SGROSSATURA - 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 eingeschliffenem Spannbrecher - Zwei Schneiden mit Zentrumschnitt
- FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con arranque 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

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG17/01	16	63	148	2	4	•
MG17/02	18	63	148	2	4	•
MG17/03	20	75	177	3	4	•
MG17/04	22	75	177	3	4	•
MG17/05	24	90	192	3	5	•
MG17/06	25	90	192	3	5	•
MG17/07	26	90	192	3	5	•
MG17/08	28	90	192	3	5	•
MG17/09	30	90	192	3	5	•
MG17/10	32	106	231	4	5	•
MG17/11	34	106	231	4	5	•
MG17/12	35	106	231	4	6	•
MG17/13	36	106	231	4	6	•
MG17/14	38	125	250	4	6	•
MG17/15	40	125	250	4	6	•
MG17/16	45	125	250	4	6	•
MG17/17	50	150	275	4	7	•

Rime



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

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

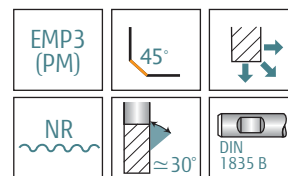
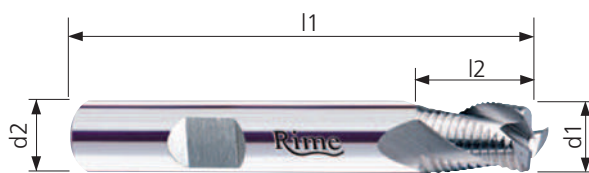
ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED



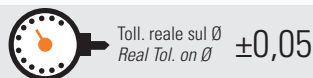
CORTA

MG18

- FRESE PER SGROSSATURA - Denti elicoidali con rompitrucciolo 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 aranca 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG18/01	6	8	52	6	3	•	•
MG18/02	8	11	61	10	3	•	•
MG18/03	10	13	63	10	3	•	•
MG18/04	12	13	73	12	3	•	•
MG18/05	14	16	73	12	3	•	•
MG18/06	15	19	79	16	3	•	•
MG18/07	16	19	79	16	3	•	•
MG18/08	18	19	79	16	3	•	•
MG18/09	20	22	88	20	3	•	•
MG18/10	22	22	88	20	3	•	•
MG18/11	25	26	102	25	3	•	•

Rime



COATING SUPREME

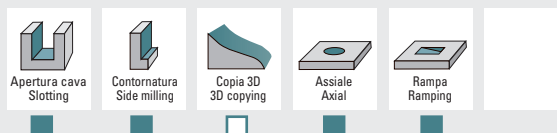


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Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

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Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

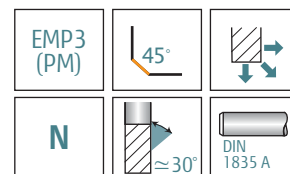
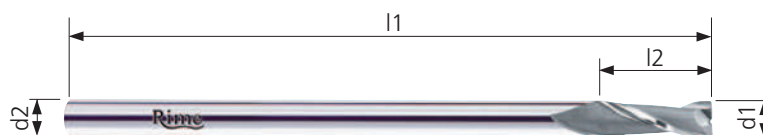
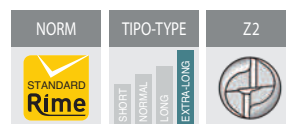
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE A DUE DENTI PER CAVE EXTRALUNGA



EXTRA-LUNGA

MG19

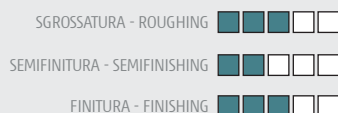
- FRESE A DUE DENTI PER CAVE - EXTRALUNGA - Un dente frontale tagliente fino al centro - Codolo cilindrico
- COPY MILLING CUTTERS - One end tooth cutting up to the centre - Straight shank
- FRAISES POUR MACHINES À COPIER - Une dent bout coupante jusqu'au centre - Queue cylindrique
- NACHFORMFRÄSER - 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. Ультралонг-серия

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG19/00	6	25	180	6	2	•
MG19/00/1	8	25	180	8	2	•
MG19/01	10	30	200	10	2	•
MG19/02	12	30	200	12	2	•
MG19/03	16	35	200	16	2	•
MG19/04	20	35	200	20	2	•
MG19/05	25	40	200	25	2	•

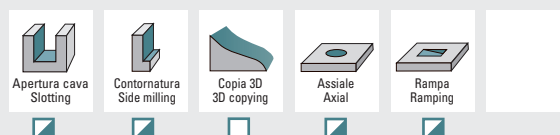
Rime

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Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

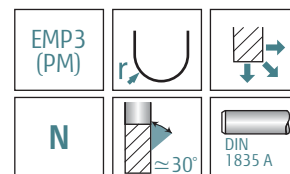
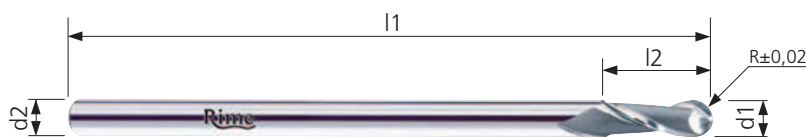
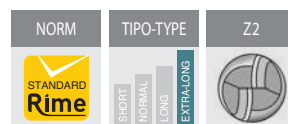
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE A DUE DENTI A TESTA SFERICA EXTRALUNGA



EXTRA-LUNGA

MG20

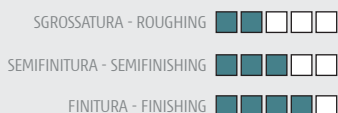
- FRESE A DUE DENTI A TESTA SFERICA - EXTRALUNGA - Due denti elicoidali testa emisferica - Codolo cilindrico
- COPY MILLING CUTTERS - Two ball-nosed helical teeth - Straight shank
- FRAISES POUR MACHINES À COPIER - Deux dents hélicoïdales à bout hémisphérique - Queue cylindrique
- NACHFORMFRÄSER - Zwei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

CODE	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG20/00	6	25	180	6	2	•
MG20/00/1	8	25	180	8	2	•
MG20/01	10	30	200	10	2	•
MG20/02	12	30	200	12	2	•
MG20/03	16	35	200	16	2	•
MG20/04	20	35	200	20	2	•
MG20/05	25	40	200	25	2	•

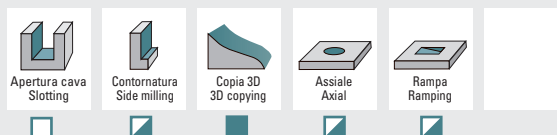
Rime

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Suggestion



Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

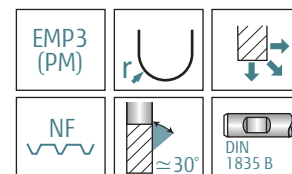
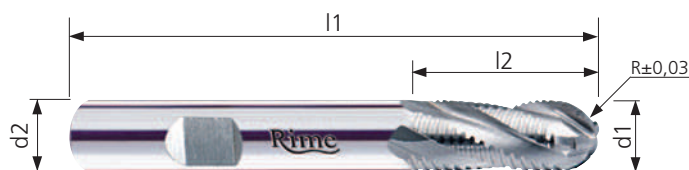
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA

NORM	TIPO-TYPE	Z3÷6
ISO 1641/II	SHORT NORMAL LONG EXTRA-LONG	



NORMALE

MG22

- FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA - Denti elicoidali con rompitrucciolo 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 quebram com corte ao centro - Encabadouro Weldon
- Фреза для черновой и получистовой обработки со стружколомом. Сферический торец. Хвостовик Weldon. Средняя серия

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG22/01	6	13	57	6	3	•
MG22/02	7	16	66	10	3	•
MG22/03	8	19	69	10	4	•
MG22/04	9	19	69	10	4	•
MG22/05	10	22	72	10	4	•
MG22/06	11	22	79	12	4	•
MG22/07	12	26	83	12	4	•
MG22/08	13	26	83	12	4	•
MG22/09	14	26	83	12	4	•
MG22/10	15	32	92	16	4	•
MG22/11	16	32	92	16	4	•
MG22/12	17	32	92	16	4	•
MG22/13	18	32	92	16	4	•
MG22/14	20	38	104	20	4	•
MG22/15	22	38	104	20	4	•
MG22/16	24	45	121	25	5	•
MG22/17	25	45	121	25	5	•
MG22/18	26	45	121	25	5	•
MG22/19	28	45	121	25	5	•
MG22/20	30	45	121	25	5	•
MG22/21	32	53	133	32	5	•
MG22/22	36	53	133	32	6	•
MG22/23	40	63	143	32	6	•

Rime

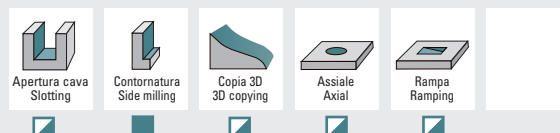
Toll. reale sul Ø $\pm 0,05$
Real Tol. on Ø

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings



Materiali
Materials

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

Rime

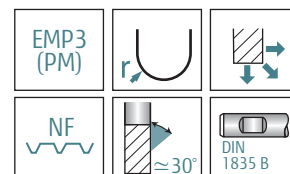
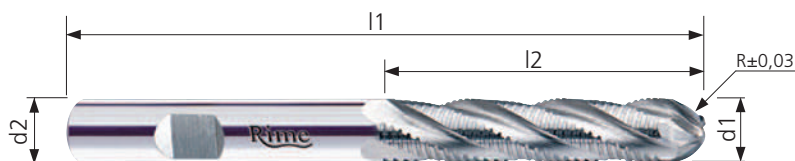
SERIE MG

LUNGA

MG23

FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA

NORM	TIPO-TYPE	Z4÷5
ISO 1641/II	SHORT NORMAL LONG EXTRALONG	



- FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA - Denti elicoidali con rompitrucciolo 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 Spannbrecher - 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 - Quatro navalhas longas quebra aparas com corte ao centro - Encabadouro Weldon
- Фреза для черновой и получистовой обработки со стружколомом. Сферический торцев. Хвостовик Weldon. Удлиненная серия

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG23/01	8	38	88	10	4	•
MG23/02	10	45	95	10	4	•
MG23/03	12	53	110	12	4	•
MG23/04	14	53	110	12	4	•
MG23/05	15	63	123	16	4	•
MG23/06	16	63	123	16	4	•
MG23/07	18	63	123	16	4	•
MG23/08	20	75	141	20	4	•
MG23/09	22	75	141	20	4	•
MG23/10	24	90	166	25	5	•
MG23/11	25	90	166	25	5	•
MG23/12	28	90	166	25	5	•
MG23/13	30	90	166	25	5	•
MG23/14	32	106	186	32	5	•

Rime

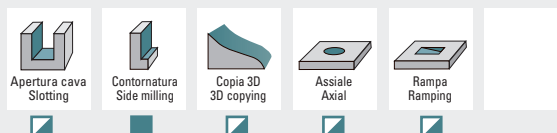
Toll. reale sul Ø $\pm 0,05$
Real Tol. on Ø

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☐
SEMIFINITURA - SEMIFINISHING	☒	☒	☒	☒
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

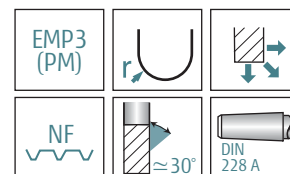
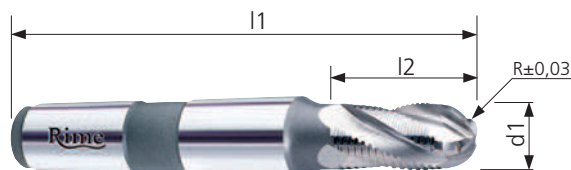
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA

NORM	TIPO-TYPE	Z4÷7
ISO 1641/II	SHORT NORMAL LONG EXTRA-LONG	



NORMALE

MG24

- FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA - 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 hank
- 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 arranque 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 aparas - Duas navalhas que cortam hasta el centro - Encabadouro conico - Morse taladro roscado
- Фреза для черновой и получистовой обработки со стружколомом. Сферический торцев. Хвостовик конус Морзе с резьбой. Средняя серия

CODE	d1 mm js14	l2 mm	l1 m	CM-MK	Z	EMP3 €
MG24/01	16	32	117	2	4	•
MG24/02	18	32	117	2	4	•
MG24/03	20	38	140	3	4	•
MG24/04	22	38	140	3	4	•
MG24/05	24	45	147	3	5	•
MG24/06	25	45	147	3	5	•
MG24/07	26	45	147	3	5	•
MG24/08	28	45	147	3	5	•
MG24/09	30	53	155	3	5	•
MG24/10	32	53	178	4	5	•
MG24/11	34	53	178	4	5	•
MG24/12	35	53	178	4	6	•
MG24/13	36	53	178	4	6	•
MG24/14	38	63	188	4	6	•
MG24/15	40	63	188	4	6	•
MG24/16	45	63	188	4	6	•
MG24/17	50	75	200	4	7	•

Rime



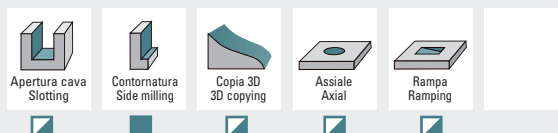
Toll. reale sul Ø $\pm 0,05$
Real Tol. on Ø

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☐
SEMIFINITURA - SEMIFINISHING	☒	☒	☒	☒
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

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

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Rime

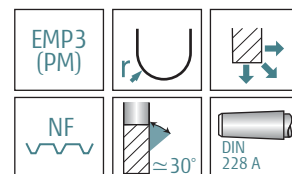
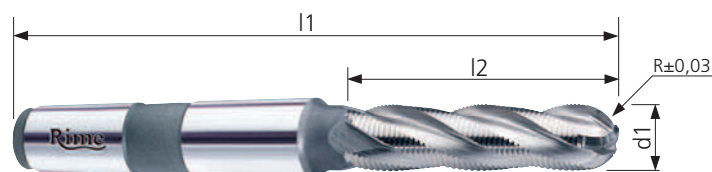
SERIE MG

