HT HYPER TOOLS

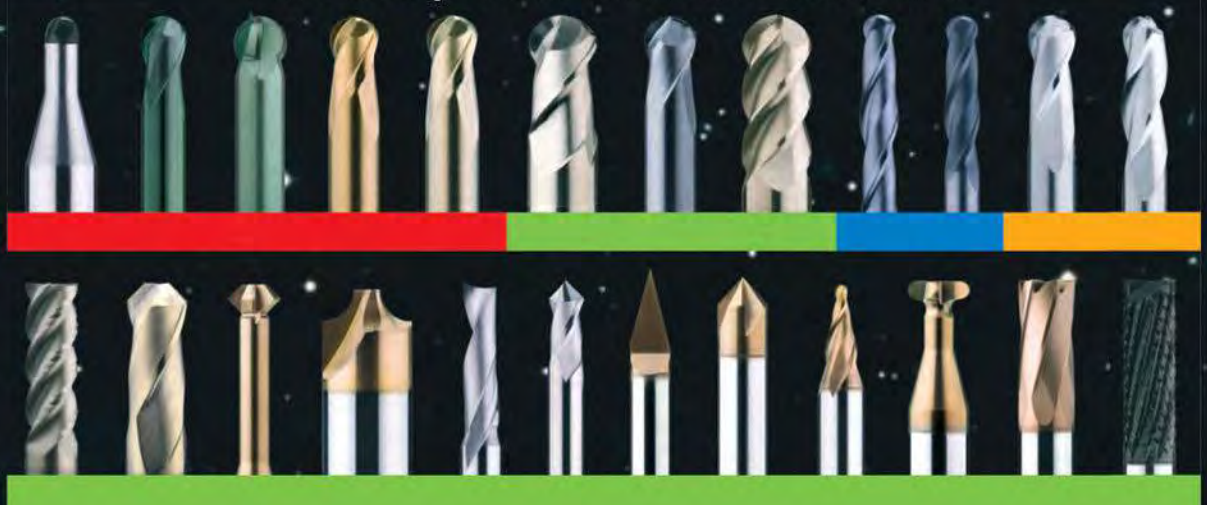
JJ TOOLS

2016

Programma Frese Ultra Micrograna

10680 UTENSILI

Il vostro speciale è il nostro standard



La stretta collaborazione fra Hyper Tools e JJ TOOLS consente di soddisfare tempestivamente le più svariate richieste della nostra clientela.
Il nostro obiettivo è di offrire una gamma ed un servizio ai massimi livelli, sempre.





T-DLC

SERIE JJ

SERIE HARD

La JJ TOOLS produce frese in metallo duro di alta qualità dal 1997 e le distribuisce capillarmente in tutto il mondo ad uso dell'industria. Grazie alla continua innovazione dei processi produttivi e ad un costante impegno creativo in ricerca e sviluppo, è in grado di offrire un prodotto di eccellenza in un mercato sempre più selettivo. L'utilizzo delle migliori e più avanzate tecnologie produttive evidenziano i notevoli sforzi della JJ TOOLS volti a soddisfare le più svariate necessità produttive della clientela. La competitività dei prodotti realizzati e l'ampia gamma in continua evoluzione fanno si che il prodotto sia apprezzato in tutto il mondo.



CBN



SERIE HARD



SERIE G



GRAPHITE





제이제이툴스(주)
JJ TOOLS Co.,Ltd.
(구) 장진공구

ISO 9001:2000

ISO 14001:2000

UKAS QUALITY MANAGEMENT
Reg. No 059









Obiettivo Precisione !

Nuove Tolleranze di Produzione!

JJ TOOLS ha ottenuto un grande incremento di qualità sulla sua linea di prodotti, offrendo tolleranze molto ristrette mediante il controllo con le migliori apparecchiature e la capacità di personale altamente qualificato



▮ *Tolleranza*

0.1R≦ R ≦1R	±0.003mm
1R< R ≦3R	±0.005mm
3R< R	±0.008mm







Alta Resistenza all'Abrasione !



CBN

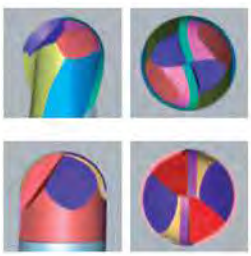
Serie Frese CBN

Lavorazioni fino a HRc70 !



Frese in CBN per superfiniture (± 5 µm) di acciai temprati HRc 50~70. Eccezionale durata grazie all'alta qualità del CBN.

DIFFERENTI GEOMETRIE PER L'OTTENIMENTO DEL MIGLIOR RISULTATO !



Helix 30°

Per lavorazioni di acciai temprati

Helix 0°

Per finiture speculari su acciai temprati

EMISFERICA ULTRA-PRECISA !

진품명품
ULTRA PRECISION



TOLLERANZE SUL RAGGIO FINO A

±0,002mm

TOLLERANZE DI PRODUZIONE

0.1R ≦ R ≦ 1R	±0.002mm
1R < R ≦ 2R	±0.003mm
2R < R	±0.005mm

HIGH SPEED

FINITURE SPECULARI !



2PHCB

Qualità senza compromessi !



SERIE JJ

Frese per acciai bonificati e temprati

HRc 52~68

- Ottima resistenza all'usura grazie al rivestimento PVD a base Sl.
- Elevata tolleranza sul filo tagliente.
- Ottima finitura superficiale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0.2 µm).



SERIE HARD

Frese per acciai bonificati e temprati

HRc 50~65

- Ottima resistenza all'usura grazie al rivestimento PVD a base Sl.
- Elevata tolleranza sul filo tagliente.
- Ottima finitura superficiale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0.2 µm).



SERIE G

Frese per vari materiali, acciai bonfificati/carbonio/per stampi

HRc ~52

- Ottimo rendimento su vari tipi di materiali grazie al rivestimento J-MAX
- Elevata tolleranza sul filo tagliente.
- Riduzione di scheggiature grazie all'elevata qualità della micrograna (0,5 µm)

RIVESTIMENTO DIAMOND !



GRAPHITE

Rivestimento DIAMOND per Grafite

Ottimo rendimento e resistenza all'usura

Nuova linea di frese con rivestimento in diamante sviluppata per ottenere i migliori rendimenti sui seguenti materiali :
grafite, plastiche caricate, fibre di carbonio e materiali non ferrosi.

PROPERTY	CVD Diamond	Mono Diamond	PCD	K10
Conduttività termica (W/m • K)	~ 1000	2,000	560	110
Durezza (Gpa)	80 ~ 100	50 ~ 100	50	18
Tenacità (Mpa • m1/2)	5 ~ 6	3.4	8 ~ 9	10.5
Resistenza alla trazione (Gpa)	400 ~ 800	1,000~3,000	1,260	-
Resis. alla compressione (Gpa)	16.0	9.0	7.6	6.1
(Gpa) TRS	1.3	2.9	1.2	2.4

INGRANDIMENTO DEI CRISTALLI DI DIAMANTE - SEM



Struttura superficiale



Sezione sullo spigolo



Sezione sul piano

Nuove frese per Alti Avanzamenti !

Sgrossatura in Alta Velocità



SERIE HARD

4RCU

6RCU

4JJRC

6JJRC

Il meglio della fresatura in alto avanzamento e velocità !

Frese per Lavorazioni di Materiali Compositi!



COMPOSITE

Ampia gamma per svariate lavorazioni

Frese per CFRP, GFRP, RAME, LEGHE DI RAME,FIBRE DI VETRO/CARBONIO, MATERIALI NON FERROSI E NON METALLICI

- *Eccellente rendimento nella lavorazione di vari materiali compositi*
- *Ottima resistenza all'usura grazie all'elevata durezza del rivestimento*
- *Riduzione di incallimento di materiale grazie al basso coefficiente di attrito del rivestimento in diamante*

HIGH speed

Frese Sferiche 230°,270° per Lavorazioni 3D



Ottimizzare per una ampia gamma di lavorazioni

Frese per acciai bonfiicati e temprati (HRc50~65)

HRc 50~65

- Affilatura sferica 230° e 270° per un'ampia gamma di lavorazioni 3D.
- La geometria rinforzata dello scarico garantisce riduzioni di vibrazioni e scheggiature.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0.2 µm).

Nuove Frese per Acciai di Difficile Lavorazione!

SUS



Eccellente controllo del truciolo Geometria SUS

Frese per acciai di difficile lavorazione, leghe Ti/Ni, acciai inossidabili, inconel.

- Riduzione di vibrazioni grazie all'elica asimmetrica.
- Eccellente finitura superficiale grazie alla geometria SUS.
- Elica 42° studiata per alte velocità ed avanzamenti.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna.

Nuove Frese per Materiali non Ferrosi!



Finiture Speculari
Nuovo Rivestimento T-DLC !

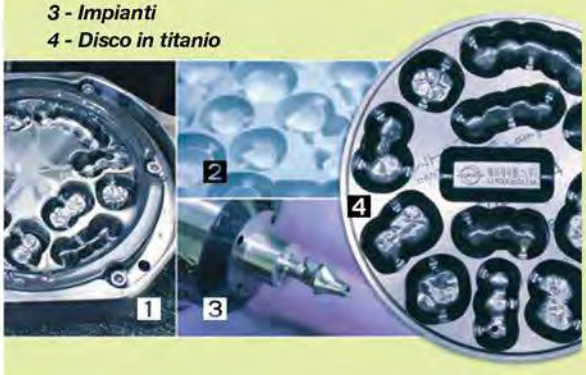
Frese per alluminio e leghe, rame e leghe, CFRP, fibre di vetro/carbonio e materiali non ferrosi

- Nuovo riversimento TETRABOND-DLC garantisce eccellenti finiture grazie ad una elevata durezza e un basso coefficiente d'attrito.
- Elevata tolleranza del filo tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0.5 µm).

Frese per DENTALE !



1 - Disco cromo cobalto
2 - Zirconia
3 - Impianti
4 - Disco in titanio



Finiture Speculari

Frese per dischi in titanio e cromocobalto, impianti, zirconia, ultimate e materiali non ferrosi.

- Eccellente resistenza all'usura grazie al rivestimento diamante CVD.
- Ampia gamma di prodotti sviluppati per ottenere il miglior rendimento nelle varie fasi di lavorazione.
- Elevata tolleranza del filo tagliente.

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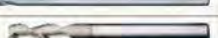
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■ A causa di eventuali migliorie, codici e specifiche posso essere cambiati senza preavviso.

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■ A causa di eventuali migliorie, codici e specifiche posso essere cambiati senza preavviso.

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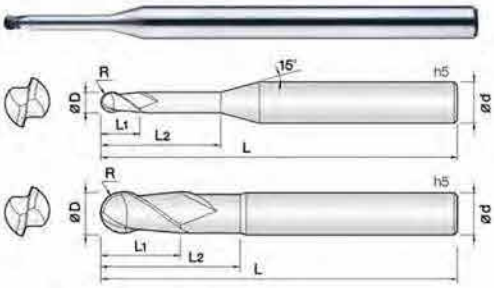
■ A causa di eventuali migliorie, codici e specifiche posso essere cambiati senza preavviso.

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■ A causa di eventuali migliorie, codici e specifiche posso essere cambiati senza preavviso.

2BCBN

CBN - Fresa Emisferica 2 Tagli per Nervature



- **Fresa in CBN per superfinitura (±5 µm) di acciai temprati (HRc50~70).**
- Eccezionale resistenza all'usura grazie all'alta qualità del CBN.
- Finitura speculare del materiale lavorato.
- Ampia gamma di diametri e lunghezze per ottimizzare il rendimento.
- Utilizzo in alta velocità (20,000~50,000RPM) con olio nebulizzato.
- C.B.N (Cubic Boron Nitride)

2 | CBN | R ±0.005 (0.1 ~ 1.25R) | R ±0.007 (1.5 ~ 2R) | R ±0.01 (3R) | 30° Helix Angle | € List. p.4 | i info p.182

D	Tolleranza
Ø0.2 ~ 6	+0 ~ -0.01mm

Unità : mm

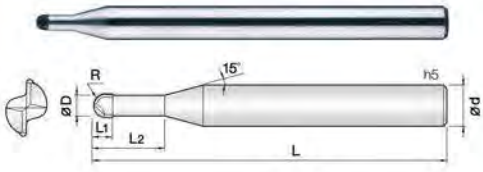
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2BCBN 002 004 S04	0.1R X 0.2	0.4	-	48	4
2BCBN 003 003 S04	0.15R X 0.3	0.3	-	48	4
2BCBN 003 005 S04	0.15R X 0.3	0.5	-	48	4
2BCBN 004 015 S04	0.2R X 0.4	0.3	1.5	48	4
2BCBN 004 020 S04	0.2R X 0.4	0.3	2	48	4
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2BCBN 005 030 S04	0.25R X 0.5	0.4	3	48	4
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2BCBN 006 050 S04	0.3R X 0.6	0.5	5	48	4
2BCBN 006 060 S04	0.3R X 0.6	0.5	6	48	4
2BCBN 006 080 S04	0.3R X 0.6	0.5	8	48	4
2BCBN 006 100 S04	0.3R X 0.6	0.5	10	48	4
2BCBN 007 020 S04	0.35R X 0.7	0.5	2	48	4
2BCBN 007 040 S04	0.35R X 0.7	0.5	4	48	4
2BCBN 008 020 S04	0.4R X 0.8	0.6	2	48	4
2BCBN 008 040 S04	0.4R X 0.8	0.6	4	48	4
2BCBN 008 060 S04	0.4R X 0.8	0.6	6	48	4
2BCBN 008 080 S04	0.4R X 0.8	0.6	8	48	4
2BCBN 008 100 S04	0.4R X 0.8	0.6	10	48	4
2BCBN 009 020 S04	0.45R X 0.9	0.6	2	48	4
2BCBN 009 040 S04	0.45R X 0.9	0.6	4	48	4
2BCBN 010 025 S04	0.5R X 1	0.7	2.5	48	4
2BCBN 010 040 S04	0.5R X 1	0.7	4	48	4
2BCBN 010 050 S04	0.5R X 1	0.7	5	48	4
2BCBN 010 060 S04	0.5R X 1	0.7	6	48	4
2BCBN 010 080 S04	0.5R X 1	0.7	8	48	4
2BCBN 010 100 S04	0.5R X 1	0.7	10	48	4
2BCBN 010 120 S04	0.5R X 1	0.7	12	48	4
2BCBN 010 160 S04	0.5R X 1	0.7	16	48	4
2BCBN 012 040 S04	0.6R X 1.2	0.8	4	48	4
2BCBN 012 060 S04	0.6R X 1.2	0.8	6	48	4
2BCBN 012 080 S04	0.6R X 1.2	0.8	8	48	4
2BCBN 012 100 S04	0.6R X 1.2	0.8	10	48	4
2BCBN 012 120 S04	0.6R X 1.2	0.8	12	48	4
2BCBN 012 160 S04	0.6R X 1.2	0.8	16	48	4

Numero d'Ordine	R×D	L1	L2	L	d
2BCBN 015 040 S04	0.75R X 1.5	1	4	48	4
2BCBN 015 060 S04	0.75R X 1.5	1	6	48	4
2BCBN 015 080 S04	0.75R X 1.5	1	8	48	4
2BCBN 015 100 S04	0.75R X 1.5	1	10	48	4
2BCBN 015 120 S04	0.75R X 1.5	1	12	48	4
2BCBN 015 140 S04	0.75R X 1.5	1	14	48	4
2BCBN 015 160 S04	0.75R X 1.5	1	16	48	4
2BCBN 015 180 S04	0.75R X 1.5	1	18	48	4
2BCBN 020 040 S04	1R X 2	1.2	4	50	4
2BCBN 020 060 S04	1R X 2	1.2	6	50	4
2BCBN 020 080 S04	1R X 2	1.2	8	50	4
2BCBN 020 100 S04	1R X 2	1.2	10	50	4
2BCBN 020 120 S04	1R X 2	1.2	12	50	4
2BCBN 020 140 S04	1R X 2	1.2	14	50	4
2BCBN 020 160 S04	1R X 2	1.2	16	50	4
2BCBN 020 180 S04	1R X 2	1.2	18	50	4
2BCBN 025 060 S06	1.25R X 2.5	1.6	6	66	6
2BCBN 025 100 S06	1.25R X 2.5	1.6	10	66	6
2BCBN 025 160 S06	1.25R X 2.5	1.6	16	66	6
2BCBN 025 200 S06	1.25R X 2.5	1.6	20	66	6
2BCBN 030 060 S06	1.5R X 3	1.8	6	66	6
2BCBN 030 080 S06	1.5R X 3	1.8	8	66	6
2BCBN 030 100 S06	1.5R X 3	1.8	10	66	6
2BCBN 030 120 S06	1.5R X 3	1.8	12	66	6
2BCBN 030 160 S06	1.5R X 3	1.8	16	66	6
2BCBN 030 200 S06	1.5R X 3	1.8	20	66	6
2BCBN 040 060 S06	2R X 4	2.4	6	66	6
2BCBN 040 080 S06	2R X 4	2.4	8	66	6
2BCBN 040 100 S06	2R X 4	2.4	10	66	6
2BCBN 040 120 S06	2R X 4	2.4	12	66	6
2BCBN 040 160 S06	2R X 4	2.4	16	66	6
2BCBN 040 200 S06	2R X 4	2.4	20	66	6
2BCBN 060 035 S06	3R X 6	3.5	-	83	6
2BCBN 060 100 S06	3R X 6	3.5	10	83	6
2BCBN 060 200 S06	3R X 6	3.5	20	83	6

2SBCBN

CBN - Fresa Emisferica 2 Tagli per Nervature

New



- **Fresa in CBN per superfinitura (±5 µm) di acciai temprati (HRc50~70).**
- Eccezionale resistenza all'usura grazie all'alta qualità del CBN.
- Tagliente negativo per ridurre le scheggiature.
- Ampia gamma di diametri e lunghezze per ottimizzare il rendimento.
- Utilizzo in alta velocità (20,000~50,000RPM) con olio nebulizzato.
- C.B.N (Cubic Boron Nitride)

2 | CBN | R ±0.005 (0.1 ~ 1.25R) | R ±0.007 (1.5 ~ 2R) | R ±0.01 (3R) | 0° Helix Angle | € List. p.5 | i info p.182

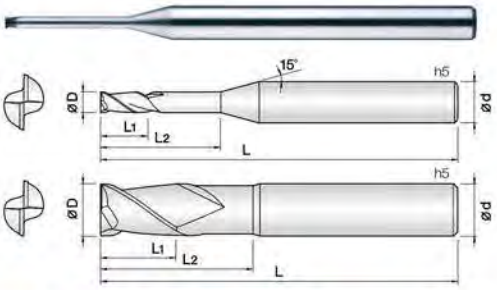
D	Tolleranza
Ø0.2 ~ 6	+0 ~ -0.01mm

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2SBCBN 002 002 S04	0.1R X 0.2	0.2	-	48	4
2SBCBN 002 004 S04	0.1R X 0.2	0.4	-	48	4
2SBCBN 003 003 S04	0.15R X 0.3	0.3	-	48	4
2SBCBN 003 005 S04	0.15R X 0.3	0.5	-	48	4
2SBCBN 004 015 S04	0.2R X 0.4	0.3	1.5	48	4
2SBCBN 005 015 S04	0.25R X 0.5	0.4	1.5	48	4
2SBCBN 005 020 S04	0.25R X 0.5	0.4	2	48	4
2SBCBN 006 015 S04	0.3R X 0.6	0.5	1.5	48	4
2SBCBN 006 020 S04	0.3R X 0.6	0.5	2	48	4
2SBCBN 006 030 S04	0.3R X 0.6	0.5	3	48	4
2SBCBN 006 040 S04	0.3R X 0.6	0.5	4	48	4
2SBCBN 007 020 S04	0.35R X 0.7	0.5	2	48	4
2SBCBN 008 020 S04	0.4R X 0.8	0.6	2	48	4
2SBCBN 008 030 S04	0.4R X 0.8	0.6	3	48	4
2SBCBN 008 040 S04	0.4R X 0.8	0.6	4	48	4
2SBCBN 009 020 S04	0.45R X 0.9	0.6	2	48	4
2SBCBN 010 025 S04	0.5R X 1	0.7	2.5	48	4
2SBCBN 010 040 S04	0.5R X 1	0.7	4	48	4
2SBCBN 010 050 S04	0.5R X 1	0.7	5	48	4
2SBCBN 010 060 S04	0.5R X 1	0.7	6	48	4
2SBCBN 012 040 S04	0.6R X 1.2	0.8	4	48	4
2SBCBN 015 040 S04	0.75R X 1.5	1	4	48	4
2SBCBN 015 060 S04	0.75R X 1.5	1	6	48	4
2SBCBN 015 080 S04	0.75R X 1.5	1	8	48	4
2SBCBN 015 100 S04	0.75R X 1.5	1	10	48	4
2SBCBN 020 040 S04	1R X 2	1.2	4	50	4
2SBCBN 020 060 S04	1R X 2	1.2	6	50	4
2SBCBN 020 080 S04	1R X 2	1.2	8	50	4
2SBCBN 020 100 S04	1R X 2	1.2	10	50	4
2SBCBN 020 120 S04	1R X 2	1.2	12	50	4
2SBCBN 025 060 S06	1.25R X 2.5	1.6	6	66	6
2SBCBN 030 060 S06	1.5R X 3	1.8	6	66	6
2SBCBN 030 080 S06	1.5R X 3	1.8	8	66	6
2SBCBN 030 100 S06	1.5R X 3	1.8	10	66	6
2SBCBN 030 120 S06	1.5R X 3	1.8	12	66	6
2SBCBN 030 160 S06	1.5R X 3	1.8	16	66	6
2SBCBN 030 200 S06	1.5R X 3	1.8	20	66	6
2SBCBN 040 060 S06	2R X 4	2.4	6	66	6
2SBCBN 040 080 S06	2R X 4	2.4	8	66	6
2SBCBN 040 100 S06	2R X 4	2.4	10	66	6
2SBCBN 040 120 S06	2R X 4	2.4	12	66	6
2SBCBN 040 160 S06	2R X 4	2.4	16	66	6
2SBCBN 040 200 S06	2R X 4	2.4	20	66	6
2SBCBN 060 035 S06	3R X 6	3.5	-	83	6
2SBCBN 060 100 S06	3R X 6	3.5	10	83	6

2ECBN

CBN - Fresa Cilindrica 2 Tagli per Nervature



- **Fresa in CBN per superfinitura (±5 µm) di acciai temprati (HRc50~70).**
- Eccezionale resistenza all'usura grazie all'alta qualità del CBN.
- Finitura speculare del materiale lavorato.
- Ampia gamma di diametri e lunghezze per ottimizzare il rendimento.
- Utilizzo in alta velocità (20,000~50,000RPM) con olio nebulizzato.
- C.B.N (Cubic Boron Nitride)

2 | CBN | ID +0~-0.01 Ø0.2 ~ Ø6 | 30° Helix Angle | Rinforzato | € List. p.5 | i info p.183

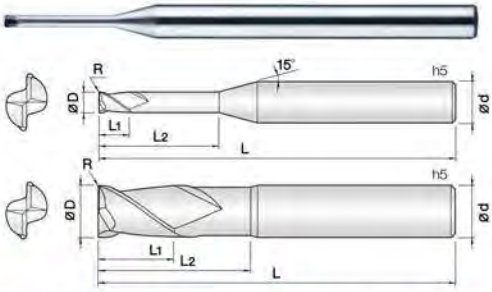
D	Tolleranza
Ø0.2 ~ 6	+0~ -0.01mm

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2ECBN 002 002 S04	0.2	0.2	-	48	4
2ECBN 002 004 S04	0.2	0.4	-	48	4
2ECBN 003 003 S04	0.3	0.3	-	48	4
2ECBN 003 005 S04	0.3	0.5	-	48	4
2ECBN 004 015 S04	0.4	0.3	1.5	48	4
2ECBN 004 020 S04	0.4	0.3	2	48	4
2ECBN 004 030 S04	0.4	0.3	3	48	4
2ECBN 004 040 S04	0.4	0.3	4	48	4
2ECBN 004 050 S04	0.4	0.3	5	48	4
2ECBN 004 060 S04	0.4	0.3	6	48	4
2ECBN 005 015 S04	0.5	0.4	1.5	48	4
2ECBN 005 020 S04	0.5	0.4	2	48	4
2ECBN 005 030 S04	0.5	0.4	3	48	4
2ECBN 005 040 S04	0.5	0.4	4	48	4
2ECBN 005 050 S04	0.5	0.4	5	48	4
2ECBN 005 060 S04	0.5	0.4	6	48	4
2ECBN 005 080 S04	0.5	0.4	8	48	4
2ECBN 006 015 S04	0.6	0.5	1.5	48	4
2ECBN 006 020 S04	0.6	0.5	2	48	4
2ECBN 006 030 S04	0.6	0.5	3	48	4
2ECBN 006 040 S04	0.6	0.5	4	48	4
2ECBN 006 060 S04	0.6	0.5	6	48	4
2ECBN 006 080 S04	0.6	0.5	8	48	4
2ECBN 006 100 S04	0.6	0.5	10	48	4
2ECBN 007 025 S04	0.7	0.5	2.5	48	4
2ECBN 007 040 S04	0.7	0.5	4	48	4
2ECBN 007 060 S04	0.7	0.5	6	48	4
2ECBN 008 025 S04	0.8	0.6	2.5	48	4
2ECBN 008 040 S04	0.8	0.6	4	48	4
2ECBN 008 060 S04	0.8	0.6	6	48	4
2ECBN 008 080 S04	0.8	0.6	8	48	4
2ECBN 008 100 S04	0.8	0.6	10	48	4
2ECBN 009 025 S04	0.9	0.6	2.5	48	4
2ECBN 009 040 S04	0.9	0.6	4	48	4
2ECBN 009 060 S04	0.9	0.6	6	48	4
2ECBN 009 080 S04	0.9	0.6	8	48	4
2ECBN 009 100 S04	0.9	0.6	10	48	4
2ECBN 010 025 S04	1	0.7	2.5	48	4
2ECBN 010 040 S04	1	0.7	4	48	4
2ECBN 010 050 S04	1	0.7	5	48	4
2ECBN 010 060 S04	1	0.7	6	48	4
2ECBN 010 080 S04	1	0.7	8	48	4
2ECBN 010 100 S04	1	0.7	10	48	4
2ECBN 010 120 S04	1	0.7	12	48	4
2ECBN 010 140 S04	1	0.7	14	48	4
2ECBN 010 160 S04	1	0.7	16	48	4
2ECBN 012 030 S04	1.2	0.7	3	48	4
2ECBN 012 040 S04	1.2	0.7	4	48	4

Numero d'Ordine	R×D	L1	L2	L	d
2ECBN 012 060 S04	1.2	0.7	6	48	4
2ECBN 012 080 S04	1.2	0.7	8	48	4
2ECBN 012 100 S04	1.2	0.7	10	48	4
2ECBN 012 120 S04	1.2	0.7	12	48	4
2ECBN 012 160 S04	1.2	0.7	16	48	4
2ECBN 015 030 S04	1.5	0.8	3	48	4
2ECBN 015 060 S04	1.5	0.8	6	48	4
2ECBN 015 080 S04	1.5	0.8	8	48	4
2ECBN 015 100 S04	1.5	0.8	10	48	4
2ECBN 015 120 S04	1.5	0.8	12	48	4
2ECBN 015 140 S04	1.5	0.8	14	48	4
2ECBN 015 160 S04	1.5	0.8	16	48	4
2ECBN 015 180 S04	1.5	0.8	18	48	4
2ECBN 020 030 S04	2	0.9	3	50	4
2ECBN 020 060 S04	2	0.9	6	50	4
2ECBN 020 080 S04	2	0.9	8	50	4
2ECBN 020 100 S04	2	0.9	10	50	4
2ECBN 020 120 S04	2	0.9	12	50	4
2ECBN 020 140 S04	2	0.9	14	50	4
2ECBN 020 160 S04	2	0.9	16	50	4
2ECBN 020 180 S04	2	0.9	18	50	4
2ECBN 025 060 S06	2.5	1.2	6	66	6
2ECBN 025 100 S06	2.5	1.2	10	66	6
2ECBN 025 160 S06	2.5	1.2	16	66	6
2ECBN 025 200 S06	2.5	1.2	20	66	6
2ECBN 030 060 S06	3	1.2	6	66	6
2ECBN 030 080 S06	3	1.2	8	66	6
2ECBN 030 100 S06	3	1.2	10	66	6
2ECBN 030 120 S06	3	1.2	12	66	6
2ECBN 030 160 S06	3	1.2	16	66	6
2ECBN 030 200 S06	3	1.2	20	66	6
2ECBN 040 060 S06	4	1.5	6	66	6
2ECBN 040 080 S06	4	1.5	8	66	6
2ECBN 040 100 S06	4	1.5	10	66	6
2ECBN 040 120 S06	4	1.5	12	66	6
2ECBN 040 160 S06	4	1.5	16	66	6
2ECBN 040 200 S06	4	1.5	20	66	6
2ECBN 060 030 S06	6	3	-	83	6
2ECBN 060 100 S06	6	3	10	83	6
2ECBN 060 200 S06	6	3	20	83	6

2CCBN CBN - Fresa Torica 2 Tagli per Nervature



- **Fresa in CBN per superfinitura (±5 µm) di acciai temprati (HRc50~70).**
- Eccezionale resistenza all'usura grazie all'alta qualità del CBN.
- Finitura speculare del materiale lavorato.
- Ampia gamma di diametri e lunghezze per ottimizzare il rendimento.
- Utilizzo in alta velocità (20,000~50,000RPM) con olio nebulizzato.
- C.B.N (Cubic Boron Nitride)

2 | CBN | R ±0.005 R0.02 ~ 1 | 30° Helix Angle | € List. p.7 | i info p.184

D	Tolleranza
Ø0.4 ~ 6	+0~ −0.01mm

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2CCBN 004 0002 015	0.4 X R0.02	0.3	1.5	48	4
2CCBN 004 0002 020	0.4 X R0.02	0.3	2	48	4
2CCBN 004 0005 015	0.4 X R0.05	0.3	1.5	48	4
2CCBN 004 0005 020	0.4 X R0.05	0.3	2	48	4
2CCBN 004 001 015	0.4 X R0.1	0.3	1.5	48	4
2CCBN 004 001 020	0.4 X R0.1	0.3	2	48	4
2CCBN 005 0005 015	0.5 X R0.05	0.4	1.5	48	4
2CCBN 005 0005 020	0.5 X R0.05	0.4	2	48	4
2CCBN 005 0005 030	0.5 X R0.05	0.4	3	48	4
2CCBN 005 0005 040	0.5 X R0.05	0.4	4	48	4
2CCBN 005 0005 050	0.5 X R0.05	0.4	5	48	4
2CCBN 005 001 015	0.5 X R0.1	0.4	1.5	48	4
2CCBN 005 001 020	0.5 X R0.1	0.4	2	48	4
2CCBN 005 001 030	0.5 X R0.1	0.4	3	48	4
2CCBN 005 001 040	0.5 X R0.1	0.4	4	48	4
2CCBN 005 001 050	0.5 X R0.1	0.4	5	48	4
2CCBN 006 0005 020	0.6 X R0.05	0.5	2	48	4
2CCBN 006 0005 030	0.6 X R0.05	0.5	3	48	4
2CCBN 006 0005 040	0.6 X R0.05	0.5	4	48	4
2CCBN 006 0005 060	0.6 X R0.05	0.5	6	48	4
2CCBN 006 001 020	0.6 X R0.1	0.5	2	48	4
2CCBN 006 001 030	0.6 X R0.1	0.5	3	48	4
2CCBN 006 001 040	0.6 X R0.1	0.5	4	48	4
2CCBN 006 001 060	0.6 X R0.1	0.5	6	48	4
2CCBN 007 001 025	0.7 X R0.1	0.5	2.5	48	4
2CCBN 007 001 040	0.7 X R0.1	0.5	4	48	4
2CCBN 007 001 060	0.7 X R0.1	0.5	6	48	4
2CCBN 008 001 025	0.8 X R0.1	0.6	2.5	48	4
2CCBN 008 001 040	0.8 X R0.1	0.6	4	48	4
2CCBN 008 001 060	0.8 X R0.1	0.6	6	48	4
2CCBN 008 002 025	0.8 X R0.2	0.6	2.5	48	4
2CCBN 008 002 040	0.8 X R0.2	0.6	4	48	4
2CCBN 008 002 060	0.8 X R0.2	0.6	6	48	4
2CCBN 010 0002 025	1 X R0.02	0.7	2.5	48	4
2CCBN 010 0002 040	1 X R0.02	0.7	4	48	4
2CCBN 010 0002 060	1 X R0.02	0.7	6	48	4
2CCBN 010 0002 080	1 X R0.02	0.7	8	48	4
2CCBN 010 0002 100	1 X R0.02	0.7	10	48	4
2CCBN 010 0005 025	1 X R0.05	0.7	2.5	48	4
2CCBN 010 0005 040	1 X R0.05	0.7	4	48	4
2CCBN 010 0005 060	1 X R0.05	0.7	6	48	4
2CCBN 010 0005 080	1 X R0.05	0.7	8	48	4
2CCBN 010 0005 100	1 X R0.05	0.7	10	48	4
2CCBN 010 001 025	1 X R0.1	0.7	2.5	48	4
2CCBN 010 001 040	1 X R0.1	0.7	4	48	4
2CCBN 010 001 060	1 X R0.1	0.7	6	48	4
2CCBN 010 001 080	1 X R0.1	0.7	8	48	4
2CCBN 010 001 100	1 X R0.1	0.7	10	48	4

Numero d'Ordine	R×D	L1	L2	L	d
2CCBN 010 002 025	1 X R0.2	0.7	2.5	48	4
2CCBN 010 002 040	1 X R0.2	0.7	4	48	4
2CCBN 010 002 060	1 X R0.2	0.7	6	48	4
2CCBN 010 002 080	1 X R0.2	0.7	8	48	4
2CCBN 010 002 100	1 X R0.2	0.7	10	48	4
2CCBN 010 003 025	1 X R0.3	0.7	2.5	48	4
2CCBN 010 003 040	1 X R0.3	0.7	4	48	4
2CCBN 010 003 060	1 X R0.3	0.7	6	48	4
2CCBN 010 003 080	1 X R0.3	0.7	8	48	4
2CCBN 010 003 100	1 X R0.3	0.7	10	48	4
2CCBN 012 001 030	1.2 X R0.1	0.7	3	48	4
2CCBN 012 001 040	1.2 X R0.1	0.7	4	48	4
2CCBN 012 001 060	1.2 X R0.1	0.7	6	48	4
2CCBN 012 001 080	1.2 X R0.1	0.7	8	48	4
2CCBN 012 001 100	1.2 X R0.1	0.7	10	48	4
2CCBN 012 002 030	1.2 X R0.2	0.7	3	48	4
2CCBN 012 002 040	1.2 X R0.2	0.7	4	48	4
2CCBN 012 002 060	1.2 X R0.2	0.7	6	48	4
2CCBN 012 002 080	1.2 X R0.2	0.7	8	48	4
2CCBN 012 002 100	1.2 X R0.2	0.7	10	48	4
2CCBN 012 003 030	1.2 X R0.3	0.7	3	48	4
2CCBN 012 003 040	1.2 X R0.3	0.7	4	48	4
2CCBN 012 003 060	1.2 X R0.3	0.7	6	48	4
2CCBN 012 003 080	1.2 X R0.3	0.7	8	48	4
2CCBN 012 003 100	1.2 X R0.3	0.7	10	48	4
2CCBN 015 0002 030	1.5 X R0.02	0.8	3	48	4
2CCBN 015 0002 040	1.5 X R0.02	0.8	4	48	4
2CCBN 015 0002 060	1.5 X R0.02	0.8	6	48	4
2CCBN 015 0002 080	1.5 X R0.02	0.8	8	48	4
2CCBN 015 0002 100	1.5 X R0.02	0.8	10	48	4
2CCBN 015 0005 030	1.5 X R0.05	0.8	3	48	4
2CCBN 015 0005 040	1.5 X R0.05	0.8	4	48	4
2CCBN 015 0005 060	1.5 X R0.05	0.8	6	48	4
2CCBN 015 0005 080	1.5 X R0.05	0.8	8	48	4
2CCBN 015 0005 100	1.5 X R0.05	0.8	10	48	4
2CCBN 015 001 030	1.5 X R0.1	0.8	3	48	4
2CCBN 015 001 040	1.5 X R0.1	0.8	4	48	4
2CCBN 015 001 060	1.5 X R0.1	0.8	6	48	4
2CCBN 015 001 080	1.5 X R0.1	0.8	8	48	4
2CCBN 015 001 100	1.5 X R0.1	0.8	10	48	4
2CCBN 015 002 030	1.5 X R0.2	0.8	3	48	4
2CCBN 015 002 040	1.5 X R0.2	0.8	4	48	4
2CCBN 015 002 060	1.5 X R0.2	0.8	6	48	4
2CCBN 015 002 080	1.5 X R0.2	0.8	8	48	4
2CCBN 015 002 100	1.5 X R0.2	0.8	10	48	4
2CCBN 015 003 030	1.5 X R0.3	0.8	3	48	4
2CCBN 015 003 040	1.5 X R0.3	0.8	4	48	4
2CCBN 015 003 060	1.5 X R0.3	0.8	6	48	4

2CCBN CBN - Fresa Torica 2 Tagli per Nervature

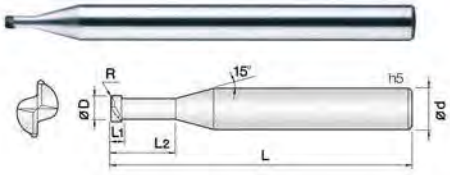
Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2CCBN 015 003 080	1.5 X R0.3	0.8	8	48	4
2CCBN 015 003 100	1.5 X R0.3	0.8	10	48	4
2CCBN 020 0002 030	2 X R0.02	0.9	3	50	4
2CCBN 020 0002 060	2 X R0.02	0.9	6	50	4
2CCBN 020 0002 080	2 X R0.02	0.9	8	50	4
2CCBN 020 0002 100	2 X R0.02	0.9	10	50	4
2CCBN 020 0005 030	2 X R0.05	0.9	3	50	4
2CCBN 020 0005 060	2 X R0.05	0.9	6	50	4
2CCBN 020 0005 080	2 X R0.05	0.9	8	50	4
2CCBN 020 0005 100	2 X R0.05	0.9	10	50	4
2CCBN 020 001 030	2 X R0.1	0.9	3	50	4
2CCBN 020 001 060	2 X R0.1	0.9	6	50	4
2CCBN 020 001 080	2 X R0.1	0.9	8	50	4
2CCBN 020 001 100	2 X R0.1	0.9	10	50	4
2CCBN 020 002 030	2 X R0.2	0.9	3	50	4
2CCBN 020 002 060	2 X R0.2	0.9	6	50	4
2CCBN 020 002 080	2 X R0.2	0.9	8	50	4
2CCBN 020 002 100	2 X R0.2	0.9	10	50	4
2CCBN 020 003 030	2 X R0.3	0.9	3	50	4
2CCBN 020 003 060	2 X R0.3	0.9	6	50	4
2CCBN 020 003 080	2 X R0.3	0.9	8	50	4
2CCBN 020 003 100	2 X R0.3	0.9	10	50	4
2CCBN 020 005 030	2 X R0.5	0.9	3	50	4
2CCBN 020 005 060	2 X R0.5	0.9	6	50	4
2CCBN 020 005 080	2 X R0.5	0.9	8	50	4
2CCBN 020 005 100	2 X R0.5	0.9	10	50	4
2CCBN 025 001 060	2.5 X R0.1	1.2	6	66	6
2CCBN 025 001 100	2.5 X R0.1	1.2	10	66	6
2CCBN 025 002 060	2.5 X R0.2	1.2	6	66	6
2CCBN 025 002 100	2.5 X R0.2	1.2	10	66	6
2CCBN 025 003 060	2.5 X R0.3	1.2	6	66	6
2CCBN 025 003 100	2.5 X R0.3	1.2	10	66	6
2CCBN 030 001 060	3 X R0.1	1.2	6	66	6
2CCBN 030 001 100	3 X R0.1	1.2	10	66	6
2CCBN 030 001 160	3 X R0.1	1.2	16	66	6
2CCBN 030 001 200	3 X R0.1	1.2	20	66	6
2CCBN 030 002 060	3 X R0.2	1.2	6	66	6
2CCBN 030 002 100	3 X R0.2	1.2	10	66	6
2CCBN 030 002 160	3 X R0.2	1.2	16	66	6
2CCBN 030 002 200	3 X R0.2	1.2	20	66	6
2CCBN 030 003 060	3 X R0.3	1.2	6	66	6
2CCBN 030 003 100	3 X R0.3	1.2	10	66	6
2CCBN 030 003 160	3 X R0.3	1.2	16	66	6
2CCBN 030 003 200	3 X R0.3	1.2	20	66	6
2CCBN 030 005 060	3 X R0.5	1.2	6	66	6
2CCBN 030 005 100	3 X R0.5	1.2	10	66	6
2CCBN 030 005 160	3 X R0.5	1.2	16	66	6
2CCBN 030 005 200	3 X R0.5	1.2	20	66	6
2CCBN 030 010 060	3 X R1	1.2	6	66	6
2CCBN 030 010 100	3 X R1	1.2	10	66	6
2CCBN 030 010 160	3 X R1	1.2	16	66	6
2CCBN 030 010 200	3 X R1	1.2	20	66	6
2CCBN 040 001 060	4 X R0.1	1.5	6	66	6
2CCBN 040 001 100	4 X R0.1	1.5	10	66	6
2CCBN 040 001 160	4 X R0.1	1.5	16	66	6
2CCBN 040 002 060	4 X R0.2	1.5	6	66	6
2CCBN 040 002 100	4 X R0.2	1.5	10	66	6
2CCBN 040 002 160	4 X R0.2	1.5	16	66	6
2CCBN 040 003 060	4 X R0.3	1.5	6	66	6
2CCBN 040 003 100	4 X R0.3	1.5	10	66	6
2CCBN 040 003 160	4 X R0.3	1.5	16	66	6
2CCBN 040 005 060	4 X R0.5	1.5	6	66	6
2CCBN 040 005 100	4 X R0.5	1.5	10	66	6
2CCBN 040 005 160	4 X R0.5	1.5	16	66	6
2CCBN 040 010 060	4 X R1	1.5	6	66	6
2CCBN 040 010 100	4 X R1	1.5	10	66	6
2CCBN 040 010 160	4 X R1	1.5	16	66	6
2CCBN 060 003 030	6 X R0.3	3	-	83	6
2CCBN 060 003 150	6 X R0.3	3	15	83	6
2CCBN 060 005 030	6 X R0.5	3	-	83	6
2CCBN 060 005 150	6 X R0.5	3	15	83	6
2CCBN 060 010 030	6 X R1	3	-	83	6
2CCBN 060 010 150	6 X R1	3	15	83	6

2SCCBN

CBN - Fresa Torica 2 Tagli per Nervature

New



- **Fresa in CBN per superfinitura (±5 µm) di acciai temprati (HRc50~70).**
- Eccezionale resistenza all'usura grazie all'alta qualità del CBN.
- Tagliente negativo per ridurre le scheggiature.
- Ampia gamma di diametri e lunghezze per ottimizzare il rendimento.
- Utilizzo in alta velocità (20,000~50,000RPM) con olio nebulizzato.
- C.B.N (Cubic Boron Nitride)

2 | CBN | R ±0.005 R0.02 ~ 1 | 0° Helix Angle | € List. p.9 | i info p.184

D	Tolleranza
ø0.4 ~ 6	+0~ -0.01mm

Unità : mm

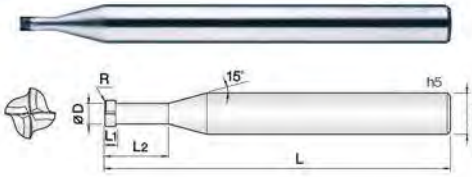
Numero d'Ordine	R×D	L1	L2	L	d
2SCCBN 004 0002 015	0.4 X R0.02	0.3	1.5	48	4
2SCCBN 004 0005 015	0.4 X R0.05	0.3	1.5	48	4
2SCCBN 004 001 015	0.4 X R0.1	0.3	1.5	48	4
2SCCBN 005 0005 015	0.5 X R0.05	0.4	1.5	48	4
2SCCBN 005 001 015	0.5 X R0.1	0.4	1.5	48	4
2SCCBN 006 0005 020	0.6 X R0.05	0.5	2	48	4
2SCCBN 006 001 020	0.6 X R0.1	0.5	2	48	4
2SCCBN 008 001 020	0.8 X R0.1	0.6	2	48	4
2SCCBN 008 002 020	0.8 X R0.2	0.6	2	48	4
2SCCBN 010 0002 025	1 X R0.02	0.7	2.5	48	4
2SCCBN 010 0002 040	1 X R0.02	0.7	4	48	4
2SCCBN 010 0005 025	1 X R0.05	0.7	2.5	48	4
2SCCBN 010 0005 040	1 X R0.05	0.7	4	48	4
2SCCBN 010 001 025	1 X R0.1	0.7	2.5	48	4
2SCCBN 010 001 040	1 X R0.1	0.7	4	48	4
2SCCBN 010 002 025	1 X R0.2	0.7	2.5	48	4
2SCCBN 010 002 040	1 X R0.2	0.7	4	48	4
2SCCBN 010 003 025	1 X R0.3	0.7	2.5	48	4
2SCCBN 010 003 040	1 X R0.3	0.7	4	48	4
2SCCBN 015 0002 030	1.5 X R0.02	0.8	3	48	4
2SCCBN 015 0002 040	1.5 X R0.02	0.8	4	48	4
2SCCBN 015 0005 030	1.5 X R0.05	0.8	3	48	4
2SCCBN 015 0005 040	1.5 X R0.05	0.8	4	48	4
2SCCBN 015 001 030	1.5 X R0.1	0.8	3	48	4
2SCCBN 015 001 040	1.5 X R0.1	0.8	4	48	4
2SCCBN 015 002 030	1.5 X R0.2	0.8	3	48	4
2SCCBN 015 002 040	1.5 X R0.2	0.8	4	48	4
2SCCBN 015 003 030	1.5 X R0.3	0.8	3	48	4
2SCCBN 015 003 040	1.5 X R0.3	0.8	4	48	4
2SCCBN 020 0002 030	2 X R0.02	0.9	3	50	4
2SCCBN 020 0002 060	2 X R0.02	0.9	6	50	4
2SCCBN 020 0005 030	2 X R0.05	0.9	3	50	4
2SCCBN 020 0005 060	2 X R0.05	0.9	6	50	4
2SCCBN 020 001 030	2 X R0.1	0.9	3	50	4
2SCCBN 020 001 060	2 X R0.1	0.9	6	50	4
2SCCBN 020 002 030	2 X R0.2	0.9	3	50	4
2SCCBN 020 002 060	2 X R0.2	0.9	6	50	4
2SCCBN 020 003 030	2 X R0.3	0.9	3	50	4
2SCCBN 020 003 060	2 X R0.3	0.9	6	50	4
2SCCBN 020 005 030	2 X R0.5	0.9	3	50	4
2SCCBN 020 005 060	2 X R0.5	0.9	6	50	4
2SCCBN 025 001 060	2.5 X R0.1	1.2	6	66	6
2SCCBN 025 002 060	2.5 X R0.2	1.2	6	66	6
2SCCBN 025 003 060	2.5 X R0.3	1.2	6	66	6
2SCCBN 030 001 060	3 X R0.1	1.2	6	66	6
2SCCBN 030 001 100	3 X R0.1	1.2	10	66	6

Numero d'Ordine	R×D	L1	L2	L	d
2SCCBN 030 002 060	3 X R0.2	1.2	6	66	6
2SCCBN 030 002 100	3 X R0.2	1.2	10	66	6
2SCCBN 030 003 060	3 X R0.3	1.2	6	66	6
2SCCBN 030 003 100	3 X R0.3	1.2	10	66	6
2SCCBN 030 005 060	3 X R0.5	1.2	6	66	6
2SCCBN 030 005 100	3 X R0.5	1.2	10	66	6
2SCCBN 030 005 160	3 X R0.5	1.2	16	66	6
2SCCBN 030 010 060	3 X R1	1.2	6	66	6
2SCCBN 030 010 100	3 X R1	1.2	10	66	6
2SCCBN 030 010 160	3 X R1	1.2	16	66	6
2SCCBN 040 001 060	4 X R0.1	1.5	6	66	6
2SCCBN 040 001 100	4 X R0.1	1.5	10	66	6
2SCCBN 040 001 160	4 X R0.1	1.5	16	66	6
2SCCBN 040 002 060	4 X R0.2	1.5	6	66	6
2SCCBN 040 002 100	4 X R0.2	1.5	10	66	6
2SCCBN 040 002 160	4 X R0.2	1.5	16	66	6
2SCCBN 040 003 060	4 X R0.3	1.5	6	66	6
2SCCBN 040 003 100	4 X R0.3	1.5	10	66	6
2SCCBN 040 003 160	4 X R0.3	1.5	16	66	6
2SCCBN 040 005 060	4 X R0.5	1.5	6	66	6
2SCCBN 040 005 100	4 X R0.5	1.5	10	66	6
2SCCBN 040 005 160	4 X R0.5	1.5	16	66	6
2SCCBN 040 010 060	4 X R1	1.5	6	66	6
2SCCBN 040 010 100	4 X R1	1.5	10	66	6
2SCCBN 040 010 160	4 X R1	1.5	16	66	6
2SCCBN 060 003 030	6 X R0.3	3	-	83	6
2SCCBN 060 003 150	6 X R0.3	3	15	83	6
2SCCBN 060 005 030	6 X R0.5	3	-	83	6
2SCCBN 060 005 150	6 X R0.5	3	15	83	6
2SCCBN 060 010 030	6 X R1	3	-	83	6
2SCCBN 060 010 150	6 X R1	3	15	83	6

4SCCBN

CBN - Fresa Torica 4 Tagli per Nervature

New



- **Fresa in CBN per superfinitura (±5 µm) di acciai temprati (HRc50~70).**
- Eccezionale resistenza all'usura grazie all'alta qualità del CBN.
- Tagliente negativo per ridurre le scheggiature.
- Ampia gamma di diametri e lunghezze per ottimizzare il rendimento.
- Utilizzo in alta velocità (20,000~50,000RPM) con olio nebulizzato.
- C.B.N (Cubic Boron Nitride)

4 | CBN | R ±0.005 R0.1 ~ 1 | 0° Helix Angle | € List. p.10 | i info p.184

D	D Tolerance
Ø0.8 ~ 6	+0~ -0.01mm

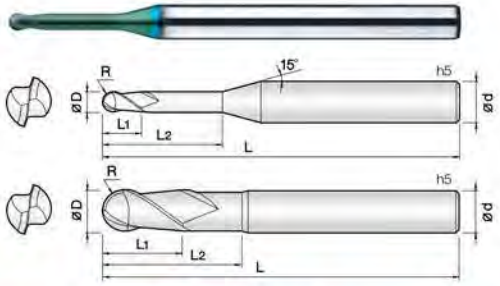
Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
4SCCBN 008 001 025	0.8 X R0.1	0.6	2.5	48	4
4SCCBN 008 002 025	0.8 X R0.2	0.6	2.5	48	4
4SCCBN 010 0002 025	1 X R0.02	0.7	2.5	48	4
4SCCBN 010 0002 040	1 X R0.02	0.7	4	48	4
4SCCBN 010 0005 025	1 X R0.05	0.7	2.5	48	4
4SCCBN 010 0005 040	1 X R0.05	0.7	4	48	4
4SCCBN 010 001 025	1 X R0.1	0.7	2.5	48	4
4SCCBN 010 001 040	1 X R0.1	0.7	4	48	4
4SCCBN 010 002 025	1 X R0.2	0.7	2.5	48	4
4SCCBN 010 002 040	1 X R0.2	0.7	4	48	4
4SCCBN 010 003 025	1 X R0.3	0.7	2.5	48	4
4SCCBN 010 003 040	1 X R0.3	0.7	4	48	4
4SCCBN 015 0002 030	1.5 X R0.02	0.8	3	48	4
4SCCBN 015 0002 040	1.5 X R0.02	0.8	4	48	4
4SCCBN 015 0005 030	1.5 X R0.05	0.8	3	48	4
4SCCBN 015 0005 040	1.5 X R0.05	0.8	4	48	4
4SCCBN 015 001 030	1.5 X R0.1	0.8	3	48	4
4SCCBN 015 001 040	1.5 X R0.1	0.8	4	48	4
4SCCBN 015 002 030	1.5 X R0.2	0.8	3	48	4
4SCCBN 015 002 040	1.5 X R0.2	0.8	4	48	4
4SCCBN 015 003 030	1.5 X R0.3	0.8	3	48	4
4SCCBN 015 003 040	1.5 X R0.3	0.8	4	48	4
4SCCBN 020 0002 030	2 X R0.02	0.9	3	50	4
4SCCBN 020 0002 040	2 X R0.02	0.9	4	50	4
4SCCBN 020 0002 060	2 X R0.02	0.9	6	50	4
4SCCBN 020 0005 030	2 X R0.05	0.9	3	50	4
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4SCCBN 020 001 040	2 X R0.1	0.9	4	50	4
4SCCBN 020 001 060	2 X R0.1	0.9	6	50	4
4SCCBN 020 002 030	2 X R0.2	0.9	3	50	4
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4SCCBN 020 002 060	2 X R0.2	0.9	6	50	4
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4SCCBN 020 003 040	2 X R0.3	0.9	4	50	4
4SCCBN 020 003 060	2 X R0.3	0.9	6	50	4
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4SCCBN 020 005 040	2 X R0.5	0.9	4	50	4
4SCCBN 020 005 060	2 X R0.5	0.9	6	50	4
4SCCBN 025 001 060	2.5 X R0.1	1.2	6	66	6
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4SCCBN 025 003 060	2.5 X R0.3	1.2	6	66	6
4SCCBN 030 001 060	3 X R0.1	1.2	6	66	6
4SCCBN 030 001 100	3 X R0.1	1.2	10	66	6
4SCCBN 030 002 060	3 X R0.2	1.2	6	66	6
4SCCBN 030 002 100	3 X R0.2	1.2	10	66	6
4SCCBN 030 003 060	3 X R0.3	1.2	6	66	6

Numero d'Ordine	R×D	L1	L2	L	d
4SCCBN 030 003 100	3 X R0.3	1.2	10	66	6
4SCCBN 030 005 060	3 X R0.5	1.2	6	66	6
4SCCBN 030 005 100	3 X R0.5	1.2	10	66	6
4SCCBN 030 005 160	3 X R0.5	1.2	16	66	6
4SCCBN 030 010 060	3 X R1	1.2	6	66	6
4SCCBN 030 010 100	3 X R1	1.2	10	66	6
4SCCBN 030 010 160	3 X R1	1.2	16	66	6
4SCCBN 040 001 060	4 X R0.1	1.5	6	66	6
4SCCBN 040 001 100	4 X R0.1	1.5	10	66	6
4SCCBN 040 001 160	4 X R0.1	1.5	16	66	6
4SCCBN 040 002 060	4 X R0.2	1.5	6	66	6
4SCCBN 040 002 100	4 X R0.2	1.5	10	66	6
4SCCBN 040 002 160	4 X R0.2	1.5	16	66	6
4SCCBN 040 003 060	4 X R0.3	1.5	6	66	6
4SCCBN 040 003 100	4 X R0.3	1.5	10	66	6
4SCCBN 040 003 160	4 X R0.3	1.5	16	66	6
4SCCBN 040 005 060	4 X R0.5	1.5	6	66	6
4SCCBN 040 005 100	4 X R0.5	1.5	10	66	6
4SCCBN 040 005 160	4 X R0.5	1.5	16	66	6
4SCCBN 040 010 060	4 X R1	1.5	6	66	6
4SCCBN 040 010 100	4 X R1	1.5	10	66	6
4SCCBN 040 010 160	4 X R1	1.5	16	66	6
4SCCBN 060 003 030	6 X R0.3	3	-	83	6
4SCCBN 060 003 150	6 X R0.3	3	15	83	6
4SCCBN 060 005 030	6 X R0.5	3	-	83	6
4SCCBN 060 005 150	6 X R0.5	3	15	83	6
4SCCBN 060 010 030	6 X R1	3	-	83	6
4SCCBN 060 010 150	6 X R1	3	15	83	6

2JJRB

JJ - Fresa Emisferica 2 Tagli per Nervature



- **Fresa JJ per acciai bonificati e temprati fino a (HRc52~68)**
- Ottima resistenza all'usura grazie al nuovo rivestimento PVD TiSiN-S.
- Ottima finitura superficiale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | ±0.005 (0.05 ~ 2.5R) | ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.11 | i info p.186

D	Tolleranza
Ø0.1	+0 ~ -0.005mm
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2JJRB 001 003 S04	0.05R X 0.1	0.3	-	40	4
2JJRB 001 005 S04	0.05R X 0.1	0.5	-	40	4
2JJRB 002 005 S04	0.1R X 0.2	0.2	0.5	40	4
2JJRB 002 010 S04	0.1R X 0.2	0.2	1	40	4
2JJRB 002 015 S04	0.1R X 0.2	0.2	1.5	40	4
2JJRB 002 020 S04	0.1R X 0.2	0.2	2	40	4
New 2JJRB 002 025 S04	0.1R X 0.2	0.2	2.5	40	4
New 2JJRB 002 030 S04	0.1R X 0.2	0.2	3	40	4
2JJRB 003 010 S04	0.15R X 0.3	0.3	1	40	4
2JJRB 003 015 S04	0.15R X 0.3	0.3	1.5	40	4
2JJRB 003 020 S04	0.15R X 0.3	0.3	2	40	4
New 2JJRB 003 025 S04	0.15R X 0.3	0.3	2.5	40	4
2JJRB 003 030 S04	0.15R X 0.3	0.3	3	40	4
New 2JJRB 003 035 S04	0.15R X 0.3	0.3	3.5	40	4
2JJRB 003 040 S04	0.15R X 0.3	0.3	4	40	4
New 2JJRB 003 050 S04	0.15R X 0.3	0.3	5	40	4
2JJRB 004 010 S04	0.2R X 0.4	0.4	1	40	4
New 2JJRB 004 015 S04	0.2R X 0.4	0.4	1.5	40	4
2JJRB 004 020 S04	0.2R X 0.4	0.4	2	40	4
New 2JJRB 004 025 S04	0.2R X 0.4	0.4	2.5	40	4
2JJRB 004 030 S04	0.2R X 0.4	0.4	3	40	4
New 2JJRB 004 035 S04	0.2R X 0.4	0.4	3.5	40	4
2JJRB 004 040 S04	0.2R X 0.4	0.4	4	40	4
New 2JJRB 004 045 S04	0.2R X 0.4	0.4	4.5	40	4
2JJRB 004 050 S04	0.2R X 0.4	0.4	5	40	4
2JJRB 004 060 S04	0.2R X 0.4	0.4	6	40	4
2JJRB 004 080 S04	0.2R X 0.4	0.4	8	40	4
2JJRB 005 010 S04	0.25R X 0.5	0.5	1	45	4
New 2JJRB 005 010 S06	0.25R X 0.5	0.5	1	50	6
New 2JJRB 005 015 S04	0.25R X 0.5	0.5	1.5	45	4
2JJRB 005 020 S04	0.25R X 0.5	0.5	2	45	4
New 2JJRB 005 020 S06	0.25R X 0.5	0.5	2	50	6
New 2JJRB 005 025 S04	0.25R X 0.5	0.5	2.5	45	4
2JJRB 005 030 S04	0.25R X 0.5	0.5	3	45	4
New 2JJRB 005 030 S06	0.25R X 0.5	0.5	3	50	6
New 2JJRB 005 035 S04	0.25R X 0.5	0.5	3.5	45	4
2JJRB 005 040 S04	0.25R X 0.5	0.5	4	45	4
New 2JJRB 005 040 S06	0.25R X 0.5	0.5	4	50	6
New 2JJRB 005 045 S04	0.25R X 0.5	0.5	4.5	45	4
2JJRB 005 050 S04	0.25R X 0.5	0.5	5	45	4
New 2JJRB 005 050 S06	0.25R X 0.5	0.5	5	50	6
2JJRB 005 060 S04	0.25R X 0.5	0.5	6	45	4
New 2JJRB 005 060 S06	0.25R X 0.5	0.5	6	50	6
2JJRB 005 080 S04	0.25R X 0.5	0.5	8	45	4
2JJRB 005 100 S04	0.25R X 0.5	0.5	10	45	4
2JJRB 005 120 S04	0.25R X 0.5	0.5	12	45	4
2JJRB 006 010 S04	0.3R X 0.6	0.6	1	45	4
New 2JJRB 006 010 S06	0.3R X 0.6	0.6	1	50	6

Numero d'Ordine	R×D	L1	L2	L	d
2JJRB 006 020 S04	0.3R X 0.6	0.6	2	45	4
New 2JJRB 006 020 S06	0.3R X 0.6	0.6	2	50	6
2JJRB 006 030 S04	0.3R X 0.6	0.6	3	45	4
New 2JJRB 006 030 S06	0.3R X 0.6	0.6	3	50	6
2JJRB 006 040 S04	0.3R X 0.6	0.6	4	45	4
New 2JJRB 006 040 S06	0.3R X 0.6	0.6	4	50	6
2JJRB 006 050 S04	0.3R X 0.6	0.6	5	45	4
New 2JJRB 006 050 S06	0.3R X 0.6	0.6	5	50	6
2JJRB 006 060 S04	0.3R X 0.6	0.6	6	45	4
New 2JJRB 006 060 S06	0.3R X 0.6	0.6	6	50	6
2JJRB 006 080 S04	0.3R X 0.6	0.6	8	45	4
New 2JJRB 006 080 S06	0.3R X 0.6	0.6	8	50	6
2JJRB 006 100 S04	0.3R X 0.6	0.6	10	45	4
2JJRB 006 120 S04	0.3R X 0.6	0.6	12	45	4
2JJRB 006 140 S04	0.3R X 0.6	0.6	14	45	4
2JJRB 007 020 S04	0.35R X 0.7	0.7	2	45	4
2JJRB 007 040 S04	0.35R X 0.7	0.7	4	45	4
New 2JJRB 007 060 S04	0.35R X 0.7	0.7	6	45	4
2JJRB 007 080 S04	0.35R X 0.7	0.7	8	45	4
2JJRB 007 100 S04	0.35R X 0.7	0.7	10	45	4
2JJRB 007 120 S04	0.35R X 0.7	0.7	12	45	4
2JJRB 008 020 S04	0.4R X 0.8	0.8	2	45	4
New 2JJRB 008 020 S06	0.4R X 0.8	0.8	2	50	6
New 2JJRB 008 030 S04	0.4R X 0.8	0.8	3	45	4
New 2JJRB 008 030 S06	0.4R X 0.8	0.8	3	50	6
2JJRB 008 040 S04	0.4R X 0.8	0.8	4	45	4
New 2JJRB 008 040 S06	0.4R X 0.8	0.8	4	50	6
New 2JJRB 008 050 S04	0.4R X 0.8	0.8	5	45	4
New 2JJRB 008 050 S06	0.4R X 0.8	0.8	5	50	6
2JJRB 008 060 S04	0.4R X 0.8	0.8	6	45	4
New 2JJRB 008 060 S06	0.4R X 0.8	0.8	6	50	6
2JJRB 008 080 S04	0.4R X 0.8	0.8	8	45	4
New 2JJRB 008 080 S06	0.4R X 0.8	0.8	8	50	6
2JJRB 008 100 S04	0.4R X 0.8	0.8	10	45	4
2JJRB 008 120 S04	0.4R X 0.8	0.8	12	45	4
2JJRB 009 040 S04	0.45R X 0.9	0.9	4	45	4
New 2JJRB 009 060 S04	0.45R X 0.9	0.9	6	45	4
New 2JJRB 009 080 S04	0.45R X 0.9	0.9	8	45	4
New 2JJRB 009 100 S04	0.45R X 0.9	0.9	10	50	4
New 2JJRB 009 120 S04	0.45R X 0.9	0.9	12	50	4
2JJRB 010 020 S04	0.5R X 1	1	2	45	4
New 2JJRB 010 020 S06	0.5R X 1	1	2	50	6
2JJRB 010 030 S04	0.5R X 1	1	3	45	4
New 2JJRB 010 030 S06	0.5R X 1	1	3	50	6
2JJRB 010 040 S04	0.5R X 1	1	4	45	4
New 2JJRB 010 040 S06	0.5R X 1	1	4	50	6
2JJRB 010 050 S04	0.5R X 1	1	5	45	4
New 2JJRB 010 050 S06	0.5R X 1	1	5	50	6

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2JJRB 010 060 S04	0.5R X 1	1	6	45	4
New 2JJRB 010 060 S06	0.5R X 1	1	6	50	6
2JJRB 010 080 S04	0.5R X 1	1	8	45	4
New 2JJRB 010 080 S06	0.5R X 1	1	8	50	6
2JJRB 010 100 S04	0.5R X 1	1	10	50	4
New 2JJRB 010 100 S06	0.5R X 1	1	10	50	6
2JJRB 010 120 S04	0.5R X 1	1	12	50	4
New 2JJRB 010 120 S06	0.5R X 1	1	12	50	6
2JJRB 010 140 S04	0.5R X 1	1	14	50	4
2JJRB 010 160 S04	0.5R X 1	1	16	50	4
2JJRB 010 180 S04	0.5R X 1	1	18	50	4
2JJRB 010 200 S04	0.5R X 1	1	20	50	4
2JJRB 010 220 S04	0.5R X 1	1	22	60	4
2JJRB 010 250 S04	0.5R X 1	1	25	60	4
2JJRB 012 040 S04	0.6R X 1.2	1.2	4	45	4
New 2JJRB 012 040 S06	0.6R X 1.2	1.2	4	50	6
2JJRB 012 060 S04	0.6R X 1.2	1.2	6	45	4
New 2JJRB 012 060 S06	0.6R X 1.2	1.2	6	50	6
2JJRB 012 080 S04	0.6R X 1.2	1.2	8	45	4
New 2JJRB 012 080 S06	0.6R X 1.2	1.2	8	50	6
2JJRB 012 100 S04	0.6R X 1.2	1.2	10	50	4
New 2JJRB 012 100 S06	0.6R X 1.2	1.2	10	50	6
2JJRB 012 120 S04	0.6R X 1.2	1.2	12	50	4
New 2JJRB 012 120 S06	0.6R X 1.2	1.2	12	50	6
2JJRB 012 160 S04	0.6R X 1.2	1.2	16	50	4
2JJRB 012 200 S04	0.6R X 1.2	1.2	20	50	4
2JJRB 012 240 S04	0.6R X 1.2	1.2	24	60	4
2JJRB 014 060 S04	0.7R X 1.4	1.4	6	45	4
2JJRB 014 080 S04	0.7R X 1.4	1.4	8	45	4
2JJRB 014 120 S04	0.7R X 1.4	1.4	12	50	4
2JJRB 014 160 S04	0.7R X 1.4	1.4	16	50	4
2JJRB 015 030 S04	0.75R X 1.5	1.5	3	45	4
New 2JJRB 015 030 S06	0.75R X 1.5	1.5	3	50	6
2JJRB 015 040 S04	0.75R X 1.5	1.5	4	45	4
New 2JJRB 015 040 S06	0.75R X 1.5	1.5	4	50	6
2JJRB 015 060 S04	0.75R X 1.5	1.5	6	45	4
New 2JJRB 015 060 S06	0.75R X 1.5	1.5	6	50	6
2JJRB 015 080 S04	0.75R X 1.5	1.5	8	45	4
New 2JJRB 015 080 S06	0.75R X 1.5	1.5	8	50	6
2JJRB 015 100 S04	0.75R X 1.5	1.5	10	50	4
New 2JJRB 015 100 S06	0.75R X 1.5	1.5	10	50	6
2JJRB 015 120 S04	0.75R X 1.5	1.5	12	50	4
New 2JJRB 015 120 S06	0.75R X 1.5	1.5	12	50	6
2JJRB 015 140 S04	0.75R X 1.5	1.5	14	50	4
New 2JJRB 015 140 S06	0.75R X 1.5	1.5	14	50	6
2JJRB 015 160 S04	0.75R X 1.5	1.5	16	50	4
New 2JJRB 015 160 S06	0.75R X 1.5	1.5	16	60	6
2JJRB 015 180 S04	0.75R X 1.5	1.5	18	50	4
2JJRB 015 200 S04	0.75R X 1.5	1.5	20	50	4
2JJRB 015 220 S04	0.75R X 1.5	1.5	22	60	4
2JJRB 015 250 S04	0.75R X 1.5	1.5	25	60	4
2JJRB 015 300 S04	0.75R X 1.5	1.5	30	70	4
2JJRB 016 060 S04	0.8R X 1.6	1.6	6	45	4
2JJRB 016 080 S04	0.8R X 1.6	1.6	8	45	4
2JJRB 016 120 S04	0.8R X 1.6	1.6	12	50	4
2JJRB 016 160 S04	0.8R X 1.6	1.6	16	50	4
2JJRB 016 200 S04	0.8R X 1.6	1.6	20	50	4
2JJRB 018 060 S04	0.9R X 1.8	1.8	6	50	4
2JJRB 018 080 S04	0.9R X 1.8	1.8	8	50	4
2JJRB 018 120 S04	0.9R X 1.8	1.8	12	50	4
2JJRB 018 160 S04	0.9R X 1.8	1.8	16	50	4
2JJRB 018 200 S04	0.9R X 1.8	1.8	20	50	4
2JJRB 020 040 S04	1R X 2	2	4	45	4
New 2JJRB 020 040 S06	1R X 2	2	4	50	6
2JJRB 020 060 S04	1R X 2	2	6	45	4
New 2JJRB 020 060 S06	1R X 2	2	6	50	6
2JJRB 020 080 S04	1R X 2	2	8	45	4
New 2JJRB 020 080 S06	1R X 2	2	8	50	6
2JJRB 020 100 S04	1R X 2	2	10	50	4
New 2JJRB 020 100 S06	1R X 2	2	10	50	6
2JJRB 020 120 S04	1R X 2	2	12	50	4
New 2JJRB 020 120 S06	1R X 2	2	12	50	6
2JJRB 020 140 S04	1R X 2	2	14	50	4
New 2JJRB 020 140 S06	1R X 2	2	14	50	6
2JJRB 020 160 S04	1R X 2	2	16	50	4
New 2JJRB 020 160 S06	1R X 2	2	16	60	6
2JJRB 020 180 S04	1R X 2	2	18	50	4
New 2JJRB 020 180 S06	1R X 2	2	18	60	6
2JJRB 020 200 S04	1R X 2	2	20	50	4
New 2JJRB 020 200 S06	1R X 2	2	20	60	6
2JJRB 020 220 S04	1R X 2	2	22	60	4
2JJRB 020 250 S04	1R X 2	2	25	60	4
2JJRB 020 300 S04	1R X 2	2	30	60	4
2JJRB 025 080 S04	1.25R X 2.5	2.5	8	45	4
New 2JJRB 025 080 S06	1.25R X 2.5	2.5	8	50	6
2JJRB 025 100 S04	1.25R X 2.5	2.5	10	50	4
New 2JJRB 025 100 S06	1.25R X 2.5	2.5	10	50	6
2JJRB 025 160 S04	1.25R X 2.5	2.5	16	50	4
New 2JJRB 025 160 S06	1.25R X 2.5	2.5	16	60	6
2JJRB 025 200 S04	1.25R X 2.5	2.5	20	60	4
New 2JJRB 025 200 S06	1.25R X 2.5	2.5	20	60	6
2JJRB 025 250 S04	1.25R X 2.5	2.5	25	60	4
2JJRB 025 300 S04	1.25R X 2.5	2.5	30	70	4
2JJRB 030 060 S06	1.5R X 3	3	6	50	6
2JJRB 030 080 S06	1.5R X 3	3	8	50	6
2JJRB 030 100 S06	1.5R X 3	3	10	50	6

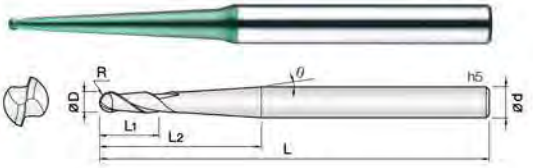
Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2JJRB 030 120 S06	1.5R X 3	3	12	50	6
2JJRB 030 160 S06	1.5R X 3	3	16	60	6
2JJRB 030 200 S06	1.5R X 3	3	20	60	6
2JJRB 030 250 S06	1.5R X 3	3	25	65	6
2JJRB 030 300 S06	1.5R X 3	3	30	70	6
2JJRB 030 350 S06	1.5R X 3	3	35	75	6
2JJRB 030 400 S06	1.5R X 3	3	40	80	6
2JJRB 030 450 S06	1.5R X 3	3	45	90	6
New 2JJRB 035 100 S06	1.75R X 3.5	3.5	10	50	6
New 2JJRB 035 150 S06	1.75R X 3.5	3.5	15	60	6
New 2JJRB 035 200 S06	1.75R X 3.5	3.5	20	60	6
New 2JJRB 035 250 S06	1.75R X 3.5	3.5	25	65	6
New 2JJRB 035 300 S06	1.75R X 3.5	3.5	30	70	6
New 2JJRB 035 350 S06	1.75R X 3.5	3.5	35	75	6
New 2JJRB 035 400 S06	1.75R X 3.5	3.5	40	80	6
2JJRB 040 080 S06	2R X 4	4	8	50	6
2JJRB 040 100 S06	2R X 4	4	10	50	6
2JJRB 040 120 S06	2R X 4	4	12	50	6
2JJRB 040 160 S06	2R X 4	4	16	60	6
2JJRB 040 200 S06	2R X 4	4	20	60	6
2JJRB 040 250 S06	2R X 4	4	25	65	6
2JJRB 040 300 S06	2R X 4	4	30	70	6
2JJRB 040 350 S06	2R X 4	4	35	75	6
2JJRB 040 400 S06	2R X 4	4	40	80	6
2JJRB 040 450 S06	2R X 4	4	45	90	6
2JJRB 050 160 S06	2.5R X 5	6	16	60	6
2JJRB 050 200 S06	2.5R X 5	6	20	60	6
2JJRB 050 250 S06	2.5R X 5	6	25	70	6
2JJRB 050 300 S06	2.5R X 5	6	30	75	6
2JJRB 050 400 S06	2.5R X 5	6	40	80	6
2JJRB 050 450 S06	2.5R X 5	6	45	90	6
2JJRB 060 150 S06	3R X 6	10	15	55	6
2JJRB 080 250 060	4R X 8	12	25	60	8
2JJRB 100 300 070	5R X 10	16	30	70	10
2JJRB 120 300 075	6R X 12	18	30	75	12

2JJTB

Fresa Emisferica 2 Tagli Rastremata

New



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base SI.
- Elevata tolleranza del filo tagliente.
- Riduzione di vibrazioni e scheggiature grazie alla forma rastremata.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | R ±0.005 (0.1 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.14 | i info p.185

D	Tolleranza
ø0.2 ~ 5	+0 ~ −0.01mm
ø6 ~ 12	−0.005 ~ −0.015mm

Unità : mm

Numero d'Ordine	R x D	θ	L1	L2	L	d
2JJTB 002 003 015	0.1R X 0.2	0° 30	0.2	1.5	40	4
2JJTB 002 003 020	0.1R X 0.2	0° 30	0.2	2	40	4
2JJTB 002 010 015	0.1R X 0.2	1°	0.2	1.5	40	4
2JJTB 002 010 020	0.1R X 0.2	1°	0.2	2	40	4
2JJTB 002 010 025	0.1R X 0.2	1°	0.2	2.5	40	4
2JJTB 002 013 015	0.1R X 0.2	1° 30	0.2	1.5	40	4
2JJTB 002 013 020	0.1R X 0.2	1° 30	0.2	2	40	4
2JJTB 002 013 025	0.1R X 0.2	1° 30	0.2	2.5	40	4
2JJTB 002 020 015	0.1R X 0.2	2°	0.2	1.5	40	4
2JJTB 002 020 020	0.1R X 0.2	2°	0.2	2	40	4
2JJTB 002 020 025	0.1R X 0.2	2°	0.2	2.5	40	4
2JJTB 002 030 015	0.1R X 0.2	3°	0.2	1.5	40	4
2JJTB 002 030 020	0.1R X 0.2	3°	0.2	2	40	4
2JJTB 002 030 025	0.1R X 0.2	3°	0.2	2.5	40	4
2JJTB 002 050 020	0.1R X 0.2	5°	0.2	2	40	4
2JJTB 003 003 030	0.15R X 0.3	0° 30	0.3	3	40	4
2JJTB 003 010 020	0.15R X 0.3	1°	0.3	2	40	4
2JJTB 003 010 030	0.15R X 0.3	1°	0.3	3	40	4
2JJTB 003 010 040	0.15R X 0.3	1°	0.3	4	40	4
2JJTB 003 010 050	0.15R X 0.3	1°	0.3	5	40	4
2JJTB 003 013 020	0.15R X 0.3	1° 30	0.3	2	40	4
2JJTB 003 013 030	0.15R X 0.3	1° 30	0.3	3	40	4
2JJTB 003 013 040	0.15R X 0.3	1° 30	0.3	4	40	4
2JJTB 003 013 050	0.15R X 0.3	1° 30	0.3	5	40	4
2JJTB 003 020 020	0.15R X 0.3	2°	0.3	2	40	4
2JJTB 003 020 030	0.15R X 0.3	2°	0.3	3	40	4
2JJTB 003 020 040	0.15R X 0.3	2°	0.3	4	40	4
2JJTB 003 020 050	0.15R X 0.3	2°	0.3	5	40	4
2JJTB 003 030 020	0.15R X 0.3	3°	0.3	2	40	4
2JJTB 003 030 030	0.15R X 0.3	3°	0.3	3	40	4
2JJTB 003 030 040	0.15R X 0.3	3°	0.3	4	40	4
2JJTB 003 030 050	0.15R X 0.3	3°	0.3	5	40	4
2JJTB 003 050 050	0.15R X 0.3	5°	0.3	5	40	4
2JJTB 004 003 020	0.2R X 0.4	0° 30	0.4	2	40	4
2JJTB 004 003 030	0.2R X 0.4	0° 30	0.4	3	40	4
2JJTB 004 003 040	0.2R X 0.4	0° 30	0.4	4	40	4
2JJTB 004 003 050	0.2R X 0.4	0° 30	0.4	5	40	4
2JJTB 004 003 060	0.2R X 0.4	0° 30	0.4	6	40	4
2JJTB 004 010 020	0.2R X 0.4	1°	0.4	2	40	4
2JJTB 004 010 030	0.2R X 0.4	1°	0.4	3	40	4
2JJTB 004 010 040	0.2R X 0.4	1°	0.4	4	40	4
2JJTB 004 010 050	0.2R X 0.4	1°	0.4	5	40	4
2JJTB 004 010 060	0.2R X 0.4	1°	0.4	6	40	4
2JJTB 004 013 020	0.2R X 0.4	1° 30	0.4	2	40	4
2JJTB 004 013 030	0.2R X 0.4	1° 30	0.4	3	40	4
2JJTB 004 013 040	0.2R X 0.4	1° 30	0.4	4	40	4
2JJTB 004 013 050	0.2R X 0.4	1° 30	0.4	5	40	4
2JJTB 004 013 060	0.2R X 0.4	1° 30	0.4	6	40	4

Numero d'Ordine	R x D	θ	L1	L2	L	d
2JJTB 004 020 020	0.2R X 0.4	2°	0.4	2	40	4
2JJTB 004 020 030	0.2R X 0.4	2°	0.4	3	40	4
2JJTB 004 020 040	0.2R X 0.4	2°	0.4	4	40	4
2JJTB 004 020 050	0.2R X 0.4	2°	0.4	5	40	4
2JJTB 004 020 060	0.2R X 0.4	2°	0.4	6	40	4
2JJTB 005 003 040	0.25R X 0.5	0° 30	0.5	4	45	4
2JJTB 005 003 060	0.25R X 0.5	0° 30	0.5	6	45	4
2JJTB 005 010 040	0.25R X 0.5	1°	0.5	4	45	4
2JJTB 005 010 060	0.25R X 0.5	1°	0.5	6	45	4
2JJTB 005 010 080	0.25R X 0.5	1°	0.5	8	45	4
2JJTB 005 010 100	0.25R X 0.5	1°	0.5	10	45	4
2JJTB 005 013 040	0.25R X 0.5	1° 30	0.5	4	45	4
2JJTB 005 013 060	0.25R X 0.5	1° 30	0.5	6	45	4
2JJTB 005 013 080	0.25R X 0.5	1° 30	0.5	8	45	4
2JJTB 005 013 100	0.25R X 0.5	1° 30	0.5	10	45	4
2JJTB 005 020 040	0.25R X 0.5	2°	0.5	4	45	4
2JJTB 005 020 060	0.25R X 0.5	2°	0.5	6	45	4
2JJTB 005 020 080	0.25R X 0.5	2°	0.5	8	45	4
2JJTB 005 020 100	0.25R X 0.5	2°	0.5	10	45	4
2JJTB 005 030 080	0.25R X 0.5	3°	0.5	8	45	4
2JJTB 005 030 120	0.25R X 0.5	3°	0.5	12	50	4
2JJTB 006 003 040	0.3R X 0.6	0° 30	0.6	4	45	4
2JJTB 006 003 060	0.3R X 0.6	0° 30	0.6	6	45	4
2JJTB 006 003 080	0.3R X 0.6	0° 30	0.6	8	45	4
2JJTB 006 010 040	0.3R X 0.6	1°	0.6	4	45	4
2JJTB 006 010 060	0.3R X 0.6	1°	0.6	6	45	4
2JJTB 006 010 080	0.3R X 0.6	1°	0.6	8	45	4
2JJTB 006 010 100	0.3R X 0.6	1°	0.6	10	45	4
2JJTB 006 010 120	0.3R X 0.6	1°	0.6	12	50	4
2JJTB 006 010 150	0.3R X 0.6	1°	0.6	15	50	4
2JJTB 006 013 040	0.3R X 0.6	1° 30	0.6	4	45	4
2JJTB 006 013 060	0.3R X 0.6	1° 30	0.6	6	45	4
2JJTB 006 013 080	0.3R X 0.6	1° 30	0.6	8	45	4
2JJTB 006 013 100	0.3R X 0.6	1° 30	0.6	10	45	4
2JJTB 006 013 120	0.3R X 0.6	1° 30	0.6	12	50	4
2JJTB 006 020 060	0.3R X 0.6	2°	0.6	6	45	4
2JJTB 006 020 080	0.3R X 0.6	2°	0.6	8	45	4
2JJTB 006 020 100	0.3R X 0.6	2°	0.6	10	45	4
2JJTB 006 030 130	0.3R X 0.6	3°	0.6	13	50	4
2JJTB 008 003 040	0.4R X 0.8	0° 30	0.8	4	45	4
2JJTB 008 003 060	0.4R X 0.8	0° 30	0.8	6	45	4
2JJTB 008 003 080	0.4R X 0.8	0° 30	0.8	8	45	4
2JJTB 008 003 100	0.4R X 0.8	0° 30	0.8	10	45	4
2JJTB 008 003 120	0.4R X 0.8	0° 30	0.8	12	50	4
2JJTB 008 010 040	0.4R X 0.8	1°	0.8	4	45	4
2JJTB 008 010 060	0.4R X 0.8	1°	0.8	6	45	4
2JJTB 008 010 080	0.4R X 0.8	1°	0.8	8	45	4
2JJTB 008 010 100	0.4R X 0.8	1°	0.8	10	45	4

Unità : mm

Numero d'Ordine	R x D	θ	L1	L2	L	d
2JJTB 008 010 120	0.4R X 0.8	1°	0.8	12	50	4
2JJTB 008 010 160	0.4R X 0.8	1°	0.8	16	50	4
2JJTB 008 013 040	0.4R X 0.8	1°30	0.8	4	45	4
2JJTB 008 013 060	0.4R X 0.8	1°30	0.8	6	45	4
2JJTB 008 013 080	0.4R X 0.8	1°30	0.8	8	45	4
2JJTB 008 013 100	0.4R X 0.8	1°30	0.8	10	45	4
2JJTB 008 013 120	0.4R X 0.8	1°30	0.8	12	50	4
2JJTB 008 013 160	0.4R X 0.8	1°30	0.8	16	50	4
2JJTB 008 020 080	0.4R X 0.8	2°	0.8	8	50	4
2JJTB 008 020 100	0.4R X 0.8	2°	0.8	10	50	4
2JJTB 008 020 120	0.4R X 0.8	2°	0.8	12	50	4
2JJTB 008 020 160	0.4R X 0.8	2°	0.8	16	50	4
2JJTB 008 030 080	0.4R X 0.8	3°	0.8	8	50	4
2JJTB 008 030 120	0.4R X 0.8	3°	0.8	12	50	4
2JJTB 008 030 160	0.4R X 0.8	3°	0.8	16	50	4
2JJTB 010 003 060	0.5R X 1	0°30	1	6	50	4
2JJTB 010 003 080	0.5R X 1	0°30	1	8	50	4
2JJTB 010 003 100	0.5R X 1	0°30	1	10	50	4
2JJTB 010 003 150	0.5R X 1	0°30	1	15	50	4
2JJTB 010 003 200	0.5R X 1	0°30	1	20	60	4
2JJTB 010 003 250	0.5R X 1	0°30	1	25	60	4
2JJTB 010 003 300	0.5R X 1	0°30	1	30	70	4
2JJTB 010 010 060	0.5R X 1	1°	1	6	50	4
2JJTB 010 010 080	0.5R X 1	1°	1	8	50	4
2JJTB 010 010 100	0.5R X 1	1°	1	10	50	4
2JJTB 010 010 150	0.5R X 1	1°	1	15	50	4
2JJTB 010 010 200	0.5R X 1	1°	1	20	50	4
2JJTB 010 010 250	0.5R X 1	1°	1	25	60	4
2JJTB 010 010 300	0.5R X 1	1°	1	30	70	4
2JJTB 010 010 350	0.5R X 1	1°	1	35	75	4
2JJTB 010 013 060	0.5R X 1	1°30	1	6	50	4
2JJTB 010 013 080	0.5R X 1	1°30	1	8	50	4
2JJTB 010 013 100	0.5R X 1	1°30	1	10	50	4
2JJTB 010 013 150	0.5R X 1	1°30	1	15	50	4
2JJTB 010 013 200	0.5R X 1	1°30	1	20	50	4
2JJTB 010 013 250	0.5R X 1	1°30	1	25	60	4
2JJTB 010 013 300	0.5R X 1	1°30	1	30	70	4
2JJTB 010 020 150	0.5R X 1	2°	1	15	50	4
2JJTB 010 020 200	0.5R X 1	2°	1	20	50	4
2JJTB 010 020 250	0.5R X 1	2°	1	25	60	4
2JJTB 010 020 300	0.5R X 1	2°	1	30	70	4
2JJTB 010 030 200	0.5R X 1	3°	1	20	50	4
2JJTB 010 030 300	0.5R X 1	3°	1	30	70	6
2JJTB 010 030 400	0.5R X 1	3°	1	40	80	6
2JJTB 010 050 230	0.5R X 1	5°	1	23	60	6
2JJTB 012 003 080	0.6R X 1.2	0°30	1.2	8	50	4
2JJTB 012 003 120	0.6R X 1.2	0°30	1.2	12	50	4
2JJTB 012 003 180	0.6R X 1.2	0°30	1.2	18	50	4
2JJTB 012 003 240	0.6R X 1.2	0°30	1.2	24	60	4
2JJTB 012 010 080	0.6R X 1.2	1°	1.2	8	50	4
2JJTB 012 010 120	0.6R X 1.2	1°	1.2	12	50	4
2JJTB 012 010 180	0.6R X 1.2	1°	1.2	18	50	4
2JJTB 012 010 240	0.6R X 1.2	1°	1.2	24	60	4
2JJTB 012 013 080	0.6R X 1.2	1°30	1.2	8	50	4
2JJTB 012 013 120	0.6R X 1.2	1°30	1.2	12	50	4
2JJTB 012 013 180	0.6R X 1.2	1°30	1.2	18	50	4
2JJTB 012 013 240	0.6R X 1.2	1°30	1.2	24	60	4
2JJTB 012 020 080	0.6R X 1.2	2°	1.2	8	50	4
2JJTB 012 020 120	0.6R X 1.2	2°	1.2	12	50	4
2JJTB 012 020 180	0.6R X 1.2	2°	1.2	18	50	4
2JJTB 012 020 240	0.6R X 1.2	2°	1.2	24	60	4
2JJTB 015 003 080	0.75R X 1.5	0°30	1.5	8	50	4
2JJTB 015 003 100	0.75R X 1.5	0°30	1.5	10	50	4
2JJTB 015 003 120	0.75R X 1.5	0°30	1.5	12	50	4
2JJTB 015 003 150	0.75R X 1.5	0°30	1.5	15	50	4
2JJTB 015 003 200	0.75R X 1.5	0°30	1.5	20	60	4
2JJTB 015 003 300	0.75R X 1.5	0°30	1.5	30	70	4
2JJTB 015 010 080	0.75R X 1.5	1°	1.5	8	50	4
2JJTB 015 010 100	0.75R X 1.5	1°	1.5	10	50	4
2JJTB 015 010 120	0.75R X 1.5	1°	1.5	12	50	4
2JJTB 015 010 150	0.75R X 1.5	1°	1.5	15	50	4
2JJTB 015 010 200	0.75R X 1.5	1°	1.5	20	60	4
2JJTB 015 010 250	0.75R X 1.5	1°	1.5	25	60	4
2JJTB 015 010 300	0.75R X 1.5	1°	1.5	30	70	4
2JJTB 015 013 080	0.75R X 1.5	1°30	1.5	8	50	4
2JJTB 015 013 100	0.75R X 1.5	1°30	1.5	10	50	4
2JJTB 015 013 120	0.75R X 1.5	1°30	1.5	12	50	4
2JJTB 015 013 150	0.75R X 1.5	1°30	1.5	15	50	4
2JJTB 015 013 200	0.75R X 1.5	1°30	1.5	20	60	4
2JJTB 015 013 250	0.75R X 1.5	1°30	1.5	25	60	4
2JJTB 015 013 300	0.75R X 1.5	1°30	1.5	30	70	4
2JJTB 015 020 100	0.75R X 1.5	2°	1.5	10	50	4
2JJTB 015 020 150	0.75R X 1.5	2°	1.5	15	50	4
2JJTB 015 020 200	0.75R X 1.5	2°	1.5	20	60	4
2JJTB 015 020 300	0.75R X 1.5	2°	1.5	30	70	4
2JJTB 015 030 420	0.75R X 1.5	3°	1.5	42	80	6
2JJTB 015 050 250	0.75R X 1.5	5°	1.5	25	70	6
2JJTB 020 003 080	1R X 2	0°30	2	8	50	4
2JJTB 020 003 120	1R X 2	0°30	2	12	50	4
2JJTB 020 003 160	1R X 2	0°30	2	16	50	4
2JJTB 020 003 200	1R X 2	0°30	2	20	60	4
2JJTB 020 003 300	1R X 2	0°30	2	30	70	4
2JJTB 020 003 400	1R X 2	0°30	2	40	80	4
2JJTB 020 010 080	1R X 2	1°	2	8	50	4
2JJTB 020 010 120	1R X 2	1°	2	12	50	4
2JJTB 020 010 160	1R X 2	1°	2	16	50	4

2JJTB

Fresa Emisferica 2 Tagli Rastremata

New

Unità : mm

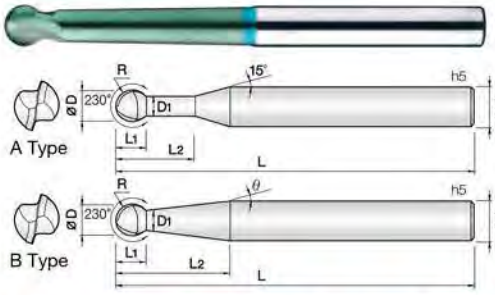
Numero d'Ordine	R x D	θ	L1	L2	L	d
2JJTB 020 010 200	1R X 2	1°	2	20	60	4
2JJTB 020 010 250	1R X 2	1°	2	25	60	4
2JJTB 020 010 300	1R X 2	1°	2	30	70	4
2JJTB 020 010 350	1R X 2	1°	2	35	75	4
2JJTB 020 010 400	1R X 2	1°	2	40	80	4
2JJTB 020 010 500	1R X 2	1°	2	50	90	4
2JJTB 020 013 080	1R X 2	1°30	2	8	50	4
2JJTB 020 013 120	1R X 2	1°30	2	12	50	4
2JJTB 020 013 160	1R X 2	1°30	2	16	50	4
2JJTB 020 013 200	1R X 2	1°30	2	20	60	4
2JJTB 020 013 250	1R X 2	1°30	2	25	60	4
2JJTB 020 013 300	1R X 2	1°30	2	30	70	4
2JJTB 020 013 350	1R X 2	1°30	2	35	75	6
2JJTB 020 013 400	1R X 2	1°30	2	40	80	6
2JJTB 020 013 500	1R X 2	1°30	2	50	90	6
2JJTB 020 020 300	1R X 2	2°	2	30	70	6
2JJTB 020 020 400	1R X 2	2°	2	40	80	6
2JJTB 020 020 500	1R X 2	2°	2	50	90	6
2JJTB 020 030 300	1R X 2	3°	2	30	70	6
2JJTB 020 030 400	1R X 2	3°	2	40	80	6
2JJTB 020 050 250	1R X 2	5°	2	25	60	6
2JJTB 020 050 380	1R X 2	5°	2	38	80	8
2JJTB 030 003 160	1.5R X 3	0°30	3	16	60	6
2JJTB 030 003 200	1.5R X 3	0°30	3	20	65	6
2JJTB 030 003 300	1.5R X 3	0°30	3	30	70	6
2JJTB 030 003 400	1.5R X 3	0°30	3	40	80	6
2JJTB 030 003 500	1.5R X 3	0°30	3	50	90	6
2JJTB 030 010 160	1.5R X 3	1°	3	16	60	6
2JJTB 030 010 200	1.5R X 3	1°	3	20	65	6
2JJTB 030 010 300	1.5R X 3	1°	3	30	70	6
2JJTB 030 010 400	1.5R X 3	1°	3	40	80	6
2JJTB 030 010 500	1.5R X 3	1°	3	50	90	6
2JJTB 030 013 160	1.5R X 3	1°30	3	16	60	6
2JJTB 030 013 200	1.5R X 3	1°30	3	20	65	6
2JJTB 030 013 300	1.5R X 3	1°30	3	30	70	6
2JJTB 030 013 400	1.5R X 3	1°30	3	40	80	6
2JJTB 030 013 500	1.5R X 3	1°30	3	50	90	6
2JJTB 030 020 160	1.5R X 3	2°	3	16	60	6
2JJTB 030 020 200	1.5R X 3	2°	3	20	65	6
2JJTB 030 020 300	1.5R X 3	2°	3	30	70	6
2JJTB 030 020 480	1.5R X 3	2°	3	48	90	6
2JJTB 030 030 300	1.5R X 3	3°	3	30	70	6
2JJTB 030 030 500	1.5R X 3	3°	3	50	90	8
2JJTB 030 050 330	1.5R X 3	5°	3	33	90	8
2JJTB 040 003 600	2R X 4	0°30	4	60	100	6
2JJTB 040 010 500	2R X 4	1°	4	50	90	6
2JJTB 040 010 600	2R X 4	1°	4	60	100	6
2JJTB 040 013 450	2R X 4	1°30	4	45	90	6

Numero d'Ordine	R x D	θ	L1	L2	L	d
2JJTB 040 013 600	2R X 4	1°30	4	60	110	8
2JJTB 040 030 250	2R X 4	3°	4	25	70	6
2JJTB 040 050 290	2R X 4	5°	4	29	90	8
2JJTB 050 013 400	2.5R X 5	1°30	5	40	90	8
2JJTB 050 013 600	2.5R X 5	1°30	5	60	110	8
2JJTB 050 030 400	2.5R X 5	3°	5	40	90	8
2JJTB 060 013 490	3R X 6	1°30	9	49	110	8
2JJTB 060 020 600	3R X 6	2°	9	60	110	10
2JJTB 060 030 290	3R X 6	3°	9	29	90	8
2JJTB 060 050 320	3R X 6	5°	9	32	110	10
2JJTB 080 013 520	4R X 8	1°30	12	52	110	10
2JJTB 080 030 330	4R X 8	3°	12	33	100	10
2JJTB 100 013 540	5R X 10	1°30	18	54	130	12
2JJTB 100 030 370	5R X 10	3°	18	37	110	12
2JJTB 120 013 850	6R X 12	1°30	22	85	160	16
2JJTB 120 030 630	6R X 12	3°	22	63	130	16

2JJSP

Fresa Sferica 2 Tagli 230° per lavorazioni 3D

New



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Tagliente a 230° per molteplici lavorazioni in 3D.
- Vibrazioni ridotte grazie alla speciale geometria.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | R ±0.005 (0.5 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 15° Helix Angle | € List. p.17 | i info p.188

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

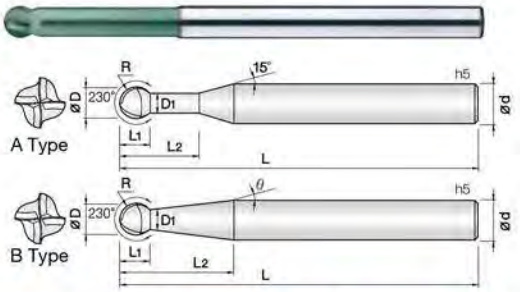
Unità : mm

Numero d'Ordine	R×D	D1	L1	L2	θ	L	T	d
2JJSP 010 040 S06	0.5R X 1	0.91	0.7	4	0°	60	A	6
2JJSP 010 060 S06	0.5R X 1	0.91	0.7	6	0°	60	A	6
2JJSP 010 013 200	0.5R X 1	0.91	0.7	20	1°30	80	B	6
2JJSP 015 060 S06	0.75R X 1.5	1.36	1	6	0°	60	A	6
2JJSP 015 080 S06	0.75R X 1.5	1.36	1	8	0°	60	A	6
2JJSP 015 013 200	0.75R X 1.5	1.36	1	20	1°30	80	B	6
2JJSP 020 060 S06	1R X 2	1.8	1.4	6	0°	60	A	6
2JJSP 020 100 S06	1R X 2	1.8	1.4	10	0°	60	A	6
2JJSP 020 013 200	1R X 2	1.8	1.4	20	1°30	80	B	6
2JJSP 030 100 S06	1.5R X 3	2.7	2.1	10	0°	70	A	6
2JJSP 030 150 S06	1.5R X 3	2.7	2.1	15	0°	70	A	6
2JJSP 030 013 300	1.5R X 3	2.7	2.1	30	1°30	80	B	6
2JJSP 040 120 S06	2R X 4	3.6	2.8	12	0°	70	A	6
2JJSP 040 200 S06	2R X 4	3.6	2.8	20	0°	70	A	6
2JJSP 040 030 250	2R X 4	3.6	2.8	25	3°	80	B	6
2JJSP 050 010 400	2.5R X 5	4.5	3.5	40	1°	90	B	6
2JJSP 060 150 S06	3R X 6	5.4	4.2	15	0°	90	A	6
2JJSP 060 300 S06	3R X 6	5.4	4.2	30	0°	90	A	6
2JJSP 060 010 210	3R X 6	5.4	4.2	21	1°	100	B	6
2JJSP 080 010 280	4R X 8	7.2	5.7	28	1°	100	B	8
2JJSP 100 010 350	5R X 10	9	7.1	35	1°	110	B	10
2JJSP 120 010 420	6R X 12	10.8	8.5	42	1°	120	B	12

4JJSP

Fresa Sferica 4 Tagli 230° per lavorazioni 3D

New



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base SI.
- Tagliente a 230° per molteplici lavorazioni in 3D.
- Vibrazioni ridotte grazie alla speciale geometria.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | UWC 초미립자 | TISIN-S Coating | R ±0.005 (0.5 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 15° Helix Angle | € (List. p.17) | i (info p.188)

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

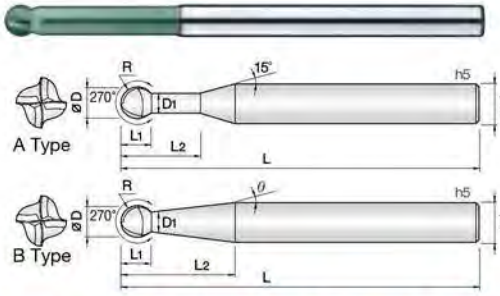
Unità : mm

Numero d'Ordine	R X D	D1	L1	L2	θ	L	T	d
4JJSP 010 040 S06	0.5R X 1	0.91	0.7	4	0°	60	A	6
4JJSP 010 060 S06	0.5R X 1	0.91	0.7	6	0°	60	A	6
4JJSP 010 013 200	0.5R X 1	0.91	0.7	20	1°30	80	B	6
4JJSP 015 060 S06	0.75R X 1.5	1.36	1	6	0°	60	A	6
4JJSP 015 080 S06	0.75R X 1.5	1.36	1	8	0°	60	A	6
4JJSP 015 013 200	0.75R X 1.5	1.36	1	20	1°30	80	B	6
4JJSP 020 060 S06	1R X 2	1.8	1.4	6	0°	60	A	6
4JJSP 020 100 S06	1R X 2	1.8	1.4	10	0°	60	A	6
4JJSP 020 013 200	1R X 2	1.8	1.4	20	1°30	80	B	6
4JJSP 030 100 S06	1.5R X 3	2.7	2.1	10	0°	70	A	6
4JJSP 030 150 S06	1.5R X 3	2.7	2.1	15	0°	70	A	6
4JJSP 030 013 300	1.5R X 3	2.7	2.1	30	1°30	80	B	6
4JJSP 040 120 S06	2R X 4	3.6	2.8	12	0°	70	A	6
4JJSP 040 200 S06	2R X 4	3.6	2.8	20	0°	70	A	6
4JJSP 040 030 250	2R X 4	3.6	2.8	25	3°	80	B	6
4JJSP 050 010 400	2.5R X 5	4.5	3.5	40	1°	90	B	6
4JJSP 060 150 S06	3R X 6	5.4	4.2	15	0°	90	A	6
4JJSP 060 300 S06	3R X 6	5.4	4.2	30	0°	90	A	6
4JJSP 060 010 210	3R X 6	5.4	4.2	21	1°	100	B	6
4JJSP 080 010 280	4R X 8	7.2	5.7	28	1°	100	B	8
4JJSP 100 010 350	5R X 10	9	7.1	35	1°	110	B	10
4JJSP 120 010 420	6R X 12	10.8	8.5	42	1°	120	B	12

4JJSPM

Fresa Sferica 4 Tagli 270° per lavorazioni 3D

New



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Tagliente a 270° per molteplici lavorazioni in 3D.
- Vibrazioni ridotte grazie alla speciale geometria.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | UWC 초미립자 | TISIN-S Coating | R ±0.005 (0.5 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 15° Helix Angle | € List. p.18 | i info p.188

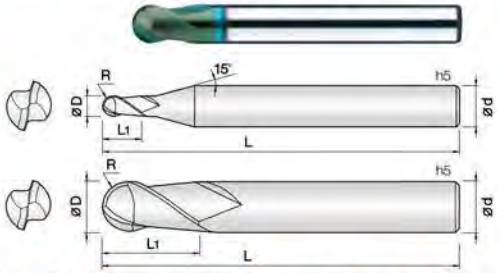
D	Tolleranza
ø1 ~ 5	+0 ~ -0.01mm
ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	D1	L1	L2	θ	L	T	d
4JJSPM 010 040 S06	0.5R X 1	0.7	0.8	4	0°	60	A	6
4JJSPM 010 060 S06	0.5R X 1	0.7	0.8	6	0°	60	A	6
4JJSPM 010 013 200	0.5R X 1	0.7	0.8	20	1°30	80	B	6
4JJSPM 015 060 S06	0.75R X 1.5	1	1.2	6	0°	60	A	6
4JJSPM 015 080 S06	0.75R X 1.5	1	1.2	8	0°	60	A	6
4JJSPM 015 013 200	0.75R X 1.5	1	1.2	20	1°30	80	B	6
4JJSPM 020 060 S06	1R X 2	1.4	1.7	6	0°	60	A	6
4JJSPM 020 100 S06	1R X 2	1.4	1.7	10	0°	60	A	6
4JJSPM 020 013 200	1R X 2	1.4	1.7	20	1°30	80	B	6
4JJSPM 030 100 S06	1.5R X 3	2.1	2.5	10	0°	70	A	6
4JJSPM 030 150 S06	1.5R X 3	2.1	2.5	15	0°	70	A	6
4JJSPM 030 013 300	1.5R X 3	2.1	2.5	30	1°30	80	B	6
4JJSPM 040 120 S06	2R X 4	2.8	3.4	12	0°	70	A	6
4JJSPM 040 200 S06	2R X 4	2.8	3.4	20	0°	70	A	6
4JJSPM 040 030 250	2R X 4	2.8	3.4	25	3°	80	B	6
4JJSPM 050 010 400	2.5R X 5	3.5	4.2	40	1°	90	B	6
4JJSPM 060 150 S06	3R X 6	4.2	5.1	15	0°	90	A	6
4JJSPM 060 300 S06	3R X 6	4.2	5.1	30	0°	90	A	6
4JJSPM 060 010 210	3R X 6	4.2	5.1	21	1°	100	B	6
4JJSPM 080 010 280	4R X 8	5.6	6.8	28	1°	100	B	8
4JJSPM 100 010 350	5R X 10	7	8.5	35	1°	110	B	10
4JJSPM 120 010 420	6R X 12	8.5	10	42	1°	120	B	12

2JJSB

Fresa Emisferica 2 Tagli Serie Corta



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD TiSiN-S.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superficiale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | R ±0.005 (0.05 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.18 | i info p.185

D	Tolleranza
Ø0.1 ~ 0.15	+0~ -0.005mm
Ø0.2 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

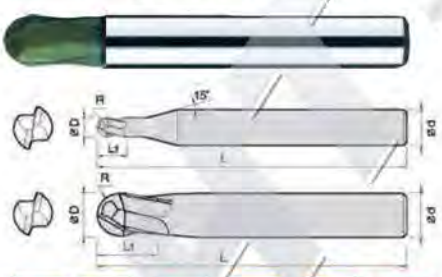
Unità : mm

Numero d'Ordine	R×D	L1	L	d
New 2JJSB 001 001 S04	0.05R X 0.1	0.1	38	4
New 2JJSB 001 0015 S04	0.05R X 0.1	0.15	38	4
New 2JJSB 0015 0015 S04	0.075R X 0.15	0.15	38	4
New 2JJSB 0015 002 S04	0.075R X 0.15	0.2	38	4
2JJSB 002 002 S04	0.1R X 0.2	0.2	38	4
New 2JJSB 002 003 S04	0.1R X 0.2	0.3	38	4
2JJSB 003 003 S04	0.15R X 0.3	0.3	38	4
New 2JJSB 003 0045 S04	0.15R X 0.3	0.45	38	4
2JJSB 004 004 S04	0.2R X 0.4	0.4	38	4
New 2JJSB 004 006 S04	0.2R X 0.4	0.6	38	4
2JJSB 005 005 S04	0.25R X 0.5	0.5	38	4
New 2JJSB 005 0075 S04	0.25R X 0.5	0.75	38	4
2JJSB 006 006 S04	0.3R X 0.6	0.6	38	4
New 2JJSB 006 009 S04	0.3R X 0.6	0.9	38	4
2JJSB 007 007 S04	0.35R X 0.7	0.7	38	4
New 2JJSB 007 010 S04	0.35R X 0.7	1	38	4
2JJSB 008 008 S04	0.4R X 0.8	0.8	38	4
New 2JJSB 008 012 S04	0.4R X 0.8	1.2	38	4
2JJSB 009 009 S04	0.45R X 0.9	0.9	38	4
New 2JJSB 009 013 S04	0.45R X 0.9	1.3	38	4
2JJSB 010 010 S04	0.5R X 1	1	40	4
New 2JJSB 010 010 S06	0.5R X 1	1	40	6
New 2JJSB 010 015 S04	0.5R X 1	1.5	40	4
New 2JJSB 010 015 S06	0.5R X 1	1.5	40	6
2JJSB 015 015 S04	0.75R X 1.5	1.5	40	4

Numero d'Ordine	R×D	L1	L	d
New 2JJSB 015 015 S06	0.75R X 1.5	1.5	40	6
New 2JJSB 015 023 S04	0.75R X 1.5	2.3	40	4
New 2JJSB 015 023 S06	0.75R X 1.5	2.3	40	6
2JJSB 020 020 S04	1R X 2	2	45	4
New 2JJSB 020 020 S06	1R X 2	2	45	6
New 2JJSB 020 030 S04	1R X 2	3	45	4
New 2JJSB 020 030 S06	1R X 2	3	45	6
2JJSB 030 030 S04	1.5R X 3	3	45	4
2JJSB 030 030 S06	1.5R X 3	3	45	6
New 2JJSB 030 045 S04	1.5R X 3	4.5	45	4
New 2JJSB 030 045 S06	1.5R X 3	4.5	45	6
2JJSB 040 040 S04	2R X 4	4	45	4
2JJSB 040 040 S06	2R X 4	4	45	6
New 2JJSB 040 060 S04	2R X 4	6	45	4
New 2JJSB 040 060 S06	2R X 4	6	45	6
2JJSB 050 050 S06	2.5R X 5	5	50	6
New 2JJSB 050 075 S06	2.5R X 5	7.5	50	6
2JJSB 060 060 050	3R X 6	6	50	6
New 2JJSB 060 080 055	3R X 6	8	55	6
2JJSB 080 080 050	4R X 8	8	50	8
New 2JJSB 080 110 060	4R X 8	11	60	8
2JJSB 100 100 060	5R X 10	10	60	10
New 2JJSB 100 130 060	5R X 10	13	60	10
2JJSB 120 120 060	6R X 12	12	60	12
New 2JJSB 120 150 060	6R X 12	15	60	12

2JJXB

Fresa Emisferica 2 Tagli a 15°



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD TiSiN-S.
- Nuova geometria per lavorazioni gravose.
- Fresa indicata per finitura su materiali duri.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | R ±0.005 (0.05 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 15° Helix Angle | € List. p.18

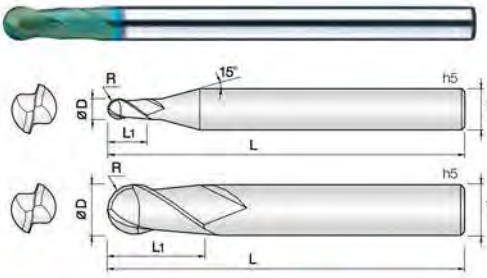
D	Tolleranza
<= Ø 6	+0~ -0.01mm
> Ø 6	+0~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
2JJXB 010 010 S06	0.5R X 1	1	50	6
2JJXB 015 015 S06	0.75R X 1.5	1.5	50	6
2JJXB 020 020 S06	1.0R X 2	2	50	6
2JJXB 030 030 S06	1.5R X 3	3	70	6
2JJXB 040 040 S06	2.0R X 4	4	70	6

Numero d'Ordine	R×D	L1	L	d
2JJXB 050 050 S06	2.5R X 5	5	70	6
2JJXB 060 060 S06	3.0R X 6	6	80	6
2JJXB 080 080 S08	4.0R X 8	8	100	8
2JJXB 100 100 S10	5.0R X 10	10	100	10
2JJXB 120 120 S12	6.0R X 12	12	110	12

2JJB Fresa Emisferica 2 Tagli Serie Standard



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD TiSiN-S.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superficiale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | R ±0.005 (0.05 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.19 | i info p.188

D	Tolleranza
Ø0.1 ~ 0.15	+0~ -0.005mm
Ø0.2 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

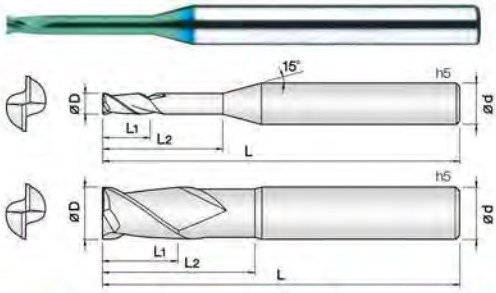
Unità : mm

Numero d'Ordine	R×D	L1	L	d
2JJB 001 002 S04	0.05R X 0.1	0.2	40	4
2JJB 0015 003 S04	0.075R X 0.15	0.3	40	4
2JJB 002 004 S04	0.1R X 0.2	0.4	40	4
2JJB 003 006 S04	0.15R X 0.3	0.6	40	4
2JJB 004 008 S04	0.2R X 0.4	0.8	40	4
2JJB 005 010 S04	0.25R X 0.5	1	45	4
2JJB 006 012 S04	0.3R X 0.6	1.2	45	4
2JJB 007 015 S04	0.35R X 0.7	1.5	45	4
2JJB 008 020 S04	0.4R X 0.8	2	45	4
2JJB 009 020 S04	0.45R X 0.9	2	45	4
2JJB 010 025 S04	0.5R X 1	2.5	50	4
2JJB 010 025 S06	0.5R X 1	2.5	50	6
New 2JJB 010 025 070	0.5R X 1	2.5	70	6
2JJB 012 030 S04	0.6R X 1.2	3	50	4
2JJB 015 040 S04	0.75R X 1.5	4	50	4
2JJB 015 040 S06	0.75R X 1.5	4	50	6
New 2JJB 015 040 070	0.75R X 1.5	4	70	6
2JJB 020 050 S04	1R X 2	5	50	4
2JJB 020 050 S06	1R X 2	5	50	6
New 2JJB 020 050 075	1R X 2	5	75	6
2JJB 025 060 S04	1.25R X 2.5	6	50	4
New 2JJB 025 060 S06	1.25R X 2.5	6	75	6
2JJB 030 080 S04	1.5R X 3	8	50	4
2JJB 030 080 S06	1.5R X 3	8	60	6
New 2JJB 030 080 080	1.5R X 3	8	80	6
2JJB 035 080 S06	1.75R X 3.5	8	60	6
New 2JJB 040 080 S04	2R X 4	8	60	4
2JJB 040 080 080	2R X 4	8	80	4
2JJB 040 080 S06	2R X 4	8	70	6
New 2JJB 040 080 090	2R X 4	8	90	6
2JJB 050 100 S06	2.5R X 5	10	75	6
2JJB 060 100 060	3R X 6	10	60	6
2JJB 060 120 090	3R X 6	12	90	6
2JJB 080 120 060	4R X 8	12	60	8
2JJB 080 140 100	4R X 8	14	100	8
2JJB 100 150 070	5R X 10	15	70	10
2JJB 100 180 100	5R X 10	18	100	10
2JJB 120 180 075	6R X 12	18	75	12
2JJB 120 220 110	6R X 12	22	110	12

Numero d'Ordine	R×D	L1	L	d

2JJRE

Fresa Cilindrica 2 Tagli per Nervature



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | D +0~-0.005 Ø0.1 | D +0~-0.01 Ø0.2~5 | D -0.01~-0.025 Ø6 | 30° Helix Angle | Rinforzato | € List. p.190 | i info p.190

D	Tolleranza
Ø0.1	+0~-0.005mm
Ø0.2~5	+0~-0.01mm
Ø6	-0.01~-0.025mm

Unità : mm

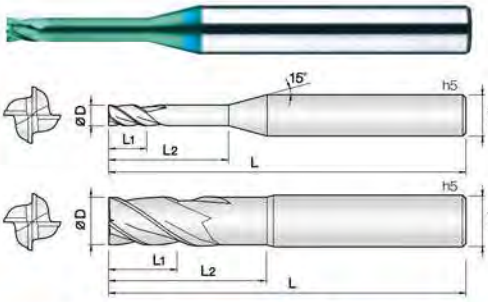
Numero d'Ordine	D	L1	L2	L	d
2JJRE 001 003 S04	0.1	0.3	-	40	4
2JJRE 001 005 S04	0.1	0.5	-	40	4
2JJRE 002 005 S04	0.2	0.2	0.5	40	4
2JJRE 002 010 S04	0.2	0.2	1	40	4
2JJRE 002 015 S04	0.2	0.2	1.5	40	4
2JJRE 002 020 S04	0.2	0.2	2	40	4
New 2JJRE 002 025 S04	0.2	0.2	2.5	40	4
New 2JJRE 002 030 S04	0.2	0.2	3	40	4
2JJRE 003 010 S04	0.3	0.3	1	40	4
2JJRE 003 015 S04	0.3	0.3	1.5	40	4
2JJRE 003 020 S04	0.3	0.3	2	40	4
New 2JJRE 003 025 S04	0.3	0.3	2.5	40	4
2JJRE 003 030 S04	0.3	0.3	3	40	4
New 2JJRE 003 035 S04	0.3	0.3	3.5	40	4
New 2JJRE 003 040 S04	0.3	0.3	4	40	4
2JJRE 004 010 S04	0.4	0.4	1	40	4
New 2JJRE 004 015 S04	0.4	0.4	1.5	40	4
2JJRE 004 020 S04	0.4	0.4	2	40	4
New 2JJRE 004 025 S04	0.4	0.4	2.5	40	4
2JJRE 004 030 S04	0.4	0.4	3	40	4
New 2JJRE 004 035 S04	0.4	0.4	3.5	40	4
2JJRE 004 040 S04	0.4	0.4	4	40	4
2JJRE 004 050 S04	0.4	0.4	5	40	4
2JJRE 004 060 S04	0.4	0.4	6	40	4
2JJRE 004 080 S04	0.4	0.5	8	40	4
New 2JJRE 005 010 S04	0.5	0.5	1	40	4
2JJRE 005 020 S04	0.5	0.5	2	40	4
2JJRE 005 030 S04	0.5	0.5	3	40	4
2JJRE 005 040 S04	0.5	0.5	4	40	4
2JJRE 005 050 S04	0.5	0.5	5	40	4
2JJRE 005 060 S04	0.5	0.5	6	40	4
2JJRE 005 080 S04	0.5	0.5	8	45	4
2JJRE 005 100 S04	0.5	0.6	10	45	4
New 2JJRE 006 010 S04	0.6	0.6	1	40	4
2JJRE 006 020 S04	0.6	0.6	2	40	4
2JJRE 006 030 S04	0.6	0.6	3	40	4
2JJRE 006 040 S04	0.6	0.6	4	40	4
2JJRE 006 050 S04	0.6	0.6	5	40	4
2JJRE 006 060 S04	0.6	0.6	6	40	4
2JJRE 006 080 S04	0.6	0.6	8	45	4
2JJRE 006 100 S04	0.6	0.7	10	45	4
2JJRE 007 020 S04	0.7	0.7	2	40	4
2JJRE 007 040 S04	0.7	0.7	4	40	4
2JJRE 007 060 S04	0.7	0.7	6	40	4
2JJRE 007 080 S04	0.7	0.7	8	45	4
2JJRE 007 100 S04	0.7	0.7	10	45	4
New 2JJRE 008 010 S04	0.8	0.8	1	40	4
2JJRE 008 020 S04	0.8	0.8	2	40	4

Numero d'Ordine	D	L1	L2	L	d
New 2JJRE 008 030 S04	0.8	0.8	3	40	4
2JJRE 008 040 S04	0.8	0.8	4	40	4
New 2JJRE 008 050 S04	0.8	0.8	5	40	4
2JJRE 008 060 S04	0.8	0.8	6	40	4
2JJRE 008 080 S04	0.8	0.8	8	45	4
2JJRE 008 100 S04	0.8	0.8	10	45	4
2JJRE 008 120 S04	0.8	0.8	12	45	4
New 2JJRE 009 040 S04	0.9	0.9	4	40	4
2JJRE 009 060 S04	0.9	0.9	6	40	4
2JJRE 009 080 S04	0.9	0.9	8	45	4
2JJRE 009 100 S04	0.9	0.9	10	45	4
New 2JJRE 010 020 S04	1	1	2	45	4
2JJRE 010 030 S04	1	1	3	45	4
2JJRE 010 040 S04	1	1	4	45	4
2JJRE 010 050 S04	1	1	5	45	4
2JJRE 010 060 S04	1	1	6	45	4
2JJRE 010 080 S04	1	1	8	45	4
2JJRE 010 100 S04	1	1	10	45	4
2JJRE 010 120 S04	1	1	12	50	4
2JJRE 010 140 S04	1	1	14	50	4
2JJRE 010 160 S04	1	1	16	50	4
2JJRE 010 180 S04	1	1	18	50	4
2JJRE 010 200 S04	1	1	20	50	4
New 2JJRE 010 220 S04	1	1	22	60	4
2JJRE 010 250 S04	1	1	25	60	4
New 2JJRE 012 040 S04	1.2	1.2	4	45	4
2JJRE 012 060 S04	1.2	1.2	6	45	4
2JJRE 012 080 S04	1.2	1.2	8	45	4
2JJRE 012 100 S04	1.2	1.2	10	45	4
2JJRE 012 120 S04	1.2	1.2	12	50	4
2JJRE 012 160 S04	1.2	1.2	16	50	4
2JJRE 012 200 S04	1.2	1.2	20	50	4
2JJRE 012 250 S04	1.2	1.2	25	60	4
2JJRE 014 080 S04	1.4	1.4	8	45	4
2JJRE 014 100 S04	1.4	1.4	10	45	4
2JJRE 014 140 S04	1.4	1.4	14	50	4
2JJRE 014 160 S04	1.4	1.4	16	50	4
2JJRE 014 200 S04	1.4	1.4	20	50	4
New 2JJRE 015 040 S04	1.5	1.5	4	45	4
2JJRE 015 060 S04	1.5	1.5	6	45	4
2JJRE 015 080 S04	1.5	1.5	8	45	4
2JJRE 015 100 S04	1.5	1.5	10	50	4
2JJRE 015 120 S04	1.5	1.5	12	50	4
2JJRE 015 140 S04	1.5	1.5	14	50	4
2JJRE 015 160 S04	1.5	1.5	16	50	4
2JJRE 015 180 S04	1.5	1.5	18	50	4
2JJRE 015 200 S04	1.5	1.5	20	50	4
New 2JJRE 015 220 S04	1.5	1.5	22	60	4

Numero d'Ordine	D	L1	L2	L	d
2JJRE 015 250 S04	1.5	1.5	25	60	4
New 2JJRE 016 060 S04	1.6	1.6	6	45	4
2JJRE 016 100 S04	1.6	1.6	10	50	4
2JJRE 016 140 S04	1.6	1.6	14	50	4
2JJRE 016 180 S04	1.6	1.6	18	50	4
2JJRE 018 100 S04	1.8	1.8	10	50	4
2JJRE 018 140 S04	1.8	1.8	14	50	4
2JJRE 018 180 S04	1.8	1.8	18	50	4
2JJRE 020 060 S04	2	2	6	45	4
2JJRE 020 080 S04	2	2	8	45	4
2JJRE 020 100 S04	2	2	10	50	4
2JJRE 020 120 S04	2	2	12	50	4
2JJRE 020 140 S04	2	2	14	50	4
2JJRE 020 160 S04	2	2	16	50	4
2JJRE 020 180 S04	2	2	18	50	4
2JJRE 020 200 S04	2	2	20	50	4
2JJRE 020 220 S04	2	2	22	60	4
2JJRE 020 250 S04	2	2	25	60	4
2JJRE 020 300 S04	2	2	30	60	4
2JJRE 020 350 S04	2	2	35	70	4
2JJRE 020 400 S04	2	2	40	80	4
2JJRE 025 100 S04	2.5	2.5	10	50	4
2JJRE 025 120 S04	2.5	2.5	12	50	4
2JJRE 025 160 S04	2.5	2.5	16	50	4
2JJRE 025 200 S04	2.5	2.5	20	50	4
2JJRE 025 250 S04	2.5	2.5	25	60	4
2JJRE 025 300 S04	2.5	2.5	30	70	4
2JJRE 025 350 S04	2.5	2.5	35	70	4
2JJRE 025 400 S04	2.5	2.5	40	80	4
New 2JJRE 030 060 S06	3	3	6	45	6
New 2JJRE 030 080 S06	3	3	8	45	6
2JJRE 030 100 S06	3	3	10	50	6
2JJRE 030 120 S06	3	3	12	50	6
2JJRE 030 160 S06	3	3	16	55	6
2JJRE 030 200 S06	3	3	20	60	6
2JJRE 030 250 S06	3	3	25	65	6
2JJRE 030 300 S06	3	3	30	70	6
2JJRE 030 350 S06	3	3	35	75	6
2JJRE 030 400 S06	3	3	40	80	6
2JJRE 030 450 S06	3	3	45	90	6
2JJRE 030 500 S06	3	3	50	100	6
New 2JJRE 040 080 S06	4	4	8	50	6
2JJRE 040 100 S06	4	4	10	50	6
2JJRE 040 120 S06	4	4	12	50	6
2JJRE 040 160 S06	4	4	16	55	6
2JJRE 040 200 S06	4	4	20	60	6
2JJRE 040 250 S06	4	4	25	65	6
2JJRE 040 300 S06	4	4	30	70	6

Numero d'Ordine	D	L1	L2	L	d
2JJRE 040 350 S06	4	4	35	75	6
2JJRE 040 400 S06	4	4	40	80	6
2JJRE 040 450 S06	4	4	45	90	6
2JJRE 040 500 S06	4	4	50	100	6
2JJRE 050 160 S06	5	6	16	60	6
2JJRE 050 200 S06	5	6	20	60	6
2JJRE 050 250 S06	5	6	25	65	6
2JJRE 050 300 S06	5	6	30	70	6
2JJRE 050 350 S06	5	6	35	75	6
2JJRE 050 400 S06	5	6	40	80	6
2JJRE 050 500 S06	5	6	50	100	6
2JJRE 060 200 S06	6	10	20	60	6
2JJRE 060 300 S06	6	10	30	75	6
2JJRE 060 400 S06	6	10	40	80	6
2JJRE 060 500 S06	6	10	50	90	6
2JJRE 060 600 S06	6	10	60	110	6

4JJRE Fresa Cilindrica 4 Tagli per Nervature



- **Fresa per acciai bonificati e temprati (HRc52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | UWC 초미립자 | TISIN-S Coating | D +0~-0.01 Ø0.8 ~ 5 | D -0.01~-0.025 Ø6 | 30° Helix Angle | Rinforzato | € List. p.22 | i info p.192

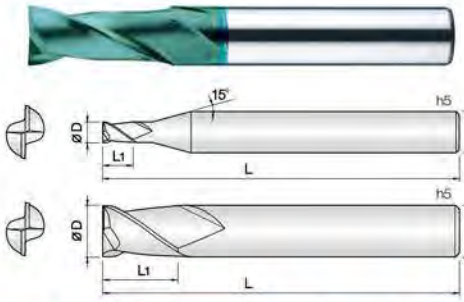
D	Tolleranza
Ø0.8 ~ 5	+0~ -0.01mm
Ø6	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
New 4JJRE 008 010 S04	0.8	0.8	1	40	4
New 4JJRE 008 020 S04	0.8	0.8	2	40	4
New 4JJRE 008 030 S04	0.8	0.8	3	40	4
New 4JJRE 008 040 S04	0.8	0.8	4	40	4
New 4JJRE 008 050 S04	0.8	0.8	5	40	4
New 4JJRE 008 060 S04	0.8	0.8	6	40	4
New 4JJRE 008 080 S04	0.8	0.8	8	40	4
New 4JJRE 010 020 S04	1	1	2	45	4
New 4JJRE 010 030 S04	1	1	3	45	4
4JJRE 010 040 S04	1	1	4	45	4
4JJRE 010 060 S04	1	1	6	45	4
4JJRE 010 080 S04	1	1	8	45	4
4JJRE 010 100 S04	1	1	10	50	4
4JJRE 010 120 S04	1	1	12	50	4
New 4JJRE 010 140 S04	1	1	14	50	4
4JJRE 010 160 S04	1	1	16	50	4
New 4JJRE 012 040 S04	1.2	1.2	4	45	4
4JJRE 012 060 S04	1.2	1.2	6	45	4
4JJRE 012 080 S04	1.2	1.2	8	45	4
4JJRE 012 100 S04	1.2	1.2	10	50	4
4JJRE 012 120 S04	1.2	1.2	12	50	4
4JJRE 012 160 S04	1.2	1.2	16	50	4
New 4JJRE 015 040 S04	1.5	1.5	4	45	4
4JJRE 015 060 S04	1.5	1.5	6	45	4
4JJRE 015 080 S04	1.5	1.5	8	45	4
4JJRE 015 100 S04	1.5	1.5	10	50	4
4JJRE 015 120 S04	1.5	1.5	12	50	4
4JJRE 015 160 S04	1.5	1.5	16	50	4
4JJRE 020 040 S04	2	2	4	45	4
4JJRE 020 060 S04	2	2	6	45	4
4JJRE 020 080 S04	2	2	8	45	4
4JJRE 020 100 S04	2	2	10	50	4
4JJRE 020 120 S04	2	2	12	50	4
New 4JJRE 020 140 S04	2	2	14	50	4
4JJRE 020 160 S04	2	2	16	50	4
New 4JJRE 020 180 S04	2	2	18	50	4
4JJRE 020 200 S04	2	2	20	50	4
4JJRE 025 100 S04	2.5	2.5	10	50	4
4JJRE 025 120 S04	2.5	2.5	12	50	4
4JJRE 025 160 S04	2.5	2.5	16	50	4
4JJRE 025 200 S04	2.5	2.5	20	50	4
4JJRE 025 250 S04	2.5	2.5	25	60	4
New 4JJRE 030 060 S06	3	3	6	45	6
New 4JJRE 030 080 S06	3	3	8	45	6
4JJRE 030 100 S06	3	3	10	50	6
4JJRE 030 120 S06	3	3	12	50	6
4JJRE 030 160 S06	3	3	16	55	6
4JJRE 030 200 S06	3	3	20	60	6

Numero d'Ordine	D	L1	L2	L	d
4JJRE 030 250 S06	3	3	25	65	6
4JJRE 030 300 S06	3	3	30	70	6
New 4JJRE 040 060 S06	4	4	6	50	6
New 4JJRE 040 080 S06	4	4	8	50	6
4JJRE 040 100 S06	4	4	10	50	6
4JJRE 040 120 S06	4	4	12	50	6
4JJRE 040 160 S06	4	4	16	55	6
4JJRE 040 200 S06	4	4	20	60	6
4JJRE 040 250 S06	4	4	25	65	6
4JJRE 040 300 S06	4	4	30	70	6
4JJRE 040 400 S06	4	4	40	80	6
4JJRE 050 160 S06	5	5	16	60	6
4JJRE 050 200 S06	5	5	20	60	6
4JJRE 050 250 S06	5	5	25	65	6
4JJRE 050 300 S06	5	5	30	70	6
4JJRE 050 400 S06	5	5	40	80	6
4JJRE 060 200 S06	6	6	20	60	6
4JJRE 060 300 S06	6	6	30	75	6
4JJRE 060 400 S06	6	6	40	80	6
4JJRE 060 500 S06	6	6	50	90	6

2JJE Fresa Cilindrica 2 Tagli



- **Fresa per acciai bonificati e temprati (HRc65)**
- Ottima resistenza all'usura grazie al rivestimento PVD TiSiN-S.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

D	Tolleranza
Ø0.05 ~ 0.15	+0 ~ −0.005mm
Ø0.2 ~ 5.5	+0 ~ −0.01mm
Ø6 ~ 12	−0.001 ~ −0.025mm
Ø14 ~ 20	−0.015 ~ −0.03mm

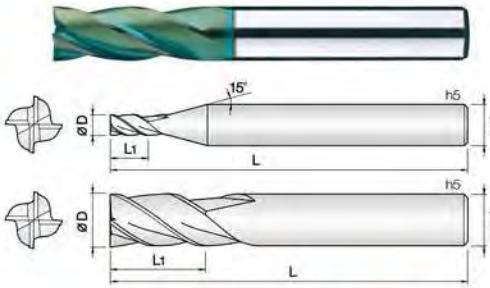
Unità : mm

2 | UWC 초미립자 | TISIN-S Coating | D +0−0.005 Ø0.05~ 0.15 | D +0−0.01 Ø0.2 ~ 5.5 | D −0.01−0.025 Ø6 ~ 12 | D −0.015−0.03 Ø14 ~ 20 | 30° Helix Angle | Rinforzato | List. p.23 | info p.189

Numero d'Ordine	D	L1	L	d
2JJE 0005 0008 S04	0.05	0.08	38	4
2JJE 0006 001 S04	0.06	0.1	38	4
2JJE 0007 0012 S04	0.07	0.12	38	4
2JJE 0008 0015 S04	0.08	0.15	38	4
2JJE 0009 0017 S04	0.09	0.17	38	4
2JJE 001 002 S04	0.1	0.2	38	4
2JJE 0015 003 S04	0.15	0.3	38	4
2JJE 002 004 S04	0.2	0.4	38	4
2JJE 0025 005 S04	0.25	0.5	38	4
2JJE 003 006 S04	0.3	0.6	38	4
2JJE 0035 007 S04	0.35	0.7	38	4
2JJE 004 008 S04	0.4	0.8	38	4
2JJE 0045 009 S04	0.45	0.9	38	4
2JJE 005 010 S04	0.5	1	38	4
2JJE 0055 011 S04	0.55	1.1	38	4
2JJE 006 012 S04	0.6	1.2	38	4
2JJE 0065 013 S04	0.65	1.3	38	4
2JJE 007 014 S04	0.7	1.4	38	4
2JJE 0075 015 S04	0.75	1.5	38	4
2JJE 008 016 S04	0.8	1.6	38	4
2JJE 0085 017 S04	0.85	1.7	38	4
2JJE 009 020 S04	0.9	2	38	4
2JJE 0095 020 S04	0.95	2	38	4
2JJE 010 025 S04	1	2.5	40	4
2JJE 010 025 S06	1	2.5	40	6
2JJE 011 027 S04	1.1	2.7	40	4
2JJE 012 030 S04	1.2	3	40	4
2JJE 013 032 S04	1.3	3.2	40	4
2JJE 014 035 S04	1.4	3.5	40	4
2JJE 015 040 S04	1.5	4	40	4
2JJE 015 040 S06	1.5	4	40	6
2JJE 016 040 S04	1.6	4	40	4
2JJE 017 042 S04	1.7	4.2	40	4
2JJE 018 045 S04	1.8	4.5	40	4
2JJE 019 050 S04	1.9	5	40	4
2JJE 020 060 S04	2	6	40	4
2JJE 020 060 S06	2	6	40	6
2JJE 021 060 S04	2.1	6	40	4
2JJE 022 060 S04	2.2	6	40	4
2JJE 023 060 S04	2.3	6	40	4
2JJE 024 080 S04	2.4	8	45	4
2JJE 025 080 S04	2.5	8	45	4
2JJE 025 080 S06	2.5	8	45	6
2JJE 026 080 S04	2.6	8	45	4
2JJE 027 080 S04	2.7	8	45	4
2JJE 028 080 S04	2.8	8	45	4
2JJE 029 080 S04	2.9	8	45	4
2JJE 030 080 S04	3	8	45	4

Numero d'Ordine	D	L1	L	d
2JJE 030 080 S06	3	8	45	6
2JJE 035 100 S06	3.5	10	45	6
2JJE 040 100 S04	4	10	45	4
2JJE 040 110 S06	4	11	45	6
2JJE 045 110 S06	4.5	11	45	6
2JJE 050 130 S06	5	13	50	6
2JJE 055 130 S06	5.5	13	50	6
2JJE 060 130 S06	6	13	50	6
2JJE 065 160 S08	6.5	16	60	8
2JJE 070 160 S08	7	16	60	8
2JJE 075 160 S08	7.5	16	60	8
2JJE 080 190 S08	8	19	60	8
2JJE 085 190 S10	8.5	19	70	10
2JJE 090 190 S10	9	19	70	10
2JJE 095 190 S10	9.5	19	70	10
2JJE 100 220 S10	10	22	70	10
2JJE 105 220 S12	10.5	22	75	12
2JJE 110 220 S12	11	22	75	12
2JJE 115 220 S12	11.5	22	75	12
2JJE 120 260 S12	12	26	75	12
2JJE 140 260 S14	14	26	80	14
2JJE 140 260 S16	14	26	90	16
2JJE 160 350 S16	16	35	100	16
2JJE 180 350 S18	18	35	100	18
2JJE 200 400 S20	20	40	100	20

4JJE Fresa Cilindrica 4 Tagli Serie Standard



- **Fresa per acciai bonificati e temprati (HRc65)**
- Ottima resistenza all'usura grazie al rivestimento PVD TiSiN-S.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

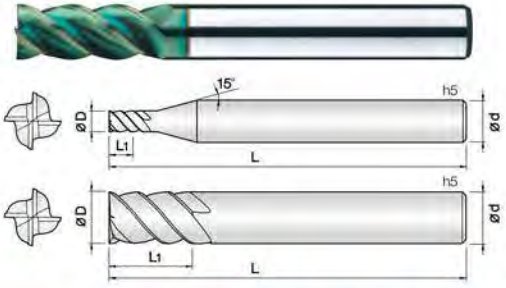
4 | UWC 초미립자 | TISIN-S Coating | D +0~-0.01 Ø0.6 ~ 5.5 | D -0.01~-0.025 Ø6 ~ 12 | 30° Helix Angle | Rinforzato | € List. p.24 | i info p.193

D	Tolleranza
Ø0.6 ~ 5.5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

	Numero d'Ordine	D	L1	L	d
New	4JJE 006 012 S04	0.6	1.2	40	4
New	4JJE 008 016 S04	0.8	1.6	40	4
	4JJE 010 025 S04	1	2.5	40	4
	4JJE 010 025 S06	1	2.5	40	6
	4JJE 012 030 S04	1.2	3	40	4
	4JJE 015 040 S04	1.5	4	40	4
	4JJE 015 040 S06	1.5	4	40	6
	4JJE 020 060 S04	2	6	40	4
	4JJE 020 060 S06	2	6	40	6
	4JJE 025 080 S04	2.5	8	45	4
	4JJE 025 080 S06	2.5	8	45	6
	4JJE 030 080 S04	3	8	45	4
	4JJE 030 080 S06	3	8	45	6
	4JJE 035 100 S06	3.5	10	45	6
	4JJE 040 110 S04	4	11	45	4
	4JJE 040 110 S06	4	11	45	6
	4JJE 045 110 S06	4.5	11	45	6
	4JJE 050 130 S06	5	13	50	6
	4JJE 055 130 S06	5.5	13	50	6
	4JJE 060 130 S06	6	13	50	6
	4JJE 080 190 S08	8	19	60	8
	4JJE 100 220 S10	10	22	70	10
	4JJE 120 260 S12	12	26	75	12

4JJHE Fresa Cilindrica 4 Tagli 45°



- **Fresa per acciai bonificati e temprati (HRc65)**
- Ottima resistenza all'usura grazie al rivestimento PVD TiSiN-S.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Elica a 45° progettata per alte velocità ed avanzamenti.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | UWC 초미립자 | TISIN-S Coating | D +0~-0.01 Ø1 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø16 | 45° Helix Angle | Rinforzato | List. p.24 | info p.193

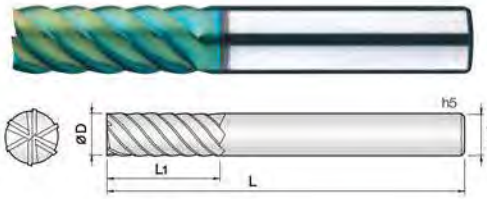
D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	L1	L	d
New 4JJHE 010 015 S06	1	1.5	40	6
4JJHE 010 025 S06	1	2.5	40	6
New 4JJHE 010 035 S06	1	3.5	40	6
New 4JJHE 020 030 S06	2	3	40	6
4JJHE 020 050 S06	2	5	40	6
New 4JJHE 020 080 S06	2	8	40	6
New 4JJHE 025 060 S06	2.5	6	45	6
New 4JJHE 025 080 S06	2.5	8	45	6
New 4JJHE 030 060 S06	3	6	45	6
4JJHE 030 080 S06	3	8	45	6
New 4JJHE 030 120 S06	3	12	50	6
New 4JJHE 040 080 S06	4	8	45	6
4JJHE 040 110 S06	4	11	45	6
New 4JJHE 040 150 S06	4	15	55	6
New 4JJHE 050 100 S06	5	10	50	6
4JJHE 050 130 S06	5	13	50	6
New 4JJHE 050 200 S06	5	20	60	6
4JJHE 060 130 S06	6	13	50	6
New 4JJHE 060 150 S06	6	15	55	6
New 4JJHE 060 200 S06	6	20	60	6
4JJHE 080 200 S08	8	20	60	8
New 4JJHE 080 250 S08	8	25	70	8
4JJHE 100 220 S10	10	22	70	10
New 4JJHE 100 300 S10	10	30	80	10
4JJHE 120 260 S12	12	26	75	12
New 4JJHE 120 350 S12	12	35	90	12
4JJHE 160 350 S16	16	35	90	16
New 4JJHE 160 500 S16	16	50	110	16

6&8JJHE

Fresa Cilindrica 6/8 Tagli 45°



- **Fresa per acciai bonificati e temprati (HRc65)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Elica a 45° progettata per alte velocità ed avanzamenti.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

6 | 8 | UWC 초미립자 | TISIN-S Coating | D +0~-0.01 Ø3 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø16 ~ 25 | 45° Helix Angle | Rinforzato | € List. p.24 | i info p.192

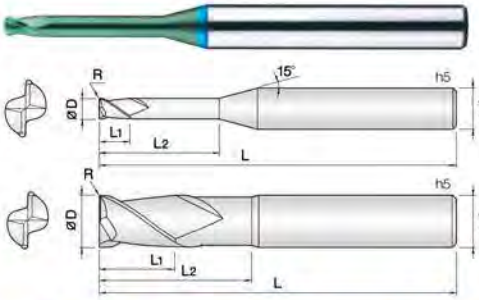
D	Tolleranza
Ø3 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16 ~ 20	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	L1	L	d
New 6JJHE 030 100 S06	3	10	50	6
New 6JJHE 030 150 S06	3	15	50	6
New 6JJHE 040 120 S06	4	12	50	6
New 6JJHE 040 160 S06	4	16	50	6
New 6JJHE 050 150 S06	5	15	50	6
New 6JJHE 050 200 S06	5	20	60	6
6JJHE 060 150 S06	6	15	50	6
6JJHE 060 200 S06	6	20	60	6
New 6JJHE 060 250 S06	6	25	65	6
New 6JJHE 060 300 S06	6	30	70	6
New 6JJHE 060 350 S06	6	35	75	6
6JJHE 080 200 S08	8	20	60	8
6JJHE 080 250 S08	8	25	65	8
New 6JJHE 080 300 S08	8	30	75	8
6JJHE 080 350 S08	8	35	80	8
New 6JJHE 080 400 S08	8	40	90	8
New 6JJHE 080 450 S08	8	45	100	8
New 6JJHE 080 500 S08	8	50	100	8
6JJHE 100 250 S10	10	25	70	10
6JJHE 100 350 S10	10	35	90	10
New 6JJHE 100 450 S10	10	45	100	10
New 6JJHE 100 500 S10	10	50	100	10
New 6JJHE 100 600 S10	10	60	110	10
6JJHE 120 300 S12	12	30	80	12
6JJHE 120 400 S12	12	40	90	12
New 6JJHE 120 500 S12	12	50	100	12
New 6JJHE 120 600 S12	12	60	110	12
New 6JJHE 120 700 S12	12	70	120	12
New 6JJHE 160 350 S16	16	35	90	16
6JJHE 160 500 S16	16	50	110	16
6JJHE 160 650 S16	16	65	120	16
New 6JJHE 160 800 S16	16	80	150	16
New 6JJHE 160 900 S16	16	90	160	16
New 6JJHE 160 1000 S16	16	100	160	16
New 6JJHE 200 450 S20	20	45	100	20
6JJHE 200 600 S20	20	60	120	20
6JJHE 200 800 S20	20	80	150	20
New 6JJHE 200 900 S20	20	90	160	20
New 6JJHE 200 1000 S20	20	100	160	20
New 6JJHE 200 1100 S20	20	110	170	20
New 6JJHE 200 1200 S20	20	120	180	20
New 8JJHE 250 1000 S25	25	100	160	25
New 8JJHE 250 1300 S25	25	130	200	25

2JJCR

Fresa Torica 2 Tagli per Nervature



- **Fresa per acciai bonificati e temprati (HRc68)**
- Ottima resistenza all'usura grazie al rivestimento PTiSiN-S.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 30° Helix Angle | € List. p.25 | i info p.194

D	Tolleranza
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
New 2JJCR 002 0002 005	0.2 X R0.02	0.2	0.5	40	4
2JJCR 002 0002 010	0.2 X R0.02	0.2	1	40	4
2JJCR 002 0002 015	0.2 X R0.02	0.2	1.5	40	4
New 2JJCR 002 0005 005	0.2 X R0.05	0.2	0.5	40	4
2JJCR 002 0005 010	0.2 X R0.05	0.2	1	40	4
2JJCR 002 0005 015	0.2 X R0.05	0.2	1.5	40	4
New 2JJCR 003 0002 010	0.3 X R0.02	0.3	1	40	4
New 2JJCR 003 0002 020	0.3 X R0.02	0.3	2	40	4
New 2JJCR 003 0002 030	0.3 X R0.02	0.3	3	40	4
2JJCR 003 0005 010	0.3 X R0.05	0.3	1	40	4
2JJCR 003 0005 020	0.3 X R0.05	0.3	2	40	4
2JJCR 003 0005 030	0.3 X R0.05	0.3	3	40	4
New 2JJCR 004 0002 010	0.4 X R0.02	0.4	1	40	4
New 2JJCR 004 0002 020	0.4 X R0.02	0.4	2	40	4
New 2JJCR 004 0002 030	0.4 X R0.02	0.4	3	40	4
New 2JJCR 004 0002 040	0.4 X R0.02	0.4	4	40	4
2JJCR 004 0005 010	0.4 X R0.05	0.4	1	40	4
2JJCR 004 0005 020	0.4 X R0.05	0.4	2	40	4
2JJCR 004 0005 030	0.4 X R0.05	0.4	3	40	4
2JJCR 004 0005 040	0.4 X R0.05	0.4	4	40	4
2JJCR 004 001 010	0.4 X R0.1	0.4	1	40	4
2JJCR 004 001 015	0.4 X R0.1	0.4	1.5	40	4
2JJCR 004 001 020	0.4 X R0.1	0.4	2	40	4
2JJCR 004 001 030	0.4 X R0.1	0.4	3	40	4
2JJCR 004 001 040	0.4 X R0.1	0.4	4	40	4
New 2JJCR 005 0002 010	0.5 X R0.02	0.5	1	45	4
New 2JJCR 005 0002 015	0.5 X R0.02	0.5	1.5	45	4
New 2JJCR 005 0002 020	0.5 X R0.02	0.5	2	45	4
New 2JJCR 005 0002 025	0.5 X R0.02	0.5	2.5	45	4
New 2JJCR 005 0002 030	0.5 X R0.02	0.5	3	45	4
New 2JJCR 005 0002 040	0.5 X R0.02	0.5	4	45	4
New 2JJCR 005 0002 050	0.5 X R0.02	0.5	5	45	4
New 2JJCR 005 0002 060	0.5 X R0.02	0.5	6	45	4
2JJCR 005 0005 010	0.5 X R0.05	0.5	1	45	4
2JJCR 005 0005 015	0.5 X R0.05	0.5	1.5	45	4
2JJCR 005 0005 020	0.5 X R0.05	0.5	2	45	4
2JJCR 005 0005 025	0.5 X R0.05	0.5	2.5	45	4
2JJCR 005 0005 030	0.5 X R0.05	0.5	3	45	4
2JJCR 005 0005 040	0.5 X R0.05	0.5	4	45	4
2JJCR 005 0005 050	0.5 X R0.05	0.5	5	45	4
2JJCR 005 0005 060	0.5 X R0.05	0.5	6	45	4
2JJCR 005 001 010	0.5 X R0.1	0.5	1	45	4
2JJCR 005 001 015	0.5 X R0.1	0.5	1.5	45	4
2JJCR 005 001 020	0.5 X R0.1	0.5	2	45	4
2JJCR 005 001 025	0.5 X R0.1	0.5	2.5	45	4
2JJCR 005 001 030	0.5 X R0.1	0.5	3	45	4
2JJCR 005 001 040	0.5 X R0.1	0.5	4	45	4
2JJCR 005 001 050	0.5 X R0.1	0.5	5	45	4

Numero d'Ordine	D×R	L1	L2	L	d
2JJCR 005 001 060	0.5 X R0.1	0.5	6	45	4
New 2JJCR 006 0002 020	0.6 X R0.02	0.6	2	45	4
New 2JJCR 006 0002 030	0.6 X R0.02	0.6	3	45	4
New 2JJCR 006 0002 040	0.6 X R0.02	0.6	4	45	4
New 2JJCR 006 0002 060	0.6 X R0.02	0.6	6	45	4
New 2JJCR 006 0002 080	0.6 X R0.02	0.6	8	45	4
2JJCR 006 0005 020	0.6 X R0.05	0.6	2	45	4
2JJCR 006 0005 030	0.6 X R0.05	0.6	3	45	4
2JJCR 006 0005 040	0.6 X R0.05	0.6	4	45	4
2JJCR 006 0005 060	0.6 X R0.05	0.6	6	45	4
2JJCR 006 0005 080	0.6 X R0.05	0.6	8	45	4
2JJCR 006 001 020	0.6 X R0.1	0.6	2	45	4
2JJCR 006 001 030	0.6 X R0.1	0.6	3	45	4
2JJCR 006 001 040	0.6 X R0.1	0.6	4	45	4
2JJCR 006 001 060	0.6 X R0.1	0.6	6	45	4
2JJCR 006 001 080	0.6 X R0.1	0.6	8	45	4
2JJCR 007 001 020	0.7 X R0.1	0.7	2	45	4
2JJCR 007 001 040	0.7 X R0.1	0.7	4	45	4
2JJCR 007 001 060	0.7 X R0.1	0.7	6	45	4
New 2JJCR 008 0002 020	0.8 X R0.02	0.8	2	45	4
New 2JJCR 008 0002 040	0.8 X R0.02	0.8	4	45	4
New 2JJCR 008 0002 060	0.8 X R0.02	0.8	6	45	4
New 2JJCR 008 0002 080	0.8 X R0.02	0.8	8	45	4
New 2JJCR 008 0005 020	0.8 X R0.05	0.8	2	45	4
New 2JJCR 008 0005 040	0.8 X R0.05	0.8	4	45	4
New 2JJCR 008 0005 060	0.8 X R0.05	0.8	6	45	4
New 2JJCR 008 0005 080	0.8 X R0.05	0.8	8	45	4
2JJCR 008 001 020	0.8 X R0.1	0.8	2	45	4
2JJCR 008 001 040	0.8 X R0.1	0.8	4	45	4
2JJCR 008 001 060	0.8 X R0.1	0.8	6	45	4
2JJCR 008 001 080	0.8 X R0.1	0.8	8	45	4
2JJCR 008 002 020	0.8 X R0.2	0.8	2	45	4
2JJCR 008 002 040	0.8 X R0.2	0.8	4	45	4
2JJCR 008 002 060	0.8 X R0.2	0.8	6	45	4
2JJCR 008 002 080	0.8 X R0.2	0.8	8	45	4
New 2JJCR 010 0002 040	1 X R0.02	1	4	45	4
New 2JJCR 010 0002 060	1 X R0.02	1	6	45	4
New 2JJCR 010 0002 080	1 X R0.02	1	8	45	4
New 2JJCR 010 0002 100	1 X R0.02	1	10	50	4
New 2JJCR 010 0002 120	1 X R0.02	1	12	50	4
New 2JJCR 010 0002 160	1 X R0.02	1	16	50	4
New 2JJCR 010 0002 200	1 X R0.02	1	20	50	4
New 2JJCR 010 0005 040	1 X R0.05	1	4	45	4
New 2JJCR 010 0005 060	1 X R0.05	1	6	45	4
New 2JJCR 010 0005 080	1 X R0.05	1	8	45	4
New 2JJCR 010 0005 100	1 X R0.05	1	10	50	4
New 2JJCR 010 0005 120	1 X R0.05	1	12	50	4
New 2JJCR 010 0005 160	1 X R0.05	1	16	50	4

2JJCR Fresa Torica 2 Tagli per Nervature

Unità : mm

	Numero d'Ordine	D×R	L1	L2	L	d
New	2JJCR 010 0005 200	1 X R0.05	1	20	50	4
	2JJCR 010 001 040	1 X R0.1	1	4	45	4
	2JJCR 010 001 060	1 X R0.1	1	6	45	4
	2JJCR 010 001 080	1 X R0.1	1	8	45	4
	2JJCR 010 001 100	1 X R0.1	1	10	50	4
	2JJCR 010 001 120	1 X R0.1	1	12	50	4
	2JJCR 010 001 160	1 X R0.1	1	16	50	4
	2JJCR 010 001 200	1 X R0.1	1	20	50	4
	2JJCR 010 002 040	1 X R0.2	1	4	45	4
	2JJCR 010 002 060	1 X R0.2	1	6	45	4
	2JJCR 010 002 080	1 X R0.2	1	8	45	4
	2JJCR 010 002 100	1 X R0.2	1	10	50	4
	2JJCR 010 002 120	1 X R0.2	1	12	50	4
	2JJCR 010 002 160	1 X R0.2	1	16	50	4
	2JJCR 010 002 200	1 X R0.2	1	20	50	4
	2JJCR 010 003 040	1 X R0.3	1	4	45	4
	2JJCR 010 003 060	1 X R0.3	1	6	45	4
	2JJCR 010 003 080	1 X R0.3	1	8	45	4
	2JJCR 010 003 100	1 X R0.3	1	10	50	4
	2JJCR 010 003 120	1 X R0.3	1	12	50	4
	2JJCR 010 003 160	1 X R0.3	1	16	50	4
	2JJCR 010 003 200	1 X R0.3	1	20	50	4
New	2JJCR 012 0002 040	1.2 X R0.02	1.2	4	45	4
New	2JJCR 012 0002 060	1.2 X R0.02	1.2	6	45	4
New	2JJCR 012 0002 080	1.2 X R0.02	1.2	8	45	4
New	2JJCR 012 0002 100	1.2 X R0.02	1.2	10	50	4
New	2JJCR 012 0002 120	1.2 X R0.02	1.2	12	50	4
New	2JJCR 012 0002 160	1.2 X R0.02	1.2	16	50	4
New	2JJCR 012 0002 200	1.2 X R0.02	1.2	20	50	4
New	2JJCR 012 0005 040	1.2 X R0.05	1.2	4	45	4
New	2JJCR 012 0005 060	1.2 X R0.05	1.2	6	45	4
New	2JJCR 012 0005 080	1.2 X R0.05	1.2	8	45	4
New	2JJCR 012 0005 100	1.2 X R0.05	1.2	10	50	4
New	2JJCR 012 0005 120	1.2 X R0.05	1.2	12	50	4
New	2JJCR 012 0005 160	1.2 X R0.05	1.2	16	50	4
New	2JJCR 012 0005 200	1.2 X R0.05	1.2	20	50	4
	2JJCR 012 001 040	1.2 X R0.1	1.2	4	45	4
	2JJCR 012 001 060	1.2 X R0.1	1.2	6	45	4
	2JJCR 012 001 080	1.2 X R0.1	1.2	8	45	4
	2JJCR 012 001 100	1.2 X R0.1	1.2	10	50	4
	2JJCR 012 001 120	1.2 X R0.1	1.2	12	50	4
	2JJCR 012 001 160	1.2 X R0.1	1.2	16	50	4
	2JJCR 012 001 200	1.2 X R0.1	1.2	20	50	4
	2JJCR 012 002 040	1.2 X R0.2	1.2	4	45	4
	2JJCR 012 002 060	1.2 X R0.2	1.2	6	45	4
	2JJCR 012 002 080	1.2 X R0.2	1.2	8	45	4
	2JJCR 012 002 100	1.2 X R0.2	1.2	10	50	4
	2JJCR 012 002 120	1.2 X R0.2	1.2	12	50	4
	2JJCR 012 002 160	1.2 X R0.2	1.2	16	50	4
	2JJCR 012 002 200	1.2 X R0.2	1.2	20	50	4
	2JJCR 012 003 040	1.2 X R0.3	1.2	4	45	4
	2JJCR 012 003 060	1.2 X R0.3	1.2	6	45	4
	2JJCR 012 003 080	1.2 X R0.3	1.2	8	45	4
	2JJCR 012 003 100	1.2 X R0.3	1.2	10	50	4
	2JJCR 012 003 120	1.2 X R0.3	1.2	12	50	4
	2JJCR 012 003 160	1.2 X R0.3	1.2	16	50	4
	2JJCR 012 003 200	1.2 X R0.3	1.2	20	50	4
New	2JJCR 015 0002 040	1.5 X R0.02	1.5	4	45	4
New	2JJCR 015 0002 060	1.5 X R0.02	1.5	6	45	4
New	2JJCR 015 0002 080	1.5 X R0.02	1.5	8	45	4
New	2JJCR 015 0002 100	1.5 X R0.02	1.5	10	50	4
New	2JJCR 015 0002 120	1.5 X R0.02	1.5	12	50	4
New	2JJCR 015 0002 160	1.5 X R0.02	1.5	16	50	4

	Numero d'Ordine	D×R	L1	L2	L	d
New	2JJCR 015 0002 200	1.5 X R0.02	1.5	20	50	4
New	2JJCR 015 0005 040	1.5 X R0.05	1.5	4	45	4
New	2JJCR 015 0005 060	1.5 X R0.05	1.5	6	45	4
New	2JJCR 015 0005 080	1.5 X R0.05	1.5	8	45	4
New	2JJCR 015 0005 100	1.5 X R0.05	1.5	10	50	4
New	2JJCR 015 0005 120	1.5 X R0.05	1.5	12	50	4
New	2JJCR 015 0005 160	1.5 X R0.05	1.5	16	50	4
New	2JJCR 015 0005 200	1.5 X R0.05	1.5	20	50	4
	2JJCR 015 001 040	1.5 X R0.1	1.5	4	45	4
	2JJCR 015 001 060	1.5 X R0.1	1.5	6	45	4
	2JJCR 015 001 080	1.5 X R0.1	1.5	8	45	4
	2JJCR 015 001 100	1.5 X R0.1	1.5	10	50	4
	2JJCR 015 001 120	1.5 X R0.1	1.5	12	50	4
	2JJCR 015 001 160	1.5 X R0.1	1.5	16	50	4
	2JJCR 015 001 200	1.5 X R0.1	1.5	20	50	4
	2JJCR 015 002 040	1.5 X R0.2	1.5	4	45	4
	2JJCR 015 002 060	1.5 X R0.2	1.5	6	45	4
	2JJCR 015 002 080	1.5 X R0.2	1.5	8	45	4
	2JJCR 015 002 100	1.5 X R0.2	1.5	10	50	4
	2JJCR 015 002 120	1.5 X R0.2	1.5	12	50	4
	2JJCR 015 002 160	1.5 X R0.2	1.5	16	50	4
	2JJCR 015 002 200	1.5 X R0.2	1.5	20	50	4
	2JJCR 015 003 040	1.5 X R0.3	1.5	4	45	4
	2JJCR 015 003 060	1.5 X R0.3	1.5	6	45	4
	2JJCR 015 003 080	1.5 X R0.3	1.5	8	45	4
	2JJCR 015 003 100	1.5 X R0.3	1.5	10	50	4
	2JJCR 015 003 120	1.5 X R0.3	1.5	12	50	4
	2JJCR 015 003 160	1.5 X R0.3	1.5	16	50	4
	2JJCR 015 003 200	1.5 X R0.3	1.5	20	50	4
	2JJCR 015 005 040	1.5 X R0.5	1.5	4	45	4
	2JJCR 015 005 060	1.5 X R0.5	1.5	6	45	4
	2JJCR 015 005 080	1.5 X R0.5	1.5	8	45	4
	2JJCR 015 005 100	1.5 X R0.5	1.5	10	50	4
	2JJCR 015 005 120	1.5 X R0.5	1.5	12	50	4
	2JJCR 015 005 160	1.5 X R0.5	1.5	16	50	4
	2JJCR 015 005 200	1.5 X R0.5	1.5	20	50	4
New	2JJCR 020 0002 060	2 X R0.02	2	6	45	4
New	2JJCR 020 0002 080	2 X R0.02	2	8	45	4
New	2JJCR 020 0002 100	2 X R0.02	2	10	50	4
New	2JJCR 020 0002 120	2 X R0.02	2	12	50	4
New	2JJCR 020 0002 160	2 X R0.02	2	16	50	4
New	2JJCR 020 0002 200	2 X R0.02	2	20	50	4
New	2JJCR 020 0002 250	2 X R0.02	2	25	60	4
New	2JJCR 020 0005 060	2 X R0.05	2	6	45	4
New	2JJCR 020 0005 080	2 X R0.05	2	8	45	4
New	2JJCR 020 0005 100	2 X R0.05	2	10	50	4
New	2JJCR 020 0005 120	2 X R0.05	2	12	50	4
New	2JJCR 020 0005 160	2 X R0.05	2	16	50	4
New	2JJCR 020 0005 200	2 X R0.05	2	20	50	4
New	2JJCR 020 0005 250	2 X R0.05	2	25	60	4
	2JJCR 020 001 060	2 X R0.1	2	6	45	4
	2JJCR 020 001 080	2 X R0.1	2	8	45	4
	2JJCR 020 001 100	2 X R0.1	2	10	50	4
	2JJCR 020 001 120	2 X R0.1	2	12	50	4
	2JJCR 020 001 160	2 X R0.1	2	16	50	4
	2JJCR 020 001 200	2 X R0.1	2	20	50	4
	2JJCR 020 001 250	2 X R0.1	2	25	60	4
	2JJCR 020 002 060	2 X R0.2	2	6	45	4
	2JJCR 020 002 080	2 X R0.2	2	8	45	4
	2JJCR 020 002 100	2 X R0.2	2	10	50	4
	2JJCR 020 002 120	2 X R0.2	2	12	50	4
	2JJCR 020 002 160	2 X R0.2	2	16	50	4
	2JJCR 020 002 200	2 X R0.2	2	20	50	4

2JJCR Fresa Torica 2 Tagli per Nervature

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
2JJCR 020 002 250	2 X R0.2	2	25	60	4
2JJCR 020 003 060	2 X R0.3	2	6	45	4
2JJCR 020 003 080	2 X R0.3	2	8	45	4
2JJCR 020 003 100	2 X R0.3	2	10	50	4
2JJCR 020 003 120	2 X R0.3	2	12	50	4
2JJCR 020 003 160	2 X R0.3	2	16	50	4
2JJCR 020 003 200	2 X R0.3	2	20	50	4
2JJCR 020 003 250	2 X R0.3	2	25	60	4
2JJCR 020 005 060	2 X R0.5	2	6	45	4
2JJCR 020 005 080	2 X R0.5	2	8	45	4
2JJCR 020 005 100	2 X R0.5	2	10	50	4
2JJCR 020 005 120	2 X R0.5	2	12	50	4
2JJCR 020 005 160	2 X R0.5	2	16	50	4
2JJCR 020 005 200	2 X R0.5	2	20	50	4
2JJCR 020 005 250	2 X R0.5	2	25	60	4
2JJCR 025 001 100	2.5 X R0.1	2.5	10	50	4
2JJCR 025 001 160	2.5 X R0.1	2.5	16	50	4
2JJCR 025 001 200	2.5 X R0.1	2.5	20	50	4
2JJCR 025 002 100	2.5 X R0.2	2.5	10	50	4
2JJCR 025 002 160	2.5 X R0.2	2.5	16	50	4
2JJCR 025 002 200	2.5 X R0.2	2.5	20	50	4
2JJCR 025 003 100	2.5 X R0.3	2.5	10	50	4
2JJCR 025 003 160	2.5 X R0.3	2.5	16	50	4
2JJCR 025 003 200	2.5 X R0.3	2.5	20	50	4
2JJCR 025 005 100	2.5 X R0.5	2.5	10	50	4
2JJCR 025 005 160	2.5 X R0.5	2.5	16	50	4
2JJCR 025 005 200	2.5 X R0.5	2.5	20	50	4
2JJCR 030 001 100	3 X R0.1	3	10	50	6
2JJCR 030 001 120	3 X R0.1	3	12	50	6
2JJCR 030 001 160	3 X R0.1	3	16	55	6
2JJCR 030 001 200	3 X R0.1	3	20	60	6
2JJCR 030 001 250	3 X R0.1	3	25	65	6
New 2JJCR 030 001 300	3 X R0.1	3	30	70	6
New 2JJCR 030 001 350	3 X R0.1	3	35	75	6
New 2JJCR 030 001 400	3 X R0.1	3	40	80	6
2JJCR 030 002 100	3 X R0.2	3	10	50	6
2JJCR 030 002 120	3 X R0.2	3	12	50	6
2JJCR 030 002 160	3 X R0.2	3	16	55	6
2JJCR 030 002 200	3 X R0.2	3	20	60	6
2JJCR 030 002 250	3 X R0.2	3	25	65	6
New 2JJCR 030 002 300	3 X R0.2	3	30	70	6
New 2JJCR 030 002 350	3 X R0.2	3	35	75	6
New 2JJCR 030 002 400	3 X R0.2	3	40	80	6
2JJCR 030 003 100	3 X R0.3	3	10	50	6
2JJCR 030 003 120	3 X R0.3	3	12	50	6
2JJCR 030 003 160	3 X R0.3	3	16	55	6
2JJCR 030 003 200	3 X R0.3	3	20	60	6
2JJCR 030 003 250	3 X R0.3	3	25	65	6
New 2JJCR 030 003 300	3 X R0.3	3	30	70	6
New 2JJCR 030 003 350	3 X R0.3	3	35	75	6
New 2JJCR 030 003 400	3 X R0.3	3	40	80	6
2JJCR 030 005 100	3 X R0.5	3	10	50	6
2JJCR 030 005 120	3 X R0.5	3	12	50	6
2JJCR 030 005 160	3 X R0.5	3	16	55	6
2JJCR 030 005 200	3 X R0.5	3	20	60	6
2JJCR 030 005 250	3 X R0.5	3	25	65	6
New 2JJCR 030 005 300	3 X R0.5	3	30	70	6
New 2JJCR 030 005 350	3 X R0.5	3	35	75	6
New 2JJCR 030 005 400	3 X R0.5	3	40	80	6
2JJCR 030 010 100	3 X R1	3	10	50	6
2JJCR 030 010 120	3 X R1	3	12	50	6
2JJCR 030 010 160	3 X R1	3	16	55	6
2JJCR 030 010 200	3 X R1	3	20	60	6

Numero d'Ordine	D×R	L1	L2	L	d
2JJCR 030 010 250	3 X R1	3	25	65	6
New 2JJCR 030 010 300	3 X R1	3	30	70	6
New 2JJCR 030 010 350	3 X R1	3	35	75	6
New 2JJCR 030 010 400	3 X R1	3	40	80	6
2JJCR 040 001 120	4 X R0.1	4	12	50	6
2JJCR 040 001 160	4 X R0.1	4	16	55	6
2JJCR 040 001 200	4 X R0.1	4	20	60	6
2JJCR 040 001 250	4 X R0.1	4	25	65	6
2JJCR 040 001 300	4 X R0.1	4	30	70	6
New 2JJCR 040 001 350	4 X R0.1	4	35	75	6
New 2JJCR 040 001 400	4 X R0.1	4	40	80	6
2JJCR 040 002 120	4 X R0.2	4	12	50	6
2JJCR 040 002 160	4 X R0.2	4	16	55	6
2JJCR 040 002 200	4 X R0.2	4	20	60	6
2JJCR 040 002 250	4 X R0.2	4	25	65	6
2JJCR 040 002 300	4 X R0.2	4	30	70	6
New 2JJCR 040 002 350	4 X R0.2	4	35	75	6
New 2JJCR 040 002 400	4 X R0.2	4	40	80	6
2JJCR 040 003 120	4 X R0.3	4	12	50	6
2JJCR 040 003 160	4 X R0.3	4	16	55	6
2JJCR 040 003 200	4 X R0.3	4	20	60	6
2JJCR 040 003 250	4 X R0.3	4	25	65	6
2JJCR 040 003 300	4 X R0.3	4	30	70	6
New 2JJCR 040 003 350	4 X R0.3	4	35	75	6
New 2JJCR 040 003 400	4 X R0.3	4	40	80	6
2JJCR 040 005 120	4 X R0.5	4	12	50	6
2JJCR 040 005 160	4 X R0.5	4	16	55	6
2JJCR 040 005 200	4 X R0.5	4	20	60	6
2JJCR 040 005 250	4 X R0.5	4	25	65	6
2JJCR 040 005 300	4 X R0.5	4	30	70	6
New 2JJCR 040 005 350	4 X R0.5	4	35	75	6
New 2JJCR 040 005 400	4 X R0.5	4	40	80	6
2JJCR 040 010 120	4 X R1	4	12	50	6
2JJCR 040 010 160	4 X R1	4	16	55	6
2JJCR 040 010 200	4 X R1	4	20	60	6
2JJCR 040 010 250	4 X R1	4	25	65	6
2JJCR 040 010 300	4 X R1	4	30	70	6
New 2JJCR 040 010 350	4 X R1	4	35	75	6
New 2JJCR 040 010 400	4 X R1	4	40	80	6
2JJCR 050 002 150	5 X R0.2	6	15	60	6
2JJCR 050 002 250	5 X R0.2	6	25	70	6
New 2JJCR 050 002 300	5 X R0.2	6	30	70	6
New 2JJCR 050 002 400	5 X R0.2	6	40	80	6
2JJCR 050 005 150	5 X R0.5	6	15	60	6
2JJCR 050 005 250	5 X R0.5	6	25	70	6
New 2JJCR 050 005 300	5 X R0.5	6	30	70	6
New 2JJCR 050 005 400	5 X R0.5	6	40	80	6
2JJCR 050 010 150	5 X R1	6	15	60	6
2JJCR 050 010 250	5 X R1	6	25	70	6
New 2JJCR 050 010 300	5 X R1	6	30	70	6
New 2JJCR 050 010 400	5 X R1	6	40	80	6
2JJCR 060 001 200	6 X R0.1	7	20	60	6
2JJCR 060 001 400	6 X R0.1	7	40	80	6
2JJCR 060 002 200	6 X R0.2	7	20	60	6
2JJCR 060 002 400	6 X R0.2	7	40	80	6
2JJCR 060 003 200	6 X R0.3	7	20	60	6
2JJCR 060 003 400	6 X R0.3	7	40	80	6
2JJCR 060 005 200	6 X R0.5	7	20	60	6
2JJCR 060 005 400	6 X R0.5	7	40	80	6
2JJCR 060 010 200	6 X R1	7	20	60	6
2JJCR 060 010 400	6 X R1	7	40	80	6
2JJCR 060 015 200	6 X R1.5	7	20	60	6
2JJCR 060 015 400	6 X R1.5	7	40	80	6

Unità : mm

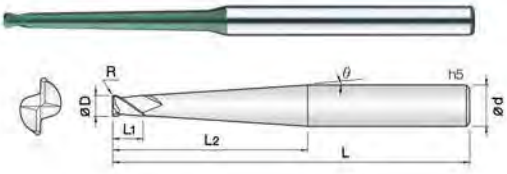
Numero d'Ordine	D×R	L1	L2	L	d
2JJCR 080 002 220	8 X R0.2	9	22	65	8
2JJCR 080 003 220	8 X R0.3	9	22	65	8
2JJCR 080 005 220	8 X R0.5	9	22	65	8
2JJCR 080 010 220	8 X R1	9	22	65	8
2JJCR 080 015 220	8 X R1.5	9	22	65	8
2JJCR 100 002 240	10 X R0.2	11	24	70	10
2JJCR 100 003 240	10 X R0.3	11	24	70	10
2JJCR 100 005 240	10 X R0.5	11	24	70	10
2JJCR 100 010 240	10 X R1	11	24	70	10
2JJCR 100 015 240	10 X R1.5	11	24	70	10
2JJCR 100 020 240	10 X R2	11	24	70	10
2JJCR 120 002 260	12 X R0.2	13	26	80	12
2JJCR 120 003 260	12 X R0.3	13	26	80	12
2JJCR 120 005 260	12 X R0.5	13	26	80	12
2JJCR 120 010 260	12 X R1	13	26	80	12
2JJCR 120 015 260	12 X R1.5	13	26	80	12
2JJCR 120 020 260	12 X R2	13	26	80	12
2JJCR 120 030 260	12 X R3	13	26	80	12
2JJCR 160 005 110	16 X R0.5	20	35	110	16
2JJCR 160 010 110	16 X R1	20	35	110	16

JJ TOOLS

2JJTC

Fresa Torica 2 Tagli Rastremata per Nervature

New



- **Fresa per acciai bonificati e temprati (HRc 52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base SI.
- Geomertia rinforzata grazie allo spigolo raggiato.
- Elevata tolleranza del filo tagliente.
- Riduzione di vibrazioni e scheggiature grazie alla forma rastremata.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN Coating | R ±0.005 R0.1 ~ 0.5 | R ±0.01 R1 | 30° Helix Angle | € List. p.30 | i info p.194

D	Tolleranza
Ø1 ~ 4	+0~ -0.01mm

Unità : mm

Numero d'Ordine	D×R	θ	L1	L2	L	d
2JJTC 010 001 0601	1 X R0.1	1°	1	6	50	4
2JJTC 010 001 1001	1 X R0.1	1°	1	10	50	4
2JJTC 010 001 1501	1 X R0.1	1°	1	15	50	4
2JJTC 010 001 2001	1 X R0.1	1°	1	20	60	4
2JJTC 010 001 2501	1 X R0.1	1°	1	25	60	4
2JJTC 010 001 3001	1 X R0.1	1°	1	30	70	4
2JJTC 010 001 3501	1 X R0.1	1°	1	35	75	4
2JJTC 010 002 0601	1 X R0.2	1°	1	6	50	4
2JJTC 010 002 1001	1 X R0.2	1°	1	10	50	4
2JJTC 010 002 1501	1 X R0.2	1°	1	15	50	4
2JJTC 010 002 2001	1 X R0.2	1°	1	20	60	4
2JJTC 010 002 2501	1 X R0.2	1°	1	25	60	4
2JJTC 010 002 3001	1 X R0.2	1°	1	30	70	4
2JJTC 010 002 3501	1 X R0.2	1°	1	35	75	4
2JJTC 010 003 0601	1 X R0.3	1°	1	6	50	4
2JJTC 010 003 1001	1 X R0.3	1°	1	10	50	4
2JJTC 010 003 1501	1 X R0.3	1°	1	15	50	4
2JJTC 010 003 2001	1 X R0.3	1°	1	20	60	4
2JJTC 010 003 2501	1 X R0.3	1°	1	25	60	4
2JJTC 010 003 3001	1 X R0.3	1°	1	30	70	4
2JJTC 010 003 3501	1 X R0.3	1°	1	35	75	4
2JJTC 015 002 1001	1.5 X R0.2	1°	1.5	10	50	4
2JJTC 015 002 1501	1.5 X R0.2	1°	1.5	15	50	4
2JJTC 015 002 2001	1.5 X R0.2	1°	1.5	20	60	4
2JJTC 015 002 2501	1.5 X R0.2	1°	1.5	25	60	4
2JJTC 015 002 3001	1.5 X R0.2	1°	1.5	30	70	4
2JJTC 015 002 3501	1.5 X R0.2	1°	1.5	35	75	4
2JJTC 015 003 1001	1.5 X R0.3	1°	1.5	10	50	4
2JJTC 015 003 1501	1.5 X R0.3	1°	1.5	15	50	4
2JJTC 015 003 2001	1.5 X R0.3	1°	1.5	20	60	4
2JJTC 015 003 2501	1.5 X R0.3	1°	1.5	25	60	4
2JJTC 015 003 3001	1.5 X R0.3	1°	1.5	30	70	4
2JJTC 015 003 3501	1.5 X R0.3	1°	1.5	35	75	4
2JJTC 015 005 1001	1.5 X R0.5	1°	1.5	10	50	4
2JJTC 015 005 1501	1.5 X R0.5	1°	1.5	15	50	4
2JJTC 015 005 2001	1.5 X R0.5	1°	1.5	20	60	4
2JJTC 015 005 2501	1.5 X R0.5	1°	1.5	25	60	4
2JJTC 015 005 3001	1.5 X R0.5	1°	1.5	30	70	4
2JJTC 015 005 3501	1.5 X R0.5	1°	1.5	35	75	4
2JJTC 020 002 1201	2 X R0.2	1°	2	12	50	4
2JJTC 020 002 1601	2 X R0.2	1°	2	16	50	4
2JJTC 020 002 2001	2 X R0.2	1°	2	20	60	4
2JJTC 020 002 2501	2 X R0.2	1°	2	25	60	4
2JJTC 020 002 3001	2 X R0.2	1°	2	30	70	4
2JJTC 020 002 3501	2 X R0.2	1°	2	35	75	4
2JJTC 020 002 4001	2 X R0.2	1°	2	40	80	4
2JJTC 020 002 5001	2 X R0.2	1°	2	50	90	4
2JJTC 020 003 1201	2 X R0.3	1°	2	12	50	4

Numero d'Ordine	D×R	θ	L1	L2	L	d
2JJTC 020 003 1601	2 X R0.3	1°	2	16	50	4
2JJTC 020 003 2001	2 X R0.3	1°	2	20	60	4
2JJTC 020 003 2501	2 X R0.3	1°	2	25	60	4
2JJTC 020 003 3001	2 X R0.3	1°	2	30	70	4
2JJTC 020 003 3501	2 X R0.3	1°	2	35	75	4
2JJTC 020 003 4001	2 X R0.3	1°	2	40	80	4
2JJTC 020 003 5001	2 X R0.3	1°	2	50	90	4
2JJTC 020 005 1201	2 X R0.5	1°	2	12	50	4
2JJTC 020 005 1601	2 X R0.5	1°	2	16	50	4
2JJTC 020 005 2001	2 X R0.5	1°	2	20	60	4
2JJTC 020 005 2501	2 X R0.5	1°	2	25	60	4
2JJTC 020 005 3001	2 X R0.5	1°	2	30	70	4
2JJTC 020 005 3501	2 X R0.5	1°	2	35	75	4
2JJTC 020 005 4001	2 X R0.5	1°	2	40	80	4
2JJTC 020 005 5001	2 X R0.5	1°	2	50	90	4
2JJTC 030 002 2001	3 X R0.2	1°	3	20	60	6
2JJTC 030 002 3001	3 X R0.2	1°	3	30	70	6
2JJTC 030 002 4001	3 X R0.2	1°	3	40	80	6
2JJTC 030 002 5001	3 X R0.2	1°	3	50	90	6
2JJTC 030 002 6001	3 X R0.2	1°	3	60	100	6
2JJTC 030 003 2001	3 X R0.3	1°	3	20	60	6
2JJTC 030 003 3001	3 X R0.3	1°	3	30	70	6
2JJTC 030 003 4001	3 X R0.3	1°	3	40	80	6
2JJTC 030 003 5001	3 X R0.3	1°	3	50	90	6
2JJTC 030 003 6001	3 X R0.3	1°	3	60	100	6
2JJTC 030 005 2001	3 X R0.5	1°	3	20	60	6
2JJTC 030 005 3001	3 X R0.5	1°	3	30	70	6
2JJTC 030 005 4001	3 X R0.5	1°	3	40	80	6
2JJTC 030 005 5001	3 X R0.5	1°	3	50	90	6
2JJTC 030 005 6001	3 X R0.5	1°	3	60	100	6
2JJTC 030 010 2001	3 X R1	1°	3	20	60	6
2JJTC 030 010 3001	3 X R1	1°	3	30	70	6
2JJTC 030 010 4001	3 X R1	1°	3	40	80	6
2JJTC 030 010 5001	3 X R1	1°	3	50	90	6
2JJTC 030 010 6001	3 X R1	1°	3	60	100	6
2JJTC 040 002 2001	4 X R0.2	1°	4	20	60	6
2JJTC 040 002 3001	4 X R0.2	1°	4	30	70	6
2JJTC 040 002 4001	4 X R0.2	1°	4	40	80	6
2JJTC 040 002 5001	4 X R0.2	1°	4	50	90	6
2JJTC 040 002 6001	4 X R0.2	1°	4	60	100	6
2JJTC 040 003 2001	4 X R0.3	1°	4	20	60	6
2JJTC 040 003 3001	4 X R0.3	1°	4	30	70	6
2JJTC 040 003 4001	4 X R0.3	1°	4	40	80	6
2JJTC 040 003 5001	4 X R0.3	1°	4	50	90	6
2JJTC 040 003 6001	4 X R0.3	1°	4	60	100	6
2JJTC 040 005 2001	4 X R0.5	1°	4	20	60	6
2JJTC 040 005 3001	4 X R0.5	1°	4	30	70	6
2JJTC 040 005 4001	4 X R0.5	1°	4	40	80	6

2JJTC Fresa Torica 2 Tagli Rastremata per Nervature

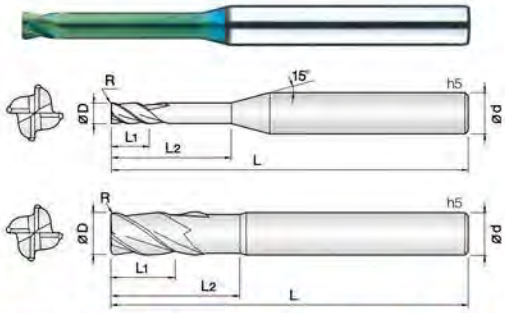
New

Unità : mm

Numero d'Ordine	D×R	θ	L1	L2	L	d
2JJTC 040 005 5001	4 X R0.5	1°	4	50	90	6
2JJTC 040 005 6001	4 X R0.5	1°	4	60	100	6
2JJTC 040 010 2001	4 X R1	1°	4	20	60	6
2JJTC 040 010 3001	4 X R1	1°	4	30	70	6
2JJTC 040 010 4001	4 X R1	1°	4	40	80	6
2JJTC 040 010 5001	4 X R1	1°	4	50	90	6
2JJTC 040 010 6001	4 X R1	1°	4	60	100	6

JJ TOOLS

4JJCR Fresa Torica 4 Tagli per Nervature



- **Fresa per acciai bonificati e temprati (HRc 52~68)**
- Ottima resistenza all'usura grazie al nuovo rivestimento PVD TiSiN-S.
- Elevata tolleranza del filo tagliente.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Ampia gamma di lunghezze per ottimizzare il rendimento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | UWC 초미립자 | TISIN-S Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 30° Helix Angle | € List. p.3q | i info p.195

D	Tolleranza
ø0.8 ~ 5	+0 ~ -0.01mm
ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
New 4JJCR 008 0002 020	0.8 X R0.02	0.8	2	45	4
New 4JJCR 008 0002 040	0.8 X R0.02	0.8	4	45	4
New 4JJCR 008 0002 060	0.8 X R0.02	0.8	6	45	4
New 4JJCR 008 0002 080	0.8 X R0.02	0.8	8	45	4
New 4JJCR 008 0002 100	0.8 X R0.02	0.8	10	45	4
New 4JJCR 008 0005 020	0.8 X R0.05	0.8	2	45	4
New 4JJCR 008 0005 040	0.8 X R0.05	0.8	4	45	4
New 4JJCR 008 0005 060	0.8 X R0.05	0.8	6	45	4
New 4JJCR 008 0005 080	0.8 X R0.05	0.8	8	45	4
New 4JJCR 008 0005 100	0.8 X R0.05	0.8	10	45	4
New 4JJCR 008 001 020	0.8 X R0.1	0.8	2	45	4
New 4JJCR 008 001 040	0.8 X R0.1	0.8	4	45	4
New 4JJCR 008 001 060	0.8 X R0.1	0.8	6	45	4
New 4JJCR 008 001 080	0.8 X R0.1	0.8	8	45	4
New 4JJCR 008 001 100	0.8 X R0.1	0.8	10	45	4
New 4JJCR 010 0002 040	1 X R0.02	1	4	45	4
New 4JJCR 010 0002 060	1 X R0.02	1	6	45	4
New 4JJCR 010 0002 080	1 X R0.02	1	8	45	4
New 4JJCR 010 0002 100	1 X R0.02	1	10	50	4
New 4JJCR 010 0002 120	1 X R0.02	1	12	50	4
4JJCR 010 0005 040	1 X R0.05	1	4	45	4
4JJCR 010 0005 060	1 X R0.05	1	6	45	4
4JJCR 010 0005 080	1 X R0.05	1	8	45	4
4JJCR 010 0005 100	1 X R0.05	1	10	50	4
4JJCR 010 0005 120	1 X R0.05	1	12	50	4
4JJCR 010 001 040	1 X R0.1	1	4	45	4
4JJCR 010 001 060	1 X R0.1	1	6	45	4
4JJCR 010 001 080	1 X R0.1	1	8	45	4
4JJCR 010 001 100	1 X R0.1	1	10	50	4
4JJCR 010 001 120	1 X R0.1	1	12	50	4
4JJCR 010 002 040	1 X R0.2	1	4	45	4
4JJCR 010 002 060	1 X R0.2	1	6	45	4
4JJCR 010 002 080	1 X R0.2	1	8	45	4
4JJCR 010 002 100	1 X R0.2	1	10	50	4
4JJCR 010 002 120	1 X R0.2	1	12	50	4
4JJCR 010 003 040	1 X R0.3	1	4	45	4
4JJCR 010 003 060	1 X R0.3	1	6	45	4
4JJCR 010 003 080	1 X R0.3	1	8	45	4
4JJCR 010 003 100	1 X R0.3	1	10	50	4
4JJCR 010 003 120	1 X R0.3	1	12	50	4
New 4JJCR 012 0002 040	1.2 X R0.02	1.2	4	45	4
New 4JJCR 012 0002 060	1.2 X R0.02	1.2	6	45	4
New 4JJCR 012 0002 080	1.2 X R0.02	1.2	8	45	4
New 4JJCR 012 0002 100	1.2 X R0.02	1.2	10	50	4
New 4JJCR 012 0002 120	1.2 X R0.02	1.2	12	50	4
New 4JJCR 012 0005 040	1.2 X R0.05	1.2	4	45	4
New 4JJCR 012 0005 060	1.2 X R0.05	1.2	6	45	4
New 4JJCR 012 0005 080	1.2 X R0.05	1.2	8	45	4

Numero d'Ordine	D×R	L1	L2	L	d
New 4JJCR 012 0005 100	1.2 X R0.05	1.2	10	50	4
New 4JJCR 012 0005 120	1.2 X R0.05	1.2	12	50	4
4JJCR 012 001 040	1.2 X R0.1	1.2	4	45	4
4JJCR 012 001 060	1.2 X R0.1	1.2	6	45	4
4JJCR 012 001 080	1.2 X R0.1	1.2	8	45	4
4JJCR 012 001 100	1.2 X R0.1	1.2	10	50	4
4JJCR 012 001 120	1.2 X R0.1	1.2	12	50	4
4JJCR 012 002 040	1.2 X R0.2	1.2	4	45	4
4JJCR 012 002 060	1.2 X R0.2	1.2	6	45	4
4JJCR 012 002 080	1.2 X R0.2	1.2	8	45	4
4JJCR 012 002 100	1.2 X R0.2	1.2	10	50	4
4JJCR 012 002 120	1.2 X R0.2	1.2	12	50	4
4JJCR 012 003 040	1.2 X R0.3	1.2	4	45	4
4JJCR 012 003 060	1.2 X R0.3	1.2	6	45	4
4JJCR 012 003 080	1.2 X R0.3	1.2	8	45	4
4JJCR 012 003 100	1.2 X R0.3	1.2	10	50	4
4JJCR 012 003 120	1.2 X R0.3	1.2	12	50	4
New 4JJCR 015 0002 060	1.5XR0.02	1.5	6	45	4
New 4JJCR 015 0002 080	1.5XR0.02	1.5	8	45	4
New 4JJCR 015 0002 100	1.5XR0.02	1.5	10	50	4
New 4JJCR 015 0002 120	1.5XR0.02	1.5	12	50	4
New 4JJCR 015 0002 160	1.5XR0.02	1.5	16	50	4
New 4JJCR 015 0005 060	1.5XR0.05	1.5	6	45	4
New 4JJCR 015 0005 080	1.5XR0.05	1.5	8	45	4
New 4JJCR 015 0005 100	1.5XR0.05	1.5	10	50	4
New 4JJCR 015 0005 120	1.5XR0.05	1.5	12	50	4
New 4JJCR 015 0005 160	1.5XR0.05	1.5	16	50	4
4JJCR 015 001 060	1.5 X R0.1	1.5	6	45	4
4JJCR 015 001 080	1.5 X R0.1	1.5	8	45	4
4JJCR 015 001 100	1.5 X R0.1	1.5	10	50	4
4JJCR 015 001 120	1.5 X R0.1	1.5	12	50	4
4JJCR 015 001 160	1.5 X R0.1	1.5	16	50	4
4JJCR 015 002 060	1.5 X R0.2	1.5	6	45	4
4JJCR 015 002 080	1.5 X R0.2	1.5	8	45	4
4JJCR 015 002 100	1.5 X R0.2	1.5	10	50	4
4JJCR 015 002 120	1.5 X R0.2	1.5	12	50	4
4JJCR 015 002 160	1.5 X R0.2	1.5	16	50	4
4JJCR 015 003 060	1.5 X R0.3	1.5	6	45	4
4JJCR 015 003 080	1.5 X R0.3	1.5	8	45	4
4JJCR 015 003 100	1.5 X R0.3	1.5	10	50	4
4JJCR 015 003 120	1.5 X R0.3	1.5	12	50	4
4JJCR 015 003 160	1.5 X R0.3	1.5	16	50	4
4JJCR 015 005 060	1.5 X R0.5	1.5	6	45	4
4JJCR 015 005 080	1.5 X R0.5	1.5	8	45	4
4JJCR 015 005 100	1.5 X R0.5	1.5	10	50	4
4JJCR 015 005 120	1.5 X R0.5	1.5	12	50	4
4JJCR 015 005 160	1.5 X R0.5	1.5	16	50	4
New 4JJCR 020 0002 060	2 X R0.02	2	6	45	4

4JJCR Fresa Torica 4 Tagli per Nervature

Unità | mm

Numero d'Ordine	D×R	L1	L2	L	d
New 4JJCR 020 0002 080	2 X R0.02	2	8	45	4
New 4JJCR 020 0002 100	2 X R0.02	2	10	50	4
New 4JJCR 020 0002 120	2 X R0.02	2	12	50	4
New 4JJCR 020 0002 160	2 X R0.02	2	16	50	4
New 4JJCR 020 0002 200	2 X R0.02	2	20	50	4
New 4JJCR 020 0002 250	2 X R0.02	2	25	60	4
New 4JJCR 020 0005 060	2 X R0.05	2	6	45	4
New 4JJCR 020 0005 080	2 X R0.05	2	8	45	4
New 4JJCR 020 0005 100	2 X R0.05	2	10	50	4
New 4JJCR 020 0005 120	2 X R0.05	2	12	50	4
New 4JJCR 020 0005 160	2 X R0.05	2	16	50	4
New 4JJCR 020 0005 200	2 X R0.05	2	20	50	4
New 4JJCR 020 0005 250	2 X R0.05	2	25	60	4
4JJCR 020 001 060	2 X R0.1	2	6	45	4
4JJCR 020 001 080	2 X R0.1	2	8	45	4
4JJCR 020 001 100	2 X R0.1	2	10	50	4
4JJCR 020 001 120	2 X R0.1	2	12	50	4
4JJCR 020 001 160	2 X R0.1	2	16	50	4
4JJCR 020 001 200	2 X R0.1	2	20	50	4
4JJCR 020 001 250	2 X R0.1	2	25	60	4
4JJCR 020 002 060	2 X R0.2	2	6	45	4
4JJCR 020 002 080	2 X R0.2	2	8	45	4
4JJCR 020 002 100	2 X R0.2	2	10	50	4
4JJCR 020 002 120	2 X R0.2	2	12	50	4
4JJCR 020 002 160	2 X R0.2	2	16	50	4
4JJCR 020 002 200	2 X R0.2	2	20	50	4
4JJCR 020 002 250	2 X R0.2	2	25	60	4
4JJCR 020 003 060	2 X R0.3	2	6	45	4
4JJCR 020 003 080	2 X R0.3	2	8	45	4
4JJCR 020 003 100	2 X R0.3	2	10	50	4
4JJCR 020 003 120	2 X R0.3	2	12	50	4
4JJCR 020 003 160	2 X R0.3	2	16	50	4
4JJCR 020 003 200	2 X R0.3	2	20	50	4
4JJCR 020 003 250	2 X R0.3	2	25	60	4
4JJCR 020 005 060	2 X R0.5	2	6	45	4
4JJCR 020 005 080	2 X R0.5	2	8	45	4
4JJCR 020 005 100	2 X R0.5	2	10	50	4
4JJCR 020 005 120	2 X R0.5	2	12	50	4
4JJCR 020 005 160	2 X R0.5	2	16	50	4
4JJCR 020 005 200	2 X R0.5	2	20	50	4
4JJCR 020 005 250	2 X R0.5	2	25	60	4
4JJCR 025 001 100	2.5 X R0.1	2.5	10	50	4
4JJCR 025 001 160	2.5 X R0.1	2.5	16	50	4
4JJCR 025 001 200	2.5 X R0.1	2.5	20	50	4
4JJCR 025 001 250	2.5 X R0.1	2.5	25	60	4
4JJCR 025 002 100	2.5 X R0.2	2.5	10	50	4
4JJCR 025 002 160	2.5 X R0.2	2.5	16	50	4
4JJCR 025 002 200	2.5 X R0.2	2.5	20	50	4
4JJCR 025 002 250	2.5 X R0.2	2.5	25	60	4
4JJCR 025 003 100	2.5 X R0.3	2.5	10	50	4
4JJCR 025 003 160	2.5 X R0.3	2.5	16	50	4
4JJCR 025 003 200	2.5 X R0.3	2.5	20	50	4
4JJCR 025 003 250	2.5 X R0.3	2.5	25	60	4
4JJCR 025 005 100	2.5 X R0.5	2.5	10	50	4
4JJCR 025 005 160	2.5 X R0.5	2.5	16	50	4
4JJCR 025 005 200	2.5 X R0.5	2.5	20	50	4
4JJCR 025 005 250	2.5 X R0.5	2.5	25	60	4
4JJCR 030 001 100	3 X R0.1	3	10	50	6
New 4JJCR 030 001 120	3 X R0.1	3	12	50	6
4JJCR 030 001 160	3 X R0.1	3	16	55	6
4JJCR 030 001 200	3 X R0.1	3	20	60	6
4JJCR 030 001 250	3 X R0.1	3	25	65	6

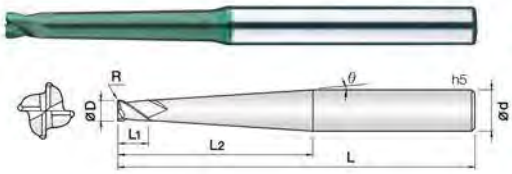
Numero d'Ordine	D×R	L1	L2	L	d
4JJCR 030 001 300	3 X R0.1	3	30	70	6
4JJCR 030 001 350	3 X R0.1	3	35	75	6
4JJCR 030 002 100	3 X R0.2	3	10	50	6
New 4JJCR 030 002 120	3 X R0.2	3	12	50	6
4JJCR 030 002 160	3 X R0.2	3	16	55	6
4JJCR 030 002 200	3 X R0.2	3	20	60	6
4JJCR 030 002 250	3 X R0.2	3	25	65	6
4JJCR 030 002 300	3 X R0.2	3	30	70	6
4JJCR 030 002 350	3 X R0.2	3	35	75	6
4JJCR 030 003 100	3 X R0.3	3	10	50	6
New 4JJCR 030 003 120	3 X R0.3	3	12	50	6
4JJCR 030 003 160	3 X R0.3	3	16	55	6
4JJCR 030 003 200	3 X R0.3	3	20	60	6
4JJCR 030 003 250	3 X R0.3	3	25	65	6
4JJCR 030 003 300	3 X R0.3	3	30	70	6
4JJCR 030 003 350	3 X R0.3	3	35	75	6
4JJCR 030 005 100	3 X R0.5	3	10	50	6
New 4JJCR 030 005 120	3 X R0.5	3	12	50	6
4JJCR 030 005 160	3 X R0.5	3	16	55	6
4JJCR 030 005 200	3 X R0.5	3	20	60	6
4JJCR 030 005 250	3 X R0.5	3	25	65	6
4JJCR 030 005 300	3 X R0.5	3	30	70	6
4JJCR 030 005 350	3 X R0.5	3	35	75	6
4JJCR 030 010 100	3 X R1	3	10	50	6
New 4JJCR 030 010 120	3 X R1	3	12	50	6
4JJCR 030 010 160	3 X R1	3	16	55	6
4JJCR 030 010 200	3 X R1	3	20	60	6
4JJCR 030 010 250	3 X R1	3	25	65	6
4JJCR 030 010 300	3 X R1	3	30	70	6
4JJCR 030 010 350	3 X R1	3	35	75	6
4JJCR 040 001 130	4 X R0.1	4	13	55	6
4JJCR 040 001 160	4 X R0.1	4	16	55	6
4JJCR 040 001 200	4 X R0.1	4	20	60	6
4JJCR 040 001 250	4 X R0.1	4	25	65	6
4JJCR 040 001 300	4 X R0.1	4	30	70	6
4JJCR 040 001 350	4 X R0.1	4	35	75	6
4JJCR 040 001 400	4 X R0.1	4	40	80	6
4JJCR 040 002 130	4 X R0.2	4	13	55	6
4JJCR 040 002 160	4 X R0.2	4	16	55	6
4JJCR 040 002 200	4 X R0.2	4	20	60	6
4JJCR 040 002 250	4 X R0.2	4	25	65	6
4JJCR 040 002 300	4 X R0.2	4	30	70	6
4JJCR 040 002 350	4 X R0.2	4	35	75	6
4JJCR 040 002 400	4 X R0.2	4	40	80	6
4JJCR 040 003 130	4 X R0.3	4	13	55	6
4JJCR 040 003 160	4 X R0.3	4	16	55	6
4JJCR 040 003 200	4 X R0.3	4	20	60	6
4JJCR 040 003 250	4 X R0.3	4	25	65	6
4JJCR 040 003 300	4 X R0.3	4	30	70	6
4JJCR 040 003 350	4 X R0.3	4	35	75	6
4JJCR 040 003 400	4 X R0.3	4	40	80	6
4JJCR 040 005 130	4 X R0.5	4	13	55	6
4JJCR 040 005 160	4 X R0.5	4	16	55	6
4JJCR 040 005 200	4 X R0.5	4	20	60	6
4JJCR 040 005 250	4 X R0.5	4	25	65	6
4JJCR 040 005 300	4 X R0.5	4	30	70	6
4JJCR 040 005 350	4 X R0.5	4	35	75	6
4JJCR 040 005 400	4 X R0.5	4	40	80	6
4JJCR 040 010 130	4 X R1	4	13	55	6
4JJCR 040 010 160	4 X R1	4	16	55	6
4JJCR 040 010 200	4 X R1	4	20	60	6
4JJCR 040 010 250	4 X R1	4	25	65	6

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
4JJCR 040 010 300	4 X R1	4	30	70	6
4JJCR 040 010 350	4 X R1	4	35	75	6
4JJCR 040 010 400	4 X R1	4	40	80	6
4JJCR 050 001 160	5 X R0.1	5	16	60	6
4JJCR 050 001 300	5 X R0.1	5	30	70	6
4JJCR 050 002 160	5 X R0.2	5	16	60	6
4JJCR 050 002 300	5 X R0.2	5	30	70	6
4JJCR 050 003 160	5 X R0.3	5	16	60	6
4JJCR 050 003 300	5 X R0.3	5	30	70	6
4JJCR 050 005 160	5 X R0.5	5	16	60	6
4JJCR 050 005 300	5 X R0.5	5	30	70	6
4JJCR 050 010 160	5 X R1	5	16	60	6
4JJCR 050 010 300	5 X R1	5	30	70	6
4JJCR 060 001 200	6 X R0.1	7	20	60	6
4JJCR 060 001 400	6 X R0.1	7	40	80	6
4JJCR 060 002 200	6 X R0.2	7	20	60	6
4JJCR 060 002 400	6 X R0.2	7	40	80	6
4JJCR 060 003 200	6 X R0.3	7	20	60	6
4JJCR 060 003 400	6 X R0.3	7	40	80	6
4JJCR 060 005 200	6 X R0.5	7	20	60	6
4JJCR 060 005 400	6 X R0.5	7	40	80	6
4JJCR 060 010 200	6 X R1	7	20	60	6
4JJCR 060 010 400	6 X R1	7	40	80	6
4JJCR 060 015 200	6 X R1.5	7	20	60	6
4JJCR 060 015 400	6 X R1.5	7	40	80	6
4JJCR 080 003 220	8 X R0.3	9	22	65	8
4JJCR 080 005 220	8 X R0.5	9	22	65	8
4JJCR 080 005 400	8 X R0.5	9	40	100	8
4JJCR 080 010 220	8 X R1	9	22	65	8
4JJCR 080 010 400	8 X R1	9	40	100	8
4JJCR 080 015 220	8 X R1.5	9	22	65	8
4JJCR 080 020 220	8 X R2	9	22	65	8
4JJCR 100 003 240	10 X R0.3	11	24	70	10
4JJCR 100 005 240	10 X R0.5	11	24	70	10
4JJCR 100 005 400	10 X R0.5	11	40	100	10
4JJCR 100 010 240	10 X R1	11	24	70	10
4JJCR 100 010 400	10 X R1	11	40	100	10
4JJCR 100 015 240	10 X R1.5	11	24	70	10
4JJCR 100 020 240	10 X R2	11	24	70	10
4JJCR 100 025 240	10 X R2.5	11	24	70	10
4JJCR 120 003 260	12 X R0.3	13	26	80	12
4JJCR 120 005 260	12 X R0.5	13	26	80	12
4JJCR 120 005 400	12 X R0.5	13	40	110	12
4JJCR 120 010 260	12 X R1	13	26	80	12
4JJCR 120 010 400	12 X R1	13	40	110	12
4JJCR 120 015 260	12 X R1.5	13	26	80	12
4JJCR 120 020 260	12 X R2	13	26	80	12
4JJCR 120 030 260	12 X R3	13	26	80	12

4JJTC Fresa Torica 4 Tagli Rastremata per Nervature

New



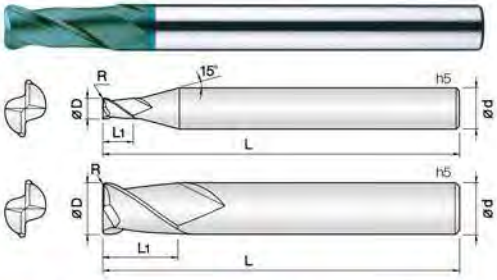
- **Fresa per acciai bonificati e temprati (HRc 52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geomertia rinforzata grazie allo spigolo raggiato.
- Riduzione di vibrazioni e scheggiature grazie alla forma rastremata.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | UWC 초미립자 | TISIN-S Coating | R ±0.005 R0.1 ~ 0.5 | 30° Helix Angle | € List. p.34 | i info p.195

D	Tolleranza
Ø1 ~ 4	+0 ~ −0.01mm

Unità : mm

Numero d'Ordine	D×R	θ	L1	L2	L	d
4JJTC 010001 0601	1 X R0.1	1°	1	6	50	4
4JJTC 010001 1001	1 X R0.1	1°	1	10	50	4
4JJTC 010001 1501	1 X R0.1	1°	1	15	50	4
4JJTC 010001 2001	1 X R0.1	1°	1	20	60	4
4JJTC 010001 2501	1 X R0.1	1°	1	25	60	4
4JJTC 010001 3001	1 X R0.1	1°	1	30	70	4
4JJTC 010001 3501	1 X R0.1	1°	1	35	75	4
4JJTC 010002 0601	1 X R0.2	1°	1	6	50	4
4JJTC 010002 1001	1 X R0.2	1°	1	10	50	4
4JJTC 010002 1501	1 X R0.2	1°	1	15	50	4
4JJTC 010002 2001	1 X R0.2	1°	1	20	60	4
4JJTC 010002 2501	1 X R0.2	1°	1	25	60	4
4JJTC 010002 3001	1 X R0.2	1°	1	30	70	4
4JJTC 010002 3501	1 X R0.2	1°	1	35	75	4
4JJTC 015002 1001	1.5 X R0.2	1°	1.5	10	50	4
4JJTC 015002 1501	1.5 X R0.2	1°	1.5	15	50	4
4JJTC 015002 2001	1.5 X R0.2	1°	1.5	20	60	4
4JJTC 015002 2501	1.5 X R0.2	1°	1.5	25	60	4
4JJTC 015002 3001	1.5 X R0.2	1°	1.5	30	70	4
4JJTC 015002 3501	1.5 X R0.2	1°	1.5	35	75	4
4JJTC 015005 1001	1.5 X R0.5	1°	1.5	10	50	4
4JJTC 015005 1501	1.5 X R0.5	1°	1.5	15	50	4
4JJTC 015005 2001	1.5 X R0.5	1°	1.5	20	60	4
4JJTC 015005 2501	1.5 X R0.5	1°	1.5	25	60	4
4JJTC 015005 3001	1.5 X R0.5	1°	1.5	30	70	4
4JJTC 015005 3501	1.5 X R0.5	1°	1.5	35	75	4
4JJTC 020002 1201	2 X R0.2	1°	2	12	50	4
4JJTC 020002 1601	2 X R0.2	1°	2	16	50	4
4JJTC 020002 2001	2 X R0.2	1°	2	20	60	4
4JJTC 020002 2501	2 X R0.2	1°	2	25	60	4
4JJTC 020002 3001	2 X R0.2	1°	2	30	70	4
4JJTC 020002 3501	2 X R0.2	1°	2	35	75	4
4JJTC 020002 4001	2 X R0.2	1°	2	40	80	4
4JJTC 020002 5001	2 X R0.2	1°	2	50	90	4
4JJTC 020005 1201	2 X R0.5	1°	2	12	50	4
4JJTC 020005 1601	2 X R0.5	1°	2	16	50	4
4JJTC 020005 2001	2 X R0.5	1°	2	20	60	4
4JJTC 020005 2501	2 X R0.5	1°	2	25	60	4
4JJTC 020005 3001	2 X R0.5	1°	2	30	70	4
4JJTC 020005 3501	2 X R0.5	1°	2	35	75	4
4JJTC 020005 4001	2 X R0.5	1°	2	40	80	4
4JJTC 020005 5001	2 X R0.5	1°	2	50	90	4
4JJTC 030002 2001	3 X R0.2	1°	3	20	60	6
4JJTC 030002 3001	3 X R0.2	1°	3	30	70	6
4JJTC 030002 4001	3 X R0.2	1°	3	40	80	6
4JJTC 030002 5001	3 X R0.2	1°	3	50	90	6
4JJTC 030002 6001	3 X R0.2	1°	3	60	100	6
4JJTC 030005 2001	3 X R0.5	1°	3	20	60	6
4JJTC 030005 3001	3 X R0.5	1°	3	30	70	6
4JJTC 030005 4001	3 X R0.5	1°	3	40	80	6
4JJTC 030005 5001	3 X R0.5	1°	3	50	90	6
4JJTC 030005 6001	3 X R0.5	1°	3	60	100	6
4JJTC 040002 2001	4 X R0.2	1°	4	20	60	6
4JJTC 040002 3001	4 X R0.2	1°	4	30	70	6
4JJTC 040002 4001	4 X R0.2	1°	4	40	80	6
4JJTC 040002 5001	4 X R0.2	1°	4	50	90	6
4JJTC 040002 6001	4 X R0.2	1°	4	60	100	6
4JJTC 040005 2001	4 X R0.5	1°	4	20	60	6
4JJTC 040005 3001	4 X R0.5	1°	4	30	70	6
4JJTC 040005 4001	4 X R0.5	1°	4	40	80	6
4JJTC 040005 5001	4 X R0.5	1°	4	50	90	6
4JJTC 040005 6001	4 X R0.5	1°	4	60	100	6



- **Fresa per acciai bonificati e temprati (HRc 52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD TiSiN-S.
- Elevata tolleranza del filo tagliente.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

2 | UWC 초미립자 | TISIN-S Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 5 | 30° Helix Angle | € List. p.35 | i info p.196

D	Tolleranza
Ø0.2 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

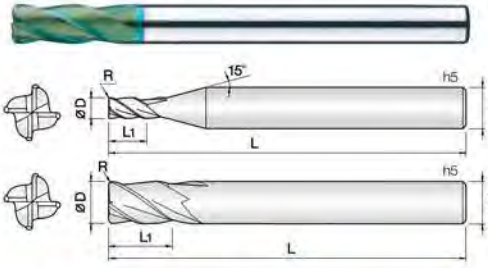
Numero d'Ordine	D×R	L1	L	d
New 2JJC 002 0002 S04	0.2 X R0.02	0.4	45	4
New 2JJC 002 0005 S04	0.2 X R0.05	0.4	45	4
New 2JJC 003 0002 S04	0.3 X R0.02	0.6	45	4
New 2JJC 003 0005 S04	0.3 X R0.05	0.6	45	4
New 2JJC 003 001 S04	0.3 X R0.1	0.6	45	4
New 2JJC 004 0002 S04	0.4 X R0.02	0.8	45	4
2JJC 004 0005 S04	0.4 X R0.05	0.8	45	4
2JJC 004 001 S04	0.4 X R0.1	0.8	45	4
New 2JJC 005 0002 S04	0.5 X R0.02	1	45	4
2JJC 005 0005 S04	0.5 X R0.05	1	45	4
2JJC 005 001 S04	0.5 X R0.1	1	45	4
New 2JJC 006 0002 S04	0.6 X R0.02	1.2	45	4
2JJC 006 0005 S04	0.6 X R0.05	1.2	45	4
2JJC 006 001 S04	0.6 X R0.1	1.2	45	4
2JJC 006 002 S04	0.6 X R0.2	1.2	45	4
2JJC 007 0005 S04	0.7 X R0.05	1.4	45	4
2JJC 007 001 S04	0.7 X R0.1	1.4	45	4
2JJC 007 002 S04	0.7 X R0.2	1.4	45	4
New 2JJC 008 0002 S04	0.8 X R0.02	1.6	45	4
2JJC 008 0005 S04	0.8 X R0.05	1.6	45	4
2JJC 008 001 S04	0.8 X R0.1	1.6	45	4
2JJC 008 002 S04	0.8 X R0.2	1.6	45	4
2JJC 009 0005 S04	0.9 X R0.05	1.8	45	4
2JJC 009 001 S04	0.9 X R0.1	1.8	45	4
New 2JJC 010 0002 S04	1 X R0.02	2.5	45	4
New 2JJC 010 0005 S04	1 X R0.05	2.5	45	4
2JJC 010 001 S04	1 X R0.1	2.5	45	4
2JJC 010 002 S04	1 X R0.2	2.5	45	4
2JJC 010 003 S04	1 X R0.3	2.5	45	4
New 2JJC 012 0002 S04	1.2 X R0.02	3.2	45	4
New 2JJC 012 0005 S04	1.2 X R0.05	3.2	45	4
2JJC 012 001 S04	1.2 X R0.1	3.2	45	4
2JJC 012 002 S04	1.2 X R0.2	3.2	45	4
2JJC 012 003 S04	1.2 X R0.3	3.2	45	4
New 2JJC 015 0002 S04	1.5 X R0.02	4	45	4
New 2JJC 015 0005 S04	1.5 X R0.05	4	45	4
2JJC 015 001 S04	1.5 X R0.1	4	45	4
2JJC 015 002 S04	1.5 X R0.2	4	45	4
2JJC 015 003 S04	1.5 X R0.3	4	45	4
2JJC 015 005 S04	1.5 X R0.5	4	45	4
New 2JJC 020 0002 S04	2 X R0.02	6	45	4
New 2JJC 020 0005 S04	2 X R0.05	6	45	4
2JJC 020 001 S04	2 X R0.1	6	45	4
2JJC 020 002 S04	2 X R0.2	6	45	4
2JJC 020 003 S04	2 X R0.3	6	45	4
2JJC 020 005 S04	2 X R0.5	6	45	4
2JJC 025 001 S04	2.5 X R0.1	6	50	4
2JJC 025 002 S04	2.5 X R0.2	6	50	4

Numero d'Ordine	D×R	L1	L	d
2JJC 025 003 S04	2.5 X R0.3	6	50	4
2JJC 025 005 S04	2.5 X R0.5	6	50	4
2JJC 030 001 S06	3 X R0.1	8	60	6
2JJC 030 002 S06	3 X R0.2	8	60	6
2JJC 030 003 S06	3 X R0.3	8	60	6
2JJC 030 005 S06	3 X R0.5	8	60	6
2JJC 030 010 S06	3 X R1	8	60	6
2JJC 040 001 S04	4 X R0.1	9	60	4
2JJC 040 001 S06	4 X R0.1	10	70	6
2JJC 040 002 S04	4 X R0.2	9	60	4
2JJC 040 002 S06	4 X R0.2	10	70	6
2JJC 040 003 S04	4 X R0.3	9	60	4
2JJC 040 003 S06	4 X R0.3	10	70	6
2JJC 040 005 S04	4 X R0.5	9	60	4
2JJC 040 005 S06	4 X R0.5	10	70	6
2JJC 040 010 S04	4 X R1	9	60	4
2JJC 040 010 S06	4 X R1	10	70	6
2JJC 050 001 S06	5 X R0.1	13	75	6
2JJC 050 002 S06	5 X R0.2	13	75	6
2JJC 050 003 S06	5 X R0.3	13	75	6
2JJC 050 005 S06	5 X R0.5	13	75	6
2JJC 050 010 S06	5 X R1	13	75	6
2JJC 060 001 060	6 X R0.1	11	60	6
2JJC 060 001 090	6 X R0.1	13	90	6
2JJC 060 002 060	6 X R0.2	11	60	6
2JJC 060 002 090	6 X R0.2	13	90	6
2JJC 060 003 060	6 X R0.3	11	60	6
2JJC 060 003 090	6 X R0.3	13	90	6
2JJC 060 005 060	6 X R0.5	11	60	6
2JJC 060 005 090	6 X R0.5	13	90	6
2JJC 060 010 060	6 X R1	11	60	6
2JJC 060 010 090	6 X R1	13	90	6
2JJC 060 015 060	6 X R1.5	11	60	6
2JJC 060 015 090	6 X R1.5	13	90	6
2JJC 060 020 060	6 X R2	11	60	6
2JJC 060 020 090	6 X R2	13	90	6
2JJC 060 025 090	6 X R2.5	13	90	6
2JJC 080 001 070	8 X R0.1	16	70	8
2JJC 080 001 100	8 X R0.1	19	100	8
2JJC 080 002 070	8 X R0.2	16	70	8
2JJC 080 002 100	8 X R0.2	19	100	8
2JJC 080 003 070	8 X R0.3	16	70	8
2JJC 080 003 100	8 X R0.3	19	100	8
2JJC 080 005 070	8 X R0.5	16	70	8
2JJC 080 005 100	8 X R0.5	19	100	8
2JJC 080 010 070	8 X R1	16	70	8
2JJC 080 010 100	8 X R1	19	100	8
2JJC 080 015 070	8 X R1.5	16	70	8

Unità : mm

Numero d'Ordine	D×R	L1	L	d
2JJC 080 015 100	8 X R1.5	19	100	8
2JJC 080 020 070	8 X R2	16	70	8
2JJC 080 020 100	8 X R2	19	100	8
2JJC 080 025 100	8 X R2.5	19	100	8
2JJC 080 030 100	8 X R3	19	100	8
2JJC 080 035 100	8 X R3.5	19	100	8
2JJC 100 001 075	10 X R0.1	19	75	10
2JJC 100 001 100	10 X R0.1	22	100	10
2JJC 100 002 075	10 X R0.2	19	75	10
2JJC 100 002 100	10 X R0.2	22	100	10
2JJC 100 003 075	10 X R0.3	19	75	10
2JJC 100 003 100	10 X R0.3	22	100	10
2JJC 100 005 075	10 X R0.5	19	75	10
2JJC 100 005 100	10 X R0.5	22	100	10
2JJC 100 010 075	10 X R1	19	75	10
2JJC 100 010 100	10 X R1	22	100	10
2JJC 100 015 075	10 X R1.5	19	75	10
2JJC 100 015 100	10 X R1.5	22	100	10
2JJC 100 020 075	10 X R2	19	75	10
2JJC 100 020 100	10 X R2	22	100	10
2JJC 100 025 100	10 X R2.5	22	100	10
2JJC 100 030 100	10 X R3	22	100	10
2JJC 100 040 100	10 X R4	22	100	10
2JJC 120 001 080	12 X R0.1	22	80	12
2JJC 120 001 110	12 X R0.1	26	110	12
2JJC 120 002 080	12 X R0.2	22	80	12
2JJC 120 002 110	12 X R0.2	26	110	12
2JJC 120 003 080	12 X R0.3	22	80	12
2JJC 120 003 110	12 X R0.3	26	110	12
2JJC 120 005 080	12 X R0.5	22	80	12
2JJC 120 005 110	12 X R0.5	26	110	12
2JJC 120 010 080	12 X R1	22	80	12
2JJC 120 010 110	12 X R1	26	110	12
2JJC 120 015 080	12 X R1.5	22	80	12
2JJC 120 015 110	12 X R1.5	26	110	12
2JJC 120 020 080	12 X R2	22	80	12
2JJC 120 020 110	12 X R2	26	110	12
2JJC 120 025 110	12 X R2.5	26	110	12
2JJC 120 030 110	12 X R3	26	110	12
2JJC 120 040 110	12 X R4	26	110	12
2JJC 120 050 110	12 X R5	26	110	12

4JJC Fresa Torica 4 Tagli



- **Fresa per acciai bonificati e temprati (HRc 52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD TiSiN-S.
- Elevata tolleranza del filo tagliente.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | UWC 초미립자 | TISIN-S Coating | R ±0.005 R0.05 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 30° Helix Angle | € List. p.37 | i info p.195

D	Tolleranza
ø1 ~ 5	+0 ~ -0.01mm
ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

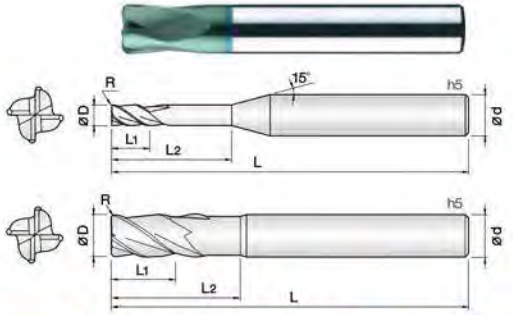
Numero d'Ordine	D×R	L1	L	d
4JJC 010 0005 S04	1 X R0.05	2.5	45	4
4JJC 010 001 S04	1 X R0.1	2.5	45	4
4JJC 010 002 S04	1 X R0.2	2.5	45	4
4JJC 010 003 S04	1 X R0.3	2.5	45	4
4JJC 015 0005 S04	1.5 X R0.05	4	45	4
4JJC 015 001 S04	1.5 X R0.1	4	45	4
4JJC 015 002 S04	1.5 X R0.2	4	45	4
4JJC 015 003 S04	1.5 X R0.3	4	45	4
4JJC 015 005 S04	1.5 X R0.5	4	45	4
4JJC 020 0005 S04	2 X R0.05	6	45	4
4JJC 020 001 S04	2 X R0.1	6	45	4
4JJC 020 002 S04	2 X R0.2	6	45	4
4JJC 020 003 S04	2 X R0.3	6	45	4
4JJC 020 005 S04	2 X R0.5	6	45	4
4JJC 025 001 S04	2.5 X R0.1	6	50	4
4JJC 025 002 S04	2.5 X R0.2	6	50	4
4JJC 025 003 S04	2.5 X R0.3	6	50	4
4JJC 025 005 S04	2.5 X R0.5	6	50	4
4JJC 030 001 S06	3 X R0.1	8	60	6
4JJC 030 002 S06	3 X R0.2	8	60	6
4JJC 030 003 S06	3 X R0.3	8	60	6
4JJC 030 005 S06	3 X R0.5	8	60	6
4JJC 030 010 S06	3 X R1	8	60	6
New 4JJC 035 001 S06	3.5 X R0.1	9	70	6
New 4JJC 035 002 S06	3.5 X R0.2	9	70	6
New 4JJC 035 003 S06	3.5 X R0.3	9	70	6
New 4JJC 035 005 S06	3.5 X R0.5	9	70	6
4JJC 040 001 S04	4 X R0.1	9	60	4
4JJC 040 001 S06	4 X R0.1	10	70	6
4JJC 040 002 S04	4 X R0.2	9	60	4
4JJC 040 002 S06	4 X R0.2	10	70	6
4JJC 040 003 S04	4 X R0.3	9	60	4
4JJC 040 003 S06	4 X R0.3	10	70	6
4JJC 040 005 S04	4 X R0.5	9	60	4
4JJC 040 005 S06	4 X R0.5	10	70	6
4JJC 040 010 S04	4 X R1	9	60	4
4JJC 040 010 S06	4 X R1	10	70	6
New 4JJC 045 002 S06	4.5 X R0.2	11	75	6
New 4JJC 045 005 S06	4.5 X R0.5	11	75	6
4JJC 050 001 S06	5 X R0.1	13	75	6
4JJC 050 002 S06	5 X R0.2	13	75	6
4JJC 050 003 S06	5 X R0.3	13	75	6
4JJC 050 005 S06	5 X R0.5	13	75	6
4JJC 050 010 S06	5 X R1	13	75	6
New 4JJC 060 0005 055	6 X R0.05	11	55	6
New 4JJC 060 0005 080	6 X R0.05	13	80	6
4JJC 060 001 055	6 X R0.1	11	55	6
4JJC 060 001 080	6 X R0.1	13	80	6

Numero d'Ordine	D×R	L1	L	d
4JJC 060 002 055	6 X R0.2	11	55	6
4JJC 060 002 080	6 X R0.2	13	80	6
4JJC 060 003 055	6 X R0.3	11	55	6
4JJC 060 003 080	6 X R0.3	13	80	6
4JJC 060 005 055	6 X R0.5	11	55	6
4JJC 060 005 080	6 X R0.5	13	80	6
4JJC 060 010 055	6 X R1	11	55	6
4JJC 060 010 080	6 X R1	13	80	6
4JJC 060 015 055	6 X R1.5	11	55	6
4JJC 060 015 080	6 X R1.5	13	80	6
4JJC 060 020 055	6 X R2	11	55	6
4JJC 060 020 080	6 X R2	13	80	6
4JJC 080 003 060	8 X R0.3	16	60	8
4JJC 080 003 090	8 X R0.3	19	90	8
4JJC 080 005 060	8 X R0.5	16	60	8
4JJC 080 005 090	8 X R0.5	19	90	8
4JJC 080 010 060	8 X R1	16	60	8
4JJC 080 010 090	8 X R1	19	90	8
4JJC 080 015 060	8 X R1.5	16	60	8
4JJC 080 015 090	8 X R1.5	19	90	8
4JJC 080 020 060	8 X R2	16	60	8
4JJC 080 020 090	8 X R2	19	90	8
4JJC 100 003 070	10 X R0.3	19	70	10
4JJC 100 003 100	10 X R0.3	22	100	10
4JJC 100 005 070	10 X R0.5	19	70	10
4JJC 100 005 100	10 X R0.5	22	100	10
4JJC 100 010 070	10 X R1	19	70	10
4JJC 100 010 100	10 X R1	22	100	10
4JJC 100 015 070	10 X R1.5	19	70	10
4JJC 100 015 100	10 X R1.5	22	100	10
4JJC 100 020 070	10 X R2	19	70	10
4JJC 100 020 100	10 X R2	22	100	10
4JJC 100 025 070	10 X R2.5	19	70	10
4JJC 100 025 100	10 X R2.5	22	100	10
4JJC 120 003 075	12 X R0.3	22	75	12
4JJC 120 003 110	12 X R0.3	26	110	12
4JJC 120 005 075	12 X R0.5	22	75	12
4JJC 120 005 110	12 X R0.5	26	110	12
4JJC 120 010 075	12 X R1	22	75	12
4JJC 120 010 110	12 X R1	26	110	12
4JJC 120 015 075	12 X R1.5	22	75	12
4JJC 120 015 110	12 X R1.5	26	110	12
4JJC 120 020 075	12 X R2	22	75	12
4JJC 120 020 110	12 X R2	26	110	12
4JJC 120 025 075	12 X R2.5	22	75	12
4JJC 120 025 110	12 X R2.5	26	110	12
4JJC 120 030 075	12 X R3	22	75	12
4JJC 120 030 110	12 X R3	26	110	12

4&6JJRC

Fresa Torica 4/6 Tagli per Alti Avanzamenti

New



- **Fresa per acciai bonificati e temprati (HRc 52~68)**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Progettata per utilizzo con alti avanzamenti.
- Indicata per lavorazioni gravose e di sgrossatura.
- Riduzione di scheggiature ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | 6 | UWC 초미립자 | TISIN-S Coating | R ±0.005 R0.2 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 15° Helix Angle | € List. p.38/39 | i

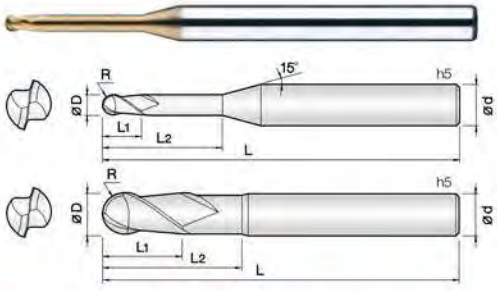
D	Tolleranza
1 ~ 5Ø	+0 ~ −0.01mm
6 ~ 12Ø	−0.005 ~ −0.015mm
16Ø	−0.01 ~ −0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
4JJRC 010 002 025	1 X R0.2	1	2.5	50	4
4JJRC 015 005 040	1.5 X R0.5	1.5	4	50	4
4JJRC 020 005 060	2 X R0.5	2	6	50	6
4JJRC 030 005 080	3 X R0.5	3	8	50	6
4JJRC 040 005 120	4 X R0.5	4	12	60	6
4JJRC 040 005 160	4 X R0.5	4	16	60	6
4JJRC 040 010 120	4 X R1	4	12	60	6
4JJRC 040 010 160	4 X R1	4	16	60	6
4JJRC 050 005 150	5 X R0.5	5	15	60	6
4JJRC 050 010 150	5 X R1	5	15	60	6
4JJRC 060 003 150	6 X R0.3	6	15	60	6
4JJRC 060 005 150	6 X R0.5	6	15	60	6
4JJRC 060 010 150	6 X R1	6	15	60	6
4JJRC 060 015 150	6 X R1.5	6	15	60	6
4JJRC 080 003 160	8 X R0.3	8	16	60	8
4JJRC 080 005 160	8 X R0.5	8	16	60	8
4JJRC 080 005 200	8 X R0.5	8	20	80	8
4JJRC 080 005 300	8 X R0.5	8	30	110	8
4JJRC 080 010 160	8 X R1	8	16	60	8
4JJRC 080 010 200	8 X R1	8	20	80	8
4JJRC 080 010 300	8 X R1	8	30	110	8
4JJRC 080 020 160	8 X R2	8	16	60	8
4JJRC 080 020 200	8 X R2	8	20	80	8
4JJRC 080 020 300	8 X R2	8	30	110	8
4JJRC 100 003 200	10 X R0.3	10	20	70	10
4JJRC 100 005 200	10 X R0.5	10	20	70	10
4JJRC 100 005 250	10 X R0.5	10	25	90	10
4JJRC 100 005 300	10 X R0.5	10	30	120	10
4JJRC 100 010 200	10 X R1	10	20	70	10
4JJRC 100 010 250	10 X R1	10	25	90	10
4JJRC 100 010 300	10 X R1	10	30	120	10
4JJRC 100 020 200	10 X R2	10	20	70	10
4JJRC 100 020 250	10 X R2	10	25	90	10
4JJRC 100 020 300	10 X R2	10	30	120	10
4JJRC 120 005 250	12 X R0.5	12	25	80	12
4JJRC 120 005 300	12 X R0.5	12	30	100	12
4JJRC 120 005 350	12 X R0.5	12	35	130	12
4JJRC 120 010 250	12 X R1	12	25	80	12
4JJRC 120 010 300	12 X R1	12	30	100	12
4JJRC 120 010 350	12 X R1	12	35	130	12
4JJRC 120 020 250	12 X R2	12	25	80	12
4JJRC 120 020 300	12 X R2	12	30	100	12
4JJRC 120 020 350	12 X R2	12	35	130	12
4JJRC 120 030 250	12 X R3	12	25	80	12
4JJRC 160 010 300	16 X R1	16	30	110	16
4JJRC 160 010 400	16 X R1	16	40	160	16
4JJRC 160 020 300	16 X R2	16	30	110	16
4JJRC 160 020 400	16 X R2	16	40	160	16