LUNGA

MG25

FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA

NORM	TIPO-TYPE	Z4÷7
ISO 1641/II	SHORT NORMAL LONG EXTRALONG	



CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG25/01	16	63	148	2	4	•
MG25/02	18	63	148	2	4	•
MG25/03	20	75	177	3	4	•
MG25/04	22	75	177	3	4	•
MG25/05	24	90	192	3	5	•
MG25/06	25	90	192	3	5	•
MG25/07	26	90	192	3	5	•
MG25/08	28	90	192	3	5	•
MG25/09	30	90	192	3	5	•
MG25/10	32	106	231	4	5	•
MG25/11	34	106	231	4	5	•
MG25/12	35	106	231	4	6	•
MG25/13	36	106	231	4	6	•
MG25/14	38	125	250	4	6	•
MG25/15	40	125	250	4	6	•
MG25/16	45	125	250	4	6	•
MG25/18	50	150	275	4	7	•

- FRESE A TESTA SEMISFERICA PER SGROSSATURA E SEMIFINITURA - 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 arranque 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 aparas - Duas navalhas que cortam hasta el centro - Encabadouro conico - Morse taladro roscado
- Фреза для черновой и полуфинишной обработки со стружколомом. Сферический торцев. Хвостовик конус Морзе с резьбой. Удлиненная серия

Rime

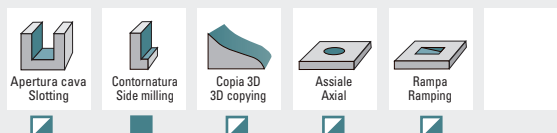
Toll. reale sul Ø $\pm 0,05$
Real Tol. on Ø

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Suggestion

SGROSSATURA - ROUGHING	☐	☐	☐	☐
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

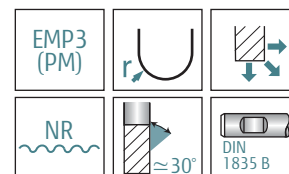
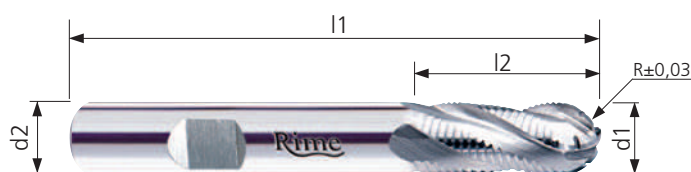
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

FRESE A TESTA SEMISFERICA
PER SGROSSATURA

NORM	TIPO-TYPE	Z3÷6
ISO 1641/I	SHORT NORMAL LONG EXTRA-LONG	



NORMALE

MG26

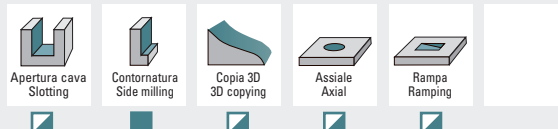
- FRESE A TESTA SEMISFERICA PER SGROSSATURA - Denti elicoidali con rompitrucciolo spogliato completamente rettificato - Due denti frontali taglienti fino al centro - Attacco Weldon
- ROUGHING BALL-NOSED END MILLS - Helical teeth with form relieved entirely ground chip-breaker - Two end teeth cutting 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 eingeschliftenem 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 aparta - Duas navalhas que cortan hasta el centro - Encabadouro Weldon
- Фреза для черновой обработки. Сферический торец. Хвостовик Weldon. Средняя серия

CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG26/01	6	13	57	6	3	•
MG26/02	7	16	66	10	3	•
MG26/03	8	19	69	10	4	•
MG26/04	9	19	69	10	4	•
MG26/05	10	22	72	10	4	•
MG26/06	11	22	79	12	4	•
MG26/07	12	26	83	12	4	•
MG26/08	13	26	83	12	4	•
MG26/09	14	26	83	12	4	•
MG26/10	15	32	92	16	4	•
MG26/11	16	32	92	16	4	•
MG26/12	17	32	92	16	4	•
MG26/13	18	32	92	16	4	•
MG26/14	20	38	104	20	4	•
MG26/15	22	38	104	20	4	•
MG26/16	24	45	121	25	5	•
MG26/17	25	45	121	25	5	•
MG26/18	26	45	121	25	5	•
MG26/19	28	45	121	25	5	•
MG26/20	30	45	121	25	5	•
MG26/21	32	53	133	32	5	•
MG26/22	36	53	133	32	6	•
MG26/23	40	63	143	32	6	•

Rime

Toll. reale sul Ø $\pm 0,05$
Real Tol. on ØParametri
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Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

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MaterialsACCIAI
STEELSGHISE
CAST IRONACCIAI INOSSIDABILI
STAINLESS STEELSSUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUMLEGHE LEGGERE
LIGHT ALLOYSMATERIALI NON FERROSI
NON FERROUS MATERIALCONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

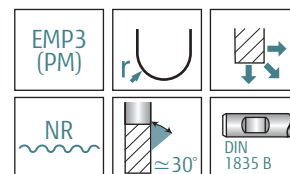
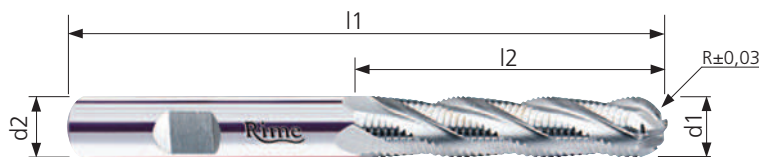
SERIE MG

LUNGA

MG27

FRESE A TESTA SEMISFERICA PER SGROSSATURA

NORM	TIPO-TYPE	Z4+5
ISO 1641/I	SHORT NORMAL LONG EXTRALONG	



CODE	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €
MG27/01	8	38	88	10	4	•
MG27/02	10	45	95	10	4	•
MG27/03	12	53	110	12	4	•
MG27/04	14	53	110	12	4	•
MG27/05	15	63	123	16	4	•
MG27/06	16	63	123	16	4	•
MG27/07	18	63	123	16	4	•
MG27/08	20	75	141	20	4	•
MG27/09	22	75	141	20	4	•
MG27/10	24	90	166	25	5	•
MG27/11	25	90	166	25	5	•
MG27/12	28	90	166	25	5	•
MG27/13	30	90	166	25	5	•
MG27/14	32	106	186	32	5	•

- FRESE A TESTA SEMISFERICA PER SGROSSATURA - Denti elicoidali con rompitrucciolo 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 arranque 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 cortam hasta el centro - Encabadouro Weldon
- Фреза для черновой обработки. Сферический торец. Хвостовик Weldon. Удлиненная серия