Numero d'Ordine	D×R	L1	L	d
6JJRC 060 005 060	6 X R0.5	12	60	6
6JJRC 060 010 060	6 X R1	12	60	6
6JJRC 080 005 060	8 X R0.5	16	60	8
6JJRC 080 010 060	8 X R1	16	60	8
6JJRC 080 020 060	8 X R2	16	60	8
6JJRC 100 005 070	10 X R0.5	20	70	10
6JJRC 100 010 070	10 X R1	20	70	10
6JJRC 100 020 070	10 X R2	20	70	10
6JJRC 120 005 080	12 X R0.5	25	80	12
6JJRC 120 010 080	12 X R1	25	80	12
6JJRC 120 020 080	12 X R2	25	80	12

2HRB Fresa Emisferica 2 Tagli per Nervature



- **Fresa per acciai bonificati e temprati (HRc50~62).**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

2 | UWC 초미립자 | TISIN Coating | R ±0.005 (0.05 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.39 | i info p.197

D	Tolleranza
Ø0.1	+0 ~ -0.005mm
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2HRB 001 003 S04	0.05R X 0.1	0.3	-	40	4
2HRB 001 005 S04	0.05R X 0.1	0.5	-	40	4
2HRB 002 005 S04	0.1R X 0.2	0.2	0.5	40	4
2HRB 002 010 S04	0.1R X 0.2	0.2	1	40	4
2HRB 002 015 S04	0.1R X 0.2	0.2	1.5	40	4
2HRB 002 020 S04	0.1R X 0.2	0.2	2	40	4
New 2HRB 002 025 S04	0.1R X 0.2	0.2	2.5	40	4
New 2HRB 002 030 S04	0.1R X 0.2	0.2	3	40	4
2HRB 003 010 S04	0.15R X 0.3	0.3	1	40	4
2HRB 003 015 S04	0.15R X 0.3	0.3	1.5	40	4
2HRB 003 020 S04	0.15R X 0.3	0.3	2	40	4
New 2HRB 003 025 S04	0.15R X 0.3	0.3	2.5	40	4
2HRB 003 030 S04	0.15R X 0.3	0.3	3	40	4
New 2HRB 003 035 S04	0.15R X 0.3	0.3	3.5	40	4
2HRB 003 040 S04	0.15R X 0.3	0.3	4	40	4
2HRB 003 050 S04	0.15R X 0.3	0.3	5	40	4
2HRB 004 010 S04	0.2R X 0.4	0.4	1	40	4
New 2HRB 004 015 S04	0.2R X 0.4	0.4	1.5	40	4
2HRB 004 020 S04	0.2R X 0.4	0.4	2	40	4
New 2HRB 004 025 S04	0.2R X 0.4	0.4	2.5	40	4
2HRB 004 030 S04	0.2R X 0.4	0.4	3	40	4
New 2HRB 004 035 S04	0.2R X 0.4	0.4	3.5	40	4
2HRB 004 040 S04	0.2R X 0.4	0.4	4	40	4
2HRB 004 045 S04	0.2R X 0.4	0.4	4.5	40	4
2HRB 004 050 S04	0.2R X 0.4	0.4	5	40	4
2HRB 004 060 S04	0.2R X 0.4	0.4	6	40	4
2HRB 004 080 S04	0.2R X 0.4	0.4	8	40	4
2HRB 004 100 S04	0.2R X 0.4	0.4	10	40	4
2HRB 005 010 S04	0.25R X 0.5	0.5	1	45	4
New 2HRB 005 015 S04	0.25R X 0.5	0.5	1.5	45	4
2HRB 005 020 S04	0.25R X 0.5	0.5	2	45	4
New 2HRB 005 025 S04	0.25R X 0.5	0.5	2.5	45	4
2HRB 005 030 S04	0.25R X 0.5	0.5	3	45	4
New 2HRB 005 035 S04	0.25R X 0.5	0.5	3.5	45	4
2HRB 005 040 S04	0.25R X 0.5	0.5	4	45	4
New 2HRB 005 045 S04	0.25R X 0.5	0.5	4.5	45	4
2HRB 005 050 S04	0.25R X 0.5	0.5	5	45	4
2HRB 005 060 S04	0.25R X 0.5	0.5	6	45	4
2HRB 005 080 S04	0.25R X 0.5	0.5	8	45	4
2HRB 005 100 S04	0.25R X 0.5	0.5	10	45	4
2HRB 005 120 S04	0.25R X 0.5	0.5	12	45	4
2HRB 005 140 S04	0.25R X 0.5	0.5	14	45	4
2HRB 006 010 S04	0.3R X 0.6	0.6	1	45	4
2HRB 006 020 S04	0.3R X 0.6	0.6	2	45	4
2HRB 006 030 S04	0.3R X 0.6	0.6	3	45	4
2HRB 006 040 S04	0.3R X 0.6	0.6	4	45	4
2HRB 006 050 S04	0.3R X 0.6	0.6	5	45	4
2HRB 006 060 S04	0.3R X 0.6	0.6	6	45	4

Numero d'Ordine	R×D	L1	L2	L	d
2HRB 006 080 S04	0.3R X 0.6	0.6	8	45	4
2HRB 006 100 S04	0.3R X 0.6	0.6	10	45	4
2HRB 006 120 S04	0.3R X 0.6	0.6	12	45	4
2HRB 006 140 S04	0.3R X 0.6	0.6	14	45	4
2HRB 006 160 S04	0.3R X 0.6	0.6	16	45	4
2HRB 007 020 S04	0.35R X 0.7	0.7	2	45	4
2HRB 007 040 S04	0.35R X 0.7	0.7	4	45	4
New 2HRB 007 060 S04	0.35R X 0.7	0.7	6	45	4
2HRB 007 080 S04	0.35R X 0.7	0.7	8	45	4
2HRB 007 100 S04	0.35R X 0.7	0.7	10	45	4
2HRB 007 120 S04	0.35R X 0.7	0.7	12	45	4
2HRB 008 020 S04	0.4R X 0.8	0.8	2	45	4
New 2HRB 008 030 S04	0.4R X 0.8	0.8	3	45	4
2HRB 008 040 S04	0.4R X 0.8	0.8	4	45	4
New 2HRB 008 050 S04	0.4R X 0.8	0.8	5	45	4
2HRB 008 060 S04	0.4R X 0.8	0.8	6	45	4
2HRB 008 080 S04	0.4R X 0.8	0.8	8	45	4
2HRB 008 100 S04	0.4R X 0.8	0.8	10	45	4
2HRB 008 120 S04	0.4R X 0.8	0.8	12	45	4
2HRB 008 140 S04	0.4R X 0.8	0.8	14	45	4
2HRB 008 160 S04	0.4R X 0.8	0.8	16	45	4
2HRB 009 040 S04	0.45R X 0.9	0.9	4	45	4
2HRB 010 020 S04	0.5R X 1	1	2	45	4
2HRB 010 020 S06	0.5R X 1	1	2	50	6
2HRB 010 030 S04	0.5R X 1	1	3	45	4
2HRB 010 030 S06	0.5R X 1	1	3	50	6
2HRB 010 040 S04	0.5R X 1	1	4	45	4
2HRB 010 040 S06	0.5R X 1	1	4	50	6
2HRB 010 050 S04	0.5R X 1	1	5	45	4
2HRB 010 050 S06	0.5R X 1	1	5	50	6
2HRB 010 060 S04	0.5R X 1	1	6	45	4
2HRB 010 060 S06	0.5R X 1	1	6	50	6
2HRB 010 080 S04	0.5R X 1	1	8	45	4
2HRB 010 080 S06	0.5R X 1	1	8	50	6
2HRB 010 100 S04	0.5R X 1	1	10	50	4
2HRB 010 100 S06	0.5R X 1	1	10	50	6
2HRB 010 120 S04	0.5R X 1	1	12	50	4
2HRB 010 120 S06	0.5R X 1	1	12	50	6
2HRB 010 140 S04	0.5R X 1	1	14	50	4
2HRB 010 140 S06	0.5R X 1	1	14	50	6
2HRB 010 160 S04	0.5R X 1	1	16	50	4
2HRB 010 160 S06	0.5R X 1	1	16	60	6
2HRB 010 180 S04	0.5R X 1	1	18	50	4
2HRB 010 180 S06	0.5R X 1	1	18	60	6
2HRB 010 200 S04	0.5R X 1	1	20	50	4
2HRB 010 200 S06	0.5R X 1	1	20	60	6
2HRB 010 220 S04	0.5R X 1	1	22	60	4
2HRB 010 220 S06	0.5R X 1	1	22	65	6

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2HRB 010 250 S04	0.5R X 1	1	25	60	4
New 2HRB 010 300 S04	0.5R X 1	1	30	70	4
2HRB 012 040 S04	0.6R X 1.2	1.2	4	45	4
2HRB 012 040 S06	0.6R X 1.2	1.2	4	50	6
2HRB 012 060 S04	0.6R X 1.2	1.2	6	45	4
2HRB 012 060 S06	0.6R X 1.2	1.2	6	50	6
2HRB 012 080 S04	0.6R X 1.2	1.2	8	45	4
2HRB 012 080 S06	0.6R X 1.2	1.2	8	50	6
2HRB 012 100 S04	0.6R X 1.2	1.2	10	50	4
2HRB 012 100 S06	0.6R X 1.2	1.2	10	50	6
2HRB 012 120 S04	0.6R X 1.2	1.2	12	50	4
2HRB 012 120 S06	0.6R X 1.2	1.2	12	50	6
2HRB 012 160 S04	0.6R X 1.2	1.2	16	50	4
2HRB 012 160 S06	0.6R X 1.2	1.2	16	60	6
2HRB 012 200 S04	0.6R X 1.2	1.2	20	50	4
2HRB 012 200 S06	0.6R X 1.2	1.2	20	60	6
2HRB 012 240 S04	0.6R X 1.2	1.2	24	60	4
2HRB 012 240 S06	0.6R X 1.2	1.2	24	65	6
2HRB 014 060 S04	0.7R X 1.4	1.4	6	45	4
2HRB 014 080 S04	0.7R X 1.4	1.4	8	45	4
2HRB 014 120 S04	0.7R X 1.4	1.4	12	50	4
2HRB 014 160 S04	0.7R X 1.4	1.4	16	50	4
2HRB 015 030 S04	0.75R X 1.5	1.5	3	45	4
2HRB 015 030 S06	0.75R X 1.5	1.5	3	50	6
2HRB 015 040 S04	0.75R X 1.5	1.5	4	45	4
2HRB 015 040 S06	0.75R X 1.5	1.5	4	50	6
2HRB 015 060 S04	0.75R X 1.5	1.5	6	45	4
2HRB 015 060 S06	0.75R X 1.5	1.5	6	50	6
2HRB 015 080 S04	0.75R X 1.5	1.5	8	45	4
2HRB 015 080 S06	0.75R X 1.5	1.5	8	50	6
2HRB 015 100 S04	0.75R X 1.5	1.5	10	50	4
2HRB 015 100 S06	0.75R X 1.5	1.5	10	50	6
2HRB 015 120 S04	0.75R X 1.5	1.5	12	50	4
2HRB 015 120 S06	0.75R X 1.5	1.5	12	50	6
2HRB 015 140 S04	0.75R X 1.5	1.5	14	50	4
2HRB 015 140 S06	0.75R X 1.5	1.5	14	50	6
2HRB 015 160 S04	0.75R X 1.5	1.5	16	50	4
2HRB 015 160 S06	0.75R X 1.5	1.5	16	60	6
2HRB 015 180 S04	0.75R X 1.5	1.5	18	50	4
2HRB 015 180 S06	0.75R X 1.5	1.5	18	60	6
2HRB 015 200 S04	0.75R X 1.5	1.5	20	50	4
2HRB 015 200 S06	0.75R X 1.5	1.5	20	60	6
2HRB 015 220 S04	0.75R X 1.5	1.5	22	60	4
2HRB 015 220 S06	0.75R X 1.5	1.5	22	65	6
2HRB 015 250 S04	0.75R X 1.5	1.5	25	60	4
2HRB 015 250 S06	0.75R X 1.5	1.5	25	65	6
2HRB 015 300 S04	0.75R X 1.5	1.5	30	70	4
2HRB 015 300 S06	0.75R X 1.5	1.5	30	70	6

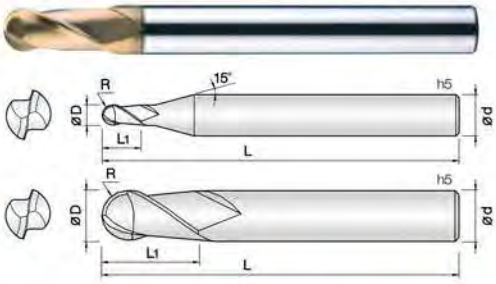
Numero d'Ordine	R×D	L1	L2	L	d
2HRB 015 350 S04	0.75R X 1.5	1.5	35	70	4
New 2HRB 015 400 S04	0.75R X 1.5	1.5	40	80	4
2HRB 016 060 S04	0.8R X 1.6	1.6	6	45	4
2HRB 016 080 S04	0.8R X 1.6	1.6	8	45	4
2HRB 016 120 S04	0.8R X 1.6	1.6	12	50	4
2HRB 016 160 S04	0.8R X 1.6	1.6	16	50	4
2HRB 016 200 S04	0.8R X 1.6	1.6	20	50	4
2HRB 018 060 S04	0.9R X 1.8	1.8	6	45	4
2HRB 018 080 S04	0.9R X 1.8	1.8	8	45	4
2HRB 018 120 S04	0.9R X 1.8	1.8	12	50	4
2HRB 018 160 S04	0.9R X 1.8	1.8	16	50	4
2HRB 018 200 S04	0.9R X 1.8	1.8	20	50	4
2HRB 020 040 S04	1R X 2	2	4	45	4
2HRB 020 040 S06	1R X 2	2	4	50	6
2HRB 020 060 S04	1R X 2	2	6	45	4
2HRB 020 060 S06	1R X 2	2	6	50	6
2HRB 020 080 S04	1R X 2	2	8	45	4
2HRB 020 080 S06	1R X 2	2	8	50	6
2HRB 020 100 S04	1R X 2	2	10	50	4
2HRB 020 100 S06	1R X 2	2	10	50	6
2HRB 020 120 S04	1R X 2	2	12	50	4
2HRB 020 120 S06	1R X 2	2	12	50	6
2HRB 020 140 S04	1R X 2	2	14	50	4
2HRB 020 140 S06	1R X 2	2	14	50	6
2HRB 020 160 S04	1R X 2	2	16	50	4
2HRB 020 160 S06	1R X 2	2	16	60	6
2HRB 020 180 S04	1R X 2	2	18	50	4
2HRB 020 180 S06	1R X 2	2	18	60	6
2HRB 020 200 S04	1R X 2	2	20	50	4
2HRB 020 200 S06	1R X 2	2	20	60	6
2HRB 020 220 S04	1R X 2	2	22	60	4
2HRB 020 220 S06	1R X 2	2	22	65	6
2HRB 020 250 S04	1R X 2	2	25	60	4
2HRB 020 250 S06	1R X 2	2	25	65	6
2HRB 020 300 S04	1R X 2	2	30	70	4
2HRB 020 300 S06	1R X 2	2	30	70	6
2HRB 020 350 S04	1R X 2	2	35	70	4
2HRB 020 350 S06	1R X 2	2	35	75	6
2HRB 020 400 S04	1R X 2	2	40	80	4
2HRB 020 400 S06	1R X 2	2	40	80	6
2HRB 020 450 S04	1R X 2	2	45	80	4
New 2HRB 020 500 S04	1R X 2	2	50	90	4
2HRB 025 080 S04	1.25R X 2.5	2.5	8	45	4
New 2HRB 025 080 S06	1.25R X 2.5	2.5	8	50	6
2HRB 025 100 S04	1.25R X 2.5	2.5	10	50	4
New 2HRB 025 100 S06	1.25R X 2.5	2.5	10	50	6
2HRB 025 160 S04	1.25R X 2.5	2.5	16	50	4
New 2HRB 025 160 S06	1.25R X 2.5	2.5	16	60	6

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2HRB 025 200 S04	1.25R X 2.5	2.5	20	60	4
2HRB 025 250 S04	1.25R X 2.5	2.5	25	60	4
2HRB 025 300 S04	1.25R X 2.5	2.5	30	70	4
2HRB 025 350 S04	1.25R X 2.5	2.5	35	70	4
New 2HRB 025 400 S04	1.25R X 2.5	2.5	40	80	4
2HRB 030 060 S06	1.5R X 3	3	6	50	6
2HRB 030 080 S06	1.5R X 3	3	8	50	6
2HRB 030 100 S06	1.5R X 3	3	10	50	6
2HRB 030 120 S06	1.5R X 3	3	12	50	6
2HRB 030 160 S06	1.5R X 3	3	16	60	6
2HRB 030 200 S06	1.5R X 3	3	20	60	6
2HRB 030 250 S06	1.5R X 3	3	25	65	6
2HRB 030 300 S06	1.5R X 3	3	30	70	6
2HRB 030 350 S06	1.5R X 3	3	35	75	6
2HRB 030 400 S06	1.5R X 3	3	40	80	6
2HRB 030 450 S06	1.5R X 3	3	45	90	6
2HRB 030 500 S06	1.5R X 3	3	50	100	6
2HRB 030 600 S06	1.5R X 3	3	60	100	6
New 2HRB 030 650 S06	1.5R X 3	3	65	110	6
New 2HRB 030 700 S06	1.5R X 3	3	70	110	6
2HRB 040 080 S06	2R X 4	4	8	50	6
2HRB 040 100 S06	2R X 4	4	10	50	6
2HRB 040 120 S06	2R X 4	4	12	50	6
2HRB 040 160 S06	2R X 4	4	16	60	6
2HRB 040 200 S06	2R X 4	4	20	60	6
2HRB 040 250 S06	2R X 4	4	25	65	6
2HRB 040 300 S06	2R X 4	4	30	70	6
2HRB 040 350 S06	2R X 4	4	35	75	6
2HRB 040 400 S06	2R X 4	4	40	80	6
2HRB 040 450 S06	2R X 4	4	45	90	6
2HRB 040 500 S06	2R X 4	4	50	100	6
2HRB 040 550 S06	2R X 4	4	55	100	6
2HRB 040 600 S06	2R X 4	4	60	100	6
New 2HRB 040 650 S06	2R X 4	4	65	110	6
New 2HRB 040 700 S06	2R X 4	4	70	110	6
2HRB 050 160 S06	2.5R X 5	6	16	60	6
2HRB 050 200 S06	2.5R X 5	6	20	60	6
2HRB 050 250 S06	2.5R X 5	6	25	70	6
2HRB 050 300 S06	2.5R X 5	6	30	75	6
2HRB 050 400 S06	2.5R X 5	6	40	80	6
2HRB 050 450 S06	2.5R X 5	6	45	90	6
2HRB 050 500 S06	2.5R X 5	6	50	100	6
2HRB 050 600 S06	2.5R X 5	6	60	100	6
New 2HRB 050 650 S06	2.5R X 5	6	65	110	6
New 2HRB 050 700 S06	2.5R X 5	6	70	110	6
2HRB 060 150 S06	3R X 6	10	15	55	6
2HRB 060 300 S06	3R X 6	10	30	110	6
2HRB 080 250 060	4R X 8	12	25	60	8

Numero d'Ordine	R×D	L1	L2	L	d
2HRB 080 300 100	4R X 8	12	30	100	8
2HRB 100 300 070	5R X 10	16	30	70	10
2HRB 100 350 100	5R X 10	16	35	100	10
2HRB 120 300 075	6R X 12	18	30	75	12
2HRB 120 400 110	6R X 12	18	40	110	12

2PHCB Fresa Emisferica 2 Tagli Ultra - Precisa



- **Fresa per superfinitura (+/- 2 µm)di acciai bonificati e temprati (HRc50~62).**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Sl.
- Tolleranza ultra-precisa del filo tagliente.
- Finiture speculari del materiale lavorato.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

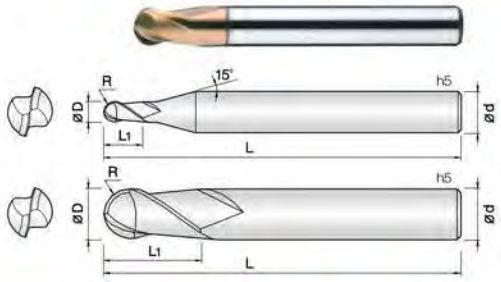
2 | UWC 초미립자 | TISIN Coating | R ±0.002 (0.1 ~ 1R) | R ±0.003 (1.25 ~ 2R) | R ±0.005 (2.5~ 6R) | 30° Helix Angle | € List. p.42 | i info p.198

D	Tolleranza
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
2PHCB 002 004 S04	0.1R X 0.2	0.4	40	4
2PHCB 003 006 S04	0.15R X 0.3	0.6	40	4
2PHCB 004 008 S04	0.2R X 0.4	0.8	40	4
2PHCB 005 010 S04	0.25R X 0.5	1	45	4
2PHCB 006 012 S04	0.3R X 0.6	1.2	45	4
2PHCB 007 015 S04	0.35R X 0.7	1.5	45	4
2PHCB 008 020 S04	0.4R X 0.8	2	45	4
2PHCB 009 020 S04	0.45R X 0.9	2	45	4
2PHCB 010 025 S04	0.5R X 1	2.5	50	4
2PHCB 010 025 S06	0.5R X 1	2.5	50	6
2PHCB 012 030 S04	0.6R X 1.2	3	50	4
2PHCB 015 040 S04	0.75R X 1.5	4	50	4
2PHCB 015 040 S06	0.75R X 1.5	4	50	6
2PHCB 020 050 S04	1R X 2	5	50	4
2PHCB 020 050 S06	1R X 2	5	50	6
2PHCB 025 060 S04	1.25R X 2.5	6	50	4
2PHCB 030 080 S04	1.5R X 3	8	50	4
2PHCB 030 080 S06	1.5R X 3	8	60	6
2PHCB 035 080 S06	1.75R X 3.5	8	60	6
2PHCB 040 080 S04	2R X 4	8	60	4
2PHCB 040 080 S06	2R X 4	8	70	6
2PHCB 045 080 S06	2.25R X 4.5	8	70	6
2PHCB 050 100 S06	2.5R X 5	10	75	6
2PHCB 055 100 S06	2.75R X 5.5	10	75	6
2PHCB 060 120 080	3R X 6	12	80	6
2PHCB 070 140 S08	3.5R X 7	14	80	8
2PHCB 080 140 090	4R X 8	14	90	8
2PHCB 100 180 100	5R X 10	18	100	10
2PHCB 120 220 110	6R X 12	22	110	12

2HSB Fresa Emisferica 2 Tagli Serie Corta



- **Fresa per acciai bonificati e temprati (HRc50~62).**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Lunghezza ridotta per utilizzo con mandrini a calettamento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

2 | UWC 초미립자 | TISIN Coating | R ±0.005 (0.05 ~ 2.5R) | R ±0.01 (3R ~ 6R) | 30° Helix Angle | € List. p.43 | i info p.198

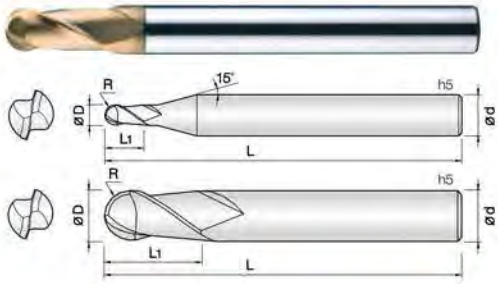
D	Tolleranza
Ø0.1 ~ 0.15	+0 ~ -0.005mm
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
New 2HSB 001 001 S04	0.05R X 0.1	0.1	38	4
New 2HSB 001 001 S04	0.05R X 0.1	0.15	38	4
New 2HSB 001 5001 S04	0.075R X 0.15	0.15	38	4
New 2HSB 001 5002 S04	0.075R X 0.15	0.2	38	4
2HSB 002 002 S04	0.1R X 0.2	0.2	38	4
New 2HSB 002 003 S04	0.1R X 0.2	0.3	38	4
2HSB 003 003 S04	0.15R X 0.3	0.3	38	4
New 2HSB 003 0045 S04	0.15R X 0.3	0.45	38	4
2HSB 004 004 S04	0.2R X 0.4	0.4	38	4
New 2HSB 004 006 S04	0.2R X 0.4	0.6	38	4
2HSB 005 005 S04	0.25R X 0.5	0.5	38	4
New 2HSB 005 0075 S04	0.25R X 0.5	0.75	38	4
2HSB 006 006 S04	0.3R X 0.6	0.6	38	4
New 2HSB 006 009 S04	0.3R X 0.6	0.9	38	4
2HSB 007 007 S04	0.35R X 0.7	0.7	38	4
New 2HSB 007 010 S04	0.35R X 0.7	1	38	4
2HSB 008 008 S04	0.4R X 0.8	0.8	38	4
New 2HSB 008 012 S04	0.4R X 0.8	1.2	38	4
2HSB 009 009 S04	0.45R X 0.9	0.9	38	4
New 2HSB 009 013 S04	0.45R X 0.9	1.3	38	4
2HSB 010 010 S04	0.5R X 1	1	40	4
2HSB 010 010 S06	0.5R X 1	1	40	6
New 2HSB 010 015 S04	0.5R X 1	1.5	40	4
New 2HSB 010 015 S06	0.5R X 1	1.5	40	6
2HSB 015 015 S04	0.75R X 1.5	1.5	40	4
2HSB 015 015 S06	0.75R X 1.5	1.5	40	6
New 2HSB 015 023 S04	0.75R X 1.5	2.3	40	4
New 2HSB 015 023 S06	0.75R X 1.5	2.3	40	6
2HSB 020 020 S04	1R X 2	2	45	4
2HSB 020 020 S06	1R X 2	2	45	6
New 2HSB 020 030 S04	1R X 2	3	45	4
New 2HSB 020 030 S06	1R X 2	3	45	6
2HSB 030 030 S04	1.5R X 3	3	45	4
2HSB 030 030 S06	1.5R X 3	3	45	6
New 2HSB 030 045 S04	1.5R X 3	4.5	45	4
New 2HSB 030 045 S06	1.5R X 3	4.5	45	6
2HSB 040 040 S04	2R X 4	4	45	4
2HSB 040 040 S06	2R X 4	4	45	6
New 2HSB 040 060 S04	2R X 4	6	45	4
New 2HSB 040 060 S06	2R X 4	6	45	6
2HSB 050 050 S06	2.5R X 5	5	50	6
New 2HSB 050 075 S06	2.5R X 5	7.5	50	6
2HSB 060 060 050	3R X 6	6	50	6
2HSB 060 060 060	3R X 6	6	60	6
2HSB 080 080 050	4R X 8	8	50	8
2HSB 080 080 060	4R X 8	8	60	8
2HSB 100 100 060	5R X 10	10	60	10
2HSB 100 100 070	5R X 10	10	70	10

Numero d'Ordine	R×D	L1	L	d
2HSB 120 120 060	6R X 12	12	60	12
2HSB 120 120 070	6R X 12	12	70	12

2HCB Fresa Emisferica 2 Tagli Serie Standard



- **Fresa per acciai bonificati e temprati (HRc50~62).**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Sl.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superficiale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

D	Tolleranza
Ø0.06 ~ 0.19	+0 ~ -0.005mm
Ø0.2 ~ 5.8	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø13 ~ 20	-0.01 ~ -0.02mm

2 | UWC 초미립자 | TISIN Coating | R ±0.005 (0.03 ~2.93R) | R ±0.01 (3 ~ 6R) | R ±0.015 (6.5 ~ 10R) | 30° Helix Angle | € List. p.43 | i info p.198

Unità : mm

Numero d'Ordine	R×D	L1	L	d
New 2HCB 0006 001 S04	0.03R X 0.06	0.1	40	4
New 2HCB 0007 0012 S04	0.035R X 0.07	0.12	40	4
New 2HCB 0008 0015 S04	0.04R X 0.08	0.15	40	4
New 2HCB 0009 0017 S04	0.045R X 0.09	0.17	40	4
2HCB 001 002 S04	0.05R X 0.1	0.2	40	4
2HCB 0015 003 S04	0.075R X 0.15	0.3	40	4
2HCB 002 004 S04	0.1R X 0.2	0.4	40	4
2HCB 003 006 S04	0.15R X 0.3	0.6	40	4
2HCB 004 008 S04	0.2R X 0.4	0.8	40	4
2HCB 005 010 S04	0.25R X 0.5	1	45	4
2HCB 006 012 S04	0.3R X 0.6	1.2	45	4
2HCB 007 015 S04	0.35R X 0.7	1.5	45	4
2HCB 008 020 S04	0.4R X 0.8	2	45	4
2HCB 009 020 S04	0.45R X 0.9	2	45	4
New 2HCB 010 025 S03	0.5R X 1	2.5	50	3
2HCB 010 025 S04	0.5R X 1	2.5	50	4
2HCB 010 025 S06	0.5R X 1	2.5	50	6
2HCB 010 025 070	0.5R X 1	2.5	70	6
2HCB 010 025 100	0.5R X 1	2.5	100	6
New 2HCB 011 027 S04	0.55R X 1.1	2.7	50	4
New 2HCB 012 030 S03	0.6R X 1.2	3	50	3
2HCB 012 030 S04	0.6R X 1.2	3	50	4
New 2HCB 013 032 S04	0.65R X 1.3	3.2	50	4
New 2HCB 014 035 S04	0.7R X 1.4	3.5	50	4
New 2HCB 015 040 S03	0.75R X 1.5	4	50	3
2HCB 015 040 S04	0.75R X 1.5	4	50	4
2HCB 015 040 S06	0.75R X 1.5	4	50	6
2HCB 015 040 070	0.75R X 1.5	4	70	6
2HCB 015 040 100	0.75R X 1.5	4	100	6
New 2HCB 016 040 S04	0.8R X 1.6	4	50	4
New 2HCB 017 042 S04	0.85R X 1.7	4.2	50	4
New 2HCB 018 045 S04	0.9R X 1.8	4.5	50	4
New 2HCB 019 047 S04	0.95R X 1.9	4.7	50	4
New 2HCB 020 050 S03	1R X 2	5	50	3
2HCB 020 050 S04	1R X 2	5	50	4
2HCB 020 050 S06	1R X 2	5	50	6
2HCB 020 050 075	1R X 2	5	75	6
2HCB 020 050 100	1R X 2	5	100	6
New 2HCB 022 055 S04	1.1R X2.2	5.5	50	4
New 2HCB 024 060 S04	1.2R X2.4	6	50	4
New 2HCB 025 060 S03	1.25R X 2.5	6	50	3
2HCB 025 060 S04	1.25R X 2.5	6	50	4
2HCB 025 060 S06	1.25R X 2.5	6	75	6
2HCB 025 060 100	1.25R X 2.5	6	100	6
New 2HCB 026 060 S04	1.3R X 2.6	6	50	4
New 2HCB 028 070 S04	1.4R X 2.8	7	50	4
2HCB 030 080 S03	1.5R X 3	8	60	3
2HCB 030 080 S04	1.5R X 3	8	50	4

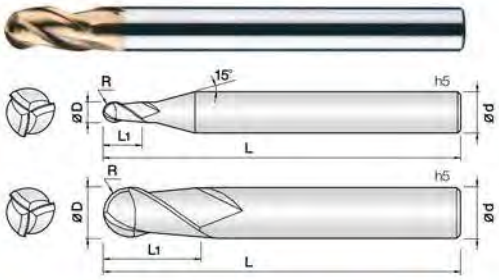
Numero d'Ordine	R×D	L1	L	d
2HCB 030 080 S06	1.5R X 3	8	60	6
2HCB 030 080 080	1.5R X 3	8	80	6
2HCB 030 080 100	1.5R X 3	8	100	6
New 2HCB 032 080 S04	1.6R X 3.2	8	60	4
New 2HCB 034 080 S04	1.7R X 3.4	8	60	4
2HCB 035 080 S06	1.75R X 3.5	8	60	6
New 2HCB 036 090 S04	1.8R X 3.6	9	60	4
New 2HCB 038 090 S04	1.9R X 3.8	9	60	4
2HCB 040 080 060	2R X 4	8	60	4
2HCB 040 080 080	2R X 4	8	80	4
2HCB 040 080 S06	2R X 4	8	70	6
2HCB 040 080 090	2R X 4	8	90	6
2HCB 040 080 120	2R X 4	8	120	6
New 2HCB 042 100 S06	2.1R X 4.2	10	70	6
New 2HCB 044 100 S06	2.2R X 4.4	10	70	6
2HCB 045 080 S06	2.25R X 4.5	8	70	6
New 2HCB 046 100 S06	2.3R X 4.6	10	70	6
New 2HCB 048 110 S06	2.4R X 4.8	11	70	6
2HCB 050 080 S05	2.5R X 5	8	80	5
2HCB 050 100 S06	2.5R X 5	10	75	6
New 2HCB 052 120 S06	2.6R X 5.2	12	75	6
New 2HCB 054 120 S06	2.7R X 5.4	12	75	6
2HCB 055 100 S06	2.75R X 5.5	10	75	6
New 2HCB 056 120 S06	2.8R X 5.6	12	75	6
New 2HCB 058 120 S06	2.9R X 5.8	12	75	6
2HCB 060 100 060	3R X 6	10	60	6
2HCB 060 120 080	3R X 6	12	80	6
2HCB 060 120 100	3R X 6	12	100	6
2HCB 060 120 120	3R X 6	12	120	6
New 2HCB 060 120 150	3R X 6	12	150	6
2HCB 070 140 S08	3.5R X 7	14	80	8
2HCB 080 140 090	4R X 8	14	90	8
2HCB 080 140 110	4R X 8	14	110	8
2HCB 080 140 150	4R X 8	14	150	8
2HCB 090 160 S10	4.5R X 9	16	100	10
2HCB 100 180 100	5R X 10	18	100	10
2HCB 100 180 120	5R X 10	18	120	10
2HCB 100 180 150	5R X 10	18	150	10
2HCB 100 180 180	5R X 10	18	180	10
2HCB 110 200 S12	5.5R X 11	20	110	12
2HCB 120 220 110	6R X 12	22	110	12
2HCB 120 220 130	6R X 12	22	130	12
2HCB 120 220 150	6R X 12	22	150	12
2HCB 120 220 200	6R X 12	22	200	12
2HCB 130 240 S14	6.5R X 13	24	110	14
2HCB 140 240 S14	7R X 14	24	110	14
2HCB 160 300 130	8R X 16	30	130	16
2HCB 160 300 160	8R X 16	30	160	16

Unità : mm

Numero d'Ordine	R×D	L1	L	d						
2HCB 160 300 200	8R X 16	30	200	16						
2HCB 200 380 160	10R X 20	38	160	20						
2HCB 200 380 200	10R X 20	38	200	20						

FIT GOLD

3HCB Fresa Emisferica 3 Tagli Serie Standard



- **Fresa per acciai bonificati e temprati fino a HRc65.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Parametri di alta velocità e avanzamenti nell'utilizzo con il 4° asse.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

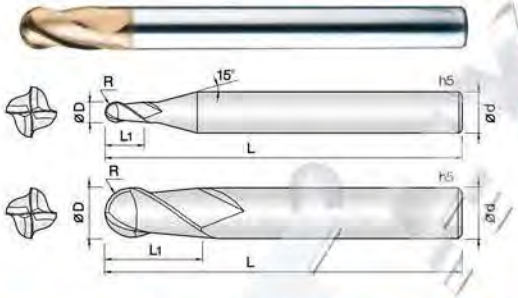
3 | WC 미립자 | TISIN Coating | R ±0.005 (1 ~ 2.5R) | R ±0.01 (3R ~ 6R) | 30° Helix Angle | List. p.45 | info p.199

D	Tolleranza
Ø2 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
3HCB 020 050 S06	1R X 2	5	50	6
3HCB 030 080 S06	1.5R X 3	8	65	6
3HCB 040 080 S04	2R X 4	8	60	4
3HCB 040 080 S06	2R X 4	8	70	6
3HCB 050 100 S06	2.5R X 5	10	75	6
3HCB 060 120 S06	3R X 6	12	80	6
3HCB 080 140 S08	4R X 8	14	90	8
3HCB 100 180 S10	5R X 10	18	100	10
3HCB 120 220 S12	6R X 12	22	110	12

4HCB Fresa Emisferica 4 Tagli Serie Standard



- **Fresa per acciai bonificati e temprati fino a HRc65.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Parametri di alta velocità e avanzamenti nell'utilizzo con il 4° asse.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

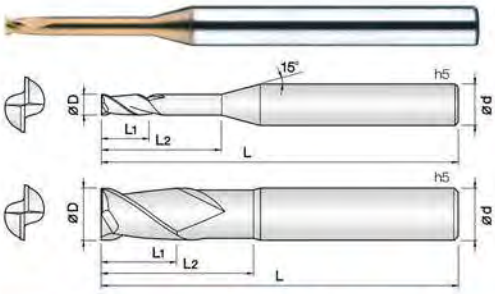
4 | WC 미립자 | TISIN Coating | R ±0.005 (0.5 ~ 2.5R) | R ±0.01 (3 ~ 6R) | R ±0.01 (8 ~ 10R) | 30° Helix Angle | List. p.45 | info p.199

D	Tolleranza
Ø1 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm
Ø16 ~ 20	−0.01 ~ −0.02mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
New 4HCB 010 025 S06	0.5R X 1	2.5	50	6
New 4HCB 015 040 S06	0.75R X 1.5	4	50	6
New 4HCB 020 050 S06	1R X 2	5	50	6
4HCB 030 080 S06	1.5R X 3	8	60	6
4HCB 040 080 S04	2R X 4	8	60	4
4HCB 040 080 S06	2R X 4	8	70	6
4HCB 050 100 S06	2.5R X 5	10	80	6
4HCB 060 120 S06	3R X 6	12	90	6
4HCB 080 140 S08	4R X 8	14	100	8
4HCB 100 180 S10	5R X 10	18	100	10
4HCB 120 220 S12	6R X 12	22	110	12
4HCB 160 300 S16	8R X 16	30	130	16
New 4HCB 200 400 S20	10R X 20	40	160	20

2HRE Fresa Emisferica 2 Tagli per Nervature



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

2 | UWC 초미립자 | TISIN Coating | D +0~-0.005 Ø0.1 | D +0~-0.01 Ø0.2 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | 30° Helix Angle | Rinforzato | € List. p.45 | i info p.200

D	Tolleranza
Ø0.1	+0 ~ -0.005mm
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
2HRE 001 003 S04	0.1	0.3	-	40	4
2HRE 001 005 S04	0.1	0.5	-	40	4
2HRE 002 005 S04	0.2	0.2	0.5	40	4
2HRE 002 010 S04	0.2	0.2	1	40	4
2HRE 002 015 S04	0.2	0.2	1.5	40	4
2HRE 002 020 S04	0.2	0.2	2	40	4
New 2HRE 002 025 S04	0.2	0.2	2.5	40	4
New 2HRE 002 030 S04	0.2	0.2	3	40	4
2HRE 003 010 S04	0.3	0.3	1	40	4
2HRE 003 015 S04	0.3	0.3	1.5	40	4
2HRE 003 020 S04	0.3	0.3	2	40	4
New 2HRE 003 025 S04	0.3	0.3	2.5	40	4
2HRE 003 030 S04	0.3	0.3	3	40	4
New 2HRE 003 035 S04	0.3	0.3	3.5	40	4
2HRE 003 040 S04	0.3	0.3	4	40	4
2HRE 003 050 S04	0.3	0.3	5	40	4
2HRE 004 010 S04	0.4	0.4	1	40	4
New 2HRE 004 015 S04	0.4	0.4	1.5	40	4
2HRE 004 020 S04	0.4	0.4	2	40	4
New 2HRE 004 025 S04	0.4	0.4	2.5	40	4
2HRE 004 030 S04	0.4	0.4	3	40	4
New 2HRE 004 035 S04	0.4	0.4	3.5	40	4
2HRE 004 040 S04	0.4	0.4	4	40	4
2HRE 004 050 S04	0.4	0.4	5	40	4
2HRE 004 060 S04	0.4	0.4	6	40	4
2HRE 004 080 S04	0.4	0.4	8	40	4
2HRE 004 100 S04	0.4	0.4	10	40	4
New 2HRE 005 010 S04	0.5	0.5	1	40	4
2HRE 005 020 S04	0.5	0.5	2	40	4
2HRE 005 030 S04	0.5	0.5	3	40	4
2HRE 005 040 S04	0.5	0.5	4	40	4
2HRE 005 050 S04	0.5	0.5	5	40	4
2HRE 005 060 S04	0.5	0.5	6	40	4
2HRE 005 080 S04	0.5	0.5	8	40	4
2HRE 005 100 S04	0.5	0.5	10	40	4
2HRE 005 120 S04	0.5	0.5	12	45	4
2HRE 005 140 S04	0.5	0.5	14	45	4
New 2HRE 006 010 S04	0.6	0.6	1	40	4
2HRE 006 020 S04	0.6	0.6	2	40	4
2HRE 006 030 S04	0.6	0.6	3	40	4
2HRE 006 040 S04	0.6	0.6	4	40	4
2HRE 006 050 S04	0.6	0.6	5	40	4
2HRE 006 060 S04	0.6	0.6	6	40	4
2HRE 006 080 S04	0.6	0.6	8	40	4
2HRE 006 100 S04	0.6	0.6	10	40	4
2HRE 006 120 S04	0.6	0.6	12	45	4
2HRE 006 140 S04	0.6	0.6	14	45	4
2HRE 006 160 S04	0.6	0.6	16	45	4

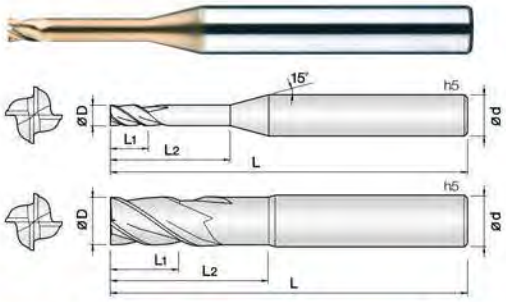
Numero d'Ordine	D	L1	L2	L	d
2HRE 007 020 S04	0.7	0.7	2	40	4
2HRE 007 040 S04	0.7	0.7	4	40	4
2HRE 007 060 S04	0.7	0.7	6	40	4
2HRE 007 080 S04	0.7	0.7	8	40	4
2HRE 007 100 S04	0.7	0.7	10	40	4
2HRE 007 120 S04	0.7	0.7	12	45	4
2HRE 008 020 S04	0.8	0.8	2	40	4
New 2HRE 008 030 S04	0.8	0.8	3	40	4
2HRE 008 040 S04	0.8	0.8	4	40	4
New 2HRE 008 050 S04	0.8	0.8	5	40	4
2HRE 008 060 S04	0.8	0.8	6	40	4
2HRE 008 080 S04	0.8	0.8	8	40	4
2HRE 008 100 S04	0.8	0.8	10	40	4
2HRE 008 120 S04	0.8	0.8	12	45	4
2HRE 008 140 S04	0.8	0.8	14	45	4
2HRE 009 060 S04	0.9	0.9	6	40	4
2HRE 009 080 S04	0.9	0.9	8	40	4
2HRE 009 100 S04	0.9	0.9	10	40	4
2HRE 010 020 S04	1	1	2	45	4
2HRE 010 030 S04	1	1	3	45	4
2HRE 010 040 S04	1	1	4	45	4
2HRE 010 050 S04	1	1	5	45	4
2HRE 010 060 S04	1	1	6	45	4
2HRE 010 080 S04	1	1	8	45	4
2HRE 010 100 S04	1	1	10	45	4
2HRE 010 120 S04	1	1	12	45	4
2HRE 010 140 S04	1	1	14	45	4
2HRE 010 160 S04	1	1	16	50	4
2HRE 010 180 S04	1	1	18	50	4
2HRE 010 200 S04	1	1	20	50	4
2HRE 010 250 S04	1	1	25	60	4
2HRE 010 300 S04	1	1	30	70	4
2HRE 012 040 S04	1.2	1.2	4	45	4
2HRE 012 060 S04	1.2	1.2	6	45	4
2HRE 012 080 S04	1.2	1.2	8	45	4
2HRE 012 100 S04	1.2	1.2	10	45	4
2HRE 012 120 S04	1.2	1.2	12	45	4
2HRE 012 160 S04	1.2	1.2	16	50	4
2HRE 012 200 S04	1.2	1.2	20	50	4
2HRE 012 250 S04	1.2	1.2	25	60	4
2HRE 012 300 S04	1.2	1.2	30	70	4
2HRE 014 060 S04	1.4	1.4	6	45	4
2HRE 014 080 S04	1.4	1.4	8	45	4
2HRE 014 100 S04	1.4	1.4	10	45	4
2HRE 014 140 S04	1.4	1.4	14	45	4
2HRE 014 160 S04	1.4	1.4	16	50	4
2HRE 014 200 S04	1.4	1.4	20	50	4
2HRE 015 040 S04	1.5	1.5	4	45	4

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
2HRE 015 060 S04	1.5	1.5	6	45	4
2HRE 015 080 S04	1.5	1.5	8	45	4
2HRE 015 100 S04	1.5	1.5	10	45	4
2HRE 015 120 S04	1.5	1.5	12	45	4
2HRE 015 140 S04	1.5	1.5	14	50	4
2HRE 015 160 S04	1.5	1.5	16	50	4
2HRE 015 180 S04	1.5	1.5	18	50	4
2HRE 015 200 S04	1.5	1.5	20	50	4
2HRE 015 250 S04	1.5	1.5	25	60	4
2HRE 015 300 S04	1.5	1.5	30	70	4
2HRE 016 100 S04	1.6	1.6	10	45	4
2HRE 016 140 S04	1.6	1.6	14	45	4
2HRE 016 180 S04	1.6	1.6	18	60	4
2HRE 018 100 S04	1.8	1.8	10	45	4
2HRE 018 140 S04	1.8	1.8	14	45	4
2HRE 018 180 S04	1.8	1.8	18	50	4
2HRE 020 040 S04	2	2	4	45	4
2HRE 020 060 S04	2	2	6	45	4
2HRE 020 080 S04	2	2	8	45	4
2HRE 020 100 S04	2	2	10	45	4
2HRE 020 120 S04	2	2	12	45	4
2HRE 020 140 S04	2	2	14	45	4
2HRE 020 160 S04	2	2	16	50	4
2HRE 020 180 S04	2	2	18	50	4
2HRE 020 200 S04	2	2	20	50	4
2HRE 020 220 S04	2	2	22	60	4
2HRE 020 250 S04	2	2	25	60	4
2HRE 020 300 S04	2	2	30	60	4
2HRE 020 350 S04	2	2	35	70	4
2HRE 020 400 S04	2	2	40	80	4
2HRE 020 450 S04	2	2	45	80	4
2HRE 020 500 S04	2	2	50	90	4
2HRE 025 080 S04	2.5	2.5	8	45	4
2HRE 025 100 S04	2.5	2.5	10	45	4
2HRE 025 120 S04	2.5	2.5	12	45	4
2HRE 025 160 S04	2.5	2.5	16	50	4
2HRE 025 200 S04	2.5	2.5	20	50	4
2HRE 025 250 S04	2.5	2.5	25	60	4
2HRE 025 300 S04	2.5	2.5	30	70	4
2HRE 025 350 S04	2.5	2.5	35	70	4
2HRE 025 400 S04	2.5	2.5	40	80	4
2HRE 025 500 S04	2.5	2.5	50	90	4
2HRE 030 060 S06	3	3	6	45	6
New 2HRE 030 080 S06	3	3	8	45	6
2HRE 030 100 S06	3	3	10	45	6
2HRE 030 120 S06	3	3	12	50	6
2HRE 030 160 S06	3	3	16	55	6
2HRE 030 200 S06	3	3	20	60	6

Numero d'Ordine	D	L1	L2	L	d
2HRE 030 250 S06	3	3	25	65	6
2HRE 030 300 S06	3	3	30	70	6
2HRE 030 350 S06	3	3	35	75	6
2HRE 030 400 S06	3	3	40	80	6
2HRE 030 450 S06	3	3	45	90	6
2HRE 030 500 S06	3	3	50	100	6
2HRE 030 600 S06	3	3	60	100	6
2HRE 040 080 S06	4	4	8	50	6
2HRE 040 100 S06	4	4	10	50	6
2HRE 040 120 S06	4	4	12	50	6
2HRE 040 160 S06	4	4	16	55	6
2HRE 040 200 S06	4	4	20	60	6
2HRE 040 250 S06	4	4	25	65	6
2HRE 040 300 S06	4	4	30	70	6
2HRE 040 350 S06	4	4	35	75	6
2HRE 040 400 S06	4	4	40	80	6
2HRE 040 450 S06	4	4	45	90	6
2HRE 040 500 S06	4	4	50	100	6
2HRE 040 550 S06	4	4	55	100	6
2HRE 040 600 S06	4	4	60	100	6
2HRE 050 160 S06	5	6	16	55	6
2HRE 050 200 S06	5	6	20	60	6
2HRE 050 250 S06	5	6	25	65	6
2HRE 050 300 S06	5	6	30	70	6
2HRE 050 350 S06	5	6	35	75	6
2HRE 050 400 S06	5	6	40	80	6
2HRE 050 500 S06	5	6	50	100	6
2HRE 050 600 S06	5	6	60	100	6
2HRE 060 200 S06	6	10	20	60	6
2HRE 060 300 S06	6	10	30	75	6
2HRE 060 400 S06	6	10	40	80	6
2HRE 060 500 S06	6	10	50	90	6
2HRE 060 600 S06	6	10	60	110	6
2HRE 080 200 S08	8	12	20	65	8
2HRE 080 300 S08	8	12	30	80	8
2HRE 080 400 S08	8	12	40	100	8
2HRE 100 250 S10	10	15	25	70	10
2HRE 100 350 S10	10	15	35	80	10
2HRE 100 450 S10	10	15	45	100	10
2HRE 120 300 S12	12	18	30	80	12
2HRE 120 400 S12	12	18	40	100	12
2HRE 120 500 S12	12	18	50	120	12

4HRE Fresa Emisferica 4 Tagli per Nervature



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature del tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

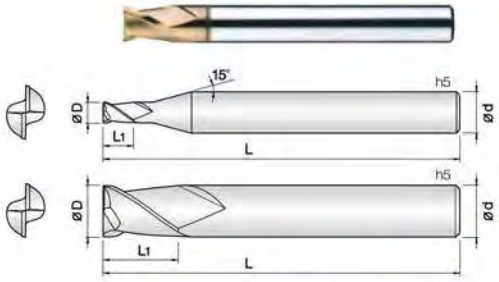
4 | UWC 초미립자 | TISIN Coating | D +0~-0.01 Ø0.8 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | 30° Helix Angle | Rinforzato | € List. p.48 | i info p.203

D	Tolleranza
Ø0.8 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
4HRE 008 020 S04	0.8	0.8	2	45	4
4HRE 008 040 S04	0.8	0.8	4	45	4
4HRE 008 060 S04	0.8	0.8	6	45	4
4HRE 008 080 S04	0.8	0.8	8	45	4
4HRE 008 100 S04	0.8	0.8	10	45	4
4HRE 008 120 S04	0.8	0.8	12	45	4
4HRE 008 160 S04	0.8	0.8	16	50	4
4HRE 009 020 S04	0.9	0.9	2	45	4
4HRE 009 060 S04	0.9	0.9	6	45	4
4HRE 009 080 S04	0.9	0.9	8	45	4
4HRE 009 100 S04	0.9	0.9	10	45	4
New 4HRE 010 020 S04	1	1	2	45	4
4HRE 010 030 S04	1	1	3	45	4
4HRE 010 040 S04	1	1	4	45	4
4HRE 010 060 S04	1	1	6	45	4
4HRE 010 080 S04	1	1	8	45	4
4HRE 010 100 S04	1	1	10	45	4
4HRE 010 120 S04	1	1	12	45	4
New 4HRE 010 140 S04	1	1	14	50	4
4HRE 010 160 S04	1	1	16	50	4
4HRE 010 200 S04	1	1	20	50	4
4HRE 010 250 S04	1	1	25	60	4
New 4HRE 012 040 S04	1.2	1.2	4	45	4
4HRE 012 060 S04	1.2	1.2	6	45	4
4HRE 012 080 S04	1.2	1.2	8	45	4
4HRE 012 100 S04	1.2	1.2	10	45	4
4HRE 012 120 S04	1.2	1.2	12	45	4
4HRE 012 160 S04	1.2	1.2	16	50	4
New 4HRE 015 040 S04	1.5	1.5	4	45	4
4HRE 015 060 S04	1.5	1.5	6	45	4
4HRE 015 080 S04	1.5	1.5	8	45	4
4HRE 015 100 S04	1.5	1.5	10	45	4
4HRE 015 120 S04	1.5	1.5	12	45	4
4HRE 015 160 S04	1.5	1.5	16	50	4
4HRE 015 200 S04	1.5	1.5	20	50	4
4HRE 015 250 S04	1.5	1.5	25	60	4
New 4HRE 020 040 S04	2	2	4	45	4
4HRE 020 060 S04	2	2	6	45	4
4HRE 020 080 S04	2	2	8	45	4
4HRE 020 100 S04	2	2	10	45	4
4HRE 020 120 S04	2	2	12	45	4
New 4HRE 020 140 S04	2	2	14	50	4
4HRE 020 160 S04	2	2	16	50	4
New 4HRE 020 180 S04	2	2	18	50	4
4HRE 020 200 S04	2	2	20	50	4
4HRE 020 250 S04	2	2	25	60	4
4HRE 020 300 S04	2	2	30	70	4
4HRE 025 100 S04	2.5	2.5	10	45	4
4HRE 025 120 S04	2.5	2.5	12	45	4
4HRE 025 160 S04	2.5	2.5	16	50	4
4HRE 025 200 S04	2.5	2.5	20	50	4
4HRE 025 250 S04	2.5	2.5	25	60	4
4HRE 025 300 S04	2.5	2.5	30	70	4
New 4HRE 030 060 S06	3	3	6	45	6
New 4HRE 030 080 S06	3	3	8	45	6
4HRE 030 100 S06	3	3	10	45	6
4HRE 030 120 S06	3	3	12	50	6
4HRE 030 160 S06	3	3	16	55	6
4HRE 030 200 S06	3	3	20	60	6
4HRE 030 250 S06	3	3	25	65	6
4HRE 030 300 S06	3	3	30	70	6
4HRE 030 350 S06	3	3	35	75	6
4HRE 030 400 S06	3	3	40	80	6
New 4HRE 040 060 S06	4	4	6	50	6
New 4HRE 040 080 S06	4	4	8	50	6
4HRE 040 100 S06	4	4	10	50	6
4HRE 040 120 S06	4	4	12	50	6
4HRE 040 160 S06	4	4	16	55	6
4HRE 040 200 S06	4	4	20	60	6
4HRE 040 250 S06	4	4	25	65	6
4HRE 040 300 S06	4	4	30	70	6
4HRE 040 400 S06	4	4	40	80	6
4HRE 040 450 S06	4	4	45	90	6
4HRE 040 500 S06	4	4	50	100	6
4HRE 050 160 S06	5	5	16	55	6
4HRE 050 200 S06	5	5	20	60	6
4HRE 050 250 S06	5	5	25	65	6
4HRE 050 300 S06	5	5	30	70	6
4HRE 050 400 S06	5	5	40	80	6
4HRE 050 500 S06	5	5	50	100	6
4HRE 060 200 S06	6	6	20	60	6
4HRE 060 300 S06	6	6	30	75	6
4HRE 060 400 S06	6	6	40	80	6
4HRE 060 500 S06	6	6	50	90	6
4HRE 080 200 S08	8	10	20	65	8
4HRE 080 300 S08	8	10	30	80	8
4HRE 080 400 S08	8	10	40	100	8
4HRE 100 250 S10	10	15	25	70	10
4HRE 100 350 S10	10	15	35	90	10
4HRE 100 450 S10	10	15	45	110	10
4HRE 120 300 S12	12	18	30	80	12
4HRE 120 400 S12	12	18	40	100	12
4HRE 120 500 S12	12	18	50	120	12

2HSE Fresa Cilindrica 2 Tagli Serie Corta



- **Fresa per acciai bonificati e temprati fino a HRc58.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

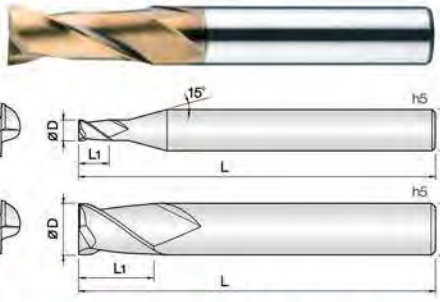
2 | WC 미립자 | TISIN Coating | D +0 −0.005 Ø0.1 | D +0 −0.01 Ø0.2 ~ 5 | D −0.01 −0.025 Ø6 ~ 12 | 30° Helix Angle | Rinforzato | € List. p.49 | i info p.204

D	Tolleranza
Ø0.1	+0 ~ −0.005mm
Ø0.2 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.01 ~ −0.025mm

Unità : mm

Numero d'Ordine	D	L1	L	d
2HSE 001 001 S04	0.1	0.1	38	4
2HSE 002 002 S04	0.2	0.2	38	4
2HSE 003 003 S04	0.3	0.3	38	4
2HSE 004 004 S04	0.4	0.4	38	4
2HSE 005 005 S04	0.5	0.5	38	4
2HSE 006 006 S04	0.6	0.6	38	4
2HSE 007 007 S04	0.7	0.7	38	4
2HSE 008 008 S04	0.8	0.8	38	4
2HSE 009 009 S04	0.9	0.9	38	4
2HSE 010 010 S04	1	1	40	4
2HSE 012 012 S04	1.2	1.2	40	4
2HSE 015 015 S04	1.5	1.5	40	4
2HSE 020 020 S04	2	2	40	4
2HSE 030 030 S04	3	3	40	4
2HSE 040 040 S04	4	4	40	4
2HSE 050 050 S06	5	5	45	6
2HSE 060 060 S06	6	6	45	6
2HSE 080 080 S08	8	8	50	8
2HSE 100 100 S10	10	10	60	10
2HSE 120 120 S12	12	12	65	12

2HCE Fresa Cilindrica 2 Tagli Serie Standard



- **Fresa per acciai bonificati e temprati fino a HRc58.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature.
- Produzione a partire da diametro 0,05 mm.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

2 | WC 미립지 | TISIN Coating | D +0~-0.005 Ø0.05 ~ 0.15 | D +0~-0.01 Ø0.2 ~ 5.9 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø13 ~ 20 | 30° Helix Angle | Rinforzato | € List. p.19 | i info p.188

D	Tolleranza
Ø0.05 ~ 0.15	+0~ -0.005mm
Ø0.2 ~ 5.9	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø13 ~ 20	-0.015 ~ -0.03mm

Unità : mm

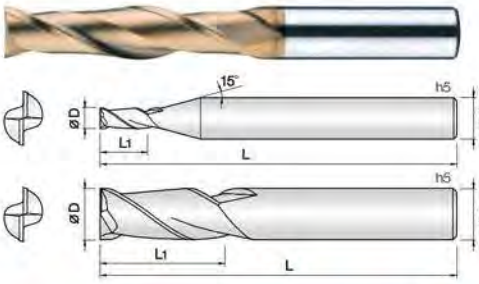
Numero d'Ordine	D	L1	L	d
2HCE 0005 0008 S04	0.05	0.08	38	4
2HCE 0006 001 S04	0.06	0.1	38	4
2HCE 0007 0012 S04	0.07	0.12	38	4
2HCE 0008 0015 S04	0.08	0.15	38	4
2HCE 0009 0017 S04	0.09	0.17	38	4
2HCE 0010 002 S04	0.1	0.2	38	4
2HCE 0015 003 S04	0.15	0.3	38	4
2HCE 002 004 S04	0.2	0.4	38	4
2HCE 002 5005 S04	0.25	0.5	38	4
2HCE 003 006 S04	0.3	0.6	38	4
2HCE 003 5007 S04	0.35	0.7	38	4
2HCE 004 008 S04	0.4	0.8	38	4
2HCE 0045 009 S04	0.45	0.9	38	4
New 2HCE 005 010 S03	0.5	1	40	3
2HCE 005 010 S04	0.5	1	38	4
2HCE 005 5011 S04	0.55	1.1	38	4
New 2HCE 006 012 S03	0.6	1.2	40	3
2HCE 006 012 S04	0.6	1.2	38	4
2HCE 006 5013 S04	0.65	1.3	38	4
2HCE 007 014 S04	0.7	1.4	38	4
2HCE 007 5015 S04	0.75	1.5	38	4
New 2HCE 008 016 S03	0.8	1.6	40	3
2HCE 008 016 S04	0.8	1.6	38	4
2HCE 008 5017 S04	0.85	1.7	38	4
2HCE 009 020 S04	0.9	2	38	4
2HCE 0095 020 S04	0.95	2	38	4
New 2HCE 010 025 S03	1	2.5	40	3
2HCE 010 025 S04	1	2.5	40	4
2HCE 010 025 S06	1	2.5	40	6
2HCE 010 025 060	1	2.5	60	6
New 2HCE 0105 025 S04	1.05	2.5	40	4
2HCE 011 027 S04	1.1	2.7	40	4
New 2HCE 0115 025 S04	1.15	2.5	40	4
New 2HCE 012 030 S03	1.2	3	40	3
2HCE 012 030 S04	1.2	3	40	4
2HCE 012 030 060	1.2	3	60	6
New 2HCE 0125 030 S04	1.25	3	40	4
2HCE 013 032 S04	1.3	3.2	40	4
New 2HCE 0135 032 S04	1.35	3.2	40	4
2HCE 014 035 S04	1.4	3.5	40	4
New 2HCE 0145 035 S04	1.45	3.5	40	4
New 2HCE 015 040 S03	1.5	4	40	3
2HCE 015 040 S04	1.5	4	40	4
2HCE 015 040 S06	1.5	4	40	6
2HCE 015 040 060	1.5	4	60	6
New 2HCE 0155 040 S04	1.55	4	40	4
2HCE 016 040 S04	1.6	4	40	4
New 2HCE 0165 040 S04	1.65	4	40	4

Numero d'Ordine	D	L1	L	d
2HCE 017 042 S04	1.7	4.2	40	4
New 2HCE 0175 042 S04	1.75	4.2	40	4
2HCE 018 045 S04	1.8	4.5	40	4
New 2HCE 0185 045 S04	1.85	4.5	40	4
2HCE 019 050 S04	1.9	5	40	4
New 2HCE 0195 050 S04	1.95	5	40	4
New 2HCE 020 060 S03	2	6	40	3
2HCE 020 060 S04	2	6	40	4
2HCE 020 060 S06	2	6	40	6
2HCE 020 060 060	2	6	60	6
2HCE 021 060 S04	2.1	6	40	4
2HCE 022 060 S04	2.2	6	40	4
2HCE 023 060 S04	2.3	6	40	4
2HCE 024 080 S04	2.4	8	45	4
New 2HCE 025 080 S03	2.5	8	45	3
2HCE 025 080 S04	2.5	8	45	4
2HCE 025 080 S06	2.5	8	45	6
2HCE 025 080 070	2.5	8	70	6
2HCE 026 080 S04	2.6	8	45	4
2HCE 027 080 S04	2.7	8	45	4
2HCE 028 080 S04	2.8	8	45	4
2HCE 029 080 S04	2.9	8	45	4
2HCE 030 080 S03	3	8	45	3
2HCE 030 080 S04	3	8	45	4
2HCE 030 080 S06	3	8	45	6
2HCE 030 080 070	3	8	70	6
New 2HCE 031 080 S06	3.1	8	45	6
New 2HCE 032 080 S06	3.2	8	45	6
New 2HCE 033 080 S06	3.3	8	45	6
New 2HCE 034 080 S06	3.4	8	45	6
2HCE 035 100 S06	3.5	10	45	6
New 2HCE 036 100 S06	3.6	10	45	6
New 2HCE 037 100 S06	3.7	10	45	6
New 2HCE 038 100 S06	3.8	10	45	6
New 2HCE 039 100 S06	3.9	10	45	6
2HCE 040 100 S04	4	11	45	4
2HCE 040 110 S06	4	11	45	6
2HCE 040 110 070	4	11	70	6
New 2HCE 041 110 S06	4.1	11	45	6
New 2HCE 042 110 S06	4.2	11	45	6
New 2HCE 043 110 S06	4.3	11	45	6
New 2HCE 044 110 S06	4.4	11	45	6
2HCE 045 110 S06	4.5	11	45	6
New 2HCE 046 110 S06	4.6	11	45	6
New 2HCE 047 110 S06	4.7	11	45	6
New 2HCE 048 110 S06	4.8	11	45	6
New 2HCE 049 110 S06	4.9	13	45	6
2HCE 050 130 S06	5	13	50	6

Unità : mm

Numero d'Ordine	D	L1	L	d
2HCE 050 130 080	5	13	80	6
New 2HCE 051 130 S06	5.1	13	50	6
New 2HCE 052 130 S06	5.2	13	50	6
New 2HCE 053 130 S06	5.3	13	50	6
New 2HCE 054 130 S06	5.4	13	50	6
2HCE 055 130 S06	5.5	13	50	6
New 2HCE 056 130 S06	5.6	13	50	6
New 2HCE 057 130 S06	5.7	13	50	6
New 2HCE 058 130 S06	5.8	13	50	6
New 2HCE 059 130 S06	5.9	13	50	6
2HCE 060 130 S06	6	13	50	6
2HCE 060 130 080	6	15	80	6
New 2HCE 061 150 S08	6.1	15	70	8
New 2HCE 062 150 S08	6.2	15	70	8
New 2HCE 063 150 S08	6.3	15	70	8
New 2HCE 064 150 S08	6.4	16	70	8
2HCE 065 160 S08	6.5	16	60	8
2HCE 070 160 S08	7	16	60	8
2HCE 075 160 S08	7.5	19	60	8
2HCE 080 190 S08	8	19	60	8
2HCE 085 190 S10	8.5	19	70	10
2HCE 090 190 S10	9	19	70	10
2HCE 095 190 S10	9.5	22	70	10
2HCE 100 220 S10	10	22	70	10
2HCE 105 220 S12	10.5	22	75	12
2HCE 110 220 S12	11	22	75	12
2HCE 115 220 S12	11.5	26	75	12
2HCE 120 260 S12	12	26	75	12
New 2HCE 130 260 S14	13	26	90	14
2HCE 140 260 S14	14	26	80	14
2HCE 140 260 S16	14	35	90	16
New 2HCE 150 350 S16	15	35	100	16
2HCE 160 350 S16	16	35	100	16
New 2HCE 170 350 S18	17	35	100	18
2HCE 180 350 S18	18	40	100	18
2HCE 200 400 S20	20		100	20

2LEM Fresa Cilindrica 2 Tagli Serie Lunga



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati fino a HRc55.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Vibrazioni ridotte grazie a run-out e tolleranze precise.
- Ampia gamma di lunghezze per le più svariate applicazioni.
- Geometria rinforzata per prevenire scheggiature del tagliente.

2 | WC 미립자 | TISIN Coating | D +0~-0.01 Ø1 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø14 ~ 25 | 30° Helix Angle | Rinforzato | € List. p.51 | i info p.203

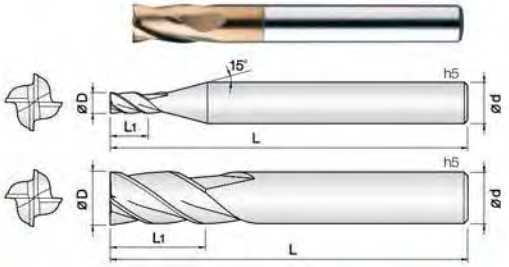
D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø14 ~ 25	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	L1	L	d
2LEM 010 030 S06	1	3	60	6
2LEM 010 050 S06	1	5	60	6
2LEM 010 070 S06	1	7	60	6
2LEM 010 100 S06	1	10	60	6
New 2LEM 010 120 S06	1	12	60	6
New 2LEM 010 150 S06	1	15	60	6
2LEM 015 060 S06	1.5	6	60	6
2LEM 015 075 S06	1.5	7.5	60	6
2LEM 015 100 S06	1.5	10	60	6
2LEM 015 150 S06	1.5	15	60	6
New 2LEM 015 200 S06	1.5	20	60	6
2LEM 020 060 S06	2	6	60	6
2LEM 020 100 S06	2	10	60	6
2LEM 020 150 S06	2	15	60	6
New 2LEM 020 200 S06	2	20	60	6
2LEM 030 120 S06	3	12	70	6
2LEM 030 150 S06	3	15	70	6
2LEM 030 200 S06	3	20	70	6
2LEM 030 250 S06	3	25	70	6
New 2LEM 030 300 S06	3	30	70	6
2LEM 040 150 S06	4	15	70	6
2LEM 040 200 S06	4	20	70	6
2LEM 040 300 S06	4	30	75	6
New 2LEM 040 350 S06	4	35	75	6
New 2LEM 040 400 S06	4	40	80	6
2LEM 050 200 S06	5	20	80	6
2LEM 050 250 S06	5	25	70	6
2LEM 050 300 S06	5	30	75	6
New 2LEM 050 400 S06	5	40	80	6
2LEM 060 200 S06	6	20	75	6
2LEM 060 200 100	6	20	100	6
2LEM 060 250 S06	6	25	75	6
2LEM 060 300 S06	6	30	80	6
New 2LEM 060 350 S06	6	35	80	6
New 2LEM 060 400 S06	6	40	90	6
2LEM 080 250 S08	8	25	75	8
2LEM 080 250 100	8	25	100	8
2LEM 080 300 S08	8	30	80	8
2LEM 080 350 S08	8	35	80	8
2LEM 080 400 S08	8	40	90	8
New 2LEM 080 450 S08	8	45	100	8
2LEM 080 500 S08	8	50	100	8
New 2LEM 080 550 S08	8	55	100	8
2LEM 100 300 S10	10	30	80	10
2LEM 100 300 110	10	30	110	10
2LEM 100 350 S10	10	35	90	10
2LEM 100 400 S10	10	40	90	10
New 2LEM 100 450 S10	10	45	100	10

Numero d'Ordine	D	L1	L	d
2LEM 100 500 S10	10	50	100	10
New 2LEM 100 550 S10	10	55	110	10
2LEM 100 600 S10	10	60	110	10
New 2LEM 100 650 S10	10	65	120	10
New 2LEM 100 700 S10	10	70	120	10
2LEM 120 300 S12	12	30	90	12
2LEM 120 350 110	12	35	110	12
2LEM 120 400 S12	12	40	100	12
New 2LEM 120 450 S12	12	45	100	12
2LEM 120 500 S12	12	50	100	12
New 2LEM 120 550 S12	12	55	110	12
2LEM 120 600 S12	12	60	110	12
2LEM 120 700 S12	12	70	130	12
New 2LEM 120 800 S12	12	80	130	12
2LEM 140 500 S14	14	50	110	14
2LEM 160 400 160	16	40	160	16
2LEM 160 550 S16	16	55	120	16
2LEM 160 700 S16	16	70	130	16
2LEM 160 800 S16	16	80	160	16
New 2LEM 160 1000 S16	16	100	160	16
2LEM 200 500 160	20	50	160	20
2LEM 200 600 S20	20	60	130	20
2LEM 200 1000 S20	20	100	200	20
2LEM 250 750 S25	25	75	160	25

4HSE Fresa Cilindrica 4 Tagli Serie Corta



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature.
- Lunghezza ridotta per utilizzo con mandrini a calettamento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

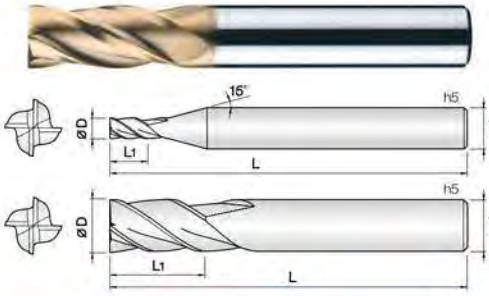
4 | WC 미립자 | TISIN Coating | D +0~-0.01 Ø0.5 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø16 | 30° Helix Angle | Rinforzato | List. p.52 | info p.205

D	Tolleranza
Ø0.5 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	L1	L	d
New 4HSE 005 0075 S04	0.5	0.75	38	4
New 4HSE 006 009 S04	0.6	0.9	38	4
New 4HSE 008 012 S04	0.8	1.2	38	4
4HSE 010 015 S04	1	1.5	40	4
4HSE 012 020 S04	1.2	2	40	4
4HSE 015 022 S04	1.5	2.2	40	4
4HSE 020 035 S04	2	3.5	40	4
4HSE 020 035 S06	2	3.5	40	6
4HSE 030 045 S04	3	4.5	40	4
4HSE 030 045 S06	3	4.5	40	6
4HSE 040 060 S04	4	6	40	4
4HSE 040 060 S06	4	6	40	6
4HSE 050 075 S06	5	7.5	45	6
4HSE 060 090 S06	6	9	45	6
4HSE 080 120 S08	8	12	55	8
4HSE 100 150 S10	10	15	60	10
4HSE 120 180 S12	12	18	65	12
4HSE 160 240 S16	16	24	75	16

4HCE Fresa Cilindrica 4 Tagli Serie Standard



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

4 | WC 미립자 | TISIN Coating | D +0~-0.01 Ø0.5 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø13 ~ 20 | 30° Helix Angle | Rinforzato | € List. p.52 | i info p.205

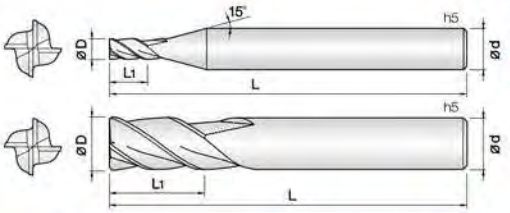
D	Tolleranza
Ø0.5 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø13 ~ 20	-0.015 ~ -0.03mm

Unità : mm

	Numero d'Ordine	D	L1	L	d
New	4HCE 005 010 S04	0.5	1	38	4
New	4HCE 006 012 S04	0.6	1.2	38	4
New	4HCE 007 014 S04	0.7	1.4	38	4
	4HCE 008 020 S04	0.8	2	38	4
New	4HCE 009 018 S04	0.9	1.8	38	4
New	4HCE 010 025 S03	1	2.5	40	3
	4HCE 010 025 S04	1	2.5	40	4
	4HCE 010025 S06	1	2.5	40	6
	4HCE 010025 060	1	2.5	60	6
	4HCE 010025 080	1	2.5	80	6
New	4HCE 012030 S03	1.2	3	40	3
	4HCE 012030 S04	1.2	3	40	4
	4HCE 012030 S06	1.2	3	40	6
	4HCE 012030 060	1.2	3	60	6
New	4HCE 015040 S03	1.5	4	40	3
	4HCE 015040 S04	1.5	4	40	4
	4HCE 015040 S06	1.5	4	40	6
	4HCE 015040 060	1.5	4	60	6
	4HCE 015040 080	1.5	4	80	6
New	4HCE 020060 S03	2	6	40	3
	4HCE 020060 S04	2	6	40	4
	4HCE 020060 S06	2	6	40	6
	4HCE 020060 060	2	6	60	6
	4HCE 020060 100	2	6	100	6
New	4HCE 025080 S03	2.5	8	45	3
	4HCE 025080 S04	2.5	8	45	4
	4HCE 025080 S06	2.5	8	45	6
	4HCE 025080 070	2.5	8	70	6
	4HCE 025080 100	2.5	8	100	6
	4HCE 030080 S03	3	8	45	3
	4HCE 030080 S04	3	8	45	4
	4HCE 030080 S06	3	8	45	6
	4HCE 030080 070	3	8	70	6
	4HCE 030080 100	3	8	100	6
	4HCE 035100 S06	3.5	10	45	6
	4HCE 040110 S04	4	11	45	4
	4HCE 040110 S06	4	11	45	6
	4HCE 040110 070	4	11	70	6
	4HCE 040110 100	4	11	100	6
	4HCE 045110 S06	4.5	11	45	6
	4HCE 050130 S06	5	13	50	6
	4HCE 050130 080	5	13	80	6
	4HCE 050130 100	5	13	100	6
	4HCE 055130 S06	5.5	13	50	6
	4HCE 060130 S06	6	13	50	6
	4HCE 060130 080	6	13	80	6
	4HCE 060130 100	6	13	100	6
	4HCE 065160 S08	6.5	16	60	8

	Numero d'Ordine	D	L1	L	d
	4HCE 070160 S08	7	16	60	8
	4HCE 075160 S08	7.5	16	60	8
	4HCE 080190 S08	8	19	60	8
	4HCE 085190 S10	8.5	19	70	10
	4HCE 090190 S10	9	19	70	10
	4HCE 095190 S10	9.5	19	70	10
	4HCE 100220 S10	10	22	70	10
	4HCE 105220 S12	10.5	22	75	12
	4HCE 110220 S12	11	22	75	12
	4HCE 115220 S12	11.5	22	75	12
	4HCE 120260 S12	12	26	75	12
New	4HCE 130260 S14	13	26	80	14
	4HCE 140260 S14	14	26	80	14
	4HCE 140260 S16	14	26	90	16
New	4HCE 150350 S16	15	35	100	16
	4HCE 160350 S16	16	35	100	16
New	4HCE 170350 S18	17	35	100	18
	4HCE 180350 S18	18	35	100	18
	4HCE 200400 S20	20	40	100	20





- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base SI.
- Vibrazioni ridotte grazie a run-out e tolleranze precise.
- Ampia gamma di lunghezze per le più svariate applicazioni.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

4 | WC 미립자 | TISIN Coating | D +0~-0.01 Ø1 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø14 ~ 25 | 30° Helix Angle | Rinforzato | List. p.53 | info p.205

D	Tolleranza
Ø1 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø14 ~ 25	-0.015 ~ -0.03mm

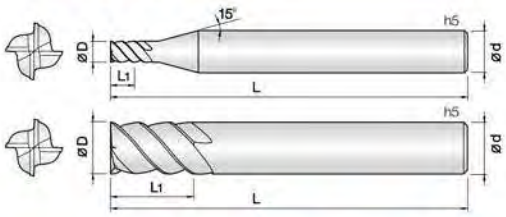
Unità : mm

Numero d'Ordine	D	L1	L	d
4LEM 010 030 S06	1	3	60	6
4LEM 010 050 S06	1	5	60	6
New 4LEM 010 070 S06	1	7	60	6
4LEM 015 060 S06	1.5	6	60	6
4LEM 015 080 S06	1.5	8	60	6
New 4LEM 015 100 S06	1.5	10	60	6
4LEM 020 080 S06	2	8	60	6
4LEM 020 100 S06	2	10	60	6
New 4LEM 020 120 S06	2	12	60	6
New 4LEM 020 150 S06	2	15	60	6
4LEM 030 100 S06	3	10	70	6
4LEM 030 150 S06	3	15	70	6
4LEM 030 200 S06	3	20	70	6
4LEM 030 250 S06	3	25	70	6
New 4LEM 030 300 S06	3	30	70	6
4LEM 040 120 S06	4	12	70	6
4LEM 040 150 S04	4	15	70	4
4LEM 040 150 S06	4	15	70	6
4LEM 040 200 S04	4	20	70	4
4LEM 040 200 S06	4	20	70	6
4LEM 040 250 S06	4	25	70	6
4LEM 040 300 S06	4	30	75	6
New 4LEM 040 350 S06	4	35	75	6
New 4LEM 040 400 S06	4	40	80	6
4LEM 050 200 S06	5	20	70	6
4LEM 050 250 S06	5	25	75	6
4LEM 050 300 S06	5	30	80	6
New 4LEM 050 400 S06	5	40	80	6
4LEM 060 200 S06	6	20	75	6
4LEM 060 200 100	6	20	100	6
4LEM 060 250 S06	6	25	75	6
4LEM 060 300 S06	6	30	80	6
4LEM 060 350 S06	6	35	80	6
New 4LEM 060 400 S06	6	40	90	6
4LEM 080 250 S08	8	25	75	8
4LEM 080 250 100	8	25	100	8
4LEM 080 300 S08	8	30	80	8
4LEM 080 350 S08	8	35	90	8
4LEM 080 400 S08	8	40	90	8
4LEM 080 450 S08	8	45	100	8
New 4LEM 080 500 S08	8	50	100	8
New 4LEM 080 550 S08	8	55	100	8
4LEM 100 300 S10	10	30	80	10
4LEM 100 300 110	10	30	110	10
4LEM 100 350 S10	10	35	90	10
4LEM 100 400 S10	10	40	90	10
New 4LEM 100 450 S10	10	45	100	10
4LEM 100 500 S10	10	50	100	10

Numero d'Ordine	D	L1	L	d
New 4LEM 100 550 S10	10	55	100	10
4LEM 100 600 S10	10	60	110	10
New 4LEM 100 650 S10	10	65	120	10
New 4LEM 100 700 S10	10	70	120	10
4LEM 120 300 S12	12	30	90	12
4LEM 120 350 110	12	35	110	12
4LEM 120 400 S12	12	40	100	12
New 4LEM 120 450 S12	12	45	100	12
4LEM 120 500 S12	12	50	100	12
New 4LEM 120 550 S12	12	55	110	12
4LEM 120 600 S12	12	60	110	12
4LEM 120 700 S12	12	70	130	12
New 4LEM 120 800 S12	12	80	130	12
4LEM 140 500 S14	14	50	110	14
4LEM 160 400 160	16	40	160	16
4LEM 160 550 S16	16	55	120	16
4LEM 160 700 S16	16	70	130	16
New 4LEM 160 900 S16	16	90	150	16
New 4LEM 160 1000 S16	16	100	160	16
4LEM 200 500 160	20	50	160	20
4LEM 200 600 S20	20	60	130	20
New 4LEM 200 800 S20	20	80	160	20
4LEM 200 1000 S20	20	100	200	20
4LEM 250 750 S25	25	75	160	25

4HEM Fresa Cilindrica 4 Tagli 45°





- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Elica a 45° progettata per alte velocità ed avanzamenti.
- Geometria rinforzata per prevenire scheggiature.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

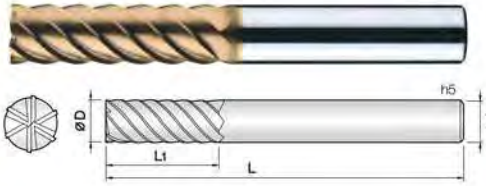
4 | UWC 초미립자 | TISIN Coating | D +0~-0.01 Ø1 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø14 ~ 25 | 45° Helix Angle | Rinforzato | € List. p.54 | i info p.206

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø14 ~ 25	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	L1	L	d
4HEM 010 025 S06	1	2.5	40	6
4HEM 010 035 S06	1	3.5	40	6
New 4HEM 010 050 S06	1	5	45	6
New 4HEM 012 030 S06	1.2	3	40	6
4HEM 015 040 S06	1.5	4	40	6
4HEM 015 060 S06	1.5	6	40	6
New 4HEM 015 080 S06	1.5	8	45	6
4HEM 020 050 S06	2	5	40	6
4HEM 020 080 S06	2	8	45	6
New 4HEM 020 100 S06	2	10	50	6
4HEM 030 080 S06	3	8	45	6
4HEM 030 120 S06	3	12	50	6
New 4HEM 030 150 S06	3	15	55	6
4HEM 040 110 S06	4	11	45	6
4HEM 040 160 S06	4	16	55	6
New 4HEM 040 200 S06	4	20	60	6
4HEM 050 130 S06	5	13	50	6
4HEM 050 180 S06	5	18	60	6
New 4HEM 050 250 S06	5	25	70	6
4HEM 060 130 S06	6	13	50	6
4HEM 060 200 S06	6	20	60	6
New 4HEM 060 250 S06	6	25	70	6
4HEM 080 200 S08	8	20	60	8
4HEM 080 250 S08	8	25	70	8
New 4HEM 080 300 S08	8	30	75	8
New 4HEM 080 400 S08	8	40	90	8
4HEM 100 220 S10	10	22	70	10
4HEM 100 300 S10	10	30	80	10
New 4HEM 100 400 S10	10	40	90	10
New 4HEM 100 500 S10	10	50	100	10
4HEM 120 260 S12	12	26	75	12
4HEM 120 400 S12	12	40	90	12
4HEM 120 500 S12	12	50	100	12
New 4HEM 120 600 S12	12	60	110	12
New 4HEM 140 300 S14	14	30	80	14
New 4HEM 140 500 S14	14	50	110	14
4HEM 160 350 S16	16	35	90	16
4HEM 160 500 S16	16	50	110	16
New 4HEM 160 650 S16	16	65	120	16
4HEM 200 400 S20	20	40	100	20
4HEM 200 500 S20	20	50	110	20
New 4HEM 200 700 S20	20	70	130	20
New 4HEM 250 800 S25	25	80	160	25

6&8HEM Fresa Cilindrica 6/8 Tagli 45°



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Sl.
- Tolleranza ed eccentricità precise garantiscono ottime finiture.
- Elica a 45° progettata per alte velocità ed avanzamenti.
- Geometria rinforzata per prevenire scheggiature.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

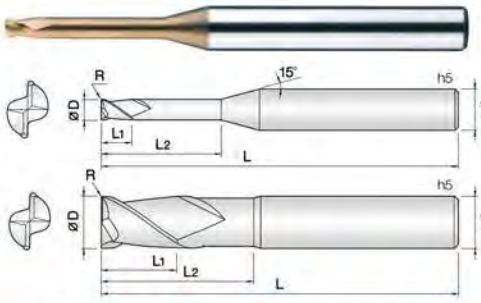
6 | 8 | UWC 초미립자 | TISIN Coating | D +0~-0.01 Ø3~5 | D -0.01~-0.025 Ø6~12 | D -0.015~-0.03 Ø16~25 | 45° Helix Angle | Rinforzato | € List. p.55 | i info p.206

D	Tolleranza
Ø3 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16 ~ 25	-0.015 ~ -0.03mm

Unità : mm

	Numero d'Ordine	D	L1	L	d
	6HEM 030 100 S06	3	10	50	6
New	6HEM 030 150 S06	3	15	50	6
	6HEM 040 120 S06	4	12	50	6
New	6HEM 040 160 S06	4	16	50	6
	6HEM 050 150 S06	5	15	50	6
New	6HEM 050 200 S06	5	20	60	6
	6HEM 060 150 S06	6	15	50	6
	6HEM 060 200 S06	6	20	60	6
	6HEM 060 250 S06	6	25	65	6
New	6HEM 060 300 S06	6	30	70	6
New	6HEM 060 350 S06	6	35	75	6
	6HEM 080 200 S08	8	20	60	8
	6HEM 080 250 S08	8	25	65	8
	6HEM 080 300 S08	8	30	75	8
	6HEM 080 350 S08	8	35	80	8
New	6HEM 080 400 S08	8	40	90	8
New	6HEM 080 450 S08	8	45	100	8
New	6HEM 080 500 S08	8	50	100	8
	6HEM 100 250 S10	10	25	70	10
	6HEM 100 350 S10	10	35	90	10
	6HEM 100 450 S10	10	45	100	10
New	6HEM 100 500 S10	10	50	100	10
New	6HEM 100 600 S10	10	60	110	10
	6HEM 120 300 S12	12	30	80	12
	6HEM 120 400 S12	12	40	90	12
	6HEM 120 500 S12	12	50	100	12
New	6HEM 120 600 S12	12	60	110	12
New	6HEM 120 700 S12	12	70	120	12
	6HEM 160 350 S16	16	35	90	16
	6HEM 160 500 S16	16	50	110	16
	6HEM 160 650 S16	16	65	120	16
	6HEM 160 800 S16	16	80	150	16
	6HEM 160 900 S16	16	90	160	16
New	6HEM 160 1000 S16	16	100	160	16
	6HEM 200 450 S20	20	45	100	20
	6HEM 200 600 S20	20	60	120	20
	6HEM 200 800 S20	20	80	150	20
	6HEM 200 900 S20	20	90	160	20
	6HEM 200 1000 S20	20	100	160	20
	6HEM 200 1100 S20	20	110	170	20
New	6HEM 200 1200 S20	20	120	180	20
New	8HEM 250 1000 S25	25	100	160	25
	8HEM 250 1250 S25	25	125	200	25

2CRE Fresa Torica 2 Tagli per Nervature



- **Fresa per acciai bonificati e temprati fino a HRc58.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

2 | UWC 초미립자 | TISIN Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 30° Helix Angle | € List. p.56 | i info p.207

D	Tolleranza
Ø0.2 ~ 5	+0~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm
Ø16	−0.01 ~ −0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
2CRE 002 0002 010	0.8 X R0.02	0.2	1	40	4
2CRE 002 0002 015	0.2 X R0.02	0.2	1.5	40	4
2CRE 002 0005 010	0.2 X R0.05	0.2	1	40	4
2CRE 002 0005 015	0.2 X R0.05	0.2	1.5	40	4
2CRE 003 0005 010	0.3 X R0.05	0.3	1	40	4
2CRE 003 0005 020	0.3 X R0.05	0.3	2	40	4
2CRE 003 0005 030	0.3 X R0.05	0.3	3	40	4
2CRE 004 0005 010	0.4 X R0.05	0.4	1	40	4
2CRE 004 0005 020	0.4 X R0.05	0.4	2	40	4
2CRE 004 0005 030	0.4 X R0.05	0.4	3	40	4
2CRE 004 0005 040	0.4 X R0.05	0.4	4	40	4
2CRE 004 001 010	0.4 X R0.1	0.4	1	40	4
2CRE 004 001 015	0.4 X R0.1	0.4	1.5	40	4
2CRE 004 001 020	0.4 X R0.1	0.4	2	40	4
2CRE 004 001 030	0.4 X R0.1	0.4	3	40	4
2CRE 004 001 040	0.4 X R0.1	0.4	4	40	4
New 2CRE 005 0002 010	0.5 X R0.02	0.5	1	45	4
New 2CRE 005 0002 015	0.5 X R0.02	0.5	1.5	45	4
New 2CRE 005 0002 020	0.5 X R0.02	0.5	2	45	4
New 2CRE 005 0002 025	0.5 X R0.02	0.5	2.5	45	4
New 2CRE 005 0002 030	0.5 X R0.02	0.5	3	45	4
New 2CRE 005 0002 040	0.5 X R0.02	0.5	4	45	4
New 2CRE 005 0002 050	0.5 X R0.02	0.5	5	45	4
New 2CRE 005 0002 060	0.5 X R0.02	0.5	6	45	4
New 2CRE 005 0002 080	0.5 X R0.02	0.5	8	45	4
New 2CRE 005 0002 100	0.5 X R0.02	0.5	10	50	4
2CRE 005 0005 010	0.5 X R0.05	0.5	1	45	4
2CRE 005 0005 015	0.5 X R0.05	0.5	1.5	45	4
2CRE 005 0005 020	0.5 X R0.05	0.5	2	45	4
2CRE 005 0005 025	0.5 X R0.05	0.5	2.5	45	4
2CRE 005 0005 030	0.5 X R0.05	0.5	3	45	4
2CRE 005 0005 040	0.5 X R0.05	0.5	4	45	4
2CRE 005 0005 050	0.5 X R0.05	0.5	5	45	4
2CRE 005 0005 060	0.5 X R0.05	0.5	6	45	4
New 2CRE 005 0005 080	0.5 X R0.05	0.5	8	45	4
New 2CRE 005 0005 100	0.5 X R0.05	0.5	10	50	4
2CRE 005 001 010	0.5 X R0.1	0.5	1	45	4
2CRE 005 001 015	0.5 X R0.1	0.5	1.5	45	4
2CRE 005 001 020	0.5 X R0.1	0.5	2	45	4
2CRE 005 001 025	0.5 X R0.1	0.5	2.5	45	4
2CRE 005 001 030	0.5 X R0.1	0.5	3	45	4
2CRE 005 001 040	0.5 X R0.1	0.5	4	45	4
2CRE 005 001 050	0.5 X R0.1	0.5	5	45	4
2CRE 005 001 060	0.5 X R0.1	0.5	6	45	4
New 2CRE 005 001 080	0.5 X R0.1	0.5	8	45	4
New 2CRE 005 001 100	0.5 X R0.1	0.5	10	50	4
New 2CRE 006 0002 020	0.6 X R0.02	0.6	2	45	4
New 2CRE 006 0002 030	0.6 X R0.02	0.6	3	45	4

Numero d'Ordine	D×R	L1	L2	L	d
New 2CRE 006 0002 040	0.6 X R0.02	0.6	4	45	4
New 2CRE 006 0002 060	0.6 X R0.02	0.6	6	45	4
New 2CRE 006 0002 080	0.6 X R0.02	0.6	8	45	4
New 2CRE 006 0002 100	0.6 X R0.02	0.6	10	50	4
2CRE 006 0005 020	0.6 X R0.05	0.6	2	45	4
2CRE 006 0005 030	0.6 X R0.05	0.6	3	45	4
2CRE 006 0005 040	0.6 X R0.05	0.6	4	45	4
2CRE 006 0005 060	0.6 X R0.05	0.6	6	45	4
2CRE 006 0005 080	0.6 X R0.05	0.6	8	45	4
New 2CRE 006 0005 100	0.6 X R0.05	0.6	10	50	4
2CRE 006 001 020	0.6 X R0.1	0.6	2	45	4
2CRE 006 001 030	0.6 X R0.1	0.6	3	45	4
2CRE 006 001 040	0.6 X R0.1	0.6	4	45	4
2CRE 006 001 060	0.6 X R0.1	0.6	6	45	4
2CRE 006 001 080	0.6 X R0.1	0.6	8	45	4
New 2CRE 006 001 100	0.6 X R0.1	0.6	10	50	4
2CRE 007 001 020	0.7 X R0.1	0.7	2	45	4
2CRE 007 001 040	0.7 X R0.1	0.7	4	45	4
2CRE 007 001 060	0.7 X R0.1	0.7	6	45	4
New 2CRE 008 0002 020	0.8 X R0.02	0.8	2	45	4
New 2CRE 008 0002 040	0.8 X R0.02	0.8	4	45	4
New 2CRE 008 0002 060	0.8 X R0.02	0.8	6	45	4
New 2CRE 008 0002 080	0.8 X R0.02	0.8	8	45	4
New 2CRE 008 0002 100	0.8 X R0.02	0.8	10	50	4
New 2CRE 008 0005 020	0.8 X R0.05	0.8	2	45	4
New 2CRE 008 0005 040	0.8 X R0.05	0.8	4	45	4
New 2CRE 008 0005 060	0.8 X R0.05	0.8	6	45	4
New 2CRE 008 0005 080	0.8 X R0.05	0.8	8	45	4
New 2CRE 008 0005 100	0.8 X R0.05	0.8	10	50	4
2CRE 008 001 020	0.8 X R0.1	0.8	2	45	4
2CRE 008 001 040	0.8 X R0.1	0.8	4	45	4
2CRE 008 001 060	0.8 X R0.1	0.8	6	45	4
2CRE 008 001 080	0.8 X R0.1	0.8	8	45	4
New 2CRE 008 001 100	0.8 X R0.1	0.8	10	50	4
2CRE 008 002 020	0.8 X R0.2	0.8	2	45	4
2CRE 008 002 040	0.8 X R0.2	0.8	4	45	4
2CRE 008 002 060	0.8 X R0.2	0.8	6	45	4
2CRE 008 002 080	0.8 X R0.2	0.8	8	45	4
New 2CRE 008 002 100	0.8 X R0.2	0.8	10	50	4
New 2CRE 010 0005 040	1 X R0.05	1	4	45	4
New 2CRE 010 0005 060	1 X R0.05	1	6	45	4
New 2CRE 010 0005 080	1 X R0.05	1	8	45	4
New 2CRE 010 0005 100	1 X R0.05	1	10	50	4
New 2CRE 010 0005 120	1 X R0.05	1	12	50	4
New 2CRE 010 0005 160	1 X R0.05	1	16	50	4
New 2CRE 010 0005 200	1 X R0.05	1	20	50	4
New 2CRE 010 0005 220	1 X R0.05	1	22	60	4
New 2CRE 010 0005 250	1 X R0.05	1	25	60	4

Unità : mm

	Numero d'Ordine	D×R	L1	L2	L	d
	2CRE 010 001 040	1 X R0.1	1	4	45	4
	2CRE 010 001 060	1 X R0.1	1	6	45	4
	2CRE 010 001 080	1 X R0.1	1	8	45	4
	2CRE 010 001 100	1 X R0.1	1	10	50	4
	2CRE 010 001 120	1 X R0.1	1	12	50	4
	2CRE 010 001 160	1 X R0.1	1	16	50	4
	2CRE 010 001 200	1 X R0.1	1	20	50	4
New	2CRE 010 001 220	1 X R0.1	1	22	60	4
New	2CRE 010 001 250	1 X R0.1	1	25	60	4
	2CRE 010 002 040	1 X R0.2	1	4	45	4
	2CRE 010 002 060	1 X R0.2	1	6	45	4
	2CRE 010 002 080	1 X R0.2	1	8	45	4
	2CRE 010 002 100	1 X R0.2	1	10	50	4
	2CRE 010 002 120	1 X R0.2	1	12	50	4
	2CRE 010 002 160	1 X R0.2	1	16	50	4
	2CRE 010 002 200	1 X R0.2	1	20	50	4
New	2CRE 010 002 220	1 X R0.2	1	22	60	4
New	2CRE 010 002 250	1 X R0.2	1	25	60	4
	2CRE 010 003 040	1 X R0.3	1	4	45	4
	2CRE 010 003 060	1 X R0.3	1	6	45	4
	2CRE 010 003 080	1 X R0.3	1	8	45	4
	2CRE 010 003 100	1 X R0.3	1	10	50	4
	2CRE 010 003 120	1 X R0.3	1	12	50	4
	2CRE 010 003 160	1 X R0.3	1	16	50	4
	2CRE 010 003 200	1 X R0.3	1	20	50	4
New	2CRE 010 003 220	1 X R0.3	1	22	60	4
New	2CRE 010 003 250	1 X R0.3	1	25	60	4
	2CRE 012 001 040	1.2 X R0.1	1.2	4	45	4
	2CRE 012 001 060	1.2 X R0.1	1.2	6	45	4
	2CRE 012 001 080	1.2 X R0.1	1.2	8	45	4
	2CRE 012 001 100	1.2 X R0.1	1.2	10	50	4
	2CRE 012 001 120	1.2 X R0.1	1.2	12	50	4
	2CRE 012 001 160	1.2 X R0.1	1.2	16	50	4
	2CRE 012 001 200	1.2 X R0.1	1.2	20	50	4
	2CRE 012 002 040	1.2 X R0.2	1.2	4	45	4
	2CRE 012 002 060	1.2 X R0.2	1.2	6	45	4
	2CRE 012 002 080	1.2 X R0.2	1.2	8	45	4
	2CRE 012 002 100	1.2 X R0.2	1.2	10	50	4
	2CRE 012 002 120	1.2 X R0.2	1.2	12	50	4
	2CRE 012 002 160	1.2 X R0.2	1.2	16	50	4
	2CRE 012 002 200	1.2 X R0.2	1.2	20	50	4
	2CRE 012 003 040	1.2 X R0.3	1.2	4	45	4
	2CRE 012 003 060	1.2 X R0.3	1.2	6	45	4
	2CRE 012 003 080	1.2 X R0.3	1.2	8	45	4
	2CRE 012 003 100	1.2 X R0.3	1.2	10	50	4
	2CRE 012 003 120	1.2 X R0.3	1.2	12	50	4
	2CRE 012 003 160	1.2 X R0.3	1.2	16	50	4
	2CRE 012 003 200	1.2 X R0.3	1.2	20	50	4
	2CRE 015 001 040	1.5 X R0.1	1.5	4	45	4
	2CRE 015 001 060	1.5 X R0.1	1.5	6	45	4
	2CRE 015 001 080	1.5 X R0.1	1.5	8	45	4
	2CRE 015 001 100	1.5 X R0.1	1.5	10	50	4
	2CRE 015 001 120	1.5 X R0.1	1.5	12	50	4
	2CRE 015 001 160	1.5 X R0.1	1.5	16	50	4
	2CRE 015 001 200	1.5 X R0.1	1.5	20	50	4
	2CRE 015 001 220	1.5 X R0.1	1.5	22	60	4
	2CRE 015 001 250	1.5 X R0.1	1.5	25	60	4
	2CRE 015 002 040	1.5 X R0.2	1.5	4	45	4
	2CRE 015 002 060	1.5 X R0.2	1.5	6	45	4
	2CRE 015 002 080	1.5 X R0.2	1.5	8	45	4
	2CRE 015 002 100	1.5 X R0.2	1.5	10	50	4
	2CRE 015 002 120	1.5 X R0.2	1.5	12	50	4
	2CRE 015 002 160	1.5 X R0.2	1.5	16	50	4

Numero d'Ordine	D×R	L1	L2	L	d
2CRE 015 002 200	1.5 X R0.2	1.5	20	50	4
2CRE 015 002 220	1.5 X R0.2	1.5	22	60	4
2CRE 015 002 250	1.5 X R0.2	1.5	25	60	4
2CRE 015 003 040	1.5 X R0.3	1.5	4	45	4
2CRE 015 003 060	1.5 X R0.3	1.5	6	45	4
2CRE 015 003 080	1.5 X R0.3	1.5	8	45	4
2CRE 015 003 100	1.5 X R0.3	1.5	10	50	4
2CRE 015 003 120	1.5 X R0.3	1.5	12	50	4
2CRE 015 003 160	1.5 X R0.3	1.5	16	50	4
2CRE 015 003 200	1.5 X R0.3	1.5	20	50	4
2CRE 015 003 220	1.5 X R0.3	1.5	22	60	4
2CRE 015 003 250	1.5 X R0.3	1.5	25	60	4
2CRE 015 005 040	1.5 X R0.5	1.5	4	45	4
2CRE 015 005 060	1.5 X R0.5	1.5	6	45	4
2CRE 015 005 080	1.5 X R0.5	1.5	8	45	4
2CRE 015 005 100	1.5 X R0.5	1.5	10	50	4
2CRE 015 005 120	1.5 X R0.5	1.5	12	50	4
2CRE 015 005 160	1.5 X R0.5	1.5	16	50	4
2CRE 015 005 200	1.5 X R0.5	1.5	20	50	4
2CRE 015 005 220	1.5 X R0.5	1.5	22	60	4
2CRE 015 005 250	1.5 X R0.5	1.5	25	60	4
2CRE 020 001 060	2 X R0.1	2	6	45	4
2CRE 020 001 080	2 X R0.1	2	8	45	4
2CRE 020 001 100	2 X R0.1	2	10	50	4
2CRE 020 001 120	2 X R0.1	2	12	50	4
2CRE 020 001 160	2 X R0.1	2	16	50	4
2CRE 020 001 200	2 X R0.1	2	20	50	4
2CRE 020 001 250	2 X R0.1	2	25	60	4
2CRE 020 001 300	2 X R0.1	2	30	70	4
2CRE 020 002 060	2 X R0.2	2	6	45	4
2CRE 020 002 080	2 X R0.2	2	8	45	4
2CRE 020 002 100	2 X R0.2	2	10	50	4
2CRE 020 002 120	2 X R0.2	2	12	50	4
2CRE 020 002 160	2 X R0.2	2	16	50	4
2CRE 020 002 200	2 X R0.2	2	20	50	4
2CRE 020 002 250	2 X R0.2	2	25	60	4
2CRE 020 002 300	2 X R0.2	2	30	70	4
2CRE 020 003 060	2 X R0.3	2	6	45	4
2CRE 020 003 080	2 X R0.3	2	8	45	4
2CRE 020 003 100	2 X R0.3	2	10	50	4
2CRE 020 003 120	2 X R0.3	2	12	50	4
2CRE 020 003 160	2 X R0.3	2	16	50	4
2CRE 020 003 200	2 X R0.3	2	20	50	4
2CRE 020 003 250	2 X R0.3	2	25	60	4
2CRE 020 003 300	2 X R0.3	2	30	70	4
2CRE 020 005 060	2 X R0.5	2	6	45	4
2CRE 020 005 080	2 X R0.5	2	8	45	4
2CRE 020 005 100	2 X R0.5	2	10	50	4
2CRE 020 005 120	2 X R0.5	2	12	50	4
2CRE 020 005 160	2 X R0.5	2	16	50	4
2CRE 020 005 200	2 X R0.5	2	20	50	4
2CRE 020 005 250	2 X R0.5	2	25	60	4
2CRE 020 005 300	2 X R0.5	2	30	70	4
2CRE 025 001 100	2.5 X R0.1	2.5	10	50	4
2CRE 025 001 160	2.5 X R0.1	2.5	16	50	4
2CRE 025 001 200	2.5 X R0.1	2.5	20	50	4
2CRE 025 001 250	2.5 X R0.1	2.5	25	60	4
2CRE 025 001 300	2.5 X R0.1	2.5	30	70	4
2CRE 025 002 100	2.5 X R0.2	2.5	10	50	4
2CRE 025 002 160	2.5 X R0.2	2.5	16	50	4
2CRE 025 002 200	2.5 X R0.2	2.5	20	50	4
2CRE 025 002 250	2.5 X R0.2	2.5	25	60	4
2CRE 025 002 300	2.5 X R0.2	2.5	30	70	4

Unità : mm

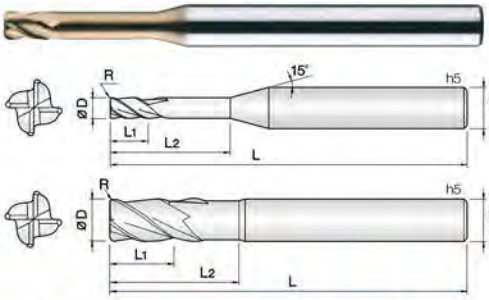
Numero d'Ordine	D×R	L1	L2	L	d
2CRE 025 003 100	2.5 X R0.3	2.5	10	50	4
2CRE 025 003 160	2.5 X R0.3	2.5	16	50	4
2CRE 025 003 200	2.5 X R0.3	2.5	20	50	4
2CRE 025 003 250	2.5 X R0.3	2.5	25	60	4
2CRE 025 003 300	2.5 X R0.3	2.5	30	70	4
2CRE 025 005 100	2.5 X R0.3	2.5	10	50	4
2CRE 025 005 160	2.5 X R0.3	2.5	16	50	4
2CRE 025 005 200	2.5 X R0.3	2.5	20	50	4
2CRE 025 005 250	2.5 X R0.3	2.5	25	60	4
2CRE 025 005 300	2.5 X R0.3	2.5	30	70	4
2CRE 030 001 100	3 X R0.1	3	10	50	6
2CRE 030 001 120	3 X R0.1	3	12	55	6
2CRE 030 001 160	3 X R0.1	3	16	55	6
2CRE 030 001 200	3 X R0.1	3	20	60	6
2CRE 030 001 250	3 X R0.1	3	25	65	6
2CRE 030 001 300	3 X R0.1	3	30	70	6
2CRE 030 001 350	3 X R0.1	3	35	75	6
2CRE 030 001 400	3 X R0.1	3	40	80	6
2CRE 030 002 100	3 X R0.2	3	10	50	6
2CRE 030 002 120	3 X R0.2	3	12	55	6
2CRE 030 002 160	3 X R0.2	3	16	55	6
2CRE 030 002 200	3 X R0.2	3	20	60	6
2CRE 030 002 250	3 X R0.2	3	25	65	6
2CRE 030 002 300	3 X R0.2	3	30	70	6
2CRE 030 002 350	3 X R0.2	3	35	75	6
2CRE 030 002 400	3 X R0.2	3	40	80	6
2CRE 030 003 100	3 X R0.3	3	10	50	6
2CRE 030 003 120	3 X R0.3	3	12	55	6
2CRE 030 003 160	3 X R0.3	3	16	55	6
2CRE 030 003 200	3 X R0.3	3	20	60	6
2CRE 030 003 250	3 X R0.3	3	25	65	6
2CRE 030 003 300	3 X R0.3	3	30	70	6
2CRE 030 003 350	3 X R0.3	3	35	75	6
2CRE 030 003 400	3 X R0.3	3	40	80	6
2CRE 030 005 100	3 X R0.5	3	10	50	6
2CRE 030 005 120	3 X R0.5	3	12	55	6
2CRE 030 005 160	3 X R0.5	3	16	55	6
2CRE 030 005 200	3 X R0.5	3	20	60	6
2CRE 030 005 250	3 X R0.5	3	25	65	6
2CRE 030 005 300	3 X R0.5	3	30	70	6
2CRE 030 005 350	3 X R0.5	3	35	75	6
2CRE 030 005 400	3 X R0.5	3	40	80	6
2CRE 030 010 100	3 X R1	3	10	50	6
2CRE 030 010 120	3 X R1	3	12	55	6
2CRE 030 010 160	3 X R1	3	16	55	6
2CRE 030 010 200	3 X R1	3	20	60	6
2CRE 030 010 250	3 X R1	3	25	65	6
2CRE 030 010 300	3 X R1	3	30	70	6
2CRE 030 010 350	3 X R1	3	35	75	6
2CRE 030 010 400	3 X R1	3	40	80	6
2CRE 040 001 050	4 X R0.1	4	12	50	4
2CRE 040 001 070	4 X R0.1	4	20	70	4
2CRE 040 001 120	4 X R0.1	4	12	55	6
2CRE 040 001 160	4 X R0.1	4	16	55	6
2CRE 040 001 200	4 X R0.1	4	20	60	6
2CRE 040 001 250	4 X R0.1	4	25	65	6
2CRE 040 001 300	4 X R0.1	4	30	70	6
2CRE 040 001 350	4 X R0.1	4	35	75	6
2CRE 040 001 400	4 X R0.1	4	40	80	6
2CRE 040 001 450	4 X R0.1	4	45	90	6
2CRE 040 001 500	4 X R0.1	4	50	100	6
2CRE 040 002 050	4 X R0.2	4	12	50	4
2CRE 040 002 070	4 X R0.2	4	20	70	4

Numero d'Ordine	D×R	L1	L2	L	d
2CRE 040 002 120	4 X R0.2	4	12	55	6
2CRE 040 002 160	4 X R0.2	4	16	55	6
2CRE 040 002 200	4 X R0.2	4	20	60	6
2CRE 040 002 250	4 X R0.2	4	25	65	6
2CRE 040 002 300	4 X R0.2	4	30	70	6
2CRE 040 002 350	4 X R0.2	4	35	75	6
2CRE 040 002 400	4 X R0.2	4	40	80	6
2CRE 040 002 450	4 X R0.2	4	45	90	6
2CRE 040 002 500	4 X R0.2	4	50	100	6
2CRE 040 003 050	4 X R0.3	4	12	50	4
2CRE 040 003 070	4 X R0.3	4	20	70	4
2CRE 040 003 120	4 X R0.3	4	12	55	6
2CRE 040 003 160	4 X R0.3	4	16	55	6
2CRE 040 003 200	4 X R0.3	4	20	60	6
2CRE 040 003 250	4 X R0.3	4	25	65	6
2CRE 040 003 300	4 X R0.3	4	30	70	6
2CRE 040 003 350	4 X R0.3	4	35	75	6
2CRE 040 003 400	4 X R0.3	4	40	80	6
2CRE 040 003 450	4 X R0.3	4	45	90	6
2CRE 040 003 500	4 X R0.3	4	50	100	6
2CRE 040 005 050	4 X R0.5	4	12	50	4
2CRE 040 005 070	4 X R0.5	4	20	70	4
2CRE 040 005 120	4 X R0.5	4	12	55	6
2CRE 040 005 160	4 X R0.5	4	16	55	6
2CRE 040 005 200	4 X R0.5	4	20	60	6
2CRE 040 005 250	4 X R0.5	4	25	65	6
2CRE 040 005 300	4 X R0.5	4	30	70	6
2CRE 040 005 350	4 X R0.5	4	35	75	6
2CRE 040 005 400	4 X R0.5	4	40	80	6
2CRE 040 005 450	4 X R0.5	4	45	90	6
2CRE 040 005 500	4 X R0.5	4	50	100	6
2CRE 040 010 050	4 X R1	4	12	50	4
2CRE 040 010 070	4 X R1	4	20	70	4
2CRE 040 010 120	4 X R1	4	12	55	6
2CRE 040 010 160	4 X R1	4	16	55	6
2CRE 040 010 200	4 X R1	4	20	60	6
2CRE 040 010 250	4 X R1	4	25	65	6
2CRE 040 010 300	4 X R1	4	30	70	6
2CRE 040 010 350	4 X R1	4	35	75	6
2CRE 040 010 400	4 X R1	4	40	80	6
2CRE 040 010 450	4 X R1	4	45	90	6
2CRE 040 010 500	4 X R1	4	50	100	6
2CRE 050 002 150	5 X R0.2	6	15	60	6
2CRE 050 002 250	5 X R0.2	6	25	70	6
2CRE 050 002 300	5 X R0.2	6	30	70	6
2CRE 050 002 400	5 X R0.2	6	40	80	6
2CRE 050 002 500	5 X R0.2	6	50	100	6
2CRE 050 005 150	5 X R0.5	6	15	60	6
2CRE 050 005 250	5 X R0.5	6	25	70	6
2CRE 050 005 300	5 X R0.5	6	30	70	6
2CRE 050 005 400	5 X R0.5	6	40	80	6
2CRE 050 005 500	5 X R0.5	6	50	100	6
2CRE 050 010 150	5 X R1	6	15	60	6
2CRE 050 010 250	5 X R1	6	25	70	6
2CRE 050 010 300	5 X R1	6	30	70	6
2CRE 050 010 400	5 X R1	6	40	80	6
2CRE 050 010 500	5 X R1	6	50	100	6
2CRE 060 001 200	6 X R0.1	7	20	60	6
2CRE 060 001 400	6 X R0.1	7	40	90	6
2CRE 060 002 200	6 X R0.2	7	20	60	6
2CRE 060 002 400	6 X R0.2	7	40	90	6
2CRE 060 003 200	6 X R0.3	7	20	60	6
2CRE 060 003 400	6 X R0.3	7	40	90	6

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
2CRE 060 005 200	6 X R0.5	7	20	60	6
2CRE 060 005 400	6 X R0.5	7	40	90	6
2CRE 060 010 200	6 X R1	7	20	60	6
2CRE 060 010 400	6 X R1	7	40	90	6
2CRE 060 015 200	6 X R1.5	7	20	60	6
2CRE 060 015 400	6 X R1.5	7	40	90	6
2CRE 080 002 220	8 X R0.2	9	22	65	8
2CRE 080 002 400	8 X R0.2	9	40	100	8
2CRE 080 003 220	8 X R0.3	9	22	65	8
2CRE 080 003 400	8 X R0.3	9	40	100	8
2CRE 080 005 220	8 X R0.5	9	22	65	8
2CRE 080 005 400	8 X R0.5	9	40	100	8
2CRE 080 010 220	8 X R1	9	22	65	8
2CRE 080 010 400	8 X R1	9	40	100	8
2CRE 080 015 220	8 X R1.5	9	22	65	8
2CRE 080 015 400	8 X R1.5	9	40	100	8
2CRE 100 002 240	10 X R0.2	11	24	70	10
2CRE 100 002 450	10 X R0.2	11	45	100	10
2CRE 100 003 240	10 X R0.3	11	24	70	10
2CRE 100 003 450	10 X R0.3	11	45	100	10
2CRE 100 005 240	10 X R0.5	11	24	70	10
2CRE 100 005 450	10 X R0.5	11	45	100	10
2CRE 100 010 240	10 X R1	11	24	70	10
2CRE 100 010 450	10 X R1	11	45	100	10
2CRE 100 015 240	10 X R1.5	11	24	70	10
2CRE 100 015 450	10 X R1.5	11	45	100	10
2CRE 100 020 240	10 X R2	11	24	70	10
2CRE 100 020 450	10 X R2	11	45	100	10
2CRE 120 002 260	12 X R0.2	13	26	80	12
2CRE 120 002 500	12 X R0.2	13	50	110	12
2CRE 120 003 260	12 X R0.3	13	26	80	12
2CRE 120 003 500	12 X R0.3	13	50	110	12
2CRE 120 005 260	12 X R0.5	13	26	80	12
2CRE 120 005 500	12 X R0.5	13	50	110	12
2CRE 120 010 260	12 X R1	13	26	80	12
2CRE 120 010 500	12 X R1	13	50	110	12
2CRE 120 015 260	12 X R1.5	13	26	80	12
2CRE 120 015 500	12 X R1.5	13	50	110	12
2CRE 120 020 260	12 X R2	13	26	80	12
2CRE 120 020 500	12 X R2	13	50	110	12
2CRE 120 030 260	12 X R3	13	26	80	12
2CRE 120 030 500	12 X R3	13	50	110	12
2CRE 160 005 110	16 X R0.5	20	35	110	16
2CRE 160 005 160	16 X R0.5	20	35	160	16
2CRE 160 010 110	16 X R1	20	35	110	16
2CRE 160 010 160	16 X R1	20	35	160	16

4CRE Fresa Torica 4 Tagli per Nervature



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

HARD series

4 | UWC 초미립자 | TISIN Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 30° Helix Angle | € List. p.60 | i info p.208

D	Tolleranza
Ø0.8 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
New 4CRE 008 0002 020	0.8 X R0.02	0.8	2	45	4
New 4CRE 008 0002 040	0.8 X R0.02	0.8	4	45	4
New 4CRE 008 0002 060	0.8 X R0.02	0.8	6	45	4
New 4CRE 008 0002 080	0.8 X R0.02	0.8	8	45	4
New 4CRE 008 0002 100	0.8 X R0.02	0.8	10	45	4
New 4CRE 008 0005 020	0.8 X R0.05	0.8	2	45	4
New 4CRE 008 0005 040	0.8 X R0.05	0.8	4	45	4
New 4CRE 008 0005 060	0.8 X R0.05	0.8	6	45	4
New 4CRE 008 0005 080	0.8 X R0.05	0.8	8	45	4
New 4CRE 008 0005 100	0.8 X R0.05	0.8	10	45	4
New 4CRE 008 001 020	0.8 X R0.1	0.8	2	45	4
New 4CRE 008 001 040	0.8 X R0.1	0.8	4	45	4
New 4CRE 008 001 060	0.8 X R0.1	0.8	6	45	4
New 4CRE 008 001 080	0.8 X R0.1	0.8	8	45	4
New 4CRE 008 001 100	0.8 X R0.1	0.8	10	45	4
New 4CRE 010 0002 040	1 X R0.02	1	4	45	4
New 4CRE 010 0002 060	1 X R0.02	1	6	45	4
New 4CRE 010 0002 080	1 X R0.02	1	8	45	4
New 4CRE 010 0002 100	1 X R0.02	1	10	50	4
New 4CRE 010 0002 120	1 X R0.02	1	12	50	4
New 4CRE 010 0002 160	1 X R0.02	1	16	50	4
New 4CRE 010 0002 200	1 X R0.02	1	20	50	4
4CRE 010 0005 040	1 X R0.05	1	4	45	4
4CRE 010 0005 060	1 X R0.05	1	6	45	4
4CRE 010 0005 080	1 X R0.05	1	8	45	4
4CRE 010 0005 100	1 X R0.05	1	10	50	4
4CRE 010 0005 120	1 X R0.05	1	12	50	4
4CRE 010 0005 160	1 X R0.05	1	16	50	4
4CRE 010 0005 200	1 X R0.05	1	20	50	4
4CRE 010 001 040	1 X R0.1	1	4	45	4
4CRE 010 001 060	1 X R0.1	1	6	45	4
4CRE 010 001 080	1 X R0.1	1	8	45	4
4CRE 010 001 100	1 X R0.1	1	10	50	4
4CRE 010 001 120	1 X R0.1	1	12	50	4
4CRE 010 001 160	1 X R0.1	1	16	50	4
4CRE 010 001 200	1 X R0.1	1	20	50	4
4CRE 010 002 040	1 X R0.2	1	4	45	4
4CRE 010 002 060	1 X R0.2	1	6	45	4
4CRE 010 002 080	1 X R0.2	1	8	45	4
4CRE 010 002 100	1 X R0.2	1	10	50	4
4CRE 010 002 120	1 X R0.2	1	12	50	4
4CRE 010 002 160	1 X R0.2	1	16	50	4
4CRE 010 002 200	1 X R0.2	1	20	50	4
4CRE 010 003 040	1 X R0.3	1	4	45	4
4CRE 010 003 060	1 X R0.3	1	6	45	4
4CRE 010 003 080	1 X R0.3	1	8	45	4
4CRE 010 003 100	1 X R0.3	1	10	50	4
4CRE 010 003 120	1 X R0.3	1	12	50	4
4CRE 010 003 160	1 X R0.3	1	16	50	4
4CRE 010 003 200	1 X R0.3	1	20	50	4
New 4CRE 012 0002 040	1.2 X R0.02	1.2	4	45	4
New 4CRE 012 0002 060	1.2 X R0.02	1.2	6	45	4
New 4CRE 012 0002 080	1.2 X R0.02	1.2	8	45	4
New 4CRE 012 0002 100	1.2 X R0.02	1.2	10	50	4
New 4CRE 012 0002 120	1.2 X R0.02	1.2	12	50	4
New 4CRE 012 0002 160	1.2 X R0.02	1.2	16	50	4
New 4CRE 012 0002 200	1.2 X R0.02	1.2	20	50	4
New 4CRE 012 0005 040	1.2 X R0.05	1.2	4	45	4
New 4CRE 012 0005 060	1.2 X R0.05	1.2	6	45	4
New 4CRE 012 0005 080	1.2 X R0.05	1.2	8	45	4
New 4CRE 012 0005 100	1.2 X R0.05	1.2	10	50	4
New 4CRE 012 0005 120	1.2 X R0.05	1.2	12	50	4
New 4CRE 012 0005 160	1.2 X R0.05	1.2	16	50	4
New 4CRE 012 0005 200	1.2 X R0.05	1.2	20	50	4
4CRE 012 001 040	1.2 X R0.1	1.2	4	45	4
4CRE 012 001 060	1.2 X R0.1	1.2	6	45	4
4CRE 012 001 080	1.2 X R0.1	1.2	8	45	4
4CRE 012 001 100	1.2 X R0.1	1.2	10	50	4
4CRE 012 001 120	1.2 X R0.1	1.2	12	50	4
4CRE 012 001 160	1.2 X R0.1	1.2	16	50	4
4CRE 012 001 200	1.2 X R0.1	1.2	20	50	4
4CRE 012 002 040	1.2 X R0.2	1.2	4	45	4
4CRE 012 002 060	1.2 X R0.2	1.2	6	45	4
4CRE 012 002 080	1.2 X R0.2	1.2	8	45	4
4CRE 012 002 100	1.2 X R0.2	1.2	10	50	4
4CRE 012 002 120	1.2 X R0.2	1.2	12	50	4
4CRE 012 002 160	1.2 X R0.2	1.2	16	50	4
4CRE 012 002 200	1.2 X R0.2	1.2	20	50	4
4CRE 012 003 040	1.2 X R0.3	1.2	4	45	4
4CRE 012 003 060	1.2 X R0.3	1.2	6	45	4
4CRE 012 003 080	1.2 X R0.3	1.2	8	45	4
4CRE 012 003 100	1.2 X R0.3	1.2	10	50	4
4CRE 012 003 120	1.2 X R0.3	1.2	12	50	4
4CRE 012 003 160	1.2 X R0.3	1.2	16	50	4
4CRE 012 003 200	1.2 X R0.3	1.2	20	50	4
New 4CRE 015 0002 060	1.5 X R0.02	1.5	6	45	4
New 4CRE 015 0002 080	1.5 X R0.02	1.5	8	45	4
New 4CRE 015 0002 100	1.5 X R0.02	1.5	10	50	4
New 4CRE 015 0002 120	1.5 X R0.02	1.5	12	50	4
New 4CRE 015 0002 160	1.5 X R0.02	1.5	16	50	4
New 4CRE 015 0002 200	1.5 X R0.02	1.5	20	50	4
New 4CRE 015 0002 220	1.5 X R0.02	1.5	22	60	4
New 4CRE 015 0002 250	1.5 X R0.02	1.5	25	60	4
New 4CRE 015 0005 060	1.5 X R0.05	1.5	6	45	4
New 4CRE 015 0005 080	1.5 X R0.05	1.5	8	45	4
New 4CRE 015 0005 100	1.5 X R0.05	1.5	10	50	4

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
New 4CRE 015 0005 120	1.5 X R0.05	1.5	12	50	4
New 4CRE 015 0005 160	1.5 X R0.05	1.5	16	50	4
New 4CRE 015 0005 200	1.5 X R0.05	1.5	20	50	4
New 4CRE 015 0005 220	1.5 X R0.05	1.5	22	60	4
New 4CRE 015 0005 250	1.5 X R0.05	1.5	25	60	4
4CRE 015 001 060	1.5 X R0.1	1.5	6	45	4
4CRE 015 001 080	1.5 X R0.1	1.5	8	45	4
4CRE 015 001 100	1.5 X R0.1	1.5	10	50	4
4CRE 015 001 120	1.5 X R0.1	1.5	12	50	4
4CRE 015 001 160	1.5 X R0.1	1.5	16	50	4
4CRE 015 001 200	1.5 X R0.1	1.5	20	50	4
4CRE 015 001 220	1.5 X R0.1	1.5	22	60	4
4CRE 015 001 250	1.5 X R0.1	1.5	25	60	4
4CRE 015 002 060	1.5 X R0.2	1.5	6	45	4
4CRE 015 002 080	1.5 X R0.2	1.5	8	45	4
4CRE 015 002 100	1.5 X R0.2	1.5	10	50	4
4CRE 015 002 120	1.5 X R0.2	1.5	12	50	4
4CRE 015 002 160	1.5 X R0.2	1.5	16	50	4
4CRE 015 002 200	1.5 X R0.2	1.5	20	50	4
4CRE 015 002 220	1.5 X R0.2	1.5	22	60	4
4CRE 015 002 250	1.5 X R0.2	1.5	25	60	4
4CRE 015 003 060	1.5 X R0.3	1.5	6	45	4
4CRE 015 003 080	1.5 X R0.3	1.5	8	45	4
4CRE 015 003 100	1.5 X R0.3	1.5	10	50	4
4CRE 015 003 120	1.5 X R0.3	1.5	12	50	4
4CRE 015 003 160	1.5 X R0.3	1.5	16	50	4
4CRE 015 003 200	1.5 X R0.3	1.5	20	50	4
4CRE 015 003 220	1.5 X R0.3	1.5	22	60	4
4CRE 015 003 250	1.5 X R0.3	1.5	25	60	4
4CRE 015 005 060	1.5 X R0.5	1.5	6	45	4
4CRE 015 005 080	1.5 X R0.5	1.5	8	45	4
4CRE 015 005 100	1.5 X R0.5	1.5	10	50	4
4CRE 015 005 120	1.5 X R0.5	1.5	12	50	4
4CRE 015 005 160	1.5 X R0.5	1.5	16	50	4
4CRE 015 005 200	1.5 X R0.5	1.5	20	50	4
4CRE 015 005 220	1.5 X R0.5	1.5	22	60	4
4CRE 015 005 250	1.5 X R0.5	1.5	25	60	4
New 4CRE 020 0002 060	2 X R0.02	2	6	45	4
New 4CRE 020 0002 080	2 X R0.02	2	8	45	4
New 4CRE 020 0002 100	2 X R0.02	2	10	50	4
New 4CRE 020 0002 120	2 X R0.02	2	12	50	4
New 4CRE 020 0002 140	2 X R0.02	2	14	50	4
New 4CRE 020 0002 160	2 X R0.02	2	16	50	4
New 4CRE 020 0002 180	2 X R0.02	2	18	50	4
New 4CRE 020 0002 200	2 X R0.02	2	20	50	4
New 4CRE 020 0002 220	2 X R0.02	2	22	60	4
New 4CRE 020 0002 250	2 X R0.02	2	25	60	4
New 4CRE 020 0002 300	2 X R0.02	2	30	70	4
New 4CRE 020 0002 350	2 X R0.02	2	35	70	4
New 4CRE 020 0005 060	2 X R0.05	2	6	45	4
New 4CRE 020 0005 080	2 X R0.05	2	8	45	4
New 4CRE 020 0005 100	2 X R0.05	2	10	50	4
New 4CRE 020 0005 120	2 X R0.05	2	12	50	4
New 4CRE 020 0005 140	2 X R0.05	2	14	50	4
New 4CRE 020 0005 160	2 X R0.05	2	16	50	4
New 4CRE 020 0005 180	2 X R0.05	2	18	50	4
New 4CRE 020 0005 200	2 X R0.05	2	20	50	4
New 4CRE 020 0005 220	2 X R0.05	2	22	60	4
New 4CRE 020 0005 250	2 X R0.05	2	25	60	4
New 4CRE 020 0005 300	2 X R0.05	2	30	70	4
New 4CRE 020 0005 350	2 X R0.05	2	35	70	4
4CRE 020 001 060	2 X R0.1	2	6	45	4
4CRE 020 001 080	2 X R0.1	2	8	45	4

Numero d'Ordine	D×R	L1	L2	L	d
4CRE 020 001 100	2 X R0.1	2	10	50	4
4CRE 020 001 120	2 X R0.1	2	12	50	4
New 4CRE 020 001 140	2 X R0.1	2	14	50	4
4CRE 020 001 160	2 X R0.1	2	16	50	4
New 4CRE 020 001 180	2 X R0.1	2	18	50	4
4CRE 020 001 200	2 X R0.1	2	20	50	4
New 4CRE 020 001 220	2 X R0.1	2	22	60	4
4CRE 020 001 250	2 X R0.1	2	25	60	4
4CRE 020 001 300	2 X R0.1	2	30	70	4
4CRE 020 001 350	2 X R0.1	2	35	70	4
4CRE 020 002 060	2 X R0.2	2	6	45	4
4CRE 020 002 080	2 X R0.2	2	8	45	4
4CRE 020 002 100	2 X R0.2	2	10	50	4
4CRE 020 002 120	2 X R0.2	2	12	50	4
New 4CRE 020 002 140	2 X R0.2	2	14	50	4
4CRE 020 002 160	2 X R0.2	2	16	50	4
New 4CRE 020 002 180	2 X R0.2	2	18	50	4
4CRE 020 002 200	2 X R0.2	2	20	50	4
New 4CRE 020 002 220	2 X R0.2	2	22	60	4
4CRE 020 002 250	2 X R0.2	2	25	60	4
4CRE 020 002 300	2 X R0.2	2	30	70	4
4CRE 020 002 350	2 X R0.2	2	35	70	4
4CRE 020 003 060	2 X R0.3	2	6	45	4
4CRE 020 003080	2 X R0.3	2	8	45	4
4CRE 020 003 100	2 X R0.3	2	10	50	4
4CRE 020 003 120	2 X R0.3	2	12	50	4
New 4CRE 020 003 140	2 X R0.3	2	14	50	4
4CRE 020 003 160	2 X R0.3	2	16	50	4
New 4CRE 020 003 180	2 X R0.3	2	18	50	4
4CRE 020 003 200	2 X R0.3	2	20	50	4
New 4CRE 020 003 220	2 X R0.3	2	22	60	4
4CRE 020 003 250	2 X R0.3	2	25	60	4
4CRE 020 003 300	2 X R0.3	2	30	70	4
4CRE 020 003 350	2 X R0.3	2	35	70	4
4CRE 020 005 060	2 X R0.5	2	6	45	4
4CRE 020 005 080	2 X R0.5	2	8	45	4
4CRE 020 005 100	2 X R0.5	2	10	50	4
4CRE 020 005 120	2 X R0.5	2	12	50	4
New 4CRE 020 005 140	2 X R0.5	2	14	50	4
4CRE 020 005 160	2 X R0.5	2	16	50	4
New 4CRE 020 005 180	2 X R0.5	2	18	50	4
4CRE 020 005 200	2 X R0.5	2	20	50	4
New 4CRE 020 005 220	2 X R0.5	2	22	60	4
4CRE 020 005 250	2 X R0.5	2	25	60	4
4CRE 020 005 300	2 X R0.5	2	30	70	4
4CRE 020 005 350	2 X R0.5	2	35	70	4
4CRE 025 001 100	2.5 X R0.1	2.5	10	50	4
New 4CRE 025 001 120	2.5 X R0.1	2.5	12	50	4
4CRE 025 001 160	2.5 X R0.1	2.5	16	50	4
4CRE 025 001 200	2.5 X R0.1	2.5	20	50	4
4CRE 025 001 250	2.5 X R0.1	2.5	25	60	4
4CRE 025 001 300	2.5 X R0.1	2.5	30	70	4
4CRE 025 002 100	2.5 X R0.2	2.5	10	50	4
New 4CRE 025 002 120	2.5 X R0.2	2.5	12	50	4
4CRE 025 002 160	2.5 X R0.2	2.5	16	50	4
4CRE 025 002 200	2.5 X R0.2	2.5	20	50	4
4CRE 025 002 250	2.5 X R0.2	2.5	25	60	4
4CRE 025 002 300	2.5 X R0.2	2.5	30	70	4
4CRE 025 003 100	2.5 X R0.3	2.5	10	50	4
New 4CRE 025 003 120	2.5 X R0.3	2.5	12	50	4
4CRE 025 003 160	2.5 X R0.3	2.5	16	50	4
4CRE 025 003 200	2.5 X R0.3	2.5	20	50	4
4CRE 025 003 250	2.5 X R0.3	2.5	25	60	4

Unità : mm

	Numero d'Ordine	D×R	L1	L2	L	d
	4CRE 025 003 300	2.5 X R0.3	2.5	30	70	4
	4CRE 025 005 100	2.5 X R0.5	2.5	10	50	4
New	4CRE 025 005 120	2.5 X R0.5	2.5	12	50	4
	4CRE 025 005 160	2.5 X R0.5	2.5	16	50	4
	4CRE 025 005 200	2.5 X R0.5	2.5	20	50	4
	4CRE 025 005 250	2.5 X R0.5	2.5	25	60	4
	4CRE 025 005 300	2.5 X R0.5	2.5	30	70	4
	4CRE 030 001 100	3 X R0.1	3	10	50	6
	4CRE 030 001 160	3 X R0.1	3	16	55	6
	4CRE 030 001 200	3 X R0.1	3	20	60	6
	4CRE 030 001 250	3 X R0.1	3	25	65	6
	4CRE 030 001 300	3 X R0.1	3	30	70	6
	4CRE 030 001 350	3 X R0.1	3	35	75	6
	4CRE 030 001 400	3 X R0.1	3	40	80	6
	4CRE 030 001 500	3 X R0.1	3	50	100	6
	4CRE 030 002 100	3 X R0.2	3	10	50	6
	4CRE 030 002 160	3 X R0.2	3	16	55	6
	4CRE 030 002 200	3 X R0.2	3	20	60	6
	4CRE 030 002 250	3 X R0.2	3	25	65	6
	4CRE 030 002 300	3 X R0.2	3	30	70	6
	4CRE 030 002 350	3 X R0.2	3	35	75	6
	4CRE 030 002 400	3 X R0.2	3	40	80	6
	4CRE 030 002 500	3 X R0.2	3	50	100	6
	4CRE 030 003 100	3 X R0.3	3	10	50	6
	4CRE 030 003 160	3 X R0.3	3	16	55	6
	4CRE 030 003 200	3 X R0.3	3	20	60	6
	4CRE 030 003 250	3 X R0.3	3	25	65	6
	4CRE 030 003 300	3 X R0.3	3	30	70	6
	4CRE 030 003 350	3 X R0.3	3	35	75	6
	4CRE 030 003 400	3 X R0.3	3	40	80	6
	4CRE 030 003 500	3 X R0.3	3	50	100	6
	4CRE 030 005 100	3 X R0.5	3	10	50	6
	4CRE 030 005 160	3 X R0.5	3	16	55	6
	4CRE 030 005 200	3 X R0.5	3	20	60	6
	4CRE 030 005 250	3 X R0.5	3	25	65	6
	4CRE 030 005 300	3 X R0.5	3	30	70	6
	4CRE 030 005 350	3 X R0.5	3	35	75	6
	4CRE 030 005 400	3 X R0.5	3	40	80	6
	4CRE 030 005 500	3 X R0.5	3	50	100	6
	4CRE 030 010 100	3 X R1	3	10	50	6
	4CRE 030 010 160	3 X R1	3	16	55	6
	4CRE 030 010 200	3 X R1	3	20	60	6
	4CRE 030 010 250	3 X R1	3	25	65	6
	4CRE 030 010 300	3 X R1	3	30	70	6
	4CRE 030 010 350	3 X R1	3	35	75	6
	4CRE 030 010 400	3 X R1	3	40	80	6
	4CRE 030 010 500	3 X R1	3	50	100	6
	4CRE 040 001 050	4 X R0.1	4	12	50	4
	4CRE 040 001 070	4 X R0.1	4	20	70	4
	4CRE 040 001 130	4 X R0.1	4	13	55	6
	4CRE 040 001 160	4 X R0.1	4	16	55	6
	4CRE 040 001 200	4 X R0.1	4	20	60	6
	4CRE 040 001 250	4 X R0.1	4	25	65	6
	4CRE 040 001 300	4 X R0.1	4	30	70	6
	4CRE 040 001 350	4 X R0.1	4	35	75	6
	4CRE 040 001 400	4 X R0.1	4	40	80	6
	4CRE 040 001 450	4 X R0.1	4	45	90	6
	4CRE 040 001 500	4 X R0.1	4	50	100	6
	4CRE 040 002 050	4 X R0.2	4	12	50	4
	4CRE 040 002 070	4 X R0.2	4	20	70	4
	4CRE 040 002 130	4 X R0.2	4	13	55	6
	4CRE 040 002 160	4 X R0.2	4	16	55	6
	4CRE 040 002 200	4 X R0.2	4	20	60	6

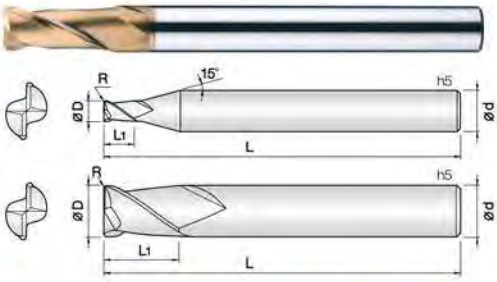
Numero d'Ordine	D×R	L1	L2	L	d
4CRE 040 002 250	4 X R0.2	4	25	65	6
4CRE 040 002 300	4 X R0.2	4	30	70	6
4CRE 040 002 350	4 X R0.2	4	35	75	6
4CRE 040 002 400	4 X R0.2	4	40	80	6
4CRE 040 002 450	4 X R0.2	4	45	90	6
4CRE 040 002 500	4 X R0.2	4	50	100	6
4CRE 040 003 050	4 X R0.3	4	12	50	4
4CRE 040 003 070	4 X R0.3	4	20	70	4
4CRE 040 003 130	4 X R0.3	4	13	55	6
4CRE 040 003 160	4 X R0.3	4	16	55	6
4CRE 040 003 200	4 X R0.3	4	20	60	6
4CRE 040 003 250	4 X R0.3	4	25	65	6
4CRE 040 003 300	4 X R0.3	4	30	70	6
4CRE 040 003 350	4 X R0.3	4	35	75	6
4CRE 040 003 400	4 X R0.3	4	40	80	6
4CRE 040 003 450	4 X R0.3	4	45	90	6
4CRE 040 003 500	4 X R0.3	4	50	100	6
4CRE 040 005 050	4 X R0.5	4	12	50	4
4CRE 040 005 070	4 X R0.5	4	20	70	4
4CRE 040 005 130	4 X R0.5	4	13	55	6
4CRE 040 005 160	4 X R0.5	4	16	55	6
4CRE 040 005 200	4 X R0.5	4	20	60	6
4CRE 040 005 250	4 X R0.5	4	25	65	6
4CRE 040 005 300	4 X R0.5	4	30	70	6
4CRE 040 005 350	4 X R0.5	4	35	75	6
4CRE 040 005 400	4 X R0.5	4	40	80	6
4CRE 040 005 450	4 X R0.5	4	45	90	6
4CRE 040 005 500	4 X R0.5	4	50	100	6
4CRE 040 010 050	4 X R1	4	12	50	4
4CRE 040 010 070	4 X R1	4	20	70	4
4CRE 040 010 130	4 X R1	4	13	55	6
4CRE 040 010 160	4 X R1	4	16	55	6
4CRE 040 010 200	4 X R1	4	20	60	6
4CRE 040 010 250	4 X R1	4	25	65	6
4CRE 040 010 300	4 X R1	4	30	70	6
4CRE 040 010 350	4 X R1	4	35	75	6
4CRE 040 010 400	4 X R1	4	40	80	6
4CRE 040 010 450	4 X R1	4	45	90	6
4CRE 040 010 500	4 X R1	4	50	100	6
4CRE 050 001 160	5 X R0.1	5	16	60	6
4CRE 050 001 300	5 X R0.1	5	30	70	6
4CRE 050 001 400	5 X R0.1	5	40	80	6
4CRE 050 001 500	5 X R0.1	5	50	100	6
4CRE 050 002 160	5 X R0.2	5	16	60	6
4CRE 050 002 300	5 X R0.2	5	30	70	6
4CRE 050 002 400	5 X R0.2	5	40	80	6
4CRE 050 002 500	5 X R0.2	5	50	100	6
4CRE 050 003 160	5 X R0.3	5	16	60	6
4CRE 050 003 300	5 X R0.3	5	30	70	6
4CRE 050 003 400	5 X R0.3	5	40	80	6
4CRE 050 003 500	5 X R0.3	5	50	100	6
4CRE 050 005 160	5 X R0.5	5	16	60	6
4CRE 050 005 300	5 X R0.5	5	30	70	6
4CRE 050 005 400	5 X R0.5	5	40	80	6
4CRE 050 005 500	5 X R0.5	5	50	100	6
4CRE 050 010 160	5 X R1	5	16	60	6
4CRE 050 010 300	5 X R1	5	30	70	6
4CRE 050 010 400	5 X R1	5	40	80	6
4CRE 050 010 500	5 X R1	5	50	100	6
4CRE 060 001 200	6 X R0.1	7	20	60	6
4CRE 060 001 400	6 X R0.1	7	40	80	6
4CRE 060 001 500	6 X R0.1	7	50	100	6
4CRE 060 002 200	6 X R0.2	7	20	60	6

HARD series

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
4CRE 060 002 300	6 X R0.2	7	30	80	6
4CRE 060 002 400	6 X R0.2	7	40	80	6
4CRE 060 002 500	6 X R0.2	7	50	100	6
4CRE 060 003 200	6 X R0.3	7	20	60	6
4CRE 060 003 300	6 X R0.3	7	30	80	6
4CRE 060 003 400	6 X R0.3	7	40	80	6
4CRE 060 003 500	6 X R0.3	7	50	100	6
4CRE 060 005 200	6 X R0.5	7	20	60	6
4CRE 060 005 300	6 X R0.5	7	30	80	6
4CRE 060 005 400	6 X R0.5	7	40	80	6
4CRE 060 005 500	6 X R0.5	7	50	100	6
4CRE 060 010 200	6 X R1	7	20	60	6
4CRE 060 010 300	6 X R1	7	30	80	6
4CRE 060 010 400	6 X R1	7	40	80	6
4CRE 060 010 500	6 X R1	7	50	100	6
4CRE 060 015 200	6 X R1.5	7	20	60	6
4CRE 060 015 400	6 X R1.5	7	40	80	6
4CRE 060 015 500	6 X R1.5	7	50	100	6
4CRE 080 002 220	8 X R0.2	7	22	65	6
4CRE 080 003 220	8 X R0.3	7	22	65	6
4CRE 080 003 500	8 X R0.3	9	50	100	8
4CRE 080 005 220	8 X R0.5	7	22	65	6
4CRE 080 005 400	8 X R0.5	7	40	100	6
4CRE 080 005 500	8 X R0.5	9	50	100	8
4CRE 080 010 220	8 X R1	7	22	65	6
4CRE 080 010 400	8 X R1	7	40	100	6
4CRE 080 010 500	8 X R1	7	50	100	8
4CRE 080 015 220	8 X R1.5	7	22	65	6
4CRE 080 015 400	8 X R1.5	7	40	100	6
4CRE 080 020 220	8 X R2	9	22	65	8
4CRE 100 002 240	10 X R0.2	11	24	70	10
4CRE 100 003 240	10 X R0.3	11	24	70	10
4CRE 100 005 240	10 X R0.5	11	24	70	10
4CRE 100 005 400	10 X R0.5	11	40	100	10
4CRE 100 005 450	10 X R0.5	11	45	100	10
4CRE 100 005 540	10 X R0.5	5	54	110	10
4CRE 100 010 240	10 X R1	11	24	70	10
4CRE 100 010 400	10 X R1	11	40	100	10
4CRE 100 010 450	10 X R1	5	54	110	10
4CRE 100 010 540	10 X R1	11	40	100	10
4CRE 100 015 240	10 X R1.5	11	24	70	10
4CRE 100 015 400	10 X R1.5	11	40	100	10
4CRE 100 015 450	10 X R1.5	11	45	100	10
4CRE 100 020 240	10 X R2	11	24	70	10
4CRE 100 020 450	10 X R2	11	45	70	10
4CRE 100 025 240	10 X R2.5	11	24	70	10
4CRE 120 003 260	12 X R0.3	13	26	80	12
4CRE 120 005 260	12 X R0.5	13	26	80	12
4CRE 120 005 400	12 X R0.5	13	40	110	12
4CRE 120 005 500	12 X R0.5	13	50	110	12
4CRE 120 005 640	12 X R0.5	6	64	130	12
4CRE 120 010 260	12 X R1	13	26	80	12
4CRE 120 010 400	12 X R1	13	40	110	12
4CRE 120 010 500	12 X R1	13	50	110	12
4CRE 120 010 640	12 X R1	6	64	130	12
4CRE 120 015 260	12 X R1.5	13	26	80	12
4CRE 120 015 400	12 X R1.5	13	40	110	12
4CRE 120 015 500	12 X R1.5	13	50	110	12
4CRE 120 020 260	12 X R2	13	26	80	12
4CRE 120 020 500	12 X R3	13	50	110	12
4CRE 120 030 260	12 X R3	13	26	80	12
4CRE 120 030 500	12 X R3	13	50	110	12

2NCR Fresa Torica 2 Tagli



- **Fresa per acciai bonificati e temprati fino a HRc58.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

HARD series

2 | UWC 초미립자 | TISIN Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 5 | 30° Helix Angle | € List. p.66 | i info p.209

D	Tolleranza
Ø0.2 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	D×R	L1	L	d
New 2NCR 002 0002 S04	0.2 X R0.02	0.6	45	4
New 2NCR 002 0005 S04	0.2 X R0.05	0.6	45	4
New 2NCR 003 0002 S04	0.3 X R0.02	0.6	45	4
New 2NCR 003 0005 S04	0.3 X R0.05	0.6	45	4
New 2NCR 003 001 S04	0.3 X R0.1	0.6	45	4
New 2NCR 004 0002 S04	0.4 X R0.02	0.8	45	4
2NCR 004 0005 S04	0.4 X R0.05	0.8	45	4
2NCR 004 001 S04	0.4 X R0.1	0.8	45	4
New 2NCR 005 0002 S04	0.5 X R0.02	1	45	4
2NCR 005 0005 S04	0.5 X R0.05	1	45	4
2NCR 005 001 S04	0.5 X R0.1	1	45	4
New 2NCR 006 0002 S04	0.6 X R0.02	1.2	45	4
2NCR 006 0005 S04	0.6 X R0.05	1.2	45	4
2NCR 006 001 S04	0.6 X R0.1	1.2	45	4
2NCR 006 002 S04	0.6 X R0.2	1.2	45	4
2NCR 007 0005 S04	0.7 X R0.05	1.4	45	4
2NCR 007 001 S04	0.7 X R0.1	1.4	45	4
2NCR 007 002 S04	0.7 X R0.2	1.4	45	4
New 2NCR 008 0002 S04	0.8 X R0.02	1.6	45	4
2NCR 008 0005 S04	0.8 X R0.05	1.6	45	4
2NCR 008 001 S04	0.8 X R0.1	1.6	45	4
2NCR 008 002 S04	0.8 X R0.2	1.6	45	4
2NCR 009 0005 S04	0.9 X R0.05	1.8	45	4
2NCR 009 001 S04	0.9 X R0.1	1.8	45	4
New 2NCR 010 0002 S04	1 X R0.02	2.5	45	4
New 2NCR 010 0005 S04	1 X R0.05	2.5	45	4
2NCR 010 001 S04	1 X R0.1	2.5	45	4
2NCR 010 002 S04	1 X R0.2	2.5	45	4
2NCR 010 003 S04	1 X R0.3	2.5	45	4
New 2NCR 010 004 S04	1 X R0.4	2.5	45	4
New 2NCR 012 0005 S04	1.2 X R0.05	3.2	45	4
2NCR 012 001 S04	1.2 X R0.1	3.2	45	4
2NCR 012 002 S04	1.2 X R0.2	3.2	45	4
2NCR 012 003 S04	1.2 X R0.3	3.2	45	4
New 2NCR 015 0002 S04	1.5 X R0.02	4	45	4
New 2NCR 015 0005 S04	1.5 X R0.05	4	45	4
2NCR 015 001 S04	1.5 X R0.1	4	45	4
2NCR 015 002 S04	1.5 X R0.2	4	45	4
2NCR 015 003 S04	1.5 X R0.3	4	45	4
New 2NCR 015 004 S04	1.5 X R0.4	4	45	4
2NCR 015 005 S04	1.5 X R0.5	4	45	4
New 2NCR 020 0002 S04	2 X R0.02	6	45	4
New 2NCR 020 0005 S04	2 X R0.05	6	45	4
2NCR 020 001 S04	2 X R0.1	6	45	4
2NCR 020 002 S04	2 X R0.2	6	45	4
2NCR 020 003 S04	2 X R0.3	6	45	4
New 2NCR 020 004 S04	2 X R0.4	6	45	4
2NCR 020 005 S04	2 X R0.5	6	45	4

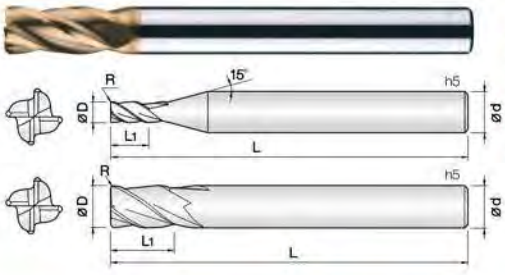
Numero d'Ordine	D×R	L1	L	d
New 2NCR 025 0005 S04	2.5 X R0.05	6	50	4
2NCR 025 001 S04	2.5 X R0.1	6	50	4
2NCR 025 002 S04	2.5 X R0.2	6	50	4
2NCR 025 003 S04	2.5 X R0.3	6	50	4
New 2NCR 025 004 S04	2.5 X R0.4	6	50	4
2NCR 025 005 S04	2.5 X R0.5	6	50	4
New 2NCR 030 0005 S06	3 X R0.05	8	60	6
2NCR 030 001 S06	3 X R0.1	8	60	6
2NCR 030 002 S06	3 X R0.2	8	60	6
2NCR 030 003 S06	3 X R0.3	8	60	6
New 2NCR 030 004 S06	3 X R0.4	8	60	6
2NCR 030 005 S06	3 X R0.5	8	60	6
2NCR 030 010 S06	3 X R1	8	60	6
New 2NCR 035 001 S06	3.5 X R0.1	9	70	6
New 2NCR 035 002 S06	3.5 X R0.2	9	70	6
New 2NCR 035 003 S06	3.5 X R0.3	9	70	6
New 2NCR 035 005 S06	3.5 X R0.5	9	70	6
New 2NCR 040 0005 060	4 X R0.05	9	60	4
New 2NCR 040 0005 080	4 X R0.05	9	80	4
New 2NCR 040 0005 S06	4 X R0.05	9	70	6
2NCR 040 001 060	4 X R0.1	9	60	4
2NCR 040 001 080	4 X R0.1	9	80	4
2NCR 040 001 S06	4 X R0.1	10	70	6
2NCR 040 002 060	4 X R0.2	9	60	4
2NCR 040 002 080	4 X R0.2	9	80	4
2NCR 040 002 S06	4 X R0.2	10	70	6
2NCR 040 003 060	4 X R0.3	9	60	4
2NCR 040 003 080	4 X R0.3	9	80	4
2NCR 040 003 S06	4 X R0.3	10	70	6
New 2NCR 040 004 060	4 X R0.4	9	60	4
New 2NCR 040 004 080	4 X R0.4	9	80	4
New 2NCR 040 004 S06	4 X R0.4	10	70	6
2NCR 040 005 060	4 X R0.5	9	60	4
2NCR 040 005 080	4 X R0.5	9	80	4
2NCR 040 005 S06	4 X R0.5	10	70	6
2NCR 040 010 060	4 X R1	9	60	4
2NCR 040 010 080	4 X R1	9	80	4
2NCR 040 010 S06	4 X R1	10	70	6
New 2NCR 045 001 S06	4.5 X R0.1	11	75	6
New 2NCR 045 002 S06	4.5 X R0.2	11	75	6
New 2NCR 045 003 S06	4.5 X R0.3	11	75	6
New 2NCR 045 005 S06	4.5 X R0.5	11	75	6
New 2NCR 045 010 S06	4.5 X R1	11	75	6
2NCR 050001 S06	5 X R0.1	13	75	6
2NCR 050 002 S06	5 X R0.2	13	75	6
2NCR 050 003 S06	5 X R0.3	13	75	6
New 2NCR 050 004 S06	5 X R0.4	13	75	6
2NCR 050 005 S06	5 X R0.5	13	75	6

Unità : mm

	Numero d'Ordine	D×R	L1	L	d
	2NCR 050 010 S06	5 X R1	13	75	6
New	2NCR 060 0005 060	6 X R0.05	11	60	6
New	2NCR 060 0005 090	6 X R0.05	13	90	6
	2NCR 060 001 060	6 X R0.1	11	60	6
	2NCR 060 001 090	6 X R0.1	13	90	6
	2NCR 060 002 060	6 X R0.2	11	60	6
	2NCR 060 002 090	6 X R0.2	13	90	6
	2NCR 060 003 060	6 X R0.3	11	60	6
	2NCR 060 003 090	6 X R0.3	13	90	6
New	2NCR 060 004 060	6 X R0.4	11	60	6
New	2NCR 060 004 090	6 X R0.4	13	90	6
	2NCR 060 005 060	6 X R0.5	11	60	6
	2NCR 060 005 090	6 X R0.5	13	90	6
	2NCR 060 010 060	6 X R1	11	60	6
	2NCR 060 010 090	6 X R1	13	90	6
	2NCR 060 015 060	6 X R1.5	11	60	6
	2NCR 060 015 090	6 X R1.5	13	90	6
	2NCR 060 020 060	6 X R2	11	60	6
	2NCR 060 020 090	6 X R2	13	90	6
	2NCR 060 025 090	6 X R2.5	13	90	6
	2NCR 080 001 070	8 X R0.1	16	70	8
	2NCR 080 001 100	8 X R0.1	19	100	8
	2NCR 080 002 070	8 X R0.2	16	70	8
	2NCR 080 002 100	8 X R0.2	19	100	8
	2NCR 080 003 070	8 X R0.3	16	70	8
	2NCR 080 003 100	8 X R0.3	19	100	8
	2NCR 080 005 070	8 X R0.5	16	70	8
	2NCR 080 005 100	8 X R0.5	19	100	8
	2NCR 080 005 120	8 X R0.5	19	120	8
	2NCR 080 010 070	8 X R1	16	70	8
	2NCR 080 010 100	8 X R1	19	100	8
	2NCR 080 010 120	8 X R1	19	120	8
	2NCR 080 015 070	8 X R1.5	16	70	8
	2NCR 080 015 100	8 X R1.5	19	100	8
	2NCR 080 020 070	8 X R2	16	70	8
	2NCR 080 020 100	8 X R2	19	100	8
	2NCR 080 025 100	8 X R2.5	19	100	8
	2NCR 080 030 100	8 X R3	19	100	8
	2NCR 080 035 100	8 X R3.5	19	100	8
	2NCR 100 001 075	10 X R0.1	19	75	10
	2NCR 100 001 100	10 X R0.1	22	100	10
	2NCR 100 002 075	10 X R0.2	19	75	10
	2NCR 100 002 100	10 X R0.2	22	100	10
	2NCR 100 003 075	10 X R0.3	19	75	10
	2NCR 100 003 100	10 X R0.3	22	100	10
	2NCR 100 005 075	10 X R0.5	19	75	10
	2NCR 100 005 100	10 X R0.5	22	100	10
	2NCR 100 005 130	10 X R0.5	22	130	10

Numero d'Ordine	D×R	L1	L	d
2NCR 100 010 075	10 X R1	19	75	10
2NCR 100 010 100	10 X R1	22	100	10
2NCR 100 010 130	10 X R1	22	130	10
2NCR 100 015 075	10 X R1.5	19	75	10
2NCR 100 015 100	10 X R1.5	22	100	10
2NCR 100 015 130	10 X R1.5	22	130	10
2NCR 100 020 075	10 X R2	19	75	10
2NCR 100 020 100	10 X R2	22	100	10
2NCR 100 025 100	10 X R2.5	22	100	10
2NCR 100 030 100	10 X R3	22	100	10
2NCR 100 040 100	10 X R4	22	100	10
2NCR 120 001 080	12 X R0.1	22	80	12
2NCR 120 001 110	12 X R0.1	26	110	12
2NCR 120 002 080	12 X R0.2	22	80	12
2NCR 120 002 110	12 X R0.2	26	110	12
2NCR 120 003 080	12 X R0.3	22	80	12
2NCR 120 003 110	12 X R0.3	26	110	12
2NCR 120 005 080	12 X R0.5	22	80	12
2NCR 120 005 110	12 X R0.5	26	110	12
2NCR 120 005 130	12 X R0.5	26	130	12
2NCR 120 010 080	12 X R1	22	80	12
2NCR 120 010 110	12 X R1	26	110	12
2NCR 120 010 130	12 X R1	26	130	12
2NCR 120 015 080	12 X R1.5	22	80	12
2NCR 120 015 110	12 X R1.5	26	110	12
2NCR 120 015 130	12 X R1.5	26	130	12
2NCR 120 020 080	12 X R2	22	80	12
2NCR 120 020 110	12 X R2	26	110	12
2NCR 120 020 130	12 X R2	26	130	12
2NCR 120 025 110	12 X R2.5	26	110	12
2NCR 120 030 110	12 X R3	26	110	12
2NCR 120 040 110	12 X R4	26	110	12
2NCR 120 050 110	12 X R5	26	110	12

4NCR Fresa Torica 4 Tagli



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

HARD series

4 | UWC 초미립자 | TISIN Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 4 | 30° Helix Angle | € List. p.68

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16 ~ 20	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L	d
New 4NCR 010 0002 S04	1 X R0.02	2.5	45	4
4NCR 010 0005 S04	1 X R0.05	2.5	45	4
4NCR 010 001 S04	1 X R0.1	2.5	45	4
4NCR 010 002 S04	1 X R0.2	2.5	45	4
4NCR 010 003 S04	1 X R0.3	2.5	45	4
New 4NCR 012 0002 S04	1.2 X R0.02	4	45	4
New 4NCR 012 0005 S04	1.2 X R0.05	4	45	4
New 4NCR 012 001 S04	1.2 X R0.1	4	45	4
New 4NCR 012 002 S04	1.2 X R0.2	4	45	4
New 4NCR 012 003 S04	1.2 X R0.3	4	45	4
New 4NCR 015 0002 S04	1.5 X R0.02	4	45	4
New 4NCR 015 0005 S04	1.5 X R0.05	4	45	4
4NCR 015 001 S04	1.5 X R0.1	4	45	4
4NCR 015 002 S04	1.5 X R0.2	4	45	4
4NCR 015 003 S04	1.5 X R0.3	4	45	4
New 4NCR 015 004 S04	1.5 X R0.4	4	45	4
4NCR 015 005 S04	1.5 X R0.5	4	45	4
New 4NCR 020 0002 S04	2 X R0.02	6	45	4
4NCR 020 0005 S04	2 X R0.05	6	45	4
4NCR 020 001 S04	2 X R0.1	6	45	4
4NCR 020 002 S04	2 X R0.2	6	45	4
4NCR 020 003 S04	2 X R0.3	6	45	4
New 4NCR 020 004 S04	2 X R0.4	6	45	4
4NCR 020 005 S04	2 X R0.5	6	45	4
New 4NCR 025 0005 S04	2.5 X R0.05	6	50	4
4NCR 025 001 S04	2.5 X R0.1	6	50	4
4NCR 025 002 S04	2.5 X R0.2	6	50	4
4NCR 025 003 S04	2.5 X R0.3	6	50	4
4NCR 025 005 S04	2.5 X R0.5	6	50	4
New 4NCR 030 0005 S06	3 X R0.05	8	60	6
4NCR 030 001 S06	3 X R0.1	8	60	6
4NCR 030 002 S06	3 X R0.2	8	60	6
4NCR 030 003 S06	3 X R0.3	8	60	6
New 4NCR 030 004 S06	3 X R0.4	8	60	6
4NCR 030 005 S06	3 X R0.5	8	60	6
4NCR 030 010 S06	3 X R1	8	60	6
New 4NCR 040 0005 060	4 X R0.05	9	60	4
New 4NCR 040 0005 080	4 X R0.05	9	80	4
New 4NCR 040 0005 S06	4 X R0.05	10	70	6
4NCR 040 001 060	4 X R0.1	9	60	4
4NCR 040 001 080	4 X R0.1	9	80	4
4NCR 040 001 S06	4 X R0.1	10	70	6
4NCR 040 002 060	4 X R0.2	9	60	4
4NCR 040 002 080	4 X R0.2	9	80	4
4NCR 040 002 S06	4 X R0.2	10	70	6
4NCR 040 003 060	4 X R0.3	9	60	4
4NCR 040 003 080	4 X R0.3	9	80	4
4NCR 040 003 S06	4 X R0.3	10	70	6

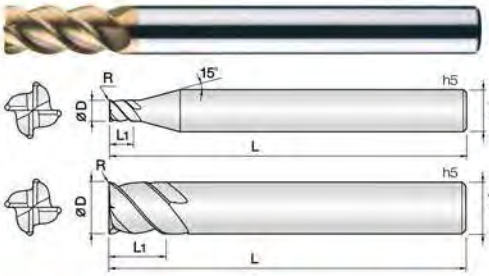
Numero d'Ordine	D×R	L1	L	d
New 4NCR 040 004 060	4 X R0.4	9	60	4
New 4NCR 040 004 080	4 X R0.4	9	80	4
New 4NCR 040 004 S06	4 X R0.4	10	70	6
4NCR 040 005 060	4 X R0.5	9	60	4
4NCR 040 005 080	4 X R0.5	9	80	4
4NCR 040 005 S06	4 X R0.5	10	70	6
4NCR 040 010 060	4 X R1	9	60	4
4NCR 040 010 080	4 X R1	9	80	4
4NCR 040 010 S06	4 X R1	10	70	6
New 4NCR 050 0005 S06	5 X R0.05	13	75	6
4NCR 050 001 S06	5 X R0.1	13	75	6
4NCR 050 002 S06	5 X R0.2	13	75	6
4NCR 050 003 S06	5 X R0.3	13	75	6
New 4NCR 050 004 S06	5 X R0.4	13	75	6
4NCR 050 005 S06	5 X R0.5	13	75	6
4NCR 050 010 S06	5 X R1	13	75	6
New 4NCR 060 0005 080	6 X R0.05	13	80	6
4NCR 060 001 060	6 X R0.1	11	60	6
4NCR 060 001 080	6 X R0.1	13	80	6
4NCR 060 002 060	6 X R0.2	11	60	6
4NCR 060 002 080	6 X R0.2	13	80	6
4NCR 060 003 060	6 X R0.3	11	60	6
4NCR 060 003 080	6 X R0.3	13	80	6
New 4NCR 060 004 080	6 X R0.4	13	80	6
4NCR 060 005 060	6 X R0.5	11	60	6
4NCR 060 005 080	6 X R0.5	13	80	6
4NCR 060 010 060	6 X R1	11	60	6
4NCR 060 010 080	6 X R1	13	80	6
4NCR 060 015 060	6 X R1.5	11	60	6
4NCR 060 015 080	6 X R1.5	13	80	6
4NCR 060 020 060	6 X R2	11	60	6
4NCR 060 020 080	6 X R2	13	80	6
4NCR 080 001 070	8 X R0.1	16	70	8
4NCR 080 001 090	8 X R0.1	19	90	8
4NCR 080 002 070	8 X R0.2	16	70	8
4NCR 080 002 090	8 X R0.2	19	90	8
4NCR 080 003 070	8 X R0.3	16	70	8
4NCR 080 003 090	8 X R0.3	19	90	8
4NCR 080 005 070	8 X R0.5	16	70	8
4NCR 080 005 090	8 X R0.5	19	90	8
4NCR 080 005 110	8 X R0.5	19	110	8
4NCR 080 010 070	8 X R1	16	70	8
4NCR 080 010 090	8 X R1	19	90	8
4NCR 080 010 110	8 X R1	19	110	8
4NCR 080 015 070	8 X R1.5	16	70	8
4NCR 080 015 090	8 X R1.5	19	90	8
4NCR 080 015 110	8 X R1.5	19	110	8
4NCR 080 020 070	8 X R2	16	70	8

Unità : mm

Numero d'Ordine	D×R	L1	L	d
4NCR 080 020 090	8 X R2	19	90	8
4NCR 080 020 110	8 X R2	19	110	8
4NCR 080 025 090	8 X R2.5	19	90	8
4NCR 100 001 075	10 X R0.1	19	75	10
4NCR 100 001 100	10 X R0.1	22	100	10
4NCR 100 002 075	10 X R0.2	19	75	10
4NCR 100 002 100	10 X R0.2	22	100	10
4NCR 100 003 075	10 X R0.3	19	75	10
4NCR 100 003 100	10 X R0.3	22	100	10
4NCR 100 005 075	10 X R0.5	19	75	10
4NCR 100 005 100	10 X R0.5	22	100	10
4NCR 100 005 120	10 X R0.5	22	120	10
4NCR 100 010 075	10 X R1	19	75	10
4NCR 100 010 100	10 X R1	22	100	10
4NCR 100 010 120	10 X R1	22	120	10
4NCR 100 015 075	10 X R1.5	19	75	10
4NCR 100 015 100	10 X R1.5	22	100	10
4NCR 100 015 120	10 X R1.5	22	120	10
4NCR 100 020 075	10 X R2	19	75	10
4NCR 100 020 100	10 X R2	22	100	10
4NCR 100 020 120	10 X R2	22	120	10
4NCR 100 025 075	10 X R2.5	19	75	10
4NCR 100 025 100	10 X R2.5	22	100	10
4NCR 100 025 120	10 X R2.5	22	120	10
4NCR 100 030 100	10 X R3	22	100	10
4NCR 120 002 080	12 X R0.2	22	80	12
4NCR 120 002 110	12 X R0.2	26	110	12
4NCR 120 003 080	12 X R0.3	22	80	12
4NCR 120 003 110	12 X R0.3	26	110	12
4NCR 120 005 080	12 X R0.5	22	80	12
4NCR 120 005 110	12 X R0.5	26	110	12
4NCR 120 005 130	12 X R0.5	26	130	12
4NCR 120 010 080	12 X R1	22	80	12
4NCR 120 010 110	12 X R1	26	110	12
4NCR 120 010 130	12 X R1	26	130	12
4NCR 120 015 080	12 X R1.5	22	80	12
4NCR 120 015 110	12 X R1.5	26	110	12
4NCR 120 015 130	12 X R1.5	26	130	12
4NCR 120 020 080	12 X R2	22	80	12
4NCR 120 020 110	12 X R2	26	110	12
4NCR 120 020 130	12 X R2	26	130	12
4NCR 120 025 080	12 X R2.5	22	80	12
4NCR 120 025 110	12 X R2.5	26	110	12
4NCR 120 025 130	12 X R2.5	26	130	12
4NCR 120 030 080	12 X R3	22	80	12
4NCR 120 030 110	12 X R3	26	110	12
4NCR 120 030 130	12 X R3	26	130	12
4NCR 120 035 110	12 X R3.5	26	110	12

Numero d'Ordine	D×R	L1	L	d
4NCR 120 040 110	12 X R4	26	110	12
4NCR 160 005 110	16 X R0.5	32	110	16
4NCR 160 005 160	16 X R0.5	32	160	16
4NCR 160 010 110	16 X R1	32	110	16
4NCR 160 010 160	16 X R1	32	160	16
New 4NCR 160 015 110	16 X R1.5	32	110	16
New 4NCR 160 020 110	16 X R2	32	110	16
New 4NCR 160 030 110	16 X R3	32	110	16
New 4NCR 200 005 160	20 X R0.5	38	160	20
New 4NCR 200 010 160	20 X R1	38	160	20
New 4NCR 200 015 160	20 X R1.5	38	160	20
New 4NCR 200 020 160	20 X R2	38	160	20

4CRL Fresa Torica 4 Tagli 45°



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Elica a 45° progettata per alte velocità ed avanzamenti.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

4 | UWC 초미립자 | TISIN Coating | R ±0.005 R0.05 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 5 | 45° Helix Angle | € List. p.70 | i info p.210

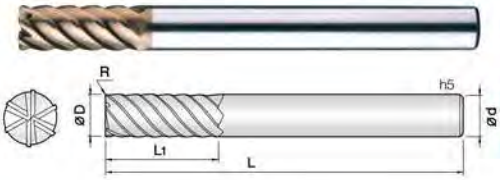
D	Tolleranza
Ø1 ~ 4	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16 ~ 20	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L	d
New 4CRL 010 0005 S06	1 X R0.05	2	50	6
New 4CRL 010 001 S06	1 X R0.1	2	50	6
New 4CRL 010 002 S06	1 X R0.2	2	50	6
New 4CRL 010 003 S06	1 X R0.3	2	50	6
New 4CRL 012 0005 S06	1.2 X R0.05	2.5	50	6
New 4CRL 012 001 S06	1.2 X R0.1	2.5	50	6
New 4CRL 012 002 S06	1.2 X R0.2	2.5	50	6
New 4CRL 012 003 S06	1.2 X R0.3	2.5	50	6
New 4CRL 015 0005 S06	1.5 X R0.05	3	50	6
New 4CRL 015 001 S06	1.5 X R0.1	3	50	6
New 4CRL 015 002 S06	1.5 X R0.2	3	50	6
New 4CRL 015 003 S06	1.5 X R0.3	3	50	6
New 4CRL 015 005 S06	1.5X R0.5	3	50	6
New 4CRL 020 001 S06	2 X R0.1	5	50	6
New 4CRL 020 002 S06	2 X R0.2	5	50	6
New 4CRL 020 003 S06	2 X R0.3	5	50	6
New 4CRL 020 005 S06	2 X R0.5	5	50	6
New 4CRL 025 001 S06	2.5 X R0.1	6	60	6
New 4CRL 025 002 S06	2.5 X R0.2	6	60	6
New 4CRL 025 003 S06	2.5 X R0.3	6	60	6
New 4CRL 025 005 S06	2.5 X R0.5	6	60	6
New 4CRL 030 001 S06	3 X R0.1	6	70	6
4CRL 030 002 S06	3 X R0.2	6	70	6
New 4CRL 030 003 S06	3 X R0.3	6	70	6
4CRL 030 005 S06	3 X R0.5	6	70	6
4CRL 030 010 S06	3 X R1	6	70	6
New 4CRL 040 001 S06	4 X R0.1	8	70	6
4CRL 040 002 S06	4 X R0.2	8	70	6
New 4CRL 040 003 S06	4X R0.3	8	70	6
4CRL 040 005 S06	4 X R0.5	8	70	6
4CRL 040 010 S06	4 X R1	8	70	6
New 4CRL 060 001 S06	6 X R0.1	12	90	6
New 4CRL 060 002 S06	6 X R0.2	12	90	6
New 4CRL 060 003 S06	6 X R0.3	12	90	6
4CRL 060 005 S06	6 X R0.5	12	90	6
4CRL 060 010 S06	6 X R1	12	90	6
New 4CRL 060 015 S06	6 X R1.5	12	90	6
New 4CRL 060 020 S06	6 X R2	12	90	6
4CRL 080 002 S08	8 X R0.2	16	90	8
New 4CRL 080 003 S08	8 X R0.3	16	90	8
4CRL 080 005 S08	8 X R0.5	16	90	8
4CRL 080 010 S08	8 X R1	16	90	8
New 4CRL 080 015 S08	8 X R1.5	16	90	8
New 4CRL 080 020 S08	8 X R2	16	90	8
New 4CRL 100 002 S10	10 X R0.2	20	100	10
4CRL 100 003 S10	10 X R0.3	20	100	10
4CRL 100 005 S10	10 X R0.5	20	100	10
4CRL 100 010 S10	10 X R1	20	100	10

Numero d'Ordine	D×R	L1	L	d
4CRL 100 015 S10	10 X R1.5	20	100	10
New 4CRL 100 020 S10	10 X R2	20	100	10
4CRL 120 003 S12	12 X R0.3	24	110	12
4CRL 120 005 S12	12 X R0.5	24	110	12
4CRL 120 010 S12	12 X R1	24	110	12
New 4CRL 120 015 S12	12 X R1.5	24	110	12
New 4CRL 120 020 S12	12 X R2	24	110	12
New 4CRL 120 030 S12	12 X R3	24	110	12
New 4CRL 160 005 S16	16 X R0.5	32	120	16
New 4CRL 160 010 S16	16 X R1	32	120	16
New 4CRL 160 020 S16	16 X R2	32	120	16
New 4CRL 160 030 S16	16 X R3	32	120	16
New 4CRL 200 005 S20	20 X R0.5	38	130	20
New 4CRL 200 010 S20	20 X R1	38	130	20
New 4CRL 200 020 S20	20 X R2	38	130	20
New 4CRL 200 030 S20	20 X R3	38	130	20
New 4CRL 200 040 S20	20 X R4	38	130	20
New 4CRL 200 050 S20	20 X R5	38	130	20

6CRL Fresa Torica 6 Tagli 45°



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Sl.
- Elica a 45° progettata per alte velocità ed avanzamenti.
- Il nuovo profilo migliora la resistenza all'usura e permette eccellenti finiture in svariate applicazioni.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

6 | UWC 초미립자 | TISIN Coating | R ±0.005 R0.2 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 | 45° Helix Angle | €

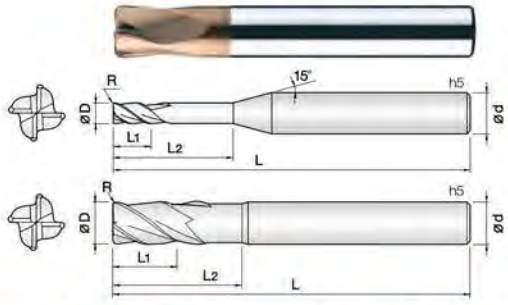
List. p.71

D	Tolleranza
ø5	+0 ~ −0.01mm
ø6 ~ 12	−0.005 ~ −0.015mm
ø16	−0.01 ~ −0.02mm

Unità : mm

	Numero d'Ordine	D×R	L1	L	d
New	6CRL 050 002 060	5 X R0.2	13	60	6
New	6CRL 050 003 060	5 X R0.3	13	60	6
New	6CRL 050 005 060	5 X R0.5	13	60	6
New	6CRL 050 010 060	5 X R1	13	60	6
New	6CRL 060 002 060	6 X R0.2	15	60	6
New	6CRL 060 002 080	6 X R0.2	15	80	6
	6CRL 060 003 060	6 X R0.3	15	60	6
	6CRL 060 003 080	6 X R0.3	15	80	6
	6CRL 060 005 060	6 X R0.5	15	60	6
	6CRL 060 005 080	6 X R0.5	15	80	6
	6CRL 060 010 060	6 X R1	15	60	6
	6CRL 060 010 080	6 X R1	15	80	6
	6CRL 080 003 070	8 X R0.3	20	70	8
	6CRL 080 003 090	8 X R0.3	20	90	8
	6CRL 080 005 070	8 X R0.5	20	70	8
	6CRL 080 005 090	8 X R0.5	20	90	8
	6CRL 080 010 070	8 X R1	20	70	8
	6CRL 080 010 090	8 X R1	20	90	8
New	6CRL 080 015 070	8 X R1.5	20	70	8
	6CRL 100 003 075	10 X R0.3	25	75	10
	6CRL 100 003 100	10 X R0.3	25	100	10
	6CRL 100 005 075	10 X R0.5	25	75	10
	6CRL 100 005 100	10 X R0.5	25	100	10
	6CRL 100 010 075	10 X R1	25	75	10
	6CRL 100 010 100	10 X R1	25	100	10
New	6CRL 100 020 075	10 X R2	25	75	10
	6CRL 120 003 080	12 X R0.3	30	80	12
	6CRL 120 003 110	12 X R0.3	30	110	12
	6CRL 120 005 080	12 X R0.5	30	80	12
	6CRL 120 005 110	12 X R0.5	30	110	12
	6CRL 120 010 080	12 X R1	30	80	12
	6CRL 120 010 110	12 X R1	30	110	12
New	6CRL 120 020 080	12 X R2	30	80	12
	6CRL 160 005 110	16 X R0.5	50	110	16
	6CRL 160 010 110	16 X R1	50	110	16
New	6CRL 160 020 110	16 X R2	50	110	16

4RCU Fresa Torica 4 Tagli per Alti Avanzamenti



- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Progettata per utilizzo con alti avanzamenti.
- Indicata per lavorazioni gravose e di sgrossatura.
- Riduzione di scheggiature ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 μm).

HARD series

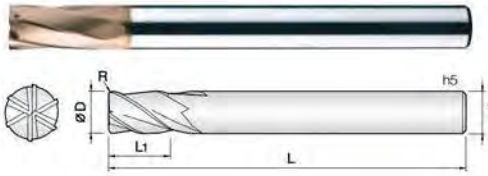
4 | WC 미립자 | TISIN Coating | R ±0.005 R0.2 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 15° Helix Angle | € List. p.71 | i info p.211

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
4RCU 010 002 025	1 X R0.2	1	2.5	50	4
4RCU 015 005 040	1.5 X R0.5	1.5	4	50	4
4RCU 020 005 060	2 X R0.5	2	6	50	6
4RCU 030 005 080	3 X R0.5	3	8	50	6
4RCU 040 005 120	4 X R0.5	4	12	60	6
4RCU 040 005 160	4 X R0.5	4	16	60	6
4RCU 040 010 120	4 X R1	4	12	60	6
4RCU 040 010 160	4 X R1	4	16	60	6
4RCU 050 005 150	5 X R0.5	5	15	60	6
4RCU 050 010 150	5 X R1	5	15	60	6
4RCU 060 003 150	6 X R0.3	6	15	60	6
4RCU 060 005 150	6 X R0.5	6	15	60	6
4RCU 060 010 150	6 X R1	6	15	60	6
4RCU 060 015 150	6 X R1.5	6	15	60	6
4RCU 080 003 160	8 X R0.3	8	16	60	8
4RCU 080 005 160	8 X R0.5	8	16	60	8
4RCU 080 005 200	8 X R0.5	8	20	80	8
4RCU 080 005 300	8 X R0.5	8	30	110	8
4RCU 080 010 160	8 X R1	8	16	60	8
4RCU 080 010 200	8 X R1	8	20	80	8
4RCU 080 010 300	8 X R1	8	30	110	8
4RCU 080 020 160	8 X R2	8	16	60	8
4RCU 080 020 200	8 X R2	8	20	80	8
4RCU 080 020 300	8 X R2	8	30	110	8
4RCU 100 003 200	10 X R0.3	10	20	70	10
4RCU 100 005 200	10 X R0.5	10	20	70	10
4RCU 100 005 250	10 X R0.5	10	25	90	10
4RCU 100 005 300	10 X R0.5	10	30	120	10
4RCU 100 010 200	10 X R1	10	20	70	10
4RCU 100 010 250	10 X R1	10	25	90	10
4RCU 100 010 300	10 X R1	10	30	120	10
4RCU 100 020 200	10 X R2	10	20	70	10
4RCU 100 020 250	10 X R2	10	25	90	10
4RCU 100 020 300	10 X R2	10	30	120	10
4RCU 120 005 250	12 X R0.5	12	25	80	12
4RCU 120 005 300	12 X R0.5	12	30	100	12
4RCU 120 005 350	12 X R0.5	12	35	130	12
4RCU 120 010 250	12 X R1	12	25	80	12
4RCU 120 010 300	12 X R1	12	30	100	12
4RCU 120 010 350	12 X R1	12	35	130	12
4RCU 120 020 250	12 X R2	12	25	80	12
4RCU 120 020 300	12 X R2	12	30	100	12
4RCU 120 020 350	12 X R2	12	35	130	12
4RCU 120 030 250	12 X R3	12	25	80	12
4RCU 160 010 300	16 X R1	16	30	110	16
4RCU 160 010 400	16 X R1	16	40	160	16
4RCU 160 020 300	16 X R2	16	30	110	16
4RCU 160 020 400	16 X R2	16	40	160	16

6RCU Fresa Torica 6 Tagli per Alti Avanzamenti



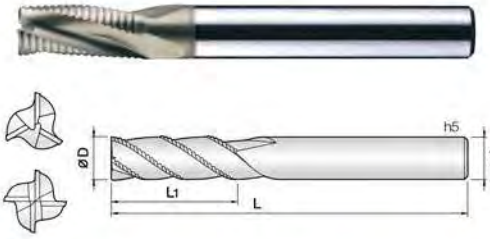
- **Fresa per acciai bonificati e temprati fino a HRc62.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Progettata per utilizzo con alti avanzamenti.
- Indicata per lavorazioni gravose e di sgrossatura.
- Riduzione di scheggiature ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 μm).

6 | WC 미립자 | TISIN Coating | R ±0.005 R0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 | 15° Helix Angle | € List. p.72 | i info p.212

D	Tolleranza
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16 ~ 20	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L	d
6RCU 060 005 060	6 X R0.5	12	60	6
6RCU 060 005 080	6 X R0.5	12	80	6
6RCU 060 010 060	6 X R1	12	60	6
6RCU 060 010 080	6 X R1	12	80	6
6RCU 080 005 060	8 X R0.5	16	60	8
6RCU 080 005 090	8 X R0.5	16	90	8
6RCU 080 010 060	8 X R1	16	60	8
6RCU 080 010 090	8 X R1	16	90	8
6RCU 080 020 060	8 X R2	16	60	8
6RCU 080 020 090	8 X R2	16	90	8
6RCU 100 005 070	10 X R0.5	20	70	10
6RCU 100 005 100	10 X R0.5	20	100	10
6RCU 100 010 070	10 X R1	20	70	10
6RCU 100 010 100	10 X R1	20	100	10
6RCU 100 020 070	10 X R2	20	70	10
6RCU 100 020 100	10 X R2	20	100	10
6RCU 120 005 080	12 X R0.5	25	80	12
6RCU 120 005 110	12 X R0.5	25	110	12
6RCU 120 010 080	12 X R1	25	80	12
6RCU 120 010 110	12 X R1	25	110	12
6RCU 120 020 080	12 X R2	25	80	12
6RCU 120 020 110	12 X R2	25	110	12
6RCU 160 005 160	16 X R0.5	35	160	16
6RCU 160 005 200	16 X R0.5	35	200	16
6RCU 160 010 160	16 X R1	35	160	16
6RCU 160 010 200	16 X R1	35	200	16
6RCU 160 015 160	16 X R1.5	35	160	16
6RCU 160 015 200	16 X R1.5	35	200	16
6RCU 160 020 160	16 X R2	35	160	16
6RCU 160 020 200	16 X R2	35	200	16
6RCU 200 005 150	20 X R0.5	40	150	20
6RCU 200 005 200	20 X R0.5	40	200	20
6RCU 200 010 150	20 X R1	40	150	20
6RCU 200 010 200	20 X R1	40	200	20
6RCU 200 015 150	20 X R1.5	40	150	20
6RCU 200 015 200	20 X R1.5	40	200	20
6RCU 200 020 150	20 X R2	40	150	20
6RCU 200 020 200	20 X R2	40	200	20



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Riduzione dei tempi di lavoro grazie all'eccellente controllo del truciolo.
- Massima efficienza in condizioni di alta velocità.
- Scheggiature del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro Ultra Micrograna (0,2 µm).

3 | 4 | WC 미립자 | JMAX Coating | D −0.02~0.04 Ø4 ~ 9 | D −0.02~0.05 Ø10 ~ 20 | 30° Helix Angle | Rinforzato | € List. p.73 | i info p.213

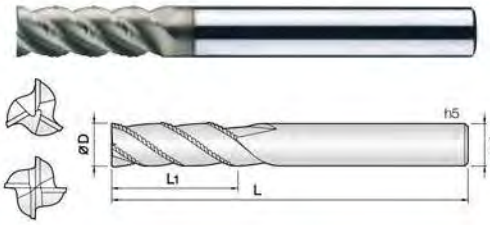
D	Tolleranza
Ø4 ~ 9	−0.02 ~ −0.04mm
Ø10 ~ 20	−0.02 ~ −0.05mm

Unità : mm

Numero d'Ordine	D	L1	L	d
3ROU 040 100 S06	4	10	50	6
3ROU 050 130 S06	5	13	50	6
3ROU 060 100 050	6	10	50	6
3ROU 060 150 055	6	15	55	6
3ROU 060 200 060	6	20	60	6
3ROU 070 180 S08	7	18	65	8
3ROU 080 120 060	8	12	60	8
3ROU 080 190 065	8	19	65	8
3ROU 080 250 070	8	25	70	8
4ROU 090 220 S10	9	22	70	10
4ROU 100 150 070	10	15	70	10
4ROU 100 220 070	10	22	70	10
4ROU 100 300 080	10	30	80	10
4ROU 110 270 S12	11	27	80	12
4ROU 120 200 075	12	20	75	12
4ROU 120 260 080	12	26	80	12
4ROU 120 350 090	12	35	90	12
4ROU 160 320 090	16	32	90	16
4ROU 160 400 100	16	40	100	16
4ROU 200 380 110	20	38	110	20
4ROU 200 500 110	20	50	110	20

3&4HROU

Fresa 3/4 Tagli 45° a Sgrossare



- **Fresa per acciai fino a HRc62, inossidabili, leghe Ti/Ni, inconel e materiali di difficile lavorazione.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Riduzione dei tempi di lavoro grazie all'eccellente controllo del truciolo.
- Ottima resistenza all'usura e ridotto sforzo di taglio grazie all'elica 45°.
- Scheggiature del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro Ultra Micrograna (0,2 µm).

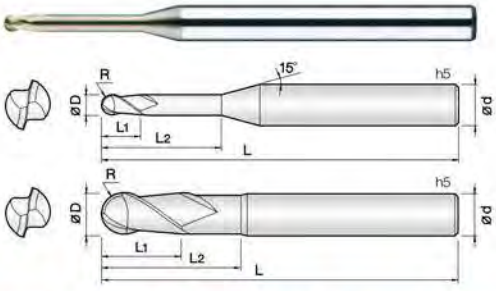
3 | 4 | WC 미립자 | JMAX Coating | D −0.02~0.04 Ø4 ~ 9 | D −0.02~0.05 Ø10 ~ 20 | 45° Helix Angle | Rinforzato | € List. p.73 | i info p.214

D	Tolleranza
Ø4 ~ 9	−0.02 ~ −0.04mm
Ø10 ~ 20	−0.02 ~ −0.05mm

Unità : mm

Numero d'Ordine	D	L1	L	d
3HROU 040 100 S06	4	10	50	6
3HROU 050 130 S06	5	13	50	6
3HROU 060 100 050	6	10	50	6
3HROU 060 160 055	6	16	55	6
3HROU 060 200 060	6	20	60	6
3HROU 070 180 S08	7	18	65	8
3HROU 080 120 060	8	12	60	8
3HROU 080 190 065	8	19	65	8
3HROU 080 250 070	8	25	70	8
4HROU 090 220 S10	9	22	70	10
4HROU 100 150 070	10	15	70	10
4HROU 100 220 070	10	22	70	10
4HROU 100 300 080	10	30	80	10
4HROU 110 270 S12	11	27	80	12
4HROU 120 200 075	12	20	75	12
4HROU 120 250 080	12	25	80	12
4HROU 120 350 090	12	35	90	12
4HROU 160 320 090	16	32	90	16
4HROU 160 400 110	16	40	110	16
4HROU 200 380 110	20	38	110	20
4HROU 200 500 120	20	50	120	20

2HRBG Fresa Emisferica 2 Tagli per Nervature



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

2 | WC 미립자 | JMAX Coating | R ±0.005 (0.05 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 35° Helix Angle | € List. p.73 | i info p.215

D	Tolleranza
Ø0.1	+0 ~ -0.005mm
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

G series

Numero d'Ordine	R×D	L1	L2	L	d
2HRBG 001 003 S04	0.05R X 0.1	0.3	-	40	4
2HRBG 001 005 S04	0.05R X 0.1	0.5	-	40	4
2HRBG 002 005 S04	0.1R X 0.2	0.2	0.5	40	4
2HRBG 002 010 S04	0.1R X 0.2	0.2	1	40	4
2HRBG 002 015 S04	0.1R X 0.2	0.2	1.5	40	4
2HRBG 002 020 S04	0.1R X 0.2	0.2	2	40	4
2HRBG 003 010 S04	0.15R X 0.3	0.3	1	40	4
2HRBG 003 015 S04	0.15R X 0.3	0.3	1.5	40	4
2HRBG 003 020 S04	0.15R X 0.3	0.3	2	40	4
2HRBG 003 030 S04	0.15R X 0.3	0.3	3	40	4
2HRBG 003 040 S04	0.15R X 0.3	0.3	4	40	4
2HRBG 003 050 S04	0.15R X 0.3	0.3	5	40	4
2HRBG 004 010 S04	0.2R X 0.4	0.5	1	40	4
2HRBG 004 020 S04	0.2R X 0.4	0.5	2	40	4
2HRBG 004 030 S04	0.2R X 0.4	0.5	3	40	4
2HRBG 004 040 S04	0.2R X 0.4	0.5	4	40	4
2HRBG 004 050 S04	0.2R X 0.4	0.5	5	40	4
2HRBG 004 060 S04	0.2R X 0.4	0.5	6	40	4
2HRBG 004 080 S04	0.2R X 0.4	0.5	8	40	4
2HRBG 004 100 S04	0.2R X 0.4	0.5	10	40	4
2HRBG 005 010 S04	0.25R X 0.5	0.6	1	45	4
2HRBG 005 020 S04	0.25R X 0.5	0.6	2	45	4
2HRBG 005 030 S04	0.25R X 0.5	0.6	3	45	4
2HRBG 005 040 S04	0.25R X 0.5	0.6	4	45	4
2HRBG 005 050 S04	0.25R X 0.5	0.6	5	45	4
2HRBG 005 060 S04	0.25R X 0.5	0.6	6	45	4
2HRBG 005 080 S04	0.25R X 0.5	0.6	8	45	4
2HRBG 005 100 S04	0.25R X 0.5	0.6	10	45	4
2HRBG 005 120 S04	0.25R X 0.5	0.6	12	45	4
2HRBG 005 140 S04	0.25R X 0.5	0.6	14	45	4
2HRBG 006 010 S04	0.3R X 0.6	0.7	1	45	4
2HRBG 006 020 S04	0.3R X 0.6	0.7	2	45	4
2HRBG 006 030 S04	0.3R X 0.6	0.7	3	45	4
2HRBG 006 040 S04	0.3R X 0.6	0.7	4	45	4
2HRBG 006 050 S04	0.3R X 0.6	0.7	5	45	4
2HRBG 006 060 S04	0.3R X 0.6	0.7	6	45	4
2HRBG 006 080 S04	0.3R X 0.6	0.7	8	45	4
2HRBG 006 100 S04	0.3R X 0.6	0.7	10	45	4
2HRBG 006 120 S04	0.3R X 0.6	0.7	12	45	4
2HRBG 006 140 S04	0.3R X 0.6	0.7	14	45	4
2HRBG 006 160 S04	0.3R X 0.6	0.7	16	45	4
2HRBG 007 020 S04	0.35R X 0.7	0.8	2	45	4
2HRBG 007 040 S04	0.35R X 0.7	0.8	4	45	4
2HRBG 007 080 S04	0.35R X 0.7	0.8	8	45	4
2HRBG 007 100 S04	0.35R X 0.7	0.8	10	45	4
2HRBG 007 120 S04	0.35R X 0.7	0.8	12	45	4
2HRBG 008 020 S04	0.4R X 0.8	0.9	2	45	4
2HRBG 008 040 S04	0.4R X 0.8	0.9	4	45	4

Numero d'Ordine	R×D	L1	L2	L	d
2HRBG 008 060 S04	0.4R X 0.8	0.9	6	45	4
2HRBG 008 080 S04	0.4R X 0.8	0.9	8	45	4
2HRBG 008 100 S04	0.4R X 0.8	0.9	10	45	4
2HRBG 008 120 S04	0.4R X 0.8	0.9	12	45	4
2HRBG 008 140 S04	0.4R X 0.8	0.9	14	45	4
2HRBG 008 160 S04	0.4R X 0.8	0.9	16	45	4
2HRBG 009 040 S04	0.45R X 0.9	1	4	45	4
2HRBG 010 020 S04	0.5R X 1	1.2	2	45	4
2HRBG 010 020 S06	0.5R X 1	1.2	2	45	6
2HRBG 010 030 S04	0.5R X 1	1.2	3	45	4
2HRBG 010 030 S06	0.5R X 1	1.2	3	45	6
2HRBG 010 040 S04	0.5R X 1	1.2	4	45	4
2HRBG 010 040 S06	0.5R X 1	1.2	4	45	6
2HRBG 010 050 S04	0.5R X 1	1.2	5	45	4
2HRBG 010 050 S06	0.5R X 1	1.2	5	45	6
2HRBG 010 060 S04	0.5R X 1	1.2	6	45	4
2HRBG 010 060 S06	0.5R X 1	1.2	6	45	6
2HRBG 010 080 S04	0.5R X 1	1.2	8	45	4
2HRBG 010 080 S06	0.5R X 1	1.2	8	45	6
2HRBG 010 100 S04	0.5R X 1	1.2	10	50	4
2HRBG 010 100 S06	0.5R X 1	1.2	10	50	6
2HRBG 010 120 S04	0.5R X 1	1.2	12	50	4
2HRBG 010 120 S06	0.5R X 1	1.2	12	50	6
2HRBG 010 140 S04	0.5R X 1	1.2	14	50	4
2HRBG 010 140 S06	0.5R X 1	1.2	14	50	6
2HRBG 010 160 S04	0.5R X 1	1.2	16	50	4
2HRBG 010 160 S06	0.5R X 1	1.2	16	55	6
2HRBG 010 180 S04	0.5R X 1	1.2	18	50	4
2HRBG 010 180 S06	0.5R X 1	1.2	18	60	6
2HRBG 010 200 S04	0.5R X 1	1.2	20	50	4
2HRBG 010 200 S06	0.5R X 1	1.2	20	60	6
2HRBG 010 220 S04	0.5R X 1	1.2	22	60	4
2HRBG 010 220 S06	0.5R X 1	1.2	22	65	6
2HRBG 010 250 S04	0.5R X 1	1.2	25	60	4
2HRBG 012 040 S04	0.6R X 1.2	1.4	4	45	4
2HRBG 012 040 S06	0.6R X 1.2	1.4	4	45	6
2HRBG 012 060 S04	0.6R X 1.2	1.4	6	45	4
2HRBG 012 060 S06	0.6R X 1.2	1.4	6	45	6
2HRBG 012 080 S04	0.6R X 1.2	1.4	8	45	4
2HRBG 012 080 S06	0.6R X 1.2	1.4	8	45	6
2HRBG 012 100 S04	0.6R X 1.2	1.4	10	50	4
2HRBG 012 100 S06	0.6R X 1.2	1.4	10	50	6
2HRBG 012 120 S04	0.6R X 1.2	1.4	12	50	4
2HRBG 012 120 S06	0.6R X 1.2	1.4	12	50	6
2HRBG 012 160 S04	0.6R X 1.2	1.4	16	50	4
2HRBG 012 160 S06	0.6R X 1.2	1.4	16	55	6
2HRBG 012 200 S04	0.6R X 1.2	1.4	20	50	4
2HRBG 012 200 S06	0.6R X 1.2	1.4	20	60	6

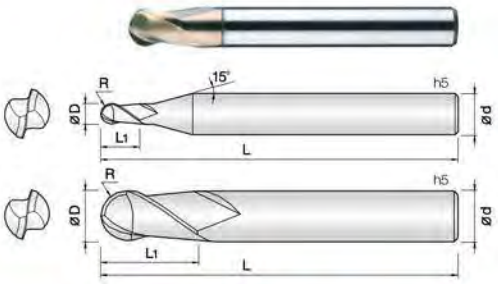
2HRBG Fresa Emisferica 2 Tagli per Nervature

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2HRBG 012 240 S04	0.6R X 1.2	1.4	24	60	4
2HRBG 012 240 S06	0.6R X 1.2	1.4	24	65	6
2HRBG 014 060 S04	0.7R X 1.4	1.6	6	45	4
2HRBG 014 080 S04	0.7R X 1.4	1.6	8	45	4
2HRBG 014 120 S04	0.7R X 1.4	1.6	12	50	4
2HRBG 014 160 S04	0.7R X 1.4	1.6	16	50	4
2HRBG 015 030 S04	0.75R X 1.5	1.8	3	45	4
2HRBG 015 030 S06	0.75R X 1.5	1.8	3	45	6
2HRBG 015 040 S04	0.75R X 1.5	1.8	4	45	4
2HRBG 015 040 S06	0.75R X 1.5	1.8	4	45	6
2HRBG 015 060 S04	0.75R X 1.5	1.8	6	45	4
2HRBG 015 060 S06	0.75R X 1.5	1.8	6	45	6
2HRBG 015 080 S04	0.75R X 1.5	1.8	8	45	4
2HRBG 015 080 S06	0.75R X 1.5	1.8	8	45	6
2HRBG 015 100 S04	0.75R X 1.5	1.8	10	50	4
2HRBG 015 100 S06	0.75R X 1.5	1.8	10	50	6
2HRBG 015 120 S04	0.75R X 1.5	1.8	12	50	4
2HRBG 015 120 S06	0.75R X 1.5	1.8	12	50	6
2HRBG 015 140 S04	0.75R X 1.5	1.8	14	50	4
2HRBG 015 140 S06	0.75R X 1.5	1.8	14	50	6
2HRBG 015 160 S04	0.75R X 1.5	1.8	16	50	4
2HRBG 015 160 S06	0.75R X 1.5	1.8	16	55	6
2HRBG 015 180 S04	0.75R X 1.5	1.8	18	50	4
2HRBG 015 180 S06	0.75R X 1.5	1.8	18	60	6
2HRBG 015 200 S04	0.75R X 1.5	1.8	20	50	4
2HRBG 015 200 S06	0.75R X 1.5	1.8	20	60	6
2HRBG 015 220 S04	0.75R X 1.5	1.8	22	60	4
2HRBG 015 220 S06	0.75R X 1.5	1.8	22	65	6
2HRBG 015 250 S04	0.75R X 1.5	1.8	25	60	4
2HRBG 015 250 S06	0.75R X 1.5	1.8	25	65	6
2HRBG 015 300 S04	0.75R X 1.5	1.8	30	70	4
2HRBG 015 300 S06	0.75R X 1.5	1.8	30	70	6
2HRBG 015 350 S04	0.75R X 1.5	1.8	35	70	4
2HRBG 016 060 S04	0.8R X 1.6	1.9	6	45	4
2HRBG 016 080 S04	0.8R X 1.6	1.9	8	45	4
2HRBG 016 120 S04	0.8R X 1.6	1.9	12	50	4
2HRBG 016 160 S04	0.8R X 1.6	1.9	16	50	4
2HRBG 016 200 S04	0.8R X 1.6	1.9	20	50	4
2HRBG 018 060 S04	0.9R X 1.8	2.1	6	45	4
2HRBG 018 080 S04	0.9R X 1.8	2.1	8	45	4
2HRBG 018 120 S04	0.9R X 1.8	2.1	12	50	4
2HRBG 018 160 S04	0.9R X 1.8	2.1	16	50	4
2HRBG 018 200 S04	0.9R X 1.8	2.1	20	50	4
2HRBG 020 040 S04	1R X 2	2.4	4	45	4
2HRBG 020 040 S06	1R X 2	2.4	4	45	6
2HRBG 020 060 S04	1R X 2	2.4	6	45	4
2HRBG 020 060 S06	1R X 2	2.4	6	45	6
2HRBG 020 080 S04	1R X 2	2.4	8	45	4
2HRBG 020 080 S06	1R X 2	2.4	8	45	6
2HRBG 020 100 S04	1R X 2	2.4	10	50	4
2HRBG 020 100 S06	1R X 2	2.4	10	50	6
2HRBG 020 120 S04	1R X 2	2.4	12	50	4
2HRBG 020 120 S06	1R X 2	2.4	12	50	6
2HRBG 020 140 S04	1R X 2	2.4	14	50	4
2HRBG 020 140 S06	1R X 2	2.4	14	50	6
2HRBG 020 160 S04	1R X 2	2.4	16	50	4
2HRBG 020 160 S06	1R X 2	2.4	16	55	6
2HRBG 020 180 S04	1R X 2	2.4	18	50	4
2HRBG 020 180 S06	1R X 2	2.4	18	60	6
2HRBG 020 200 S04	1R X 2	2.4	20	50	4
2HRBG 020 200 S06	1R X 2	2.4	20	60	6
2HRBG 020 220 S04	1R X 2	2.4	22	60	4
2HRBG 020 220 S06	1R X 2	2.4	22	65	6

Numero d'Ordine	R×D	L1	L2	L	d
2HRBG 020 250 S04	1R X 2	2.4	25	60	4
2HRBG 020 250 S06	1R X 2	2.4	25	65	6
2HRBG 020 300 S04	1R X 2	2.4	30	70	4
2HRBG 020 300 S06	1R X 2	2.4	30	70	6
2HRBG 020 350 S04	1R X 2	2.4	35	70	4
2HRBG 020 350 S06	1R X 2	2.4	35	75	6
2HRBG 020 400 S04	1R X 2	2.4	40	80	4
2HRBG 020 400 S06	1R X 2	2.4	40	80	6
2HRBG 020 450 S04	1R X 2	2.4	45	80	4
2HRBG 025 080 S04	1.25R X 2.5	3	8	45	4
2HRBG 025 100 S04	1.25R X 2.5	3	10	50	4
2HRBG 025 160 S04	1.25R X 2.5	3	16	50	4
2HRBG 025 200 S04	1.25R X 2.5	3	20	50	4
2HRBG 025 250 S04	1.25R X 2.5	3	25	60	4
2HRBG 025 300 S04	1.25R X 2.5	3	30	70	4
2HRBG 025 350 S04	1.25R X 2.5	3	35	70	4
2HRBG 030 060 S06	1.5R X 3	3.6	6	45	6
2HRBG 030 080 S06	1.5R X 3	3.6	8	45	6
2HRBG 030 100 S06	1.5R X 3	3.6	10	50	6
2HRBG 030 120 S06	1.5R X 3	3.6	12	50	6
2HRBG 030 160 S06	1.5R X 3	3.6	16	55	6
2HRBG 030 200 S06	1.5R X 3	3.6	20	60	6
2HRBG 030 250 S06	1.5R X 3	3.6	25	65	6
2HRBG 030 300 S06	1.5R X 3	3.6	30	70	6
2HRBG 030 350 S06	1.5R X 3	3.6	35	75	6
2HRBG 030 400 S06	1.5R X 3	3.6	40	80	6
2HRBG 030 450 S06	1.5R X 3	3.6	45	90	6
2HRBG 030 500 S06	1.5R X 3	3.6	50	100	6
2HRBG 030 600 S06	1.5R X 3	3.6	60	100	6
2HRBG 040 080 S06	2R X 4	4.8	8	45	6
2HRBG 040 100 S06	2R X 4	4.8	10	50	6
2HRBG 040 120 S06	2R X 4	4.8	12	50	6
2HRBG 040 160 S06	2R X 4	4.8	16	55	6
2HRBG 040 200 S06	2R X 4	4.8	20	60	6
2HRBG 040 250 S06	2R X 4	4.8	25	65	6
2HRBG 040 300 S06	2R X 4	4.8	30	70	6
2HRBG 040 350 S06	2R X 4	4.8	35	75	6
2HRBG 040 400 S06	2R X 4	4.8	40	80	6
2HRBG 040 450 S06	2R X 4	4.8	45	90	6
2HRBG 040 500 S06	2R X 4	4.8	50	100	6
2HRBG 040 550 S06	2R X 4	4.8	55	100	6
2HRBG 040 600 S06	2R X 4	4.8	60	100	6
2HRBG 050 150 S06	2.5R X 5	6	15	55	6
2HRBG 050 200 S06	2.5R X 5	6	20	60	6
2HRBG 050 250 S06	2.5R X 5	6	25	70	6
2HRBG 050 300 S06	2.5R X 5	6	30	75	6
2HRBG 050 400 S06	2.5R X 5	6	40	80	6
2HRBG 050 450 S06	2.5R X 5	6	45	90	6
2HRBG 050 500 S06	2.5R X 5	6	50	100	6
2HRBG 050 600 S06	2.5R X 5	6	60	100	6
2HRBG 060 150 S06	3R X 6	10	15	55	6
2HRBG 060 300 S06	3R X 6	10	30	110	6
2HRBG 080 250 060	4R X 8	12	25	60	8
2HRBG 080 300 100	4R X 8	12	30	100	8
2HRBG 100 300 070	5R X 10	16	30	70	10
2HRBG 100 350 100	5R X 10	16	35	100	10
2HRBG 120 300 075	6R X 12	18	30	75	12
2HRBG 120 400 110	6R X 12	18	40	110	12

2HSBG Fresa Emisferica 2 Tagli Serie Corta



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Lunghezza ridotta per utilizzo con mandrini a calettamento.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

2 | WC 미립자 | JMAX Coating | R ±0.005 (0.1R ~ 2.5R) | R ±0.01 (3R ~ 6R) | 35° Helix Angle | € List. p.76 | i info p.220

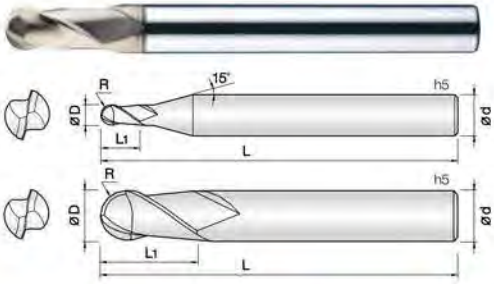
D	Tolleranza
ø0.2 ~ 5	+0~ -0.01mm
ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
2HSBG 002 002 S04	0.1R X 0.2	0.2	40	4
2HSBG 003 003 S04	0.15R X 0.3	0.3	40	4
2HSBG 004 004 S04	0.2R X 0.4	0.4	40	4
2HSBG 005 005 S04	0.25R X 0.5	0.5	40	4
2HSBG 006 006 S04	0.3R X 0.6	0.6	40	4
2HSBG 007 007 S04	0.35R X 0.7	0.7	40	4
2HSBG 008 008 S04	0.4R X 0.8	0.8	40	4
2HSBG 009 009 S04	0.45R X 0.9	0.9	40	4
2HSBG 010 010 S04	0.5R X 1	1	40	4
2HSBG 010 010 S06	0.5R X 1	1	40	6
2HSBG 015 015 S04	0.75R X 1.5	1.5	40	4
2HSBG 015 015 S06	0.75R X 1.5	1.5	40	6
2HSBG 020 020 S04	1R X 2	2	45	4
2HSBG 020 020 S06	1R X 2	2	45	6
2HSBG 030 030 S04	1.5R X 3	3	45	4
2HSBG 030 030 S06	1.5R X 3	3	45	6
2HSBG 040 040 S04	2R X 4	4	45	4
2HSBG 040 040 S06	2R X 4	4	45	6
2HSBG 050 050 S06	2.5R X 5	5	50	6
2HSBG 060 060 050	3R X 6	6	50	6
2HSBG 060 060 060	3R X 6	6	60	6
2HSBG 080 080 050	4R X 8	8	50	8
2HSBG 080 080 060	4R X 8	8	60	8
2HSBG 100 100 060	5R X 10	10	60	10
2HSBG 100 100 070	5R X 10	10	70	10
2HSBG 120 120 060	6R X 12	12	60	12
2HSBG 120 120 070	6R X 12	12	70	12

2HCBG

Fresa Emisferica 2 Tagli Serie Standard



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 μm).

2 | WC 미립자 | JMAX Coating | R ±0.005 (0.05~2.75R) | R ±0.01 (3 ~ 6R) | R ±0.015 (6.5 ~ 10R) | 35° Helix Angle | € List. p.77 | i info p.220

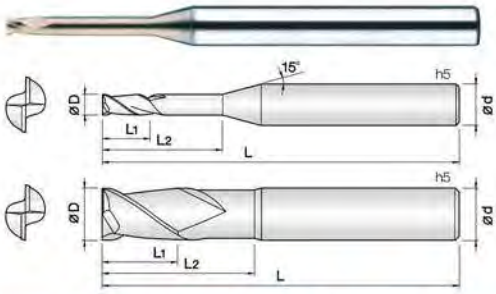
D	Tolleranza
Ø0.2 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm
Ø16	−0.01 ~ −0.02mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
2HCBG 001 002 S04	0.05R X 0.1	0.2	40	4
2HCBG 0015 003 S04	0.075R X 0.15	0.3	40	4
2HCBG 002 004 S04	0.1R X 0.2	0.4	40	4
2HCBG 003 006 S04	0.15R X 0.3	0.6	40	4
2HCBG 004 008 S04	0.2R X 0.4	0.8	40	4
2HCBG 005 010 S04	0.25R X 0.5	1	45	4
2HCBG 006 012 S04	0.3R X 0.6	1.2	45	4
2HCBG 007 015 S04	0.35R X 0.7	1.5	45	4
2HCBG 008 020 S04	0.4R X 0.8	2	45	4
2HCBG 009 020 S04	0.45R X 0.9	2	45	4
2HCBG 010 025 S04	0.5R X 1	2.5	50	4
2HCBG 010 025 S06	0.5R X 1	2.5	50	6
2HCBG 010 025 070	0.5R X 1	2.5	70	6
2HCBG 010 025 100	0.5R X 1	2.5	100	6
2HCBG 012 030 S04	0.6R X 1.2	3	50	4
2HCBG 015 040 S04	0.75R X 1.5	4	50	4
2HCBG 015 040 S06	0.75R X 1.5	4	50	6
2HCBG 015 040 070	0.75R X 1.5	4	70	6
2HCBG 015 040 100	0.75R X 1.5	4	100	6
2HCBG 020 050 S04	1R X 2	5	50	4
2HCBG 020 050 S06	1R X 2	5	50	6
2HCBG 020 050 075	1R X 2	5	75	6
2HCBG 020 050 100	1R X 2	5	100	6
2HCBG 025 060 S04	1.25R X 2.5	6	50	4
New 2HCBG 025 060 S06	1.25R X 2.5	6	60	6
2HCBG 025 060 075	1.25R X 2.5	6	75	6
2HCBG 025 060 100	1.25R X 2.5	6	100	6
2HCBG 030 080 S03	1.5R X 3	8	60	3
2HCBG 030 080 S04	1.5R X 3	8	50	4
2HCBG 030 080 S06	1.5R X 3	8	60	6
2HCBG 030 080 080	1.5R X 3	8	80	6
2HCBG 030 080 100	1.5R X 3	8	100	6
2HCBG 035 080 S06	1.75R X 3.5	8	60	6
2HCBG 040 080 060	2R X 4	8	60	4
2HCBG 040 080 080	2R X 4	8	80	4
2HCBG 040 080 S06	2R X 4	8	70	6
2HCBG 040 080 090	2R X 4	8	90	6
2HCBG 040 080 120	2R X 4	8	120	6
2HCBG 045 080 S06	2.25R X 4.5	8	70	6
2HCBG 050 080 S05	2.5R X 5	8	80	5
2HCBG 050 100 S06	2.5R X 5	10	75	6
2HCBG 055 100 S06	2.75R X 5.5	10	75	6
2HCBG 060 100 060	3R X 6	10	60	6
2HCBG 060 120 080	3R X 6	12	80	6
2HCBG 060 120 100	3R X 6	12	100	6
2HCBG 060 120 120	3R X 6	12	120	6
2HCBG 070 140 S08	3.5R X 7	14	80	8
2HCBG 080 120 060	4R X 8	12	60	8

Numero d'Ordine	R×D	L1	L	d
2HCBG 080 140 090	4R X 8	14	90	8
2HCBG 080 140 110	4R X 8	14	110	8
2HCBG 080 140 150	4R X 8	14	150	8
2HCBG 090 160 S10	4.5R X 9	16	100	10
2HCBG 100 150 070	5R X 10	15	70	10
2HCBG 100 180 100	5R X 10	18	100	10
2HCBG 100 180 120	5R X 10	18	120	10
2HCBG 100 180 150	5R X 10	18	150	10
2HCBG 100 180 180	5R X 10	18	180	10
2HCBG 110 200 S12	5.5R X 11	20	110	12
2HCBG 120 180 070	6R X 12	18	70	12
2HCBG 120 220 110	6R X 12	22	110	12
2HCBG 120 220 130	6R X 12	22	130	12
2HCBG 120 220 150	6R X 12	22	150	12
2HCBG 120 220 200	6R X 12	22	200	12
2HCBG 130 240 S14	6.5R X 13	24	110	14
2HCBG 140 240 S14	7R X 14	24	110	14
2HCBG 160 300 130	8R X 16	30	130	16
2HCBG 160 300 160	8R X 16	30	160	16
2HCBG 160 300 200	8R X 16	30	200	16
2HCBG 200 380 160	10R X 20	38	160	20
2HCBG 200 380 200	10R X 20	38	200	20

2HREG Fresa Cilindrica 2 Tagli per Nervature



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

2 | WC 미립자 | JMAX Coating | D +0~-0.05 Ø0.1 | D +0~-0.01 Ø0.2 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | 35° Helix Angle | Rinforzato | List. p.80 | info p.219

D	Tolleranza
Ø0.1	+0 ~ -0.05mm
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

G series

Numero d'Ordine	D	L1	L2	L	d
2HREG 001 003 S04	0.1	0.3	-	40	4
2HREG 001 005 S04	0.1	0.5	-	40	4
2HREG 002 005 S04	0.2	0.3	0.5	40	4
2HREG 002 010 S04	0.2	0.2	1	40	4
2HREG 002 015 S04	0.2	0.2	1.5	40	4
2HREG 002 020 S04	0.2	0.2	2	40	4
2HREG 003 010 S04	0.3	0.3	1	40	4
2HREG 003 015 S04	0.3	0.3	1.5	40	4
2HREG 003 020 S04	0.3	0.3	2	40	4
2HREG 003 030 S04	0.3	0.3	3	40	4
2HREG 003 040 S04	0.3	0.3	4	40	4
2HREG 003 050 S04	0.3	0.3	5	40	4
2HREG 004 010 S04	0.4	0.5	1	40	4
2HREG 004 020 S04	0.4	0.5	2	40	4
2HREG 004 030 S04	0.4	0.5	3	40	4
2HREG 004 040 S04	0.4	0.5	4	40	4
2HREG 004 050 S04	0.4	0.5	5	40	4
2HREG 004 060 S04	0.4	0.5	6	40	4
2HREG 004 080 S04	0.4	0.5	8	40	4
2HREG 004 100 S04	0.4	0.5	10	40	4
2HREG 005 020 S04	0.5	0.6	2	45	4
2HREG 005 030 S04	0.5	0.6	3	45	4
2HREG 005 040 S04	0.5	0.6	4	45	4
2HREG 005 050 S04	0.5	0.6	5	45	4
2HREG 005 060 S04	0.5	0.6	6	45	4
2HREG 005 080 S04	0.5	0.6	8	45	4
2HREG 005 100 S04	0.5	0.6	10	45	4
2HREG 005 120 S04	0.5	0.6	12	45	4
2HREG 005 140 S04	0.5	0.6	14	45	4
2HREG 006 020 S04	0.6	0.7	2	45	4
2HREG 006 030 S04	0.6	0.7	3	45	4
2HREG 006 040 S04	0.6	0.7	4	45	4
2HREG 006 050 S04	0.6	0.7	5	45	4
2HREG 006 060 S04	0.6	0.7	6	45	4
2HREG 006 080 S04	0.6	0.7	8	45	4
2HREG 006 100 S04	0.6	0.7	10	45	4
2HREG 006 120 S04	0.6	0.7	12	45	4
2HREG 006 140 S04	0.6	0.7	14	45	4
2HREG 006 160 S04	0.6	0.7	16	45	4
2HREG 007 020 S04	0.7	0.8	2	45	4
2HREG 007 040 S04	0.7	0.8	4	45	4
2HREG 007 060 S04	0.7	0.8	6	45	4
2HREG 007 080 S04	0.7	0.8	8	45	4
2HREG 007 100 S04	0.7	0.8	10	45	4
2HREG 007 120 S04	0.7	0.8	12	45	4
2HREG 008 020 S04	0.8	0.9	2	45	4
2HREG 008 040 S04	0.8	0.9	4	45	4
2HREG 008 060 S04	0.8	0.9	6	45	4

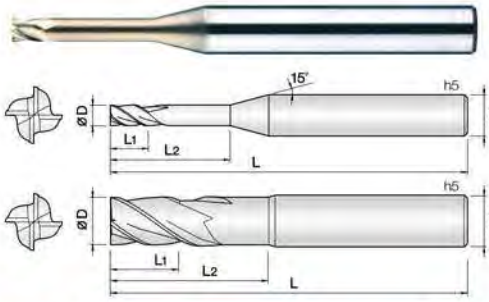
Numero d'Ordine	D	L1	L2	L	d
2HREG 008 080 S04	0.8	0.9	8	45	4
2HREG 008 100 S04	0.8	0.9	10	45	4
2HREG 008 120 S04	0.8	0.9	12	45	4
2HREG 008 140 S04	0.8	0.9	14	45	4
2HREG 009 060 S04	0.9	1	6	45	4
2HREG 009 080 S04	0.9	1	8	45	4
2HREG 009 100 S04	0.9	1	10	45	4
2HREG 010 020 S04	1	1.2	2	45	4
2HREG 010 030 S04	1	1.2	3	45	4
2HREG 010 040 S04	1	1.2	4	45	4
2HREG 010 050 S04	1	1.2	5	45	4
2HREG 010 060 S04	1	1.2	6	45	4
2HREG 010 080 S04	1	1.2	8	45	4
2HREG 010 100 S04	1	1.2	10	50	4
2HREG 010 120 S04	1	1.2	12	50	4
2HREG 010 140 S04	1	1.2	14	50	4
2HREG 010 160 S04	1	1.2	16	50	4
2HREG 010 180 S04	1	1.2	18	50	4
2HREG 010 200 S04	1	1.2	20	50	4
2HREG 010 250 S04	1	1.2	25	60	4
2HREG 010 300 S04	1	1.2	30	70	4
2HREG 012 040 S04	1.2	1.4	4	45	4
2HREG 012 060 S04	1.2	1.4	6	45	4
2HREG 012 080 S04	1.2	1.4	8	45	4
2HREG 012 100 S04	1.2	1.4	10	50	4
2HREG 012 120 S04	1.2	1.4	12	50	4
2HREG 012 160 S04	1.2	1.4	16	50	4
2HREG 012 200 S04	1.2	1.4	20	50	4
2HREG 012 250 S04	1.2	1.4	25	60	4
2HREG 012 300 S04	1.2	1.4	30	70	4
2HREG 014 060 S04	1.4	1.6	6	45	4
2HREG 014 080 S04	1.4	1.6	8	45	4
2HREG 014 100 S04	1.4	1.6	10	50	4
2HREG 014 140 S04	1.4	1.6	14	50	4
2HREG 014 160 S04	1.4	1.6	16	50	4
2HREG 014 200 S04	1.4	1.6	20	50	4
2HREG 015 040 S04	1.5	1.8	4	45	4
2HREG 015 060 S04	1.5	1.8	6	45	4
2HREG 015 080 S04	1.5	1.8	8	45	4
2HREG 015 100 S04	1.5	1.8	10	50	4
2HREG 015 120 S04	1.5	1.8	12	50	4
2HREG 015 140 S04	1.5	1.8	14	50	4
2HREG 015 160 S04	1.5	1.8	16	50	4
2HREG 015 180 S04	1.5	1.8	18	50	4
2HREG 015 200 S04	1.5	1.8	20	50	4
2HREG 015 250 S04	1.5	1.8	25	60	4
2HREG 015 300 S04	1.5	1.8	30	70	4
2HREG 016 100 S04	1.6	1.9	10	50	4

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
2HREG 016 140 S04	1.6	1.9	14	50	4
2HREG 016 180 S04	1.6	1.9	18	50	4
2HREG 018 100 S04	1.8	2.1	10	50	4
2HREG 018 140 S04	1.8	2.1	14	50	4
2HREG 018 180 S04	1.8	2.1	18	50	4
2HREG 020 040 S04	2	2.4	4	45	4
2HREG 020 060 S04	2	2.4	6	45	4
2HREG 020 080 S04	2	2.4	8	45	4
2HREG 020 100 S04	2	2.4	10	50	4
2HREG 020 120 S04	2	2.4	12	50	4
2HREG 020 140 S04	2	2.4	14	50	4
2HREG 020 160 S04	2	2.4	16	50	4
2HREG 020 180 S04	2	2.4	18	50	4
2HREG 020 200 S04	2	2.4	20	50	4
2HREG 020 220 S04	2	2.4	22	60	4
2HREG 020 250 S04	2	2.4	25	60	4
2HREG 020 300 S04	2	2.4	30	70	4
2HREG 020 350 S04	2	2.4	35	70	4
2HREG 020 400 S04	2	2.4	40	80	4
2HREG 020 450 S04	2	2.4	45	80	4
2HREG 020 500 S04	2	2.4	50	90	4
2HREG 025 080 S04	2.5	3	8	45	4
2HREG 025 100 S04	2.5	3	10	50	4
2HREG 025 120 S04	2.5	3	12	50	4
2HREG 025 160 S04	2.5	3	16	50	4
2HREG 025 200 S04	2.5	3	20	50	4
2HREG 025 250 S04	2.5	3	25	60	4
2HREG 025 300 S04	2.5	3	30	70	4
2HREG 025 350 S04	2.5	3	35	70	4
2HREG 025 400 S04	2.5	3	40	80	4
2HREG 025 500 S04	2.5	3	50	90	4
2HREG 030 060 S06	3	3.6	6	45	6
2HREG 030 080 S06	3	3.6	8	45	6
2HREG 030 100 S06	3	3.6	10	50	6
2HREG 030 120 S06	3	3.6	12	50	6
2HREG 030 160 S06	3	3.6	16	55	6
2HREG 030 200 S06	3	3.6	20	60	6
2HREG 030 250 S06	3	3.6	25	65	6
2HREG 030 300 S06	3	3.6	30	70	6
2HREG 030 350 S06	3	3.6	35	75	6
2HREG 030 400 S06	3	3.6	40	80	6
2HREG 030 450 S06	3	3.6	45	90	6
2HREG 030 500 S06	3	3.6	50	100	6
2HREG 030 600 S06	3	3.6	60	100	6
2HREG 040 080 S06	4	4.8	8	45	6
2HREG 040 100 S06	4	4.8	10	50	6
2HREG 040 120 S06	4	4.8	12	50	6
2HREG 040 160 S06	4	4.8	16	55	6

Numero d'Ordine	D	L1	L2	L	d
2HREG 040 200 S06	4	4.8	20	60	6
2HREG 040 250 S06	4	4.8	25	65	6
2HREG 040 300 S06	4	4.8	30	70	6
2HREG 040 350 S06	4	4.8	35	75	6
2HREG 040 400 S06	4	4.8	40	80	6
2HREG 040 450 S06	4	4.8	45	90	6
2HREG 040 500 S06	4	4.8	50	100	6
2HREG 040 550 S06	4	4.8	55	100	6
2HREG 040 600 S06	4	4.8	60	100	6
2HREG 050 150 S06	5	6	15	55	6
2HREG 050 200 S06	5	6	20	60	6
2HREG 050 250 S06	5	6	25	70	6
2HREG 050 300 S06	5	6	30	75	6
2HREG 050 350 S06	5	6	35	75	6
2HREG 050 400 S06	5	6	40	80	6
2HREG 050 500 S06	5	6	50	100	6
2HREG 050 600 S06	5	6	60	100	6
2HREG 060 200 S06	6	10	20	60	6
2HREG 060 300 S06	6	10	30	75	6
2HREG 060 400 S06	6	10	40	80	6
2HREG 060 500 S06	6	10	50	90	6
2HREG 060 600 S06	6	10	60	110	6
2HREG 080 200 S08	8	12	20	65	8
2HREG 080 300 S08	8	12	30	80	8
2HREG 080 400 S08	8	12	40	100	8
2HREG 100 250 S10	10	15	25	70	10
2HREG 100 350 S10	10	15	35	80	10
2HREG 100 450 S10	10	15	45	100	10
2HREG 120 300 S12	12	18	30	80	12
2HREG 120 400 S12	12	18	40	100	12
2HREG 120 500 S12	12	18	50	120	12

4HREG Fresa Cilindrica 4 Tagli per Nervature



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

4 | WC 미립자 | JMAX Coating | D +0~-0.01 Ø0.8 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | 35° Helix Angle | Rinforzato | € List. p.80 | i info p.221

D	Tolleranza
Ø0.8 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

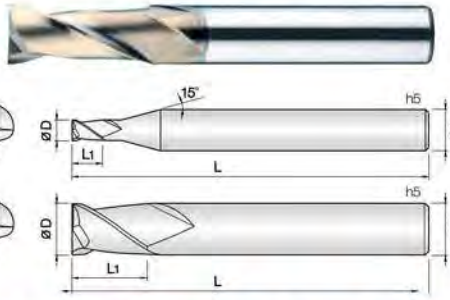
Unità : mm

Numero d'Ordine	D	L1	L2	L	d
4HREG 008 020 S04	0.8	0.9	2	45	4
4HREG 008 040 S04	0.8	0.9	4	45	4
4HREG 008 060 S04	0.8	0.9	6	45	4
4HREG 008 080 S04	0.8	0.9	8	45	4
4HREG 008 100 S04	0.8	0.9	10	45	4
4HREG 008 120 S04	0.8	0.9	12	45	4
4HREG 008 160 S04	0.8	0.9	16	45	4
4HREG 009 020 S04	0.9	1	2	45	4
4HREG 009 060 S04	0.9	1	6	45	4
4HREG 009 080 S04	0.9	1	8	45	4
4HREG 009 100 S04	0.9	1	10	45	4
4HREG 010 030 S04	1	1.2	3	45	4
4HREG 010 040 S04	1	1.2	4	45	4
4HREG 010 060 S04	1	1.2	6	45	4
4HREG 010 080 S04	1	1.2	8	45	4
4HREG 010 100 S04	1	1.2	10	50	4
4HREG 010 120 S04	1	1.2	12	50	4
4HREG 010 160 S04	1	1.2	16	50	4
4HREG 010 200 S04	1	1.2	20	50	4
4HREG 010 250 S04	1	1.2	25	60	4
4HREG 012 060 S04	1.2	1.4	6	45	4
4HREG 012 080 S04	1.2	1.4	8	45	4
4HREG 012 100 S04	1.2	1.4	10	50	4
4HREG 012 120 S04	1.2	1.4	12	50	4
4HREG 012 160 S04	1.2	1.4	16	50	4
4HREG 015 060 S04	1.5	1.8	6	45	4
4HREG 015 080 S04	1.5	1.8	8	45	4
4HREG 015 100 S04	1.5	1.8	10	50	4
4HREG 015 120 S04	1.5	1.8	12	50	4
4HREG 015 160 S04	1.5	1.8	16	50	4
4HREG 015 200 S04	1.5	1.8	20	50	4
4HREG 015 250 S04	1.5	1.8	25	60	4
4HREG 020 060 S04	2	2.4	6	45	4
4HREG 020 080 S04	2	2.4	8	45	4
4HREG 020 100 S04	2	2.4	10	50	4
4HREG 020 120 S04	2	2.4	12	50	4
4HREG 020 160 S04	2	2.4	16	50	4
4HREG 020 200 S04	2	2.4	20	50	4
4HREG 020 250 S04	2	2.4	25	60	4
4HREG 020 300 S04	2	2.4	30	70	4
4HREG 025 100 S04	2.5	3	10	50	4
4HREG 025 120 S04	2.5	3	12	50	4
4HREG 025 160 S04	2.5	3	16	50	4
4HREG 025 200 S04	2.5	3	20	50	4
4HREG 025 250 S04	2.5	3	25	60	4
4HREG 025 300 S04	2.5	3	30	70	4
4HREG 030 100 S06	3	3.6	10	50	6
4HREG 030 120 S06	3	3.6	12	50	6

Numero d'Ordine	D	L1	L2	L	d
4HREG 030 160 S06	3	3.6	16	55	6
4HREG 030 200 S06	3	3.6	20	60	6
4HREG 030 250 S06	3	3.6	25	65	6
4HREG 030 300 S06	3	3.6	30	70	6
4HREG 030 350 S06	3	3.6	35	75	6
4HREG 030 400 S06	3	3.6	40	80	6
4HREG 040 100 S06	4	4.8	10	50	6
4HREG 040 120 S06	4	4.8	12	50	6
4HREG 040 160 S06	4	4.8	16	55	6
4HREG 040 200 S06	4	4.8	20	60	6
4HREG 040 250 S06	4	4.8	25	65	6
4HREG 040 300 S06	4	4.8	30	70	6
4HREG 040 400 S06	4	4.8	40	80	6
4HREG 040 450 S06	4	4.8	45	90	6
4HREG 040 500 S06	4	4.8	50	100	6
4HREG 050 150 S06	5	6	15	55	6
4HREG 050 200 S06	5	6	20	60	6
4HREG 050 250 S06	5	6	25	65	6
4HREG 050 300 S06	5	6	30	70	6
4HREG 050 400 S06	5	6	40	80	6
4HREG 050 500 S06	5	6	50	100	6
4HREG 060 200 S06	6	10	20	60	6
4HREG 060 300 S06	6	10	30	75	6
4HREG 060 400 S06	6	10	40	80	6
4HREG 060 500 S06	6	10	50	90	6
4HREG 080 200 S08	8	12	20	65	8
4HREG 080 300 S08	8	12	30	80	8
4HREG 080 400 S08	8	12	40	100	8
4HREG 100 250 S10	10	15	25	70	10
4HREG 100 350 S10	10	15	35	90	10
4HREG 100 450 S10	10	15	45	110	10
4HREG 120 300 S12	12	18	30	80	12
4HREG 120 400 S12	12	18	40	100	12
4HREG 120 500 S12	12	18	50	120	12

2HCEG

Fresa Cilindrica 2 Tagli Serie Standard



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

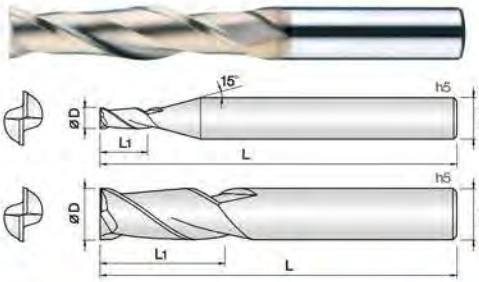
D	Tolleranza
Ø0.1 ~ 0.15	+0 ~ -0.005mm
Ø0.2 ~ 5.5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø14 ~ 20	-0.015 ~ -0.03mm

2 | WC 미립자 | JMAX Coating | D +0 -0.005 Ø0.1~0.15 | D +0 -0.01 Ø0.2 ~ 5.5 | D -0.01 -0.025 Ø6 ~ 12 | D -0.015 -0.03 Ø14 ~ 20 | 35° Helix Angle | Rinforzato | List. p.81 | info p.222

Unità : mm

Numero d'Ordine	D	L1	L	d
2HCEG 001 002 S04	0.1	0.2	38	4
2HCEG 0015 003 S04	0.15	0.3	38	4
2HCEG 002 004 S04	0.2	0.4	38	4
2HCEG 0025 005 S04	0.25	0.5	38	4
2HCEG 003 006 S04	0.3	0.6	38	4
2HCEG 0035 007 S04	0.35	0.7	38	4
2HCEG 004 008 S04	0.4	0.8	38	4
2HCEG 0045 009 S04	0.45	0.9	38	4
2HCEG 005 010 S04	0.5	1	38	4
2HCEG 0055 011 S04	0.55	1.1	38	4
2HCEG 006 012 S04	0.6	1.2	38	4
2HCEG 0065 013 S04	0.65	1.3	38	4
2HCEG 007 014 S04	0.7	1.4	38	4
2HCEG 0075 015 S04	0.75	1.5	38	4
2HCEG 008 016 S04	0.8	1.6	38	4
2HCEG 0085 017 S04	0.85	1.7	38	4
2HCEG 009 020 S04	0.9	2	38	4
2HCEG 0095 020 S04	0.95	2	38	4
2HCEG 010 010 S04	1	1	40	4
2HCEG 010 025 S04	1	2.5	40	4
2HCEG 010 025 S06	1	2.5	40	6
2HCEG 010 025 060	1	2.5	60	6
2HCEG 010 040 S06	1	4	50	6
2HCEG 011 027 S04	1.1	2.7	40	4
2HCEG 012 012 S04	1.2	1.2	40	4
2HCEG 012 030 S04	1.2	3	40	4
2HCEG 012 030 S06	1.2	3	40	6
2HCEG 012 030 060	1.2	3	60	6
2HCEG 012 060 S06	1.2	6	50	6
2HCEG 013 032 S04	1.3	3.2	40	4
2HCEG 014 035 S04	1.4	3.5	40	4
2HCEG 015 015 S04	1.5	1.5	40	4
2HCEG 015 040 S04	1.5	4	40	4
2HCEG 015 040 S06	1.5	4	40	6
2HCEG 015 040 060	1.5	4	60	6
2HCEG 016 040 S04	1.6	4	40	4
2HCEG 017 042 S04	1.7	4.2	40	4
2HCEG 018 045 S04	1.8	4.5	40	4
2HCEG 019 050 S04	1.9	5	40	4
2HCEG 020 020 S04	2	2	40	4
2HCEG 020 060 S04	2	6	40	4
2HCEG 020 060 S06	2	6	40	6
2HCEG 020 060 060	2	6	60	6
2HCEG 021 060 S04	2.1	6	40	4
2HCEG 022 060 S04	2.2	6	40	4
2HCEG 023 060 S04	2.3	6	40	4
2HCEG 024 080 S04	2.4	8	45	4
2HCEG 025 080 S04	2.5	8	45	4

Numero d'Ordine	D	L1	L	d
2HCEG 025 080 S06	2.5	8	45	6
2HCEG 025 080 070	2.5	8	70	6
2HCEG 026 080 S04	2.6	8	45	4
2HCEG 027 080 S04	2.7	8	45	4
2HCEG 028 080 S04	2.8	8	45	4
2HCEG 029 080 S04	2.9	8	45	4
2HCEG 030 030 S04	3	3	40	4
2HCEG 030 080 S04	3	8	45	4
2HCEG 030 080 S06	3	8	45	6
2HCEG 030 080 070	3	8	70	6
2HCEG 035 100 S06	3.5	10	45	6
2HCEG 040 040 S04	4	4	40	4
2HCEG 040 100 S04	4	10	45	4
2HCEG 040 110 S06	4	11	45	6
2HCEG 040 110 070	4	11	70	6
2HCEG 045 110 S06	4.5	11	45	6
2HCEG 050 130 S06	5	13	50	6
2HCEG 050 130 080	5	13	80	6
2HCEG 055 130 S06	5.5	13	50	6
2HCEG 060 060 S06	6	6	45	6
2HCEG 060 130 S06	6	13	50	6
2HCEG 060 130 080	6	13	80	6
2HCEG 060 150 S06	6	15	60	6
2HCEG 065 160 S08	6.5	16	60	8
2HCEG 070 160 S08	7	16	60	8
2HCEG 075 160 S08	7.5	16	60	8
2HCEG 080 080 S08	8	8	50	8
2HCEG 080 190 S08	8	19	60	8
2HCEG 080 200 S08	8	20	70	8
2HCEG 085 190 S10	8.5	19	70	10
2HCEG 090 190 S10	9	19	70	10
2HCEG 095 190 S10	9.5	19	70	10
2HCEG 100 100 S10	10	10	60	10
2HCEG 100 220 S10	10	22	70	10
2HCEG 100 250 S10	10	25	75	10
2HCEG 105 220 S12	10.5	22	75	12
2HCEG 110 220 S12	11	22	75	12
2HCEG 115 220 S12	11.5	22	75	12
2HCEG 120 120 S12	12	12	65	12
2HCEG 120 260 S12	12	26	75	12
2HCEG 120 300 S12	12	30	80	12
2HCEG 140 260 S14	14	26	80	14
2HCEG 140 260 S16	14	26	85	16
2HCEG 160 350 S16	16	35	100	16
2HCEG 160 400 S16	16	40	100	16
2HCEG 180 350 S18	18	35	100	18
2HCEG 200 400 S20	20	40	100	20
2HCEG 200 450 S20	20	50	110	20



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Vibrazioni ridotte grazie a run-out e tolleranze precise.
- Ampia gamma di lunghezza per le più svariate applicazioni.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

2 | WC 미립자 | JMAX Coating | D +0~-0.01 Ø1 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø14 ~ 25 | 35° Helix Angle | Rinforzato | € List. p.82 | i info p.222

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø14 ~ 25	-0.015 ~ -0.03mm

G series

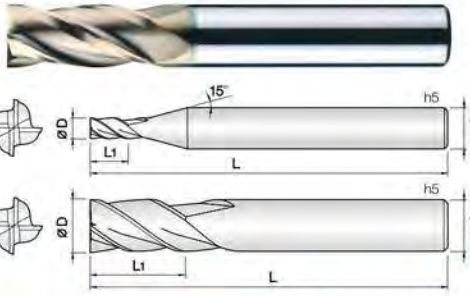
Unità : mm

Numero d'Ordine	D	L1	L	d
2LEMG 010 030 S06	1	3	60	6
2LEMG 010 050 S06	1	5	60	6
2LEMG 010 070 S06	1	7	60	6
2LEMG 010 100 S06	1	10	60	6
2LEMG 010 150 S06	1	15	60	6
2LEMG 015 060 S06	1.5	6	60	6
2LEMG 015 075 S06	1.5	7.5	60	6
2LEMG 015 100 S06	1.5	10	60	6
2LEMG 015 150 S06	1.5	15	60	6
2LEMG 015 200 S06	1.5	20	60	6
2LEMG 020 060 S06	2	6	60	6
2LEMG 020 100 S06	2	10	60	6
2LEMG 020 150 S06	2	15	60	6
2LEMG 020 200 S06	2	20	60	6
2LEMG 030 120 S06	3	12	70	6
2LEMG 030 150 S06	3	15	70	6
2LEMG 030 200 S06	3	20	70	6
2LEMG 030 250 S06	3	25	70	6
2LEMG 030 300 S06	3	30	70	6
2LEMG 040 150 S06	4	15	70	6
2LEMG 040 200 S06	4	20	70	6
2LEMG 040 300 S06	4	30	75	6
2LEMG 050 200 S06	5	20	70	6
2LEMG 050 250 S06	5	25	75	6
2LEMG 050 300 S06	5	30	80	6
2LEMG 060 200 S06	6	20	75	6
2LEMG 060 200 100	6	20	100	6
2LEMG 060 250 S06	6	25	75	6
2LEMG 060 300 S06	6	30	80	6
2LEMG 080 250 S08	8	25	75	8
2LEMG 080 250 100	8	25	100	8
2LEMG 080 300 S08	8	30	80	8
2LEMG 080 350 S08	8	35	80	8
2LEMG 080 400 S08	8	40	90	8
2LEMG 080 500 S08	8	50	100	8
2LEMG 100 300 S10	10	30	80	10
2LEMG 100 300 110	10	30	110	10
2LEMG 100 350 S10	10	35	90	10
2LEMG 100 400 S10	10	40	90	10
2LEMG 100 500 S10	10	50	100	10
2LEMG 100 600 S10	10	60	110	10
2LEMG 120 300 S12	12	30	90	12
2LEMG 120 350 110	12	35	110	12
2LEMG 120 400 S12	12	40	100	12
2LEMG 120 500 S12	12	50	100	12
2LEMG 120 600 S12	12	60	110	12
2LEMG 120 700 S12	12	70	130	12
2LEMG 140 500 S14	14	50	110	14

Numero d'Ordine	D	L1	L	d
2LEMG 160 400 160	16	40	160	16
2LEMG 160 550 S16	16	55	120	16
2LEMG 160 700 S16	16	70	130	16
2LEMG 160 800 S16	16	80	160	16
2LEMG 200 500 160	20	50	160	20
2LEMG 200 600 S20	20	60	130	20
2LEMG 200 1000 S20	20	100	200	20
2LEMG 250 750 S25	25	75	160	25

4HCEG

Fresa Cilindrica 4 Tagli Serie Standard



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 μm).