Rime

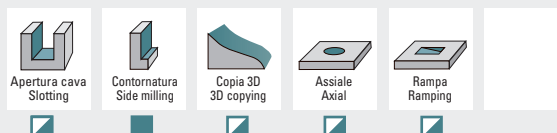
Toll. reale sul Ø ±0,05
Real Tol. on Ø

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

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

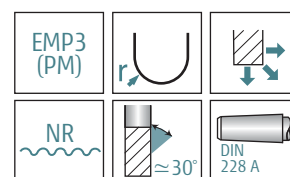
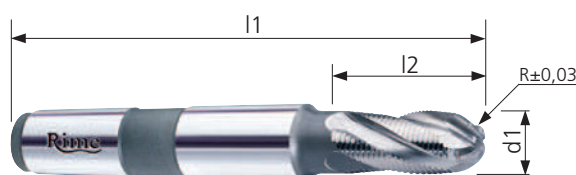
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Rime

SERIE MG

FRESE A TESTA SEMISFERICA PER SGROSSATURA

NORM	TIPO-TYPE	Z4÷7
UNI 8250 8251 DIN 845B ISO 1641/II	SHORT NORMAL LONG EXTRA-LONG	



NORMALE

MG28

- FRESE A TESTA SEMISFERICA PER SGROSSATURA - 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 - Labios helicoidal con arranque 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 apar - 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

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG28/01	16	32	117	2	4	•
MG28/02	18	32	117	2	4	•
MG28/03	20	38	140	3	4	•
MG28/04	22	38	140	3	4	•
MG28/05	24	45	147	3	5	•
MG28/06	25	45	147	3	5	•
MG28/07	26	45	147	3	5	•
MG28/08	28	45	147	3	5	•
MG28/09	30	53	155	3	5	•
MG28/10	32	53	178	4	5	•
MG28/11	34	53	178	4	5	•
MG28/12	35	53	178	4	6	•
MG28/13	36	53	178	4	6	•
MG28/14	38	63	188	4	6	•
MG28/15	40	63	188	4	6	•
MG28/16	45	63	188	4	6	•
MG28/17	50	75	200	4	7	•

Rime



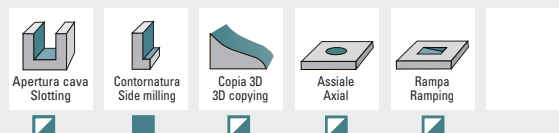
Toll. reale sul Ø $\pm 0,05$
Real Tol. on Ø

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

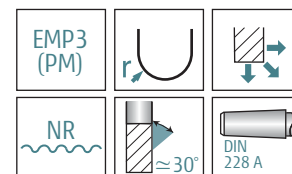
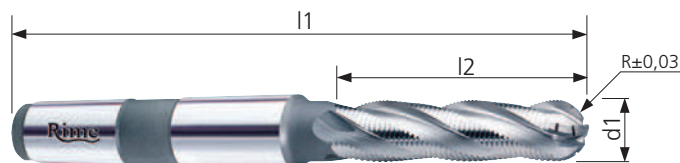
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE A TESTA SEMISFERICA PER SGROSSATURA

NORM	TIPO-TYPE	Z4÷7
UNI 8250 8251 DIN 845B ISO 1641/II	SHORT NORMAL LONG EXTRALONG	



LUNGA

MG29

- FRESE A TESTA SEMISFERICA PER SGROSSATURA - 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 - Labios helicoidal con arranque de viruta - Dos labios que cortan hasta el centro - Mango conico Morse con taladro roscado
- FRESAS CILINDRICAS FRONTALES BOLEADA PARA DESBASTE - Navalhas helicoidal com quebra apar - duas navalhas que cortan hasta el centro - Encabadouro cónico - Morse taladro roscado
- Фреза для черновой обработки. Сферический торец. Хвостовик конус Морзе с резьбой. Удлиненная серия

CODE	d1 mm js14	l2 mm	l1 mm	CM-MK	Z	EMP3 €
MG29/01	16	63	148	2	4	•
MG29/02	18	63	148	2	4	•
MG29/03	20	75	177	3	4	•
MG29/04	22	75	177	3	4	•
MG29/05	24	90	192	3	5	•
MG29/06	25	90	192	3	5	•
MG29/07	26	90	192	3	5	•
MG29/08	28	90	192	3	5	•
MG29/09	30	90	192	3	5	•
MG29/10	32	106	231	4	5	•
MG29/11	34	106	231	4	5	•
MG29/12	35	106	231	4	6	•
MG29/13	36	106	231	4	6	•
MG29/14	38	125	250	4	6	•
MG29/15	40	125	250	4	6	•
MG29/16	45	125	250	4	6	•
MG29/17	50	150	275	4	7	•

Rime

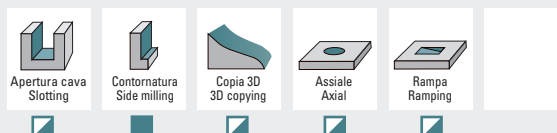
Toll. reale sul Ø $\pm 0,05$
Real Tol. on Ø

Parametri
Cutting data
pag. 199-222

Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

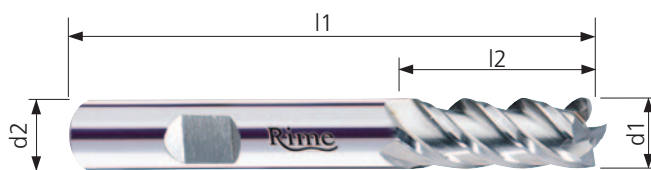
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MG

FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI

NORM	TIPO-TYPE	Z3÷6
UNI 8248 DIN 844B ISO 1641/I	SHORT NORMAL LONG EXTRA-LONG	



EMP3 (PM)	45° 0,05-0,25		IRREGULAR y ₂ y ₁ y ₃ y ₂
N	HPC	45°	DIN 1835 B

NORMALE

MG30

- FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI - 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 cortam 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG30/01	6	13	57	6	3	•	•
MG30/02	8	19	69	10	4	•	•
MG30/03	10	22	72	10	4	•	•
MG30/04	12	26	83	12	4	•	•
MG30/05	14	26	83	12	4	•	•
MG30/06	16	32	92	16	4	•	•
MG30/07	18	32	92	16	4	•	•
MG30/08	20	38	104	20	4	•	•
MG30/09	22	38	104	20	4	•	•
MG30/10	25	45	121	25	4	•	•
MG30/11	28	45	121	25	6	•	•
MG30/12	30	45	121	25	6	•	•
MG30/13	32	53	133	32	6	•	•

Rime

Toll. reale sul Ø
Real Tol. on Ø **±0,03**

COATING **SUPREME**

CODE
MG30/.../S

Parametri
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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐
SEMIFINITURA - SEMIFINISHING	☐
FINITURA - FINISHING	☐

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping
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Materiali
Materials