4 | WC 미립자 | JMAX Coating | D +0~-0.01 Ø0.8 ~ 5.5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø14 ~ 20 | 35° Helix Angle | Rinforzato | € List. p.83 | i info p.223

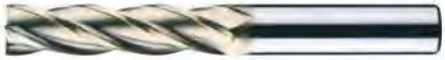
D	Tolleranza
Ø0.8 ~ 5.5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø14 ~ 20	-0.015 ~ -0.03mm

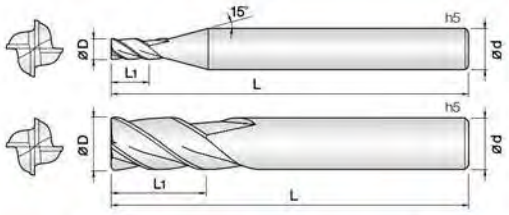
Unità : mm

Numero d'Ordine	D	L1	L	d
4HCEG 008 020 S04	0.8	2	40	4
4HCEG 010 010 S04	1	1	40	4
4HCEG 010 025 S04	1	2.5	40	4
4HCEG 010 025 S06	1	2.5	40	6
4HCEG 010 025 060	1	2.5	60	6
4HCEG 010 025 080	1	2.5	80	6
4HCEG 010 040 S06	1	4	50	6
4HCEG 012 012 S04	1.2	1.2	40	4
4HCEG 012 030 S04	1.2	3	40	4
4HCEG 012 030 S06	1.2	3	40	6
4HCEG 012 030 060	1.2	3	60	6
4HCEG 012 060 S06	1.5	6	50	6
4HCEG 015 015 S04	1.5	1.5	40	4
4HCEG 015 040 S04	1.5	4	40	4
4HCEG 015 040 S06	1.5	4	40	6
4HCEG 015 040 060	1.5	4	60	6
4HCEG 015 040 080	1.5	4	80	6
4HCEG 020 020 S04	2	2	40	4
4HCEG 020 060 S04	2	6	40	4
4HCEG 020 060 S06	2	6	40	6
4HCEG 020 060 060	2	6	60	6
4HCEG 020 060 100	2	6	100	6
4HCEG 025 080 S04	2.5	8	45	4
4HCEG 025 080 S06	2.5	8	45	6
4HCEG 025 080 070	2.5	8	70	6
4HCEG 025 080 100	2.5	8	100	6
4HCEG 030 080 S03	3	8	45	3
4HCEG 030 080 S04	3	8	45	4
4HCEG 030 080 S06	3	8	45	6
4HCEG 030 080 070	3	8	70	6
4HCEG 030 080 100	3	8	100	6
4HCEG 035 100 S06	3.5	10	45	6
4HCEG 040 040 S04	4	4	40	4
4HCEG 040 110 S04	4	11	45	4
4HCEG 040 110 S06	4	11	45	6
4HCEG 040 110 070	4	11	70	6
4HCEG 040 110 100	4	11	100	6
4HCEG 045 110 S06	4.5	11	45	6
4HCEG 050 130 S06	5	13	50	6
4HCEG 050 130 080	5	13	80	6
4HCEG 050 130 100	5	13	100	6
4HCEG 055 130 S06	5.5	13	50	6
4HCEG 060 060 S06	6	6	45	6
4HCEG 060 130 S06	6	13	50	6
4HCEG 060 130 080	6	13	80	6
4HCEG 060 130 100	6	13	100	6
4HCEG 060 150 S06	6	15	60	6
4HCEG 065 160 S08	6.5	16	60	8

Numero d'Ordine	D	L1	L	d
4HCEG 070 160 S08	7	16	60	8
4HCEG 075 160 S08	7.5	16	60	8
4HCEG 080 080 S08	8	8	50	8
4HCEG 080 190 S08	8	19	60	8
4HCEG 080 200 S08	8	20	70	8
4HCEG 085 190 S10	8.5	19	70	10
4HCEG 090 190 S10	9	19	70	10
4HCEG 095 190 S10	9.5	19	70	10
4HCEG 100 100 S10	10	10	60	10
4HCEG 100 220 S10	10	22	70	10
4HCEG 100 250 S10	10	25	75	10
4HCEG 105 220 S12	10.5	22	75	12
4HCEG 110 220 S12	11	22	75	12
4HCEG 115 220 S12	11.5	22	75	12
4HCEG 120 120 S12	12	12	65	12
4HCEG 120 260 S12	12	26	75	12
4HCEG 120 300 S12	12	30	80	12
4HCEG 140 260 S14	14	26	80	14
4HCEG 140 260 S16	14	26	85	16
4HCEG 160 350 S16	16	35	100	16
4HCEG 160 400 S16	16	40	100	16
4HCEG 180 350 S18	18	35	100	18
4HCEG 200 400 S20	20	40	100	20
4HCEG 200 450 S20	20	45	100	20

4LEMG Fresa Cilindrica 4 Tagli Serie Lunga





- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Vibrazioni ridotte grazie a run-out e tolleranze precise.
- Ampia gamma di lunghezze per le più svariate applicazioni.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

4 | WC 미립자 | JMAX Coating | D +0~-0.01 Ø1 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø14 ~ 25 | 35° Helix Angle | Rinforzato | € List. p.84 | i info p.223

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø14 ~ 25	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	L1	L	d
4LEMG 010 030 S06	1	3	60	6
4LEMG 010 050 S06	1	5	60	6
4LEMG 015 060 S06	1.5	6	60	6
4LEMG 015 080 S06	1.5	8	60	6
4LEMG 020 080 S06	2	8	60	6
4LEMG 020 100 S06	2	10	60	6
4LEMG 030 100 S06	3	10	70	6
4LEMG 030 150 S06	3	15	70	6
4LEMG 030 200 S06	3	20	70	6
4LEMG 030 250 S06	3	25	70	6
4LEMG 040 120 S06	4	12	70	6
4LEMG 040 150 S04	4	15	70	4
4LEMG 040 150 S06	4	15	70	6
4LEMG 040 200 S04	4	20	70	4
4LEMG 040 200 S06	4	20	70	6
4LEMG 040 250 S06	4	25	70	6
4LEMG 040 300 S06	4	30	75	6
4LEMG 050 200 S06	5	20	70	6
4LEMG 050 250 S06	5	25	75	6
4LEMG 050 300 S06	5	30	80	6
4LEMG 060 200 S06	6	20	75	6
4LEMG 060 200 100	6	20	100	6
4LEMG 060 250 S06	6	25	75	6
4LEMG 060 300 S06	6	30	80	6
4LEMG 060 350 S06	6	35	80	6
4LEMG 080 250 S08	8	25	75	8
4LEMG 080 250 100	8	25	100	8
4LEMG 080 300 S08	8	30	80	8
4LEMG 080 350 S08	8	35	90	8
4LEMG 080 400 S08	8	40	90	8
4LEMG 080 450 S08	8	45	100	8
4LEMG 100 300 S10	10	30	80	10
4LEMG 100 300 110	10	30	110	10
4LEMG 100 350 S10	10	35	90	10
4LEMG 100 400 S10	10	40	90	10
4LEMG 100 500 S10	10	50	100	10
4LEMG 100 600 S10	10	60	110	10
4LEMG 120 300 S12	12	30	90	12
4LEMG 120 350 110	12	35	110	12
4LEMG 120 400 S12	12	40	100	12
4LEMG 120 500 S12	12	50	100	12
4LEMG 120 600 S12	12	60	110	12
4LEMG 120 700 S12	12	70	130	12
4LEMG 140 500 S14	14	50	110	14
4LEMG 160 400 160	16	40	160	16
4LEMG 160 550 S16	16	55	120	16
4LEMG 160 700 S16	16	70	130	16
New 4LEMG 180 800 160	18	80	160	18

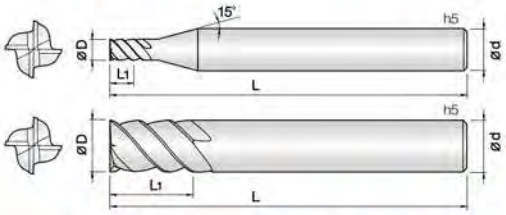
Numero d'Ordine	D	L1	L	d
4LEMG 200 500 160	20	50	160	20
4LEMG 200 600 S20	20	60	130	20
4LEMG 200 1000 S20	20	100	200	20
4LEMG 250 750 S25	25	75	160	25

G series

4HEMG

Fresa Cilindrica 4 Tagli 45°





- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Elica a 45°progettata per alte velocità ed avanzamenti.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

4 | WC 미립자 | JMAX Coating | D +0~-0.01 Ø1 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø16 ~ 20 | 45° Helix Angle | Rinforzato | € List. p.85 | i info p.219

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16 ~ 20	-0.015 ~ -0.03mm

Unità : mm

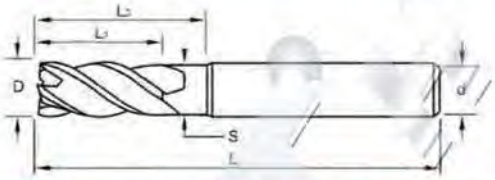
Numero d'Ordine	D	L1	L	d
4HEMG 010 025 S06	1	2.5	40	6
4HEMG 010 035 S06	1	3.5	40	6
4HEMG 015 040 S06	1.5	4	40	6
4HEMG 015 060 S06	1.5	6	40	6
4HEMG 020 050 S06	2	5	40	6
4HEMG 020 080 S06	2	8	45	6
4HEMG 030 080 S06	3	8	45	6
4HEMG 030 120 S06	3	12	50	6
4HEMG 040 110 S06	4	11	45	6
4HEMG 040 160 S06	4	16	55	6
4HEMG 050 130 S06	5	13	50	6
4HEMG 050 180 S06	5	18	60	6
4HEMG 060 130 S06	6	13	50	6

Numero d'Ordine	D	L1	L	d
4HEMG 060 200 S06	6	20	60	6
4HEMG 080 200 S08	8	20	60	8
4HEMG 080 250 S08	8	25	70	8
4HEMG 100 220 S10	10	22	70	10
4HEMG 100 300 S10	10	30	80	10
4HEMG 120 260 S12	12	26	75	12
4HEMG 120 400 S12	12	40	90	12
4HEMG 120 500 S12	12	50	100	12
4HEMG 160 350 S16	16	35	90	16
4HEMG 160 500 S16	16	50	110	16
4HEMG 200 400 S20	20	40	100	20
4HEMG 200 500 S20	20	50	110	20

4SUEC-G

Fresa Cilindrica 4 Tagli ad Elica Variabile





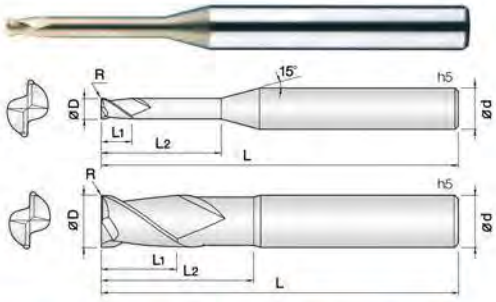
- **Fresa per acciai legati e materiali di difficile lavorazione.**
- Il nuovo rivestimento J-MAX S migliora ulteriormente la resistenza all'usura nelle varie applicazioni.
- Notevole riduzione delle vibrazioni grazie alla nuova geometria e all'elica variabile.
- Adatta alla lavorazione di molteplici materiali incluse leghe Inconel e acciai inossidabili.

4 | UWC 초미립자 | ALCRN Coating | D -0.01~-0.03 Ø4~ Ø9 | D -0.01~-0.04 Ø10~ Ø20 | 35° Helix Angle | 38° Helix Angle | € List. p.85

D	Tolleranza
D ≦ ø5	+0 ~ -0,01mm
D > ø5	-0,01 ~ -0,03mm

Numero d'Ordine	D	L1	L2	L	s	d
4SUEC-G 030 080 190	3	8	19	60	2,8	6
4SUEC-G 040 110 190	4	11	19	60	3,7	6
4SUEC-G 050 130 200	5	13	20	60	4,6	6
4SUEC-G 060 130 210	6	13	21	60	5,5	6
4SUEC-G 080 190 270	8	19	27	70	7,5	8
4SUEC-G 100 220 320	10	22	32	75	9,5	10
4SUEC-G 120 260 380	12	26	38	80	11,2	12
4SUEC-G 140 260 360	14	26	36	83	13,0	14
4SUEC-G 160 320 440	16	32	44	90	15,0	16

2CREG Fresa Torica 2 Tagli per Nervature



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

2 | WC 미립자 | JMAX Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 35° Helix Angle | € List. p.85 | i info p.224

D	Tolleranza
Ø0.2 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm
Ø16	−0.01 ~ −0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
2CREG 002 0002 010	0.2 X R0.02	0.2	1	40	4
2CREG 002 0002 015	0.2 X R0.02	0.2	1.5	40	4
2CREG 002 0005 010	0.2 X R0.05	0.2	1	40	4
2CREG 002 0005 015	0.2 X R0.05	0.2	1.5	40	4
2CREG 003 0005 010	0.3 X R0.05	0.3	1	40	4
2CREG 003 0005 020	0.3 X R0.05	0.3	2	40	4
2CREG 003 0005 030	0.3 X R0.05	0.3	3	40	4
2CREG 004 0005 010	0.4 X R0.05	0.5	1	40	4
2CREG 004 0005 020	0.4 X R0.05	0.5	2	40	4
2CREG 004 0005 030	0.4 X R0.05	0.5	3	40	4
2CREG 004 0005 040	0.4 X R0.05	0.5	4	40	4
2CREG 004 001 010	0.4 X R0.1	0.5	1	40	4
2CREG 004 001 015	0.4 X R0.1	0.5	1.5	40	4
2CREG 004 001 020	0.4 X R0.1	0.5	2	40	4
2CREG 004 001 030	0.4 X R0.1	0.5	3	40	4
2CREG 004 001 040	0.4 X R0.1	0.5	4	40	4
2CREG 005 0005 010	0.5 X R0.05	0.6	1	45	4
2CREG 005 0005 015	0.5 X R0.05	0.6	1.5	45	4
2CREG 005 0005 020	0.5 X R0.05	0.6	2	45	4
2CREG 005 0005 025	0.5 X R0.05	0.6	2.5	45	4
2CREG 005 0005 030	0.5 X R0.05	0.6	3	45	4
2CREG 005 0005 040	0.5 X R0.05	0.6	4	45	4
2CREG 005 0005 050	0.5 X R0.05	0.6	5	45	4
2CREG 005 0005 060	0.5 X R0.05	0.6	6	45	4
2CREG 005 001 010	0.5 X R0.1	0.6	1	45	4
2CREG 005 001 015	0.5 X R0.1	0.6	1.5	45	4
2CREG 005 001 020	0.5 X R0.1	0.6	2	45	4
2CREG 005 001 025	0.5 X R0.1	0.6	2.5	45	4
2CREG 005 001 030	0.5 X R0.1	0.6	3	45	4
2CREG 005 001 040	0.5 X R0.1	0.6	4	45	4
2CREG 005 001 050	0.5 X R0.1	0.6	5	45	4
2CREG 005 001 060	0.5 X R0.1	0.6	6	45	4
2CREG 006 0005 020	0.6 X R0.05	0.7	2	45	4
2CREG 006 0005 030	0.6 X R0.05	0.7	3	45	4
2CREG 006 0005 040	0.6 X R0.05	0.7	4	45	4
2CREG 006 0005 060	0.6 X R0.05	0.7	6	45	4
2CREG 006 0005 080	0.6 X R0.05	0.7	8	45	4
2CREG 006 001 020	0.6 X R0.1	0.7	2	45	4
2CREG 006 001 030	0.6 X R0.1	0.7	3	45	4
2CREG 006 001 040	0.6 X R0.1	0.7	4	45	4
2CREG 006 001 060	0.6 X R0.1	0.7	6	45	4
2CREG 006 001 080	0.6 X R0.1	0.7	8	45	4
2CREG 007 001 020	0.7 X R0.1	0.8	2	45	4
2CREG 007 001 040	0.7 X R0.1	0.8	4	45	4
2CREG 007 001 060	0.7 X R0.1	0.8	6	45	4
2CREG 008 001 020	0.8 X R0.1	0.9	2	45	4
2CREG 008 001 040	0.8 X R0.1	0.9	4	45	4
2CREG 008 001 060	0.8 X R0.1	0.9	6	45	4

Numero d'Ordine	D×R	L1	L2	L	d
2CREG 008 001 080	0.8 X R0.1	0.9	8	45	4
2CREG 008 002 020	0.8 X R0.2	0.9	2	45	4
2CREG 008 002 040	0.8 X R0.2	0.9	4	45	4
2CREG 008 002 060	0.8 X R0.2	0.9	6	45	4
2CREG 008 002 080	0.8 X R0.2	0.9	8	45	4
2CREG 010 001 040	1 X R0.1	1.2	4	45	4
2CREG 010 001 060	1 X R0.1	1.2	6	45	4
2CREG 010 001 080	1 X R0.1	1.2	8	45	4
2CREG 010 001 100	1 X R0.1	1.2	10	50	4
2CREG 010 001 120	1 X R0.1	1.2	12	50	4
2CREG 010 001 160	1 X R0.1	1.2	16	50	4
2CREG 010 001 200	1 X R0.1	1.2	20	50	4
2CREG 010 002 040	1 X R0.2	1.2	4	45	4
2CREG 010 002 060	1 X R0.2	1.2	6	45	4
2CREG 010 002 080	1 X R0.2	1.2	8	45	4
2CREG 010 002 100	1 X R0.2	1.2	10	50	4
2CREG 010 002 120	1 X R0.2	1.2	12	50	4
2CREG 010 002 160	1 X R0.2	1.2	16	50	4
2CREG 010 002 200	1 X R0.2	1.2	20	50	4
2CREG 010 003 040	1 X R0.3	1.2	4	45	4
2CREG 010 003 060	1 X R0.3	1.2	6	45	4
2CREG 010 003 080	1 X R0.3	1.2	8	45	4
2CREG 010 003 100	1 X R0.3	1.2	10	50	4
2CREG 010 003 120	1 X R0.3	1.2	12	50	4
2CREG 010 003 160	1 X R0.3	1.2	16	50	4
2CREG 010 003 200	1 X R0.3	1.2	20	50	4
2CREG 012 001 040	1.2 X R0.1	1.4	4	45	4
2CREG 012 001 060	1.2 X R0.1	1.4	6	45	4
2CREG 012 001 080	1.2 X R0.1	1.4	8	45	4
2CREG 012 001 100	1.2 X R0.1	1.4	10	50	4
2CREG 012 001 120	1.2 X R0.1	1.4	12	50	4
2CREG 012 001 160	1.2 X R0.1	1.4	16	50	4
2CREG 012 001 200	1.2 X R0.1	1.4	20	50	4
2CREG 012 002 040	1.2 X R0.2	1.4	4	45	4
2CREG 012 002 060	1.2 X R0.2	1.4	6	45	4
2CREG 012 002 080	1.2 X R0.2	1.4	8	45	4
2CREG 012 002 100	1.2 X R0.2	1.4	10	50	4
2CREG 012 002 120	1.2 X R0.2	1.4	12	50	4
2CREG 012 002 160	1.2 X R0.2	1.4	16	50	4
2CREG 012 002 200	1.2 X R0.2	1.4	20	50	4
2CREG 012 003 040	1.2 X R0.3	1.4	4	45	4
2CREG 012 003 060	1.2 X R0.3	1.4	6	45	4
2CREG 012 003 080	1.2 X R0.3	1.4	8	45	4
2CREG 012 003 100	1.2 X R0.3	1.4	10	50	4
2CREG 012 003 120	1.2 X R0.3	1.4	12	50	4
2CREG 012 003 160	1.2 X R0.3	1.4	16	50	4
2CREG 012 003 200	1.2 X R0.3	1.4	20	50	4
2CREG 015 001 040	1.5 X R0.1	1.8	4	45	4

Unità : mm

Numero d'Ordine	D X R	L1	L2	L	d
2CREG 015 001 060	1.5 X R0.1	1.8	6	45	4
2CREG 015 001 080	1.5 X R0.1	1.8	8	45	4
2CREG 015 001 100	1.5 X R0.1	1.8	10	50	4
2CREG 015 001 120	1.5 X R0.1	1.8	12	50	4
2CREG 015 001 160	1.5 X R0.1	1.8	16	50	4
2CREG 015 001 200	1.5 X R0.1	1.8	20	50	4
2CREG 015 001 220	1.5 X R0.1	1.8	22	60	4
2CREG 015 001 250	1.5 X R0.1	1.8	25	60	4
2CREG 015 002 040	1.5 X R0.2	1.8	4	45	4
2CREG 015 002 060	1.5 X R0.2	1.8	6	45	4
2CREG 015 002 080	1.5 X R0.2	1.8	8	45	4
2CREG 015 002 100	1.5 X R0.2	1.8	10	50	4
2CREG 015 002 120	1.5 X R0.2	1.8	12	50	4
2CREG 015 002 160	1.5 X R0.2	1.8	16	50	4
2CREG 015 002 200	1.5 X R0.2	1.8	20	50	4
2CREG 015 002 220	1.5 X R0.2	1.8	22	60	4
2CREG 015 002 250	1.5 X R0.2	1.8	25	60	4
2CREG 015 003 040	1.5 X R0.3	1.8	4	45	4
2CREG 015 003 060	1.5 X R0.3	1.8	6	45	4
2CREG 015 003 080	1.5 X R0.3	1.8	8	45	4
2CREG 015 003 100	1.5 X R0.3	1.8	10	50	4
2CREG 015 003 120	1.5 X R0.3	1.8	12	50	4
2CREG 015 003 160	1.5 X R0.3	1.8	16	50	4
2CREG 015 003 200	1.5 X R0.3	1.8	20	50	4
2CREG 015 003 220	1.5 X R0.3	1.8	22	60	4
2CREG 015 003 250	1.5 X R0.3	1.8	25	60	4
2CREG 015 005 040	1.5 X R0.5	1.8	4	45	4
2CREG 015 005 060	1.5 X R0.5	1.8	6	45	4
2CREG 015 005 080	1.5 X R0.5	1.8	8	45	4
2CREG 015 005 100	1.5 X R0.5	1.8	10	50	4
2CREG 015 005 120	1.5 X R0.5	1.8	12	50	4
2CREG 015 005 160	1.5 X R0.5	1.8	16	50	4
2CREG 015 005 200	1.5 X R0.5	1.8	20	50	4
2CREG 015 005 220	1.5 X R0.5	1.8	22	60	4
2CREG 015 005 250	1.5 X R0.5	1.8	25	60	4
2CREG 020 001 060	2 X R0.1	2.4	6	45	4
2CREG 020 001 080	2 X R0.1	2.4	8	45	4
2CREG 020 001 100	2 X R0.1	2.4	10	50	4
2CREG 020 001 120	2 X R0.1	2.4	12	50	4
2CREG 020 001 160	2 X R0.1	2.4	16	50	4
2CREG 020 001 200	2 X R0.1	2.4	20	50	4
2CREG 020 001 250	2 X R0.1	2.4	25	60	4
2CREG 020 001 300	2 X R0.1	2.4	30	70	4
2CREG 020 002 060	2 X R0.2	2.4	6	45	4
2CREG 020 002 080	2 X R0.2	2.4	8	45	4
2CREG 020 002 100	2 X R0.2	2.4	10	50	4
2CREG 020 002 120	2 X R0.2	2.4	12	50	4
2CREG 020 002 160	2 X R0.2	2.4	16	50	4
2CREG 020 002 200	2 X R0.2	2.4	20	50	4
2CREG 020 002 250	2 X R0.2	2.4	25	60	4
2CREG 020 002 300	2 X R0.2	2.4	30	70	4
2CREG 020 003 060	2 X R0.3	2.4	6	45	4
2CREG 020 003 080	2 X R0.3	2.4	8	45	4
2CREG 020 003 100	2 X R0.3	2.4	10	50	4
2CREG 020 003 120	2 X R0.3	2.4	12	50	4
2CREG 020 003 160	2 X R0.3	2.4	16	50	4
2CREG 020 003 200	2 X R0.3	2.4	20	50	4
2CREG 020 003 250	2 X R0.3	2.4	25	60	4
2CREG 020 003 300	2 X R0.3	2.4	30	70	4
2CREG 020 005 060	2 X R0.5	2.4	6	45	4
2CREG 020 005 080	2 X R0.5	2.4	8	45	4
2CREG 020 005 100	2 X R0.5	2.4	10	50	4
2CREG 020 005 120	2 X R0.5	2.4	12	50	4

Numero d'Ordine	D X R	L1	L2	L	d
2CREG 020 005 160	2 X R0.5	2.4	16	50	4
2CREG 020 005 200	2 X R0.5	2.4	20	50	4
2CREG 020 005 250	2 X R0.5	2.4	25	60	4
2CREG 020 005 300	2 X R0.5	2.4	30	70	4
2CREG 025 001 100	2.5 X R0.1	3	10	50	4
2CREG 025 001 160	2.5 X R0.1	3	16	50	4
2CREG 025 001 200	2.5 X R0.1	3	20	50	4
2CREG 025 001 250	2.5 X R0.1	3	25	60	4
2CREG 025 001 300	2.5 X R0.1	3	30	70	4
2CREG 025 002 100	2.5 X R0.2	3	10	50	4
2CREG 025 002 160	2.5 X R0.2	3	16	50	4
2CREG 025 002 200	2.5 X R0.2	3	20	50	4
2CREG 025 002 250	2.5 X R0.2	3	25	60	4
2CREG 025 002 300	2.5 X R0.2	3	30	70	4
2CREG 025 003 100	2.5 X R0.3	3	10	50	4
2CREG 025 003 160	2.5 X R0.3	3	16	50	4
2CREG 025 003 200	2.5 X R0.3	3	20	50	4
2CREG 025 003 250	2.5 X R0.3	3	25	60	4
2CREG 025 003 300	2.5 X R0.3	3	30	70	4
2CREG 025 005 100	2.5 X R0.5	3	10	50	4
2CREG 025 005 160	2.5 X R0.5	3	16	50	4
2CREG 025 005 200	2.5 X R0.5	3	20	50	4
2CREG 025 005 250	2.5 X R0.5	3	25	60	4
2CREG 025 005 300	2.5 X R0.5	3	30	70	4
2CREG 030 001 100	3 X R0.1	3.6	10	50	6
2CREG 030 001 120	3 X R0.1	3.6	12	50	6
2CREG 030 001 160	3 X R0.1	3.6	16	55	6
2CREG 030 001 200	3 X R0.1	3.6	20	60	6
2CREG 030 001 250	3 X R0.1	3.6	25	65	6
2CREG 030 001 300	3 X R0.1	3.6	30	70	6
2CREG 030 001 350	3 X R0.1	3.6	35	75	6
2CREG 030 001 400	3 X R0.1	3.6	40	80	6
2CREG 030 002 100	3 X R0.2	3.6	10	50	6
2CREG 030 002 120	3 X R0.2	3.6	12	50	6
2CREG 030 002 160	3 X R0.2	3.6	16	55	6
2CREG 030 002 200	3 X R0.2	3.6	20	60	6
2CREG 030 002 250	3 X R0.2	3.6	25	65	6
2CREG 030 002 300	3 X R0.2	3.6	30	70	6
2CREG 030 002 350	3 X R0.2	3.6	35	75	6
2CREG 030 002 400	3 X R0.2	3.6	40	80	6
2CREG 030 003 100	3 X R0.3	3.6	10	50	6
2CREG 030 003 120	3 X R0.3	3.6	12	50	6
2CREG 030 003 160	3 X R0.3	3.6	16	55	6
2CREG 030 003 200	3 X R0.3	3.6	20	60	6
2CREG 030 003 250	3 X R0.3	3.6	25	65	6
2CREG 030 003 300	3 X R0.3	3.6	30	70	6
2CREG 030 003 350	3 X R0.3	3.6	35	75	6
2CREG 030 003 400	3 X R0.3	3.6	40	80	6
2CREG 030 005 100	3 X R0.5	3.6	10	50	6
2CREG 030 005 120	3 X R0.5	3.6	12	50	6
2CREG 030 005 160	3 X R0.5	3.6	16	55	6
2CREG 030 005 200	3 X R0.5	3.6	20	60	6
2CREG 030 005 250	3 X R0.5	3.6	25	65	6
2CREG 030 005 300	3 X R0.5	3.6	30	70	6
2CREG 030 005 350	3 X R0.5	3.6	35	75	6
2CREG 030 005 400	3 X R0.5	3.6	40	80	6
2CREG 030 010 100	3 X R1	3.6	10	50	6
2CREG 030 010 120	3 X R1	3.6	12	50	6
2CREG 030 010 160	3 X R1	3.6	16	55	6
2CREG 030 010 200	3 X R1	3.6	20	60	6
2CREG 030 010 250	3 X R1	3.6	25	65	6
2CREG 030 010 300	3 X R1	3.6	30	70	6
2CREG 030 010 350	3 X R1	3.6	35	75	6

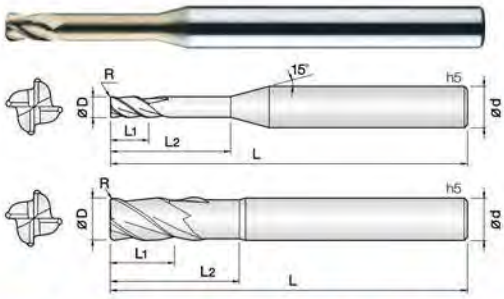
Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
2CREG 030 010 400	3 X R1	3.6	40	80	6
2CREG 040 001 050	4 X R0.1	4.8	12	50	4
2CREG 040 001 070	4 X R0.1	4.8	20	70	4
2CREG 040 001 120	4 X R0.1	4.8	12	50	6
2CREG 040 001 160	4 X R0.1	4.8	16	55	6
2CREG 040 001 200	4 X R0.1	4.8	20	60	6
2CREG 040 001 250	4 X R0.1	4.8	25	65	6
2CREG 040 001 300	4 X R0.1	4.8	30	70	6
2CREG 040 001 350	4 X R0.1	4.8	35	75	6
2CREG 040 001 400	4 X R0.1	4.8	40	80	6
2CREG 040 001 450	4 X R0.1	4.8	45	90	6
2CREG 040 001 500	4 X R0.1	4.8	50	100	6
2CREG 040 002 050	4 X R0.2	4.8	12	50	4
2CREG 040 002 070	4 X R0.2	4.8	20	70	4
2CREG 040 002 120	4 X R0.2	4.8	12	50	6
2CREG 040 002 160	4 X R0.2	4.8	16	55	6
2CREG 040 002 200	4 X R0.2	4.8	20	60	6
2CREG 040 002 250	4 X R0.2	4.8	25	65	6
2CREG 040 002 300	4 X R0.2	4.8	30	70	6
2CREG 040 002 350	4 X R0.2	4.8	35	75	6
2CREG 040 002 400	4 X R0.2	4.8	40	80	6
2CREG 040 002 450	4 X R0.2	4.8	45	90	6
2CREG 040 002 500	4 X R0.2	4.8	50	100	6
2CREG 040 003 050	4 X R0.3	4.8	12	50	4
2CREG 040 003 070	4 X R0.3	4.8	20	70	4
2CREG 040 003 120	4 X R0.3	4.8	12	50	6
2CREG 040 003 160	4 X R0.3	4.8	16	55	6
2CREG 040 003 200	4 X R0.3	4.8	20	60	6
2CREG 040 003 250	4 X R0.3	4.8	25	65	6
2CREG 040 003 300	4 X R0.3	4.8	30	70	6
2CREG 040 003 350	4 X R0.3	4.8	35	75	6
2CREG 040 003 400	4 X R0.3	4.8	40	80	6
2CREG 040 003 450	4 X R0.3	4.8	45	90	6
2CREG 040 003 500	4 X R0.3	4.8	50	100	6
2CREG 040 005 050	4 X R0.5	4.8	12	50	4
2CREG 040 005 070	4 X R0.5	4.8	20	70	4
2CREG 040 005 120	4 X R0.5	4.8	12	50	6
2CREG 040 005 160	4 X R0.5	4.8	16	55	6
2CREG 040 005 200	4 X R0.5	4.8	20	60	6
2CREG 040 005 250	4 X R0.5	4.8	25	65	6
2CREG 040 005 300	4 X R0.5	4.8	30	70	6
2CREG 040 005 350	4 X R0.5	4.8	35	75	6
2CREG 040 005 400	4 X R0.5	4.8	40	80	6
2CREG 040 005 450	4 X R0.5	4.8	45	90	6
2CREG 040 005 500	4 X R0.5	4.8	50	100	6
2CREG 040 010 050	4 X R1	4.8	12	50	4
2CREG 040 010 070	4 X R1	4.8	20	70	4
2CREG 040 010 120	4 X R1	4.8	12	50	6
2CREG 040 010 160	4 X R1	4.8	16	55	6
2CREG 040 010 200	4 X R1	4.8	20	60	6
2CREG 040 010 250	4 X R1	4.8	25	65	6
2CREG 040 010 300	4 X R1	4.8	30	70	6
2CREG 040 010 350	4 X R1	4.8	35	75	6
2CREG 040 010 400	4 X R1	4.8	40	80	6
2CREG 040 010 450	4 X R1	4.8	45	90	6
2CREG 040 010 500	4 X R1	4.8	50	100	6
2CREG 050 002 150	5 X R0.2	6	15	55	6
2CREG 050 002 250	5 X R0.2	6	25	70	6
2CREG 050 002 300	5 X R0.2	6	30	70	6
2CREG 050 002 400	5 X R0.2	6	40	80	6
2CREG 050 002 500	5 X R0.2	6	50	100	6
2CREG 050 005 150	5 X R0.5	6	15	55	6
2CREG 050 005 250	5 X R0.5	6	25	70	6

Numero d'Ordine	D×R	L1	L2	L	d
2CREG 050 005 300	5 X R0.5	6	30	70	6
2CREG 050 005 400	5 X R0.5	6	40	80	6
2CREG 050 005 500	5 X R0.5	6	50	100	6
2CREG 050 010 150	5 X R1	6	15	55	6
2CREG 050 010 250	5 X R1	6	25	70	6
2CREG 050 010 300	5 X R1	6	30	70	6
2CREG 050 010 400	5 X R1	6	40	80	6
2CREG 050 010 500	5 X R1	6	50	100	6
2CREG 060 001 200	6 X R0.1	7	20	60	6
2CREG 060 001 400	6 X R0.1	7	40	90	6
2CREG 060 002 200	6 X R0.2	7	20	60	6
2CREG 060 002 400	6 X R0.2	7	40	90	6
2CREG 060 003 200	6 X R0.3	7	20	60	6
2CREG 060 003 400	6 X R0.3	7	40	90	6
2CREG 060 005 200	6 X R0.5	7	20	60	6
2CREG 060 005 400	6 X R0.5	7	40	90	6
2CREG 060 010 200	6 X R1	7	20	60	6
2CREG 060 010 400	6 X R1	7	40	90	6
2CREG 060 015 200	6 X R1.5	7	20	60	6
2CREG 060 015 400	6 X R1.5	7	40	90	6
2CREG 080 002 220	8 X R0.2	9	22	65	8
2CREG 080 002 400	8 X R0.2	9	40	100	8
2CREG 080 003 220	8 X R0.3	9	22	65	8
2CREG 080 003 400	8 X R0.3	9	40	100	8
2CREG 080 005 220	8 X R0.5	9	22	65	8
2CREG 080 005 400	8 X R0.5	9	40	100	8
2CREG 080 010 220	8 X R1	9	22	65	8
2CREG 080 010 400	8 X R1	9	40	100	8
2CREG 080 015 220	8 X R1.5	9	22	65	8
2CREG 080 015 400	8 X R1.5	9	40	100	8
2CREG 100 002 240	10 X R0.2	11	24	70	10
2CREG 100 002 450	10 X R0.2	11	45	100	10
2CREG 100 003 240	10 X R0.3	11	24	70	10
2CREG 100 003 450	10 X R0.3	11	45	100	10
2CREG 100 005 240	10 X R0.5	11	24	70	10
2CREG 100 005 450	10 X R0.5	11	45	100	10
2CREG 100 010 240	10 X R1	11	24	70	10
2CREG 100 010 450	10 X R1	11	45	100	10
2CREG 100 015 240	10 X R1.5	11	24	70	10
2CREG 100 015 450	10 X R1.5	11	45	100	10
2CREG 100 020 240	10 X R2	11	24	70	10
2CREG 100 020 450	10 X R2	11	45	100	10
2CREG 120 002 260	12 X R0.2	13	26	80	12
2CREG 120 002 500	12 X R0.2	13	50	110	12
2CREG 120 003 260	12 X R0.3	13	26	80	12
2CREG 120 003 500	12 X R0.3	13	50	110	12
2CREG 120 005 260	12 X R0.5	13	26	80	12
2CREG 120 005 500	12 X R0.5	13	50	110	12
2CREG 120 010 260	12 X R1	13	26	80	12
2CREG 120 010 500	12 X R1	13	50	110	12
2CREG 120 015 260	12 X R1.5	13	26	80	12
2CREG 120 015 500	12 X R1.5	13	50	110	12
2CREG 120 020 260	12 X R2	13	26	80	12
2CREG 120 020 500	12 X R2	13	50	110	12
2CREG 120 030 260	12 X R3	13	26	80	12
2CREG 120 030 500	12 X R3	13	50	110	12
2CREG 160 005 110	16 X R0.5	20	35	110	16
2CREG 160 005 160	16 X R0.5	20	35	160	16
2CREG 160 010 110	16 X R1	20	35	110	16
2CREG 160 010 160	16 X R1	20	35	160	16

4CREG

Fresa Torica 4 Tagli per Nervature



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 μm).

4 | WC 미립자 | JMAX Coating | R ±0.005 (R0.05 ~ 0.5) | R ±0.01 (R1 ~ 1.5) | R ±0.015 (R2 ~ 3) | 35° Helix Angle | € (List. p.90) | i (info p.224)

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
4CREG 010 0005 040	1 X R0.05	1.2	4	45	4
4CREG 010 0005 060	1 X R0.05	1.2	6	45	4
4CREG 010 0005 080	1 X R0.05	1.2	8	45	4
4CREG 010 0005 100	1 X R0.05	1.2	10	50	4
4CREG 010 0005 120	1 X R0.05	1.2	12	50	4
4CREG 010 0005 160	1 X R0.05	1.2	16	50	4
4CREG 010 0005 200	1 X R0.05	1.2	20	50	4
4CREG 010 001 040	1 X R0.1	1.2	4	45	4
4CREG 010 001 060	1 X R0.1	1.2	6	45	4
4CREG 010 001 080	1 X R0.1	1.2	8	45	4
4CREG 010 001 100	1 X R0.1	1.2	10	50	4
4CREG 010 001 120	1 X R0.1	1.2	12	50	4
4CREG 010 001 160	1 X R0.1	1.2	16	50	4
4CREG 010 001 200	1 X R0.1	1.2	20	50	4
4CREG 010 002 040	1 X R0.2	1.2	4	45	4
4CREG 010 002 060	1 X R0.2	1.2	6	45	4
4CREG 010 002 080	1 X R0.2	1.2	8	45	4
4CREG 010 002 100	1 X R0.2	1.2	10	50	4
4CREG 010 002 120	1 X R0.2	1.2	12	50	4
4CREG 010 002 160	1 X R0.2	1.2	16	50	4
4CREG 010 002 200	1 X R0.2	1.2	20	50	4
4CREG 010 003 040	1 X R0.3	1.2	4	45	4
4CREG 010 003 060	1 X R0.3	1.2	6	45	4
4CREG 010 003 080	1 X R0.3	1.2	8	45	4
4CREG 010 003 100	1 X R0.3	1.2	10	50	4
4CREG 010 003 120	1 X R0.3	1.2	12	50	4
4CREG 010 003 160	1 X R0.3	1.2	16	50	4
4CREG 010 003 200	1 X R0.3	1.2	20	50	4
4CREG 012 001 040	1.2 X R0.1	1.4	4	45	4
4CREG 012 001 060	1.2 X R0.1	1.4	6	45	4
4CREG 012 001 080	1.2 X R0.1	1.4	8	45	4
4CREG 012 001 100	1.2 X R0.1	1.4	10	50	4
4CREG 012 001 120	1.2 X R0.1	1.4	12	50	4
4CREG 012 001 160	1.2 X R0.1	1.4	16	50	4
4CREG 012 001 200	1.2 X R0.1	1.4	20	50	4
4CREG 012 002 040	1.2 X R0.2	1.4	4	45	4
4CREG 012 002 060	1.2 X R0.2	1.4	6	45	4
4CREG 012 002 080	1.2 X R0.2	1.4	8	45	4
4CREG 012 002 100	1.2 X R0.2	1.4	10	50	4
4CREG 012 002 120	1.2 X R0.2	1.4	12	50	4
4CREG 012 002 160	1.2 X R0.2	1.4	16	50	4
4CREG 012 002 200	1.2 X R0.2	1.4	20	50	4
4CREG 012 003 040	1.2 X R0.3	1.4	4	45	4
4CREG 012 003 060	1.2 X R0.3	1.4	6	45	4
4CREG 012 003 080	1.2 X R0.3	1.4	8	45	4
4CREG 012 003 100	1.2 X R0.3	1.4	10	50	4
4CREG 012 003 120	1.2 X R0.3	1.4	12	50	4
4CREG 012 003 160	1.2 X R0.3	1.4	16	50	4

Numero d'Ordine	D×R	L1	L2	L	d
4CREG 012 003 200	1.2 X R0.3	1.4	20	50	4
4CREG 015 001 060	1.5 X R0.1	1.8	6	45	4
4CREG 015 001 080	1.5 X R0.1	1.8	8	45	4
4CREG 015 001 100	1.5 X R0.1	1.8	10	50	4
4CREG 015 001 120	1.5 X R0.1	1.8	12	50	4
4CREG 015 001 160	1.5 X R0.1	1.8	16	50	4
4CREG 015 001 200	1.5 X R0.1	1.8	20	50	4
4CREG 015 001 220	1.5 X R0.1	1.8	22	60	4
4CREG 015 001 250	1.5 X R0.1	1.8	25	60	4
4CREG 015 002 060	1.5 X R0.2	1.8	6	45	4
4CREG 015 002 080	1.5 X R0.2	1.8	8	45	4
4CREG 015 002 100	1.5 X R0.2	1.8	10	50	4
4CREG 015 002 120	1.5 X R0.2	1.8	12	50	4
4CREG 015 002 160	1.5 X R0.2	1.8	16	50	4
4CREG 015 002 200	1.5 X R0.2	1.8	20	50	4
4CREG 015 002 220	1.5 X R0.2	1.8	22	60	4
4CREG 015 002 250	1.5 X R0.2	1.8	25	60	4
4CREG 015 003 060	1.5 X R0.3	1.8	6	45	4
4CREG 015 003 080	1.5 X R0.3	1.8	8	45	4
4CREG 015 003 100	1.5 X R0.3	1.8	10	50	4
4CREG 015 003 120	1.5 X R0.3	1.8	12	50	4
4CREG 015 003 160	1.5 X R0.3	1.8	16	50	4
4CREG 015 003 200	1.5 X R0.3	1.8	20	50	4
4CREG 015 003 220	1.5 X R0.3	1.8	22	60	4
4CREG 015 003 250	1.5 X R0.3	1.8	25	60	4
4CREG 015 005 060	1.5 X R0.5	1.8	6	45	4
4CREG 015 005 080	1.5 X R0.5	1.8	8	45	4
4CREG 015 005 100	1.5 X R0.5	1.8	10	50	4
4CREG 015 005 120	1.5 X R0.5	1.8	12	50	4
4CREG 015 005 160	1.5 X R0.5	1.8	16	50	4
4CREG 015 005 200	1.5 X R0.5	1.8	20	50	4
4CREG 015 005 220	1.5 X R0.5	1.8	22	60	4
4CREG 015 005 250	1.5 X R0.5	1.8	25	60	4
4CREG 020 001 060	2 X R0.1	2.4	6	45	4
4CREG 020 001 080	2 X R0.1	2.4	8	45	4
4CREG 020 001 100	2 X R0.1	2.4	10	50	4
4CREG 020 001 120	2 X R0.1	2.4	12	50	4
4CREG 020 001 160	2 X R0.1	2.4	16	50	4
4CREG 020 001 200	2 X R0.1	2.4	20	50	4
4CREG 020 001 250	2 X R0.1	2.4	25	60	4
4CREG 020 001 300	2 X R0.1	2.4	30	70	4
4CREG 020 001 350	2 X R0.1	2.4	35	70	4
4CREG 020 002 060	2 X R0.2	2.4	6	45	4
4CREG 020 002 080	2 X R0.2	2.4	8	45	4
4CREG 020 002 100	2 X R0.2	2.4	10	50	4
4CREG 020 002 120	2 X R0.2	2.4	12	50	4
4CREG 020 002 160	2 X R0.2	2.4	16	50	4
4CREG 020 002 200	2 X R0.2	2.4	20	50	4

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
4CREG 020 002 250	2 X R0.2	2.4	25	60	4
4CREG 020 002 300	2 X R0.2	2.4	30	70	4
4CREG 020 002 350	2 X R0.2	2.4	35	70	4
4CREG 020 003 060	2 X R0.3	2.4	6	45	4
4CREG 020 003 080	2 X R0.3	2.4	8	45	4
4CREG 020 003 100	2 X R0.3	2.4	10	50	4
4CREG 020 003 120	2 X R0.3	2.4	12	50	4
4CREG 020 003 160	2 X R0.3	2.4	16	50	4
4CREG 020 003 200	2 X R0.3	2.4	20	50	4
4CREG 020 003 250	2 X R0.3	2.4	25	60	4
4CREG 020 003 300	2 X R0.3	2.4	30	70	4
4CREG 020 003 350	2 X R0.3	2.4	35	70	4
4CREG 020 005 060	2 X R0.5	2.4	6	45	4
4CREG 020 005 080	2 X R0.5	2.4	8	45	4
4CREG 020 005 100	2 X R0.5	2.4	10	50	4
4CREG 020 005 120	2 X R0.5	2.4	12	50	4
4CREG 020 005 160	2 X R0.5	2.4	16	50	4
4CREG 020 005 200	2 X R0.5	2.4	20	50	4
4CREG 020 005 250	2 X R0.5	2.4	25	60	4
4CREG 020 005 300	2 X R0.5	2.4	30	70	4
4CREG 020 005 350	2 X R0.5	2.4	35	70	4
4CREG 025 001 100	2.5 X R0.1	3	10	50	4
4CREG 025 001 160	2.5 X R0.1	3	16	50	4
4CREG 025 001 200	2.5 X R0.1	3	20	50	4
4CREG 025 001 250	2.5 X R0.1	3	25	60	4
4CREG 025 001 300	2.5 X R0.1	3	30	70	4
4CREG 025 002 100	2.5 X R0.2	3	10	50	4
4CREG 025 002 160	2.5 X R0.2	3	16	50	4
4CREG 025 002 200	2.5 X R0.2	3	20	50	4
4CREG 025 002 250	2.5 X R0.2	3	25	60	4
4CREG 025 002 300	2.5 X R0.2	3	30	70	4
4CREG 025 003 100	2.5 X R0.3	3	10	50	4
4CREG 025 003 160	2.5 X R0.3	3	16	50	4
4CREG 025 003 200	2.5 X R0.3	3	20	50	4
4CREG 025 003 250	2.5 X R0.3	3	25	60	4
4CREG 025 003 300	2.5 X R0.3	3	30	70	4
4CREG 025 005 100	2.5 X R0.5	3	10	50	4
4CREG 025 005 160	2.5 X R0.5	3	16	50	4
4CREG 025 005 200	2.5 X R0.5	3	20	50	4
4CREG 025 005 250	2.5 X R0.5	3	25	60	4
4CREG 025 005 300	2.5 X R0.5	3	30	70	4
4CREG 030 001 100	3 X R0.1	3.6	10	50	6
4CREG 030 001 160	3 X R0.1	3.6	16	55	6
4CREG 030 001 200	3 X R0.1	3.6	20	60	6
4CREG 030 001 250	3 X R0.1	3.6	25	65	6
4CREG 030 001 300	3 X R0.1	3.6	30	70	6
4CREG 030 001 350	3 X R0.1	3.6	35	75	6
4CREG 030 001 400	3 X R0.1	3.6	40	80	6
4CREG 030 001 500	3 X R0.1	3.6	50	100	6
4CREG 030 002 100	3 X R0.2	3.6	10	50	6
4CREG 030 002 160	3 X R0.2	3.6	16	55	6
4CREG 030 002 200	3 X R0.2	3.6	20	60	6
4CREG 030 002 250	3 X R0.2	3.6	25	65	6
4CREG 030 002 300	3 X R0.2	3.6	30	70	6
4CREG 030 002 350	3 X R0.2	3.6	35	75	6
4CREG 030 002 400	3 X R0.2	3.6	40	80	6
4CREG 030 002 500	3 X R0.2	3.6	50	100	6
4CREG 030 003 100	3 X R0.3	3.6	10	50	6
4CREG 030 003 160	3 X R0.3	3.6	16	55	6
4CREG 030 003 200	3 X R0.3	3.6	20	60	6
4CREG 030 003 250	3 X R0.3	3.6	25	65	6
4CREG 030 003 300	3 X R0.3	3.6	30	70	6
4CREG 030 003 350	3 X R0.3	3.6	35	75	6

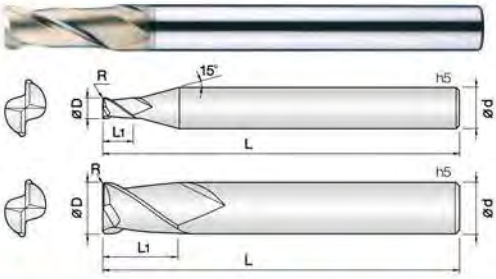
Numero d'Ordine	D×R	L1	L2	L	d
4CREG 030 003 400	3 X R0.3	3.6	40	80	6
4CREG 030 003 500	3 X R0.3	3.6	50	100	6
4CREG 030 005 100	3 X R0.5	3.6	10	50	6
4CREG 030 005 160	3 X R0.5	3.6	16	55	6
4CREG 030 005 200	3 X R0.5	3.6	20	60	6
4CREG 030 005 250	3 X R0.5	3.6	25	65	6
4CREG 030 005 300	3 X R0.5	3.6	30	70	6
4CREG 030 005 350	3 X R0.5	3.6	35	75	6
4CREG 030 005 400	3 X R0.5	3.6	40	80	6
4CREG 030 005 500	3 X R0.5	3.6	50	100	6
4CREG 030 010 100	3 X R1	3.6	10	50	6
4CREG 030 010 160	3 X R1	3.6	16	55	6
4CREG 030 010 200	3 X R1	3.6	20	60	6
4CREG 030 010 250	3 X R1	3.6	25	65	6
4CREG 030 010 300	3 X R1	3.6	30	70	6
4CREG 030 010 350	3 X R1	3.6	35	75	6
4CREG 030 010 400	3 X R1	3.6	40	80	6
4CREG 030 010 500	3 X R1	3.6	50	100	6
4CREG 040 001 050	4 X R0.1	4.8	12	50	4
4CREG 040 001 070	4 X R0.1	4.8	20	70	4
4CREG 040 001 120	4 X R0.1	4.8	12	50	6
4CREG 040 001 160	4 X R0.1	4.8	16	55	6
4CREG 040 001 200	4 X R0.1	4.8	20	60	6
4CREG 040 001 250	4 X R0.1	4.8	25	65	6
4CREG 040 001 300	4 X R0.1	4.8	30	70	6
4CREG 040 001 350	4 X R0.1	4.8	35	75	6
4CREG 040 001 400	4 X R0.1	4.8	40	80	6
4CREG 040 001 450	4 X R0.1	4.8	45	90	6
4CREG 040 001 500	4 X R0.1	4.8	50	100	6
4CREG 040 002 050	4 X R0.2	4.8	12	50	4
4CREG 040 002 070	4 X R0.2	4.8	20	70	4
4CREG 040 002 120	4 X R0.2	4.8	12	50	6
4CREG 040 002 160	4 X R0.2	4.8	16	55	6
4CREG 040 002 200	4 X R0.2	4.8	20	60	6
4CREG 040 002 250	4 X R0.2	4.8	25	65	6
4CREG 040 002 300	4 X R0.2	4.8	30	70	6
4CREG 040 002 350	4 X R0.2	4.8	35	75	6
4CREG 040 002 400	4 X R0.2	4.8	40	80	6
4CREG 040 002 450	4 X R0.2	4.8	45	90	6
4CREG 040 002 500	4 X R0.2	4.8	50	100	6
4CREG 040 003 050	4 X R0.3	4.8	12	50	4
4CREG 040 003 070	4 X R0.3	4.8	20	70	4
4CREG 040 003 120	4 X R0.3	4.8	12	50	6
4CREG 040 003 160	4 X R0.3	4.8	16	55	6
4CREG 040 003 200	4 X R0.3	4.8	20	60	6
4CREG 040 003 250	4 X R0.3	4.8	25	65	6
4CREG 040 003 300	4 X R0.3	4.8	30	70	6
4CREG 040 003 350	4 X R0.3	4.8	35	75	6
4CREG 040 003 400	4 X R0.3	4.8	40	80	6
4CREG 040 003 450	4 X R0.3	4.8	45	90	6
4CREG 040 003 500	4 X R0.3	4.8	50	100	6
4CREG 040 005 050	4 X R0.5	4.8	12	50	4
4CREG 040 005 070	4 X R0.5	4.8	20	70	4
4CREG 040 005 120	4 X R0.5	4.8	12	50	6
4CREG 040 005 160	4 X R0.5	4.8	16	55	6
4CREG 040 005 200	4 X R0.5	4.8	20	60	6
4CREG 040 005 250	4 X R0.5	4.8	25	65	6
4CREG 040 005 300	4 X R0.5	4.8	30	70	6
4CREG 040 005 350	4 X R0.5	4.8	35	75	6
4CREG 040 005 400	4 X R0.5	4.8	40	80	6
4CREG 040 005 450	4 X R0.5	4.8	45	90	6
4CREG 040 005 500	4 X R0.5	4.8	50	100	6
4CREG 040 010 050	4 X R1	4.8	12	50	4

Unità : mm

Numero d'Ordine	D X R	L1	L2	L	d
4CREG 040 010 070	4 X R1	4.8	20	70	4
4CREG 040 010 120	4 X R1	4.8	12	50	6
4CREG 040 010 160	4 X R1	4.8	16	55	6
4CREG 040 010 200	4 X R1	4.8	20	60	6
4CREG 040 010 250	4 X R1	4.8	25	65	6
4CREG 040 010 300	4 X R1	4.8	30	70	6
4CREG 040 010 350	4 X R1	4.8	35	75	6
4CREG 040 010 400	4 X R1	4.8	40	80	6
4CREG 040 010 450	4 X R1	4.8	45	90	6
4CREG 040 010 500	4 X R1	4.8	50	100	6
4CREG 050 001 150	5 X R0.1	6	15	55	6
4CREG 050 001 300	5 X R0.1	6	30	70	6
4CREG 050 001 400	5 X R0.1	6	40	80	6
4CREG 050 001 500	5 X R0.1	6	50	100	6
4CREG 050 002 150	5 X R0.2	6	15	55	6
4CREG 050 002 300	5 X R0.2	6	30	70	6
4CREG 050 002 400	5 X R0.2	6	40	80	6
4CREG 050 002 500	5 X R0.2	6	50	100	6
4CREG 050 003 150	5 X R0.3	6	15	55	6
4CREG 050 003 300	5 X R0.3	6	30	70	6
4CREG 050 003 400	5 X R0.3	6	40	80	6
4CREG 050 003 500	5 X R0.3	6	50	100	6
4CREG 050 005 150	5 X R0.5	6	15	55	6
4CREG 050 005 300	5 X R0.5	6	30	70	6
4CREG 050 005 400	5 X R0.5	6	40	80	6
4CREG 050 005 500	5 X R0.5	6	50	100	6
4CREG 050 010 150	5 X R1	6	15	55	6
4CREG 050 010 300	5 X R1	6	30	70	6
4CREG 050 010 400	5 X R1	6	40	80	6
4CREG 050 010 500	5 X R1	6	50	100	6
4CREG 060 001 200	6 X R0.1	7	20	60	6
4CREG 060 001 400	6 X R0.1	7	40	80	6
4CREG 060 001 500	6 X R0.1	7	50	100	6
4CREG 060 002 200	6 X R0.2	7	20	60	6
4CREG 060 002 400	6 X R0.2	7	40	80	6
4CREG 060 002 500	6 X R0.2	7	50	100	6
4CREG 060 003 200	6 X R0.3	7	20	60	6
4CREG 060 003 400	6 X R0.3	7	40	80	6
4CREG 060 003 500	6 X R0.3	7	50	100	6
4CREG 060 005 200	6 X R0.5	7	20	60	6
4CREG 060 005 400	6 X R0.5	7	40	80	6
4CREG 060 005 500	6 X R0.5	7	50	100	6
4CREG 060 010 200	6 X R1	7	20	60	6
4CREG 060 010 400	6 X R1	7	40	80	6
4CREG 060 010 500	6 X R1	7	50	100	6
4CREG 060 015 200	6 X R1.5	7	20	60	6
4CREG 060 015 400	6 X R1.5	7	40	80	6
4CREG 060 015 500	6 X R1.5	7	50	100	6
4CREG 080 002 220	8 X R0.2	9	22	65	8
4CREG 080 003 220	8 X R0.3	9	22	65	8
4CREG 080 005 220	8 X R0.5	9	22	65	8
4CREG 080 005 400	8 X R0.5	9	40	100	8
4CREG 080 010 220	8 X R1	9	22	65	8
4CREG 080 010 400	8 X R1	9	40	100	8
4CREG 080 015 220	8 X R1.5	9	22	65	8
4CREG 080 015400	8 X R1.5	9	40	100	8
4CREG 080 020 220	8 X R2	9	22	65	8
4CREG 100 002 240	10 X R0.2	11	24	70	10
4CREG 100 003 240	10 X R0.3	11	24	70	10
4CREG 100 005 240	10 X R0.5	11	24	70	10
4CREG 100 005 400	10 X R0.5	11	40	100	10
4CREG 100 010 240	10 X R1	11	24	70	10
4CREG 100 010 400	10 X R1	11	40	100	10

Numero d'Ordine	D X R	L1	L2	L	d
4CREG 100 015 240	10 X R1.5	11	24	70	10
4CREG 100 015 400	10 X R1.5	11	40	100	10
4CREG 100 020 240	10 X R2	11	24	70	10
4CREG 100 025 240	10 X R2.5	11	24	70	10
4CREG 120 003 260	12 X R0.3	13	26	80	12
4CREG 120 005 260	12 X R0.5	13	26	80	12
4CREG 120 005 400	12 X R0.5	13	40	110	12
4CREG 120 010 260	12 X R1	13	26	80	12
4CREG 120 010 400	12 X R1	13	40	110	12
4CREG 120 015 260	12 X R1.5	13	26	80	12
4CREG 120 015 400	12 X R1.5	13	40	110	12
4CREG 120 020 260	12 X R2	13	26	80	12
4CREG 120 030 260	12 X R3	13	26	80	12

2NCRG Fresa Torica 2 Tagli



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 μm).

2 | WC 미립자 | JMAX Coating | R ±0.005 R0.05 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 5 | 35° Helix Angle | € List. p.93 | i info p.225

D	Tolleranza
Ø0.4 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

G series

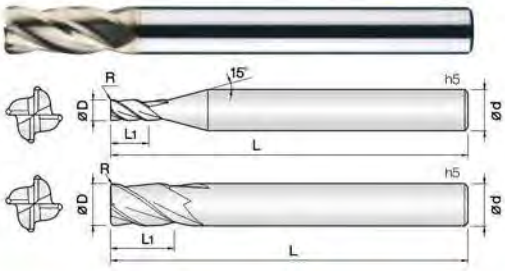
Numero d'Ordine	D×R	L1	L	d
2NCRG 004 0005 S04	0.4 X R0.05	0.8	45	4
2NCRG 004 001 S04	0.4 X R0.1	0.8	45	4
2NCRG 005 0005 S04	0.5 X R0.05	1	45	4
2NCRG 005 001 S04	0.5 X R0.1	1	45	4
2NCRG 006 0005 S04	0.6 X R0.05	1.2	45	4
2NCRG 006 001 S04	0.6 X R0.1	1.2	45	4
2NCRG 006 002 S04	0.6 X R0.2	1.2	45	4
2NCRG 007 0005 S04	0.7 X R0.05	1.4	45	4
2NCRG 007 001 S04	0.7 X R0.1	1.4	45	4
2NCRG 007 002 S04	0.7 X R0.2	1.4	45	4
2NCRG 008 0005 S04	0.8 X R0.05	1.6	45	4
2NCRG 008 001 S04	0.8 X R0.1	1.6	45	4
2NCRG 008 002 S04	0.8 X R0.2	1.6	45	4
2NCRG 009 0005 S04	0.9 X R0.05	1.8	45	4
2NCRG 009 001 S04	0.9 X R0.1	1.8	45	4
2NCRG 010 001 S04	1 X R0.1	2.5	45	4
2NCRG 010 002 S04	1 X R0.2	2.5	45	4
2NCRG 010 003 S04	1 X R0.3	2.5	45	4
2NCRG 012 001 S04	1.2 X R0.1	3.2	45	4
2NCRG 012 002 S04	1.2 X R0.2	3.2	45	4
2NCRG 012 003 S04	1.2 X R0.3	3.2	45	4
2NCRG 015 001 S04	1.5 X R0.1	4	45	4
2NCRG 015 002 S04	1.5 X R0.2	4	45	4
2NCRG 015 003 S04	1.5 X R0.3	4	45	4
2NCRG 015 005 S04	1.5 X R0.5	4	45	4
2NCRG 020 001 S04	2 X R0.1	6	45	4
2NCRG 020 002 S04	2 X R0.2	6	45	4
2NCRG 020 003 S04	2 X R0.3	6	45	4
2NCRG 020 005 S04	2 X R0.5	6	45	4
2NCRG 025 001 S04	2.5 X R0.1	6	50	4
2NCRG 025 002 S04	2.5 X R0.2	6	50	4
2NCRG 025 003 S04	2.5 X R0.3	6	50	4
2NCRG 025 005 S04	2.5 X R0.5	6	50	4
2NCRG 030 001 S06	3 X R0.1	8	60	6
2NCRG 030 002 S06	3 X R0.2	8	60	6
2NCRG 030 003 S06	3 X R0.3	8	60	6
2NCRG 030 005 S06	3 X R0.5	8	60	6
2NCRG 030 010 S06	3 X R1	8	60	6
2NCRG 040 001 060	4 X R0.1	9	60	4
2NCRG 040 001 080	4 X R0.1	9	80	4
2NCRG 040 001 S06	4 X R0.1	10	70	6
2NCRG 040 002 060	4 X R0.2	9	60	4
2NCRG 040 002 080	4 X R0.2	9	80	4
2NCRG 040 002 S06	4 X R0.2	10	70	6
2NCRG 040 003 060	4 X R0.3	9	60	4
2NCRG 040 003 080	4 X R0.3	9	80	4
2NCRG 040 003 S06	4 X R0.3	10	70	6
2NCRG 040 005 060	4 X R0.5	9	60	4

Numero d'Ordine	D×R	L1	L	d
2NCRG 040 005 080	4 X R0.5	9	80	4
2NCRG 040 005 S06	4 X R0.5	10	70	6
2NCRG 040 010 060	4 X R1	9	60	4
2NCRG 040 010 080	4 X R1	9	80	4
2NCRG 040 010 S06	4 X R1	10	70	6
2NCRG 050 001 S06	5 X R0.1	13	75	6
2NCRG 050 002 S06	5 X R0.2	13	75	6
2NCRG 050 003 S06	5 X R0.3	13	75	6
2NCRG 050 005 S06	5 X R0.5	13	75	6
2NCRG 050 010 S06	5 X R1	13	75	6
2NCRG 060 001 060	6 X R0.1	11	60	6
2NCRG 060 001 090	6 X R0.1	13	90	6
2NCRG 060 002 060	6 X R0.2	11	60	6
2NCRG 060 002 090	6 X R0.2	13	90	6
2NCRG 060 003 060	6 X R0.3	11	60	6
2NCRG 060 003 090	6 X R0.3	13	90	6
2NCRG 060 005 060	6 X R0.5	11	60	6
2NCRG 060 005 090	6 X R0.5	13	90	6
2NCRG 060 010 060	6 X R1	11	60	6
2NCRG 060 010 090	6 X R1	13	90	6
2NCRG 060 015 060	6 X R1.5	11	60	6
2NCRG 060 015 090	6 X R1.5	13	90	6
2NCRG 060 020 060	6 X R2	11	60	6
2NCRG 060 020 090	6 X R2	13	90	6
2NCRG 060 025 090	6 X R2.5	13	90	6
2NCRG 080 001 070	8 X R0.1	16	70	8
2NCRG 080 001 100	8 X R0.1	19	100	8
2NCRG 080 002 070	8 X R0.2	16	70	8
2NCRG 080 002 100	8 X R0.2	19	100	8
2NCRG 080 003 070	8 X R0.3	16	70	8
2NCRG 080 003 100	8 X R0.3	19	100	8
2NCRG 080 005 070	8 X R0.5	16	70	8
2NCRG 080 005 100	8 X R0.5	19	100	8
2NCRG 080 005 120	8 X R0.5	19	120	8
2NCRG 080 010 070	8 X R1	16	70	8
2NCRG 080 010 100	8 X R1	19	100	8
2NCRG 080 010 120	8 X R1	19	120	8
2NCRG 080 015 070	8 X R1.5	16	70	8
2NCRG 080 015 100	8 X R1.5	19	100	8
2NCRG 080 020 070	8 X R2	16	70	8
2NCRG 080 020 100	8 X R2	19	100	8
2NCRG 080 025 100	8 X R2.5	19	100	8
2NCRG 080 030 100	8 X R3	19	100	8
2NCRG 080 035 100	8 X R3.5	19	100	8
2NCRG 100 001 075	10 X R0.1	19	75	10
2NCRG 100 001 100	10 X R0.1	22	100	10
2NCRG 100 002 075	10 X R0.2	19	75	10
2NCRG 100 002 100	10 X R0.2	22	100	10

Unità : mm

Numero d'Ordine	D×R	L1	L	d
2NCRG 100 003 075	10 X R0.3	19	75	10
2NCRG 100 003 100	10 X R0.3	22	100	10
2NCRG 100 005 075	10 X R0.5	19	75	10
2NCRG 100 005 100	10 X R0.5	22	100	10
2NCRG 100 005 130	10 X R0.5	22	130	10
2NCRG 100 010 075	10 X R1	19	75	10
2NCRG 100 010 100	10 X R1	22	100	10
2NCRG 100 010 130	10 X R1	22	130	10
2NCRG 100 015 075	10 X R1.5	19	75	10
2NCRG 100 015 100	10 X R1.5	22	100	10
2NCRG 100 015 130	10 X R1.5	22	130	10
2NCRG 100 020 075	10 X R2	19	75	10
2NCRG 100 020 100	10 X R2	22	100	10
2NCRG 100 025 100	10 X R2.5	22	100	10
2NCRG 100 030 100	10 X R3	22	100	10
2NCRG 100 040 100	10 X R4	22	100	10
2NCRG 120 001 080	12 X R0.1	22	80	12
2NCRG 120 001 110	12 X R0.1	26	110	12
2NCRG 120 002 080	12 X R0.2	22	80	12
2NCRG 120 002 110	12 X R0.2	26	110	12
2NCRG 120 003 080	12 X R0.3	22	80	12
2NCRG 120 003 110	12 X R0.3	26	110	12
2NCRG 120 005 080	12 X R0.5	22	80	12
2NCRG 120 005 110	12 X R0.5	26	110	12
2NCRG 120 005 130	12 X R0.5	26	130	12
2NCRG 120 010 080	12 X R1	22	80	12
2NCRG 120 010 110	12 X R1	26	110	12
2NCRG 120 010 130	12 X R1	26	130	12
2NCRG 120 015 080	12 X R1.5	22	80	12
2NCRG 120 015 110	12 X R1.5	26	110	12
2NCRG 120 015 130	12 X R1.5	26	130	12
2NCRG 120 020 080	12 X R2	22	80	12
2NCRG 120 020 110	12 X R2	26	110	12
2NCRG 120 020 130	12 X R2	26	130	12
2NCRG 120 025 110	12 X R2.5	26	110	12
2NCRG 120 030 110	12 X R3	26	110	12
2NCRG 120 040 110	12 X R4	26	110	12
2NCRG 120 050 110	12 X R5	26	110	12

4NCRG Fresa Torica 4 Tagli



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Elevata tolleranza sul filo tagliente.
- Ampia gamma di raggi e lunghezze per ottimizzare il rendimento.
- Progettata per ridurre scheggiature grazie allo spigolo raggiato.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 µm).

4 | WC 미립자 | JMAX Coating | R ±0.005 R0.05 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 4 | 35° Helix Angle | € List. p.95 | i info p.225

D	Tolleranza
Ø1 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm
Ø16	−0.01 ~ −0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L	d
4NCRG 010 0005 S04	1 X R0.05	2.5	45	4
4NCRG 010 001 S04	1 X R0.1	2.5	45	4
4NCRG 010 002 S04	1 X R0.2	2.5	45	4
4NCRG 010 003 S04	1 X R0.3	2.5	45	4
4NCRG 015 0005 S04	1.5 X R0.05	4	45	4
4NCRG 015 001 S04	1.5 X R0.1	4	45	4
4NCRG 015 002 S04	1.5 X R0.2	4	45	4
4NCRG 015 003 S04	1.5 X R0.3	4	45	4
4NCRG 015 005 S04	1.5 X R0.5	4	45	4
4NCRG 020 0005 S04	2 X R0.05	6	45	4
4NCRG 020 001 S04	2 X R0.1	6	45	4
4NCRG 020 002 S04	2 X R0.2	6	45	4
4NCRG 020 003 S04	2 X R0.3	6	45	4
4NCRG 020 005 S04	2 X R0.5	6	45	4
4NCRG 025 001 S04	2.5 X R0.1	6	50	4
4NCRG 025 002 S04	2.5 X R0.2	6	50	4
4NCRG 025 003 S04	2.5 X R0.3	6	50	4
4NCRG 025 005 S04	2.5 X R0.5	6	50	4
4NCRG 030 001 S06	3 X R0.1	8	60	6
4NCRG 030 002 S06	3 X R0.2	8	60	6
4NCRG 030 003 S06	3 X R0.3	8	60	6
4NCRG 030 005 S06	3 X R0.5	8	60	6
4NCRG 030 010 S06	3 X R1	8	60	6
4NCRG 040 001 060	4 X R0.1	9	60	4
4NCRG 040 001 080	4 X R0.1	9	80	4
4NCRG 040 001 S06	4 X R0.1	10	70	6
4NCRG 040 002 060	4 X R0.2	9	60	4
4NCRG 040 002 080	4 X R0.2	9	80	4
4NCRG 040 002 S06	4 X R0.2	10	70	6
4NCRG 040 003 060	4 X R0.3	9	60	4
4NCRG 040 003 080	4 X R0.3	9	80	4
4NCRG 040 003 S06	4 X R0.3	10	70	6
4NCRG 040 005 060	4 X R0.5	9	60	4
4NCRG 040 005 080	4 X R0.5	9	80	4
4NCRG 040 005 S06	4 X R0.5	10	70	6
4NCRG 040 010 060	4 X R1	9	60	4
4NCRG 040 010 080	4 X R1	9	80	4
4NCRG 040 010 S06	4 X R1	10	70	6
4NCRG 050 001 S06	5 X R0.1	13	75	6
4NCRG 050 002 S06	5 X R0.2	13	75	6
4NCRG 050 003 S06	5 X R0.3	13	75	6
4NCRG 050 005 S06	5 X R0.5	13	75	6
4NCRG 050 010 S06	5 X R1	13	75	6
4NCRG 060 001 060	6 X R0.1	11	60	6
4NCRG 060 001 080	6 X R0.1	13	80	6
4NCRG 060 002 060	6 X R0.2	11	60	6
4NCRG 060 002 080	6 X R0.2	13	80	6
4NCRG 060 003 060	6 X R0.3	11	60	6

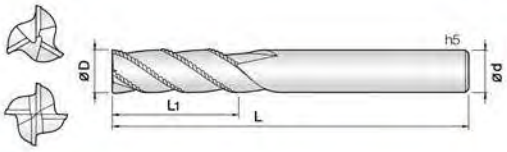
Numero d'Ordine	D×R	L1	L	d
4NCRG 060 003 080	6 X R0.3	13	80	6
4NCRG 060 005 060	6 X R0.5	11	60	6
4NCRG 060 005 080	6 X R0.5	13	80	6
4NCRG 060 010 060	6 X R1	11	60	6
4NCRG 060 010 080	6 X R1	13	80	6
4NCRG 060 015 060	6 X R1.5	11	60	6
4NCRG 060 015 080	6 X R1.5	13	80	6
4NCRG 060 020 060	6 X R2	11	60	6
4NCRG 060 020 080	6 X R2	13	80	6
4NCRG 080 001 070	8 X R0.1	16	70	8
4NCRG 080 001 090	8 X R0.1	19	90	8
4NCRG 080 002 070	8 X R0.2	16	70	8
4NCRG 080 002 090	8 X R0.2	19	90	8
4NCRG 080 003 070	8 X R0.3	16	70	8
4NCRG 080 003 090	8 X R0.3	19	90	8
4NCRG 080 005 070	8 X R0.5	16	70	8
4NCRG 080 005 090	8 X R0.5	19	90	8
4NCRG 080 005 110	8 X R0.5	19	110	8
4NCRG 080 010 070	8 X R1	16	70	8
4NCRG 080 010 090	8 X R1	19	90	8
4NCRG 080 010 110	8 X R1	19	110	8
4NCRG 080 015 070	8 X R1.5	16	70	8
4NCRG 080 015 090	8 X R1.5	19	90	8
4NCRG 080 015 110	8 X R1.5	19	110	8
4NCRG 080 020 070	8 X R2	16	70	8
4NCRG 080 020 090	8 X R2	19	90	8
4NCRG 080 020 110	8 X R2	19	110	8
4NCRG 080 025 090	8 X R2.5	19	90	8
4NCRG 100 001 075	10 X R0.1	19	75	10
4NCRG 100 001 100	10 X R0.1	22	100	10
4NCRG 100 002 075	10 X R0.2	19	75	10
4NCRG 100 002 100	10 X R0.2	22	100	10
4NCRG 100 003 075	10 X R0.3	19	75	10
4NCRG 100 003 100	10 X R0.3	22	100	10
4NCRG 100 005 075	10 X R0.5	19	75	10
4NCRG 100 005 100	10 X R0.5	22	100	10
4NCRG 100 005 120	10 X R0.5	22	120	10
4NCRG 100 010 075	10 X R1	19	75	10
4NCRG 100 010 100	10 X R1	22	100	10
4NCRG 100 010 120	10 X R1	22	120	10
4NCRG 100 015 075	10 X R1.5	19	75	10
4NCRG 100 015 100	10 X R1.5	22	100	10
4NCRG 100 015 120	10 X R1.5	22	120	10
4NCRG 100 020 075	10 X R2	19	75	10
4NCRG 100 020 100	10 X R2	22	100	10
4NCRG 100 020 120	10 X R2	22	120	10
4NCRG 100 025 075	10 X R2.5	19	75	10
4NCRG 100 025 100	10 X R2.5	22	100	10

Unità : mm

Numero d'Ordine	D×R	L1	L	d
4NCRG 100 025 120	10 X R2.5	22	120	10
4NCRG 100 030 100	10 X R3	22	100	10
4NCRG 120 002 080	12 X R0.2	22	80	12
4NCRG 120 002 110	12 X R0.2	26	110	12
4NCRG 120 003 080	12 X R0.3	22	80	12
4NCRG 120 003 110	12 X R0.3	26	110	12
4NCRG 120 005 080	12 X R0.5	22	80	12
4NCRG 120 005 110	12 X R0.5	26	110	12
4NCRG 120 005 130	12 X R0.5	26	130	12
4NCRG 120 010 080	12 X R1	22	80	12
4NCRG 120 010 110	12 X R1	26	110	12
4NCRG 120 010 130	12 X R1	26	130	12
4NCRG 120 015 080	12 X R1.5	22	80	12
4NCRG 120 015 110	12 X R1.5	26	110	12
4NCRG 120 015 130	12 X R1.5	26	130	12
4NCRG 120 020 080	12 X R2	22	80	12
4NCRG 120 020 110	12 X R2	26	110	12
4NCRG 120 020 130	12 X R2	26	130	12
4NCRG 120 025 080	12 X R2.5	22	80	12
4NCRG 120 025 110	12 X R2.5	26	110	12
4NCRG 120 025 130	12 X R2.5	26	130	12
4NCRG 120 030 080	12 X R3	22	80	12
4NCRG 120 030 110	12 X R3	26	110	12
4NCRG 120 030 130	12 X R3	26	130	12
4NCRG 120 035 110	12 X R3.5	26	110	12
4NCRG 120 040 110	12 X R4	26	110	12
4NCRG 160 005 110	16 X R0.5	35	110	16
4NCRG 160 005 160	16 X R0.5	35	160	16
4NCRG 160 010 110	16 X R1	35	110	16
4NCRG 160 010 160	16 X R1	35	160	16

3&4ROUG Fresa Cilindrica 3/4 Tagli a Sgrossare





- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Riduzione dei tempi di lavoro grazie all'eccellente controllo del truciolo.
- Massima efficienza in condizioni di alta velocità.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,2 µm).

3 | 4 | WC 미립자 | JMAX Coating | D -0.02~-0.04 Ø4~Ø9 | D -0.02~-0.05 Ø10~Ø20 | 35° Helix Angle | Rinforzato | List. p.97 | info p.226

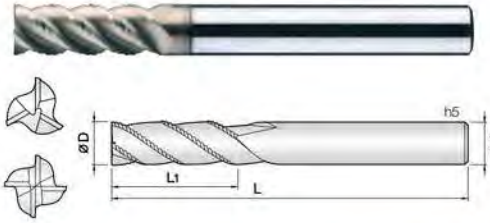
D	Tolleranza
Ø4 ~ 9	0.02~ -0.04mm
Ø10 ~ 20	0.02~ -0.05mm

Unità : mm

Numero d'Ordine	D	L1	L	d
3ROUG 040 100 S06	4	10	50	6
3ROUG 050 130 S06	5	13	50	6
3ROUG 060 100 050	6	10	50	6
3ROUG 060 150 055	6	15	55	6
3ROUG 060 200 060	6	20	60	6
3ROUG 070 180 S08	7	18	65	8
3ROUG 080 120 060	8	12	60	8
3ROUG 080 190 065	8	19	65	8
3ROUG 080 250 070	8	25	70	8
4ROUG 090 220 S10	9	22	70	10
4ROUG 100 150 070	10	15	70	10
4ROUG 100 220 070	10	22	70	10
4ROUG 100 300 080	10	30	80	10
4ROUG 110 270 S12	11	27	80	12
4ROUG 120 200 075	12	20	75	12
4ROUG 120 260 080	12	26	80	12
4ROUG 120 350 090	12	35	90	12
4ROUG 160 320 090	16	32	90	16
4ROUG 160 400 100	16	40	100	16
4ROUG 200 380 110	20	38	110	20
4ROUG 200 500 110	20	50	110	20

3&4HROUG

Fresa Cilindrica 3/4 Tagli 45° a Sgrossare



- **Fresa per acciai dolci, bonificati e temprati fino a HRc52.**
- Ottima resistenza all'usura grazie al nuovo rivestimento AlCrN.
- Riduzione dei tempi di lavoro grazie all'eccellente controllo del truciolo.
- Massima efficienza in condizioni di alta velocità.
- Scheggiatura del tagliente ridotta grazie all'elevato TRS e garantita dal metallo duro micrograna (0,5 μm).

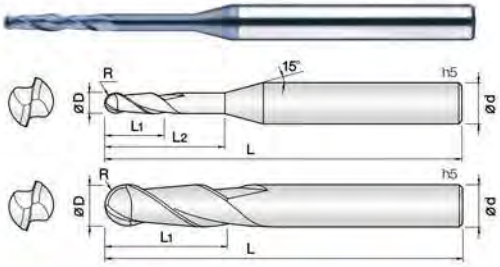
3 | 4 | WC 미립자 | JMAX Coating | D −0.02~−0.04 Ø4~Ø9 | D −0.02~−0.05 Ø10~Ø20 | 45° Helix Angle | Rinforzato

D	Tolleranza
Ø4 ~ 9	0.02~ −0.04mm
Ø10 ~ 20	0.02~ −0.05mm

Unità : mm

Numero d'Ordine	D	L1	L	d
3HROUG 040 100 S06	4	10	50	6
3HROUG 050 130 S06	5	13	50	6
3HROUG 060 100 050	6	10	50	6
3HROUG 060 160 055	6	16	55	6
3HROUG 060 200 060	6	20	60	6
3HROUG 070 180 S08	7	18	65	8
3HROUG 080 120 060	8	12	60	8
3HROUG 080 190 065	8	19	65	8
3HROUG 080 250 070	8	25	70	8
4HROUG 090 220 S10	9	22	70	10
4HROUG 100 150 070	10	15	70	10
4HROUG 100 220 070	10	22	70	10
4HROUG 100 300 080	10	30	80	10
4HROUG 110 270 S12	11	27	80	12
4HROUG 120 200 075	12	20	75	12
4HROUG 120 250 080	12	25	80	12
4HROUG 120 350 090	12	35	90	12
4HROUG 160 320 090	16	32	90	16
4HROUG 160 400 110	16	40	110	16
4HROUG 200 380 110	20	38	110	20
4HROUG 200 500 120	20	50	120	20

2GBE Fresa Emisferica 2 Tagli Serie Lunga per Grafite



- **Fresa per differenti applicazioni su vari materiali, grafite, ghisa e materiali non ferrosi.**
- Ottimo rendimento e basso sforzo di taglio grazie al rivestimento ALTIN.
- Varie lunghezze per spallamenti profondi su grafite.
- Il materiale impiegato (Ultra Micrograna) permette varie applicazioni su materiali non ferrosi.

2 | WC 미립자 | ALTIN Coating | R ±0.005 (0.25 ~ 2.5R) | R ±0.01 (3R ~ 6R) | R ±0.015 (8R ~ 12.5R) | 30° Helix Angle | € List. p.97

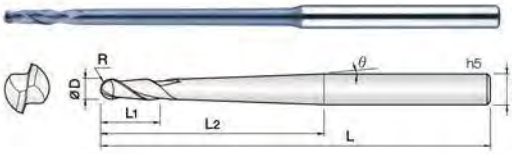
D	Tolleranza
Ø0.5 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16 ~ 25	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2GBE 005 020 S04	0.25R X 0.5	2	-	50	4
2GBE 005 050 S04	0.25R X 0.5	2	5	50	4
2GBE 010 050 S04	0.5R X 1	5	-	60	4
2GBE 010 050 S06	0.5R X 1	5	-	60	6
2GBE 010 100 S04	0.5R X 1	5	10	60	4
2GBE 010 100 S06	0.5R X 1	5	10	60	6
2GBE 010 150 S04	0.5R X 1	5	15	60	4
2GBE 010 200 S04	0.5R X 1	5	20	60	4
2GBE 010 250 S04	0.5R X 1	5	25	70	4
2GBE 010 300 S04	0.5R X 1	5	30	80	4
2GBE 010 350 S04	0.5R X 1	5	35	80	4
2GBE 010 400 S04	0.5R X 1	5	40	90	4
2GBE 015 080 S06	0.75R X 1.5	8	-	60	6
2GBE 015 100 S04	0.75R X 1.5	8	10	60	4
2GBE 015 150 S04	0.75R X 1.5	8	15	60	4
2GBE 015 150 S06	0.75R X 1.5	8	15	60	6
2GBE 015 200 S04	0.75R X 1.5	8	20	60	4
2GBE 015 250 S04	0.75R X 1.5	8	25	70	4
2GBE 015 300 S04	0.75R X 1.5	8	30	80	4
2GBE 015 350 S04	0.75R X 1.5	8	35	80	4
2GBE 015 400 S04	0.75R X 1.5	8	40	90	4
2GBE 020 100 S04	1R X 2	10	-	60	4
2GBE 020 100 S06	1R X 2	10	-	70	6
2GBE 020 150 S04	1R X 2	10	15	60	4
2GBE 020 200 S04	1R X 2	10	20	60	4
2GBE 020 200 S06	1R X 2	10	20	70	6
2GBE 020 250 S04	1R X 2	10	25	70	4
2GBE 020 300 S04	1R X 2	10	30	80	4
2GBE 020 350 S04	1R X 2	10	35	80	4
2GBE 020 400 S04	1R X 2	10	40	90	4
2GBE 020 500 S04	1R X 2	10	50	100	4
2GBE 020 600 S04	1R X 2	10	60	100	4
2GBE 025 200 S04	1.25R X 2.5	10	20	70	4
2GBE 030 150 100	1.5R X 3	15	-	100	3
2GBE 030 150 S06	1.5R X 3	15	-	70	6
2GBE 030 200 S04	1.5R X 3	15	20	70	4
2GBE 030 300 S04	1.5R X 3	15	30	80	4
2GBE 030 300 S06	1.5R X 3	15	30	75	6
2GBE 030 400 S04	1.5R X 3	15	40	90	4
2GBE 030 400 S06	1.5R X 3	15	40	90	6
2GBE 030 500 S04	1.5R X 3	15	50	100	4
2GBE 030 600 S04	1.5R X 3	15	60	100	4
2GBE 040 200 080	2R X 4	20	-	80	4
2GBE 040 200 100	2R X 4	20	-	100	4
2GBE 040 200 130	2R X 4	20	-	130	4
2GBE 040 200 S06	2R X 4	20	-	75	6
2GBE 040 350 S06	2R X 4	20	35	90	6
2GBE 040 450 S06	2R X 4	20	45	100	6

Numero d'Ordine	R×D	L1	L2	L	d
2GBE 050 250 100	2.5R X 5	25	-	100	5
2GBE 050 250 130	2.5R X 5	25	-	130	5
2GBE 050 250 S06	2.5R X 5	25	-	90	6
2GBE 050 500 S06	2.5R X 5	25	50	110	6
2GBE 060 250 110	3R X 6	25	-	110	6
2GBE 060 300 150	3R X 6	30	-	150	6
2GBE 060 300 200	3R X 6	30	-	200	6
2GBE 060 300 220	3R X 6	30	-	220	6
2GBE 080 350 110	4R X 8	35	-	110	8
2GBE 080 400 150	4R X 8	40	-	150	8
2GBE 080 400 200	4R X 8	40	-	200	8
2GBE 080 400 220	4R X 8	40	-	220	8
2GBE 100 400 120	5R X 10	40	-	120	10
2GBE 100 450 150	5R X 10	45	-	150	10
2GBE 100 450 200	5R X 10	45	-	200	10
2GBE 100 450 230	5R X 10	45	-	230	10
2GBE 120 500 130	6R X 12	50	-	130	12
2GBE 120 500 150	6R X 12	50	-	150	12
2GBE 120 550 200	6R X 12	55	-	200	12
2GBE 120 550 250	6R X 12	55	-	250	12
2GBE 160 600 160	8R X 16	60	-	160	16
2GBE 160 650 200	8R X 16	65	-	200	16
2GBE 160 650 250	8R X 16	65	-	250	16
2GBE 160 700 320	8R X 16	70	-	320	16
2GBE 200 700 160	10R X 20	70	-	160	20
2GBE 200 750 200	10R X 20	75	-	200	20
2GBE 200 750 250	10R X 20	75	-	250	20
2GBE 200 900 320	10R X 20	90	-	320	20
New 2GBE 2501000 250	12.5R X 25	100	-	250	25

2TGB Fresa Emisferica 2 Tagli Rastremata per Grafite



- **Fresa per differenti applicazioni su vari materiali, grafite, ghisa e materiali non ferrosi.**
- Ottimo rendimento e basso sforzo di taglio grazie al rivestimento ALTIN.
- Varie lunghezze per spallamenti profondi su grafite.
- Il materiale impiegato (Ultra Micrograna) permette varie applicazioni su materiali non ferrosi.

2 | WC 미립자 | ALTIN Coating | R ±0.005 0.5R~2.5R | R ±0.01 3R~6R | 30° Helix Angle | €

List. p.99

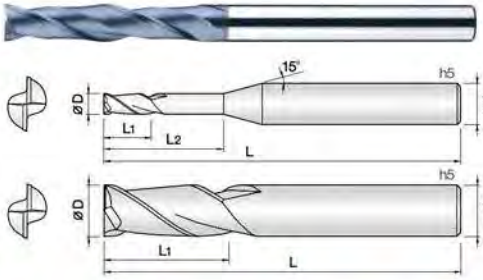
D	Tolleranza
Ø1 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm

Unità : mm

FOR GRAPHITE

Numero d'Ordine	R×D	θ	L1	L2	L	d
2TGB 010 003 200	0.5R X 1	0°30	4	20	60	4
2TGB 010 003 300	0.5R X 1	0°30	4	30	75	4
2TGB 010 003 400	0.5R X 1	0°30	4	40	90	4
2TGB 010 010 250	0.5R X 1	1°	4	25	60	4
2TGB 010 010 350	0.5R X 1	1°	4	35	75	4
2TGB 010 010 500	0.5R X 1	1°	4	50	100	4
2TGB 015 003 300	0.75R X 1.5	0°30	6	30	75	4
2TGB 015 003 400	0.75R X 1.5	0°30	6	40	80	4
2TGB 015 003 500	0.75R X 1.5	0°30	6	50	100	4
2TGB 015 010 300	0.75R X 1.5	1°	6	30	75	4
2TGB 015 010 500	0.75R X 1.5	1°	6	50	100	4
2TGB 015 010 600	0.75R X 1.5	1°	6	60	100	4
2TGB 020 003 400	1R X 2	0°30	8	40	90	4
2TGB 020 003 500	1R X 2	0°30	8	50	100	4
2TGB 020 003 700	1R X 2	0°30	8	70	130	4
2TGB 020 010 600	1R X 2	1°	8	60	110	6
2TGB 020 010 900	1R X 2	1°	8	90	150	6
2TGB 030 003 700	1.5R X 3	0°30	10	70	120	6
2TGB 030 010 900	1.5R X 3	1°	10	90	150	6
2TGB 040 003 700	2R X 4	0°30	14	70	120	6
2TGB 040 010 800	2R X 4	1°	14	80	150	6
2TGB 050 003 800	2.5R X 5	0°30	16	80	130	6
2TGB 060 003 1000	3R X 6	0°30	16	100	150	8
2TGB 060 010 1000	3R X 6	1°	16	100	150	10
2TGB 080 010 1000	4R X 8	1°	20	100	150	12
2TGB 100 010 830	5R X 10	1°	25	83	200	12
2TGB 120 010 1100	6R X 12	1°	30	110	200	16

2GEM Fresa Cilindrica 2 Tagli Serie Lunga per Grafite



- **Fresa per differenti applicazioni su vari materiali, grafite, acciai legati e temprati fino a HRc50.**
- Ottimo rendimento e basso sforzo di taglio grazie al rivestimento ALTIN.
- Varie lunghezze per spallamenti profondi su grafite.
- Il materiale impiegato (Ultra Micrograna) permette varie applicazioni su acciai fino a HRc50.

2 | WC 미립자 | ALTIN Coating | D +0 ~ -0.01 Ø0.5 ~ 5 | D -0.01 ~ -0.025 Ø6 ~ 12 | D -0.015 ~ -0.03 Ø16 ~ 20 | 30° Helix Angle | Rinforzato | € List. p.99 | i info p.228

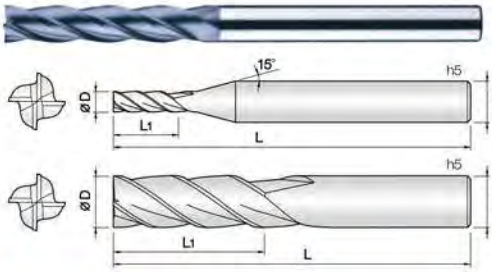
D	Tolleranza
Ø0.5 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16 ~ 20	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
2GEM 005 020 S04	0.5	2	-	50	4
2GEM 010 050 S04	1	5	-	60	4
2GEM 010 100 S04	1	5	10	60	4
2GEM 010 100 S06	1	5	10	60	6
2GEM 010 150 S04	1	5	15	60	4
2GEM 010 200 S04	1	5	20	60	4
2GEM 010 250 S04	1	5	25	70	4
2GEM 015 100 S04	1.5	10	-	60	4
2GEM 015 150 S04	1.5	8	15	60	4
2GEM 015 200 S04	1.5	8	20	60	4
2GEM 015 200 S06	1.5	8	20	60	6
2GEM 015 250 S04	1.5	8	25	70	4
2GEM 020 100 S04	2	10	-	60	4
2GEM 020 150 S04	2	10	15	60	4
2GEM 020 200 S04	2	10	20	60	4
2GEM 020 200 S06	2	10	20	60	6
2GEM 020 250 S04	2	10	25	70	4
2GEM 020 300 S04	2	10	30	80	4
2GEM 030 150 S04	3	15	-	70	4
2GEM 030 250 S04	3	15	25	75	4
2GEM 030 300 S06	3	15	30	75	6
2GEM 040 200 100	4	20	-	100	4
2GEM 040 400 S06	4	20	40	100	6
2GEM 050 250 100	5	25	-	100	5
2GEM 060 300 110	6	30	-	110	6
2GEM 060 300 150	6	30	-	150	6
2GEM 080 400 150	8	40	-	150	8
2GEM 100 450 150	10	45	-	150	10
2GEM 100 500 200	10	50	-	200	10
2GEM 120 600 150	12	60	-	150	12
2GEM 120 600 200	12	60	-	200	12
2GEM 160 600 130	16	60	-	130	16
2GEM 160 700 160	16	70	-	160	16
2GEM 160 700 200	16	70	-	200	16
2GEM 200 800 160	20	80	-	160	20
2GEM 200 900 200	20	90	-	200	20
2GEM 200 1200 320	20	120	-	320	20

4GEM

Fresa Cilindrica 4 Tagli Serie Lunga per Grafite



- **Fresa per differenti applicazioni su vari materiali, grafite, acciai legati e temprati fino a HRc50.**
- Ottimo rendimento e basso sforzo di taglio grazie al rivestimento ALTIN.
- Varie lunghezze per spallamenti profondi su grafite.
- Il materiale impiegato (Ultra Micrograna) permette varie applicazioni su acciai fino a HRc50.

4 | WC 미립자 | ALTIN Coating | D +0~-0.01 Ø3 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø16 ~ 20 | 30° Helix Angle | Rinforzato | List. p.100 | info p.228

D	Tolleranza
Ø3 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16 ~ 20	-0.015 ~ -0.03mm

Unità : mm

FOR GRAPHITE

Numero d'Ordine	D	L1	L	d
4GEM 030 100 S06	3	10	100	6
4GEM 030 150 S06	3	15	100	6
4GEM 040 150 S06	4	15	100	6
4GEM 040 200 100	4	20	100	4
4GEM 040 200 S06	4	20	100	6
4GEM 050 200 S06	5	20	100	6
4GEM 060 300 110	6	30	110	6
4GEM 060 300 150	6	30	150	6
4GEM 080 400 150	8	40	150	8
4GEM 080 400 200	8	40	200	8
4GEM 100 500 150	10	50	150	10
4GEM 100 500 200	10	50	200	10
4GEM 120 600 150	12	60	150	12
4GEM 120 600 200	12	60	200	12
4GEM 160 700 160	16	70	160	16
4GEM 160 800 200	16	80	200	16
4GEM 200 750 160	20	75	160	20
4GEM 200 900 200	20	90	200	20
4GEM 200 1000 320	20	100	320	20

6GEM Fresa Cilindrica 6 Tagli 45° Serie Lunga per Grafite



- **Fresa per differenti applicazioni su vari materiali, grafite, acciai legati e temprati fino a HRc50.**
- Ottimo rendimento e basso sforzo di taglio grazie al rivestimento ALTIN.
- Varie lunghezze per spallamenti profondi su grafite.
- Il materiale impiegato (Ultra Micrograna) permette varie applicazioni su acciai fino a HRc50.

6 | WC 미립자 | ALTIN Coating | D -0.01 ~ -0.025 Ø6 ~ 12 | D -0.015 ~ -0.03 Ø16 ~ 20 | 45° Helix Angle | Rinforzato | € List. p.100 | i info p.228

D	Tolleranza
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16 ~ 20	-0.015 ~ -0.03mm

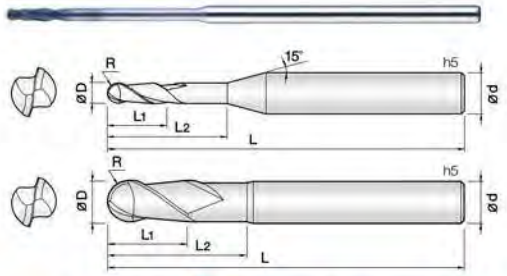
Unità : mm

FOR GRAPHITE

Numero d'Ordine	D	L1	L	d
6GEM 060 300 110	6	30	110	6
6GEM 080 400 110	8	40	110	8
6GEM 100 500 120	10	50	120	10
6GEM 100 500 150	10	50	150	10
6GEM 120 600 130	12	60	130	12
6GEM 120 600 160	12	60	160	12
6GEM 160 900 160	16	90	160	16
6GEM 160 900 200	16	90	200	16
6GEM 160 900 250	16	90	250	16
6GEM 200 1000 200	20	100	200	20
6GEM 200 1000 250	20	100	250	20
6GEM 200 1000 320	20	100	320	20

ATTENTION

2DBE Fresa Emisferica 2 Tagli Diamond



- **Fresa per grafite, plastiche caricate, fibre di carbonio e materiali non ferrosi.**
- Il nuovo rivestimento CVD Diamond garantisce un eccellente resistenza all'usura.
- Ampia gamma di prodotti per le più svariate esigenze con redimenti eccellenti.

2 | WC 미립자 | DIA. Coating | R ±0.005 (0.1 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.100 | i info p.228

D	Tolleranza
Ø0.2 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm

Unità : mm

FOR GRAPHITE

Numero d'Ordine	R×D	L1	L2	L	d
2DBE 002 010 S04	0.1R X 0.2	1	-	45	4
2DBE 003 012 S04	0.15R X 0.3	1.2	-	45	4
New 2DBE 003 020 S04	0.15R X 0.3	1.2	2	45	4
2DBE 004 015 S04	0.2R X 0.4	1.5	-	45	4
New 2DBE 004 020 S04	0.2R X 0.4	1.5	2	45	4
2DBE 004 030 S04	0.2R X 0.4	1.5	3	45	4
New 2DBE 004 040 S04	0.2R X 0.4	1.5	4	45	4
New 2DBE 004 050 S04	0.2R X 0.4	1.5	5	45	4
2DBE 005 020 S04	0.25R X 0.5	2	-	45	4
New 2DBE 005 030 S04	0.25R X 0.5	2	3	45	4
New 2DBE 005 040 S04	0.25R X 0.5	2	4	45	4
2DBE 005 050 S04	0.25R X 0.5	2	5	45	4
New 2DBE 005 060 S04	0.25R X 0.5	2	6	45	4
New 2DBE 005 080 S04	0.25R X 0.5	2	8	45	4
2DBE 006 020 S04	0.3R X 0.6	2	-	45	4
New 2DBE 006 030 S04	0.3R X 0.6	2	3	45	4
New 2DBE 006 040 S04	0.3R X 0.6	2	4	45	4
2DBE 006 050 S04	0.3R X 0.6	2	5	45	4
New 2DBE 006 060 S04	0.3R X 0.6	2	6	45	4
2DBE 006 080 S04	0.3R X 0.6	2	8	45	4
2DBE 006 100 S04	0.3R X 0.6	2	10	45	4
New 2DBE 006 120 S04	0.3R X 0.6	2	12	45	4
2DBE 008 030 S04	0.4R X 0.8	3	-	45	4
New 2DBE 008 040 S04	0.4R X 0.8	3	4	45	4
2DBE 008 050 S04	0.4R X 0.8	3	5	45	4
New 2DBE 008 060 S04	0.4R X 0.8	3	6	45	4
New 2DBE 008 080 S04	0.4R X 0.8	3	8	45	4
2DBE 008 100 S04	0.4R X 0.8	3	10	45	4
2DBE 008 150 S04	0.4R X 0.8	3	15	45	4
2DBE 008 200 S04	0.4R X 0.8	3	20	45	4
2DBE 010 030 S04	0.5R X 1	3	-	60	4
New 2DBE 010 040 S04	0.5R X 1	3	4	60	4
2DBE 010 050 S04	0.5R X 1	3	5	60	4
New 2DBE 010 060 S04	0.5R X 1	3	6	60	4
New 2DBE 010 080 S04	0.5R X 1	3	8	60	4
2DBE 010 100 S04	0.5R X 1	3	10	60	4
New 2DBE 010 120 S04	0.5R X 1	3	12	60	4
2DBE 010 150 S04	0.5R X 1	3	15	60	4
2DBE 010 200 S04	0.5R X 1	3	20	60	4
2DBE 010 250 S04	0.5R X 1	3	25	80	4
2DBE 010 300 S04	0.5R X 1	3	30	80	4
New 2DBE 010 350 S04	0.5R X 1	3	35	80	4
New 2DBE 010 400 S04	0.5R X 1	3	40	80	4
2DBE 015 050 S04	0.75R X 1.5	5	-	60	4
New 2DBE 015 080 S04	0.75R X 1.5	5	8	80	4
2DBE 015 100 S04	0.75R X 1.5	5	10	80	4
New 2DBE 015 120 S04	0.75R X 1.5	5	12	80	4
2DBE 015 150 S04	0.75R X 1.5	5	15	80	4

Numero d'Ordine	R×D	L1	L2	L	d
New 2DBE 015 180 S04	0.75R X 1.5	5	18	80	4
2DBE 015 200 S04	0.75R X 1.5	5	20	80	4
2DBE 015 250 S04	0.75R X 1.5	5	25	80	4
2DBE 015 300 S04	0.75R X 1.5	5	30	80	4
New 2DBE 015 350 S04	0.75R X 1.5	5	35	80	4
New 2DBE 015 400 S04	0.75R X 1.5	5	40	80	4
2DBE 020 060 S04	1R X 2	6	-	60	4
2DBE 020 100 S04	1R X 2	6	10	80	4
2DBE 020 150 S04	1R X 2	6	15	80	4
2DBE 020 200 S04	1R X 2	6	20	80	4
New 2DBE 020 250 S04	1R X 2	6	25	80	4
2DBE 020 300 S04	1R X 2	6	30	80	4
New 2DBE 020 350 S04	1R X 2	6	35	80	4
2DBE 020 400 S04	1R X 2	6	40	100	4
New 2DBE 020 450 S04	1R X 2	6	45	100	4
2DBE 020 500 S04	1R X 2	6	50	100	4
New 2DBE 020 600 S04	1R X 2	6	60	100	4
New 2DBE 030 150 100	1.5R X 3	8	15	100	3
2DBE 030 080 S04	1.5R X 3	8	-	60	4
2DBE 030 150 S04	1.5R X 3	8	15	100	4
2DBE 030 200 S04	1.5R X 3	8	20	100	4
New 2DBE 030 250 S04	1.5R X 3	8	25	100	4
2DBE 030 300 S04	1.5R X 3	8	30	100	4
New 2DBE 030 350 S04	1.5R X 3	8	35	100	4
2DBE 030 400 S04	1.5R X 3	8	40	100	4
2DBE 030 500 S04	1.5R X 3	8	50	100	4
New 2DBE 030 600 S04	1.5R X 3	8	60	100	4
2DBE 040 160 060	2R X 4	16	-	60	4
2DBE 040 160 080	2R X 4	16	-	80	4
New 2DBE 040 300 080	2R X 4	16	30	80	4
2DBE 040 160 100	2R X 4	16	-	100	4
New 2DBE 040 400 100	2R X 4	16	40	100	4
2DBE 040 160 130	2R X 4	16	-	130	4
New 2DBE 040 400 130	2R X 4	16	40	130	4
New 2DBE 040 160 150	2R X 4	16	-	150	4
New 2DBE 040 500 150	2R X 4	16	50	150	4
2DBE 050 200 S06	2.5R X 5	16	20	110	6
2DBE 060 250 080	3R X 6	16	25	80	6
2DBE 060 250 110	3R X 6	16	25	110	6
New 2DBE 060 400 110	3R X 6	16	40	110	6
2DBE 060 300 150	3R X 6	16	30	150	6
New 2DBE 060 500 150	3R X 6	16	50	150	6
2DBE 080 300 080	4R X 8	20	30	80	8
2DBE 080 300 110	4R X 8	20	30	110	8
New 2DBE 080 400 110	4R X 8	20	40	110	8
2DBE 080 500 150	4R X 8	20	50	150	8
2DBE 080 400 200	4R X 8	20	40	200	8
2DBE 100 400 080	5R X 10	22	40	80	10

Unità : mm

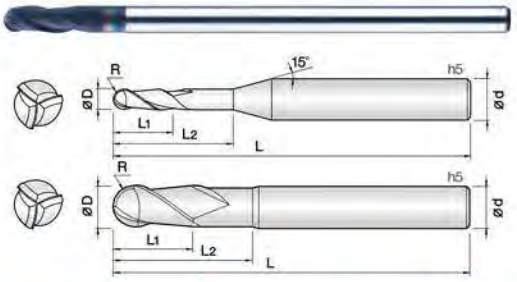
Numero d'Ordine	R×D	L1	L2	L	d
2DBE 100 350 110	5R X 10	22	35	110	10
New 2DBE 100 500 110	5R X 10	22	50	110	10
2DBE 100 600 160	5R X 10	22	60	160	10
2DBE 100 500 200	5R X 10	22	50	200	10
2DBE 120 500 110	6R X 12	25	50	110	12
2DBE 120 500 160	6R X 12	25	50	160	12
2DBE 120 600 200	6R X 12	25	60	200	12

Numero d'Ordine	R×D	L1	L2	L	d

FOR GRAPHITE

3DBE Fresa Emisferica 3 Tagli Diamond

New



- **Fresa per grafite, plastiche caricate, fibre di carbonio e materiali non ferrosi.**
- Il nuovo rivestimento CVD Diamond garantisce un eccellente resistenza all'usura.
- Ampia gamma di prodotti per le più svariate esigenze con redimenti eccellenti.

3 | WC 미립자 | DIA. Coating | R ±0.005 (0.5 ~ 2R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.102 | i info p.228

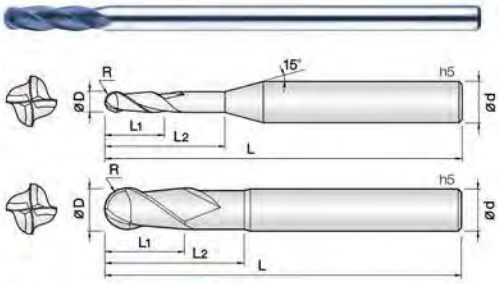
D	Tolleranza
ø1 ~ 5	+0 ~ -0.01mm
ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

FOR GRAPHITE

Numero d'Ordine	R×D	L1	L2	L	d
3DBE 010 030 S04	0.5R X 1	3	-	60	4
3DBE 010 050 S04	0.5R X 1	3	5	60	4
3DBE 010 100 S04	0.5R X 1	3	10	60	4
3DBE 010 150 S04	0.5R X 1	3	15	60	4
3DBE 010 200 S04	0.5R X 1	3	20	60	4
3DBE 015 050 S04	0.75R X 1.5	5	-	60	4
3DBE 015 100 S04	0.75R X 1.5	5	10	80	4
3DBE 015 150 S04	0.75R X 1.5	5	15	80	4
3DBE 015 200 S04	0.75R X 1.5	5	20	80	4
3DBE 020 060 S04	1R X 2	6	-	60	4
3DBE 020 100 S04	1R X 2	6	10	80	4
3DBE 020 150 S04	1R X 2	6	15	80	4
3DBE 020 200 S04	1R X 2	6	20	80	4
3DBE 020 250 S04	1R X 2	6	25	80	4
3DBE 020 300 S04	1R X 2	6	30	80	4
3DBE 020 350 S04	1R X 2	6	35	80	4
3DBE 020 400 S04	1R X 2	6	40	80	4
3DBE 030 150 100	1.5R X 3	8	15	100	3
3DBE 030 080 S04	1.5R X 3	8	-	60	4
3DBE 030 150 S04	1.5R X 3	8	15	100	4
3DBE 030 200 S04	1.5R X 3	8	20	100	4
3DBE 030 300 S04	1.5R X 3	8	30	100	4
3DBE 030 400 S04	1.5R X 3	8	40	100	4
3DBE 030 500 S04	1.5R X 3	8	50	100	4
3DBE 040 160 080	2R X 4	16	-	80	4
3DBE 040 300 080	2R X 4	16	30	80	4
3DBE 040 160 100	2R X 4	16	-	100	4
3DBE 040 400 100	2R X 4	16	40	100	4
3DBE 040 160 130	2R X 4	16	-	130	4
3DBE 040 400 130	2R X 4	16	40	130	4
3DBE 060 250 110	3R X 6	16	25	110	6
3DBE 060 400 110	3R X 6	16	40	110	6
3DBE 060 300 150	3R X 6	16	30	150	6
3DBE 060 500 150	3R X 6	16	50	150	6
3DBE 060 500 180	3R X 6	16	50	180	6
3DBE 080 400 110	4R X 8	20	40	110	8
3DBE 080 500 150	4R X 8	20	50	150	8
3DBE 100 400 110	5R X 10	22	40	110	10
3DBE 100 600 160	5R X 10	22	60	160	10
3DBE 120 500 110	6R X 12	25	50	110	12
3DBE 120 500 160	6R X 12	25	50	160	12
3DBE 120 600 200	6R X 12	25	60	200	12

4DBE Fresa Emisferica 4 Tagli Diamond



- **Fresa per grafite, plastiche caricate, fibre di carbonio e materiali non ferrosi.**
- Il nuovo rivestimento CVD Diamond garantisce un eccellente resistenza all'usura.
- Ampia gamma di prodotti per le più svariate esigenze con redimenti eccellenti.

4 | WC 미립자 | DIA. Coating | R ±0.005 (0.5 ~ 2R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.102 | i info p.228

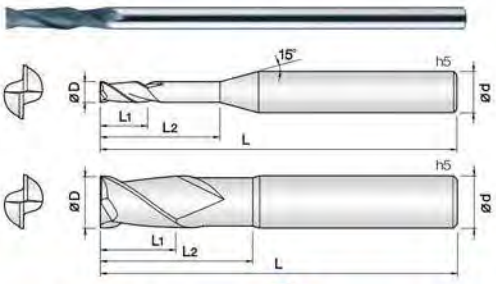
D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

FOR GRAPHITE

Numero d'Ordine	R×D	L1	L2	L	d
4DBE 010 030 S04	0.5R X 1	3	-	60	4
4DBE 010 050 S04	0.5R X 1	3	5	60	4
4DBE 010 100 S04	0.5R X 1	3	10	60	4
4DBE 010 150 S04	0.5R X 1	3	15	60	4
4DBE 010 200 S04	0.5R X 1	3	20	60	4
4DBE 010 250 S04	0.5R X 1	3	25	60	4
4DBE 015 045 S04	0.75R X 1.5	4.5	-	60	4
4DBE 015 100 S04	0.75R X 1.5	4.5	10	60	4
4DBE 015 150 S04	0.75R X 1.5	4.5	15	60	4
4DBE 015 200 S04	0.75R X 1.5	4.5	20	60	4
4DBE 015 250 S04	0.75R X 1.5	4.5	25	60	4
4DBE 020 060 S04	1R X 2	6	-	60	4
4DBE 020 100 S04	1R X 2	6	10	80	4
4DBE 020 200 S04	1R X 2	6	20	80	4
4DBE 020 300 S04	1R X 2	6	30	80	4
4DBE 020 400 S04	1R X 2	6	40	80	4
4DBE 030 080 S04	1.5R X 3	8	-	60	4
4DBE 030 150 S04	1.5R X 3	8	15	100	4
4DBE 030 200 S04	1.5R X 3	8	20	100	4
4DBE 030 300 S04	1.5R X 3	8	30	100	4
4DBE 030 400 S04	1.5R X 3	8	40	100	4
4DBE 030 500 S04	1.5R X 3	8	50	100	4
4DBE 040 160 060	2R X 4	16	-	60	4
4DBE 040 160 080	2R X 4	16	-	80	4
4DBE 040 160 100	2R X 4	16	-	100	4
New 4DBE 040 160 130	2R X 4	16	-	130	4
4DBE 060 250 080	3R X 6	16	25	80	6
4DBE 060 250 110	3R X 6	16	25	110	6
4DBE 060 300 150	3R X 6	16	30	150	6
4DBE 080 300 080	4R X 8	20	30	80	8
4DBE 080 300 110	4R X 8	20	30	110	8
4DBE 080 350 150	4R X 8	20	35	150	8
4DBE 080 400 200	4R X 8	20	40	200	8
4DBE 100 350 080	5R X 10	22	35	80	10
4DBE 100 350 110	5R X 10	22	35	110	10
4DBE 100 400 160	5R X 10	22	40	160	10
4DBE 100 500 200	5R X 10	22	50	200	10
4DBE 120 500 110	6R X 12	25	50	110	12
4DBE 120 500 160	6R X 12	25	50	160	12
4DBE 120 600 200	6R X 12	25	60	200	12

2&3DEM Fresa Cilindrica 2/3 Tagli Diamond



- **Fresa per grafite, plastiche caricate, fibre di carbonio e materiali non ferrosi.**
- Il nuovo rivestimento CVD Diamond garantisce un eccellente resistenza all'usura.
- Ampia gamma di prodotti per le più svariate esigenze con redimenti eccellenti.

2 | 3 | WC 미립자 | DIA. Coating | D +0~-0.01 Ø0.2~Ø5 | D -0.01~-0.025 Ø6~Ø12 | 30° Helix Angle | Rinforzato | List. p.103 | info p.227

D	Tolleranza
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

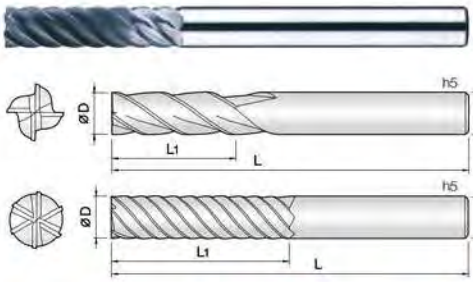
FOR GRAPHITE

Numero d'Ordine	D	L1	L2	L	d
2DEM 002 004 S04	0.2	0.4	-	45	4
2DEM 003 006 S04	0.3	0.6	-	45	4
2DEM 004 008 S04	0.4	0.8	-	45	4
2DEM 005 010 S04	0.5	1	-	45	4
2DEM 006 012 S04	0.6	1.2	-	45	4
2DEM 007 015 S04	0.7	1.5	-	45	4
2DEM 008 020 S04	0.8	2	-	45	4
2DEM 009 025 S04	0.9	2.5	-	45	4
2DEM 010 030 S04	1	3	-	60	4
2DEM 010 032 S04	1	3.2	-	45	4
2DEM 010 050 S04	1	3	5	60	4
2DEM 010 100 S04	1	3	10	60	4
2DEM 010 150 S04	1	3	15	60	4
2DEM 010 200 S04	1	3	20	60	4
2DEM 010 250 S04	1	3	25	60	4
2DEM 015 060 S04	1.5	6	-	60	4
2DEM 015 100 S04	1.5	6	10	60	4
2DEM 015 150 S04	1.5	6	15	60	4
2DEM 015 200 S04	1.5	6	20	60	4
2DEM 015 250 S04	1.5	6	25	60	4
2DEM 020 060 S04	2	6	-	45	4
2DEM 020 080 S04	2	8	-	80	4
2DEM 020 120 S04	2	8	12	80	4
2DEM 020 150 S04	2	8	15	80	4
2DEM 020 200 S04	2	8	20	80	4
2DEM 020 250 S04	2	8	25	80	4
2DEM 020 300 S04	2	8	30	80	4
2DEM 020 400 S04	2	8	40	80	4
2DEM 030 090 S06	3	9	-	50	6
2DEM 030 120 S04	3	12	-	80	4
2DEM 030 200 S04	3	12	20	80	4
2DEM 030 250 S04	3	12	25	80	4
2DEM 030 300 S04	3	12	30	80	4
2DEM 030 400 S04	3	12	40	80	4
2DEM 040 120 S06	4	12	-	50	6
2DEM 040 160 080	4	16	-	80	4
2DEM 050 150 S06	5	15	-	60	6
2DEM 050 200 S06	5	20	-	110	6
2DEM 060 180 S06	6	18	-	60	6
2DEM 060 250 110	6	25	-	110	6
2DEM 060 250 150	6	25	-	150	6
2DEM 080 240 S08	8	24	-	70	8
2DEM 080 400 150	8	25	40	150	8
2DEM 100 250 S10	10	25	-	80	10
2DEM 100 500 160	10	25	50	160	10
2DEM 120 250 S12	12	25	-	80	12
2DEM 120 600 160	12	25	60	160	12

Numero d'Ordine	D	L1	L	d
New 3DEM 010 030 S04	1	3	45	4
New 3DEM 015 060 S04	1.5	6	60	4
New 3DEM 020 060 S04	2	6	45	4
New 3DEM 020 100 S04	2	10	60	4
New 3DEM 030 090 S06	3	9	50	6
New 3DEM 030 150 S03	3	15	60	3
New 3DEM 030 150 S04	3	15	60	4
New 3DEM 040 120 S06	4	12	50	6
New 3DEM 040 200 080	4	20	80	4
New 3DEM 060 180 060	6	18	60	6
New 3DEM 060 250 110	6	25	110	6
New 3DEM 060 250 150	6	25	150	6
New 3DEM 080 240 070	8	24	70	8
New 3DEM 080 350 110	8	35	110	8
New 3DEM 080 350 150	8	35	150	8
New 3DEM 100 250 080	10	25	80	10
New 3DEM 100 400 110	10	40	110	10
New 3DEM 100 500 160	10	50	160	10
New 3DEM 120 250 080	12	25	80	12
New 3DEM 120 450 110	12	45	110	12
New 3DEM 120 550 160	12	55	160	12

4&6DEM

Fresa Cilindrica 4/6 Tagli Diamond



- **Fresa per grafite, plastiche caricate, fibre di carbonio e materiali non ferrosi.**
- Il nuovo rivestimento CVD Diamond garantisce un eccellente resistenza all'usura.
- Ampia gamma di prodotti per le più svariate esigenze con redimenti eccellenti.

D	Tolleranza
Ø2 ~ 4	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16	-0.015 ~ -0.03mm

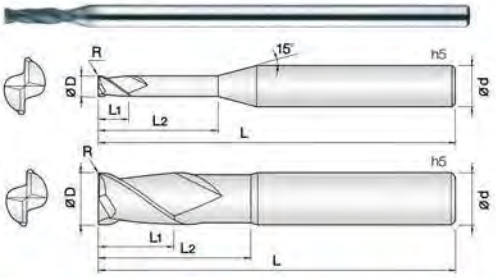
4 | 6 | WC 미립자 | DIA. Coating | D +0~-0.01 Ø2~Ø4 | D -0.01~-0.025 Ø6~Ø12 | D -0.015~-0.03 Ø16 | 30° Helix Angle 4F | 45° Helix Angle 6F | Rinforzato | List. p.104 | info p.227

Unità : mm

Numero d'Ordine	D	L1	L	d
4DEM 020 060 S04	2	6	45	4
4DEM 020 100 S04	2	10	60	4
4DEM 030 090 S06	3	9	50	6
4DEM 030 150 S03	3	15	60	3
4DEM 030 150 S04	3	15	60	4
4DEM 040 120 S06	4	12	50	6
4DEM 040 200 080	4	20	80	4
4DEM 060 180 060	6	18	60	6
4DEM 060 250 110	6	25	110	6
4DEM 060 250 150	6	25	150	6
4DEM 080 240 070	8	24	70	8
4DEM 080 350 110	8	35	110	8
4DEM 080 350 150	8	35	150	8
4DEM 100 250 080	10	25	80	10
4DEM 100 400 110	10	40	110	10
New 4DEM 100 500 160	10	50	160	10
4DEM 120 250 080	12	25	80	12
4DEM 120 450 110	12	45	110	12
New 4DEM 120 550 160	12	55	160	12

Numero d'Ordine	D	L1	L	d
6DEM 100 400 110	10	40	110	10
6DEM 100 400 160	10	40	160	10
6DEM 120 450 110	12	45	110	12
6DEM 120 450 160	12	45	160	12
6DEM 160 500 110	16	50	110	16
6DEM 160 500 160	16	50	160	16
New 6DEM 160 500 200	16	50	200	16

2DCR Fresa Torica 2 Tagli Diamond



- **Fresa per grafite, plastiche caricate, fibre di carbonio e materiali non ferrosi.**
- Il nuovo rivestimento CVD Diamond garantisce un eccellente resistenza all'usura.
- Ampia gamma di prodotti per le più svariate esigenze con redimenti eccellenti.

2 | WC 미립자 | DIA. Coating | R ±0.005 R0.02 ~ 0.5 | R ±0.01 1R | 30° Helix Angle | € List. p.104 | i info p.228

D	Tolleranza
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6	-0.005 ~ -0.015mm

Unità : mm

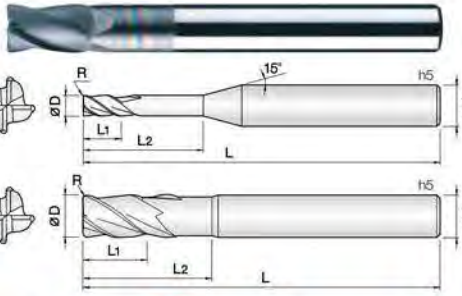
Numero d'Ordine	D×R	L1	L2	L	d
2DCR 002 0002 015	0.2 X R0.02	0.5	1.5	60	4
2DCR 003 0002 015	0.3 X R0.02	0.6	1.5	60	4
2DCR 003 0002 030	0.3 X R0.02	0.6	3	60	4
2DCR 003 0002 045	0.3 X R0.02	0.6	4.5	60	4
2DCR 003 0002 060	0.3 X R0.02	0.6	6	60	4
2DCR 004 0002 020	0.4 X R0.02	0.8	2	60	4
2DCR 004 0002 040	0.4 X R0.02	0.8	4	60	4
2DCR 004 0002 060	0.4 X R0.02	0.8	6	60	4
2DCR 004 0002 080	0.4 X R0.02	0.8	8	60	4
2DCR 005 0005 010	0.5 X R0.05	1	-	60	4
2DCR 005 0005 025	0.5 X R0.05	1	2.5	60	4
2DCR 005 0005 035	0.5 X R0.05	1	3.5	60	4
2DCR 005 0005 050	0.5 X R0.05	1	5	60	4
2DCR 005 0005 075	0.5 X R0.05	1	7.5	60	4
2DCR 005 0005 100	0.5 X R0.05	1	10	60	4
2DCR 006 0005 012	0.6 X R0.05	1.2	-	60	4
2DCR 006 0005 030	0.6 X R0.05	1.2	3	60	4
2DCR 006 0005 060	0.6 X R0.05	1.2	6	60	4
2DCR 006 0005 090	0.6 X R0.05	1.2	9	60	4
2DCR 006 0005 120	0.6 X R0.05	1.2	12	60	4
2DCR 008 0005 016	0.8 X R0.05	1.6	-	60	4
2DCR 008 0005 040	0.8 X R0.05	1.6	4	60	4
2DCR 008 0005 080	0.8 X R0.05	1.6	8	60	4
2DCR 008 0005 100	0.8 X R0.05	1.6	10	60	4
2DCR 008 0005 160	0.8 X R0.05	1.6	16	60	4
2DCR 010 0005 020	1 X R0.05	2	-	60	4
2DCR 010 0005 050	1 X R0.05	2	5	60	4
2DCR 010 0005 100	1 X R0.05	2	10	60	4
2DCR 010 0005 150	1 X R0.05	2	15	60	4
2DCR 010 0005 200	1 X R0.05	2	20	60	4
2DCR 010 001 020	1 X R0.1	2	-	60	4
2DCR 010 001 050	1 X R0.1	2	5	60	4
2DCR 010 001 100	1 X R0.1	2	10	60	4
2DCR 010 001 150	1 X R0.1	2	15	60	4
2DCR 010 001 200	1 X R0.1	2	20	60	4
2DCR 010 002 020	1 X R0.2	2	-	60	4
2DCR 010 002 050	1 X R0.2	2	5	60	4
2DCR 010 002 100	1 X R0.2	2	10	60	4
2DCR 010 002 150	1 X R0.2	2	15	60	4
2DCR 010 002 200	1 X R0.2	2	20	60	4
2DCR 015 0005 030	1.5 X R0.05	3	-	60	4
2DCR 015 0005 050	1.5 X R0.05	3	5	60	4
2DCR 015 0005 100	1.5 X R0.05	3	10	60	4
2DCR 015 0005 150	1.5 X R0.05	3	15	60	4
2DCR 015 0005 200	1.5 X R0.05	3	20	60	4
2DCR 015 001 030	1.5 X R0.1	3	-	60	4
2DCR 015 001 050	1.5 X R0.1	3	5	60	4
2DCR 015 001 100	1.5 X R0.1	3	10	60	4

Numero d'Ordine	D×R	L1	L2	L	d
2DCR 015 001 150	1.5 X R0.1	3	15	60	4
2DCR 015 001 200	1.5 X R0.1	3	20	60	4
2DCR 015 0015 030	1.5 X R0.15	3	-	60	4
2DCR 015 0015 050	1.5 X R0.15	3	5	60	4
2DCR 015 0015 100	1.5 X R0.15	3	10	60	4
2DCR 015 0015 150	1.5 X R0.15	3	15	60	4
2DCR 015 0015 200	1.5 X R0.15	3	20	60	4
2DCR 015 002 030	1.5 X R0.2	3	-	60	4
2DCR 015 002 050	1.5 X R0.2	3	5	60	4
2DCR 015 002 100	1.5 X R0.2	3	10	60	4
2DCR 015 002 150	1.5 X R0.2	3	15	60	4
2DCR 015 002 200	1.5 X R0.2	3	20	60	4
2DCR 015 003 030	1.5 X R0.3	3	-	60	4
2DCR 015 003 050	1.5 X R0.3	3	5	60	4
2DCR 015 003 100	1.5 X R0.3	3	10	60	4
2DCR 015 003 150	1.5 X R0.3	3	15	60	4
2DCR 015 003 200	1.5 X R0.3	3	20	60	4
2DCR 020 0005 035	2 X R0.05	3.5	-	60	4
2DCR 020 0005 060	2 X R0.05	3.5	6	60	4
2DCR 020 0005 120	2 X R0.05	3.5	12	60	4
2DCR 020 0005 180	2 X R0.05	3.5	18	60	4
2DCR 020 0005 250	2 X R0.05	3.5	25	60	4
2DCR 020 0005 300	2 X R0.05	3.5	30	60	4
2DCR 020 002 035	2 X R0.2	3.5	-	60	4
2DCR 020 002 060	2 X R0.2	3.5	6	60	4
2DCR 020 002 120	2 X R0.2	3.5	12	60	4
2DCR 020 002 180	2 X R0.2	3.5	18	60	4
2DCR 020 002 250	2 X R0.2	3.5	25	60	4
2DCR 020 002 300	2 X R0.2	3.5	30	60	4
2DCR 020 003 035	2 X R0.3	3.5	-	60	4
2DCR 020 003 060	2 X R0.3	3.5	6	60	4
2DCR 020 003 120	2 X R0.3	3.5	12	60	4
2DCR 020 003 180	2 X R0.3	3.5	18	60	4
2DCR 020 003 250	2 X R0.3	3.5	25	60	4
2DCR 020 003 300	2 X R0.3	3.5	30	60	4
2DCR 020 005 035	2 X R0.5	3.5	-	60	4
2DCR 020 005 060	2 X R0.5	3.5	6	60	4
2DCR 020 005 120	2 X R0.5	3.5	12	60	4
2DCR 020 005 180	2 X R0.5	3.5	18	60	4
2DCR 020 005 250	2 X R0.5	3.5	25	60	4
2DCR 020 005 300	2 X R0.5	3.5	30	60	4
2DCR 030 0005 040	3 X R0.05	4	-	80	4
2DCR 030 0005 100	3 X R0.05	4	10	80	4
2DCR 030 0005 200	3 X R0.05	4	20	80	4
2DCR 030 0005 300	3 X R0.05	4	30	80	4
2DCR 030 0005 400	3 X R0.05	4	40	80	4
2DCR 030 002 040	3 X R0.2	4	-	80	4
2DCR 030 002 100	3 X R0.2	4	10	80	4

Unità : mm

Numero d'Ordine	D x R	L1	L2	L	d
2DCR 030 002 200	3 X R0.2	4	20	80	4
2DCR 030 002 300	3 X R0.2	4	30	80	4
2DCR 030 002 400	3 X R0.2	4	40	80	4
2DCR 030 003 040	3 X R0.3	4	-	80	4
2DCR 030 003 100	3 X R0.3	4	10	80	4
2DCR 030 003 200	3 X R0.3	4	20	80	4
2DCR 030 003 300	3 X R0.3	4	30	80	4
2DCR 030 003 400	3 X R0.3	4	40	80	4
2DCR 030 005 040	3 X R0.5	4	-	80	4
2DCR 030 005 100	3 X R0.5	4	10	80	4
2DCR 030 005 200	3 X R0.5	4	20	80	4
2DCR 030 005 300	3 X R0.5	4	30	80	4
2DCR 030 005 400	3 X R0.5	4	40	80	4
2DCR 030 010 040	3 X R1	4	-	80	4
2DCR 030 010 100	3 X R1	4	10	80	4
2DCR 030 010 200	3 X R1	4	20	80	4
2DCR 030 010 300	3 X R1	4	30	80	4
2DCR 030 010 400	3 X R1	4	40	80	4
2DCR 040 0005 050	4 X R0.05	5	-	80	4
2DCR 040 0005 150	4 X R0.05	5	15	80	4
2DCR 040 0005 250	4 X R0.05	5	25	80	4
2DCR 040 0005 400	4 X R0.05	5	40	80	4
2DCR 040 002 050	4 X R0.2	5	-	80	4
2DCR 040 002 150	4 X R0.2	5	15	80	4
2DCR 040 002 250	4 X R0.2	5	25	80	4
2DCR 040 002 400	4 X R0.2	5	40	80	4
2DCR 040 005 050	4 X R0.5	5	-	80	4
2DCR 040 005 150	4 X R0.5	5	15	80	4
2DCR 040 005 250	4 X R0.5	5	25	80	4
2DCR 040 005 400	4 X R0.5	5	40	80	4
2DCR 040 010 050	4 X R1	5	-	80	4
2DCR 040 010 150	4 X R1	5	15	80	4
2DCR 040 010 250	4 X R1	5	25	80	4
2DCR 040 010 400	4 X R1	5	40	80	4
2DCR 050 0005 060	5 X R0.05	6	-	110	6
2DCR 050 0005 150	5 X R0.05	6	15	110	6
2DCR 050 0005 300	5 X R0.05	6	30	110	6
2DCR 050 0005 500	5 X R0.05	6	50	110	6
2DCR 050 002 060	5 X R0.2	6	-	110	6
2DCR 050 002 150	5 X R0.2	6	15	110	6
2DCR 050 002 300	5 X R0.2	6	30	110	6
2DCR 050 002 500	5 X R0.2	6	50	110	6
2DCR 050 005 060	5 X R0.5	6	-	110	6
2DCR 050 005 150	5 X R0.5	6	15	110	6
2DCR 050 005 300	5 X R0.5	6	30	110	6
2DCR 050 005 500	5 X R0.5	6	50	110	6
2DCR 060 0005 070	6 X R0.05	7	-	110	6
2DCR 060 0005 200	6 X R0.05	7	20	110	6
2DCR 060 0005 300	6 X R0.05	7	30	110	6
2DCR 060 0005 500	6 X R0.05	7	50	110	6
2DCR 060 002 070	6 X R0.2	7	-	110	6
2DCR 060 002 200	6 X R0.2	7	20	110	6
2DCR 060 002 300	6 X R0.2	7	30	110	6
2DCR 060 002 500	6 X R0.2	7	50	110	6
2DCR 060 005 070	6 X R0.5	7	-	110	6
2DCR 060 005 200	6 X R0.5	7	20	110	6
2DCR 060 005 300	6 X R0.5	7	30	110	6
2DCR 060 005 500	6 X R0.5	7	50	110	6
2DCR 060 010 070	6 X R1	7	-	110	6
2DCR 060 010 200	6 X R1	7	20	110	6
2DCR 060 010 300	6 X R1	7	30	110	6
2DCR 060 010 500	6 X R1	7	50	110	6

4DCR Fresa Torica 4 Tagli Diamond



- **Fresa per grafite, plastiche caricate, fibre di carbonio e materiali non ferrosi.**
- Il nuovo rivestimento CVD Diamond garantisce un eccellente resistenza all'usura.
- Ampia gamma di prodotti per le più svariate esigenze con redimenti eccellenti.

4 | WC 미립자 | DIA. Coating | R ±0.005 R0.05 ~ 0.5 | R ±0.01 R1 | 30° Helix Angle | € List. p.106 | i info p.228

D	Tolleranza
ø2 ~ 5	+0 ~ -0.01mm
ø6	-0.005 ~ -0.015mm

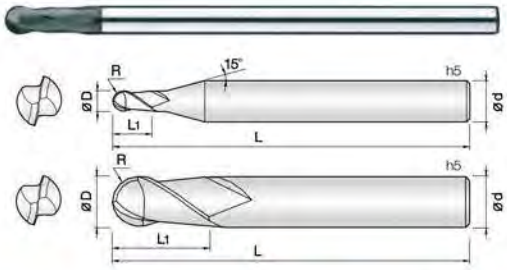
Unità : mm

FOR GRAPHITE

Numero d'Ordine	D×R	L1	L2	L	d
4DCR 020 0005 035	2 X R0.05	3.5	-	60	4
4DCR 020 0005 060	2 X R0.05	3.5	6	60	4
4DCR 020 0005 120	2 X R0.05	3.5	12	60	4
4DCR 020 0005 180	2 X R0.05	3.5	18	60	4
4DCR 020 0005 250	2 X R0.05	3.5	25	60	4
4DCR 020 0005 300	2 X R0.05	3.5	30	60	4
4DCR 020 002 035	2 X R0.2	3.5	-	60	4
4DCR 020 002 060	2 X R0.2	3.5	6	60	4
4DCR 020 002 120	2 X R0.2	3.5	12	60	4
4DCR 020 002 180	2 X R0.2	3.5	18	60	4
4DCR 020 002 250	2 X R0.2	3.5	25	60	4
4DCR 020 002 300	2 X R0.2	3.5	30	60	4
4DCR 020 003 035	2 X R0.3	3.5	-	60	4
4DCR 020 003 060	2 X R0.3	3.5	6	60	4
4DCR 020 003 120	2 X R0.3	3.5	12	60	4
4DCR 020 003 180	2 X R0.3	3.5	18	60	4
4DCR 020 003 250	2 X R0.3	3.5	25	60	4
4DCR 020 003 300	2 X R0.3	3.5	30	60	4
4DCR 020 005 035	2 X R0.5	3.5	-	60	4
4DCR 020 005 060	2 X R0.5	3.5	6	60	4
4DCR 020 005 120	2 X R0.5	3.5	12	60	4
4DCR 020 005 180	2 X R0.5	3.5	18	60	4
4DCR 020 005 250	2 X R0.5	3.5	25	60	4
4DCR 020 005 300	2 X R0.5	3.5	30	60	4
4DCR 030 0005 040	3 X R0.05	4	-	80	4
4DCR 030 0005 100	3 X R0.05	4	10	80	4
4DCR 030 0005 200	3 X R0.05	4	20	80	4
4DCR 030 0005 300	3 X R0.05	4	30	80	4
4DCR 030 0005 400	3 X R0.05	4	40	80	4
4DCR 030 002 040	3 X R0.2	4	-	80	4
4DCR 030 002 100	3 X R0.2	4	10	80	4
4DCR 030 002 200	3 X R0.2	4	20	80	4
4DCR 030 002 300	3 X R0.2	4	30	80	4
4DCR 030 002 400	3 X R0.2	4	40	80	4
4DCR 030 003 040	3 X R0.3	4	-	80	4
4DCR 030 003 100	3 X R0.3	4	10	80	4
4DCR 030 003 200	3 X R0.3	4	20	80	4
4DCR 030 003 300	3 X R0.3	4	30	80	4
4DCR 030 003 400	3 X R0.3	4	40	80	4
4DCR 030 005 040	3 X R0.5	4	-	80	4
4DCR 030 005 100	3 X R0.5	4	10	80	4
4DCR 030 005 200	3 X R0.5	4	20	80	4
4DCR 030 005 300	3 X R0.5	4	30	80	4
4DCR 030 005 400	3 X R0.5	4	40	80	4
4DCR 030 010 040	3 X R1	4	-	80	4
4DCR 030 010 100	3 X R1	4	10	80	4
4DCR 030 010 200	3 X R1	4	20	80	4
4DCR 030 010 300	3 X R1	4	30	80	4

Numero d'Ordine	D×R	L1	L2	L	d
4DCR 030 010 400	3 X R1	4	40	80	4
4DCR 040 003 100	4 X R0.3	6	20	100	4
4DCR 040 005 100	4 X R0.5	6	20	100	4
4DCR 040 010 100	4 X R1	6	20	100	4
4DCR 060 003 110	6 X R0.3	9	25	110	6
4DCR 060 005 110	6 X R0.5	9	25	110	6
4DCR 060 005 150	6 X R0.5	9	30	150	6
4DCR 060 010 110	6 X R1	9	25	110	6
4DCR 060 010 150	6 X R1	9	30	150	6
4DCR 080 003 110	8 X R0.3	12	30	110	8
4DCR 080 005 110	8 X R0.5	12	30	110	8
4DCR 080 005 150	8 X R0.5	12	40	150	8
4DCR 080 010 110	8 X R1	12	30	110	8
4DCR 080 010 150	8 X R1	12	40	150	8
4DCR 100 005 110	10 X R0.5	15	35	110	10
4DCR 100 005 160	10 X R0.5	15	45	160	10
4DCR 100 010 110	10 X R1	15	35	110	10
4DCR 100 010 160	10 X R1	15	45	160	10
4DCR 120 005 110	12 X R0.5	18	40	110	12
4DCR 120 005 160	12 X R0.5	18	45	160	12
4DCR 120 010 110	12 X R1	18	40	110	12
4DCR 120 010 160	12 X R1	18	45	160	12

2CPB Fresa Emisferica per Compositi



- **Fresa per fibre di vetro e di carbonio, CFRP, rame, leghe di rame e materiali non ferrosi.**
- Eccellente rendimento su vari materiali compositi.
- La durezza e lo spessore del rivestimento conferiscono un'ottima resistenza all'usura.
- Elevata resistenza del filo tagliente grazie al basso coefficiente di attrito del nuovo rivestimento diamante.

2 | WC 미립자 | NANO DIA. Coating | R ±0.005 (0.25 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.107

D	Tolleranza
Ø0.5 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

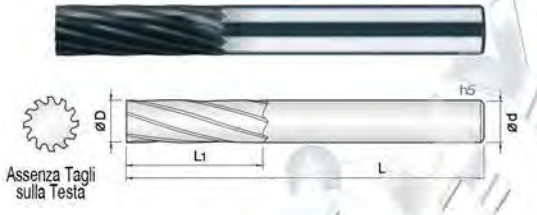
Numero d'Ordine	R×D	L1	L	d
2CPB 005 010 S04	0.25R X 0.5	1	50	4
2CPB 006 012 S04	0.3R X 0.6	1.2	50	4
2CPB 008 020 S04	0.4R X 0.8	2	50	4
2CPB 010 025 S04	0.5R X 1	2.5	50	4
2CPB 015 040 S04	0.75R X 1.5	4	50	4
2CPB 020 050 S04	1R X 2	5	50	4
2CPB 025 060 S04	1.25R X 2.5	6	50	4
2CPB 030 080 S06	1.5R X 3	8	60	6
2CPB 040 080 S06	2R X 4	8	70	6
2CPB 050 100 S06	2.5R X 5	10	80	6

Numero d'Ordine	R×D	L1	L	d
2CPB 060 120 080	3R X 6	12	80	6
2CPB 060 120 110	3R X 6	12	110	6
2CPB 080 140 080	4R X 8	14	80	8
2CPB 080 140 110	4R X 8	14	110	8
2CPB 100 180 080	5R X 10	18	80	10
2CPB 100 180 110	5R X 10	18	110	10
2CPB 120 220 080	6R X 12	22	80	12
2CPB 120 220 110	6R X 12	22	110	12

FOR COMPOSITE

8~12CPE Fresa 8/12 Tagli per Finitura Compositi

New



- **Fresa per fibre di vetro e di carbonio, CFRP, rame, leghe di rame e materiali non ferrosi.**
- Eccellente rendimento su vari materiali compositi.
- La durezza e lo spessore del rivestimento conferiscono un'ottima resistenza all'usura.
- Elevata resistenza del filo tagliente grazie al basso coefficiente di attrito del nuovo rivestimento diamante.

8 ~ 12 | WC 미립자 | NANO DIA. Coating | D -0.01 ~ -0.025 (Ø6~Ø12) | 15° Helix Angle | € List. p.108

D	Tolleranza
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L	d
8CPE 060 180 080	6	18	80	6
10CPE 080 240 080	8	24	80	8
12CPE 100 300 100	10	30	100	10
12CPE 120 360 100	12	36	100	12

3&4&6CPR — Fresa Elica Convergente per Compositi



- **Fresa per fibre di vetro e di carbonio, CFRP, rame, leghe di rame e materiali non ferrosi.**
- Stabilità del pezzo lavorato grazie all'elica convergente in lavorazioni di spallamento.
- La durezza e lo spessore del rivestimento conferiscono un'ottima resistenza all'usura.
- Elevata resistenza del filo tagliente grazie al basso coefficiente di attrito del nuovo rivestimento diamante.

3 4 6 | WC 미립자 | TDLC Coating (3F) | NANO DIA. Coating (4F, 6F) | D -0.01~-0.025 (Ø6~Ø12) | 30° Helix Angle | Rinforzato | List. p.108 | info p.229

D	Tolleranza
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine Rivestimento Diamond	D	L1	L2	L	d
3CPR 060 200 S06	6	5	20	70	6
3CPR 080 250 S08	8	5	25	80	8
3CPR 100 270 S10	10	6	27	80	10
3CPR 120 300 S12	12	6	30	80	12

Numero d'Ordine Rivestimento Diamond	D	L1	L2	L	d
4CPR 060 200 S06	6	5	20	70	6
6CPR 080 250 S08	8	5	25	80	8
6CPR 100 270 S10	10	6	27	80	10
6CPR 120 300 S12	12	6	30	80	12

FOR COMPOSITE

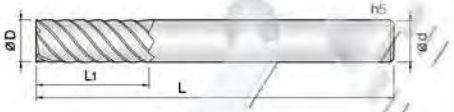
8~16CPO — Fresa a Sgrossare per Compositi

A Type



B Type





- **Fresa per fibre di vetro e di carbonio, CFRP, rame, leghe di rame e materiali non ferrosi.**
- Stabilità del pezzo lavorato grazie all'elica convergente in lavorazioni di spallamento.
- La durezza e lo spessore del rivestimento conferiscono un'ottima resistenza all'usura.
- Elevata resistenza del filo tagliente grazie al basso coefficiente di attrito del nuovo rivestimento diamante.

8 ~ 16 | WC 미립자 | NANO DIA. Coating | D +0~-0.01 (Ø4~Ø5) | D -0.01~-0.025 (Ø6~Ø12) | 30° Helix Angle | Rinforzato | List. p.108 | info p.229

D	Tolleranza
Ø4 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

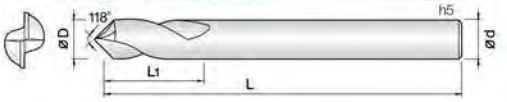
Unità : mm

Numero d'Ordine	D	L1	L		d
8CPOA 040 160 S04	4	16	60	A	4
8CPOB 040 160 S04	4	16	60	B	4
10CPOA 050 200 S06	5	20	60	A	6
10CPOB 050 200 S06	5	20	60	B	6
10CPOA 060 200 S06	6	20	70	A	6
10CPOB 060 200 S06	6	20	70	B	6
12CPOA 080 250 S08	8	25	80	A	8
12CPOB 080 250 S08	8	25	80	B	8

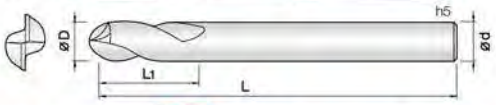
Numero d'Ordine	D	L1	L		d
14CPOA 100 270 S10	10	27	80	A	10
14CPOB 100 270 S10	10	27	80	B	10
16CPOA 120 300 S12	12	30	80	A	12
16CPOB 120 300 S12	12	30	80	B	12

2DDC Punta 2 Tagli per Materiali Compositi

A Type



B Type



- **Punta per fibre di vetro e di carbonio, CFRP, rame, leghe di rame e materiali non ferrosi.**
- Eccellente rendimento su vari materiali compositi.
- La durezza e lo spessore del rivestimento conferiscono un'ottima resistenza all'usura.
- Elevata resistenza del filo tagliente grazie al basso coefficiente di attrito del nuovo rivestimento diamante.

2 | WC 미립자 | NANO DIA. Coating | +0~-0.01 Ø2~Ø5.5 | -0.005~-0.015 Ø6~Ø12 | 20° Helix Angle | € List. p.108 | i info p.229

D	Tolleranza
Ø2 ~ 5.5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	D	L1	L		d
2DDCA 020 160 S04	2	16	60	A	4
2DDCA 023 180 S04	2.3	18	60	A	4
2DDCA 025 200 S04	2.5 X M3	20	60	A	4
2DDCA 030 220 S04	3	22	60	A	4
2DDCA 033 230 S04	3.3 X M4	23	60	A	4
2DDCA 035 270 S04	3.5	27	60	A	4
2DDCA 040 300 S04	4	30	60	A	4
2DDCA 042 300 S06	4.2 X M5	30	80	A	6
2DDCA 045 330 S06	4.5	33	80	A	6
2DDCA 050 360 S06	5 X M6	36	80	A	6
2DDCA 055 380 S06	5.5	38	80	A	6
2DDCA 060 380 S06	6	38	80	A	6
2DDCA 065 450 S08	6.5	45	90	A	8
2DDCA 068 450 S08	6.8 X M8	45	90	A	8
2DDCA 070 450 S08	7	45	90	A	8
2DDCA 075 480 S08	7.5	48	90	A	8
2DDCA 080 480 S08	8	48	90	A	8
2DDCA 085 510 S10	8.5 X M10	51	110	A	10
2DDCA 090 540 S10	9	54	110	A	10
2DDCA 095 540 S10	9.5	54	110	A	10
2DDCA 100 600 S10	10	60	110	A	10
2DDCA 103 600 S12	10.3 X M12	60	110	A	12
2DDCA 105 600 S12	10.5	60	110	A	12
2DDCA 110 650 S12	11	65	110	A	12
2DDCA 115 650 S12	11.5	65	110	A	12
2DDCA 120 700 S12	12	70	120	A	12

Numero d'Ordine	D	L1	L		d
2DDCB 020 160 S04	2	16	60	B	4
2DDCB 023 180 S04	2.3	18	60	B	4
2DDCB 025 200 S04	2.5 X M3	20	60	B	4
2DDCB 030 220 S04	3	22	60	B	4
2DDCB 033 230 S04	3.3 X M4	23	60	B	4
2DDCB 035 270 S04	3.5	27	60	B	4
2DDCB 040 300 S04	4	30	60	B	4
2DDCB 042 300 S06	4.2 X M5	30	80	B	6
2DDCB 045 330 S06	4.5	33	80	B	6
2DDCB 050 360 S06	5 X M6	36	80	B	6
2DDCB 055 380 S06	5.5	38	80	B	6
2DDCB 060 380 S06	6	38	80	B	6
2DDCB 065 450 S08	6.5	45	90	B	8
2DDCB 068 450 S08	6.8 X M8	45	90	B	8
2DDCB 070 450 S08	7	45	90	B	8
2DDCB 075 480 S08	7.5	48	90	B	8
2DDCB 080 480 S08	8	48	90	B	8
2DDCB 085 510 S10	8.5 X M10	51	110	B	10
2DDCB 090 540 S10	9	54	110	B	10
2DDCB 095 540 S10	9.5	54	110	B	10
2DDCB 100 600 S10	10	60	110	B	10
2DDCB 103 600 S12	10.3 X M12	60	110	B	12
2DDCB 105 600 S12	10.5	60	110	B	12
2DDCB 110 650 S12	11	65	110	B	12
2DDCB 115 650 S12	11.5	65	110	B	12
2DDCB 120 700 S12	12	70	120	B	12

FOR COMPOSITE

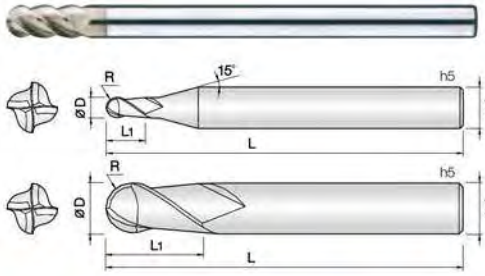
■ **Vantaggi punta di tipo B**

Esempi



2DDCB Concorrenti

4SUB Fresa Emisferica 4 Tagli 45°



- **Fresa per acciai legati, inossidabili, leghe Ti/Ni, inconel e materiali di difficile lavorazione.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- La geometria SUS a 4 taglienti consente eccellenti finiture.
- Riduzione di rotture ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 μm)

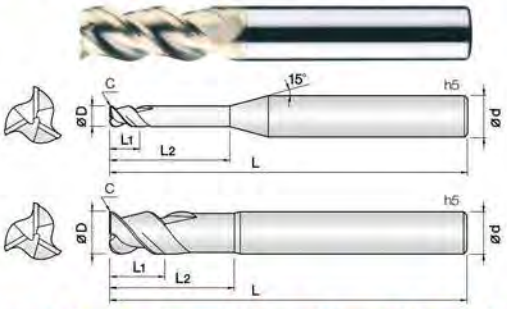
4 | WC 미립자 | JMAX Coating | R ±0.005 (1.5 ~ 2.5R) | R ±0.01 (3 ~ 6R) | R ±0.015 (8R) | 45° Helix Angle | List. p.109 | info p.231

D	Tolleranza
Ø3 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm
Ø16	−0.01 ~ −0.02mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
4SUB 030 080 S06	1.5R X 3	8	60	6
4SUB 040 080 S06	2R X 4	8	70	6
4SUB 050 100 S06	2.5R X 5	10	80	6
4SUB 060 120 S06	3R X 6	12	90	6
4SUB 080 140 S08	4R X 8	14	100	8
4SUB 100 180 S10	5R X 10	18	100	10
4SUB 120 220 S12	6R X 12	22	110	12
4SUB 160 300 S16	8R X 16	30	130	16

3SUE — Fresa Cilindrica 3 Tagli 45°



- **Fresa per acciai legati, inossidabili, leghe Ti/Ni, inconel e materiali di difficile lavorazione.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- La geometria SUS a 4 taglienti consente eccellenti finiture.
- Elica a 45° progettata per alte velocità e avanzamenti.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm)

3 | WC 미립자 | JMAX Coating | D +0~-0.01 Ø0.8 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø16 ~ 20 | 45° Helix Angle | Taglio C | € List. p.109 | i info p.232

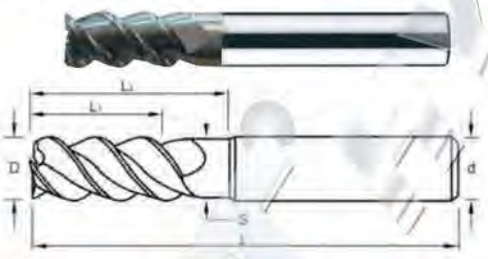
D	Tolleranza
Ø0.8 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16 ~ 20	-0.015 ~ -0.03mm

Unità : mm

	Numero d'Ordine	D	L1	L2	L	d
	3SUE 008 020 S04	0.8	2	-	45	4
New	3SUE 008 040 S06	0.8	2	4	45	6
	3SUE 010 025 S04	1	2.5	-	45	4
	3SUE 010 025 S06	1	2.5	-	45	6
New	3SUE 010 040 S06	1	2.5	4	45	6
	3SUE 012 030 S04	1.2	3	-	45	4
	3SUE 012 030 S06	1.2	3	-	45	6
New	3SUE 012 060 S06	1.2	3	6	45	6
	3SUE 015 040 S04	1.5	4	-	45	4
	3SUE 015 040 S06	1.5	4	-	45	6
New	3SUE 015 060 S06	1.5	4	6	45	6
	3SUE 020 050 S04	2	5	-	45	4
	3SUE 020 050 S06	2	5	-	45	6
New	3SUE 020 080 S06	2	5	8	45	6
	3SUE 030 080 S04	3		-	45	4
	3SUE 030 080 S06	3	8	-	45	6

	Numero d'Ordine	D	L1	L2	L	d
New	3SUE 030 150 S06	3		15	45	6
	3SUE 040 100 S04	4	10	-	50	4
	3SUE 040 100 S06	4	10	-	50	6
New	3SUE 040 150 S06	4	10	15	50	6
	3SUE 050 120 S06	5	12	-	50	6
	3SUE 060 120 S06	6	12	-	50	6
New	3SUE 060 200 S06	6	12	20	60	6
	3SUE 080 190 S08	8	19	-	60	8
New	3SUE 080 260 S08	8	26	26	60	8
	3SUE 100 220 S10	10	22	-	70	10
New	3SUE 100 320 S10	10	22	32	70	10
	3SUE 120 260 S12	12	26	-	80	12
New	3SUE 120 380 S12	12	26	38	80	12
	3SUE 160 360 S16	16	36	-	100	16
New	3SUE 160 450 S16	16	36	45	100	16
New	3SUE 200 550 S20	20	38	55	110	20

3SUEC — Fresa Cilindrica 3 Tagli ad Elica Variabile



- **Fresa per acciai legati, inossidabili, leghe Ti/Ni, inconel e materiali di difficile lavorazione.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Notevole riduzione delle vibrazioni grazie alla nuova geometria e all'elica variabile.

3 | UWC 초미립자 | JMAX Coating | D -0.01~-0.03 Ø4~ Ø9 | D -0.01~-0.04 Ø10~ Ø20 | 54° Helix Angle | 55° Helix Angle | 56° Helix Angle | € List. p.110

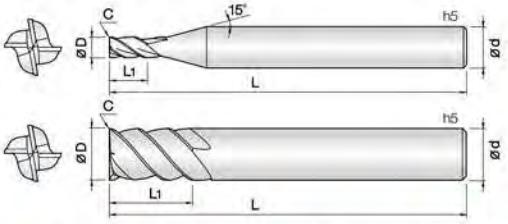
D	Tolleranza
D ≦ ø5	+0 ~ -0,01mm
D > ø5	+0 ~ -0,02mm

Unità : mm

Numero d'Ordine	D	L1	L2	L	s	d
3SUEC 030 080 140	3	8	14	60	2,8	6
3SUEC 040 110 160	4	11	16	60	3,8	6
3SUEC 050 130 180	5	13	18	60	4,8	6
3SUEC 060 130 190	6	13	19	60	5,7	6
3SUEC 080 190 250	8	19	25	70	7,6	8
3SUEC 100 220 300	10	22	30	75	9,5	10
3SUEC 120 260 360	12	26	36	80	11,5	12
3SUEC 140 260 380	14	26	38	83	13,5	14
3SUEC 160 320 420	16	32	42	90	15,5	16

4SUE — Fresa Cilindrica 4 Tagli 42° Asimmetrica





- **Fresa per acciai legati, inossidabili, leghe Ti/Ni, inconel e materiali di difficile lavorazione.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Riduzione delle vibrazioni grazie all'elica asimmetrica.
- La geometria SUS a 4 taglienti consente eccellenti finiture.
- Riduzione di rotture ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | WC 미립자 | JMAX Coating | D +0~-0.01 Ø1~5 | D -0.01~-0.025 Ø6~12 | D -0.015~-0.03 Ø16~20 | 42° Helix Angle | Taglio C | € List. p.110 | i info p.230

D	Tolleranza
Ø1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16 ~ 20	-0.015 ~ -0.03mm

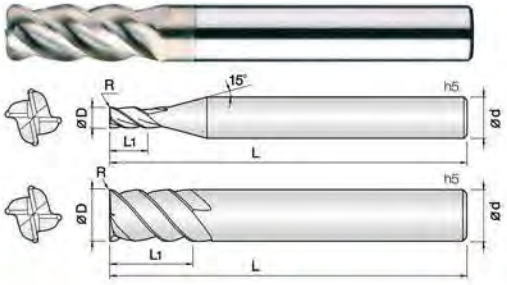
Unità : mm

Numero d'Ordine	D	L1	L	d
4SUE 010 015 S04	1	1.5	50	4
4SUE 010 025 S04	1	2.5	50	4
New 4SUE 010 035 S04	1	3.5	50	4
4SUE 015 025 S04	1.5	2.5	50	4
4SUE 015 040 S04	1.5	4	50	4
New 4SUE 015 055 S04	1.5	5.5	50	4
4SUE 020 030 S04	2	3	50	4
4SUE 020 060 S04	2	6	50	4
New 4SUE 020 080 S04	2	8	50	4
4SUE 025 035 S04	2.5	3.5	50	4
4SUE 025 080 S04	2.5	8	50	4
4SUE 030 045 S06	3	4.5	60	6
4SUE 030 100 S06	3	10	60	6
New 4SUE 030 120 S06	3	12	60	6
4SUE 040 060 S06	4	6	60	6
4SUE 040 120 S06	4	12	60	6
New 4SUE 040 160 S06	4	16	60	6
4SUE 050 075 S06	5	7.5	60	6
4SUE 050 150 S06	5	15	60	6
New 4SUE 050 200 S06	5	20	60	6
4SUE 060 090 S06	6	9	60	6
4SUE 060 150 S06	6	15	60	6
4SUE 060 180 S06	6	18	60	6
New 4SUE 060 250 S06	6	25	65	6
4SUE 070 110 S08	7	11	70	8
4SUE 070 180 S08	7	18	70	8
4SUE 070 210 S08	7	21	70	8
4SUE 080 120 S08	8	12	70	8
4SUE 080 200 S08	8	20	70	8
4SUE 080 240 S08	8	24	70	8
New 4SUE 080 300 S08	8	30	80	8
4SUE 090 140 S10	9	14	80	10
4SUE 090 220 S10	9	22	80	10
4SUE 090 270 S10	9	27	80	10
4SUE 100 150 S10	10	15	80	10
4SUE 100 250 S10	10	25	80	10
4SUE 100 300 S10	10	30	80	10
New 4SUE 100 400 S10	10	40	90	10
New 4SUE 100 500 S10	10	50	100	10
4SUE 110 170 S12	11	17	90	12
4SUE 110 220 S12	11	22	90	12
4SUE 110 330 S12	11	33	90	12
4SUE 120 180 S12	12	18	90	12
4SUE 120 300 S12	12	30	90	12
4SUE 120 360 S12	12	36	90	12
New 4SUE 120 500 S12	12	50	100	12
New 4SUE 120 600 S12	12	60	110	12
4SUE 160 240 S16	16	24	100	16

Numero d'Ordine	D	L1	L	d
4SUE 160 350 S16	16	35	100	16
New 4SUE 160 500 S16	16	50	110	16
4SUE 200 300 S20	20	30	100	20
4SUE 200 400 S20	20	40	100	20
New 4SUE 200 600 S20	20	60	120	20

FOR SUS

4SUC Fresa Torica 4 Tagli 42° Asimmetrica



- **Fresa per acciai legati, inossidabili, leghe Ti/Ni, inconel e materiali di difficile lavorazione.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Riduzione delle vibrazioni grazie all'elica asimmetrica.
- Lo spigolo raggiato previene scheggiature.
- Riduzione di rotture ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 μm)

4 | WC 미립자 | JMAX Coating | R ±0.005 R0.1 ~ 0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 3 | 42° Helix Angle | € List. p.111 | i info p.230

D	Tolleranza
Ø1 ~ 5.5	+0~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16 ~ 20	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	D×R	L1	L	d
New 4SUC 010 001 S04	1 X R0.1	2.5	50	4
New 4SUC 010 002 S04	1 X R0.2	2.5	50	4
New 4SUC 012 001 S04	1.2 X R0.1	3	50	4
New 4SUC 012 002 S04	1.2 X R0.2	3	50	4
New 4SUC 015 001 S04	1.5 X R0.1	4	50	4
New 4SUC 015 002 S04	1.5 X R0.2	4	50	4
New 4SUC 015 003 S04	1.5 X R0.3	4	50	4
New 4SUC 020 001 S04	2 X R0.1	6	50	4
New 4SUC 020 002 S04	2 X R0.2	6	50	4
New 4SUC 020 003 S04	2 X R0.3	6	50	4
New 4SUC 020 005 S04	2 X R0.5	6	50	4
New 4SUC 025 001 S04	2.5 X R0.1	7	50	4
New 4SUC 025 002 S04	2.5 X R0.2	7	50	4
New 4SUC 025 003 S04	2.5 X R0.3	7	50	4
New 4SUC 030 001 S06	3 X R0.1	10	60	6
New 4SUC 030 002 055	3 X R0.2	6	55	6
4SUC 030 002 S06	3 X R0.2	10	60	6
New 4SUC 030 003 S06	3 X R0.3	10	60	6
New 4SUC 030 005 055	3 X R0.5	6	55	6
4SUC 030 005 S06	3 X R0.5	10	60	6
4SUC 035 002 S06	3.5 X R0.2	10	60	6
New 4SUC 040 001 S06	4 X R0.1	12	60	6
New 4SUC 040 002 055	4 X R0.2	8	55	6
4SUC 040 002 S06	4 X R0.2	12	60	6
New 4SUC 040 003 S06	4 X R0.3	12	60	6
New 4SUC 040 005 055	4 X R0.5	8	55	6
4SUC 040 005 S06	4 X R0.5	12	60	6
New 4SUC 040 010 S06	4 X R1	12	60	6
4SUC 045 002 S06	4.5 X R0.2	14	60	6
New 4SUC 050 002 055	5 X R0.2	10	55	6
4SUC 050 002 S06	5 X R0.2	15	60	6
New 4SUC 050 003 S06	5 X R0.3	15	60	6
New 4SUC 050 005 055	5 X R0.5	10	55	6
4SUC 050 005 S06	5 X R0.5	15	60	6
New 4SUC 050 010 S06	5 X R1	15	60	6
4SUC 055 002 S06	5.5 X R0.2	15	60	6
New 4SUC 060 003 055	6 X R0.3	12	55	6
4SUC 060 003 S06	6 X R0.3	15	60	6
New 4SUC 060 005 055	6 X R0.5	12	55	6
4SUC 060 005 S06	6 X R0.5	15	60	6
New 4SUC 060 010 055	6 X R1	12	55	6
4SUC 060 010 S06	6 X R1	15	60	6
4SUC 065 003 S08	6.5 X R0.3	18	60	8
4SUC 070 003 S08	7 X R0.3	20	80	8
New 4SUC 080 003 070	8 X R0.3	16	70	8
4SUC 080 003 S08	8 X R0.3	20	80	8
New 4SUC 080 005 070	8 X R0.5	16	70	8
4SUC 080 005 S08	8 X R0.5	20	80	8

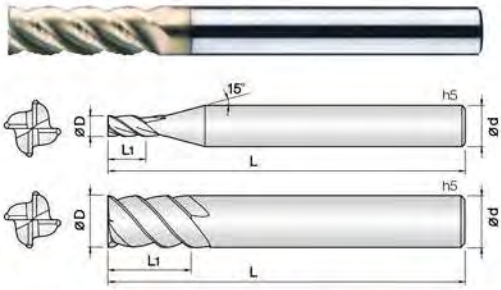
Numero d'Ordine	D×R	L1	L	d
New 4SUC 080 010 070	8 X R1	16	70	8
4SUC 080 010 S08	8 X R1	20	80	8
4SUC 085 003 S10	8.5 X R0.3	22	80	10
4SUC 090 003 S10	9 X R0.3	25	80	10
New 4SUC 100 003 070	10 X R0.3	20	70	10
4SUC 100 003 S10	10 X R0.3	25	80	10
New 4SUC 100 005 070	10 X R0.5	20	70	10
4SUC 100 005 S10	10 X R0.5	25	80	10
New 4SUC 100 010 070	10 X R1	20	70	10
4SUC 100 010 S10	10 X R1	25	80	10
New 4SUC 100 015 070	10 X R1.5	20	70	10
4SUC 100 015 S10	10 X R1.5	25	80	10
New 4SUC 100 020 070	10 X R2	20	70	10
4SUC 100 020 S10	10 X R2	25	80	10
New 4SUC 100 025 070	10 X R2.5	20	70	10
New 4SUC 100 025 S10	10 X R2.5	25	80	10
New 4SUC 100 030 070	10 X R3	20	70	10
New 4SUC 100 030 S10	10 X R3	25	80	10
New 4SUC 120 003 080	12 X R0.3	24	80	12
New 4SUC 120 003 S12	12 X R0.3	30	100	12
New 4SUC 120 005 080	12 X R0.5	24	80	12
4SUC 120 005 S12	12 X R0.5	30	100	12
New 4SUC 120 010 080	12 X R1	24	80	12
4SUC 120 010 S12	12 X R1	30	100	12
New 4SUC 120 015 080	12 X R1.5	24	80	12
4SUC 120 015 S12	12 X R1.5	30	100	12
New 4SUC 120 020 080	12 X R2	24	90	12
4SUC 120 020 S12	12 X R2	30	100	12
4SUC 120 025 S12	12 X R2.5	30	100	12
New 4SUC 120 030 080	12 X R3	24	90	12
4SUC 120 030 S12	12 X R3	30	100	12
New 4SUC 160 005 100	16 X R0.5	32	100	16
4SUC 160 005 S16	16 X R0.5	42	110	16
New 4SUC 160 010 100	16 X R1	32	100	16
4SUC 160 010 S16	16 X R1	42	110	16
4SUC 200 005 S20	20 X R0.5	48	110	20
4SUC 200 010 S20	20 X R1	48	110	20

FOR SUS

3&4&5SUR

Fresa Cilindrica a 3/4/5 Tagli 45° a sgrossare

New



- **Fresa per acciai legati, inossidabili, leghe Ti/Ni, inconel e materiali di difficile lavorazione.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Elica a 45° progettata per alte velocità e avanzamenti.
- Lo spigolo raggiato previene scheggiature.
- Riduzione di rotture ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 μm)

3 4 5 WC 미립자 JMAX Coating D −0.02~−0.04 Ø3~Ø9 D −0.02~−0.05 Ø10~Ø20 45° Helix Angle

List. p.112

info p.231

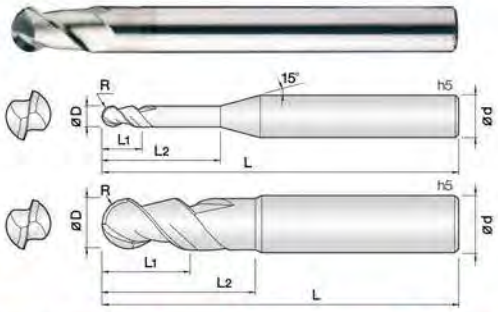
D	Tolleranza
Ø3 ~ 9	−0.02 ~ −0.04mm
Ø10 ~ 20	−0.02 ~ −0.05mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
3SUR 030 002 S06	3 X R0.2	8	-	50	6
3SUR 040 002 S06	4 X R0.2	10	-	50	6
4SUR 050 002 S06	5 X R0.2	13	-	50	6
4SUR 060 002 200	6 X R0.2	10	20	60	6
4SUR 060 002 S06	6 X R0.2	13	-	60	6
4SUR 060 005 S06	6 X R0.5	13	-	60	6
4SUR 070 002 S08	7X R0.2	18	-	70	8
4SUR 080 002 250	8X R0.2	12	25	70	8
4SUR 080 002 S08	8X R0.2	19	-	70	8
4SUR 080 010 S08	8 X R1	19	-	70	8
4SUR 090 003 S10	9 X R0.3	20	-	70	10
4SUR 100 003 300	10 X R0.3	15	30	75	10
4SUR 100 003 S10	10 X R0.3	22	-	75	10
4SUR 100 010 S10	10 X R1	22	-	75	10
4SUR 110 003 S12	11 X R0.3	25	-	80	12
4SUR 120 003 350	12 X R0.3	20	35	80	12
4SUR 120 003 S12	12 X R0.3	26	-	80	12
4SUR 120 010 S12	12 X R1	26	-	80	12
5SUR 140 005 S16	14 X R0.5	28	-	90	16
5SUR 160 005 100	16 X R0.5	32	-	100	16
5SUR 160 005 110	16 X R0.5	42	-	110	16
5SUR 160 015 100	16 X R1.5	32	-	100	16
5SUR 160 015 110	16 X R1.5	42	-	110	16
5SUR 200 005 100	20 X R0.5	38	-	100	20
5SUR 200 020 110	20 X R2	45	-	110	20
5SUR 200 005 100	20 X R0.5	38	-	100	20
5SUR 200 020 110	20 X R2	45	-	110	20

FOR SUS

2COB Fresa Emisferica 2 Tagli 45° per Rame



- **Fresa per rame, leghe di rame e materiali non ferrosi.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Elica a 45° per lavorazioni in alta velocità.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

2 | WC 미립자 | JMAX Coating | R ±0.005 (0.25 ~ 2.5R) | R ±0.01 (3R ~ 6R) | R ±0.015 (8R) | 45° Helix Angle | € List. p.112 | i info p.232

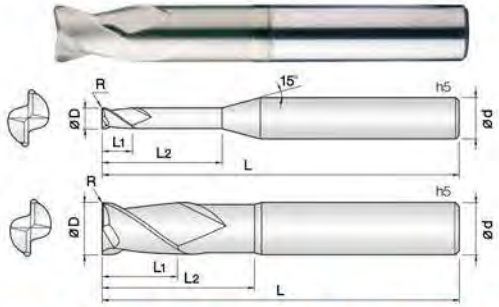
D	Tolleranza
Ø0.5 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
New 2COB 005 010 S04	0.25R X 0.5	0.7	1	45	4
New 2COB 005 020 S04	0.25R X 0.5	0.7	2	45	4
New 2COB 005 030 S04	0.25R X 0.5	0.7	3	45	4
New 2COB 005 040 S04	0.25R X 0.5	0.7	4	45	4
New 2COB 005 050 S04	0.25R X 0.5	0.7	5	45	4
New 2COB 005 060 S04	0.25R X 0.5	0.7	6	45	4
New 2COB 006 020 S04	0.3R X 0.6	0.9	2	45	4
New 2COB 006 030 S04	0.3R X 0.6	0.9	3	45	4
New 2COB 006 040 S04	0.3R X 0.6	0.9	4	45	4
New 2COB 006 050 S04	0.3R X 0.6	0.9	5	45	4
New 2COB 006 060 S04	0.3R X 0.6	0.9	6	45	4
New 2COB 006 080 S04	0.3R X 0.6	0.9	8	45	4
New 2COB 006 100 S04	0.3R X 0.6	0.9	10	45	4
New 2COB 008 020 S04	0.4R X 0.8	1.2	2	45	4
New 2COB 008 030 S04	0.4R X 0.8	1.2	3	45	4
New 2COB 008 040 S04	0.4R X 0.8	1.2	4	45	4
New 2COB 008 060 S04	0.4R X 0.8	1.2	6	45	4
New 2COB 008 080 S04	0.4R X 0.8	1.2	8	45	4
New 2COB 008 100 S04	0.4R X 0.8	1.2	10	45	4
New 2COB 008 120 S04	0.4R X 0.8	1.2	12	45	4
2COB 010 030 S04	0.5R X 1	1.5	3	50	4
2COB 010 050 S04	0.5R X 1	1.5	5	50	4
2COB 010 080 S04	0.5R X 1	1.5	8	50	4
2COB 010 100 S04	0.5R X 1	1.5	10	50	4
2COB 010 120 S04	0.5R X 1	1.5	12	50	4
2COB 010 160 S04	0.5R X 1	1.5	16	50	4
2COB 010 200 S04	0.5R X 1	1.5	20	50	4
New 2COB 012 030 S04	0.6R X 1.2	1.8	3	50	4
New 2COB 012 040 S04	0.6R X 1.2	1.8	4	50	4
New 2COB 012 060 S04	0.6R X 1.2	1.8	6	50	4
New 2COB 012 080 S04	0.6R X 1.2	1.8	8	50	4
New 2COB 012 100 S04	0.6R X 1.2	1.8	10	50	4
New 2COB 012 120 S04	0.6R X 1.2	1.8	12	50	4
2COB 015 050 S04	0.75R X 1.5	2	5	50	4
2COB 015 080 S04	0.75R X 1.5	2	8	50	4
2COB 015 100 S04	0.75R X 1.5	2	10	50	4
2COB 015 120 S04	0.75R X 1.5	2	12	50	4
2COB 015 160 S04	0.75R X 1.5	2	16	50	4
2COB 015 200 S04	0.75R X 1.5	2	20	50	4
2COB 020 050 S06	1R X 2	3	5	50	6
2COB 020 080 S06	1R X 2	3	8	50	6
2COB 020 100 S06	1R X 2	3	10	50	6
2COB 020 120 S06	1R X 2	3	12	60	6
2COB 020 160 S06	1R X 2	3	16	60	6
2COB 020 200 S06	1R X 2	3	20	60	6
2COB 020 250 S06	1R X 2	3	25	65	6
2COB 025 060 S06	1.25R X 2.5	4	6	50	6
2COB 025 100 S06	1.25R X 2.5	4	10	50	6

Numero d'Ordine	R×D	L1	L2	L	d
2COB 025 120 S06	1.25R X 2.5	4	12	60	6
2COB 025 160 S06	1.25R X 2.5	4	16	60	6
2COB 025 200 S06	1.25R X 2.5	4	20	60	6
2COB 030 080 S06	1.5R X 3	4.5	8	60	6
2COB 030 120 S06	1.5R X 3	4.5	12	60	6
2COB 030 160 S06	1.5R X 3	4.5	16	60	6
2COB 030 200 S06	1.5R X 3	4.5	20	60	6
2COB 030 250 S06	1.5R X 3	4.5	25	70	6
2COB 030 300 S06	1.5R X 3	4.5	30	70	6
2COB 030 400 S06	1.5R X 3	4.5	40	80	6
2COB 040 100 S06	2R X 4	6	10	60	6
2COB 040 160 S06	2R X 4	6	16	60	6
2COB 040 200 S06	2R X 4	6	20	60	6
2COB 040 250 S06	2R X 4	6	25	70	6
2COB 040 300 S06	2R X 4	6	30	70	6
2COB 040 400 S06	2R X 4	6	40	80	6
2COB 050 160 S06	2.5R X 5	8	16	80	6
2COB 050 200 S06	2.5R X 5	8	20	80	6
2COB 050 250 S06	2.5R X 5	8	25	80	6
2COB 060 150 S06	3R X 6	9	15	90	6
2COB 060 300 S06	3R X 6	9	30	90	6
2COB 060 400 S06	3R X 6	9	40	90	6
2COB 080 200 S08	4R X 8	12	20	100	8
2COB 100 250 S10	5R X 10	15	25	100	10
2COB 120 300 S12	6R X 12	18	30	110	12
2COB 160 600 S16	8R X 16	30	60	160	16

2COR Fresa Torica 2 Tagli per Rame



- **Fresa per rame, leghe di rame e materiali non ferrosi.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Eccellente finitura grazie alla geometria specifica.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

2 | WC 미립자 | JMAX Coating | R ±0.005 R0.1 ~ 0.5 | R ±0.01 R1 ~ 1.5 | 30° Helix Angle | € List. p.113 | i info p.233

D	Tolleranza
Ø1 ~ 4	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
2COR 010 001 040	1 X R0.1	1.5	4	50	4
2COR 010 001 060	1 X R0.1	1.5	6	50	4
2COR 010 001 080	1 X R0.1	1.5	8	50	4
2COR 010 001 100	1 X R0.1	1.5	10	50	4
2COR 010 001 120	1 X R0.1	1.5	12	50	4
2COR 010 001 160	1 X R0.1	1.5	16	50	4
2COR 010 001 200	1 X R0.1	1.5	20	50	4
New 2COR 010 002 040	1 X R0.2	1.5	4	50	4
New 2COR 010 002 060	1 X R0.2	1.5	6	50	4
New 2COR 010 002 080	1 X R0.2	1.5	8	50	4
New 2COR 010 002 100	1 X R0.2	1.5	10	50	4
New 2COR 010 002 120	1 X R0.2	1.5	12	50	4
New 2COR 010 002 160	1 X R0.2	1.5	16	50	4
New 2COR 010 002 200	1 X R0.2	1.5	20	50	4
New 2COR 010 003 040	1 X R0.3	1.5	4	50	4
New 2COR 010 003 060	1 X R0.3	1.5	6	50	4
New 2COR 010 003 080	1 X R0.3	1.5	8	50	4
New 2COR 010 003 100	1 X R0.3	1.5	10	50	4
New 2COR 010 003 120	1 X R0.3	1.5	12	50	4
New 2COR 010 003 160	1 X R0.3	1.5	16	50	4
New 2COR 010 003 200	1 X R0.3	1.5	20	50	4
2COR 015 001 060	1.5 X R0.1	2	6	50	4
2COR 015 001 100	1.5 X R0.1	2	10	50	4
2COR 015 001 120	1.5 X R0.1	2	12	50	4
2COR 015 001 160	1.5 X R0.1	2	16	50	4
2COR 015 001 200	1.5 X R0.1	2	20	50	4
2COR 015 001 250	1.5 X R0.1	2	25	60	4
2COR 015 002 060	1.5 X R0.2	2	6	50	4
2COR 015 002 100	1.5 X R0.2	2	10	50	4
2COR 015 002 120	1.5 X R0.2	2	12	50	4
2COR 015 002 160	1.5 X R0.2	2	16	50	4
2COR 015 002 200	1.5 X R0.2	2	20	50	4
2COR 015 002 250	1.5 X R0.2	2	25	60	4
New 2COR 015 003 060	1.5 X R0.3	2	6	50	4
New 2COR 015 003 100	1.5 X R0.3	2	10	50	4
New 2COR 015 003 120	1.5 X R0.3	2	12	50	4
New 2COR 015 003 160	1.5 X R0.3	2	16	50	4
New 2COR 015 003 200	1.5 X R0.3	2	20	50	4
New 2COR 015 003 250	1.5 X R0.3	2	25	60	4
New 2COR 015 005 060	1.5 X R0.5	2	6	50	4
New 2COR 015 005 100	1.5 X R0.5	2	10	50	4
New 2COR 015 005 120	1.5 X R0.5	2	12	50	4
New 2COR 015 005 160	1.5 X R0.5	2	16	50	4
New 2COR 015 005 200	1.5 X R0.5	2	20	50	4
New 2COR 015 005 250	1.5 X R0.5	2	25	60	4
New 2COR 020 001 060	2 X R0.1	3	6	50	4
New 2COR 020 001 100	2 X R0.1	3	10	50	4
New 2COR 020 001 120	2 X R0.1	3	12	50	4

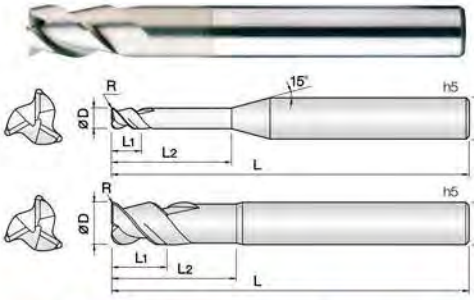
Numero d'Ordine	D×R	L1	L2	L	d
New 2COR 020 001 160	2 X R0.1	3	16	50	64
New 2COR 020 001 200	2 X R0.1	3	20	50	4
New 2COR 020 001 250	2 X R0.1	3	25	60	4
2COR 020 002 060	2 X R0.2	3	6	50	4
2COR 020 002 100	2 X R0.2	3	10	50	4
2COR 020 002 120	2 X R0.2	3	12	50	4
2COR 020 002 160	2 X R0.2	3	16	50	4
2COR 020 002 200	2 X R0.2	3	20	50	4
2COR 020 002 250	2 X R0.2	3	25	60	4
New 2COR 020 003 060	2 X R0.3	3	6	50	4
New 2COR 020 003 100	2 X R0.3	3	10	50	4
New 2COR 020 003 120	2 X R0.3	3	12	50	4
New 2COR 020 003 160	2 X R0.3	3	16	50	4
New 2COR 020 003 200	2 X R0.3	3	20	50	4
New 2COR 020 003 250	2 X R0.3	3	25	60	4
2COR 020 005 060	2 X R0.5	3	6	50	4
2COR 020 005 100	2 X R0.5	3	10	50	4
2COR 020 005 120	2 X R0.5	3	12	50	4
2COR 020 005 140	2 X R0.5	3	14	50	4
2COR 020 005 160	2 X R0.5	3	16	50	4
2COR 020 005 200	2 X R0.5	3	20	50	4
2COR 020 005 250	2 X R0.5	3	25	60	4
New 2COR 025 001 060	2.5 X R0.1	3.5	6	50	4
New 2COR 025 001 100	2.5 X R0.1	3.5	10	50	4
New 2COR 025 001 120	2.5 X R0.1	3.5	12	50	4
New 2COR 025 001 160	2.5 X R0.1	3.5	16	50	4
New 2COR 025 001 200	2.5 X R0.1	3.5	20	50	4
New 2COR 025 001 250	2.5 X R0.1	3.5	25	60	4
2COR 025 002 060	2.5 X R0.2	3.5	6	50	4
2COR 025 002 100	2.5 X R0.2	3.5	10	50	4
2COR 025 002 120	2.5 X R0.2	3.5	12	50	4
2COR 025 002 160	2.5 X R0.2	3.5	16	50	4
2COR 025 002 200	2.5 X R0.2	3.5	20	50	4
2COR 025 002 250	2.5 X R0.2	3.5	25	60	4
New 2COR 025 003 060	2.5 X R0.3	3.5	6	50	4
New 2COR 025 003 100	2.5 X R0.3	3.5	10	50	4
New 2COR 025 003 120	2.5 X R0.3	3.5	12	50	4
New 2COR 025 003 160	2.5 X R0.3	3.5	16	50	4
New 2COR 025 003 200	2.5 X R0.3	3.5	20	50	4
New 2COR 025 003 250	2.5 X R0.3	3.5	25	60	4
2COR 025 005 060	2.5 X R0.5	3.5	6	50	4
2COR 025 005 100	2.5 X R0.5	3.5	10	50	4
2COR 025 005 120	2.5 X R0.5	3.5	12	50	4
2COR 025 005 160	2.5 X R0.5	3.5	16	50	4
2COR 025 005 200	2.5 X R0.5	3.5	20	50	4
2COR 025 005 250	2.5 X R0.5	3.5	25	60	4
New 2COR 030 001 100	3 X R0.1	4	10	55	6
New 2COR 030 001 120	3 X R0.1	4	12	55	6

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
New 2COR 030 001 160	3 X R0.1	4	16	55	6
New 2COR 030 001 200	3 X R0.1	4	20	60	6
New 2COR 030 001 250	3 X R0.1	4	25	65	6
New 2COR 030 001 300	3 X R0.1	4	30	70	6
New 2COR 030 001 350	3 X R0.1	4	35	75	6
New 2COR 030 001 400	3 X R0.1	4	40	80	6
2COR 030 002 100	3 X R0.2	4	10	55	6
2COR 030 002 120	3 X R0.2	4	12	55	6
2COR 030 002 160	3 X R0.2	4	16	55	6
2COR 030 002 200	3 X R0.2	4	20	60	6
2COR 030 002 250	3 X R0.2	4	25	65	6
2COR 030 002 300	3 X R0.2	4	30	70	6
2COR 030 002 350	3 X R0.2	4	35	75	6
2COR 030 002 400	3 X R0.2	4	40	80	6
New 2COR 030 003 100	3 X R0.3	4	10	55	6
New 2COR 030 003 120	3 X R0.3	4	12	55	6
New 2COR 030 003 160	3 X R0.3	4	16	55	6
New 2COR 030 003 200	3 X R0.3	4	20	60	6
New 2COR 030 003 250	3 X R0.3	4	25	65	6
New 2COR 030 003 300	3 X R0.3	4	30	70	6
New 2COR 030 003 350	3 X R0.3	4	35	75	6
New 2COR 030 003 400	3 X R0.3	4	40	80	6
2COR 030 005 100	3 X R0.5	4	10	55	6
2COR 030 005 120	3 X R0.5	4	12	55	6
2COR 030 005 160	3 X R0.5	4	16	55	6
2COR 030 005 200	3 X R0.5	4	20	60	6
2COR 030 005 250	3 X R0.5	4	25	65	6
2COR 030 005 300	3 X R0.5	4	30	70	6
2COR 030 005 350	3 X R0.5	4	35	75	6
2COR 030 005 400	3 X R0.5	4	40	80	6
New 2COR 030 010 100	3 X R1	4	10	55	6
New 2COR 030 010 120	3 X R1	4	12	55	6
New 2COR 030 010 160	3 X R1	4	16	55	6
New 2COR 030 010 200	3 X R1	4	20	60	6
New 2COR 030 010 250	3 X R1	4	25	65	6
New 2COR 030 010 300	3 X R1	4	30	70	6
New 2COR 030 010 350	3 X R1	4	35	75	6
New 2COR 030 010 400	3 X R1	4	40	80	6
New 2COR 040 001 120	4 X R0.1	5	12	55	6
New 2COR 040 001 160	4 X R0.1	5	16	55	6
New 2COR 040 001 200	4 X R0.1	5	20	60	6
New 2COR 040 001 300	4 X R0.1	5	30	70	6
New 2COR 040 001 400	4 X R0.1	5	40	80	6
2COR 040 002 120	4 X R0.2	5	12	55	6
2COR 040 002 160	4 X R0.2	5	16	55	6
2COR 040 002 200	4 X R0.2	5	20	60	6
2COR 040 002 300	4 X R0.2	5	30	70	6
2COR 040 002 400	4 X R0.2	5	40	80	6

Numero d'Ordine	D×R	L1	L2	L	d
New 2COR 040 003 120	4 X R0.3	5	12	55	6
New 2COR 040 003 160	4 X R0.3	5	16	55	6
New 2COR 040 003 200	4 X R0.3	5	20	60	6
New 2COR 040 003 300	4 X R0.3	5	30	70	6
New 2COR 040 003 400	4 X R0.3	5	40	80	6
2COR 040 005 120	4 X R0.5	5	12	55	6
2COR 040 005 160	4 X R0.5	5	16	55	6
2COR 040 005 200	4 X R0.5	5	20	60	6
2COR 040 005 300	4 X R0.5	5	30	70	6
2COR 040 005 400	4 X R0.5	5	40	80	6
New 2COR 040 010 120	4 X R1	5	12	55	6
New 2COR 040 010 160	4 X R1	5	16	55	6
New 2COR 040 010 200	4 X R1	5	20	60	6
New 2COR 040 010 300	4 X R1	5	30	70	6
New 2COR 040 010 400	4 X R1	5	40	80	6
New 2COR 060 001 200	6 X R0.1	7	20	60	6
2COR 060 002 200	6 X R0.2	7	20	60	6
New 2COR 060 003 200	6 X R0.3	7	20	60	6
2COR 060 005 200	6 X R0.5	7	20	60	6
2COR 060 005 300	6 X R0.5	7	30	80	6
2COR 060 005 400	6 X R0.5	7	40	90	6
2COR 060 010 200	6 X R1	9	20	60	8
2COR 060 015 200	6 X R1.5	9	20	60	8
2COR 080 005 250	8 X R0.5	9	25	65	8
2COR 080 005 400	8 X R0.5	9	40	90	8
2COR 080 005 500	8 X R0.5	9	50	100	8
2COR 080 005 600	8 X R0.5	9	60	100	8
2COR 080 010 250	8 X R1	9	25	65	8
2COR 080 010 400	8 X R1	9	40	90	8
2COR 080 010 500	8 X R1	9	50	100	10
2COR 080 010 600	8 X R1	9	60	100	10
2COR 080 015 250	8 X R1.5	11	25	65	10
2COR 100 005 320	10 X R0.5	11	32	70	10
2COR 100 005 500	10 X R0.5	11	50	90	10
2COR 100 005 600	10 X R0.5	11	60	100	10
2COR 100 010 320	10 X R1	11	32	70	10
2COR 100 010 500	10 X R1	11	50	90	10
2COR 100 010 600	10 X R1	11	60	100	10
2COR 100 015 320	10 X R1.5	11	32	70	10
2COR 120 005 380	12 X R0.5	12	38	80	12
2COR 120 005 500	12 X R0.5	12	50	100	12
2COR 120 005 600	12 X R0.5	12	60	110	12
2COR 120 005 700	12 X R0.5	12	70	110	12
2COR 120 010 380	12 X R1	12	38	80	12
2COR 120 010 600	12 X R1	12	60	100	12
2COR 120 010 700	12 X R1	12	70	110	12
2COR 120 015 380	12 X R1.5	12	38	80	12

3COR Fresa Torica 3 Tagli 45° per Rame



- **Fresa per rame, leghe di rame e materiali non ferrosi.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Lavorazioni in alte velocità e avanzamenti.
- Eccellente finitura grazie alla geometria specifica a 45°
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

3 | WC 미립자 | JMAX Coating | R ±0.005 R0.1 ~ 0.5 | R ±0.01 R1 | 45° Helix Angle | € List. p.116 | i info p.234

D	Tolleranza
Ø1 ~ 4	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm

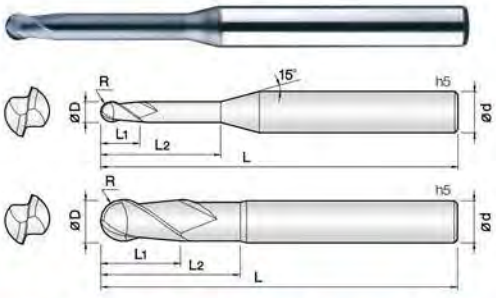
Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
3COR 010 001 030	1 X R0.1	1.5	3	45	4
3COR 010 001 060	1 X R0.1	1.5	6	45	4
3COR 010 001 100	1 X R0.1	1.5	10	45	4
3COR 010 002 030	1 X R0.2	1.5	3	45	4
3COR 010 002 060	1 X R0.2	1.5	6	45	4
3COR 010 002 100	1 X R0.2	1.5	10	45	4
3COR 015 001 050	1.5 X R0.1	2	5	45	4
3COR 015 001 080	1.5 X R0.1	2	8	45	4
3COR 015 001 120	1.5 X R0.1	2	12	45	4
3COR 015 002 050	1.5 X R0.2	2	5	45	4
3COR 015 002 080	1.5 X R0.2	2	8	45	4
3COR 015 002 120	1.5 X R0.2	2	12	45	4
3COR 020 001 060	2 X R0.1	3	6	45	4
3COR 020 001 100	2 X R0.1	3	10	45	4
3COR 020 001 140	2 X R0.1	3	14	45	4
3COR 020 002 060	2 X R0.2	3	6	45	4
3COR 020 002 100	2 X R0.2	3	10	45	4
3COR 020 002 140	2 X R0.2	3	14	45	4
3COR 025 001 080	2.5 X R0.1	3.5	8	45	4
3COR 025 001 120	2.5 X R0.1	3.5	12	45	4
3COR 025 001 160	2.5 X R0.1	3.5	16	45	4
3COR 025 002 080	2.5 X R0.2	3.5	8	45	4
3COR 025 002 120	2.5 X R0.2	3.5	12	45	4
3COR 025 002 160	2.5 X R0.2	3.5	16	45	4
3COR 025 005 080	2.5 X R0.5	3.5	8	45	4
3COR 025 005 120	2.5 X R0.5	3.5	12	45	4
3COR 025 005 160	2.5 X R0.5	3.5	16	45	4
3COR 030 002 100	3 X R0.2	4	10	50	4
3COR 030 002 160	3 X R0.2	4	16	50	4
3COR 030 002 200	3 X R0.2	4	20	50	4
3COR 030 003 100	3 X R0.3	4	10	50	4
3COR 030 003 160	3 X R0.3	4	16	50	4
3COR 030 003 200	3 X R0.3	4	20	50	4
3COR 030 005 100	3 X R0.5	4	10	50	4
3COR 030 005 160	3 X R0.5	4	16	50	4
3COR 030 005 200	3 X R0.5	4	20	50	4
3COR 040 002 120	4 X R0.2	6	12	50	4
3COR 040 002 160	4 X R0.2	6	16	50	4
3COR 040 002 200	4 X R0.2	6	20	50	4
3COR 040 003 120	4 X R0.3	6	12	50	4
3COR 040 003 160	4 X R0.3	6	16	50	4
3COR 040 003 200	4 X R0.3	6	20	50	4
3COR 040 005 120	4 X R0.5	6	12	50	4
3COR 040 005 160	4 X R0.5	6	16	50	4
3COR 040 005 200	4 X R0.5	6	20	50	4
3COR 060 003 200	6 X R0.3	9	20	55	6
3COR 060 003 300	6 X R0.3	9	30	70	6
3COR 060 005 200	6 X R0.5	9	20	55	6

Numero d'Ordine	D×R	L1	L2	L	d
3COR 060 005 300	6 X R0.5	9	30	70	6
3COR 060 010 200	6 X R1	9	20	55	6
3COR 060 010 300	6 X R1	9	30	70	6
3COR 080 003 S08	8 X R0.3	12	25	65	8
3COR 080 005 S08	8 X R0.5	12	25	65	8
3COR 080 010 S08	8 X R1	12	25	65	8
3COR 100 005 S10	10 X R0.5	15	30	70	10
3COR 100 010 S10	10 X R1	15	30	70	10
3COR 120 005 S12	12 X R0.5	20	35	80	12
3COR 120 010 S12	12 X R1	20	35	80	12

FOR DORER

2DRB DLC - Fresa Emisferica 2 Tagli per Nervature



- **Fresa per alluminio, leghe di alluminio, rame, leghe di rame, CFRP, fibre di vetro/carbonio e materiali non ferrosi.**
- Il rivestimento Super DLC garantisce eccellenti finiture grazie ad una elevatissima durezza e ad un basso coefficiente di attrito.
- Eccellente tolleranza del filo tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

2 | WC 미립자 | TDLC Coating | R ±0.005 (0.05 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.117 | i info p.235

D	Tolleranza
Ø0.1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

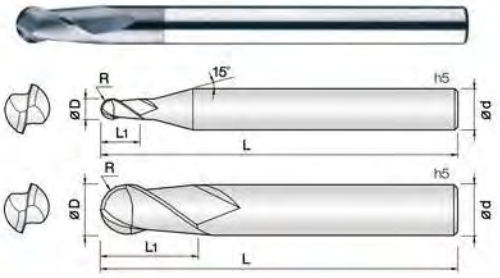
Numero d'Ordine	R×D	L1	L2	L	d
2DRB 001 003 S04	0.05R X 0.1	0.3	-	45	4
2DRB 002 005 S04	0.1R X 0.2	0.5	-	45	4
2DRB 002 010 S04	0.1R X 0.2	0.2	1	45	4
2DRB 002 015 S04	0.1R X 0.2	0.2	1.5	45	4
2DRB 002 020 S04	0.1R X 0.2	0.2	2	45	4
2DRB 003 010 S04	0.15R X 0.3	0.3	1	45	4
2DRB 003 015 S04	0.15R X 0.3	0.3	1.5	45	4
2DRB 003 020 S04	0.15R X 0.3	0.3	2	45	4
2DRB 004 010 S04	0.2R X 0.4	0.4	1	45	4
2DRB 004 020 S04	0.2R X 0.4	0.4	2	45	4
2DRB 004 030 S04	0.2R X 0.4	0.4	3	45	4
2DRB 004 040 S04	0.2R X 0.4	0.4	4	45	4
2DRB 004 050 S04	0.2R X 0.4	0.4	5	45	4
2DRB 005 020 S04	0.25R X 0.5	0.5	2	45	4
2DRB 005 040 S04	0.25R X 0.5	0.5	4	45	4
2DRB 005 060 S04	0.25R X 0.5	0.5	6	45	4
2DRB 005 080 S04	0.25R X 0.5	0.5	8	45	4
2DRB 005 100 S04	0.25R X 0.5	0.5	10	45	4
2DRB 006 020 S04	0.3R X 0.6	0.6	2	45	4
2DRB 006 040 S04	0.3R X 0.6	0.6	4	45	4
2DRB 006 060 S04	0.3R X 0.6	0.6	6	45	4
2DRB 006 080 S04	0.3R X 0.6	0.6	8	45	4
2DRB 006 100 S04	0.3R X 0.6	0.6	10	45	4
2DRB 008 020 S04	0.4R X 0.8	0.8	2	45	4
2DRB 008 040 S04	0.4R X 0.8	0.8	4	45	4
2DRB 008 060 S04	0.4R X 0.8	0.8	6	45	4
2DRB 008 080 S04	0.4R X 0.8	0.8	8	45	4
2DRB 008 100 S04	0.4R X 0.8	0.8	10	45	4
2DRB 008 120 S04	0.4R X 0.8	0.8	12	45	4
2DRB 010 040 S04	0.5R X 1	1	4	45	4
2DRB 010 060 S04	0.5R X 1	1	6	45	4
2DRB 010 080 S04	0.5R X 1	1	8	45	4
2DRB 010 100 S04	0.5R X 1	1	10	45	4
2DRB 010 120 S04	0.5R X 1	1	12	45	4
2DRB 010 160 S04	0.5R X 1	1	16	50	4
2DRB 015 060 S04	0.75R X 1.5	1.5	6	45	4
2DRB 015 080 S04	0.75R X 1.5	1.5	8	45	4
2DRB 015 100 S04	0.75R X 1.5	1.5	10	45	4
2DRB 015 120 S04	0.75R X 1.5	1.5	12	45	4
2DRB 015 160 S04	0.75R X 1.5	1.5	16	50	4
2DRB 015 200 S04	0.75R X 1.5	1.5	20	50	4
2DRB 020 060 S04	1R X 2	3	6	45	4
2DRB 020 080 S04	1R X 2	3	8	45	4
2DRB 020 100 S04	1R X 2	3	10	45	4
2DRB 020 120 S04	1R X 2	3	12	45	4
2DRB 020 160 S04	1R X 2	3	16	50	4
2DRB 020 200 S04	1R X 2	3	20	50	4
2DRB 020 250 S04	1R X 2	3	25	60	4

Numero d'Ordine	R×D	L1	L2	L	d
2DRB 020 300 S04	1R X 2	3	30	70	4
2DRB 030 120 S06	1.5R X 3	4	12	50	6
2DRB 030 160 S06	1.5R X 3	4	16	60	6
2DRB 030 200 S06	1.5R X 3	4	20	60	6
2DRB 030 250 S06	1.5R X 3	4	25	65	6
2DRB 030 300 S06	1.5R X 3	4	30	70	6
2DRB 030 400 S06	1.5R X 3	4	40	80	6
2DRB 040 120 S06	2R X 4	5	12	50	6
2DRB 040 160 S06	2R X 4	5	16	60	6
2DRB 040 200 S06	2R X 4	5	20	60	6
2DRB 040 250 S06	2R X 4	5	25	65	6
2DRB 040 300 S06	2R X 4	5	30	70	6
2DRB 050 200 S06	2.5R X 5	6	20	60	6
2DRB 050 400 S06	2.5R X 5	6	40	80	6
2DRB 060 200 S06	3R X 6	8	20	60	6
2DRB 060 300 S06	3R X 6	8	30	90	6
2DRB 080 200 S08	4R X 8	10	20	70	8
2DRB 100 250 S10	5R X 10	12	25	80	10
2DRB 120 250 S12	6R X 12	14	25	80	12

T-DLC

2DLB

DLC - Fresa Emisferica 2 Tagli



- **Fresa per alluminio, leghe di alluminio, rame, leghe di rame, CFRP, fibre di vetro/carbonio e materiali non ferrosi.**
- Il rivestimento Super DLC garantisce eccellenti finiture grazie ad una elevatissima durezza e ad un basso coefficiente di attrito.
- Eccellente tolleranza del filo tagliente.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

2 | WC 미립자 | TDLC Coating | R ±0.005 (0.1 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € List. p.118 | i info p.236

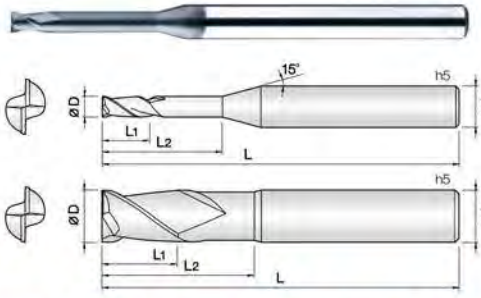
D	Tolleranza
Ø2 ~ 5	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
2DLB 002 004 S04	0.1R X 0.2	0.4	45	4
2DLB 003 006 S04	0.15R X 0.3	0.6	45	4
2DLB 004 008 S04	0.2R X 0.4	0.8	45	4
2DLB 005 010 S04	0.25R X 0.5	1	45	4
2DLB 006 012 S04	0.3R X 0.6	1.2	45	4
2DLB 008 020 S04	0.4R X 0.8	2	50	4
2DLB 010 025 S04	0.5R X 1	2.5	50	4
2DLB 012 030 S04	0.6R X 1.2	3	50	4
2DLB 015 040 S04	0.75R X 1.5	4	50	4
2DLB 020 050 S04	1R X 2	5	50	4
2DLB 025 060 S04	1.25R X 2.5	6	50	4
2DLB 030 080 S06	1.5R X 3	8	60	6
2DLB 040 080 S06	2R X 4	8	70	6
2DLB 050 100 S06	2.5R X 5	10	80	6
2DLB 060 120 090	3R X 6	12	90	6
2DLB 080 140 100	4R X 8	14	100	8
2DLB 100 180 100	5R X 10	18	100	10
2DLB 120 220 110	6R X 12	22	110	12

T-DLC

2DRE DLC - Fresa Cilindrica 2 Tagli per Nervature



- **Fresa per alluminio, leghe di alluminio, rame, leghe di rame, CFRP, fibre di vetro/carbonio e materiali non ferrosi.**
- Il rivestimento Super DLC garantisce eccellenti finiture grazie ad una elevatissima durezza e ad un basso coefficiente di attrito.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

2 | WC 미립자 | TDLC Coating | D +0~-0.005 Ø0.1 | D +0~-0.01 Ø0.2 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | 30° Helix Angle | Affilato | € List. p.118 | i info p.235

D	Tolleranza
Ø0.1	+0~ -0.005mm
Ø0.2 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

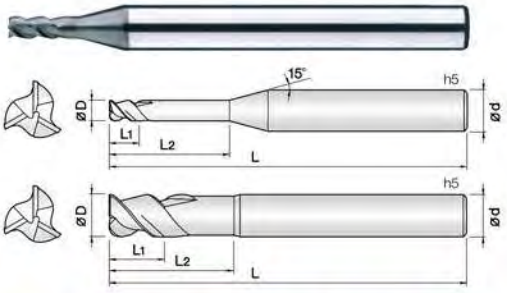
Numero d'Ordine	D	L1	L2	L	d
2DRE 001 003 S04	0.1	0.3	-	45	4
2DRE 001 005 S04	0.1	0.5	-	45	4
2DRE 002 005 S04	0.2	0.5	-	45	4
2DRE 002 010 S04	0.2	0.3	1	45	4
2DRE 002 015 S04	0.2	0.3	1.5	45	4
2DRE 002 020 S04	0.2	0.3	2	45	4
2DRE 003 010 S04	0.3	0.5	1	45	4
2DRE 003 015 S04	0.3	0.5	1.5	45	4
2DRE 003 020 S04	0.3	0.5	2	45	4
2DRE 004 010 S04	0.4	0.6	1	45	4
2DRE 004 020 S04	0.4	0.6	2	45	4
2DRE 004 030 S04	0.4	0.6	3	45	4
2DRE 004 040 S04	0.4	0.6	4	45	4
2DRE 004 050 S04	0.4	0.6	5	45	4
2DRE 005 020 S04	0.5	0.7	2	45	4
2DRE 005 040 S04	0.5	0.7	4	45	4
2DRE 005 060 S04	0.5	0.7	6	45	4
2DRE 005 080 S04	0.5	0.7	8	45	4
2DRE 005 100 S04	0.5	0.7	10	45	4
2DRE 006 020 S04	0.6	0.9	2	45	4
2DRE 006 040 S04	0.6	0.9	4	45	4
2DRE 006 060 S04	0.6	0.9	6	45	4
2DRE 006 080 S04	0.6	0.9	8	45	4
2DRE 006 100 S04	0.6	0.9	10	45	4
2DRE 008 020 S04	0.8	1.2	2	45	4
2DRE 008 040 S04	0.8	1.2	4	45	4
2DRE 008 060 S04	0.8	1.2	6	45	4
2DRE 008 080 S04	0.8	1.2	8	45	4
2DRE 008 100 S04	0.8	1.2	10	45	4
2DRE 008 120 S04	0.8	1.2	12	45	4
2DRE 010 040 S04	1	1.5	4	45	4
2DRE 010 060 S04	1	1.5	6	45	4
2DRE 010 080 S04	1	1.5	8	45	4
2DRE 010 100 S04	1	1.5	10	45	4
2DRE 010 120 S04	1	1.5	12	45	4
2DRE 010 160 S04	1	1.5	16	50	4
2DRE 015 060 S04	1.5	2.3	6	45	4
2DRE 015 080 S04	1.5	2.3	8	45	4
2DRE 015 100 S04	1.5	2.3	10	45	4
2DRE 015 120 S04	1.5	2.3	12	45	4
2DRE 015 160 S04	1.5	2.3	16	50	4
2DRE 015 200 S04	1.5	2.3	20	50	4
2DRE 020 060 S04	2	3	6	45	4
2DRE 020 080 S04	2	3	8	45	4
2DRE 020 100 S04	2	3	10	45	4
2DRE 020 120 S04	2	3	12	45	4
2DRE 020 160 S04	2	3	16	50	4
2DRE 020 200 S04	2	3	20	50	4

Numero d'Ordine	D	L1	L2	L	d
2DRE 030 120 S06	3	4.5	12	50	6
2DRE 030 160 S06	3	4.5	16	60	6
2DRE 030 200 S06	3	4.5	20	60	6
2DRE 030 250 S06	3	4.5	25	65	6
2DRE 030 300 S06	3	4.5	30	70	6
2DRE 030 400 S06	3	4.5	40	80	6
2DRE 040 120 S06	4	6	12	50	6
2DRE 040 160 S06	4	6	16	60	6
2DRE 040 200 S06	4	6	20	60	6
2DRE 040 250 S06	4	6	25	65	6
2DRE 040 300 S06	4	6	30	70	6
2DRE 040 400 S06	4	6	40	80	6
2DRE 050 200 S06	5	6	20	60	6
2DRE 050 400 S06	5	6	40	80	6
2DRE 060 200 S06	6	8	20	60	6
2DRE 060 300 S06	6	8	30	90	6
2DRE 080 200 S08	8	12	20	70	8
2DRE 100 250 S10	10	15	25	80	10
2DRE 120 300 S12	12	18	30	80	12

T-DLC

3DRE

DLC - Fresa Cilindrica 3 Tagli 45° per Nervature



- **Fresa per alluminio, leghe di alluminio, rame, leghe di rame, CFRP, fibre di vetro/carbonio e materiali non ferrosi.**
- Il rivestimento Super DLC garantisce eccellenti finiture grazie ad una elevatissima durezza e ad un basso coefficiente di attrito.
- Alta velocità e avanzamenti grazie alla geometria specifica a 3 taglienti e all'elica a 45°.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

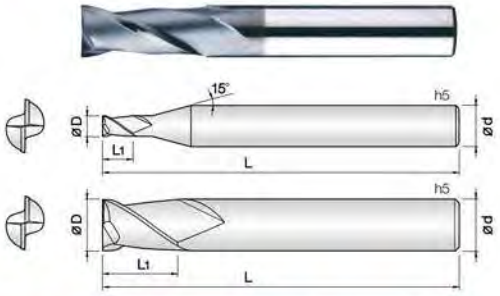
3 | WC 미립자 | TDLC Coating | D +0~-0.01 Ø0.1~Ø5 | D -0.01~-0.025 Ø6~Ø12 | 45° Helix Angle | Affilato | List. p.119 | info p.235

D	Tolleranza
Ø0.1 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
3DRE 010 030 S04	1	2	3	50	4
3DRE 015 045 S04	1.5	3	4.5	50	4
3DRE 020 060 S04	2	4	6	50	4
3DRE 025 075 S04	2.5	5	7.5	50	4
3DRE 030 090 S06	3	6	9	60	6
3DRE 040 120 S06	4	9	12	60	6
3DRE 050 150 S06	5	10	15	70	6
3DRE 060 180 S06	6	12	18	70	6
3DRE 080 240 S08	8	16	24	80	8
3DRE 100 300 S10	10	20	30	90	10
3DRE 120 360 S12	12	24	36	100	12

2DLE DLC - Fresa Cilindrica 2 Tagli



- **Fresa per alluminio, leghe di alluminio, rame, leghe di rame, CFRP, fibre di vetro/carbonio e materiali non ferrosi.**
- Il rivestimento Super DLC garantisce eccellenti finiture grazie ad una elevatissima durezza e ad un basso coefficiente di attrito.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

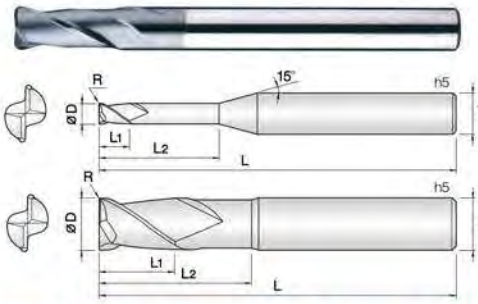
2 | WC 미립자 | TDLC Coating | D +0~-0.01 Ø0.4~Ø5 | D -0.01~-0.025 Ø6~Ø12 | 30° Helix Angle | Affilato | € List. p.119 | i info p.236

D	Tolleranza
Ø0.4 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L	d
2DLE 004 008 S04	0.4	0.8	45	4
2DLE 005 010 S04	0.5	1	45	4
2DLE 006 012 S04	0.6	1.2	45	4
2DLE 007 014 S04	0.7	1.4	45	4
2DLE 008 016 S04	0.8	1.6	45	4
2DLE 010 025 S04	1	2.5	45	4
2DLE 010 040 S04	1	4	45	4
2DLE 012 040 S04	1.2	4	45	4
2DLE 015 040 S04	1.5	4	45	4
2DLE 020 060 S04	2	6	45	4
2DLE 020 080 S04	2	8	45	4
2DLE 025 080 S04	2.5	8	50	4
2DLE 030 100 S06	3	10	50	6
2DLE 030 120 S06	3	12	50	6
2DLE 035 100 S06	3.5	10	50	6
2DLE 040 120 S06	4	12	60	6
2DLE 050 150 S06	5	15	60	6
2DLE 060 150 S06	6	15	60	6
2DLE 060 240 S06	6	24	60	6
2DLE 080 200 S08	8	20	65	8
2DLE 100 250 S10	10	25	70	10
2DLE 120 300 S10	12	30	80	12

DLC - Fresa Torica 2 Tagli



- **Fresa per alluminio, leghe di alluminio, rame, leghe di rame, CFRP, fibre di vetro/carbonio e materiali non ferrosi.**
- Il rivestimento Super DLC garantisce eccellenti finiture grazie ad una elevatissima durezza e ad un basso coefficiente di attrito.
- Elevata tolleranza del filo tagliente.
- Geometria rinforzata per prevenire scheggiature.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

2 | WC 미립자 | TDLC Coating | R ±0.005 R0.1 ~ 0.5 | R ±0.01 R1 | 30° Helix Angle | € List. p.119 | i info p.237

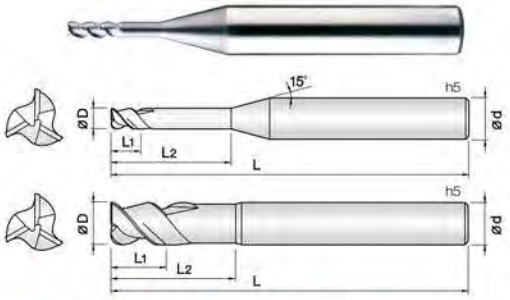
D	Tolleranza
Ø1 ~ 4	+0 ~ −0.01mm
Ø6 ~ 12	−0.005 ~ −0.015mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	L	d
2DLC 010 001 040	1 X R0.1	1.5	4	45	4
2DLC 010 001 060	1 X R0.1	1.5	6	45	4
2DLC 010 001 080	1 X R0.1	1.5	8	45	4
2DLC 010 001 100	1 X R0.1	1.5	10	45	4
2DLC 010 002 040	1 X R0.2	1.5	4	45	4
2DLC 010 002 060	1 X R0.2	1.5	6	45	4
2DLC 010 002 080	1 X R0.2	1.5	8	45	4
2DLC 010 002 100	1 X R0.2	1.5	10	45	4
2DLC 015 001 060	1.5 X R0.1	2.3	6	45	4
2DLC 015 001 080	1.5 X R0.1	2.3	8	45	4
2DLC 015 001 100	1.5 X R0.1	2.3	10	45	4
2DLC 015 001 120	1.5 X R0.1	2.3	12	50	4
2DLC 015 002 060	1.5 X R0.2	2.3	6	45	4
2DLC 015 002 080	1.5 X R0.2	2.3	8	45	4
2DLC 015 002 100	1.5 X R0.2	2.3	10	45	4
2DLC 015 002 120	1.5 X R0.2	2.3	12	50	4
2DLC 020 002 080	2 X R0.2	3	8	45	4
2DLC 020 002 100	2 X R0.2	3	10	45	4
2DLC 020 002 120	2 X R0.2	3	12	50	4
2DLC 020 002 160	2 X R0.2	3	16	50	4
2DLC 020 005 080	2 X R0.5	3	8	45	4
2DLC 020 005 100	2 X R0.5	3	10	45	4
2DLC 020 005 120	2 X R0.5	3	12	50	4
2DLC 020 005 160	2 X R0.5	3	16	50	4
2DLC 030 002 100	3 X R0.2	4.5	10	50	6
2DLC 030 002 120	3 X R0.2	4.5	12	50	6
2DLC 030 002 160	3 X R0.2	4.5	16	60	6
2DLC 030 002 200	3 X R0.2	4.5	20	60	6
2DLC 030 002 250	3 X R0.2	4.5	25	65	6
2DLC 030 002 300	3 X R0.2	4.5	30	70	6
2DLC 030 003 100	3 X R0.3	4.5	10	50	6
2DLC 030 003 120	3 X R0.3	4.5	12	50	6
2DLC 030 003 160	3 X R0.3	4.5	16	60	6
2DLC 030 003 200	3 X R0.3	4.5	20	60	6
2DLC 030 003 250	3 X R0.3	4.5	25	65	6
2DLC 030 003 300	3 X R0.3	4.5	30	70	6
2DLC 030 005 100	3 X R0.5	4.5	10	50	6
2DLC 030 005 120	3 X R0.5	4.5	12	50	6
2DLC 030 005 160	3 X R0.5	4.5	16	60	6
2DLC 030 005 200	3 X R0.5	4.5	20	60	6
2DLC 030 005 250	3 X R0.5	4.5	25	65	6
2DLC 030 005 300	3 X R0.5	4.5	30	70	6
2DLC 040 002 120	4 X R0.2	6	12	50	6
2DLC 040 002 160	4 X R0.2	6	16	60	6
2DLC 040 002 200	4 X R0.2	6	20	60	6
2DLC 040 005 120	4 X R0.5	6	12	50	6
2DLC 040 005 160	4 X R0.5	6	16	60	6
2DLC 040 005 200	4 X R0.5	6	20	60	6

Numero d'Ordine	D×R	L1	L2	L	d
2DLC 040 005 250	4 X R0.5	6	25	65	6
2DLC 040 005 300	4 X R0.5	6	30	70	6
2DLC 040 010 120	4 X R1	6	12	50	6
2DLC 040 010 160	4 X R1	6	16	60	6
2DLC 040 010 200	4 X R1	6	20	60	6
2DLC 040 010 250	4 X R1	6	25	65	6
2DLC 040 010 300	4 X R1	6	30	70	6
2DLC 060 003 200	6 X R0.3	9	20	60	6
2DLC 060 005 200	6 X R0.5	9	20	60	6
2DLC 060 010 200	6 X R1	9	20	60	6
2DLC 080 003 250	8 X R0.3	12	25	65	8
2DLC 080 005 250	8 X R0.5	12	25	65	8
2DLC 080 010 250	8 X R1	12	25	65	8
2DLC 100 005 300	10 X R0.5	15	30	70	10
2DLC 100 010 300	10 X R1	15	30	70	10
2DLC 120 005 320	12 X R0.5	18	32	80	12
2DLC 120 010 320	12 X R1	18	32	80	12