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

Rime

SERIE MG

FRESE A TAGLIO INTERROTTO AD ALTE PRESTAZIONI

NORM	TIPO-TYPE	Z3÷6
UNI 8248 DIN 844B ISO 1641/1	SHORT NORMAL LONG EXTRALONG	



EMP3 (PM)	45° 0,05-0,25		IRREGULAR y ₂ y ₁ y ₃ y ₂
NFR	HPC	45°	DIN 1835 B

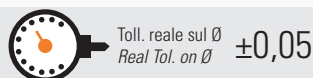
NORMALE

MG31

- FRESE A TAGLIO INTERROTTO AD ALTE PRESTAZIONI - 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 CYLINDRICES AVEC BRISE-COPE-AUX - Deux dents bout coupantes jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
- SCHAFTFRÄSER 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

CODE (EMP3)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP3 €	SUPREME €
MG31/01	6	13	57	6	3	•	•
MG31/02	8	19	69	10	4	•	•
MG31/03	10	22	72	10	4	•	•
MG31/04	12	26	83	12	4	•	•
MG31/05	14	26	83	12	4	•	•
MG31/06	16	32	92	16	4	•	•
MG31/07	18	32	92	16	4	•	•
MG31/08	20	38	104	20	4	•	•
MG31/09	22	38	104	20	4	•	•
MG31/10	25	45	121	25	4	•	•
MG31/11	28	45	121	25	6	•	•
MG31/12	30	45	121	25	6	•	•
MG31/13	32	53	133	32	6	•	•

Rime



COATING **SUPREME**

CODE
MG31/.../S

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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

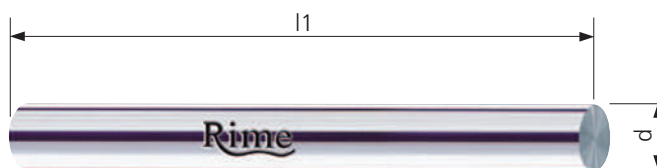
LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

BARRETTE TONDE TEMPRATE E RETTIFICATE

NORM	TIPO-TYPE	
UNI 3868	SHORT NORMAL LONG EXTRA-LONG	



EMP3
(PM)



MG32

-  BARRETTE TEMPRATE E RETTIFICATE
-  ROUND TOOL BITS
-  BARREUX ROND TREMPES
-  ROHLINGE
-  BARRETAS REDONDAS TRACTADAS
-  BRUS TRACTADAS
-  Заготовка-цилиндр шлифованная

CODE	d h8	l j16	EMP3 €
MG32/01	4	100	•
MG32/02	6	100	•
MG32/03	6	200	•
MG32/04	8	100	•
MG32/05	8	200	•
MG32/06	10	100	•
MG32/07	10	200	•
MG32/08	12	100	•
MG32/09	12	200	•
MG32/10	14	200	•
MG32/11	16	200	•
MG32/12	18	200	•
MG32/13	20	200	•

Rime



Rime
advanced tools production

[torna all'indice](#)
[back to index](#)

SERIE MR

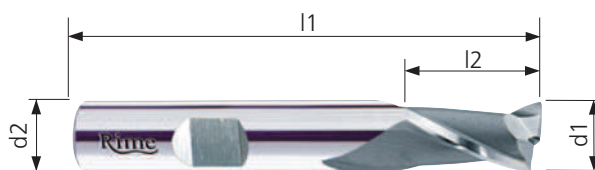
Frese in EMP6

EMP6 end mills

		pag.
MR1		192
MR2		193
MR3		194
MR4		195
MR8		196
MR12		197

FRESE A DUE DENTI PER CAVE

NORM	TIPO-TYPE	Z2
UNI 8258 DIN 327D ISO 1641/I	SHORT NORMAL LONG EXTRALONG	



EMP6 (PM)	90°	
N	≈ 30°	DIN 1835 B

NORMALE

MR1

- FRESE A DUE DENTI PER CAVE - 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 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

CODE (EMP6)	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR1/02	4	7	51	6	2	•	•
MR1/03	5	8	52	6	2	•	•
MR1/04	6	8	52	6	2	•	•
MR1/05	7	10	60	10	2	•	•
MR1/06	8	11	61	10	2	•	•
MR1/07	9	11	61	10	2	•	•
MR1/08	10	13	63	10	2	•	•
MR1/09	11	13	70	12	2	•	•
MR1/10	12	16	73	12	2	•	•
MR1/11	13	16	73	12	2	•	•
MR1/12	14	16	73	12	2	•	•
MR1/13	15	19	79	16	2	•	•
MR1/14	16	19	79	16	2	•	•
MR1/15	17	19	79	16	2	•	•
MR1/16	18	19	79	16	2	•	•
MR1/17	19	22	88	20	2	•	•
MR1/18	20	22	88	20	2	•	•
MR1/19	22	22	88	20	2	•	•

Rime

COATING SUPREME



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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

Apertura cava Slotting	Contornatura Side milling	Copia 3D 3D copying	Assiale Axial	Rampa Ramping

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

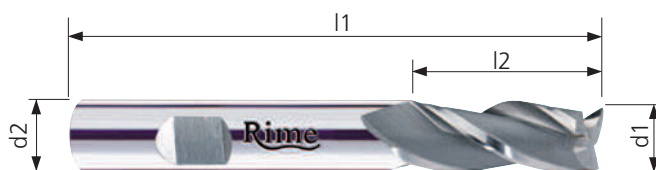
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MR

FRESE A TRE DENTI

NORM	TIPO-TYPE	Z3
UNI 8248 DIN 844B ISO 1641/1	SHORT NORMAL LONG EXTRA-LONG	



EMP6 (PM)	90°	
N	≈ 30°	DIN 1835 B

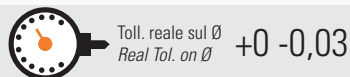
NORMALE

MR2

- FRESE A TRE DENTI - Un dente frontale tagliente fino al centro - Attacco Weldon
- THREE-FLUTES END MILLS - One end tooth cutting up to the centre - Weldon shank
- FRAISES CYLINDRES TROIS DENTS - Une dent bout coupante jusqu'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 TRÉS NAVALHAS - Um naval que corta hasta el centro - Encabadouro Weldon
- Фреза 3-х зубая. Режущий торец. Хвостовик Weldon. Средняя серия

CODE (EMP6)	d1 mm e8	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR2/03	4	11	55	6	3	•	•
MR2/04	5	13	57	6	3	•	•
MR2/05	6	13	57	6	3	•	•
MR2/06	7	16	66	10	3	•	•
MR2/07	8	19	69	10	3	•	•
MR2/08	10	22	72	10	3	•	•
MR2/09	12	26	83	12	3	•	•
MR2/10	14	26	83	12	3	•	•
MR2/11	16	32	92	16	3	•	•
MR2/12	18	32	92	16	3	•	•
MR2/13	20	38	104	20	3	•	•
MR2/14	22	38	104	20	3	•	•

Rime



COATING **SUPREME**



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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☐
SEMIFINITURA - SEMIFINISHING	☐
FINITURA - FINISHING	☐

Lavorazioni
Workings

☐	☐	☐	☐	☐

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

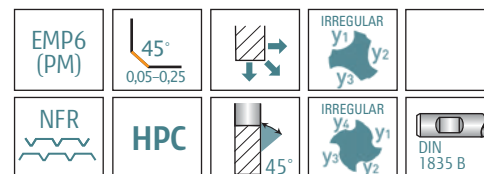
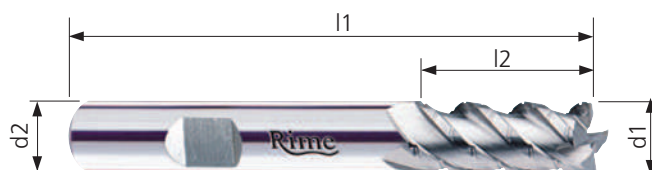
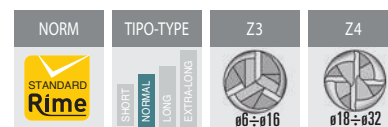
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MR

FRESE A TAGLIO INTERROTTO AD ALTE PRESTAZIONI



NORMALE

MR3

IT FRESE A TAGLIO INTERROTTO AD ALTE PRESTAZIONI - Un dente frontale tagliente fino al centro - Elica destra 45° - Divisione irregolare - Attacco Weldon
EN END MILLS WITH CHIP-BREAKER - One end tooth cutting up to the centre - 45° right hand spiral - Irregular division - Weldon shank

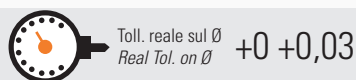
FR FRAISES CYLINDRQUES AVEC BRISE-COPE-AUX - Une dent bout coupante jusqu'au centre - Hélice 45° à droite - Division irrégulière - Queue cylindrique Weldon
DE SCHATFRÄSER, LANGLOCH - Eine Schneide mit Zentrumschnitt - 45° rechts spiralgenutet - Unregelmäßige Teilung - Weldon Spannfläche

ES FRESAS CILINDRICAS FRONTALES CORTE INTERRUPTO - Un labio que corta hasta el centro, Hélice derecha 45° - División irregular - Mango Weldon
PT FRESAS CILINDRICAS FRONTAIS CORTE INTERRUPTO - Um naval que corta ao centro - Hélice direita 45° - Divisão irregular - Encabadouro Weldon

RU Фреза концевая со стружколомом с непостоянным шагом зуба. Угол винтовой канавки 45°. Режущий торец. Хвостовик Weldon. Средняя серия

CODE (EMP6)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR3/03	6	13	57	6	3	•	•
MR3/04	8	20	69	10	3	•	•
MR3/05	10	22	72	10	3	•	•
MR3/06	12	26	83	12	3	•	•
MR3/07	14	26	83	12	3	•	•
MR3/08	16	36	90	16	3	•	•
MR3/09	18	40	100	16	4	•	•
MR3/10	20	45	110	20	4	•	•
MR3/12	25	50	125	25	4	•	•
MR3/14	30	63	140	25	4	•	•
MR3/15	32	63	140	32	4	•	•

Rime

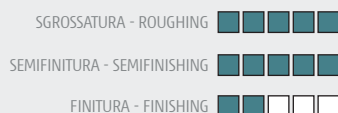


COATING **SUPREME**

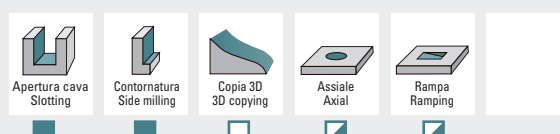


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Suggerimenti
Suggestion



Lavorazioni
Workings



Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

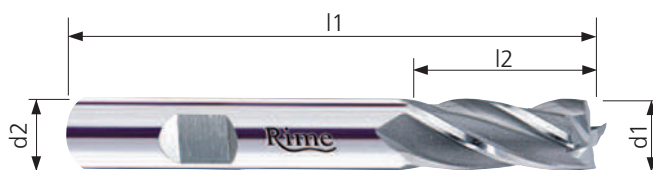
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MR

FRESE PER FINITURA

NORM	TIPO-TYPE	Z4÷6
UNI 8248 DIN 844B ISO 1641/1	SHORT NORMAL LONG EXTRA-LONG	



EMP6 (PM)	90°	
N	≈ 30°	DIN 1835 B

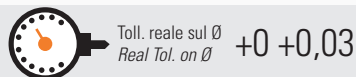
NORMALE

MR4

- FRESE PER FINITURA - Due denti frontali taglienti fino al centro - Attacco Weldon
- END MILLS - Two end teeth cutting up to the centre - Weldon shank
- FRAISES CYLINDRES - 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

CODE (EMP6)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR4/01	6	13	57	6	4	•	•
MR4/02	7	16	66	10	4	•	•
MR4/03	8	19	69	10	4	•	•
MR4/04	9	19	69	10	4	•	•
MR4/05	10	22	72	10	4	•	•
MR4/06	12	26	83	12	4	•	•
MR4/07	14	26	83	12	4	•	•
MR4/07/1	15	32	92	16	4	•	•
MR4/08	16	32	92	16	4	•	•
MR4/09	18	32	92	16	4	•	•
MR4/10	20	38	104	20	4	•	•
MR4/11	22	38	104	20	4	•	•
MR4/12	25	45	121	25	5	•	•
MR4/13	28	45	121	25	5	•	•
MR4/14	30	45	121	25	6	•	•
MR4/15	32	53	133	32	6	•	•

Rime



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

COATING **SUPREME**



CODE
MR4/.../S

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Suggestion

SGROSSATURA - ROUGHING	
SEMIFINITURA - SEMIFINISHING	
FINITURA - FINISHING	

Lavorazioni
Workings

☒	☒	☐	☒	☒

Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

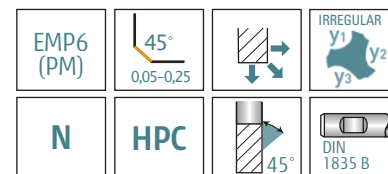
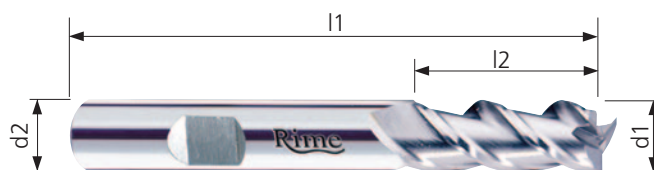
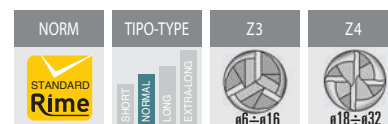
MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MR

FRESE CILINDRICHE FRONTALI AD ALTE PRESTAZIONI



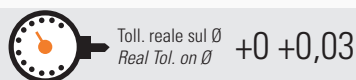
NORMALE

MR8

- FRESE CILINDRICHE FRONTALI - 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 CYLINDRIS - 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

CODE (EMP6)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR8/01	6	13	57	6	3	•	•
MR8/02	8	20	69	10	3	•	•
MR8/03	10	22	72	10	3	•	•
MR8/04	12	26	83	12	3	•	•
MR8/04/1	14	26	83	12	3	•	•
MR8/05	16	36	92	16	3	•	•
MR8/05/1	18	40	100	16	4	•	•
MR8/06	20	45	110	20	4	•	•
MR8/07	25	50	125	25	4	•	•
MR8/08	30	63	140	25	4	•	•
MR8/09	32	63	140	32	4	•	•