3ALR — Fresa Cilindrica 3 Tagli 45° per Alluminio



- **Fresa per alluminio, leghe di alluminio e materiali non ferrosi.**
- Materiale Ultra Micrograna (0,2 µm) per finiture eccellenti.
- Tagliente corto a 45° ribassato per varie operazioni.
- Ridotto incollamento del truciolo grazie alla geometria specifica.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

3 | WC 미립자 | D +0~-0.01 Ø0.8~Ø12 | 45° Helix Angle | Rinforzato | € List. p.120 | i info p.237

D	Tolleranza
Ø0.8 ~ 12	+0 ~ -0.01mm

Unità : mm

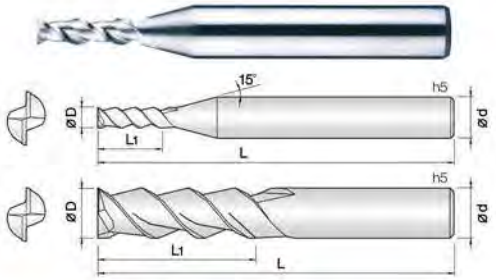
Numero d'Ordine	D	L1	L2	L	d
New 3ALR 008 016 S04	0.8	1.6	-	50	4
New 3ALR 008 030 S04	0.8	1.6	3	50	4
New 3ALR 008 040 S04	0.8	1.6	4	50	4
New 3ALR 008 050 S04	0.8	1.6	5	50	4
New 3ALR 008 060 S04	0.8	1.6	6	50	4
New 3ALR 008 080 S04	0.8	1.6	8	50	4
New 3ALR 008 100 S04	0.8	1.6	10	50	4
New 3ALR 008 120 S04	0.8	1.6	12	50	4
3ALR 010 020 S06	1	2	-	60	6
3ALR 010 040 S06	1	2	4	60	6
3ALR 010 060 S06	1	2	6	60	6
3ALR 010 080 S06	1	2	8	60	6
3ALR 010 100 S06	1	2	10	60	6
New 3ALR 010 120 S06	1	2	12	60	6
New 3ALR 010 140 S06	1	2	14	60	6
3ALR 015 030 S06	1.5	3	-	60	6
3ALR 015 060 S06	1.5	3	6	60	6
New 3ALR 015 080 S06	1.5	3	8	60	6
3ALR 015 100 S06	1.5	3	10	60	6
3ALR 015 120 S06	1.5	3	12	60	6
New 3ALR 015 140 S06	1.5	3	14	60	6
New 3ALR 015 160 S06	1.5	3	16	60	6
3ALR 020 040 S06	2	4	-	60	6
3ALR 020 080 S06	2	4	8	60	6
New 3ALR 020 100 S06	2	4	10	60	6
3ALR 020 120 S06	2	4	12	60	6
New 3ALR 020 140 S06	2	4	14	60	6
3ALR 020 160 S06	2	4	16	60	6
New 3ALR 020 200 S06	2	4	20	60	6
3ALR 025 050 S06	2.5	5	-	60	6
3ALR 025 100 S06	2.5	5	10	60	6
3ALR 025 150 S06	2.5	5	15	60	6
3ALR 025 200 S06	2.5	5	20	60	6
New 3ALR 025 250 S06	2.5	5	25	60	6
3ALR 030 060 S06	3	6	-	60	6
3ALR 030 100 S06	3	6	10	60	6
3ALR 030 150 S06	3	6	15	60	6
3ALR 030 200 S06	3	6	20	70	6
3ALR 030 250 S06	3	6	25	70	6
3ALR 030 300 S06	3	6	30	80	6
3ALR 040 080 S06	4	8	-	70	6
3ALR 040 100 S06	4	8	10	70	6
3ALR 040 150 S06	4	8	15	70	6
3ALR 040 200 S06	4	8	20	70	6
3ALR 040 250 S06	4	8	25	70	6
3ALR 040 300 S06	4	8	30	80	6
3ALR 050 100 S06	5	10	-	80	6
3ALR 050 200 S06	5	10	20	80	6

Numero d'Ordine	D	L1	L2	L	d
3ALR 050 300 S06	5	10	30	80	6
3ALR 060 200 S06	6	12	20	80	6
3ALR 060 400 S06	6	12	40	80	6
3ALR 080 400 S08	8	16	40	100	8
3ALR 100 500 S10	10	20	50	110	10
3ALR 120 500 S12	12	24	50	110	12

FOR ALUMINUM

2ALE

Fresa Cilindrica 2 Tagli 45° per Alluminio



- **Fresa per alluminio, leghe di alluminio e materiali non ferrosi.**
- Materiale Ultra Micrograna (0,2 µm) per finiture eccellenti.
- Varie lunghezze di taglio per soddisfare le più svariate esigenze.
- Ridotto incollamento del truciolo grazie alla geometria specifica.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

2 | WC 미립자 | D +0~-0.01 Ø0.5~Ø20 | 45° Helix Angle | Rinforzato | € List. p.121 | i info p.238

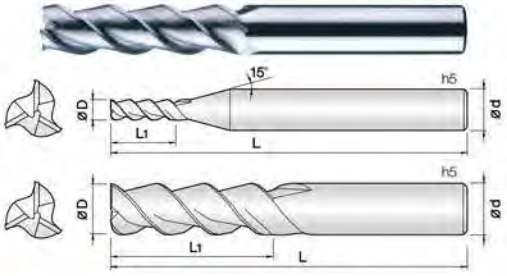
D	Tolleranza
Ø0.5 ~ 20	+0~ -0.01mm

Unità : mm

Numero d'Ordine	D	L1	L	d
New 2ALE 005 005 S04	0.5	0.5	38	4
New 2ALE 005 010 S04	0.5	1	38	4
New 2ALE 005 015 S04	0.5	1.5	38	4
New 2ALE 005 020 S04	0.5	2	38	4
New 2ALE 006 006 S04	0.6	0.6	38	4
New 2ALE 006 012 S04	0.6	1.2	38	4
New 2ALE 006 020 S04	0.6	2	38	4
New 2ALE 007 007 S04	0.7	0.7	38	4
New 2ALE 007 014 S04	0.7	1.4	38	4
New 2ALE 007 020 S04	0.7	2	38	4
New 2ALE 008 008 S04	0.8	0.8	38	4
New 2ALE 008 016 S04	0.8	1.6	38	4
New 2ALE 008 020 S04	0.8	2	38	4
New 2ALE 009 009 S04	0.9	0.9	38	4
New 2ALE 009 018 S04	0.9	1.8	38	4
New 2ALE 009 025 S04	0.9	2.5	38	4
New 2ALE 010 015 S04	1	1.5	40	4
New 2ALE 010 015 S06	1	1.5	40	6
New 2ALE 010 025 S04	1	2.5	40	4
2ALE 010 025 S06	1	2.5	40	6
New 2ALE 010 035 S04	1	3.5	40	4
2ALE 010 035 S06	1	3.5	40	6
2ALE 010 050 S06	1	5	45	6
New 2ALE 010 060 S06	1	6	45	6
New 2ALE 012 030 S06	1.2	3	40	6
New 2ALE 012 040 S06	1.2	4	40	6
New 2ALE 012 060 S06	1.2	6	40	6
2ALE 015 040 S06	1.5	4	40	6
2ALE 015 060 S06	1.5	6	40	6
2ALE 015 080 S06	1.5	8	45	6
New 2ALE 015 100 S06	1.5	10	50	6
New 2ALE 015 120 S06	1.5	12	50	6
2ALE 020 050 S06	2	5	45	6
2ALE 020 070 S06	2	7	45	6
2ALE 020 100 S06	2	10	50	6
2ALE 020 120 S06	2	12	50	6
New 2ALE 020 140 S06	2	14	50	6
New 2ALE 020 160 S06	2	16	60	6
2ALE 025 080 S06	2.5	8	45	6
2ALE 025 120 S06	2.5	12	50	6
New 2ALE 025 150 S06	2.5	15	60	6
2ALE 030 080 S06	3	8	45	6
2ALE 030 100 S06	3	10	45	6
2ALE 030 120 S06	3	12	50	6
2ALE 030 150 S06	3	15	50	6
2ALE 030 200 S06	3	20	60	6
New 2ALE 030 250 S06	3	25	65	6
2ALE 035 100 S06	3.5	10	45	6
2ALE 035 150 S06	3.5	15	50	6
2ALE 040 120 S06	4	12	50	6
2ALE 040 150 S06	4	15	55	6
2ALE 040 180 S06	4	18	55	6
2ALE 040 250 S06	4	25	65	6
New 2ALE 040 300 S06	4	30	70	6
2ALE 045 120 S06	4.5	12	50	6
2ALE 045 180 S06	4.5	18	55	6
2ALE 050 150 S06	5	15	50	6
2ALE 050 200 S06	5	20	60	6
2ALE 050 250 S06	5	25	65	6
New 2ALE 050 300 S06	5	30	70	6
2ALE 055 150 S06	5.5	15	50	6
2ALE 060 150 S06	6	15	50	6
2ALE 060 200 S06	6	20	60	6
2ALE 060 250 S06	6	25	65	6
New 2ALE 060 300 S06	6	30	70	6
New 2ALE 060 350 S06	6	35	75	6
New 2ALE 060 400 S06	6	40	80	6
2ALE 070 200 S08	7	20	60	8
2ALE 070 300 S08	7	30	70	8
2ALE 080 200 S08	8	20	60	8
2ALE 080 250 S08	8	25	65	8
2ALE 080 300 S08	8	30	70	8
2ALE 080 400 S08	8	40	80	8
New 2ALE 080 450 S08	8	45	90	8
2ALE 100 250 S10	10	25	70	10
2ALE 100 300 S10	10	30	75	10
2ALE 100 350 S10	10	35	80	10
2ALE 100 450 S10	10	45	90	10
New 2ALE 100 500 S10	10	50	100	10
2ALE 120 300 S12	12	30	75	12
2ALE 120 350 S12	12	35	80	12
2ALE 120 400 S12	12	40	90	12
New 2ALE 120 450 S12	12	45	100	12
2ALE 120 500 S12	12	50	100	12
New 2ALE 120 600 S12	12	60	110	12
2ALE 140 300 S14	14	30	80	14
2ALE 160 400 S16	16	40	90	16
2ALE 160 550 S16	16	55	110	16
2ALE 160 700 S16	16	70	120	16
2ALE 200 450 S20	20	45	100	20
2ALE 200 650 S20	20	65	120	20
2ALE 200 800 S20	20	80	135	20

FOR ALUMINUM

3ALE — Fresa Cilindrica 3 Tagli 45° per Alluminio



- **Fresa per alluminio, leghe di alluminio e materiali non ferrosi.**
- Materiale Ultra Micrograna (0,2 µm) per finiture eccellenti.
- Varie lunghezze di taglio per soddisfare le più svariate esigenze.
- Ridotto incollamento del truciolo grazie alla geometria specifica.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

3 | WC 미립자 | D +0~-0.01 Ø1~Ø20 | 45° Helix Angle | Rinforzato | € List. p.122 | i info p.237

D	Tolleranza
Ø1 ~ 20	+0 ~ -0.01mm

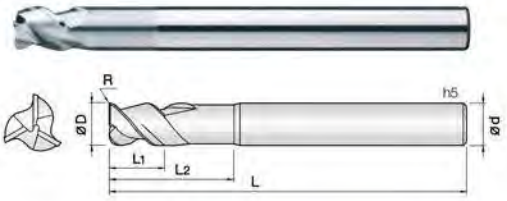
Unità : mm

Numero d'Ordine	D	L1	L	d
3ALE 010 015 S06	1	1.5	40	6
3ALE 010 030 S06	1	3	40	6
3ALE 010 050 S06	1	5	45	6
New 3ALE 012 030 S06	1.2	3	40	6
New 3ALE 012 040 S06	1.2	4	40	6
New 3ALE 012 060 S06	1.2	6	40	6
3ALE 015 025 S06	1.5	2.5	40	6
3ALE 015 040 S06	1.5	4	40	6
3ALE 015 060 S06	1.5	6	45	6
3ALE 015 080 S06	1.5	8	45	6
New 3ALE 015 100 S06	1.5	10	50	6
New 3ALE 015 120 S06	1.5	12	50	6
3ALE 020 030 S06	2	3	45	6
3ALE 020 050 S06	2	5	45	6
3ALE 020 070 S06	2	7	45	6
3ALE 020 100 S06	2	10	50	6
3ALE 020 120 S06	2	12	50	6
New 3ALE 020 140 S06	2	14	60	6
New 3ALE 020 160 S06	2	16	60	6
3ALE 025 040 S06	2.5	4	45	6
3ALE 025 080 S06	2.5	8	45	6
3ALE 025 120 S06	2.5	12	50	6
New 3ALE 025 150 S06	2.5	15	60	6
3ALE 030 045 S06	3	4.5	45	6
3ALE 030 080 S06	3	8	45	6
3ALE 030 120 S06	3	12	50	6
3ALE 030 150 S06	3	15	50	6
3ALE 030 200 S06	3	20	55	6
3ALE 030 250 S06	3	25	60	6
3ALE 030 300 S06	3	30	65	6
3ALE 035 055 S06	3.5	5.5	45	6
3ALE 035 100 S06	3.5	10	45	6
3ALE 035 150 S06	3.5	15	50	6
3ALE 040 060 S06	4	6	45	6
3ALE 040 110 S06	4	11	45	6
3ALE 040 160 S06	4	16	50	6
3ALE 040 200 S06	4	20	55	6
3ALE 040 250 S06	4	25	60	6
3ALE 040 300 S06	4	30	65	6
3ALE 045 120 S06	4.5	12	50	6
3ALE 045 180 S06	4.5	18	55	6
3ALE 050 075 S06	5	7.5	50	6
3ALE 050 130 S06	5	13	50	6
3ALE 050 200 S06	5	20	55	6
3ALE 050 250 S06	5	25	60	6
3ALE 050 300 S06	5	30	65	6
3ALE 055 150 S06	5.5	15	50	6
3ALE 060 090 050	6	9	50	6

Numero d'Ordine	D	L1	L	d
3ALE 060 150 050	6	15	50	6
3ALE 060 200 055	6	20	55	6
3ALE 060 250 060	6	25	60	6
3ALE 060 300 070	6	30	70	6
New 3ALE 060 350 070	6	35	70	6
New 3ALE 060 400 075	6	40	75	6
3ALE 080 120 060	8	12	60	8
3ALE 080 200 060	8	20	60	8
3ALE 080 250 065	8	25	65	8
3ALE 080 300 070	8	30	70	8
3ALE 080 350 075	8	35	75	8
3ALE 080 400 080	8	40	80	8
3ALE 080 450 090	8	45	90	8
3ALE 080 500 090	8	50	90	8
3ALE 080 550 100	8	55	100	8
New 3ALE 080 600 110	8	60	110	8
3ALE 100 150 070	10	15	70	10
3ALE 100 250 070	10	25	70	10
3ALE 100 300 075	10	30	75	10
3ALE 100 350 080	10	35	80	10
3ALE 100 400 090	10	40	90	10
3ALE 100 450 090	10	45	90	10
3ALE 100 500 100	10	50	100	10
3ALE 100 550 100	10	55	100	10
3ALE 100 600 110	10	60	110	10
3ALE 100 650 110	10	65	110	10
New 3ALE 100 700 120	10	70	120	10
3ALE 120 180 075	12	18	75	12
3ALE 120 260 075	12	26	75	12
3ALE 120 350 080	12	35	80	12
3ALE 120 400 090	12	40	90	12
3ALE 120 450 090	12	45	90	12
3ALE 120 500 100	12	50	100	12
3ALE 120 550 100	12	55	100	12
3ALE 120 650 110	12	65	110	12
New 3ALE 120 700 120	12	70	120	12
3ALE 140 300 080	14	30	80	14
3ALE 140 450 110	14	45	110	14
3ALE 160 300 085	16	30	85	16
3ALE 160 500 110	16	50	110	16
3ALE 160 650 120	16	65	120	16
3ALE 160 800 130	16	80	130	16
3ALE 200 500 100	20	50	100	20
3ALE 200 750 130	20	75	130	20
3ALE 200 1000 160	20	100	160	20
3ALE 200 1300 200	20	130	200	20

FOR ALUMINUM

3ALC Fresa Torica 3 Tagli 45° per Alluminio



- **Fresa per alluminio, leghe di alluminio e materiali non ferrosi.**
- Materiale Ultra Micrograna (0,2 µm) per finiture eccellenti.
- Tagliente corto a 45° ribassato per varie operazioni.
- Ridotto incollamento del truciolo grazie alla geometria specifica.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

3 | WC 미립자 | TDLC Coating | R ±0.005 R0.5 | R ±0.01 R1 ~ 1.5 | R ±0.015 R2 ~ 5 | 45° Helix Angle | € List. p.124 | i info p.237

D	Tolleranza
ø6 ~ 20	+0~ -0.015mm

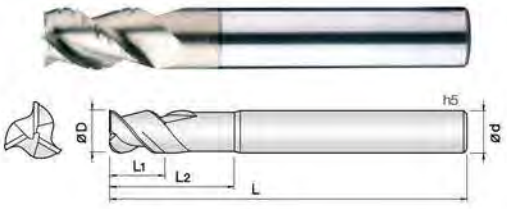
Unità : mm

Numero d'Ordine		D×R	L1	L2	L	d
Non Rivestito	Rivestito					
3ALC 060 005 050	3ALCC 060 005 050	6 X R0.5	15	-	50	6
3ALC 060 005 070	3ALCC 060 005 070	6 X R0.5	7	20	70	6
3ALC 060 010 050	3ALCC 060 010 050	6 X R1	15	-	50	6
3ALC 060 010 070	3ALCC 060 010 070	6 X R1	7	20	70	6
3ALC 080 005 060	3ALCC 080 005 060	8 X R0.5	20	-	60	8
3ALC 080 005 080	3ALCC 080 005 080	8 X R0.5	9	25	80	8
3ALC 080 010 060	3ALCC 080 010 060	8 X R1	20	-	60	8
3ALC 080 010 080	3ALCC 080 010 080	8 X R1	9	25	80	8
3ALC 080 020 060	3ALCC 080 020 060	8 X R2	20	-	60	8
3ALC 080 020 080	3ALCC 080 020 080	8 X R2	9	25	80	8
3ALC 080 025 080	3ALCC 080 025 080	8 X R2.5	9	25	80	8
3ALC 100 010 070	3ALCC 100 010 070	10 X R1	25	-	70	10
3ALC 100 010 100	3ALCC 100 010 100	10 X R1	11	30	100	10
3ALC 100 015 070	3ALCC 100 015 070	10 X R1.5	25	-	70	10
3ALC 100 015 100	3ALCC 100 015 100	10 X R1.5	11	30	100	10
3ALC 100 020 070	3ALCC 100 020 070	10 X R2	25	-	70	10
3ALC 100 020 100	3ALCC 100 020 100	10 X R2	11	30	100	10
3ALC 100 025 100	3ALCC 100 025 100	10 X R2.5	11	30	100	10
3ALC 120 010 075	3ALCC 120 010 075	12 X R1	30	-	75	12
3ALC 120 010 110	3ALCC 120 010 110	12 X R1	13	36	110	12
3ALC 120 015 110	3ALCC 120 015 110	12 X R1.5	13	36	110	12
3ALC 120 020 075	3ALCC 120 020 075	12 X R2	30	-	75	12
3ALC 120 020 110	3ALCC 120 020 110	12 X R2	13	36	110	12
3ALC 120 025 110	3ALCC 120 025 110	12 X R2.5	13	36	110	12
3ALC 120 030 075	3ALCC 120 030 075	12 X R3	30	-	75	12
3ALC 120 030 110	3ALCC 120 030 110	12 X R3	13	36	110	12
3ALC 120 040 075	3ALCC 120 040 075	12 X R4	30	-	75	12
3ALC 120 040 110	3ALCC 120 040 110	12 X R4	13	36	110	12
3ALC 160 010 090	3ALCC 160 010 090	16 X R1	35	-	90	16
3ALC 160 010 130	3ALCC 160 010 130	16 X R1	17	50	130	16
3ALC 160 020 090	3ALCC 160 020 090	16 X R2	35	-	90	16
3ALC 160 020 130	3ALCC 160 020 130	16 X R2	17	50	130	16
3ALC 160 025 130	3ALCC 160 025 130	16 X R2.5	17	50	130	16
3ALC 160 030 090	3ALCC 160 030 090	16 X R3	35	-	90	16
3ALC 160 030 130	3ALCC 160 030 130	16 X R3	17	50	130	16
3ALC 160 040 090	3ALCC 160 040 090	16 X R4	35	-	90	16
3ALC 160 040 130	3ALCC 160 040 130	16 X R4	17	50	130	16
3ALC 160 050 090	3ALCC 160 050 090	16 X R5	35	-	90	16
3ALC 200 020 150	3ALCC 200 020 150	20 X R2	21	60	150	20
3ALC 200 025 150	3ALCC 200 025 150	20 X R2.5	21	60	150	20
3ALC 200 030 150	3ALCC 200 030 150	20 X R3	21	60	150	20
3ALC 200 040 150	3ALCC 200 040 150	20 X R4	21	60	150	20

FOR ALUMINUM

3ARE

Fresa Cilindrica 3 Tagli 45° a Sgrossare per Alluminio



- **Fresa per sgrossatura e semi finitura in alta velocità su alluminio, leghe di alluminio e materiali non ferrosi.**
- Il rivestimento J-Max migliora la resistenza all'usura, riduce lo sforzo nel taglio in varie applicazioni.
- Buona rugosità superficiale a differenza delle frese concorrenti.
- Ridotto incollamento del truciolo grazie alla geometria specifica.
- Riduzione di scheggiature ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 µm).

3 | WC 미립자 | JMAX Coating | D −0.02~−0.04 Ø6~Ø8 | D −0.02~−0.05 Ø10~Ø20 | 45° Helix Angle | Rinforzato

D	Tolleranza
Ø6 ~ 8	−0.02 ~ −0.04mm
Ø10 ~ 20	−0.02 ~ −0.05mm

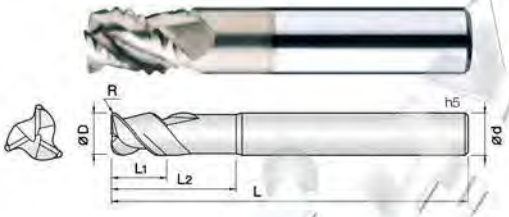
Unità : mm

Numero d'Ordine	D	L1	L2	L	d
3ARE 060 150 S06	6	10	15	50	6
3ARE 060 200 S06	6	15	20	70	6
3ARE 080 200 S08	8	15	20	60	8
3ARE 080 250 S08	8	20	25	80	8
3ARE 100 250 S10	10	18	25	70	10
3ARE 100 300 S10	10	23	30	90	10
3ARE 120 300 S12	12	20	30	80	12
3ARE 120 400 S12	12	30	40	100	12
3ARE 160 350 S16	16	25	35	110	16

Numero d'Ordine	D	L1	L2	L	d
3ARE 160 500 S16	16	35	50	120	16
3ARE 200 500 S20	20	35	50	110	20
3ARE 200 600 S20	20	45	60	120	20

3ARC

Fresa Cilindrica 3 Tagli 45° a Sgrossare per Alluminio



- **Fresa per sgrossatura e semi finitura in alta velocità su alluminio, leghe di alluminio e materiali non ferrosi.**
- Il rivestimento J-Max migliora la resistenza all'usura, riduce lo sforzo nel taglio in varie applicazioni.
- Buona rugosità superficiale a differenza delle frese concorrenti.
- Ridotto incollamento del truciolo grazie alla geometria specifica.
- Riduzione di scheggiature ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 µm).

3 | WC 미립자 | JMAX Coating | R ±0.005 R0.5 | R ±0.01 R1 | R ±0.015 R02 ~ 3 | 45° Helix Angle | € List. p.125 | i info p.238

D	Tolleranza
Ø6 ~ 20	+0~ −0.015mm

Unità : mm

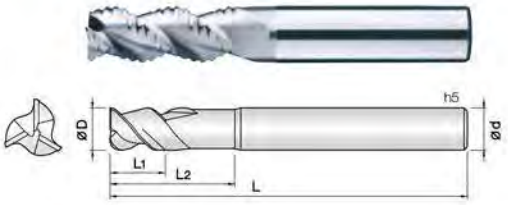
Numero d'Ordine	D×R	L1	L2	L	d
3ARC 060 005 S06	6 X R0.5	9	15	65	6
3ARC 060 010 S06	6 X R1	9	15	65	6
3ARC 080 005 S08	8 X R0.5	12	20	70	8
3ARC 080 010 S08	8 X R1	12	20	70	8
3ARC 100 010 S10	10 X R1	15	25	75	10
3ARC 100 020 S10	10 X R2	15	25	75	10
3ARC 120 010 S12	12 X R1	20	30	80	12
3ARC 120 020 S12	12 X R2	20	30	80	12
3ARC 120 030 S12	12 X R3	20	30	80	12

Numero d'Ordine	D×R	L1	L2	L	d
3ARC 160 010 S16	16 X R1	25	35	110	16
3ARC 160 020 S16	16 X R2	25	35	110	16
3ARC 160 030 S16	16 X R3	25	35	110	16
3ARC 200 020 S20	20 X R2	30	50	110	20
3ARC 200 030 S20	20 X R3	30	50	110	20

FOR ALUMINUM

3ARO

Fresa 3 Tagli 45° a Sgrossare per Alluminio



- **Fresa per sgrossatura e semi finitura in alta velocità su alluminio, leghe di alluminio e materiali non ferrosi.**
- Elica a 45° con rompitruciolo aprofilo fine per sgrossatura in alta velocità.
- Ridotto incollamento del truciolo grazie alla geometria specifica.
- Riduzione di scheggiature ad alti avanzamenti garantite dal metallo duro Ultra Micrograna (0,2 μm).

3 | WC 미립자 | TDLC Coating | DI -0.02~-0.04 Ø4~Ø8 | DI -0.02~-0.05 Ø10~Ø20 | 45° Helix Angle | Rinforzato | € List. p.125 | i info p.238

D	Tolleranza
Ø4 ~ 8	-0.02 ~ -0.04mm
Ø10 ~ 20	-0.02 ~ -0.05mm

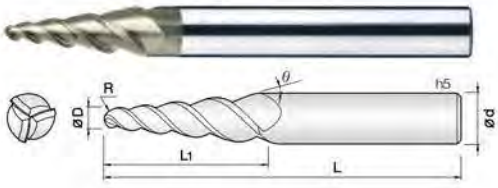
Unità : mm

Numero d'Ordine		D	L1	L2	L	d
Non Rivestita	Rivestita					
New 3ARO 040 080 S06	New 3AROC 040 080 S06	4	8	-	50	6
3ARO 040 150 S06	3AROC 040 150 S06	4	10	15	60	6
New 3ARO 050 100 S06	New 3AROC 050 100 S06	5	10	-	60	6
3ARO 050 200 S06	3AROC 050 200 S06	5	15	20	60	6
New 3ARO 060 120 S06	New 3AROC 060 120 S06	6	12	-	60	6
3ARO 060 210 S06	3AROC 060 210 S06	6	16	21	65	6
New 3ARO 080 160 S08	New 3AROC 080 160 S08	8	16	-	70	8
3ARO 080 270 S08	3AROC 080 270 S08	8	21	27	70	8
New 3ARO 100 200 S10	New 3AROC 100 200 S10	10	20	-	70	10
3ARO 100 310 S10	3AROC 100 310 S10	10	26	31	75	10
New 3ARO 120 240 S12	New 3AROC 120 240 S12	12	24	-	75	12
3ARO 120 380 S12	3AROC 120 380 S12	12	30	38	80	12
New 3ARO 160 320 S16	New 3AROC 160 320 S16	16	32	-	100	16
3ARO 160 450 S16	3AROC 160 450 S16	16	36	45	100	16
3ARO 200 550 S20	3AROC 200 550 S20	20	41	55	110	20

FOR ALUMINUM

3TBIC

Fresa Emisferica Conica 3 Tagli per Palette



- **Fresa per acciai legati, leghe Ni/Cr, inconel, ghisa, leghe di alluminio e materiali non ferrosi.**
- Il rivestimento J-Max migliora la resistenza all'usura, riduce lo sforzo nel taglio in varie applicazioni.
- Adatta per lavorazioni su macchine a 5 assi nella produzione di giranti, stampi per gomma, palette e turbine.
- Indicata per operazioni di sgrossatura e finitura.

3 | WC 미립자 | JMAX Coating | R ±0.005 (0.5R ~ 1R) | R ±0.01 (2R ~ 3R) | 35° Helix Angle | € List. p.126

D	Tolleranza
Ø4 ~ 6	+0.01~ -0.01mm

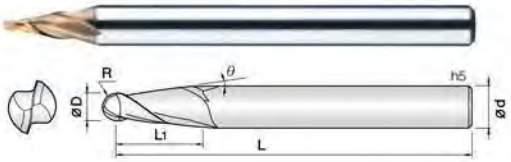
Unità : mm

Numero d'Ordine	R x D	θ	L1	L	d
3TBIC 010 010 120	R0.5 X 1	1°	12	50	6
3TBIC 010 010 200	R0.5 X 1	1°	20	60	6
3TBIC 010 020 150	R0.5 X 1	2°	15	55	6
3TBIC 010 020 200	R0.5 X 1	2°	20	60	6
3TBIC 010 030 150	R0.5 X 1	3°	15	55	6
3TBIC 010 030 200	R0.5 X 1	3°	20	60	6
3TBIC 010 040 200	R0.5 X 1	4°	20	60	6
3TBIC 010 050 200	R0.5 X 1	5°	20	60	6
3TBIC 010 060 200	R0.5 X 1	6°	20	60	6
3TBIC 010 070 200	R0.5 X 1	7°	20	60	6
3TBIC 010 080 180	R0.5 X 1	8°	18	60	6
3TBIC 020 010 120	R1 X 2	1°	12	50	6
3TBIC 020 010 200	R1 X 2	1°	20	60	6
3TBIC 020 020 150	R1 X 2	2°	15	55	6
3TBIC 020 020 200	R1 X 2	2°	20	60	6
3TBIC 020 030 150	R1 X 2	3°	15	55	6
3TBIC 020 030 200	R1 X 2	3°	20	60	6
3TBIC 020 030 300	R1 X 2	3°	30	70	6
3TBIC 020 040 200	R1 X 2	4°	20	60	6
3TBIC 020 050 200	R1 X 2	5°	20	60	6
3TBIC 020 050 300	R1 X 2	5°	30	75	8
3TBIC 020 060 190	R1 X 2	6°	19	60	6
3TBIC 020 060 290	R1 X 2	6°	29	75	8
3TBIC 020 070 160	R1 X 2	7°	16	60	6
3TBIC 020 070 250	R1 X 2	7°	25	70	8
3TBIC 020 080 150	R1 X 2	8°	15	60	6
3TBIC 020 080 220	R1 X 2	8°	22	70	8
3TBIC 030 010 200	R1.5 X 3	1°	20	60	6
3TBIC 030 010 320	R1.5 X 3	1°	32	75	6
3TBIC 030 020 200	R1.5 X 3	2°	20	60	6
3TBIC 030 030 200	R1.5 X 3	3°	20	60	6
3TBIC 030 030 300	R1.5 X 3	3°	30	70	6
3TBIC 030 030 390	R1.5 X 3	3°	39	80	8
3TBIC 030 040 200	R1.5 X 3	4°	20	65	6
3TBIC 030 050 180	R1.5 X 3	5°	18	60	6
3TBIC 030 050 300	R1.5 X 3	5°	30	75	8
3TBIC 030 060 150	R1.5 X 3	6°	15	60	6
3TBIC 030 060 250	R1.5 X 3	6°	25	70	8
3TBIC 030 070 190	R1.5 X 3	7°	19	70	8
3TBIC 030 070 300	R1.5 X 3	7°	30	80	10
3TBIC 030 080 190	R1.5 X 3	8°	19	70	8
3TBIC 030 080 260	R1.5 X 3	8°	26	75	10
3TBIC 040 010 200	R2 X 4	1°	20	60	6
3TBIC 040 010 320	R2 X 4	1°	32	75	6
3TBIC 040 020 200	R2 X 4	2°	20	60	6
3TBIC 040 020 300	R2 X 4	2°	30	70	6
3TBIC 040 030 210	R2 X 4	3°	21	70	6
3TBIC 040 030 320	R2 X 4	3°	32	80	8

Unità : mm

Numero d'Ordine	R x D	θ	L1	L	d	刃
3TBIC 040 030 400	R2 X 4	3°	40	90	8	
3TBIC 040 040 200	R2 X 4	4°	20	70	8	
3TBIC 040 040 300	R2 X 4	4°	30	75	8	
3TBIC 040 050 200	R2 X 4	5°	20	70	8	
3TBIC 040 050 320	R2 X 4	5°	32	80	10	
3TBIC 040 060 200	R2 X 4	6°	20	70	8	
3TBIC 040 060 300	R2 X 4	6°	30	80	10	
3TBIC 040 070 180	R2 X 4	7°	18	70	8	
3TBIC 040 070 260	R2 X 4	7°	26	80	10	
3TBIC 040 080 230	R2 X 4	8°	23	75	10	
3TBIC 060 010 320	R3 X 6	1°	32	75	8	
3TBIC 060 020 300	R3 X 6	2°	30	75	8	
3TBIC 060 030 220	R3 X 6	3°	22	75	8	
3TBIC 060 030 320	R3 X 6	3°	32	80	10	
3TBIC 060 030 400	R3 X 6	3°	40	90	10	
3TBIC 060 040 250	R3 X 6	4°	25	75	10	
3TBIC 060 040 310	R3 X 6	4°	31	80	10	
3TBIC 060 050 210	R3 X 6	5°	21	75	10	
3TBIC 060 050 320	R3 X 6	5°	32	80	12	
3TBIC 060 060 210	R3 X 6	6°	21	75	10	
3TBIC 060 060 310	R3 X 6	6°	31	80	12	
3TBIC 060 070 190	R3 X 6	7°	19	75	10	
3TBIC 060 070 270	R3 X 6	7°	27	80	12	

2CTB Fresa Emisferica Conica 2 Tagli



- **Fresa per acciai bonificati e temprati fino a Hrc58.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superciale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

2 | WC 미립자 | TISIN Coating | R ±0.005 (0.2 ~ 1.5R) | R ±0.01 (1.5 ~ 3R) | 30° Helix Angle | € (List. p.127) | i (info p.239)

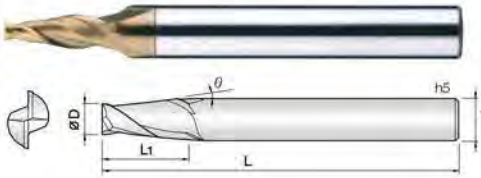
D	Tolleranza
ø0.4 ~ 3	-0.01 ~ -0.025mm
ø3 ~ 6	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	R×D	θ	L1	L	d
2CTB 004 020 030	0.2R X 0.4	2°	3	40	4
2CTB 004 030 030	0.2R X 0.4	3°	3	40	4
2CTB 004 040 030	0.2R X 0.4	4°	3	40	4
2CTB 004 050 030	0.2R X 0.4	5°	3	40	4
2CTB 004 070 030	0.2R X 0.4	7°	3	40	4
2CTB 004 100 030	0.2R X 0.4	10°	3	40	4
2CTB 005 020 030	0.25R X 0.5	2°	3	40	4
2CTB 005 030 030	0.25R X 0.5	3°	3	40	4
2CTB 005 040 035	0.25R X 0.5	4°	3.5	40	4
2CTB 005 050 035	0.25R X 0.5	5°	3.5	40	4
2CTB 005 070 035	0.25R X 0.5	7°	3.5	40	4
2CTB 005 100 035	0.25R X 0.5	10°	3.5	40	4
2CTB 006 020 030	0.3R X 0.6	2°	3	40	4
2CTB 006 030 030	0.3R X 0.6	3°	3	40	4
2CTB 006 040 035	0.3R X 0.6	4°	3.5	40	4
2CTB 006 050 035	0.3R X 0.6	5°	3.5	40	4
2CTB 006 070 035	0.3R X 0.6	7°	3.5	40	4
2CTB 006 100 035	0.3R X 0.6	10°	3.5	40	4
2CTB 008 020 030	0.4R X 0.8	2°	3	40	4
2CTB 008 030 030	0.4R X 0.8	3°	3	40	4
2CTB 008 040 040	0.4R X 0.8	4°	4	40	4
2CTB 008 050 040	0.4R X 0.8	5°	4	40	4
2CTB 008 070 040	0.4R X 0.8	7°	4	40	4
2CTB 008 100 040	0.4R X 0.8	10°	4	40	4
2CTB 010 003 030	0.5R X 1	0°30	3	40	4
2CTB 010 010 030	0.5R X 1	1°	3	40	4
2CTB 010 013 040	0.5R X 1	1°30	4	40	4
2CTB 010 020 040	0.5R X 1	2°	4	40	4
2CTB 010 030 040	0.5R X 1	3°	4	40	4
2CTB 010 040 060	0.5R X 1	4°	6	45	4
2CTB 010 050 060	0.5R X 1	5°	6	45	4
2CTB 010 070 060	0.5R X 1	7°	6	45	4
2CTB 010 100 060	0.5R X 1	10°	6	45	4
2CTB 015 003 060	0.75R X 1.5	0°30	6	45	4
2CTB 015 010 060	0.75R X 1.5	1°	6	45	4
2CTB 015 013 060	0.75R X 1.5	1°30	6	45	4
2CTB 015 020 060	0.75R X 1.5	2°	6	45	4
2CTB 015 030 060	0.75R X 1.5	3°	6	45	4
2CTB 015 040 060	0.75R X 1.5	4°	6	45	4
2CTB 015 050 060	0.75R X 1.5	5°	6	45	4
2CTB 015 070 060	0.75R X 1.5	7°	6	45	4
2CTB 020 003 080	1R X 2	0°30	8	45	4
2CTB 020 010 080	1R X 2	1°	8	45	4
2CTB 020 013 080	1R X 2	1°30	8	45	4
2CTB 020 020 080	1R X 2	2°	8	45	4
2CTB 020 030 080	1R X 2	3°	8	45	4
2CTB 020 040 080	1R X 2	4°	8	45	4
2CTB 020 050 080	1R X 2	5°	8	45	4

Numero d'Ordine	R×D	θ	L1	L	d
2CTB 020 070 080	1R X 2	7°	8	45	4
New 2CTB 030 003 120	1.5RX3	0°30	12	60	6
New 2CTB 030 010 120	1.5RX3	1°	12	60	6
New 2CTB 030 013 120	1.5RX3	1°30	12	60	6
New 2CTB 030 020 120	1.5RX3	2°	12	60	6
New 2CTB 030 030 120	1.5RX3	3°	12	60	6
New 2CTB 030 040 120	1.5RX3	4°	12	60	6
New 2CTB 030 050 120	1.5RX3	5°	12	60	6
New 2CTB 030 070 120	1.5RX3	7°	12	60	6
New 2CTB 040 003 160	2RX4	0°30	16	70	8
New 2CTB 040 010 160	2RX4	1°	16	70	8
New 2CTB 040 013 160	2RX4	1°30	16	70	8
New 2CTB 040 020 160	2RX4	2°	16	70	8
New 2CTB 040 030 160	2RX4	3°	16	70	8
New 2CTB 040 040 160	2RX4	4°	16	70	8
New 2CTB 040 050 160	2RX4	5°	16	70	8
New 2CTB 040 070 160	2RX4	7°	16	70	8
New 2CTB 050 003 160	2.5RX5	0°30	20	75	8
New 2CTB 050 010 160	2.5RX5	1°	20	75	8
New 2CTB 050 013 160	2.5RX5	1°30	20	75	8
New 2CTB 050 020 160	2.5RX5	2°	20	75	8
New 2CTB 050 030 160	2.5RX5	3°	20	75	8
New 2CTB 050 040 160	2.5RX5	4°	20	75	8
New 2CTB 050 050 160	2.5RX5	5°	20	80	10
New 2CTB 050 070 160	2.5RX5	7°	20	80	10
New 2CTB 060 003 160	3RX6	0°30	24	80	10
New 2CTB 060 010 160	3RX6	1°	24	80	10
New 2CTB 060 013 160	3RX6	1°30	24	80	10
New 2CTB 060 020 160	3RX6	2°	24	80	10
New 2CTB 060 030 160	3RX6	3°	24	80	10
New 2CTB 060 040 160	3RX6	4°	24	80	10
New 2CTB 060 050 160	3RX6	5°	24	90	12
New 2CTB 060 070 160	3RX6	7°	24	90	12

2CTE Fresa Conica 2 Tagli



- **Fresa per acciai bonificati e temprati fino a Hrc58.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superciale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

2 | WC 미립자 | TISIN Coating | D +0~-0.01 Ø0.3 ~ Ø4 | D -0.01~-0.025 Ø6 ~ Ø8 | 30° Helix Angle | Rinforzato | € List. p.128 | i info p.239

D	Tolleranza
Ø0.3 ~ 4	+0~ -0.01mm
Ø6 ~ 8	-0.01 ~ -0.025mm

Unità : mm

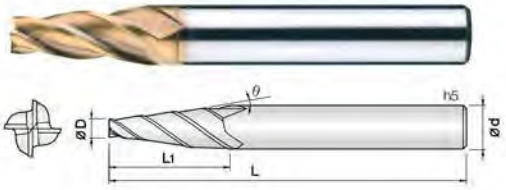
Numero d'Ordine	D	θ	L1	L	d
2CTE 003 003 012	0.3	0°30	1.2	40	4
2CTE 003 010 012	0.3	1°	1.2	40	4
2CTE 003 013 012	0.3	1°30	1.2	40	4
2CTE 003 020 012	0.3	2°	1.2	40	4
2CTE 003 030 012	0.3	3°	1.2	40	4
2CTE 003 050 012	0.3	5°	1.2	40	4
2CTE 003 070 015	0.3	7°	1.5	40	4
2CTE 003 100 015	0.3	10°	1.5	40	4
2CTE 004 003 016	0.4	0°30	1.6	40	4
2CTE 004 010 016	0.4	1°	1.6	40	4
2CTE 004 013 016	0.4	1°30	1.6	40	4
2CTE 004 020 016	0.4	2°	1.6	40	4
2CTE 004 030 016	0.4	3°	1.6	40	4
2CTE 004 050 016	0.4	5°	1.6	40	4
2CTE 004 070 020	0.4	7°	2	40	4
2CTE 004 100 020	0.4	10°	2	40	4
2CTE 005 003 020	0.5	0°30	2	40	4
2CTE 005 010 020	0.5	1°	2	40	4
2CTE 005 013 020	0.5	1°30	2	40	4
2CTE 005 020 020	0.5	2°	2	40	4
2CTE 005 030 020	0.5	3°	2	40	4
2CTE 005 050 020	0.5	5°	2	40	4
2CTE 005 070 025	0.5	7°	2.5	40	4
2CTE 005 100 025	0.5	10°	2.5	40	4
2CTE 006 003 020	0.6	0°30	2	40	4
2CTE 006 010 020	0.6	1°	2	40	4
2CTE 006 013 020	0.6	1°30	2	40	4
2CTE 006 020 020	0.6	2°	2	40	4
2CTE 006 030 020	0.6	3°	2	40	4
2CTE 006 050 020	0.6	5°	2	40	4
2CTE 006 070 025	0.6	7°	2.5	40	4
2CTE 006 100 025	0.6	10°	2.5	40	4
2CTE 007 010 025	0.7	1°	2.5	40	4
2CTE 007 013 025	0.7	1°30	2.5	40	4
2CTE 007 020 025	0.7	2°	2.5	40	4
2CTE 007 030 025	0.7	3°	2.5	40	4
2CTE 007 050 025	0.7	5°	2.5	40	4
2CTE 007 070 030	0.7	7°	3	40	4
2CTE 007 100 030	0.7	10°	3	40	4
2CTE 008 003 030	0.8	0°30	3	40	4
2CTE 008 010 030	0.8	1°	3	40	4
2CTE 008 013 030	0.8	1°30	3	40	4
2CTE 008 020 030	0.8	2°	3	40	4
2CTE 008 030 030	0.8	3°	3	40	4
2CTE 008 050 030	0.8	5°	3	40	4
2CTE 008 070 030	0.8	7°	3	40	4
2CTE 008 100 030	0.8	10°	3	40	4
2CTE 010 003 040	1	0°30	4	45	4

Numero d'Ordine	D	θ	L1	L	d
2CTE 010 010 040	1	1°	4	45	4
2CTE 010 013 040	1	1°30	4	45	4
2CTE 010 020 040	1	2°	4	45	4
2CTE 010 030 040	1	3°	4	45	4
2CTE 010 050 040	1	5°	4	45	4
2CTE 010 070 040	1	7°	4	45	4
2CTE 010 100 040	1	10°	4	45	4
2CTE 015 003 050	1.5	0°30	5	45	4
2CTE 015 010 050	1.5	1°	5	45	4
2CTE 015 013 060	1.5	1°30	6	45	4
2CTE 015 020 070	1.5	2°	7	45	4
2CTE 015 030 080	1.5	3°	8	45	4
2CTE 015 050 100	1.5	5°	10	50	4
2CTE 015 070 100	1.5	7°	10	50	4
2CTE 015 100 100	1.5	10°	10	50	6
2CTE 020 003 060	2	0°30	6	45	4
2CTE 020 010 060	2	1°	6	45	4
2CTE 020 013 060	2	1°30	6	45	4
2CTE 020 020 080	2	2°	8	45	4
2CTE 020 030 100	2	3°	10	50	4
2CTE 020 050 100	2	5°	10	50	4
2CTE 020 070 100	2	7°	10	50	6
2CTE 020 100 110	2	10°	11	50	6
2CTE 025 003 080	2.5	0°30	8	45	6
2CTE 025 010 100	2.5	1°	10	50	6
2CTE 025 013 100	2.5	1°30	10	50	6
2CTE 025 020 120	2.5	2°	12	50	6
2CTE 025 030 120	2.5	3°	12	50	6
2CTE 025 050 120	2.5	5°	12	50	6
2CTE 025 070 120	2.5	7°	12	50	6
2CTE 025 100 100	2.5	10°	10	50	6
2CTE 030 003 120	3	0°30	12	50	6
2CTE 030 010 120	3	1°	12	50	6
2CTE 030 013 120	3	1°30	12	50	6
2CTE 030 020 120	3	2°	12	50	6
2CTE 030 030 120	3	3°	12	50	6
2CTE 030 050 120	3	5°	12	50	6
2CTE 030 070 120	3	7°	12	50	6
2CTE 030 100 080	3	10°	8	50	6
2CTE 040 003 150	4	0°30	15	60	6
2CTE 040 010 150	4	1°	15	60	6
2CTE 040 013 150	4	1°30	15	60	6
2CTE 040 020 150	4	2°	15	60	6
2CTE 040 030 180	4	3°	18	60	6
2CTE 040 050 230	4	5°	23	65	8
2CTE 060 003 200	6	0°30	20	65	8
2CTE 060 010 200	6	1°	20	65	8
2CTE 060 013 200	6	1°30	20	65	8

Unità : mm

Numero d'Ordine	D	θ	L1	L	d
2CTE 060 020 200	6	2°	20	65	8
2CTE 060 030 190	6	3°	19	65	8
2CTE 060 050 230	6	5°	23	75	10
2CTE 060 070 240	6	7°	24	75	12
2CTE 060 100 170	6	10°	17	75	12
2CTE 070 003 250	7	0°30	25	70	8
2CTE 070 010 250	7	1°	25	70	8
2CTE 070 013 250	7	1°30	25	70	10
2CTE 070 030 280	7	3°	28	80	10
2CTE 070 050 280	7	5°	28	80	12
2CTE 080 003 320	8	0°30	32	90	10
2CTE 080 010 350	8	1°	35	90	10
2CTE 080 013 350	8	1°30	35	90	10
2CTE 080 020 280	8	2°	28	75	10
2CTE 080 030 350	8	3°	35	90	12
2CTE 080 050 450	8	5°	45	100	16
2CTE 080 070 320	8	7°	32	90	16
2CTE 080 100 340	8	10°	34	100	20

4CTE Fresa Conica 4 Tagli



- **Fresa per acciai bonificati e temprati fino a Hrc58.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superciale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

4 | WC 미립자 | TISIN Coating | D +0 -0.01 Ø0.3 ~ Ø5 | D -0.01 -0.025 Ø6 ~ Ø10 | 30° Helix Angle | Rinforzato | € List. p.129 | i info p.240

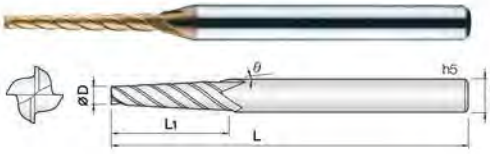
D	Tolleranza
Ø0.3 ~ 5	+0~ -0.01mm
Ø6 ~ 8	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	θ	L1	L	d
4CTE 030 003 110	3	0°30	11	50	6
4CTE 030 010 110	3	1°	11	50	6
4CTE 030 013 110	3	1°30	11	50	6
4CTE 030 020 150	3	2°	15	60	6
4CTE 030 023 150	3	2°30	15	60	6
4CTE 030 030 150	3	3°	15	60	6
4CTE 030 050 150	3	5°	15	60	6
4CTE 030 070 120	3	7°	12	60	6
4CTE 040 003 150	4	0°30	15	60	6
4CTE 040 010 150	4	1°	15	60	6
4CTE 040 013 150	4	1°30	15	60	6
4CTE 040 020 180	4	2°	18	60	6
4CTE 040 023 180	4	2°30	18	60	6
4CTE 040 030 180	4	3°	18	60	6
4CTE 040 050 230	4	5°	23	65	8
4CTE 040 070 250	4	7°	25	75	10
4CTE 050 003 180	5	0°30	18	60	6
4CTE 050 010 180	5	1°	18	60	6
4CTE 050 013 180	5	1°30	18	60	6
4CTE 050 020 150	5	2°	15	60	6
4CTE 050 023 200	5	2°30	20	65	8
4CTE 050 030 210	5	3°	21	65	8
4CTE 050 050 280	5	5°	28	80	10
4CTE 050 070 280	5	7°	28	80	12
4CTE 060 003 200	6	0°30	20	65	8
4CTE 060 010 200	6	1°	20	65	8
4CTE 060 013 200	6	1°30	20	65	8
4CTE 060 020 200	6	2°	20	65	8
4CTE 060 023 200	6	2°30	20	65	8
4CTE 060 030 260	6	3°	26	75	10
4CTE 060 050 230	6	5°	23	75	10
4CTE 060 070 240	6	7°	24	80	12
4CTE 080 003 250	8	0°30	25	75	10
4CTE 080 010 250	8	1°	25	75	10
4CTE 080 013 250	8	1°30	25	75	10
4CTE 080 020 250	8	2°	25	75	10
4CTE 080 023 230	8	2°30	23	75	10
4CTE 080 030 300	8	3°	30	80	12
4CTE 080 050 230	8	5°	23	85	12
4CTE 100 003 300	10	0°30	30	80	12
4CTE 100 010 300	10	1°	30	80	12
4CTE 100 013 300	10	1°30	30	80	12
4CTE 100 020 280	10	2°	28	80	12
4CTE 100 030 400	10	3°	40	100	16
4CTE 100 050 340	10	5°	34	100	16

4RTE

Fresa Conica 4 Tagli per Nervature



- **Fresa per acciai bonificati e temprati fino a Hrc58.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superciale.
- Ideale per nervature profonde.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

4 | WC 미립자 | TISIN Coating | ID +0~0.01 Ø0.5~Ø2.5 | 30° Helix Angle | Rinforzato | € List. p.130 | i info p.240

D	Tolleranza
Ø0.5 ~ 2.5	+0 ~ -0.01mm

Unità : mm

Numero d'Ordine	D	θ	L1	L	d
4RTE 005 030 040	0.5	0° 30	4	45	4
4RTE 005 030 060	0.5	0° 30	6	45	4
4RTE 005 045 040	0.5	0° 45	4	45	4
4RTE 005 045 060	0.5	0° 45	6	45	4
4RTE 005 100 040	0.5	1°	4	45	4
4RTE 005 100 060	0.5	1°	6	45	4
4RTE 006 030 040	0.6	0° 30	4	45	4
4RTE 006 030 060	0.6	0° 30	6	45	4
4RTE 006 045 040	0.6	0° 45	4	45	4
4RTE 006 045 060	0.6	0° 45	6	45	4
4RTE 006 100 040	0.6	1°	4	45	4
4RTE 006 100 060	0.6	1°	6	45	4
4RTE 007 030 060	0.7	0° 30	6	45	4
4RTE 007 030 080	0.7	0° 30	8	45	4
4RTE 007 045 060	0.7	0° 45	6	45	4
4RTE 007 045 080	0.7	0° 45	8	45	4
4RTE 007 100 060	0.7	1°	6	45	4
4RTE 007 100 080	0.7	1°	8	45	4
4RTE 008 030 060	0.8	0° 30	6	45	4
4RTE 008 030 080	0.8	0° 30	8	45	4
4RTE 008 030 100	0.8	0° 30	10	45	4
4RTE 008 045 060	0.8	0° 45	6	45	4
4RTE 008 045 080	0.8	0° 45	8	45	4
4RTE 008 045 100	0.8	0° 45	10	45	4
4RTE 008 100 060	0.8	1°	6	45	4
4RTE 008 100 080	0.8	1°	8	45	4
4RTE 008 100 100	0.8	1°	10	45	4
4RTE 009 030 060	0.9	0° 30	6	45	4
4RTE 009 030 080	0.9	0° 30	8	45	4
4RTE 009 030 100	0.9	0° 30	10	45	4
4RTE 009 045 060	0.9	0° 45	6	45	4
4RTE 009 045 080	0.9	0° 45	8	45	4
4RTE 009 045 100	0.9	0° 45	10	45	4
4RTE 009 100 060	0.9	1°	6	45	4
4RTE 009 100 080	0.9	1°	8	45	4
4RTE 009 100 100	0.9	1°	10	45	4
4RTE 010 030 080	1	0° 30	8	45	4
4RTE 010 030 100	1	0° 30	10	45	4
4RTE 010 030 120	1	0° 30	12	45	4
4RTE 010 045 080	1	0° 45	8	45	4
4RTE 010 045 100	1	0° 45	10	45	4
4RTE 010 045 120	1	0° 45	12	45	4
4RTE 010 100 080	1	1°	8	45	4
4RTE 010 100 100	1	1°	10	45	4
4RTE 010 100 120	1	1°	12	45	4
4RTE 012 030 080	1.2	0° 30	8	45	4
4RTE 012 030 100	1.2	0° 30	10	45	4
4RTE 012 030 120	1.2	0° 30	12	45	4

Numero d'Ordine	D	θ	L1	L	d
4RTE 012 030 160	1.2	0° 30	16	50	4
4RTE 012 045 080	1.2	0° 45	8	45	4
4RTE 012 045 100	1.2	0° 45	10	45	4
4RTE 012 045 120	1.2	0° 45	12	45	4
4RTE 012 045 160	1.2	0° 45	16	50	4
4RTE 012 100 080	1.2	1°	8	45	4
4RTE 012 100 100	1.2	1°	10	45	4
4RTE 012 100 120	1.2	1°	12	45	4
4RTE 012 100 160	1.2	1°	16	50	4
4RTE 015 030 060	1.5	0° 30	6	45	4
4RTE 015 030 100	1.5	0° 30	10	45	4
4RTE 015 030 160	1.5	0° 30	16	50	4
4RTE 015 030 200	1.5	0° 30	20	60	4
4RTE 015 100 060	1.5	1°	6	45	4
4RTE 015 100 100	1.5	1°	10	45	4
4RTE 015 100 160	1.5	1°	16	50	4
4RTE 015 100 200	1.5	1°	20	60	4
4RTE 015 100 250	1.5	1°	25	60	4
4RTE 015 130 060	1.5	1° 30	6	45	4
4RTE 015 130 100	1.5	1° 30	10	45	4
4RTE 015 130 160	1.5	1° 30	16	50	4
4RTE 015 130 200	1.5	1° 30	20	60	4
4RTE 015 130 250	1.5	1° 30	25	60	4
4RTE 020 030 100	2	0° 30	10	45	4
4RTE 020 030 160	2	0° 30	16	50	4
4RTE 020 030 200	2	0° 30	20	60	4
4RTE 020 030 250	2	0° 30	25	60	4
4RTE 020 100 100	2	1°	10	45	4
4RTE 020 100 160	2	1°	16	50	4
4RTE 020 100 200	2	1°	20	60	4
4RTE 020 100 250	2	1°	25	60	4
4RTE 020 130 100	2	1° 30	10	45	4
4RTE 020 130 160	2	1° 30	16	50	4
4RTE 020 130 200	2	1° 30	20	60	4
4RTE 020 130 250	2	1° 30	25	60	4
4RTE 025 030 100	2.5	0° 30	10	45	4
4RTE 025 030 160	2.5	0° 30	16	50	4
4RTE 025 030 200	2.5	0° 30	20	60	4
4RTE 025 030 250	2.5	0° 30	25	60	4
4RTE 025 100 100	2.5	1°	10	45	4
4RTE 025 100 160	2.5	1°	16	50	4
4RTE 025 100 200	2.5	1°	20	60	4
4RTE 025 100 250	2.5	1°	25	60	4
4RTE 025 130 100	2.5	1° 30	10	45	4
4RTE 025 130 160	2.5	1° 30	16	50	4
4RTE 025 130 200	2.5	1° 30	20	60	4
4RTE 025 130 250	2.5	1° 30	25	60	4

2CRC Fresa 2 Tagli a Raggio Concavo





- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superciale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

2 | WC 미립자 | TISIN Coating | R ±0.01 (0.1 ~ 2.5R) | R ±0.02 (3 ~ 8R) | 0° Helix Angle | € List. p.131 | i info p.240

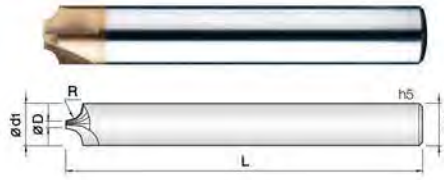
D	Tolleranza
Ø0.5 ~ 0.9	+0 ~ -0.01mm
Ø1.4 ~ 5.9	+0 ~ -0.02mm

Unità : mm

Numero d'Ordine	D×R	d1	L2	L	d
2CRC 005 001 S04	0.5 X R0.1	0.8	2.5	45	4
2CRC 005 0015 S04	0.5 X R0.15	0.9	2.5	45	4
2CRC 005 002 S04	0.5 X R0.2	1	2.5	45	4
2CRC 005 0025 S04	0.5 X R0.25	1.1	2.5	45	4
2CRC 005 003 S04	0.5 X R0.3	1.2	2.5	45	4
2CRC 005 0035 S04	0.5 X R0.35	1.3	2.5	45	4
2CRC 005 004 S04	0.5 X R0.4	1.4	2.5	45	4
2CRC 005 0045 S04	0.5 X R0.45	1.5	2.5	45	4
2CRC 005 005 S04	0.5 X R0.5	1.6	2.5	45	4
2CRC 009 005 S04	0.9 X R0.5	2	3	45	4
2CRC 049 005 S06	4.9 X R0.5	6	-	50	6
2CRC 005 0055 S04	0.5 X R0.55	1.7	3	45	4
2CRC 005 006 S04	0.5 X R0.6	1.8	3	45	4
2CRC 005 0065 S04	0.5 X R0.65	1.9	3	45	4
2CRC 005 007 S04	0.5 X R0.7	2	3	45	4
2CRC 009 0075 S04	0.9 X R0.75	2.5	4	45	4
2CRC 009 008 S04	0.9 X R0.8	2.6	4	45	4
2CRC 009 0085 S04	0.9 X R0.85	2.7	4	45	4
2CRC 009 009 S04	0.9 X R0.9	2.8	4	45	4
2CRC 009 0095 S04	0.9 X R0.95	2.9	4	45	4
2CRC 009 010 S06	0.9 X R1	3	5	50	6
2CRC 039 010 S06	3.9 X R1	6	-	50	6
2CRC 059 010 S08	5.9 X R1	8	-	60	8
2CRC 009 0125 S06	0.9 X R1.25	3.5	5	50	6
2CRC 034 0125 S06	3.4 X R1.25	6	-	50	6
2CRC 014 015 S06	1.4 X R1.5	4.5	8	50	6
2CRC 049 015 S08	4.9 X R1.5	8	-	60	8
2CRC 014 020 S06	1.4 X R2	5.5	10	50	6
2CRC 039 020 S08	3.9 X R2	8	-	60	8
2CRC 019 025 S08	1.9 X R2.5	7	13	60	8
2CRC 019 030 S08	1.9 X R3	8	-	60	8
2CRC 019 035 S10	1.9 X R3.5	9	13	70	10
2CRC 019 040 S10	1.9 X R4	10	-	70	10
2CRC 019 045 S12	1.9 X R4.5	11	13	80	12
2CRC 019 050 S12	1.9 X R5	12	-	80	12
2CRC 039 060 S16	3.9 X R6	16	-	85	16
2CRC 059 070 S20	5.9 X R7	20	-	85	20
2CRC 039 080 S20	3.9 X R8	20	-	85	20

GENERAL PURPOSE

4CRC Fresa 4 Tagli a Raggio Concavo



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Sl.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superciale.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

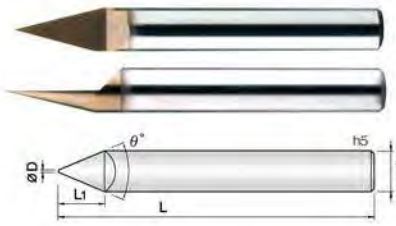
4 | WC 미립자 | TISIN Coating | R ±0.01 (0.5 ~ 2.5R) | R ±0.02 (3 ~ 6R) | 0° Helix Angle | € List. p.132 | i info p.241

D	Tolleranza
ø1.4 ~ 5.9	+0 ~ -0.02mm

Unità : mm

Numero d'Ordine	D×R	d1	L	d
4CRC 029 005 S04	2.9 X R0.5	4	50	4
New 4CRC 024 0075 S04	2.4 X R0.75	4	50	4
4CRC 019 010 S04	1.9 X R1	4	50	4
4CRC 049 005 S06	4.9 X R0.5	6	50	6
New 4CRC 049 0075 S06	4.9 X R0.75	6	50	6
4CRC 039 010 S06	3.9 X R1	6	50	6
4CRC 059 010 S08	5.9 X R1	8	60	8
4CRC 049 015 S08	4.9 X R1.5	8	60	8
New 4CRC 039 020 S08	3.9 X R2	8	60	8
4CRC 059 020 S10	5.9 X R2	10	70	10
4CRC 049 025 S10	4.9 X R2.5	10	70	10
New 4CRC 039 030 S10	3.9 X R3	10	70	10
4CRC 059 030 S12	5.9 X R3	12	75	12
4CRC 039 040 S12	3.9 X R4	12	75	12
4CRC 059 050 S16	5.9 X R5	16	80	16
4CRC 039 060 S16	3.9 X R6	16	80	16

1STE Fresa Monotagliente per Incisioni



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base SI.
- Ideale per incisioni grazie al tagliente dritto.
- Vari diametri ed inclinazioni per offrire la massima efficienza.

1 | WC 미립자 | TISIN Coating | D +0.05−0 Ø0 | D +0−0.02 Ø0.1 ~ 0.2 | 0° Helix Angle | € List. p.132 | i info p.241

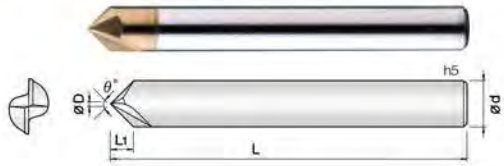
D	Tolleranza
Ø0	+0.05~ −0mm
Ø0.1 ~ 0.2	+0~ −0.02mm

Unità : mm

Numero d'Ordine	D	θ	L1	L	d
1STE 000 200 S04	0	20°	5	40	4
1STE 000 300 S04	0	30°	5	40	4
1STE 000 200 S06	0	20°	5	50	6
1STE 000 300 S06	0	30°	5	50	6
1STE 001 200 S04	0.1	20°	5	40	4
1STE 001 300 S04	0.1	30°	5	40	4
1STE 001 200 S06	0.1	20°	5	50	6
1STE 001 300 S06	0.1	30°	5	50	6
1STE 0015 200 S04	0.15	20°	5	40	4
1STE 0015 300 S04	0.15	30°	5	40	4
1STE 0015 200 S06	0.15	20°	5	50	6
1STE 0015 300 S06	0.15	30°	5	50	6
1STE 002 200 S04	0.2	20°	5	40	4
1STE 002 300 S04	0.2	30°	5	40	4
1STE 002 200 S06	0.2	20°	5	50	6
1STE 002 300 S06	0.2	30°	5	50	6



2STE Fresa 2 Tagli per Incisioni



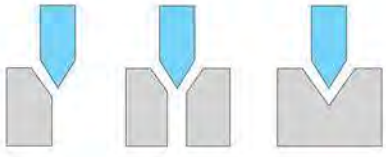
- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Ideale per incisioni grazie al tagliente dritto.
- Possibilità di lavorare plastiche e resine con frese non rivestite.

2 | WC 미립자 | TISIN Coating | D +0.05 −0 Ø0 | 0° Helix Angle | € List. p.133 | i info p.241

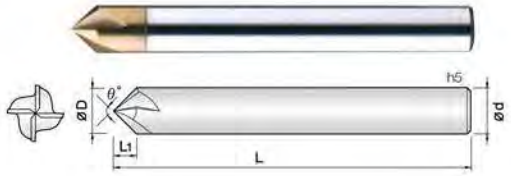
D	Tolleranza
Ø0	+0.05~ −0mm

Unità : mm

Numero d'Ordine		D	θ	L1	L	d
Non Rivestita	Rivestita					
2STE 000 300 S03	2STEC 000 300 S03	0	30°	5.5	60	3
2STE 000 600 S03	2STEC 000 600 S03	0	60°	2.5	60	3
2STE 000 900 S03	2STEC 000 900 S03	0	90°	1.5	60	3
2STE 000 300 S04	2STEC 000 300 S04	0	30°	7.4	60	4
2STE 000 600 S04	2STEC 000 600 S04	0	60°	3.4	60	4
2STE 000 900 S04	2STEC 000 900 S04	0	90°	2	60	4
2STE 000 300 S06	2STEC 000 300 S06	0	30°	11.1	60	6
2STE 000 600 S06	2STEC 000 600 S06	0	60°	5.1	60	6
2STE 000 900 S06	2STEC 000 900 S06	0	90°	3	60	6
2STE 000 600 S08	2STEC 000 600 S08	0	60°	6.9	65	8
2STE 000 900 S08	2STEC 000 900 S08	0	90°	4	65	8
2STE 000 600 S10	2STEC 000 600 S10	0	60°	8.6	70	10
2STE 000 900 S10	2STEC 000 900 S10	0	90°	5	70	10
2STE 000 600 S12	2STEC 000 600 S12	0	60°	10.3	75	12
2STE 000 900 S12	2STEC 000 900 S12	0	90°	6	75	12



4STE Fresa 4 Tagli per Incisioni



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Sl.
- Ideale per incisioni grazie al tagliente dritto.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 µm).

4 | WC 미립자 | TISIN Coating | D +0.05−0 Ø0 | 0° Helix Angle | € List. p.133 | i info p.241

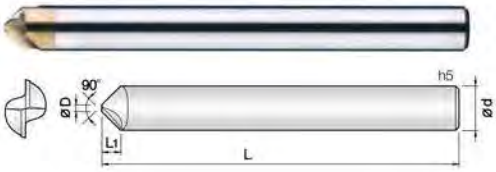
D	Tolleranza
Ø0	+0.05~ −0mm

Unità : mm

Numero d'Ordine	D	θ	L1	L	d
4STE 000 600 S03	0	60°	2.5	50	3
4STE 000 900 S03	0	90°	1.5	50	3
4STE 000 600 S04	0	60°	3.4	50	4
4STE 000 900 S04	0	90°	2	50	4
4STE 000 600 S06	0	60°	5.1	60	6
4STE 000 900 S06	0	90°	3	60	6
4STE 000 600 S08	0	60°	6.9	65	8
4STE 000 900 S08	0	90°	4	65	8
4STE 000 600 S10	0	60°	8.6	75	10
4STE 000 900 S10	0	90°	5	75	10
4STE 000 600 S12	0	60°	10.3	80	12
4STE 000 900 S12	0	90°	6	80	12



2CHA Fresa 2 Tagli per Smussatura a 45°



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elica a 2 tagli per un migliore rendimento in smussatura.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

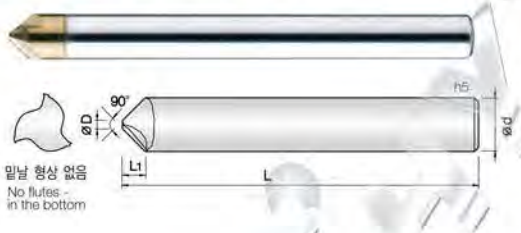
2 | WC 미립자 | TISIN Coating | D +0~-0.02 Ø0.8~Ø1 | 30° Helix Angle | € List. p.133 | i info p.242

D	Tolleranza
Ø0.8 ~ 1	+0~ -0.02mm

Unità : mm

Numero d'Ordine	D	θ	L1	L	d
2CHA 008 900 011	0.8	90°	1.1	50	3
2CHA 008 900 016	0.8	90°	1.6	50	4
2CHA 010 900 025	1	90°	2.5	60	6
2CHA 010 900 035	1	90°	3.5	70	8
2CHA 010 900 045	1	90°	4.5	80	10
2CHA 010 900 055	1	90°	5.5	90	12

3CHA Fresa 3 Tagli per Smussatura a 45°



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elica a 3 tagli per un migliore rendimento in smussatura.
- Prestazioni eccellenti in alta velocità garantite dal metallo duro Ultra Micrograna (0,2 μm).

3 | WC 미립자 | TISIN Coating | D +0~-0.02 Ø0.8~Ø2 | 30° Helix Angle | € List. p.134 | i info p.242

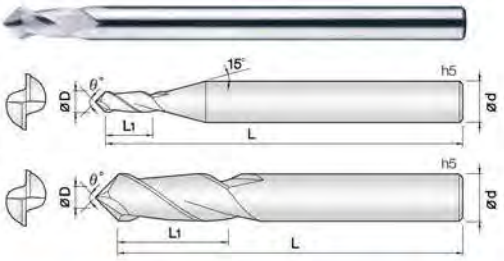
D	Tolleranza
Ø0.8 ~ 2	+0~ -0.02mm

Unità : mm

Numero d'Ordine	D	θ	L1	L	d
3CHA 008 900 011	0.8	90°	1.1	50	3
3CHA 008 900 016	0.8	90°	1.6	50	4
3CHA 010 900 025	1	90°	2.5	60	6
3CHA 010 900 035	1	90°	3.5	65	8
3CHA 020 900 045	2	90°	4.5	75	10
3CHA 020 900 055	2	90°	5.5	80	12

GENERAL PURPOSE

2CEN Fresa Multifunzione 2 Tagli 60° - 90°



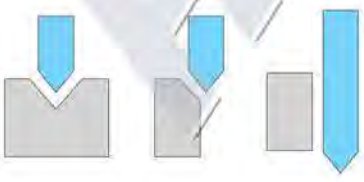
- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Fresa multifunzionale per smussatura, fresatura e centratura.
- Materiale Ultra Micrograna ottimizzato per lavorazioni su materiali non ferrosi.
- Versione anche rivestita per lavorazioni di acciai bonificati, temprati e ghise.

2 | WC 미립지 | JMAX Coating | D +0~-0.01 Ø0.3~Ø5 | D -0.01~-0.025 Ø6~Ø12 | D -0.015~-0.03 Ø14~Ø16 | 30° Helix Angle | € List. p.134 | i info p.242

D	Tolleranza
Ø3 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø14 ~ 16	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine		D	θ	L1	L	d		
Non Rivestita	Rivestita							
2CEN 003 600 S03	2CENC 003 600 S03	0.3	60°	0.6	45	3		
2CEN 003 900 S03	2CENC 003 900 S03	0.3	90°	0.6	45	3		
2CEN 005 600 S03	2CENC 005 600 S03	0.5	60°	1	50	3		
2CEN 005 900 S03	2CENC 005 900 S03	0.5	90°	1	50	3		
2CEN 008 600 S03	2CENC 008 600 S03	0.8	60°	1.6	50	3		
2CEN 008 900 S03	2CENC 008 900 S03	0.8	90°	1.6	50	3		
2CEN 010 600 S03	2CENC 010 600 S03	1	60°	2	50	3		
2CEN 010 900 S03	2CENC 010 900 S03	1	90°	2	50	3		
2CEN 020 600 S03	2CENC 020 600 S03	2	60°	4	50	3		
2CEN 020 900 S03	2CENC 020 900 S03	2	90°	4	50	3		
2CEN 030 600 S03	2CENC 030 600 S03	3	60°	6	50	3		
2CEN 030 900 S03	2CENC 030 900 S03	3	90°	6	50	3		
2CEN 030 600 S06	2CENC 030 600 S06	3	60°	6	50	6		
2CEN 030 900 S06	2CENC 030 900 S06	3	90°	6	50	6		
2CEN 040 600 S06	2CENC 040 600 S06	4	60°	8	50	6		
2CEN 040 900 S06	2CENC 040 900 S06	4	90°	8	50	6		
2CEN 050 600 S06	2CENC 050 600 S06	5	60°	10	50	6		
2CEN 050 900 S06	2CENC 050 900 S06	5	90°	10	50	6		
2CEN 060 600 S06	2CENC 060 600 S06	6	60°	12	60	6		
2CEN 060 900 S06	2CENC 060 900 S06	6	90°	12	60	6		
2CEN 080 600 S08	2CENC 080 600 S08	8	60°	16	70	8		
2CEN 080 900 S08	2CENC 080 900 S08	8	90°	16	70	8		
2CEN 100 600 S10	2CENC 100 600 S10	10	60°	18	70	10		
2CEN 100 900 S10	2CENC 100 900 S10	10	90°	18	70	10		
2CEN 120 600 S12	2CENC 120 600 S12	12	60°	20	75	12		
2CEN 120 900 S12	2CENC 120 900 S12	12	90°	20	75	12		
2CEN 140 600 S14	2CENC 140 600 S14	14	60°	26	80	14		
2CEN 140 900 S14	2CENC 140 900 S14	14	90°	26	80	14		
2CEN 160 600 S16	2CENC 160 600 S16	16	60°	32	100	16		
2CEN 160 900 S16	2CENC 160 900 S16	16	90°	32	100	16		

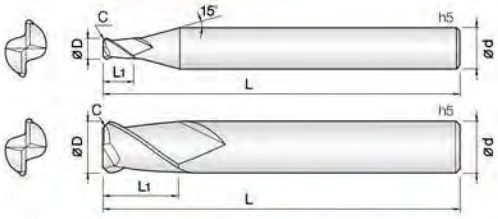


2CCMC

Fresa 2 Tagli

New





- **Fresa per alluminio e materiali non ferrosi.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Ideale per smussature ad angolo.
- Materiale Ultra Micrograna ottimizzato per lavorazioni su materiali non ferrosi.

2 | WC 미립자 | JMAX Coating | D +0~-0.01 Ø1~Ø5 | D -0.01~-0.025 Ø6~Ø12 | 30° Helix Angle | € List. p.135 | i info p.241

D	Tolleranza
Ø1 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

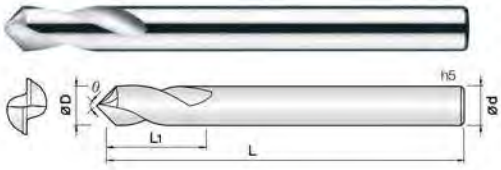
Numero d'Ordine	D	C	L1	L	d
2CCMC 010 0002 S04	1	0.02	2.5	45	4
2CCMC 010 0005 S04	1	0.05	2.5	45	4
2CCMC 010 001 S04	1	0.1	2.5	45	4
2CCMC 010 002 S04	1	0.2	2.5	45	4
2CCMC 010 003 S04	1	0.3	2.5	45	4
2CCMC 015 0005 S04	1.5	0.05	4	45	4
2CCMC 015 001 S04	1.5	0.1	4	45	4
2CCMC 015 002 S04	1.5	0.2	4	45	4
2CCMC 015 003 S04	1.5	0.3	4	45	4
2CCMC 015 005 S04	1.5	0.5	4	45	4
2CCMC 020 0005 S04	2	0.05	6	45	4
2CCMC 020 001 S04	2	0.1	6	45	4
2CCMC 020 002 S04	2	0.2	6	45	4
2CCMC 020 003 S04	2	0.3	6	45	4
2CCMC 020 004 S04	2	0.4	6	45	4
2CCMC 020 005 S04	2	0.5	6	45	4
2CCMC 030 0005 S06	3	0.05	8	50	6
2CCMC 030 001 S06	3	0.1	8	50	6
2CCMC 030 002 S06	3	0.2	8	50	6
2CCMC 030 003 S06	3	0.3	8	50	6
2CCMC 030 005 S06	3	0.5	8	50	6
2CCMC 030 010 S06	3	1	8	50	6
2CCMC 040 0005 S06	4	0.05	11	50	6
2CCMC 040 001 S06	4	0.1	11	50	6
2CCMC 040 002 S06	4	0.2	11	50	6
2CCMC 040 003 S06	4	0.3	11	50	6
2CCMC 040 005 S06	4	0.5	11	50	6
2CCMC 040 010 S06	4	1	11	50	6
2CCMC 040 015 S06	4	1.5	11	50	6
2CCMC 050 001 S06	5	0.1	13	60	6
2CCMC 050 002 S06	5	0.2	13	60	6
2CCMC 050 005 S06	5	0.5	13	60	6
2CCMC 050 010 S06	5	1	13	60	6
2CCMC 050 015 S06	5	1.5	13	60	6
2CCMC 050 020 S06	5	2	13	60	6
2CCMC 060 0005 S06	6	0.05	13	60	6
2CCMC 060 001 S06	6	0.1	13	60	6
2CCMC 060 002 S06	6	0.2	13	60	6
2CCMC 060 003 S06	6	0.3	13	60	6
2CCMC 060 005 S06	6	0.5	13	60	6
2CCMC 060 010 S06	6	1	13	60	6
2CCMC 060 015 S06	6	1.5	13	60	6
2CCMC 060 020 S06	6	2	13	60	6
2CCMC 060 025 S06	6	2.5	13	60	6
2CCMC 080 001 S08	8	0.1	19	70	8
2CCMC 080 002 S08	8	0.2	19	70	8
2CCMC 080 005 S08	8	0.5	19	70	8
2CCMC 080 010 S08	8	1	19	70	8

New

Unità : mm

Numero d'Ordine	D	C	L1	L	d
2CCMC 080 015 S08	8	1.5	19	70	8
2CCMC 080 020 S08	8	2	19	70	8
2CCMC 080 025 S08	8	2.5	19	70	8
2CCMC 080 030 S08	8	3	19	70	8
2CCMC 100 001 S10	10	0.1	22	75	10
2CCMC 100 002 S10	10	0.2	22	75	10
2CCMC 100 005 S10	10	0.5	22	75	10
2CCMC 100 010 S10	10	1	22	75	10
2CCMC 100 015 S10	10	1.5	22	75	10
2CCMC 100 020 S10	10	2	22	75	10
2CCMC 100 030 S10	10	3	22	75	10
2CCMC 100 040 S10	10	4	22	75	10
2CCMC 120 001 S12	12	0.1	26	80	12
2CCMC 120 002 S12	12	0.2	26	80	12
2CCMC 120 005 S12	12	0.5	26	80	12
2CCMC 120 010 S12	12	1	26	80	12
2CCMC 120 015 S12	12	1.5	26	80	12
2CCMC 120 020 S12	12	2	26	80	12
2CCMC 120 030 S12	12	3	26	80	12
2CCMC 120 040 S12	12	4	26	80	12
2CCMC 120 050 S12	12	5	26	80	12

2SPO Punta da Centro CNC 2 Tagli 90° - 120°



- **Punta da centro per lavorazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Ideale per centrature e smussature grazie all'elica a 2 tagli.
- Utilizzabile anche su plastiche e resine nella versione non rivestita.
- Materiale Ultra Micrograna ottimizzato per lavorazioni su materiali non ferrosi.

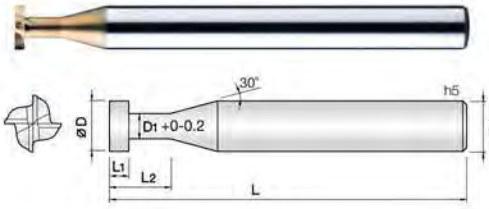
2 | WC 미립자 | TISIN Coating | D +0~-0.01 Ø2~Ø5 | D -0.01~-0.025 Ø6~Ø12 | D -0.015~-0.03 Ø16 | 30° Helix Angle | € List. p.136

D	Tolleranza
Ø2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16	-0.015 ~ -0.03mm

Unità : mm

	Numero d'Ordine		D	θ	L1	L	d
	Non Rivestita	Rivestita					
New	2SPO 010 090 050	2SPOC 010 090 050	1	90°	3	50	3
New	2SPO 010 120 050	2SPOC 010 120 050	1	120°	3	50	3
	2SPO 020 090 050	2SPOC 020 090 050	2	90°	6	50	3
	2SPO 020 120 050	2SPOC 020 120 050	2	120°	6	50	3
	2SPO 030 090 050	2SPOC 030 090 050	3	90°	10	50	3
	2SPO 030 120 050	2SPOC 030 120 050	3	120°	10	50	3
	2SPO 030 090 100	2SPOC 030 090 100	3	90°	10	100	3
	2SPO 030 120 100	2SPOC 030 120 100	3	120°	10	100	3
	2SPO 040 090 050	2SPOC 040 090 050	4	90°	12	50	4
	2SPO 040 120 050	2SPOC 040 120 050	4	120°	12	50	4
	2SPO 040 090 100	2SPOC 040 090 100	4	90°	12	100	4
	2SPO 040 120 100	2SPOC 040 120 100	4	120°	12	100	4
	2SPO 060 090 070	2SPOC 060 090 070	6	90°	15	70	6
	2SPO 060 120 070	2SPOC 060 120 070	6	120°	15	70	6
	2SPO 060 090 110	2SPOC 060 090 110	6	90°	15	110	6
	2SPO 060 120 110	2SPOC 060 120 110	6	120°	15	110	6
	2SPO 080 090 080	2SPOC 080 090 080	8	90°	25	80	8
	2SPO 080 120 080	2SPOC 080 120 080	8	120°	25	80	8
	2SPO 100 090 090	2SPOC 100 090 090	10	90°	25	90	10
	2SPO 100 120 090	2SPOC 100 120 090	10	120°	25	90	10
	2SPO 100 090 150	2SPOC 100 090 150	10	90°	25	150	10
	2SPO 100 120 150	2SPOC 100 120 150	10	120°	25	150	10
	2SPO 120 090 090	2SPOC 120 090 090	12	90°	30	90	12
	2SPO 120 120 090	2SPOC 120 120 090	12	120°	30	90	12
	2SPO 120 090 150	2SPOC 120 090 150	12	90°	30	150	12
	2SPO 120 120 150	2SPOC 120 120 150	12	120°	30	150	12
	2SPO 160 090 110	2SPOC 160 090 110	16	90°	35	110	16
	2SPO 160 120 110	2SPOC 160 120 110	16	120°	35	110	16

4TES Fresa T 4 Tagli



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Geometria a 4 tagli per ridurre scheggiature.
- Ampia gamma per ottimizzare il rendimento.

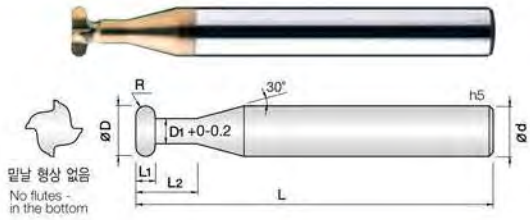
4 | WC 미립자 | JMAX Coating | D +0~0.02 Ø2~Ø5 | D -0.01~0.03 Ø6~Ø10 | L1 ±0.03 Ø2 ~ 5 | L1 ±0.05 Ø6 ~ 10 | 15° Helix Angle | € List. p.137 | i info p.243

D	Tolleranza
Ø2 ~ 5	+0 ~ -0.02mm
Ø6 ~ 10	-0.01 ~ -0.03mm

Unità : mm

Numero d'Ordine		D	L1	L2	D1	L	d
Non Rivestita	Rivestita						
4TES 020 003 040	4TESC 020 003 040	2	0.3	4	1	50	6
4TES 020 005 040	4TESC 020 005 040	2	0.5	4	1	50	6
4TES 030 003 045	4TESC 030 003 045	3	0.3	4.5	1.5	50	6
4TES 030 005 045	4TESC 030 005 045	3	0.5	4.5	1.5	50	6
4TES 030 010 045	4TESC 030 010 045	3	1	4.5	1.5	50	6
4TES 040 003 050	4TESC 040 003 050	4	0.3	5	2	50	6
4TES 040 005 050	4TESC 040 005 050	4	0.5	5	2	50	6
4TES 040 010 050	4TESC 040 010 050	4	1	5	2	50	6
4TES 050 005 045	4TESC 050 005 045	5	0.5	4.5	2.5	50	6
4TES 050 010 050	4TESC 050 010 050	5	1	5	2.5	50	6
4TES 050 015 055	4TESC 050 015 055	5	1.5	5.5	2.5	50	6
4TES 050 020 060	4TESC 050 020 060	5	2	6	2.5	50	6
4TES 060 005 045	4TESC 060 005 045	6	0.5	4.5	3	60	6
4TES 060 010 050	4TESC 060 010 050	6	1	5	3	60	6
4TES 060 015 055	4TESC 060 015 055	6	1.5	5.5	3	60	6
4TES 060 020 060	4TESC 060 020 060	6	2	6	3	60	6
4TES 080 005 045	4TESC 080 005 045	8	0.5	4.5	4	60	8
4TES 080 010 050	4TESC 080 010 050	8	1	5	4	60	8
4TES 080 015 055	4TESC 080 015 055	8	1.5	5.5	4	60	8
4TES 080 020 060	4TESC 080 020 060	8	2	6	4	60	8
4TES 080 030 070	4TESC 080 030 070	8	3	7	4	60	8
4TES 100 010 070	4TESC 100 010 070	10	1	7	5	70	10
4TES 100 020 080	4TESC 100 020 080	10	2	8	5	70	10
4TES 100 030 090	4TESC 100 030 090	10	3	9	5	70	10

4TRS Fresa T 4 Tagli - Raggiata



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Geometria a 4 tagli per ridurre scheggiature.
- Ampia gamma per ottimizzare il rendimento.

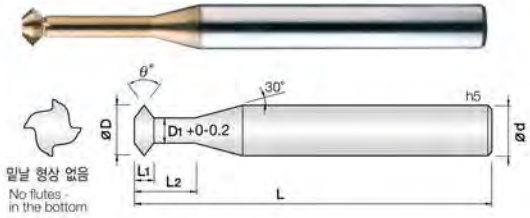
4 | WC 미립자 | JMAX Coating | R ±0.02 (0.5R~2R) | L1 ±0.03 (Ø5) | L1 ±0.05 (Ø6 ~ 12) | 0° Helix Angle | € List. p.137 | i info p.243

D	Tolleranza
Ø5 ~ 12	-0.01~ -0.025mm

Unità : mm

Numero d'Ordine	D×R	L1	L2	D1	L	d
4TRS 050 010 045	5X0.5R	1	4.5	2.5	50	6
4TRS 050 020 055	5X1R	2	5.5	2.5	50	6
4TRS 060 010 050	6X0.5R	1	5	3	50	6
4TRS 060 015 055	6X0.75R	1.5	5.5	3	50	6
4TRS 060 020 060	6X1R	2	6	3	50	6
4TRS 080 020 070	8X1R	2	7	4	60	8
4TRS 080 030 080	8X1.5R	3	8	4	60	8
4TRS 100 040 100	10X2R	4	10	4.5	70	10
New 4TRS 120 060 150	12X3R	6	15	5	75	12

4&6TDA Fresa T 4/6 Tagli - Doppio Angolo



- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Geometria a 4 tagli per ridurre scheggiature.
- Ampia gamma per ottimizzare il rendimento.

4 | 6 | WC 미립자 | JMAX Coating | D +0~-0.02 Ø1.5~Ø5 | D -0.01~-0.03 Ø6~Ø12 | L1 ±0.03 Ø1.5~Ø5 | L1 ±0.05 Ø6 ~ 12 | 0° Helix Angle | € List. p.138 | i Info p.243

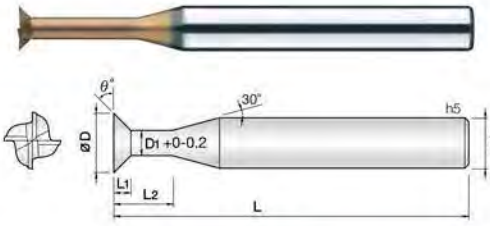
D	Tolleranza
Ø1.5 ~ 5	+0~ -0.02mm
Ø6 ~ 12	-0.01 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	θ	L1	L2	D1	L	d
4TDA 015 600 030	1.5	60°	0.43	3	0.75	45	4
4TDA 015 900 030	1.5	90°	0.75	3	0.75	45	4
4TDA 020 600 050	2	60°	0.57	5	1	50	4
4TDA 020 900 050	2	90°	1	5	1	50	4
4TDA 025 600 060	2.5	60°	0.75	6	1.2	50	4
4TDA 025 900 060	2.5	90°	1.3	6	1.2	50	4
4TDA 030 600 075	3	60°	0.86	7.5	1.5	50	4
4TDA 030 900 075	3	90°	1.5	7.5	1.5	50	4
4TDA 040 600 100	4	60°	1.15	10	2	50	4
4TDA 040 900 100	4	90°	2	10	2	50	4
4TDA 050 600 125	5	60°	1.44	12.5	2.5	60	6
4TDA 050 900 125	5	90°	2.4	12.5	2.5	60	6
4TDA 060 600 150	6	60°	1.73	15	3	60	6
4TDA 060 900 150	6	90°	2.8	15	3	60	6
6TDA 080 600 200	8	60°	2.3	20	4	70	8
6TDA 080 900 200	8	90°	3.8	20	4	70	8
6TDA 100 600 250	10	60°	2.8	25	5	75	10
6TDA 100 900 250	10	90°	4.8	25	5	75	10
6TDA 120 600 300	12	60°	3.4	30	6	80	12
6TDA 120 900 300	12	90°	5.8	30	6	80	12



4&6TAC Fresa T 4/6 Tagli - Coda di Rondine



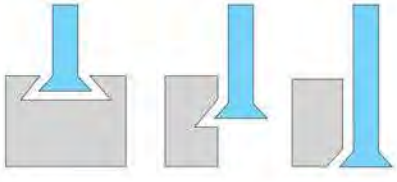
- **Fresa per differenti applicazioni su vari materiali, ghisa, acciai legati, bonificati e temprati.**
- Il rivestimento J-Max migliora la resistenza all'usura e riduce lo sforzo nel taglio in varie applicazioni.
- Geometria a 4 tagli per ridurre scheggiature.
- Ampia gamma per ottimizzare il rendimento.

4 | 6 | WC 미립자 | JMAX Coating | D +0~-0.02 Ø1.5~Ø5 | D -0.01~-0.03 Ø6~Ø12 | L1 ±0.03 Ø1.5~Ø5 | L1 ±0.05 Ø6 ~ 12 | 0° Helix Angle | € List. p.138 | i info p.243

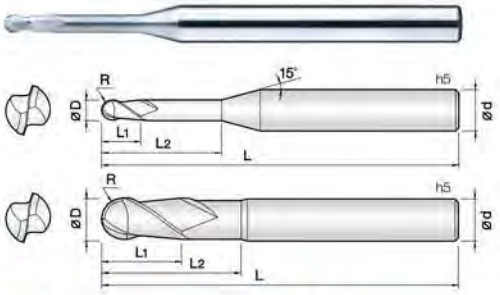
D	Tolleranza
Ø1.5 ~ 5	+0 ~ -0.02mm
Ø6 ~ 12	-0.01 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	θ	L1	L2	D1	L	d
4TAC 015 300 030	1.5	30°	0.21	3	0.75	45	4
4TAC 015 450 030	1.5	45°	0.37	3	0.75	45	4
4TAC 020 300 050	2	30°	0.28	5	1	50	4
4TAC 020 450 050	2	45°	0.5	5	1	50	4
4TAC 025 300 060	2.5	30°	0.37	6	1.2	50	4
4TAC 025 450 060	2.5	45°	0.65	6	1.2	50	4
4TAC 030 300 075	3	30°	0.43	7.5	1.5	50	4
4TAC 030 450 075	3	45°	0.75	7.5	1.5	50	4
4TAC 040 300 100	4	30°	0.57	10	2	50	4
4TAC 040 450 100	4	45°	1	10	2	50	4
4TAC 050 300 125	5	30°	0.72	12.5	2.5	60	6
4TAC 050 450 125	5	45°	1.25	12.5	2.5	60	6
4TAC 060 300 150	6	30°	0.86	15	3	60	6
4TAC 060 450 150	6	45°	1.5	15	3	60	6
6TAC 080 300 200	8	30°	1.15	20	4	70	8
6TAC 080 450 200	8	45°	2	20	4	70	8
6TAC 100 300 250	10	30°	1.44	25	5	75	10
6TAC 100 450 250	10	45°	2.5	25	5	75	10
6TAC 120 300 300	12	30°	1.73	30	6	80	12
6TAC 120 450 300	12	45°	3	30	6	80	12



2MRB Fresa Emisferica 2 Tagli per Nervature



- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie all'elica corta.
- Geometria rinforzata per prevenire scheggiature.
- Eccellente rigidità ad alte velocità e avanzamenti.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

2 | WC 미립자 | R ±0.005 (0.1 ~ 2.5R) | R ±0.01 (3R) | 30° Helix Angle | € (List. p.138) | i (info p.244)

D	Tolleranza
Ø6 ~ 5	+0 ~ -0.01mm
Ø6	-0.005 ~ -0.015mm

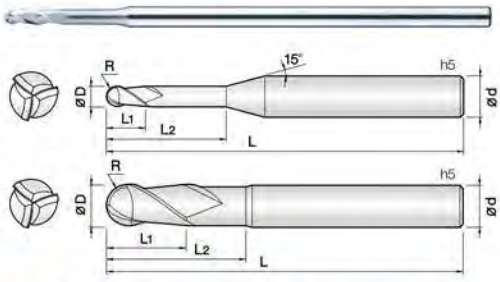
Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2MRB 002 005 S04	0.1R X 0.2	0.3	0.5	40	4
2MRB 002 010 S04	0.1R X 0.2	0.3	1	40	4
2MRB 002 015 S04	0.1R X 0.2	0.3	1.5	40	4
2MRB 002 020 S04	0.1R X 0.2	0.3	2	40	4
2MRB 003 010 S04	0.15R X 0.3	0.45	1	40	4
2MRB 003 020 S04	0.15R X 0.3	0.45	2	40	4
2MRB 003 030 S04	0.15R X 0.3	0.45	3	40	4
2MRB 003 050 S04	0.15R X 0.3	0.45	5	40	4
2MRB 004 020 S04	0.2R X 0.4	0.6	2	40	4
2MRB 004 030 S04	0.2R X 0.4	0.6	3	40	4
2MRB 004 040 S04	0.2R X 0.4	0.6	4	40	4
2MRB 004 050 S04	0.2R X 0.4	0.6	5	40	4
2MRB 004060 S04	0.2R X 0.4	0.6	6	40	4
2MRB 005 020 S04	0.25R X 0.5	1	2	45	4
2MRB 005 040 S04	0.25R X 0.5	1	4	45	4
2MRB 005 060 S04	0.25R X 0.5	1	6	45	4
2MRB 005 080 S04	0.25R X 0.5	1	8	45	4
2MRB 005 100 S04	0.25R X 0.5	1	10	45	4
2MRB 006 020 S04	0.3R X 0.6	1.2	2	45	4
2MRB 006 040 S04	0.3R X 0.6	1.2	4	45	4
2MRB 006 060 S04	0.3R X 0.6	1.2	6	45	4
2MRB 006 080 S04	0.3R X 0.6	1.2	8	45	4
2MRB 006 100 S04	0.3R X 0.6	1.2	10	45	4
2MRB 007 040 S04	0.35R X 0.7	1.4	4	45	4
2MRB 007 060 S04	0.35R X 0.7	1.4	6	45	4
2MRB 007 080 S04	0.35R X 0.7	1.4	8	45	4
2MRB 007 100 S04	0.35R X 0.7	1.4	10	45	4
2MRB 008 040 S04	0.4R X 0.8	1.6	4	45	4
2MRB 008 060 S04	0.4R X 0.8	1.6	6	45	4
2MRB 008 080 S04	0.4R X 0.8	1.6	8	45	4
2MRB 008 100 S04	0.4R X 0.8	1.6	10	45	4
2MRB 008 120 S04	0.4R X 0.8	1.6	12	45	4
2MRB 009 060 S04	0.45R X 0.9	1.8	6	45	4
2MRB 009 100 S04	0.45R X 0.9	1.8	10	45	4
2MRB 009 120 S04	0.45R X 0.9	1.8	12	45	4
2MRB 010 060 S04	0.5R X 1	2	6	50	4
2MRB 010 080 S04	0.5R X 1	2	8	50	4
2MRB 010 100 S04	0.5R X 1	2	10	50	4
2MRB 010 120 S04	0.5R X 1	2	12	50	4
2MRB 010 160 S04	0.5R X 1	2	16	50	4
2MRB 010 200 S04	0.5R X 1	2	20	60	4
2MRB 010 250 S04	0.5R X 1	2	25	60	4
2MRB 012 060 S04	0.6R X 1.2	2.4	6	50	4
2MRB 012 080 S04	0.6R X 1.2	2.4	8	50	4
2MRB 012 100 S04	0.6R X 1.2	2.4	10	50	4
2MRB 012 120 S04	0.6R X 1.2	2.4	12	50	4
2MRB 012 160 S04	0.6R X 1.2	2.4	16	50	4
2MRB 014 060 S04	0.7R X 1.4	2.8	6	50	4

Numero d'Ordine	R×D	L1	L2	L	d
2MRB 014 100 S04	0.7R X 1.4	2.8	10	50	4
2MRB 014 160 S04	0.7R X 1.4	2.8	16	50	4
2MRB 015 060 S04	0.75R X 1.5	3	6	50	4
2MRB 015 100 S04	0.75R X 1.5	3	10	50	4
2MRB 015 140 S04	0.75R X 1.5	3	14	50	4
2MRB 015 160 S04	0.75R X 1.5	3	16	50	4
2MRB 015 200 S04	0.75R X 1.5	3	20	60	4
2MRB 015 250 S04	0.75R X 1.5	3	25	60	4
2MRB 015 300 S04	0.75R X 1.5	3	30	70	4
2MRB 016 060 S04	0.8R X 1.6	3.2	6	50	4
2MRB 020 080 S04	1R X 2	4	8	50	4
2MRB 020 100 S04	1R X 2	4	10	50	4
2MRB 020 120 S04	1R X 2	4	12	50	4
2MRB 020 140 S04	1R X 2	4	14	50	4
2MRB 020 160 S04	1R X 2	4	16	50	4
2MRB 020 180 S04	1R X 2	4	18	50	4
2MRB 020 200 S04	1R X 2	4	20	60	4
2MRB 020 250 S04	1R X 2	4	25	60	4
2MRB 020 300 S04	1R X 2	4	30	70	4
2MRB 020 350 S04	1R X 2	4	35	80	4
2MRB 020 400 S04	1R X 2	4	40	80	4
2MRB 025 120 S04	1.25R X 2.5	5	12	60	4
2MRB 025 200 S04	1.25R X 2.5	5	20	60	4
2MRB 030 080 S06	1.5R X 3	6	8	70	6
2MRB 030 120 S06	1.5R X 3	6	12	70	6
2MRB 030 160 S06	1.5R X 3	6	16	70	6
2MRB 030 200 S06	1.5R X 3	6	20	70	6
2MRB 030 250 S06	1.5R X 3	6	25	70	6
2MRB 030 300 S06	1.5R X 3	6	30	80	6
2MRB 030 400 S06	1.5R X 3	6	40	90	6
2MRB 030 450 S06	1.5R X 3	6	45	90	6
2MRB 040 120 S06	2R X 4	8	12	70	6
2MRB 040 160 S06	2R X 4	8	16	70	6
2MRB 040 200 S06	2R X 4	8	20	70	6
2MRB 040 250 S06	2R X 4	8	25	70	6
2MRB 040 300 S06	2R X 4	8	30	70	6
2MRB 040 350 S06	2R X 4	8	35	80	6
2MRB 040 400 S06	2R X 4	8	40	80	6
2MRB 040 500 S06	2R X 4	8	50	100	6
2MRB 050 160 S06	2.5R X 5	10	16	80	6
2MRB 050 250 S06	2.5R X 5	10	25	80	6
2MRB 050 350 S06	2.5R X 5	10	35	80	6
2MRB 060 250 S06	3R X 6	12	25	80	6
2MRB 060 350 S06	3R X 6	12	35	80	6
2MRB 060 500 S06	3R X 6	12	50	120	6
2MRB 060 600 S06	3R X 6	12	60	120	6

FOR A.B.S

3MRB — Fresa Emisferica 3 Tagli per Nervature



- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie all'elica corta.
- Geometria rinforzata per prevenire scheggiature.
- Eccellente rigidità ad alte velocità e avanzamenti.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 μm)

3 | WC 미립자 | R ±0.005 (0.5 ~ 2R) | R ±0.01 (3 ~ 6R) | R ±0.015 (8R) | 30° Helix Angle | € List. p.140 | i info p.244

D	Tolleranza
Ø1 ~ 4	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16	-0.01 ~ -0.02mm

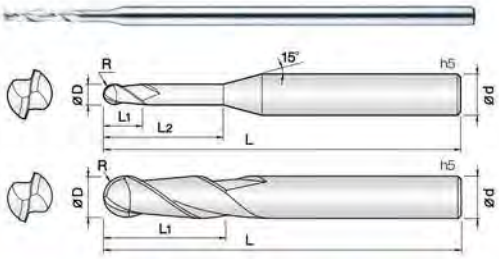
Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
3MRB 010 050 S04	0.5R X 1	3	5	70	4
3MRB 010 100 S04	0.5R X 1	3	10	70	4
3MRB 010 150 S04	0.5R X 1	3	15	70	4
3MRB 010 200 S04	0.5R X 1	3	20	70	4
3MRB 010 250 S04	0.5R X 1	3	25	70	4
3MRB 015 100 S04	0.75R X 1.5	4.5	10	70	4
3MRB 015 150 S04	0.75R X 1.5	4.5	15	70	4
3MRB 015 200 S04	0.75R X 1.5	4.5	20	70	4
3MRB 015 250 S04	0.75R X 1.5	4.5	25	70	4
3MRB 015 300 S04	0.75R X 1.5	4.5	30	70	4
3MRB 020 100 S04	1R X 2	6	10	70	4
3MRB 020 150 S04	1R X 2	6	15	70	4
3MRB 020 200 S04	1R X 2	6	20	70	4
3MRB 020 250 S04	1R X 2	6	25	70	4
3MRB 020 300 S04	1R X 2	6	30	70	4
3MRB 030 200 080	1.5R X 3	15	20	80	3
3MRB 030 200 S04	1.5R X 3	9	20	80	4
3MRB 030 300 100	1.5R X 3	15	30	100	3
3MRB 030 300 S04	1.5R X 3	9	30	80	4
3MRB 040 200 080	2R X 4	12	20	80	4
3MRB 040 300 100	2R X 4	12	30	100	4
3MRB 060 300 100	3R X 6	18	30	100	6
3MRB 060 400 150	3R X 6	18	40	150	6
3MRB 080 400 120	4R X 8	24	40	120	8
3MRB 080 500 150	4R X 8	24	50	150	8
3MRB 100 500 120	5R X 10	30	50	120	10
3MRB 100 600 150	5R X 10	30	60	150	10
3MRB 120 600 150	6R X 12	36	60	150	12
3MRB 160 700 160	8R X 16	54	70	160	16

FOR A.B.S

2MLB

Fresa Emisferica 2 Tagli per Prototipazione



- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie a run-out e tolleranze precise.
- Geometria rinforzata per prevenire scheggiature.
- Elica lunga per migliorare l'evacuazione del truciolo in lavorazioni profonde.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

2 | WC 미립자 | R ±0.005 (0.1 ~ 2.5R) | R ±0.01 (3 ~ 6R) | R ±0.015 (8R) | 30° Helix Angle | € List. p.140 | i info p.244

D	Tolleranza
Ø2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm
Ø16	-0.01 ~ -0.02mm

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2MLB 002 010 S03	0.1R X 0.2	0.4	-	40	3
2MLB 002 015 S03	0.1R X 0.2	0.4	1.5	40	3
2MLB 002 020 S03	0.1R X 0.2	0.4	2	40	3
2MLB 003 010 S03	0.15R X 0.3	1	-	45	3
2MLB 003 015 S03	0.15R X 0.3	1	1.5	45	3
2MLB 003 018 S03	0.15R X 0.3	1.8	-	45	3
2MLB 003 020 S03	0.15R X 0.3	1	2	45	3
2MLB 003 025 S03	0.15R X 0.3	1	2.5	45	3
2MLB 003 030 S03	0.15R X 0.3	1	3	45	3
2MLB 003 040 S03	0.15R X 0.3	1	4	45	3
2MLB 004 012 S03	0.2R X 0.4	1.2	-	45	3
2MLB 004 020 S03	0.2R X 0.4	2	-	45	3
2MLB 004 030 S03	0.2R X 0.4	1.2	3	45	3
2MLB 004 040 S03	0.2R X 0.4	1.2	4	45	3
2MLB 004 050 S03	0.2R X 0.4	1.2	5	45	3
2MLB 005 015 S03	0.25R X 0.5	1.5	-	50	3
2MLB 005 020 S03	0.25R X 0.5	2	-	50	3
2MLB 005 030 S03	0.25R X 0.5	1.5	3	50	3
2MLB 005 040 S03	0.25R X 0.5	1.5	4	50	3
2MLB 005 050 S03	0.25R X 0.5	1.5	5	50	3
2MLB 005 060 S03	0.25R X 0.5	1.5	6	50	3
2MLB 005 080 S03	0.25R X 0.5	1.5	8	50	3
2MLB 005 100 S03	0.25R X 0.5	1.5	10	50	3
2MLB 006 030 S03	0.3R X 0.6	3	-	50	3
2MLB 006 060 S03	0.3R X 0.6	3	6	50	3
2MLB 006 080 S03	0.3R X 0.6	3	8	50	3
2MLB 006 100 S03	0.3R X 0.6	3	10	50	3
2MLB 007 030 S03	0.35R X 0.7	3	-	50	3
2MLB 007 070 S03	0.35R X 0.7	3	7	50	3
2MLB 007 100 S03	0.35R X 0.7	3	10	50	3
2MLB 007 120 S03	0.35R X 0.7	3	12	50	3
2MLB 008 040 S03	0.4R X 0.8	4	-	50	3
2MLB 008 080 S03	0.4R X 0.8	4	8	50	3
2MLB 008 100 S03	0.4R X 0.8	4	10	50	3
2MLB 008 120 S03	0.4R X 0.8	4	12	50	3
2MLB 009 040 S03	0.45R X 0.9	4	-	50	3
2MLB 009 060 S03	0.45R X 0.9	4	6	50	3
2MLB 009 080 S03	0.45R X 0.9	4	8	50	3
2MLB 009 100 S03	0.45R X 0.9	4	10	50	3
2MLB 010 050 S03	0.5R X 1	5	-	80	3
2MLB 010 050 S04	0.5R X 1	5	-	80	4
2MLB 010 100 S03	0.5R X 1	5	10	80	3
2MLB 010 100 S04	0.5R X 1	5	10	80	4
2MLB 010 150 S03	0.5R X 1	5	15	80	3
2MLB 010 150 S04	0.5R X 1	5	15	80	4
2MLB 010 200 S03	0.5R X 1	5	20	80	3
2MLB 010 200 S04	0.5R X 1	5	20	80	4
2MLB 010 250 S03	0.5R X 1	5	25	80	3

Numero d'Ordine	R×D	L1	L2	L	d
2MLB 010 250 S04	0.5R X 1	5	25	80	4
2MLB 010 300 S03	0.5R X 1	5	30	80	3
2MLB 010 300 S04	0.5R X 1	5	30	80	4
2MLB 010 350 S04	0.5R X 1	5	35	100	4
2MLB 010 400 S04	0.5R X 1	5	40	100	4
2MLB 015 100 S03	0.75R X 1.5	10	-	80	3
2MLB 015 100 S04	0.75R X 1.5	10	-	80	4
2MLB 015 150 S03	0.75R X 1.5	10	15	80	3
2MLB 015 150 S04	0.75R X 1.5	10	15	80	4
2MLB 015 200 S03	0.75R X 1.5	10	20	80	3
2MLB 015 200 S04	0.75R X 1.5	10	20	80	4
2MLB 015 250 S03	0.75R X 1.5	10	25	80	3
2MLB 015 250 S04	0.75R X 1.5	10	25	80	4
2MLB 015 300 S03	0.75R X 1.5	10	30	80	3
2MLB 015 300 S04	0.75R X 1.5	10	30	80	4
2MLB 015 350 S04	0.75R X 1.5	10	35	100	4
2MLB 015 400 S04	0.75R X 1.5	10	40	100	4
2MLB 020 100 S03	1R X 2	10	-	80	3
2MLB 020 100 S04	1R X 2	10	-	80	4
2MLB 020 150 S03	1R X 2	10	15	80	3
2MLB 020 150 S04	1R X 2	10	15	80	4
2MLB 020 200 S03	1R X 2	10	20	80	3
2MLB 020 200 S04	1R X 2	10	20	80	4
2MLB 020 250 S03	1R X 2	10	25	80	3
2MLB 020 250 S04	1R X 2	10	25	80	4
2MLB 020 300 S03	1R X 2	10	30	80	3
2MLB 020 300 S04	1R X 2	10	30	80	4
2MLB 020 350 S03	1R X 2	10	35	80	3
2MLB 020 350 S04	1R X 2	10	35	100	4
2MLB 020 400 S03	1R X 2	10	40	80	3
2MLB 020 400 S04	1R X 2	10	40	100	4
2MLB 025 100 S03	1.25R X 2.5	10	-	80	3
2MLB 025 150 S03	1.25R X 2.5	15	-	80	3
2MLB 025 200 S03	1.25R X 2.5	15	20	80	3
2MLB 030 100 060	1.5R X 3	10	-	60	3
2MLB 030 200 080	1.5R X 3	20	-	80	3
2MLB 030 200 100	1.5R X 3	20	-	100	3
2MLB 030 200 120	1.5R X 3	20	-	120	3
2MLB 030 150 S06	1.5R X 3	15	-	100	6
2MLB 030 200 S06	1.5R X 3	15	20	100	6
2MLB 030 250 S06	1.5R X 3	15	25	100	6
2MLB 030 300 S06	1.5R X 3	15	30	100	6
2MLB 030 400 S06	1.5R X 3	15	40	100	6
2MLB 040 200 080	2R X 4	20	-	80	4
2MLB 040 200 100	2R X 4	20	-	100	4
2MLB 040 200 130	2R X 4	20	-	130	4
2MLB 040 200 S06	2R X 4	20	-	100	6
2MLB 040 250 S06	2R X 4	20	25	100	6

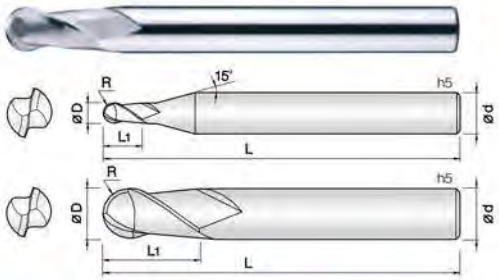
FOR A.B.S

Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2MLB 040 300 S06	2R X 4	20	30	100	6
2MLB 040 400 S06	2R X 4	20	40	120	6
2MLB 040 500 S06	2R X 4	20	50	120	6
2MLB 050 300 100	2.5R X 5	30	-	100	5
2MLB 050 300 120	2.5R X 5	30	-	120	5
2MLB 060 300 080	3R X 6	30	-	80	6
2MLB 060 400 100	3R X 6	40	-	100	6
2MLB 060 400 120	3R X 6	40	-	120	6
2MLB 060 400 150	3R X 6	40	-	150	6
2MLB 080 450 120	4R X 8	45	-	120	8
2MLB 080 450 150	4R X 8	45	-	150	8
2MLB 100 500 120	5R X 10	50	-	120	10
2MLB 100 500 150	5R X 10	50	-	150	10
2MLB 120 550 130	6R X 12	55	-	130	12
2MLB 120 550 150	6R X 12	55	-	150	12
2MLB 160 700 160	8R X 16	70	-	160	16

FIT HYPER VISION

2MBE Fresa Emisferica 2 Tagli



- **Fresa per acciai dolci, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie a run-out e tolleranze precise.
- Ottima finitura superficiale.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

2 | WC 미립자 | R ±0.005 (0.05 ~ 2.5R) | R ±0.01 (3 ~ 6R) | 30° Helix Angle | € (List. p.142) | i (info p.245)