Rime

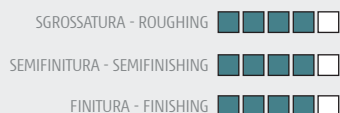


COATING **SUPREME**

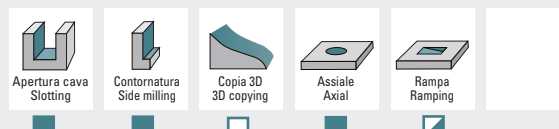


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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

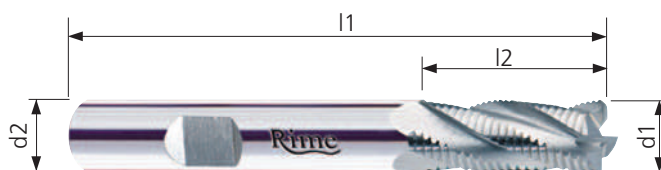
CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED

Rime

SERIE MR

FRESE PER SGROSSATURA

NORM	TIPO-TYPE	Z3+5
UNI 8248 DIN 844B ISO 1641/1	SHORT NORMAL LONG EXTRA-LONG	



EMP6 (PM)	45°	
NR	≈30°	DIN 1835 B

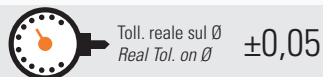
NORMALE

MR12

-  FRESE PER SGROSSATURA - 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 volleingeschliffenem Spanbrecher - Zwei Schneiden mit Zentrumschnitt - Weldon-Spanfläche
-  FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Labios helicoidal con aranca de viruta completamente rectificado - Dos labios que cortan hasta el centro - Mango Weldon
-  FRESAS CILINDRICAS FRONTALES PARA DESBASTE - Navalhas helicoidal com quebra aparta - Duas navalhas corta ao centro - Encabadouro Weldon
-  Фреза для черновой обработки. Режущий торец. Хвостовик Weldon. Средняя серия

CODE (EMP6)	d1 mm js14	l2 mm	l1 mm	d2 mm h6	Z	EMP6 €	SUPREME €
MR12/01	6	13	57	6	3	•	•
MR12/03	8	19	69	10	4	•	•
MR12/05	10	22	72	10	4	•	•
MR12/07	12	26	83	12	4	•	•
MR12/09	14	26	83	12	4	•	•
MR12/10	15	32	92	16	4	•	•
MR12/11	16	32	92	16	4	•	•
MR12/13	18	32	92	16	4	•	•
MR12/14	20	38	104	20	4	•	•
MR12/15	22	38	104	20	4	•	•
MR12/17	25	45	121	25	5	•	•
MR12/19	28	45	121	25	5	•	•
MR12/20	30	45	121	25	5	•	•
MR12/21	32	53	133	32	5	•	•

Rime



COATING **SUPREME**

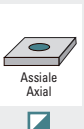
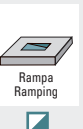


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Suggerimenti
Suggestion

SGROSSATURA - ROUGHING	☒	☒	☒	☒
SEMIFINITURA - SEMIFINISHING	☐	☐	☐	☐
FINITURA - FINISHING	☐	☐	☐	☐

Lavorazioni
Workings

					
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Materiali
Materials

ACCIAI
STEELS

GHISE
CAST IRON

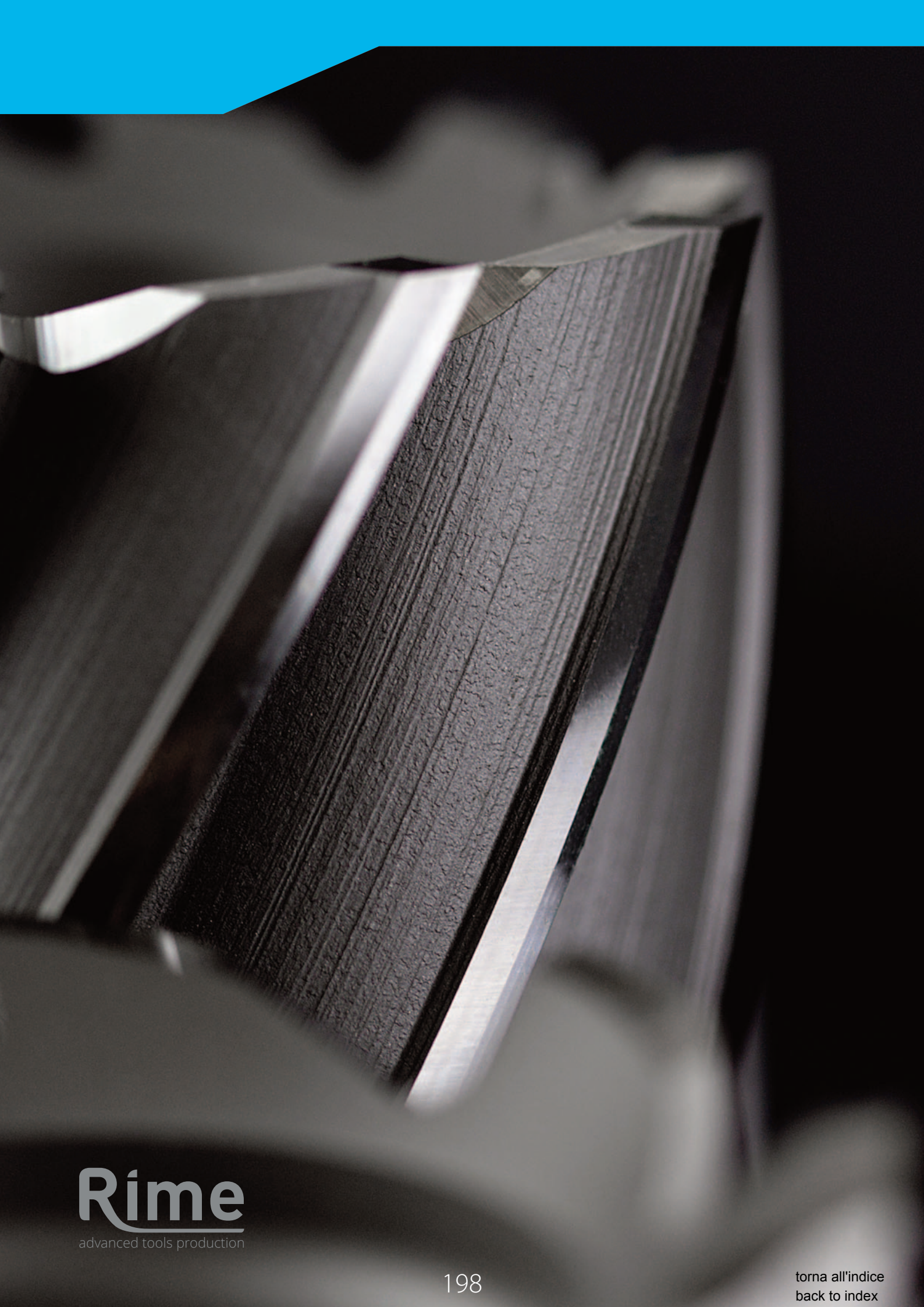
ACCIAI INOSSIDABILI
STAINLESS STEELS

SUPER LEGHE - TITANIO
SUPERALLOYS - TITANIUM

LEGHE LEGGERE
LIGHT ALLOYS

MATERIALI NON FERROSI
NON FERROUS MATERIAL

CONSIGLIATO
RECOMMENDED
ACCETTABILE
ACCEPTABLE
SCONSIGLIATO
NOT RECOMMENDED



HSS-E & PM

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Dati di taglio per frese RIME in HSS Co8 - EMP3 EMP6

I valori espressi sulle tabelle alle pagine seguenti devono essere considerati come indicativi e usati come aiuto per ottenere i migliori risultati nell'impiego delle nostre frese.

Dalle tabelle si può rilevare la combinazione più adatta per ricavare velocità di taglio, numero dei giri e di avanzamento con corrispondente profondità e larghezza di taglio relativamente al diametro delle frese da impiegare.

I tipi di materiale da lavorare sono divisi in 6 gruppi. Ogni gruppo comprende qualità di materiali che presentano valori simili di truciolabilità.

Nella scelta dei dati di taglio occorre tenere presente il gruppo a cui appartiene il materiale.

Normalmente è necessario un adattamento dei dati di taglio così trovati con quelli consentiti dalle macchine utensili a disposizione.

Data on cutting rate of RIME end mills in HSS Co8 EMP3 - EMP6

The data shown in the tables hereafter shall be only indicative and used as a support to get the best performances by RIME end mills.

Therefore, the tables can be helpful in finding the most suitable combination of cutting speed, number of revolutions per minute and feed progress with relevant cut depth and width with regard to diameter of the end mills to be used.

The types of metals to be machined are divided into 6 groups. Each group includes metal quality classes having similar "chipability" rates.

When choosing a certain cutting class, always keep in mind the group the metal is part of.

However, the data on cutting rate herein generally need to be matched to the machine tools available.

Le premesse per un'esatta applicazione dei dati di taglio

- 1) Impiego delle frese RIME in HSS/Co8 - EMP3 - EMP6
- 2) I valori di taglio indicati valgono per frese a codolo cilindrico con lunghezza di taglio media e corta. (Valori iniziali $\pm 15\%$).
Per le frese con taglio lungo l'avanzamento deve essere ridotto del 40%, per le frese extralunghe del 60%, mentre la velocità di taglio va ridotta del 20%
- 3) Uso di un liquido di raffreddamento adatto (generalmente emulsione).
- 4) Macchina operatrice, bloccaggio del pezzo in lavorazione e dell'utensile devono essere stabili onde evitare pericolose vibrazioni.

To get a suitable application of cutting data the directions hereafter shall be followed

- 1) use RIME HSS/Co8 - EMP3 - EMP6;
- 2) the cutting rates herein shown are referred to end mills with cylindrical shaft having an average and short cut length. (starting rates $\pm 15\%$).
If end mills have extra -long cut then the feed has to be reduced of 60%; for the end mills with long cut the feed has to be reduced of 40%; for both cases (long and extra-long cut) the cutting speed has to be reduced of 20%.
- 3) use a suitable coolant (normally an emulsion);
- 4) machine tool, clamping of the piece machined and tool shall be stable, so to prevent any dangerous vibrations.

Adeguamento numeri giri ed avanzamento alla fresatrice

Le fresatrici in uso hanno generalmente possibilità di selezionare sia numero di giri del mandrino che gli avanzamenti.

I valori rilevati dalle tabelle di taglio, nella maggior parte dei casi, devono essere adattati ai valori della macchina operatrice.

Gli aggiustamenti devono essere tali da non variare sensibilmente il carico per dente.

Adjustment of the number of revolutions and feed on a milling machine

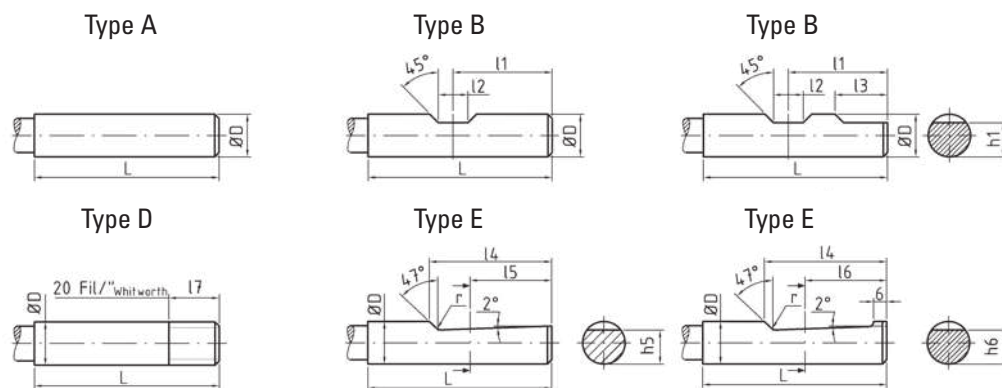
The milling machines now available normally allow to select both the number of mandrel revolutions and feed.

Most of the values shown in the tables hereafter shall be adjusted to the values of the machine.

Every adjustment shall be so not to change the load on each flute considerably.

Codolo delle frese - Estratto Tab. DIN 1835

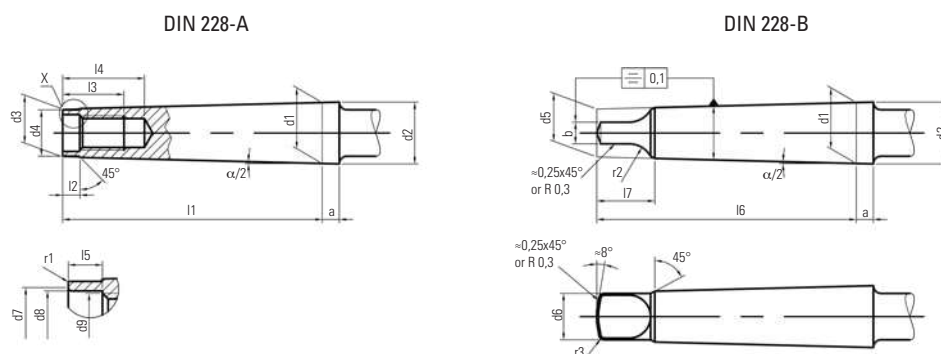
Mill shank according DIN 1835



D _{h6}	L ^{+2 -0}	l ₁ ^{+0 -1}	h ₁ h13	l ₂ ^{+0,05 -0}	l ₃ ^{+1 -0}	l ₄ ^{+0 -1}	l ₅ nom.	h ₅ h11	l ₆ nom.	h ₆ h13	r _{min}	l ₇ ^{+2 -0}
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



Mkα/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