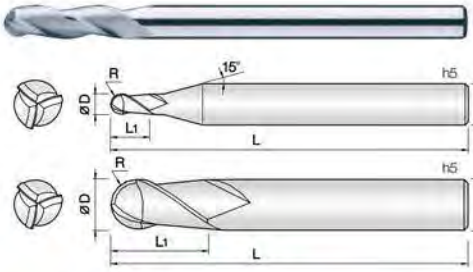
D	Tolleranza
Ø0.1 ~ 0.15	+0 ~ -0.005mm
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
2MBE 001 002 S03	0.05R X 0.1	0.2	38	3
2MBE 0015 003 S03	0.075R X 0.15	0.3	38	3
2MBE 002 004 S03	0.1R X 0.2	0.4	38	3
2MBE 003 006 S03	0.15R X 0.3	0.6	38	3
2MBE 004 008 S03	0.2R X 0.4	0.8	38	3
2MBE 005 010 S03	0.25R X 0.5	1	38	3
2MBE 006 012 S03	0.3R X 0.6	1.2	38	3
2MBE 007 014 S03	0.35R X 0.7	1.4	38	3
2MBE 008 016 S03	0.4R X 0 .8	1.6	38	3
2MBE 009 018 S03	0.45R X 0.9	1.8	38	3
2MBE 010 025 S03	0.5R X 1	2.5	50	3
2MBE 010 025 S06	0.5R X 1	2.5	50	6
2MBE 010 025 100	0.5R X 1	2.5	100	6
2MBE 011 025 S03	0.55R X 1.1	2.5	50	3
2MBE 012 030 S03	0.6R X 1.2	3	50	3
2MBE 015 040 S03	0.75R X 1.5	4	50	3
2MBE 015 040 100	0.75R X 1.5	4	100	6
2MBE 020 050 S03	1R X 2	5	50	3
2MBE 020 050 S06	1R X 2	5	50	6
2MBE 020 050 100	1R X 2	5	100	6
2MBE 025 060 S03	1.25R X 2.5	6	50	3
2MBE 025 060 100	1.25R X 2.5	6	100	6
2MBE 030 080 S03	1.5R X 3	8	60	3
2MBE 030 080 S06	1.5R X 3	8	60	6
2MBE 030 080 100	1.5R X 3	8	100	6
2MBE 035 080 S06	1.75R X 3.5	8	65	6
2MBE 040 080 S06	2R X 4	8	65	6
2MBE 040 080 120	2R X 4	8	120	6
2MBE 050 120 S06	2.5R X 5	12	75	6
2MBE 060 120 080	3R X 6	12	80	6
2MBE 060 120 100	3RX 6	12	100	6
2MBE 080 140 090	4R X 8	14	90	8
2MBE 080 140 110	4RX 8	14	110	8
2MBE 100 180 100	5R X 10	18	100	10
2MBE 100 180 120	5RX 10	18	120	10
2MBE 120 220 110	6R X 12	22	110	12
2MBE 120 220 130	6RX 12	22	130	12

FOR A.B.S

3MBE Fresa Emisferica 3 Tagli



- **Fresa per acciai dolci, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie a run-out e tolleranze precise.
- Ottima finitura superficiale.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

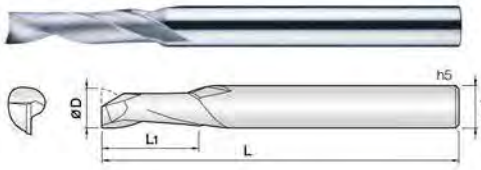
3 | WC 미립자 | R ±0.005 (0.15R ~ 2R) | R ±0.01 (3R) | 30° Helix Angle | € List. p.142 | i info p.245

D	Tolleranza
ø0.3 ~ 4	+0 ~ -0.01mm
ø6	-0.005 ~ -0.015mm

Unità : mm

Numero d'Ordine	R×D	L1	L	d
3MBE 003 008 S04	0.15R X 0.3	0.8	40	4
3MBE 003 012 S04	0.15R X 0.3	1.2	40	4
3MBE 004 010 S04	0.2R X 0.4	1	40	4
3MBE 004 015 S04	0.2R X 0.4	1.5	40	4
3MBE 005 013 S04	0.25R X 0.5	1.3	45	4
3MBE 005 020 S04	0.25R X 0.5	2	45	4
3MBE 006 015 S04	0.3R X 0.6	1.5	45	4
3MBE 006 024 S04	0.3R X 0.6	2.4	45	4
3MBE 007 018 S04	0.35R X 0.7	1.8	45	4
3MBE 007 028 S04	0.35R X 0.7	2.8	45	4
3MBE 008 020 S04	0.4R X 0.8	2	45	4
3MBE 008 032 S04	0.4R X 0.8	3.2	45	4
3MBE 009 025 S04	0.45R X 0.9	2.5	50	4
3MBE 009 036 S04	0.45R X 0.9	3.6	50	4
3MBE 010 025 S04	0.5R X 1	2.5	50	4
3MBE 010 040 S04	0.5R X 1	4	50	4
3MBE 010 060 S04	0.5R X 1	6	60	4
3MBE 012 030 S04	0.6R X 1.2	3	50	4
3MBE 012 050 S04	0.6R X 1.2	5	50	4
3MBE 012 070 S04	0.6R X 1.2	7	60	4
3MBE 015 040 S04	0.75R X 1.5	4	50	4
3MBE 015 060 S04	0.75R X 1.5	6	50	4
3MBE 015 090 S04	0.75R X 1.5	9	60	4
3MBE 020 050 S04	1R X 2	5	50	4
3MBE 020 080 S04	1R X 2	8	50	4
3MBE 020 100 S04	1R X 2	10	60	4
3MBE 025 060 S04	1.25R X 2.5	6	50	4
3MBE 025 100 S04	1.25R X 2.5	10	60	4
3MBE 025 150 S04	1.25R X 2.5	15	70	4
3MBE 030 080 S04	1.5R X 3	8	50	4
3MBE 030 120 S04	1.5R X 3	12	60	4
3MBE 030 150 S04	1.5R X 3	15	80	4
3MBE 040 100 S04	2R X 4	10	60	4
3MBE 040 150 S04	2R X 4	15	80	4
3MBE 060 200 S06	3R X 6	20	80	6
3MBE 060 300 S06	3R X 6	30	110	6

1MEM Fresa Monotagliente



- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Eccellente evacuazione del truciolo grazie alla geometria specifica.
- Ottima per il taglio e lavorazioni in parete.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

1 | WC 미립자 | D +0~-0.01 Ø0.2 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | 30° Helix Angle | Affilato | € List. p.143 | i info p.243

D	Tolleranza
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

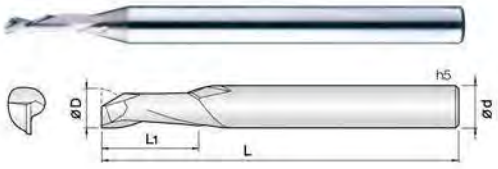
Unità : mm

Numero d'Ordine	D	L1	L	d
New 1MEM 002 004 S04	0.2	0.4	40	4
1MEM 002 005 S04	0.2	0.5	40	4
New 1MEM 003 006 S04	0.3	0.6	40	4
1MEM 003 009 S04	0.3	0.9	40	4
New 1MEM 004 008 S04	0.4	0.8	40	4
1MEM 004 012 S04	0.4	1.2	40	4
New 1MEM 005 010 S04	0.5	1	40	4
1MEM 005 015 S04	0.5	1.5	40	4
New 1MEM 006 012 S04	0.6	1.2	40	4
1MEM 006 018 S04	0.6	1.8	40	4
New 1MEM 007 014 S04	0.7	1.4	40	4
1MEM 007 021 S04	0.7	2.1	40	4
New 1MEM 008 016 S04	0.8	1.6	40	4
1MEM 008 024 S04	0.8	2.4	40	4
New 1MEM 009 018 S04	0.9	1.8	40	4
1MEM 009 027 S04	0.9	2.7	40	4
New 1MEM 010 025 S06	1	2.5	45	6
1MEM 010 030 S06	1	3	45	6
New 1MEM 010 035 S06	1	3.5	45	6
1MEM 010 045 S06	1	4.5	45	6
1MEM 010 060 S06	1	6	50	6
New 1MEM 010 070 S06	1	7	50	6
1MEM 012 030 S06	1.2	3	45	6
1MEM 012 050 S06	1.2	5	45	6
1MEM 012 060 S06	1.2	6	50	6
1MEM 015 040 S06	1.5	4	45	6
1MEM 015 060 S06	1.5	6	50	6
1MEM 015 080 S06	1.5	8	50	6
New 1MEM 015 100 S06	1.5	10	50	6
1MEM 020 060 S06	2	6	50	6
1MEM 020 080 S06	2	8	50	6
1MEM 020 100 S06	2	10	50	6
New 1MEM 020 120 S06	2	12	50	6
New 1MEM 020 140 S06	2	14	55	6
1MEM 030 080 S06	3	8	50	6
1MEM 030 120 S06	3	12	50	6
1MEM 030 150 S06	3	15	50	6
New 1MEM 030 200 S06	3	20	60	6
1MEM 040 100 S06	4	10	50	6
1MEM 040 150 S06	4	15	50	6
1MEM 040 200 S06	4	20	60	6
New 1MEM 040 250 S06	4	25	70	6
1MEM 050 130 S06	5	13	60	6
1MEM 050 200 S06	5	20	60	6
1MEM 050 250 S06	5	25	60	6
1MEM 060 150 S06	6	15	60	6
1MEM 060 200 S06	6	20	60	6
1MEM 060 250 S06	6	25	60	6

Numero d'Ordine	D	L1	L	d
New 1MEM 060 300 S06	6	30	70	6
1MEM 080 190 S08	8	19	70	8
1MEM 080 250 S08	8	25	75	8
New 1MEM 080 300 S08	8	30	80	8
1MEM 100 220 S10	10	22	75	10
1MEM 100 300 S10	10	30	80	10
1MEM 120 260 S12	12	26	75	12
1MEM 120 350 S12	12	35	90	12

FOR A.B.S

1REM Fresa Monotagliente Elica Sinistra



- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Eccellente evacuazione del truciolo verso il basso grazie all'elica sinistra.
- Ottima per staffaggi non rigidi.
- Lavorazioni senza bave.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

D	Tolleranza
Ø0.5 ~ 5	+0 ~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

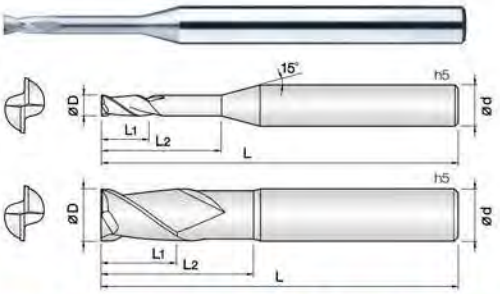
Unità : mm

Ø0.5 ~ 5 | Ø6 ~ 12 | Affilato | List. p.143 | info p.243

Numero d'Ordine	D	L1	L	d
New 1REM 005 010 S04	0.5	1	45	4
New 1REM 005 015 S04	0.5	1.5	45	4
New 1REM 005 020 S04	0.5	2	45	4
New 1REM 006 012 S04	0.6	1.2	45	4
New 1REM 006 018 S04	0.6	1.8	45	4
New 1REM 006 025 S04	0.6	2.5	45	4
New 1REM 007 014 S04	0.7	1.4	45	4
New 1REM 007 021 S04	0.7	2.1	45	4
New 1REM 008 016 S04	0.8	1.6	45	4
New 1REM 008 024 S04	0.8	2.4	45	4
New 1REM 008 030 S04	0.8	3	45	4
New 1REM 009 018 S04	0.9	1.8	45	4
1REM 010 030 S06	1	3	50	6
New 1REM 010 040 S06	1	4	50	6
New 1REM 010 050 S06	1	5	50	6
1REM 010 060 S06	1	6	60	6
New 1REM 012 040 S06	1.2	4	50	6
New 1REM 012 060 S06	1.2	6	50	6
New 1REM 015 040 S06	1.5	4	50	6
New 1REM 015 060 S06	1.5	6	50	6
New 1REM 015 080 S06	1.5	8	50	6
1REM 020 060 S06	2	6	60	6
1REM 020 080 S06	2	8	60	6
New 1REM 020 100 S06	2	10	60	6
New 1REM 020 120 S06	2	12	60	6
New 1REM 025 060 S06	2.5	6	60	6
New 1REM 025 080 S06	2.5	8	60	6
New 1REM 025 100 S06	2.5	10	60	6
1REM 030 080 S06	3	8	60	6
1REM 030 120 S06	3	12	65	6
New 1REM 030 160 S06	3	16	70	6
1REM 040 120 S06	4	12	65	6
1REM 040 160 S06	4	16	70	6
New 1REM 040 200 S06	4	20	70	6
New 1REM 050 150 S06	5	15	70	6
1REM 050 220 S06	5	22	75	6
1REM 060 270 S06	6	27	75	6
New 1REM 080 260 S08	8	26	80	8
1REM 080 320 S08	8	32	90	8
New 1REM 100 300 S10	10	30	90	10
New 1REM 120 350 S12	12	35	100	12

2MRE

Fresa Cilindrica 2 Tagli per Nervature



- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie all'elica corta.
- Eccellente rigidità ad alte velocità e avanzamenti.
- Geometria rinforzata per prevenire scheggiature.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

2 | WC 미립자 | D +0-0.01 Ø0.2 ~ 5 | D -0.01~-0.025 Ø6 | 30° Helix Angle | Affilato | € List. p.144 | i info p.246

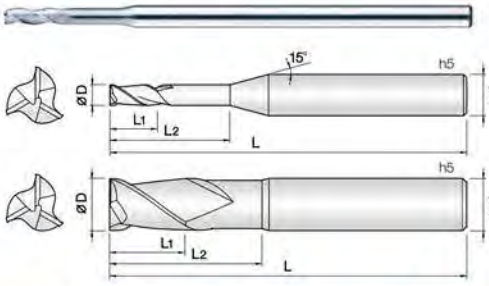
D	Tolleranza
Ø0.2 ~ 5	+0 ~ -0.01mm
Ø6	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
2MRE 002 005 S04	0.2	0.3	0.5	40	4
2MRE 002 010 S04	0.2	0.3	1	40	4
2MRE 002 015 S04	0.2	0.3	1.5	40	4
2MRE 002 020 S04	0.2	0.3	2	40	4
2MRE 003 010 S04	0.3	0.45	1	40	4
2MRE 003 020 S04	0.3	0.45	2	40	4
2MRE 003 030 S04	0.3	0.45	3	40	4
2MRE 003 050 S04	0.3	0.45	5	40	4
2MRE 004 020 S04	0.4	0.6	2	40	4
2MRE 004 030 S04	0.4	0.6	3	40	4
2MRE 004 040 S04	0.4	0.6	4	40	4
2MRE 004 050 S04	0.4	0.6	5	40	4
2MRE 004 060 S04	0.4	0.6	6	40	4
2MRE 005 020 S04	0.5	1	2	45	4
2MRE 005 040 S04	0.5	1	4	45	4
2MRE 005 060 S04	0.5	1	6	45	4
2MRE 005 080 S04	0.5	1	8	45	4
2MRE 005 100 S04	0.5	1	10	45	4
2MRE 006 020 S04	0.6	1.2	2	45	4
2MRE 006 040 S04	0.6	1.2	4	45	4
2MRE 006 060 S04	0.6	1.2	6	45	4
2MRE 006 080 S04	0.6	1.2	8	45	4
2MRE 006 100 S04	0.6	1.2	10	45	4
2MRE 007 040 S04	0.7	1.4	4	45	4
2MRE 007 060 S04	0.7	1.4	6	45	4
2MRE 007 080 S04	0.7	1.4	8	45	4
2MRE 007 100 S04	0.7	1.4	10	45	4
2MRE 008 040 S04	0.8	1.6	4	45	4
2MRE 008 060 S04	0.8	1.6	6	45	4
2MRE 008 080 S04	0.8	1.6	8	45	4
2MRE 008 100 S04	0.8	1.6	10	45	4
2MRE 008 120 S04	0.8	1.6	12	45	4
2MRE 009 060 S04	0.9	1.8	6	45	4
2MRE 009 100 S04	0.9	1.8	10	45	4
2MRE 009 120 S04	0.9	1.8	12	45	4
2MRE 010 060 S04	1	2	6	50	4
2MRE 010 080 S04	1	2	8	50	4
2MRE 010 100 S04	1	2	10	50	4
2MRE 010 120 S04	1	2	12	50	4
2MRE 010 160 S04	1	2	16	50	4
2MRE 010 200 S04	1	2	20	60	4
2MRE 010 250 S04	1	2	25	60	4
2MRE 012 060 S04	1.2	2.4	6	50	4
2MRE 012 080 S04	1.2	2.4	8	50	4
2MRE 012 100 S04	1.2	2.4	10	50	4
2MRE 012 120 S04	1.2	2.4	12	50	4
2MRE 012 160 S04	1.2	2.4	16	50	4
2MRE 014 060 S04	1.4	2.8	6	50	4

Numero d'Ordine	D	L1	L2	L	d
2MRE 014 100 S04	1.4	2.8	10	50	4
2MRE 014 160 S04	1.4	2.8	16	50	4
2MRE 015 060 S04	1.5	3	6	50	4
2MRE 015 100 S04	1.5	3	10	50	4
2MRE 015 140 S04	1.5	3	14	50	4
2MRE 015 160 S04	1.5	3	16	50	4
2MRE 015 200 S04	1.5	3	20	60	4
2MRE 015 250 S04	1.5	3	25	60	4
2MRE 015 300 S04	1.5	3	30	70	4
2MRE 016 060 S04	1.6	3.2	6	50	4
2MRE 020 080 S04	2	4	8	50	4
2MRE 020 100 S04	2	4	10	50	4
2MRE 020 120 S04	2	4	12	50	4
2MRE 020 140 S04	2	4	14	50	4
2MRE 020 160 S04	2	4	16	50	4
2MRE 020 180 S04	2	4	18	50	4
2MRE 020 200 S04	2	4	20	60	4
2MRE 020 250 S04	2	4	25	60	4
2MRE 020 300 S04	2	4	30	70	4
2MRE 020 350 S04	2	4	35	80	4
2MRE 020 400 S04	2	4	40	80	4
2MRE 025 120 S04	2.5	5	12	60	4
2MRE 025 200 S04	2.5	5	20	60	4
2MRE 030 080 S06	3	6	8	70	6
2MRE 030 120 S06	3	6	12	70	6
2MRE 030 160 S06	3	6	16	70	6
2MRE 030 200 S06	3	6	20	70	6
2MRE 030 250 S06	3	6	25	70	6
2MRE 030 300 S06	3	6	30	80	6
2MRE 030 400 S06	3	6	40	90	6
2MRE 030 450 S06	3	6	45	90	6
2MRE 040 120 S06	4	8	12	70	6
2MRE 040 160 S06	4	8	16	70	6
2MRE 040 200 S06	4	8	20	70	6
2MRE 040 250 S06	4	8	25	70	6
2MRE 040 300 S06	4	8	30	70	6
2MRE 040 350 S06	4	8	35	80	6
2MRE 040 400 S06	4	8	40	80	6
2MRE 040 500 S06	4	8	50	100	6
2MRE 050 160 S06	5	10	16	80	6
2MRE 050 250 S06	5	10	25	80	6
2MRE 050 350 S06	5	10	35	80	6
2MRE 060 250 S06	6	12	25	80	6
2MRE 060 350 S06	6	12	35	80	6
2MRE 060 500 S06	6	12	50	120	6
2MRE 060 600 S06	6	12	60	120	6

FOR A.B.S



- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie all'elica corta.
- Eccellente rigidità ad alte velocità e avanzamenti.
- Geometria rinforzata per prevenire scheggiature.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

3 | WC 미립자 | D +0~-0.01 Ø1 ~ 4 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø16 | 30° Helix Angle | Affilato | € List. p.145 | i info p.246

D	Tolleranza
Ø1 ~ 4	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16	-0.015 ~ -0.03mm

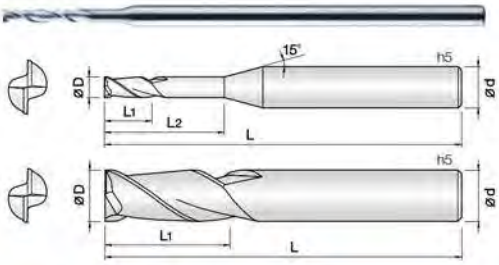
Unità : mm

Numero d'Ordine	D	L1	L2	L	d
3MRE 010 050 S04	1	3	5	70	4
3MRE 010 100 S04	1	3	10	70	4
3MRE 010 150 S04	1	3	15	70	4
3MRE 010 200 S04	1	3	20	70	4
3MRE 010 250 S04	1	3	25	70	4
3MRE 015 100 S04	1.5	4.5	10	70	4
3MRE 015 150 S04	1.5	4.5	15	70	4
3MRE 015 200 S04	1.5	4.5	20	70	4
3MRE 015 250 S04	1.5	4.5	25	70	4
3MRE 015 300 S04	1.5	4.5	30	70	4
3MRE 020 100 S04	2	6	10	70	4
3MRE 020 150 S04	2	6	15	70	4
3MRE 020 200 S04	2	6	20	70	4
3MRE 020 250 S04	2	6	25	70	4
3MRE 020 300 S04	2	6	30	70	4
3MRE 030 200 080	3	15	20	80	3
3MRE 030 200 S04	3	9	20	80	4
3MRE 030 300 100	3	15	30	100	3
3MRE 030 300 S04	3	9	30	80	4
3MRE 040 200 080	4	12	20	80	4
3MRE 040 300 100	4	12	30	100	4
3MRE 060 300 100	6	18	30	100	6
3MRE 060 400 150	6	18	40	150	6
3MRE 080 400 120	8	24	40	120	8
3MRE 080 500 150	8	24	50	150	8
3MRE 100 500 120	10	30	50	120	10
3MRE 100 600 150	10	30	60	150	10
3MRE 120 600 150	12	36	60	150	12
3MRE 160 700 160	16	54	70	160	16

FOR A.B.S

2MLE

Fresa Cilindrica 2 Tagli per Prototipazione



- **Fresa per materiali acrilici, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie a run-out e tolleranze precise.
- Elica lunga per migliorare l'evacuazione del truciolo in lavorazioni profonde.
- Geometria rinforzata per prevenire scheggiature.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

2 | WC 미립자 | D +0~-0.01 Ø0.2 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | D -0.015~-0.03 Ø16 | 30° Helix Angle | Affilato | € List. p.146 | i info p.244

D	Tolleranza
Ø0.2 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm
Ø16	-0.015 ~ -0.03mm

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
2MLE 002 010 S03	0.2	0.4	1	40	3
2MLE 002 015 S03	0.2	0.4	1.5	40	3
2MLE 002 020 S03	0.2	0.4	2	40	3
2MLE 003 010 S03	0.3	1	-	45	3
2MLE 003 015 S03	0.3	1	1.5	45	3
2MLE 003 018 S03	0.3	1.8	-	45	3
2MLE 003 020 S03	0.3	1	2	45	3
2MLE 003 025 S03	0.3	1	2.5	45	3
2MLE 003 030 S03	0.3	1	3	45	3
2MLE 003 040 S03	0.3	1	4	45	3
2MLE 004 012 S03	0.4	1.2	-	45	3
2MLE 004 020 S03	0.4	2	-	45	3
2MLE 004 030 S03	0.4	1.2	3	45	3
2MLE 004 040 S03	0.4	1.2	4	45	3
2MLE 004 050 S03	0.4	1.2	5	45	3
2MLE 005 015 S03	0.5	1.5	-	50	3
2MLE 005 020 S03	0.5	2	-	50	3
2MLE 005 030 S03	0.5	1.5	3	50	3
2MLE 005 040 S03	0.5	1.5	4	50	3
2MLE 005 050 S03	0.5	1.5	5	50	3
2MLE 005 060 S03	0.5	1.5	6	50	3
2MLE 005 080 S03	0.5	1.5	8	50	3
2MLE 005 100 S03	0.5	1.5	10	50	3
2MLE 006 030 S03	0.6	3	-	50	3
2MLE 006 060 S03	0.6	3	6	50	3
2MLE 006 080 S03	0.6	3	8	50	3
2MLE 006 100 S03	0.6	3	10	50	3
2MLE 007 030 S03	0.7	3	-	50	3
2MLE 007 070 S03	0.7	3	7	50	3
2MLE 007 100 S03	0.7	3	10	50	3
2MLE 007 120 S03	0.7	3	12	50	3
2MLE 008 040 S03	0.8	4	-	50	3
2MLE 008 080 S03	0.8	4	8	50	3
2MLE 008 100 S03	0.8	4	10	50	3
2MLE 008 120 S03	0.8	4	12	50	3
2MLE 009 040 S03	0.9	4	-	50	3
2MLE 009 060 S03	0.9	4	6	50	3
2MLE 009 080 S03	0.9	4	8	50	3
2MLE 009 100 S03	0.9	4	10	50	3
2MLE 010 050 S03	1	5	-	80	3
2MLE 010 050 S04	1	5	-	80	4
2MLE 010 100 S03	1	5	10	80	3
2MLE 010 100 S04	1	5	10	80	4
2MLE 010 150 S03	1	5	15	80	3
2MLE 010 150 S04	1	5	15	80	4
2MLE 010 200 S03	1	5	20	80	3
2MLE 010 200 S04	1	5	20	80	4
2MLE 010 250 S03	1	5	25	80	3

Numero d'Ordine	D	L1	L2	L	d
2MLE 010 250 S04	1	5	25	80	4
2MLE 010 300 S03	1	5	30	80	3
2MLE 010 300 S04	1	5	30	80	4
2MLE 010 350 S04	1	5	35	100	4
2MLE 010 400 S04	1	5	40	100	4
2MLE 015 100 S03	1.5	10	-	80	3
2MLE 015 100 S04	1.5	10	-	80	4
2MLE 015 150 S03	1.5	10	15	80	3
2MLE 015 150 S04	1.5	10	15	80	4
2MLE 015 200 S03	1.5	10	20	80	3
2MLE 015 200 S04	1.5	10	20	80	4
2MLE 015 250 S03	1.5	10	25	80	3
2MLE 015 250 S04	1.5	10	25	80	4
2MLE 015 300 S03	1.5	10	30	80	3
2MLE 015 300 S04	1.5	10	30	80	4
2MLE 015 350 S04	1.5	10	35	100	4
2MLE 015 400 S04	1.5	10	40	100	4
2MLE 020 100 S03	2	10	-	80	3
2MLE 020 100 S04	2	10	-	80	4
2MLE 020 150 S03	2	10	15	80	3
2MLE 020 150 S04	2	10	15	80	4
2MLE 020 200 S03	2	10	20	80	3
2MLE 020 200 S04	2	10	20	80	4
2MLE 020 250 S03	2	10	25	80	3
2MLE 020 250 S04	2	10	25	80	4
2MLE 020 300 S03	2	10	30	80	3
2MLE 020 300 S04	2	10	30	80	4
2MLE 020 350 S03	2	10	35	80	3
2MLE 020 350 S04	2	10	35	100	4
2MLE 020 400 S03	2	10	40	80	3
2MLE 020 400 S04	2	10	40	100	4
2MLE 025 100 S03	2.5	10	-	80	3
2MLE 025 150 S03	2.5	15	-	80	3
2MLE 025 200 S03	2.5	15	20	80	3
2MLE 030 100 060	3	10	-	60	3
2MLE 030 200 080	3	20	-	80	3
2MLE 030 200 100	3	20	-	100	3
2MLE 030 200 120	3	20	-	120	3
2MLE 030 150 S06	3	15	-	100	6
2MLE 030 200 S06	3	15	20	100	6
2MLE 030 250 S06	3	15	25	100	6
2MLE 030 300 S06	3	15	30	100	6
2MLE 040 200 080	4	20	-	80	4
2MLE 040 200 100	4	20	-	100	4
2MLE 040 200 130	4	20	-	130	4
2MLE 040 200 S06	4	20	-	100	6
2MLE 040 250 S06	4	20	25	100	6
2MLE 040 300 S06	4	20	30	100	6

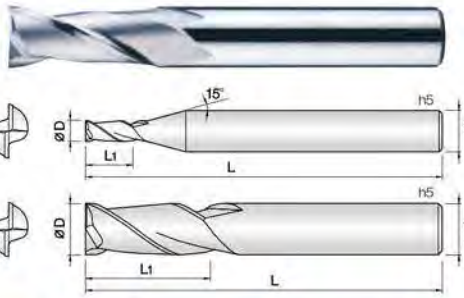
FOR A.B.S

Unità : mm

Numero d'Ordine	D	L1	L2	L	d
2MLE 040 400 S06	4	20	40	120	6
2MLE 050 200 S06	5	20	-	100	6
2MLE 050 300 100	5	30	-	100	5
2MLE 050 300 120	5	30	-	120	5
2MLE 060 250 080	6	25	-	80	6
2MLE 060 300 080	6	30	-	80	6
2MLE 060 400 100	6	40	-	100	6
2MLE 060 400 120	6	40	-	120	6
2MLE 060 400 150	6	40	-	150	6
2MLE 080 300 080	8	30	-	80	8
2MLE 080 350 090	8	35	-	90	8
2MLE 080 400 100	8	40	-	100	8
2MLE 080 450 120	8	45	-	120	8
2MLE 080 450 150	8	45	-	150	8
2MLE 100 300 080	10	30	-	80	10
2MLE 100 350 090	10	35	-	90	10
2MLE 100 400 100	10	40	-	100	10
2MLE 100 500 120	10	50	-	120	10
2MLE 100 500 150	10	50	-	150	10
2MLE 120 300 090	12	30	-	90	12
2MLE 120 400 100	12	40	-	100	12
2MLE 120 500 110	12	50	-	110	12
2MLE 120 550 130	12	55	-	130	12
2MLE 120 550 150	12	55	-	150	12
2MLE 160 700 160	16	70	-	160	16

FOR A.B.S

2MEM Fresa Cilindrica 2 Tagli



- **Fresa per acciai dolci, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie a run-out e tolleranze precise.
- Geometria rinforzata per prevenire scheggiature.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

2 | WC 미립자 | D +0~-0.005 Ø0.1 ~ 0.15 | D +0~-0.01 Ø0.2 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | 30° Helix Angle | Affilato | € List. p.147 | i info p.245

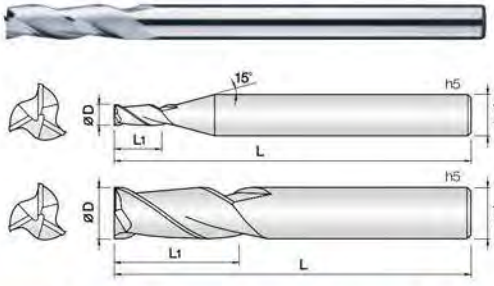
D	Tolleranza
Ø0.1 ~ 0.15	+0~ -0.005mm
Ø0.2 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01 ~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L	d
2MEM 001 002 S03	0.1	0.2	40	3
2MEM 0015 003 S03	0.15	0.3	40	3
2MEM 002 004 S03	0.2	0.4	40	3
2MEM 003 006 S03	0.3	0.6	40	3
2MEM 004 008 S03	0.4	0.8	40	3
2MEM 005 010 S03	0.5	1	40	3
2MEM 006 012 S03	0.6	1.2	40	3
2MEM 007 014 S03	0.7	1.4	40	3
2MEM 008 016 S03	0.8	1.6	40	3
2MEM 009 018 S03	0.9	1.8	40	3
2MEM 010 025 S03	1	2.5	40	3
2MEM 010 025 S06	1	2.5	40	6
2MEM 011 025 S03	1.1	2.5	40	3
2MEM 012 035 S03	1.2	3.5	40	3
2MEM 013 040 S03	1.3	4	40	3
2MEM 014 040 S03	1.4	4	40	3
2MEM 015 040 S03	1.5	4	40	3
2MEM 015 040 S06	1.5	4	40	6
2MEM 016 040 S03	1.6	4	40	3
2MEM 017 050 S03	1.7	5	40	3
2MEM 018 055 S03	1.8	5.5	40	3
2MEM 019 060 S03	1.9	6	40	3
2MEM 020 060 S03	2	6	40	3
2MEM 020 060 S06	2	6	40	6
2MEM 025 080 S03	2.5	8	40	3
2MEM 030 080 S03	3	8	45	3
2MEM 030 080 S06	3	8	45	6
2MEM 035 100 S06	3.5	10	45	6
2MEM 040 110 S06	4	11	45	6
2MEM 045 110 S06	4.5	11	45	6
2MEM 050 130 S06	5	13	50	6
2MEM 060 130 S06	6	13	50	6
2MEM 070 160 S08	7	16	60	8
2MEM 080 190 S08	8	19	60	8
2MEM 090 190 S10	9	19	70	10
2MEM 100 220 S10	10	22	70	10
2MEM 120 260 S12	12	26	75	12

FOR A.B.S

3MEM Fresa Cilindrica 3 Tagli



- **Fresa per acciai dolci, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie a run-out e tolleranze precise.
- Geometria rinforzata per prevenire scheggiature.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

3 | WC 미립자 | D +0~-0.01 Ø0.3~ 4 | D -0.01~-0.025 Ø6 | 30° Helix Angle | Affilato | € List. p.148 | i info p245

D	Tolleranza
Ø0.3 ~ 4	+0~ -0.01mm
Ø6	-0.01~ -0.025mm

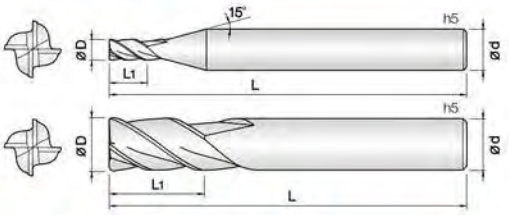
Unità : mm

Numero d'Ordine	D	L1	L	d
3MEM 003 008 S04	0.3	0.8	40	4
3MEM 003 012 S04	0.3	1.2	40	4
3MEM 004 010 S04	0.4	1	40	4
3MEM 004 015 S04	0.4	1.5	40	4
3MEM 005 013 S04	0.5	1.3	40	4
3MEM 005 020 S04	0.5	2	45	4
3MEM 006 015 S04	0.6	1.5	40	4
3MEM 006 024 S04	0.6	2.4	45	4
3MEM 007 018 S04	0.7	1.8	40	4
3MEM 007 028 S04	0.7	2.8	45	4
3MEM 008 020 S04	0.8	2	40	4
3MEM 008 032 S04	0.8	3.2	45	4
3MEM 009 025 S04	0.9	2.5	40	4
3MEM 009 036 S04	0.9	3.6	45	4
3MEM 010 025 S04	1	2.5	40	4
3MEM 010 040 S04	1	4	45	4
3MEM 010 060 S04	1	6	50	4
3MEM 012 030 S04	1.2	3	40	4
3MEM 012 050 S04	1.2	5	40	4
3MEM 012 070 S04	1.2	7	50	4
3MEM 015 040 S04	1.5	4	40	4
3MEM 015 060 S04	1.5	6	40	4
3MEM 015 090 S04	1.5	9	60	4
3MEM 020 050 S04	2	5	40	4
3MEM 020 080 S04	2	8	50	4
3MEM 020 100 S04	2	10	60	4
3MEM 025 060 S04	2.5	6	45	4
3MEM 025 100 S04	2.5	10	50	4
3MEM 025 150 S04	2.5	15	60	4
3MEM 030 080 S04	3	8	50	4
3MEM 030 120 S04	3	12	60	4
3MEM 030 150 S04	3	15	80	4
3MEM 040 100 S04	4	10	50	4
3MEM 040 150 S04	4	15	80	4
3MEM 060 200 S06	6	20	80	6
3MEM 060 300 S06	6	30	110	6

4MEM Fresa Cilindrica 4 Tagli

New





- **Fresa per acciai dolci, A.B.S., alluminio e materiali non ferrosi.**
- Riduzione di vibrazioni grazie a run-out e tolleranze precise.
- Geometria rinforzata per prevenire scheggiature.
- Eccellente resistenza all'usura grazie al metallo duro Ultra Micrograna (0,2 µm)

4 | WC 미립자 | D +0~-0.01 Ø1 ~ 5 | D -0.01~-0.025 Ø6 ~ 12 | 30° Helix Angle | Affilato | € List. p.148

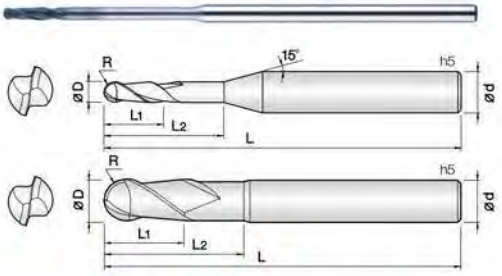
D	Tolleranza
Ø1 ~ 5	+0~ -0.01mm
Ø6 ~ 12	-0.01~ -0.025mm

Unità : mm

Numero d'Ordine	D	L1	L	d
4MEM 010 025 S04	1	2.5	40	4
4MEM 010 040 S04	1	4	45	4
4MEM 015 040 S04	1.5	4	40	4
4MEM 015 060 S04	1.5	6	45	4
4MEM 020 050 S04	2	5	40	4
4MEM 020 080 S04	2	8	45	4
4MEM 025 080 S04	2.5	8	45	4
4MEM 025 100 S04	2.5	10	50	4
4MEM 030 080 S06	3	8	45	6
4MEM 030 120 S06	3	12	50	6
4MEM 040 110 S06	4	11	45	6
4MEM 040 160 S06	4	16	55	6
4MEM 050 130 S06	5	13	50	6
4MEM 050 200 S06	5	20	60	6
4MEM 060 130 S06	6	13	50	6
4MEM 060 240 S06	6	24	70	6
4MEM 080 200 S08	8	20	60	8
4MEM 080 320 S08	8	32	80	8
4MEM 100 220 S10	10	22	70	10
4MEM 100 400 S10	10	40	100	10
4MEM 120 260 S12	12	26	75	12
4MEM 120 480 S12	12	48	100	12

FOR A.B.S

2DBED Fresa Emisferica 2 Tagli Nano-Diamond per Zirconia



- **Fresa per zirconia, ultimate e materiali non ferrosi.**
- Eccellente resistenza all'usura e ottima finitura superficiale grazie al nuovo rivestimento Nano-Diamond.
- Ampia gamma di prodotti sviluppati per la realizzazione di varie forme con un ottimo rendimento.

2 | WC 미립자 | NANO DIA. Coating | R ±0.01 (0.25 ~ 1.5R) | 30° Helix Angle | €

List. p.149

D	Tolleranza
ø0.2 ~ 5	+0~ -0.01mm

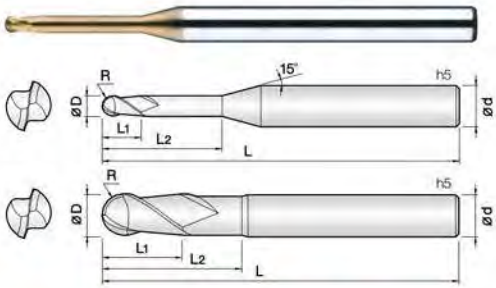
Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2DBED 005 050 345	0.25R X 0.6	1.5	5	45	3
2DBED 005 050 350	0.25R X 0.6	1.5	5	50	3
2DBED 005 050 445	0.25R X 0.6	1.5	5	45	4
2DBED 005 050 450	0.25R X 0.6	1.5	5	50	4
2DBED 005 050 645	0.25R X 0.6	1.5	5	45	6
2DBED 005 050 650	0.25R X 0.6	1.5	5	50	6
2DBED 005 120 345	0.25R X 0.6	1.5	12	45	3
2DBED 005 120 350	0.25R X 0.6	1.5	12	50	3
2DBED 005 120 445	0.25R X 0.6	1.5	12	45	4
2DBED 005 120 450	0.25R X 0.6	1.5	12	50	4
2DBED 005 120 645	0.25R X 0.6	1.5	12	45	6
2DBED 005 120 650	0.25R X 0.6	1.5	12	50	6
2DBED 006 050 345	0.3R X 0.6	2	5	45	3
2DBED 006 050 350	0.3R X 0.6	2	5	50	3
2DBED 006 050 445	0.3R X 0.6	2	5	45	4
2DBED 006 050 450	0.3R X 0.6	2	5	50	4
2DBED 006 050 645	0.3R X 0.6	2	5	45	6
2DBED 006 050 650	0.3R X 0.6	2	5	50	6
2DBED 006 120 345	0.3R X 0.6	2	12	45	3
2DBED 006 120 350	0.3R X 0.6	2	12	50	3
2DBED 006 120 445	0.3R X 0.6	2	12	45	4
2DBED 006 120 450	0.3R X 0.6	2	12	50	4
2DBED 006 120 645	0.3R X 0.6	2	12	45	6
2DBED 006 120 650	0.3R X 0.6	2	12	50	6
2DBED 010 160 350	0.5R X 1	6	16	50	3
2DBED 010 160 355	0.5R X 1	6	16	55	3
2DBED 010 160 450	0.5R X 1	6	16	50	4
2DBED 010 160 455	0.5R X 1	6	16	55	4
2DBED 010 160 650	0.5R X 1	6	16	50	6
2DBED 010 160 655	0.5R X 1	6	16	55	6
2DBED 010 180 350	0.5R X 1	6	18	50	3
2DBED 010 180 355	0.5R X 1	6	18	55	3
2DBED 010 180 450	0.5R X 1	6	18	50	4
2DBED 010 180 455	0.5R X 1	6	18	55	4
2DBED 010 180 650	0.5R X 1	6	18	50	6
2DBED 010 180 655	0.5R X 1	6	18	55	6
2DBED 020 160 350	1R X 2	8	16	50	3
2DBED 020 160 355	1R X 2	8	16	55	3
2DBED 020 160 450	1R X 2	8	16	50	4
2DBED 020 160 455	1R X 2	8	16	55	4
2DBED 020 160 650	1R X 2	8	16	50	6
2DBED 020 160 655	1R X 2	8	16	55	6
2DBED 020 200 350	1R X 2	8	20	50	3
2DBED 020 200 355	1R X 2	8	20	55	3
2DBED 020 200 450	1R X 2	8	20	50	4
2DBED 020 200 455	1R X 2	8	20	55	4
2DBED 020 200 650	1R X 2	8	20	50	6
2DBED 020 200 655	1R X 2	8	20	55	6

Numero d'Ordine	R×D	L1	L2	L	d
2DBED 030 200 355	1.5R X 2	10	20	55	3
2DBED 030 200 455	1.5R X 2	10	20	55	4
2DBED 030 200 655	1.5R X 2	10	20	55	6

2HRBD

Fresa Emisferica 2 Tagli per Titanio e Cromo Cobalto



- **Fresa per dischi in cromo cobalto, titanio e impianti.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base Si.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superficiale.

2 | UWC 초미립자 | TISIN Coating | IR ±0.01 | 30° Helix Angle | €

0.3R ~ 1.5R

List. p.150

D	Tolleranza
Ø0.6 ~ 3	+0 ~ -0.01mm

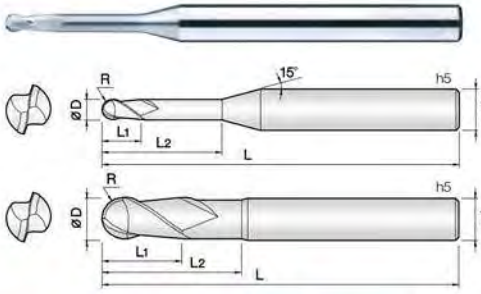
Unità : mm

Numero d'Ordine	R×D	L1	L2	L	d
2HRBD 006 050 645	0.3R X 0.6	0.8	5	45	6
2HRBD 006 050 650	0.3R X 0.6	0.8	5	50	6
2HRBD 006 120 645	0.3R X 0.6	0.8	12	45	6
2HRBD 006 120 650	0.3R X 0.6	0.8	12	50	6
2HRBD 008 080 645	0.4R X 0.8	1	8	45	6
2HRBD 008 080 650	0.4R X 0.8	1	8	50	6
2HRBD 008 120 645	0.4R X 0.8	1	12	45	6
2HRBD 008 120 650	0.4R X 0.8	1	12	50	6
2HRBD 010 040 645	0.5R X 1	2	4	45	6
2HRBD 010 060 645	0.5R X 1	2	6	45	6
2HRBD 010 080 645	0.5R X 1	2	8	45	6
2HRBD 010 080 650	0.5R X 1	2	8	50	6
2HRBD 010 100 645	0.5R X 1	2	10	45	6
2HRBD 010 100 650	0.5R X 1	2	10	50	6
2HRBD 010 120 645	0.5R X 1	2	12	45	6
2HRBD 010 120 650	0.5R X 1	2	12	50	6
New 2HRBD 015 100 645	0.75R X 1.5	2.5	10	45	6
2HRBD 015 120 645	0.75R X 1.5	2.5	12	45	6
2HRBD 015 120 650	0.75R X 1.5	2.5	12	50	6
2HRBD 015 140 645	0.75R X 1.5	2.5	14	45	6
2HRBD 015 140 650	0.75R X 1.5	2.5	14	50	6
2HRBD 020 050 645	1R X 2	3	5	45	6
2HRBD 020 080 645	1R X 2	3	8	45	6
2HRBD 020 120 645	1R X 2	3	12	45	6
2HRBD 020 120 650	1R X 2	3	12	50	6
2HRBD 020 140 645	1R X 2	3	14	45	6
2HRBD 020 140 650	1R X 2	3	14	50	6
2HRBD 020 160 645	1R X 2	3	16	45	6
2HRBD 020 160 650	1R X 2	3	16	50	6
2HRBD 030 080 645	1.5R X 3	4	8	45	6
2HRBD 030 100 645	1.5R X 3	4	10	45	6
New 2HRBD 030 120 645	1.5R X 3	4	12	45	6
2HRBD 030 160 645	1.5R X 3	4	16	45	6
2HRBD 030 160 650	1.5R X 3	4	16	50	6

FOR DENTAL

2MRBD

Fresa Emisferica 2 Tagli per PMMA, PEEK E WAX



- **Fresa per per PMMA, PEE, WAX, A.B.S. e materiali non ferrosi.**
- Ottima resistenza all'usura grazie al rivestimento PVD a base SI.
- Elevata tolleranza del filo tagliente.
- Ottima finitura superficiale.

2 | WC 미립자 | TDLC Coating | LRJ ±0.01 (0.3R ~ 1R) | 30° Helix Angle | €

List. p.150

D	D Tolerance
Ø0.6 ~ 2	+0 ~ -0.01mm

Unità : mm

Numero d'Ordine		R×D	L1	L2	L	d
Non Rivestito	Rivestito					
2MRBD 006 050 450	2MRBDD 006 050 450	0.3R X 0.6	2	5	50	4
2MRBD 006 050 650	2MRBDD 006 050 650	0.3R X 0.6	2	5	50	6
2MRBD 006 100 450	2MRBDD 006 100 450	0.3R X 0.6	2	10	50	4
2MRBD 006 100 650	2MRBDD 006 100 650	0.3R X 0.6	2	10	50	6
2MRBD 010 140 455	2MRBDD 010 140 455	0.5R X 1	6	14	55	4
2MRBD 010 140 655	2MRBDD 010 140 655	0.5R X 1	6	14	55	6
2MRBD 010 160 455	2MRBDD 010 160 455	0.5R X 1	6	16	55	4
2MRBD 010 160 655	2MRBDD 010 160 655	0.5R X 1	6	16	55	6
2MRBD 020 160 455	2MRBDD 020 160 455	1R X 2	8	16	55	4
2MRBD 020 160 655	2MRBDD 020 160 655	1R X 2	8	16	55	6
2MRBD 020 200 455	2MRBDD 020 200 455	1R X 2	8	20	55	4
2MRBD 020 200 655	2MRBDD 020 200 655	1R X 2	8	20	55	6

New

Fresa Emisferica 2 Tagli Nano-Diamond per Zirconia

- **Fresa per zirconia, ultimate e materiali non ferrosi.**
- Eccellente resistenza all'usura e ottima finitura superficiale grazie al nuovo rivestimento Nano-Diamond.
- Ampia gamma di prodotti sviluppati per la realizzazione di varie forme con un ottimo rendimento.

2 | WC 미립자 | NANO DIA. Coating | R ±0.01 (0.3 ~ 1.5R) | 30° Helix Angle | € List. p.151

D	Tolleranza
Ø0.6 ~ 3	+0~ -0.01mm



ROLAND Standard

Compatibile con macchine
DWX 50, DWX 4

Unità : mm

2ROL	R×D	L1	L2	L	d
2ROL 006 060 S04	0.3R X 0.6	2	6	50	4
2ROL 008 100 S04	0.4R X 0.8	3	10	50	4
2ROL 010 120 S04	0.5R X 1	6	12	50	4
2ROL 010 160 S04	0.5R X 1	6	16	50	4
2ROL 010 200 S04	0.5R X 1	6	20	50	4
2ROL 020 160 S04	1R X 2	8	16	50	4
2ROL 030 180 S04	1.5R X 3	10	18	50	4



VHF Standard

Compatibile con macchine
Wieland, Brux Zir, EzMill, Jensen, Master-Mill, 5Axes

2VHF	R×D	L1	L2	L	d
2VHF 006 070 S03	0.3R X 0.6	2	7	35	3
2VHF 007 070 S03	0.35R X 0.7	6	7	35	3
2VHF 010 160 S03	0.5R X 1	6	16	35	3
2VHF 020 160 S03	1R X 2	8	16	35	3
2VHF 025 160 S03	1.25R X 2.5	9	16	35	3
2VHF 030 160 S03	1.5R X 3	10	16	35	3



ARUM Standard

Compatibile con macchine
DWX 50, DWX 4

2ARU	R×D	L1	L2	L	d
2ARU 006 080 S06	0.3R X 0.6	2	8	63	6
2ARU 010 016 S06	0.5R X 1	6	16	63	6
2ARU 020 200 S06	1R X 2	8	20	63	6

New

Fresa Emisferica 2 Tagli Nano-Diamond per Zirconia

- **Fresa per zirconia, ultimate e materiali non ferrosi.**
- Eccellente resistenza all'usura e ottima finitura superficiale grazie al nuovo rivestimento Nano-Diamond.
- Ampia gamma di prodotti sviluppati per la realizzazione di varie forme con un ottimo rendimento.



List. p.151

D	Tolleranza
Ø0.5 ~ 2.5	+0 ~ −0.01mm



IME Standard
Compatibile con macchine DWX 50, DWX 4

Unità : mm

2IME	R x D	L1	L2	L	d
2IME 006 030 S03	0.3R X 0.6	2	7	48	3
2IME 020 160 S03	1R X 2	8	16	48	3
2IME 025 160 S03	1.25R X 2.5	9	16	48	3



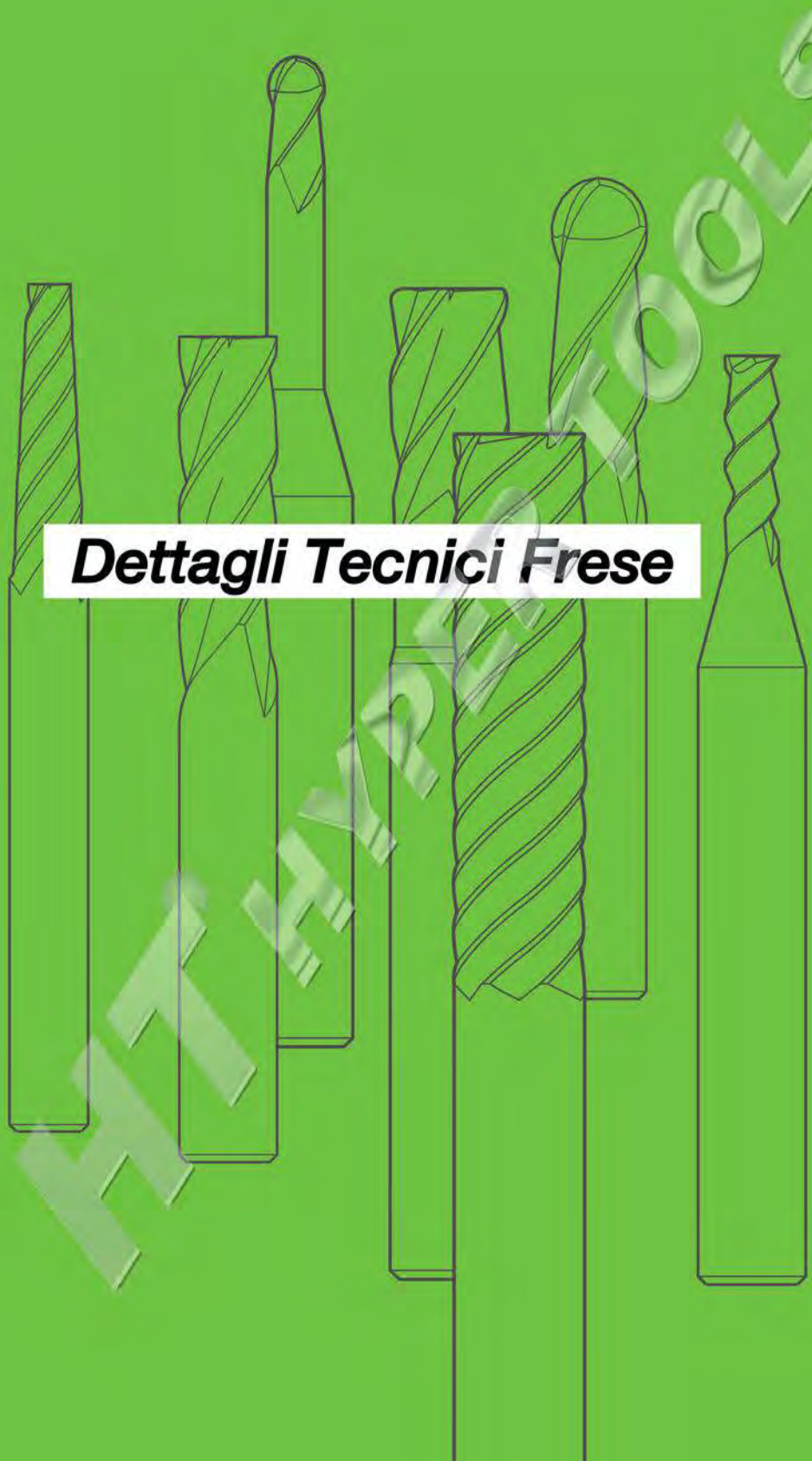
ZIRCONZAHN Standard
Compatibile con macchine DWX 50, DWX 4

2ZIR	R x D	L1	L2	L	d
2ZIR 005 160 S03	0.25R X 0.5	3	12	57	3
2ZIR 010 160 S03	0.5R X 1	8	16	57	3
2ZIR 020 180 S03	1R X 2	10	18	57	3



AMANN Standard
Compatibile con macchine DWX 50, DWX 4

2AMA	R x D	L1	L2	L	d
2AMA 006 090 S03	0.3R X 0.6	2	7	47	3
2AMA 010 160 S03	0.5R X 1	6	16	47	3
2AMA 025 170 S03	1.25R X 2.5	9	17	47	3

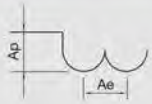


Dettagli Tecnici Frese

HYPER TOOLS

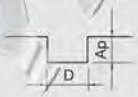
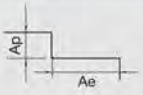
2BCBN/2SBCBN

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Acciai Bonificati / Acciai Temprati NAK / SKD61				Acciai Temprati STAVX / SKD61				Acciai Temprati SKD11 / YXR7 / SKH51			
Durezza		30HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 68HRc			
Raggio	Lunghezza Utile	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R 0.1	0.2	50,000	326	0.005	0.005	50,000	216	0.004	0.004	50,000	120	0.003	0.003
"	0.5	50,000	308	0.004	0.004	50,000	198	0.003	0.003	50,000	110	0.002	0.003
R 0.15	0.3	50,000	800	0.006	0.010	50,000	520	0.004	0.005	50,000	410	0.003	0.005
"	0.5	50,000	720	0.006	0.010	50,000	450	0.003	0.005	50,000	390	0.003	0.005
"	1	50,000	650	0.006	0.010	50,000	410	0.003	0.005	50,000	350	0.003	0.004
R 0.2	0.3	50,000	1,120	0.010	0.010	50,000	750	0.005	0.006	50,000	650	0.005	0.005
"	1	50,000	1,050	0.010	0.010	50,000	710	0.005	0.005	50,000	600	0.005	0.005
"	3	50,000	540	0.005	0.005	50,000	360	0.003	0.003	50,000	310	0.002	0.003
R 0.25	0.4	50,000	1,420	0.010	0.020	50,000	1,210	0.050	0.010	50,000	1,030	0.005	0.001
"	1	50,000	1,290	0.010	0.015	50,000	1,100	0.005	0.010	50,000	980	0.005	0.010
"	3	50,000	1,090	0.010	0.015	50,000	850	0.005	0.010	50,000	730	0.005	0.010
R 0.3	0.5	50,000	2,300	0.020	0.020	50,000	1,890	0.015	0.015	50,000	1,520	0.010	0.010
"	1	50,000	2,180	0.020	0.020	50,000	1,760	0.010	0.010	50,000	1,490	0.010	0.010
"	3	40,000	1,300	0.015	0.020	40,000	1,060	0.010	0.010	40,000	870	0.010	0.010
"	5	30,000	650	0.015	0.050	30,000	590	0.010	0.010	30,000	390	0.005	0.005
R 0.4	0.6	50,000	2,600	0.020	0.030	50,000	1,980	0.020	0.020	50,000	1,720	0.010	0.020
"	2	40,000	2,100	0.015	0.020	40,000	1,450	0.015	0.015	40,000	1,210	0.010	0.010
"	4	30,000	1,540	0.015	0.015	30,000	940	0.010	0.015	30,000	840	0.010	0.010
"	8	24,000	970	0.010	0.010	24,000	650	0.005	0.010	24,000	470	0.005	0.005
R 0.5	1.5	40,000	2,560	0.030	0.040	40,000	1,980	0.020	0.030	40,000	1,590	0.020	0.020
"	3	30,000	2,100	0.030	0.030	30,000	1,650	0.020	0.030	30,000	1,240	0.020	0.020
"	5	30,000	1,700	0.030	0.030	30,000	1,360	0.015	0.020	30,000	1,080	0.010	0.015
"	10	16,000	780	0.015	0.015	16,000	620	0.010	0.015	16,000	500	0.010	0.010
R 0.75	2	40,000	2,300	0.040	0.040	40,000	1,920	0.030	0.030	40,000	1,530	0.020	0.030
"	4	30,000	2,010	0.030	0.030	30,000	1,600	0.025	0.025	30,000	1,280	0.020	0.020
"	8	30,000	1,700	0.030	0.030	30,000	1,360	0.020	0.030	30,000	1,080	0.010	0.010
R 1	2	40,000	3,310	0.050	0.050	40,000	2,640	0.040	0.040	40,000	2,110	0.030	0.040
"	6	40,000	3,020	0.030	0.040	40,000	2,410	0.030	0.030	40,000	1,930	0.020	0.030
"	10	24,000	1,210	0.020	0.030	24,000	970	0.010	0.030	24,000	770	0.010	0.020
"	14	16,000	920	0.010	0.020	16,000	780	0.010	0.010	16,000	630	0.010	0.010
R 1.5	3	40,000	2,500	0.030	0.040	40,000	2,000	0.030	0.030	40,000	1,600	0.020	0.030
"	6	32,000	2,100	0.030	0.030	32,000	1,680	0.020	0.030	32,000	1,340	0.020	0.030
"	10	21,000	1,700	0.020	0.030	21,000	1,360	0.020	0.020	21,000	1,080	0.010	0.020
"	16	16,000	1,100	0.020	0.030	16,000	880	0.010	0.020	16,000	700	0.010	0.010
R 2	4	40,000	2,100	0.030	0.040	40,000	1,680	0.030	0.030	40,000	1,340	0.020	0.030
"	10	21,000	1,620	0.020	0.030	21,000	1,290	0.020	0.020	21,000	1,030	0.010	0.020
"	16	16,000	1,060	0.010	0.020	21,000	840	0.010	0.020	16,000	670	0.010	0.010
R 3		16,000~ 50,000	960~ 8000	0.050	0.060	13,000~ 50,000	780~ 6,000	0.050	0.060	11,000~ 50,000	540~ 4,000	0.050	0.060
Profondità di Taglio													

2ECBN

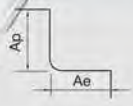
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Acciai Bonificati / Acciai Temprati NAK / SKD61				Acciai Temprati STAVX / SKD61				Acciai Temprati SKD11 / YXR7 / SKH51			
Durezza		30HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 68HRc			
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
0.2mm	0.2	50,000	211	0.005	0.005	50,000	140	0.004	0.004	50,000	78	0.003	0.003
"	0.5	50,000	200	0.004	0.004	50,000	130	0.003	0.003	50,000	71	0.002	0.003
0.3mm	0.3	50,000	520	0.006	0.010	50,000	290	0.004	0.005	50,000	260	0.003	0.005
"	0.5	50,000	460	0.006	0.010	50,000	270	0.003	0.005	50,000	250	0.003	0.005
"	1	50,000	422	0.006	0.010	50,000	260	0.003	0.005	50,000	220	0.003	0.004
0.4mm	0.3	50,000	840	0.010	0.010	50,000	490	0.005	0.006	50,000	430	0.005	0.005
"	1	50,000	690	0.010	0.010	50,000	470	0.005	0.005	50,000	420	0.005	0.005
"	2	50,000	370	0.005	0.005	50,000	240	0.003	0.003	50,000	209	0.002	0.003
0.5mm	0.4	50,000	940	0.010	0.020	50,000	810	0.050	0.010	50,000	732	0.005	0.010
"	1	50,000	850	0.010	0.015	50,000	560	0.005	0.010	50,000	523	0.005	0.010
"	3	50,000	560	0.010	0.015	50,000	530	0.005	0.010	50,000	504	0.005	0.010
0.8mm	0.6	50,000	1,530	0.020	0.020	50,000	1,254	0.015	0.015	50,000	1,093	0.010	0.010
"	2	50,000	1,440	0.020	0.020	50,000	1,169	0.010	0.010	50,000	1,064	0.010	0.010
"	4	40,000	860	0.015	0.020	40,000	703	0.010	0.010	40,000	620	0.010	0.010
"	6	30,000	440	0.015	0.050	30,000	390	0.010	0.010	30,000	280	0.005	0.005
1mm	0.7	50,000	1,730	0.020	0.030	50,000	1,311	0.020	0.020	50,000	1,230	0.010	0.020
"	2	40,000	1,390	0.015	0.200	40,000	960	0.015	0.015	40,000	870	0.010	0.010
"	4	30,000	1,030	0.015	0.015	30,000	620	0.010	0.015	30,000	600	0.010	0.010
"	8	24,000	650	0.010	0.010	24,000	440	0.005	0.010	24,000	340	0.005	0.005
1.5mm	0.8	40,000	1,700	0.030	0.040	40,000	1,090	0.020	0.030	40,000	1,130	0.020	0.020
"	2	30,000	1,400	0.030	0.030	30,000	1,100	0.020	0.030	30,000	880	0.020	0.020
"	4	30,000	1,130	0.030	0.030	30,000	900	0.015	0.020	30,000	770	0.010	0.015
"	8	16,000	520	0.015	0.015	16,000	410	0.010	0.015	16,000	350	0.010	0.010
2mm	2	40,000	1,530	0.040	0.040	40,000	1,270	0.030	0.030	40,000	1,090	0.020	0.030
"	4	30,000	1,330	0.030	0.030	30,000	1,060	0.025	0.025	30,000	910	0.020	0.020
"	8	30,000	1,130	0.030	0.030	30,000	900	0.020	0.030	30,000	770	0.010	0.010
2.5mm	1.2	40,000	2,200	0.050	0.050	40,000	1,760	0.040	0.040	40,000	1,500	0.030	0.040
"	4	40,000	1,540	0.030	0.040	40,000	1,240	0.030	0.030	40,000	1,150	0.020	0.030
"	10	24,000	810	0.020	0.030	24,000	650	0.010	0.030	24,000	260	0.010	0.020
3mm	6	40,000	1,400	0.030	0.030	40,000	1,120	0.020	0.030	40,000	960	0.020	0.030
"	10	21,000	1,130	0.020	0.030	21,000	900	0.020	0.020	21,000	770	0.010	0.020
"	16	16,000	730	0.020	0.030	16,000	590	0.010	0.020	16,000	500	0.010	0.010
4mm	6	40,000	1,430	0.030	0.040	40,000	1,120	0.030	0.030	40,000	1,040	0.020	0.030
"	10	21,000	1,080	0.020	0.030	21,000	850	0.020	0.020	21,000	740	0.010	0.020
"	16	16,000	700	0.010	0.020	21,000	560	0.010	0.020	16,000	470	0.010	0.010
6mm		16,000~ 50,000	740~ 6000	0.050	0.060	13,000~ 50,000	590~ 4,000	0.050	0.060	11,000~ 50,000	390~ 3,000	0.050	0.060
Profondità di Taglio		Fresatura dal pieno • Ap : Profondità Taglio • D : Diametro Esterno						Spallamento • Ap : Profondità Taglio • Ae : Radiale Passo					

2CCBN/2SCCBN/4SCCBN

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Acciai Bonificati / Acciai Temprati NAK / SKD61				Acciai Temprati STAVX / SKD61				Acciai Temprati SKD11 / YXR7 / SKH51			
Durezza		30HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 68HRc			
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
0.4mm	0.3	50,000	890	0.010	0.010	50,000	520	0.005	0.006	50,000	450	0.005	0.005
"	1	50,000	730	0.010	0.010	50,000	500	0.005	0.005	50,000	430	0.005	0.005
"	2	50,000	390	0.005	0.005	50,000	250	0.003	0.003	50,000	220	0.002	0.003
0.5mm	0.4	50,000	990	0.010	0.020	50,000	850	0.005	0.010	50,000	770	0.005	0.010
"	1	50,000	900	0.010	0.015	50,000	590	0.005	0.010	50,000	550	0.005	0.010
"	3	50,000	630	0.010	0.015	50,000	560	0.005	0.010	50,000	530	0.005	0.010
0.8mm	0.6	50,000	1,610	0.020	0.020	50,000	1,320	0.015	0.015	50,000	1,140	0.010	0.010
"	2	50,000	1,520	0.020	0.020	50,000	1,230	0.010	0.010	50,000	1,120	0.010	0.010
"	4	40,000	910	0.015	0.020	40,000	740	0.010	0.010	40,000	650	0.010	0.010
"	6	30,000	460	0.015	0.050	30,000	410	0.010	0.010	30,000	290	0.005	0.005
1mm	0.7	50,000	1,820	0.020	0.030	50,000	1,380	0.020	0.020	50,000	1,290	0.010	0.020
"	2	40,000	1,470	0.015	0.200	40,000	1,010	0.015	0.015	40,000	910	0.010	0.010
"	4	30,000	1,080	0.015	0.015	30,000	660	0.010	0.015	30,000	630	0.010	0.010
"	8	24,000	680	0.010	0.010	24,000	460	0.005	0.010	24,000	360	0.005	0.005
1.5mm	0.8	40,000	1,790	0.030	0.040	40,000	1,150	0.020	0.030	40,000	1,190	0.020	0.020
"	2	30,000	1,470	0.030	0.030	30,000	1,160	0.020	0.030	30,000	930	0.020	0.020
"	4	30,000	1,190	0.030	0.030	30,000	950	0.015	0.020	30,000	810	0.010	0.015
"	8	16,000	550	0.015	0.015	16,000	430	0.010	0.015	16,000	370	0.010	0.010
2mm	2	40,000	1,610	0.040	0.040	40,000	1,340	0.030	0.030	40,000	1,150	0.020	0.030
"	4	30,000	1,400	0.030	0.030	30,000	1,120	0.025	0.025	30,000	960	0.020	0.020
"	8	30,000	1,190	0.030	0.030	30,000	950	0.020	0.030	30,000	810	0.010	0.010
2.5mm	1.2	40,000	2,317	0.050	0.050	40,000	1,850	0.040	0.040	40,000	1,580	0.030	0.040
"	4	40,000	1,620	0.030	0.040	40,000	1,300	0.030	0.030	40,000	1,210	0.020	0.030
"	10	24,000	850	0.020	0.030	24,000	680	0.010	0.030	24,000	280	0.010	0.020
3mm	6	40,000	1,470	0.030	0.030	40,000	1,180	0.020	0.030	40,000	1,010	0.020	0.030
"	10	21,000	1,190	0.020	0.030	21,000	950	0.020	0.020	21,000	810	0.010	0.020
"	16	16,000	770	0.020	0.030	16,000	620	0.010	0.020	16,000	530	0.010	0.010
4mm	6	40,000	1,510	0.030	0.040	40,000	1,180	0.030	0.030	40,000	1,100	0.020	0.030
"	10	21,000	1,140	0.020	0.030	21,000	900	0.020	0.020	21,000	780	0.010	0.020
"	16	16,000	740	0.010	0.020	21,000	590	0.010	0.020	16,000	500	0.010	0.010
6mm		16,000~ 50,000	740~ 6000	0.050	0.060	13,000~ 50,000	590~ 4,000	0.050	0.060	11,000~ 50,000	390~ 3,000	0.050	0.060
Profondità di Taglio		• Ap : Prof. Taglio. • Ae : Passo Radiale											

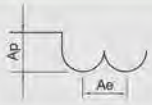


- Per le frese a 4 tagli, incrementare del 20% l'avanzamento e ridurre del 5% la profondità di taglio.

2JJTB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Rame / Acciai al Carbonio Cu / S45C / SKD			Acciai Bonificati / Acciai Temprati NAK / SKD			Acciai Temprati SKD / SKT			Acciai Temprati SKD / SKT		
Durezza		30HRC~45HRC			30HRC~45HRC			45HRC~55HRC			55HRc ~ 68HRc		
Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap
R0.1	1.5	42,000	630	0.007	28,350	431	0.005	27,300	326	0.005	27,300	252	0.004
"	2	32,550	368	0.005	22,575	252	0.004	21,000	200	0.003	21,000	179	0.003
R0.15	2	34,650	641	0.008	23,310	399	0.006	21,525	336	0.005	21,525	294	0.004
"	3	32,550	494	0.003	22,050	326	0.002	19,950	242	0.002	19,950	189	0.001
R0.2	3	42,000	1,155	0.016	28,350	788	0.013	26,250	672	0.011	26,250	473	0.008
"	6	25,200	525	0.004	17,850	326	0.003	16,800	294	0.003	16,800	252	0.002
R0.25	4	34,650	1,187	0.019	28,350	861	0.015	24,675	630	0.013	24,675	609	0.011
"	8	21,525	609	0.006	17,850	431	0.005	15,750	368	0.004	15,750	326	0.003
R0.3	4	43,050	2,142	0.032	31,500	1,418	0.022	23,625	788	0.021	23,625	704	0.016
"	8	26,775	998	0.016	22,050	735	0.013	16,800	515	0.011	16,800	410	0.008
"	12	2,625	893	0.008	22,575	714	0.006	14,700	399	0.005	13,650	336	0.004
R0.4	4	43,050	2,310	0.037	29,400	1,470	0.028	24,150	861	0.026	24,150	714	0.016
"	8	26,775	1,365	0.021	18,900	945	0.016	15,750	630	0.016	15,750	578	0.011
"	12	26,775	1,050	0.016	16,275	525	0.013	12,600	462	0.011	12,600	420	0.007
R0.5	8	26,250	2,100	0.047	17,850	1,365	0.037	17,850	1,050	0.032	16,800	861	0.026
"	15	17,850	1,103	0.023	12,600	767	0.019	11,550	683	0.017	11,550	525	0.013
"	25	15,750	945	0.014	10,500	683	0.011	9,450	567	0.008	9,450	462	0.008
"	35	9,450	609	0.008	6,300	399	0.006	6,300	378	0.005	6,300	273	0.004
R0.75	10	18,900	2,205	0.063	12,600	1,470	0.042	12,600	1,155	0.037	12,600	893	0.032
"	20	13,650	1,260	0.032	9,450	945	0.021	9,450	735	0.016	9,450	630	0.014
"	30	9,450	893	0.016	7,350	651	0.013	7,350	546	0.011	7,350	504	0.011
R1	12	15,750	2,468	0.084	11,550	1,785	0.068	11,025	1,428	0.059	11,025	1,124	0.048
"	20	10,500	1,470	0.063	8,400	1,050	0.053	9,450	1,050	0.047	9,450	924	0.037
"	30	9,450	1,260	0.047	7,350	840	0.037	7,350	819	0.032	7,350	672	0.026
"	40	9,450	1,260	0.037	7,035	819	0.032	6,300	735	0.026	6,300	609	0.021
R1.5	20	10,500	2,310	0.095	8,400	1,365	0.074	7,350	1,260	0.063	7,350	1,155	0.053
"	30	9,450	1,890	0.079	7,350	1,103	0.063	6,300	1,050	0.053	6,300	924	0.044
"	40	7,875	1,470	0.063	5,250	924	0.053	5,355	840	0.042	5,355	735	0.037
"	50	7,875	1,365	0.042	5,250	840	0.032	5,355	788	0.026	5,355	683	0.024
R2	40	6,300	1,260	0.085	3,675	630	0.068	3,360	557	0.053	3,360	525	0.045
"	60	4,200	767	0.063	3,150	473	0.047	2,940	420	0.042	2,940	368	0.033
R3	29	9,450	2,205	0.147	7,350	1,103	0.105	6,300	998	0.084	6,300	893	0.061
"	49	4,725	1,470	0.074	4,095	735	0.063	3,570	683	0.053	3,570	578	0.042
R4	33	9,345	2,310	0.189	7,350	1,155	0.147	6,300	1,050	0.105	6,300	840	0.086
"	52	4,515	1,365	0.095	3,360	683	0.084	3,045	578	0.068	3,045	473	0.042
R5	37	5,775	1,785	0.194	3,675	893	0.168	3,570	735	0.126	3,570	630	0.084
"	54	4,200	998	0.093	3,150	504	0.068	2,940	420	0.053	2,940	336	0.034
R6	63	3,990	735	0.126	2,940	368	0.086	2,625	326	0.063	2,625	231	0.047
"	85	2,940	336	0.063	1,995	168	0.032	1,575	158	0.016	1,575	105	0.011
Importo Fresatura	Sgrossatura	Ae≤0.1D			Ae≤0.1D			Ae≤0.08D			Ae≤0.06D		
	Finitura	Ae = Vf/n											
Profondità di Taglio		• Ap : Profondità Taglio • Ae : Passo Radiale • D : Diametro Esterno • n : Velocità • Vf : Avanzamento											



- Si raccomanda l'uso di aria o olio nebulizzato. Per lavorazioni su rame emulsione o olio appositi.
- Questi parametri sono solo un riferimento. Si raccomanda una ottimizzazione in funzione delle macchina, rigidità del pezzo e percorso utensile.
- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.
- La lunghezza utile e il diverso angolo di rastrematura, richiedono un aggiustamento anche in ordine alle condizioni di lavoro.
- Rimuovere i trucioli per prevenire infortuni.

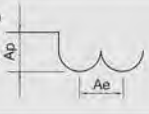
2JJRB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiali		Acciai Bonificati / Acciai Temprati NAK / STAVAX				Acciai Temprati SKD11				Acciai Temprati HAP10				Acciai Temprati HAP72			
Durezza		~ 55HRc				55HRc ~ 62HRc				62HRc ~ 66HRc				66HRc ~ 70HRc			
Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R0.1	0.5	60,000	200	0.003	0.005	60,000	200	0.002	0.003	60,000	130	0.002	0.003	45,000	65	0.002	0.003
"	1	60,000	200	0.003	0.005	60,000	200	0.002	0.003	60,000	130	0.002	0.003	45,000	65	0.002	0.003
"	1.5	60,000	130	0.002	0.003	48,000	80	0.001	0.002	48,000	65	0.001	0.002	36,000	30	0.001	0.002
"	2	60,000	90	0.001	0.002	48,000	50	0.001	0.001	48,000	40	0.001	0.001	36,000	20	0.001	0.001
R0.15	1	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
"	1.5	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
"	2	60,000	210	0.004	0.007	45,000	190	0.003	0.005	43,500	110	0.002	0.004	32,500	55	0.002	0.004
"	3	42,500	140	0.002	0.004	32,000	80	0.002	0.004	32,000	65	0.001	0.002	24,000	30	0.001	0.002
R0.2	1	50,000	500	0.010	0.020	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
"	2	50,000	500	0.010	0.020	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
"	3	40,000	250	0.005	0.008	31,900	210	0.004	0.008	30,500	160	0.003	0.005	22,800	80	0.002	0.005
"	4	32,000	180	0.003	0.005	25,500	150	0.002	0.004	24,300	120	0.002	0.004	18,200	60	0.002	0.004
R0.25	1	44,000	650	0.015	0.040	33,000	530	0.010	0.020	30,000	300	0.007	0.010	22,500	150	0.007	0.010
"	2	44,000	650	0.015	0.040	33,000	530	0.010	0.020	30,000	300	0.007	0.010	22,500	150	0.007	0.010
"	3	40,000	500	0.010	0.020	31,000	400	0.007	0.010	28,550	230	0.005	0.008	21,400	115	0.005	0.008
"	4	32,700	180	0.005	0.015	27,150	150	0.003	0.008	25,650	100	0.002	0.005	19,900	50	0.002	0.005
"	5	27,000	135	0.003	0.008	24,200	110	0.002	0.005	23,500	75	0.002	0.004	17,600	35	0.002	0.004
"	6	21,350	90	0.002	0.005	21,300	75	0.001	0.003	21,300	50	0.001	0.002	16,000	25	0.001	0.002
"	8	15,900	60	0.001	0.003	15,900	40	0.001	0.002	15,900	25	0.001	0.002	11,950	12	0.001	0.002
R0.3	1	40,000	1,400	0.045	0.150	30,000	1,500	0.030	0.130	26,500	1,000	0.015	0.090	20,000	500	0.015	0.090
"	2	40,000	1,100	0.030	0.130	30,000	1,200	0.020	0.100	26,500	800	0.010	0.075	20,000	400	0.010	0.075
"	3	40,000	800	0.020	0.100	30,000	800	0.015	0.090	26,500	520	0.008	0.065	20,000	260	0.008	0.065
"	4	40,000	500	0.015	0.090	30,000	500	0.010	0.075	26,500	340	0.006	0.050	20,000	170	0.006	0.050
"	5	32,000	400	0.010	0.075	25,000	390	0.007	0.050	23,000	260	0.005	0.040	18,000	130	0.005	0.040
"	6	24,000	300	0.007	0.060	21,000	320	0.005	0.040	19,500	210	0.004	0.030	15,000	105	0.004	0.030
"	8	16,000	200	0.005	0.050	16,000	240	0.003	0.020	16,000	160	0.003	0.020	12,000	80	0.003	0.020
"	10	14,900	175	0.003	0.020	14,900	175	0.002	0.015	14,900	115	0.002	0.015	11,100	55	0.002	0.015
"	12	13,800	150	0.002	0.015	13,800	110	0.001	0.010	13,800	70	0.001	0.010	10,350	35	0.001	0.010
R0.4	2	35,000	1,600	0.060	0.210	27,000	1,600	0.040	0.170	23,500	1,000	0.020	0.120	17,500	500	0.020	0.120
"	4	35,000	1,200	0.040	0.170	27,000	1,200	0.025	0.135	23,500	600	0.012	0.095	17,500	300	0.012	0.095
"	6	28,000	600	0.020	0.120	23,000	600	0.012	0.095	20,500	400	0.006	0.065	15,500	200	0.006	0.065
"	8	19,500	330	0.012	0.095	18,000	375	0.007	0.070	17,000	285	0.005	0.060	12,750	140	0.005	0.060
"	10	15,000	260	0.010	0.085	14,700	340	0.005	0.060	14,650	225	0.004	0.050	11,000	110	0.004	0.050
R0.5	2	30,000	1,750	0.200	0.400	24,000	2,000	0.100	0.300	21,000	1,750	0.050	0.200	16,000	875	0.050	0.200
"	3	30,000	1,750	0.100	0.300	24,000	2,000	0.060	0.200	21,000	1,750	0.030	0.170	16,000	875	0.030	0.170
"	4	30,000	1,750	0.100	0.300	24,000	2,000	0.050	0.200	21,000	1,750	0.030	0.170	16,000	875	0.030	0.170
"	5	30,000	1,750	0.100	0.300	24,000	2,000	0.050	0.200	21,000	1,750	0.030	0.170	16,000	875	0.030	0.170
"	6	30,000	1,150	0.060	0.230	21,500	1,250	0.030	0.170	19,700	1,050	0.025	0.150	14,500	525	0.025	0.150
"	8	18,500	480	0.025	0.150	18,500	580	0.015	0.120	18,400	480	0.015	0.120	13,800	240	0.015	0.120
"	10	14,800	360	0.018	0.130	14,800	430	0.010	0.090	14,700	360	0.010	0.090	11,100	180	0.010	0.090
"	12	14,150	320	0.015	0.120	13,400	360	0.008	0.080	13,300	290	0.008	0.080	9,950	140	0.008	0.080
"	14	13,500	280	0.012	0.100	12,000	350	0.007	0.080	12,000	220	0.007	0.080	9,000	110	0.007	0.080
"	16	12,750	240	0.008	0.080	10,500	250	0.005	0.045	10,500	160	0.005	0.045	7,850	80	0.005	0.045
"	18	12,350	220	0.006	0.065	9,750	200	0.004	0.035	9,750	130	0.004	0.035	7,300	85	0.004	0.035
"	20	12,000	200	0.005	0.030	9,000	150	0.003	0.020	9,000	100	0.003	0.020	6,750	50	0.003	0.020
"	22	12,000	150	0.003	0.020	9,000	110	0.002	0.012	9,000	75	0.002	0.012	6,750	35	0.002	0.012
R0.6	6	30,000	2,000	0.120	0.360	20,000	2,000	0.060	0.240	17,500	1,750	0.036	0.200	13,100	875	0.036	0.200
"	8	20,200	800	0.050	0.230	16,600	900	0.025	0.170	15,850	750	0.025	0.170	11,900	375	0.025	0.170
"	10	15,500	480	0.030	0.180	15,500	580	0.015	0.130	15,350	480	0.015	0.130	11,500	240	0.015	0.130
R0.7	8	25,200	1,300	0.080	0.320	15,350	1,250	0.040	0.230	14,050	1,050	0.030	0.200	10,550	525	0.030	0.200
R0.75	3	30,000	2,450	0.250	0.550	1,700	2,000	0.120	0.400	15,000	1,750	0.060	0.290	11,250	875	0.060	0.290
"	4	30,000	2,450	0.250	0.550	17,000	2,000	0.120	0.400	15,000	1,750	0.060	0.290	11,250	875	0.060	0.290
"	6	30,000	2,450	0.150	0.450	17,000	2,000	0.070	0.310	15,000	1,750	0.040	0.240	11,250	875	0.040	0.240
"	8	23,500	1,300	0.100	0.370	15,000	1,250	0.045	0.250	14,000	1,050	0.030	0.210	10,500	525	0.030	0.210
"	10	23,500	1,300	0.100	0.370	15,000	1,250	0.045	0.250	14,000	1,050	0.030	0.210	10,500	525	0.030	0.210
"	12	13,100	480	0.030	0.210	13,000	580	0.020	0.170	13,000	480	0.020	0.170	9,750	240	0.020	0.170
"	14	11,200	400	0.025	0.190	10,900	485	0.015	0.145	10,900	385	0.015	0.145	8,200	190	0.015	0.145
"	16	9,350	320	0.020	0.170	8,850	390	0.012	0.130	8,800	290	0.012	0.130	6,600	145	0.012	0.130
"	20	9,000	280	0.018	0.160	8,000	350	0.010	0.120	8,000	220	0.010	0.120	6,000	110	0.010	0.120

Profondità di Taglio

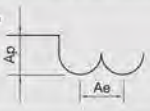
- Ap : Profondità Taglio
- Ae : Passo Radiale
- D : Diametro Esterno
- n : Velocità
- Vf : Avanzamento



2JJRB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Acciai Bonificati / Acciai Temprati NAK / STAVAX				Acciai Temprati SKD11				Acciai Temprati HAP10				Acciai Temprati HAP72			
Durezza		~ 55HRc				55HRc ~ 62HRc				62HRc ~ 66HRc				66HRc ~ 70HRc			
Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R0.8	8	30,000	2,500	0.160	0.480	17,500	2,100	0.080	0.320	15,300	1,800	0.050	0.275	11,500	900	0.050	0.275
»	12	13,500	500	0.040	0.245	13,500	600	0.024	0.190	13,400	490	0.024	0.190	10,050	245	0.025	0.190
»	16	10,800	375	0.030	0.210	10,800	450	0.016	0.150	10,700	370	0.016	0.150	8,000	185	0.016	0.150
R1	4	28,000	2,900	0.300	0.700	14,000	2,100	0.150	0.500	12,250	1,800	0.080	0.350	9,200	900	0.080	0.350
»	6	28,000	2,900	0.200	0.600	14,000	2,100	0.100	0.400	12,250	1,800	0.060	0.300	9,200	900	0.060	0.300
»	8	28,000	2,900	0.200	0.600	14,000	2,100	0.100	0.400	12,250	1,800	0.060	0.300	9,200	900	0.060	0.300
»	10	28,000	2,900	0.200	0.600	14,000	2,100	0.100	0.400	12,250	1,800	0.060	0.300	9,200	900	0.600	0.300
»	12	19,500	1,350	0.120	0.450	12,400	1,350	0.060	0.340	11,500	1,100	0.045	0.270	8,650	550	0.045	0.270
»	14	19,500	1,350	0.120	0.450	12,400	1,350	0.060	0.340	11,500	1,100	0.045	0.270	8,650	550	0.045	0.270
»	16	10,800	500	0.050	0.300	10,800	600	0.030	0.240	10,700	490	0.030	0.240	8,000	245	0.030	0.240
»	18	9,700	435	0.040	0.280	9,700	520	0.025	0.220	9,650	430	0.025	0.220	7,250	215	0.025	0.220
»	20	8,650	375	0.035	0.250	8,650	450	0.020	0.190	8,560	370	0.020	0.190	6,400	185	0.020	0.190
»	22	8,450	350	0.032	0.245	8,200	440	0.018	0.180	8,200	330	0.018	0.180	6,150	165	0.018	0.180
»	25	8,250	320	0.030	0.240	7,800	440	0.016	0.160	7,800	290	0.016	0.160	5,850	145	0.016	0.160
»	30	7,850	280	0.024	0.200	7,000	350	0.014	0.160	7,000	220	0.014	0.160	5,250	110	0.014	0.160
R1.25	20	9,600	520	0.060	0.380	9,600	630	0.040	0.310	9,600	510	0.040	0.310	7,200	255	0.040	0.310
R1.5	6	21,000	3,000	0.400	1.000	10,500	2,200	0.200	0.700	9,200	1,900	0.120	0.550	6,900	950	0.120	0.550
»	8	21,000	3,000	0.400	1.000	10,500	2,200	0.200	0.700	9,200	1,900	0.120	0.550	6,900	950	0.120	0.550
»	10	21,000	3,000	0.300	0.900	10,500	2,200	0.150	0.650	9,200	1,900	0.100	0.500	6,900	950	0.100	0.500
»	12	21,000	3,000	0.300	0.900	10,500	2,200	0.150	0.650	9,200	1,900	0.100	0.500	6,900	950	0.100	0.500
»	16	21,000	3,000	0.300	0.900	10,500	2,200	0.150	0.650	9,200	1,900	0.100	0.500	6,900	950	0.100	0.500
»	20	14,500	1,360	0.180	0.700	9,250	1,400	0.100	0.500	8,600	1,150	0.075	0.450	6,450	575	0.075	0.450
»	25	8,000	520	0.007	0.450	8,000	630	0.050	0.380	8,000	510	0.050	0.380	6,000	255	0.050	0.380
»	30	5,750	375	0.050	0.380	5,750	450	0.030	0.290	5,700	370	0.030	0.290	4,275	185	0.030	0.290
»	35	5,550	335	0.045	0.360	5,350	440	0.025	0.270	5,350	310	0.025	0.270	4,000	155	0.025	0.270
»	40	5,350	300	0.040	0.340	4,900	390	0.200	0.240	4,950	250	0.020	0.240	3,700	125	0.020	0.240
R2	8	18,000	3,200	0.500	1.300	9,000	2,300	0.250	0.950	7,900	2,000	0.150	0.750	5,900	1,000	0.150	0.750
»	10	18,000	3,200	0.500	1.300	9,000	2,300	0.250	0.950	7,900	2,000	0.150	0.750	5,900	1,000	0.150	0.750
»	12	18,000	3,200	0.400	1.200	9,000	2,300	0.200	0.850	7,900	2,000	0.130	0.700	5,900	1,000	0.130	0.700
»	16	18,000	3,200	0.400	1.200	9,000	2,300	0.200	0.850	7,900	2,000	0.130	0.700	5,900	1,000	0.130	0.700
»	20	18,000	3,200	0.400	1.200	9,000	2,300	0.200	0.850	7,900	2,000	0.130	0.700	5,900	1,000	0.130	0.700
»	25	12,500	1,500	0.250	0.950	8,000	1,450	0.130	0.700	7,450	1,250	0.090	0.550	5,600	625	0.090	0.550
»	30	7,000	550	0.100	0.600	7,000	660	0.060	0.450	7,000	540	0.060	0.450	5,250	270	0.060	0.450
»	35	6,000	520	0.090	0.590	6,000	630	0.055	0.430	6,000	510	0.055	0.430	4,500	255	0.055	0.430
»	40	4,300	375	0.065	0.500	4,300	450	0.040	0.390	4,300	370	0.040	0.390	3,200	185	0.040	0.390
R2.5	20	14,400	3,200	0.500	1.500	7,200	2,300	0.250	1.050	6,350	2,000	0.160	0.880	4,750	1,000	0.160	0.880
»	30	10,000	1,500	0.310	1.200	6,400	1,450	0.160	0.880	6,200	1,250	0.110	0.730	4,650	625	0.110	0.730
»	40	6,000	570	0.125	0.780	6,000	690	0.080	0.625	6,000	570	0.080	0.625	4,500	285	0.080	0.625
»	15	13,000	3,500	0.600	1.800	6,500	2,500	0.300	1.300	5,700	2,200	0.200	1.000	4,300	1,100	0.200	1.000
»	25	9,500	3,000	0.700	2.100	5,200	2,200	0.400	1.700	4,500	1,900	0.250	1.350	3,400	950	0.250	1.350
»	30	7,500	2,500	0.800	2.500	4,300	2,000	0.500	2.100	3,750	1,750	0.300	1.700	2,800	875	0.300	1.700
»	30	6,200	2,000	0.900	3.000	3,600	1,750	0.600	2.600	3,150	1,500	0.350	2.000	2,350	750	0.350	2.000
Profondità di Taglio																	

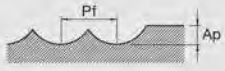


- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.
- Si raccomanda l'uso di aria o olio nebulizzato.
- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Per lavorazioni su rame si raccomanda emulsione o olio appositi.
- Fino al D. 1 tolleranze sotto i 5micron.

2JJSP/4JJSP/4JJSPM

■ Aumentare del 20% i valori sotto riportati per 4JJSP/4JJSPM

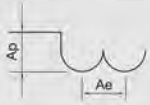
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Legati / Acciai per Utensili SCM / SKT / SKS / SKD		Acciai Temprati / Acciai Bonificati SKT / SKD / NAK55 / HPM11		Acciai Inox / Acciai Temprati SUS304 / SKD		Acciai Temprati		Acciai Temprati	
Durezza	~ 30HRc		30 ~ 38HRc		38 ~ 45HRc		45 ~ 55HRc		55 ~ 60HRc	
Raggio	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
R0.5	25,600	680	25,600	680	25,600	680	25,600	680	25,600	610
R0.75	22,000	850	22,000	850	22,000	850	22,000	850	22,000	750
R1	19,200	1,080	19,200	1,080	19,200	1,080	19,200	1,080	17,600	960
R2	12,400	1,440	11,200	1,240	10,800	1,160	10,000	1,080	8,800	920
R3	8,400	1,480	7,600	1,360	7,200	1,280	6,800	1,200	5,900	1,040
R4	6,400	1,120	5,700	1,000	5,500	960	5,100	880	4,400	790
R5	5,100	880	4,600	800	4,400	784	4,000	720	3,600	640
R6	4,800	840	3,800	670	3,640	640	3,400	600	3,000	540
Profondità di Taglio	Ap: 0.05D, Pf: 0.1D						Ap: 0.02D, Pf: 0.1D			

2JJSB/2JJB

• RPM : giri/min • Avanzamento (AV) : mm/min

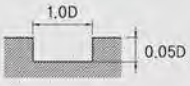
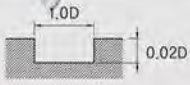
Materiale	Acciai Bonificati / Acciai Temprati NAK / STAVAX				Acciai Temprati SKD11				Acciai Temprati HAP10				Acciai Temprati HAP72			
Durezza	~ 55HRc				55HRc ~ 62HRc				62HRc ~ 65HRc				65HRc ~ 68HRc			
	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R0.05	60,000	150	0.002	0.004	60,000	150	0.002	0.003	60,000	100	0.001	0.0012	52,500	30	0.001	0.002
R0.1	60,000	180	0.003	0.005	60,000	180	0.002	0.003	60,000	120	0.002	0.003	45,000	60	0.002	0.003
R0.15	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
R0.2	50,000	500	0.01	0.02	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
R0.25	44,000	650	0.015	0.04	33,000	530	0.010	0.02	30,600	300	0.007	0.01	22,500	150	0.007	0.01
R0.3	40,000	1,100	0.03	0.13	30,000	1,200	0.02	0.1	26,500	800	0.01	0.075	20,000	400	0.01	0.075
R0.4	35,000	1,600	0.06	0.21	27,000	1,600	0.04	0.17	23,500	1,000	0.02	0.12	17,500	500	0.02	0.12
R0.5	30,000	1,750	0.2	0.4	24,000	2,000	0.1	0.3	21,000	1,750	0.05	0.2	16,000	875	0.05	0.2
R0.6	30,000	2,000	0.23	0.45	21,000	2,000	0.1	0.3	18,000	1,750	0.05	0.2	14,500	875	0.05	0.2
R0.75	30,000	2,450	0.25	0.55	17,000	2,000	0.12	0.4	15,000	1,750	0.06	0.29	11,250	875	0.06	0.29
R1	28,000	2,900	0.3	0.7	14,000	2,100	0.15	0.5	12,250	1,800	0.08	0.35	9,200	900	0.08	0.35
R1.25	24,500	2,950	0.35	0.85	12,250	2,150	0.17	0.6	10,700	1,850	0.1	0.45	8,050	925	0.1	0.45
R1.5	21,000	3,000	0.4	1	10,500	2,200	0.2	0.7	9,200	1,900	0.12	0.55	6,900	950	0.12	0.55
R2	18,000	3,200	0.5	1.3	9,000	2,300	0.25	0.95	7,900	2,000	0.15	0.75	5,900	1,000	0.15	0.75
R2.5	15,600	3,500	0.5	1.5	7,800	2,500	0.25	1.05	6,800	2,100	0.15	0.85	5,100	1,050	0.15	0.85
R3	13,000	3,500	0.6	1.8	6,500	2,500	0.3	1.3	5,700	2,200	0.2	1	4,300	1,100	0.2	1
R4	9,500	3,000	0.7	2.1	5,200	2,200	0.4	1.7	4,500	1,900	0.25	1.35	3,400	950	0.25	1.35
R5	7,500	2,500	0.8	2.5	4,300	2,000	0.5	2.1	3,750	1,750	0.3	1.7	2,800	875	0.3	1.7
R6	6,200	2,000	0.9	3	3,600	1,750	0.6	2.6	3,150	1,500	0.35	2	2,350	750	0.35	2
Profondità di Taglio	• Ap : Profondità Taglio • Ae : Passo Radiale • D : Diametro Esterno • n : Velocità • Vf : Avanzamento															



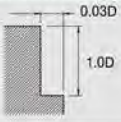
- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.
- Si raccomanda l'uso di aria o olio nebulizzato.
- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Per lavorazioni su rame si raccomanda emulsione o olio appositi.
- Fino al D. 1 tolleranze sotto i 5micron.

• RPM : giri/min • Avanzamento (AV) : mm/min

Fresatura dal pieno

Materiale	Acciai Bonificati / Acciai Temprati						Acciai Temprati			
	NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 68HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.1mm	45,000	100	40,000	90	33,000	50	33,000	40	26,400	30
0.2mm	45,000	115	40,000	95	33,000	60	33,000	45	20,000	35
0.3mm	45,000	140	40,000	115	33,000	70	25,000	50	20,000	40
0.4mm	45,000	180	40,000	140	33,000	90	25,000	55	20,000	60
0.5mm	45,000	280	40,000	220	33,000	140	25,000	85	20,000	75
0.6mm	45,000	360	40,000	285	30,000	160	25,000	105	15,200	80
0.8mm	40,000	440	30,000	295	25,000	185	19,000	110	14,000	90
0.9mm	39,000	520	27,800	330	22,700	205	17,500	125	12,500	85
1mm	38,000	570	25,500	360	20,500	215	16,000	135	12,500	85
2mm	26,000	680	17,500	420	14,500	260	11,000	160	9,500	115
3mm	17,300	680	11,500	420	9,500	260	7,500	160	6,400	115
4mm	13,200	700	8,800	440	7,200	270	5,600	170	4,750	118
5mm	12,500	805	8,300	500	6,400	285	5,100	180	4,450	132
6mm	10,350	770	6,900	480	5,300	280	4,200	180	3,700	130
8mm	7,800	720	5,200	445	4,000	255	3,200	165	2,800	120
10mm	6,150	680	4,100	415	3,200	240	2,550	155	2,200	112
12mm	5,250	680	3,500	415	2,650	240	2,100	155	1,860	112
16mm	4,340	610	2,600	360	1,840	180	1,800	100	1,460	100
18mm	4,340	610	2,600	360	1,840	180	1,800	100	1,460	100
20mm	3,650	570	2,100	300	1,460	180	1,400	100	1,100	100
Profondità di Taglio										

Taglio Laterale

Materiale	Acciai Bonificati / Acciai Temprati						Acciai Temprati			
	NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 68HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	38,000	820	25,500	510	20,500	310	16,000	190	12,500	125
2mm	26,000	970	17,500	600	14,500	370	11,000	230	9,500	165
3mm	17,300	970	11,500	600	9,500	370	7,500	230	6,400	165
4mm	13,200	1,000	8,800	625	7,200	385	5,600	240	4,750	170
5mm	12,500	1,150	8,300	710	6,400	410	5,100	260	4,450	190
6mm	10,350	1,100	6,900	690	5,300	400	4,200	255	3,700	185
8mm	7,800	1,030	5,200	635	4,000	365	3,200	235	2,800	170
10mm	6,150	970	4,100	590	3,200	340	2,550	220	2,200	160
12mm	5,250	970	3,500	590	2,650	340	2,100	220	1,860	160
16mm	4,340	880	2,600	530	1,840	300	1,800	190	1,800	190
18mm	4,340	880	2,600	530	1,840	300	1,800	190	1,800	190
20mm	3,650	800	2,100	500	1,460	295	1,400	180	1,400	180
Profondità di Taglio										

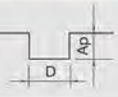
2JJRE

• RPM : giri/min • Avanzamento (AV) : mm/min

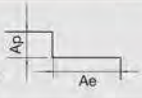
Materiale		Acciai al Carbonio			Acciai Legati SK / SCM / SUS			Acciai Bonificati / Acciai Temprati NAK / SKD		
Durezza		35HRc ~ 45HRc			45HRc ~ 55HRc			55HRc ~ 65HRc		
		RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap
0.1mm	0.3	48,600	345	0.006	42,750	255	0.006	40,050	206	0.006
"	0.5	48,600	346	0.004	42,750	255	0.004	40,050	206	0.004
0.2mm	0.5	38,250	403	0.020	33,750	301	0.020	31,500	242	0.020
"	1	38,250	403	0.014	33,750	301	0.014	31,500	242	0.014
"	1.5	34,425	362	0.008	30,375	271	0.008	28,350	218	0.008
0.3mm	1	34,000	358	0.021	30,000	267	0.021	28,000	215	0.021
"	1.5	34,000	358	0.021	30,000	267	0.021	28,000	215	0.021
"	2	30,600	322	0.012	27,000	241	0.012	25,200	194	0.012
"	3	30,600	322	0.008	27,000	241	0.008	25,200	194	0.008
0.4mm	1	27,200	446	0.040	24,000	333	0.040	22,400	268	0.040
"	2	27,200	446	0.028	24,000	333	0.028	22,400	268	0.028
"	3	24,480	401	0.016	21,600	299	0.016	20,160	241	0.016
"	4	24,480	401	0.010	21,600	299	0.010	20,160	241	0.010
"	5	21,760	260	0.010	19,200	230	0.010	17,920	181	0.010
"	6	21,760	260	0.006	19,200	230	0.006	17,920	181	0.006
0.5mm	1	27,200	446	0.050	24,000	333	0.050	22,400	268	0.050
"	2	27,200	446	0.035	24,000	333	0.035	22,400	268	0.035
"	3	24,480	401	0.020	21,600	299	0.020	20,160	241	0.020
"	4	24,480	401	0.020	21,600	299	0.020	20,160	241	0.020
"	5	24,480	401	0.013	21,600	299	0.013	20,160	241	0.013
"	6	21,760	260	0.013	19,200	230	0.013	17,920	181	0.013
"	8	21,760	247	0.008	19,200	194	0.008	17,920	147	0.008
0.6mm	2	27,200	636	0.042	24,000	475	0.042	22,400	383	0.042
"	4	24,480	573	0.024	21,600	428	0.024	20,160	345	0.024
"	6	24,480	573	0.015	21,600	428	0.015	20,160	345	0.015
"	8	21,760	372	0.015	19,200	328	0.015	17,920	258	0.015
"	10	21,760	372	0.009	19,200	328	0.009	17,920	258	0.009
0.7mm	2	27,200	636	0.070	24,000	475	0.070	22,400	383	0.070
"	4	24,480	573	0.049	21,600	428	0.049	20,160	345	0.049
"	6	24,480	573	0.018	21,600	428	0.018	20,160	345	0.018
"	8	21,760	372	0.018	19,200	328	0.018	17,920	258	0.018
"	10	21,760	372	0.018	19,200	328	0.018	17,920	258	0.018
0.8mm	4	27,200	636	0.056	24,000	475	0.056	22,400	383	0.056
"	6	24,480	573	0.032	21,600	428	0.032	20,160	345	0.032
"	8	24,480	573	0.020	21,600	428	0.020	20,160	345	0.020
"	10	21,760	372	0.020	19,200	328	0.020	17,920	258	0.020
"	12	21,760	372	0.012	19,200	328	0.012	17,920	258	0.012
0.9mm	6	24,480	573	0.036	21,600	428	0.036	20,160	345	0.036
"	8	24,480	573	0.023	21,600	428	0.023	20,160	345	0.023
"	10	21,760	372	0.023	19,200	328	0.023	17,920	258	0.023
1mm	4	24,480	936	0.100	21,600	699	0.100	20,160	563	0.100
"	6	22,032	773	0.040	19,440	577	0.040	18,144	465	0.040
"	8	22,032	773	0.040	19,440	577	0.040	18,144	465	0.040
"	10	22,032	773	0.025	19,440	577	0.025	18,144	465	0.025
"	12	19,584	502	0.025	17,280	443	0.025	16,128	348	0.025
"	14	19,584	502	0.025	17,280	443	0.025	16,128	348	0.025
"	16	19,584	476	0.015	17,280	373	0.015	16,128	283	0.015
1.2mm	6	21,760	764	0.084	19,200	570	0.084	17,920	460	0.084
"	8	19,584	687	0.048	17,280	513	0.048	16,128	414	0.048
"	10	19,584	687	0.030	17,280	513	0.030	16,128	414	0.030
"	12	19,584	687	0.030	17,280	513	0.030	16,128	414	0.030
"	16	17,408	611	0.020	15,360	456	0.020	14,336	368	0.020
1.4mm	8	19,040	668	0.100	16,800	499	0.100	15,680	402	0.100
"	10	17,136	601	0.056	15,120	449	0.056	14,112	362	0.056
"	14	17,136	601	0.035	15,120	449	0.035	14,112	362	0.035
"	16	15,232	391	0.035	13,440	345	0.035	12,544	271	0.035

Profondità di Taglio

Fresatura dal Pieno
• Ap : Prof. Taglio
• D : Diametro Esterno



Spallamento
• Ap : Prof. Taglio
• Ae : Passo radiale



- Si raccomanda l'uso di aria o olio nebulizzato.
- Rimuovere i trucioli per prevenire infortuni.
- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.

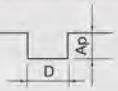
2JJRE

• RPM : giri/min • Avanzamento (AV) : mm/min

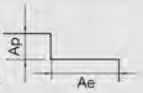
Materiale		Acciai al Carbonio			Acciai Legati SK / SCM / SUS			Acciai Bonificati / Acciai Temprati NAK / SKD		
Durezza		35HRc ~ 45HRc			45HRc ~ 55HRc			55HRc ~ 65HRc		
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap
1.5mm	6	19,040	668	0.110	16,800	499	0.110	15,680	402	0.110
"	8	19,040	668	0.110	16,800	499	0.110	15,680	402	0.110
"	10	17,136	601	0.060	15,120	449	0.060	14,112	362	0.060
"	12	17,136	601	0.060	15,120	449	0.060	14,112	362	0.060
"	14	17,136	601	0.060	15,120	449	0.060	14,112	362	0.060
"	16	15,232	391	0.038	13,440	345	0.038	12,544	271	0.038
"	18	15,232	391	0.038	13,440	345	0.038	12,544	271	0.038
"	20	15,232	391	0.038	13,440	345	0.038	12,544	271	0.038
"	25	11,424	278	0.023	10,080	218	0.023	9,408	165	0.023
1.6mm	10	15,912	621	0.040	14,040	463	0.040	13,104	373	0.040
"	14	15,912	621	0.040	14,040	463	0.040	13,104	373	0.040
"	18	15,912	621	0.040	14,040	463	0.040	13,104	373	0.040
1.8mm	10	15,912	621	0.072	14,040	463	0.072	13,104	373	0.072
"	14	15,912	621	0.072	14,040	463	0.072	13,104	373	0.072
"	18	15,912	621	0.072	14,040	463	0.072	13,104	373	0.072
2mm	6	14,280	668	0.200	12,600	499	0.200	11,760	402	0.200
"	8	14,280	668	0.140	12,600	499	0.140	11,760	402	0.140
"	10	14,280	668	0.140	12,600	499	0.140	11,760	402	0.140
"	12	12,852	601	0.080	11,340	449	0.080	10,584	362	0.080
"	14	12,852	601	0.080	11,340	449	0.080	10,584	362	0.080
"	16	12,852	601	0.080	11,340	449	0.080	10,584	362	0.080
"	18	12,852	601	0.050	11,340	449	0.050	10,584	362	0.050
"	20	12,852	601	0.050	11,340	449	0.050	10,584	362	0.050
"	25	11,424	391	0.050	10,080	345	0.050	9,408	271	0.050
"	30	11,424	391	0.030	10,080	345	0.030	9,408	271	0.030
2.5mm	12	12,240	716	0.180	10,800	535	0.180	10,080	431	0.180
"	16	11,116	644	0.100	9,720	388	0.100	9,072	388	0.100
"	20	11,116	644	0.100	9,720	481	0.100	9,072	388	0.100
3mm	12	10,880	636	0.210	9,600	475	0.210	8,960	383	0.210
"	16	9,792	573	0.120	8,640	428	0.120	8,064	345	0.120
"	20	9792	573	0.12	8640	428	0.12	8064	345	0.12
"	25	9792	573	0.08	8640	428	0.08	8064	345	0.08
"	30	9792	573	0.08	8640	428	0.08	8064	345	0.08
"	40	8704	509	0.05	7680	380	0.05	7168	307	0.05
4mm	12	8000	1358	0.4	7050	902	0.4	6580	727	0.4
"	16	8000	1358	0.4	7050	902	0.4	6580	727	0.4
"	20	7800	1200	0.3	6800	800	0.3	6200	720	0.3
"	25	7800	1200	0.3	6800	800	0.3	6200	720	0.3
"	30	7800	1200	0.3	6800	800	0.3	6200	720	0.3
"	35	7600	1150	0.2	6700	780	0.2	6000	700	0.2
"	40	7600	1150	0.2	6700	780	0.2	6000	700	0.2
"	45	7600	1150	0.2	6700	780	0.2	6000	700	0.2
"	50	7600	1150	0.2	6700	780	0.2	6000	700	0.2
5mm	16	7400	1060	0.1	6600	760	0.4	5900	680	0.4
"	20	7400	1060	0.1	6600	760	0.4	5900	680	0.4
"	25	7400	1060	0.1	6600	760	0.3	5900	680	0.3
"	30	7200	1000	0.09	6200	740	0.2	5800	650	0.2
"	35	7200	1000	0.09	6200	740	0.2	5800	650	0.2
"	40	7000	980	0.09	6000	700	0.2	5600	620	0.2
"	50	7000	980	0.09	6000	700	0.2	5600	620	0.2
6mm	20	6800	950	0.08	5800	680	0.1	5400	600	0.1
"	30	6800	950	0.08	5800	680	0.1	5400	600	0.1
"	40	6800	950	0.08	5800	680	0.1	5400	600	0.1
"	50	6500	900	0.05	5600	650	0.09	5000	560	0.09
"	60	6500	900	0.05	5600	650	0.09	5000	560	0.09

Profondità di Taglio

Fresatura dal Pieno
- Ap : Prof. Taglio
- D : Diametro Esterno

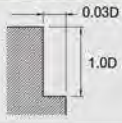


Spallamento
- Ap : Prof. Taglio
- Ae : Passo radiale



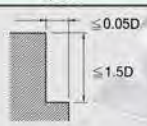
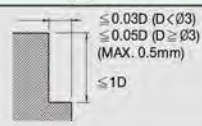
4JJRE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Bonificati / Acciai Temprati				Acciai Temprati					
	NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 70HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	38,000	1,050	25,500	710	20,500	430	16,000	270	12,500	175
2mm	26,000	1,250	17,500	840	14,500	520	11,000	320	9,500	230
3mm	17,300	1,250	11,500	840	9,500	520	7,500	320	6,400	230
4mm	13,200	1,300	8,800	880	7,200	540	335	4,750	4,750	240
5mm	12,500	1,500	8,300	1,000	6,400	580	5,100	370	4,450	270
6mm	10,350	1,400	6,900	950	5,300	560	4,200	350	3,700	260
8mm	7,800	1,350	5,200	900	4,000	520	3,200	330	2,800	240
10mm	6,150	1,260	4,100	840	3,200	480	2,550	310	2,200	220
12mm	5,250	1,260	3,500	840	2,650	480	2,100	300	1,860	220
Profondità di Taglio										

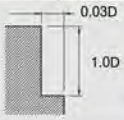
6JJHE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Temprati			Acciai Temprati		
	SKD11			SKS / SKH		
Durezza	55HRc ~ 62HRc			62HRc ~ 68HRc		
Diametro Esterno	RPM	AV	Ap	RPM	AV	Ap
3mm	16,000	1,900	0.1	11,000	1,200	0.05
4mm	12,000	2,200	0.1	8,000	1,300	0.05
5mm	10,000	2,500	0.1	6,000	1,500	0.05
6mm	8,000	2,900	0.2	5,300	1,800	0.1
8mm	6,000	2,900	0.2	4,000	1,800	0.1
10mm	4,800	2,900	0.3	3,200	1,800	0.2
12mm	4,000	2,400	0.3	2,700	1,500	0.2
16mm	3,000	1,800	0.5	2,000	1,100	0.3
20mm	2,400	1,400	0.5	1,600	880	0.3
25mm	2,000	1,000	0.5	1,000	700	0.4
Profondità di Taglio						

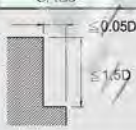
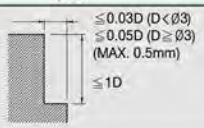
4JJE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Temprati			
Durezza	45HRc ~ 50HRc		50HRc ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV
1mm	38,000	1,050	25,500	710
2mm	26,000	1,250	17,500	840
3mm	17,300	1,250	11,500	840
4mm	13,200	1,300	8,800	880
5mm	12,500	1,500	8,300	1,000
6mm	10,350	1,400	6,900	950
7mm	9,000	1,380	5,200	900
8mm	7,800	1,350	4,100	840
9mm	6,150	1,260	3,500	840
10mm	5,250	1,260	2,800	800
11mm	4,300	1,150	2,500	800
12mm	4,300	1,150	2,300	760
14mm	3,500	1,050	2,100	760
16mm	3,500	1,050	2,000	700
18mm	2,800	1,000	2,000	700
20mm	2,600	980	1,800	650
Profondità di Taglio				

4JJHE

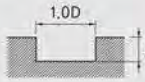
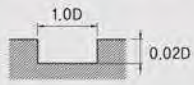
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Temprati SKD11			Acciai Temprati SKS / SKH		
Durezza	55HRc ~ 62HRc			62HRc ~ 68HRc		
Diametro Esterno	RPM	AV	Ap	RPM	AV	Ap
1mm	40,000	800	0.03	32,000	500	0.02
1.5mm	40,000	900	0.04	32,000	550	0.02
2mm	24,000	1,000	0.05	16,000	600	0.05
3mm	38,400	4,560	0.1	19,200	2,280	0.05
4mm	28,800	5,280	0.1	14,400	2,640	0.05
5mm	24,000	6,000	0.1	12,000	3,000	0.05
6mm	19,200	6,960	0.2	9,600	3,480	0.1
8mm	14,400	6,960	0.2	7,200	3,480	0.1
10mm	11,520	6,960	0.3	5,760	3,480	0.2
12mm	9,600	5,760	0.3	4,800	2,880	0.2
16mm	7,200	4,320	0.5	3,600	2,160	0.3
20mm	5,760	3,480	0.5	2,880	1,680	0.3
Profondità di Taglio						

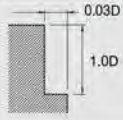
2JJCR/2JJTC

• RPM : giri/min • Avanzamento (AV) : mm/min

Fresatura dal Pieno

Materiale	Acciai Bonificati / Acciai Temprati		Acciai Temprati					
	STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 68HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.4mm	40,000	155	33,000	105	25,000	60	25,000	60
0.5mm	40,000	175	33,000	110	25,000	65	20,000	40
0.6mm	40,000	225	30,000	125	25,000	85	20,000	50
0.8mm	30,000	235	25,000	145	19,000	90	16,000	55
1mm	25,500	288	20,500	172	16,000	108	12,500	70
2mm	17,500	336	14,500	208	11,000	128	9,500	92
3mm	11,500	336	9,500	208	7,500	128	6,400	92
4mm	8,800	352	7,200	216	5,600	136	4,750	94
5mm	8,300	400	6,400	228	5,100	144	4,450	105
6mm	6,900	384	5,300	224	4,200	144	3,700	104
8mm	5,200	356	4,000	204	3,200	132	2,800	96
10mm	4,100	332	3,200	192	2,550	124	2,200	90
12mm	3,500	332	2,650	192	2,100	124	1,860	90
Prof. di Taglio								

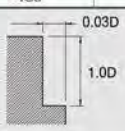
Taglio Laterale

Materiale	Acciai Bonificati / Acciai Temprati		Acciai Temprati					
	STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 68HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.4mm	40,000	110	33,000	70	25,000	40	25,000	40
0.5mm	40,000	125	33,000	80	25,000	45	20,000	30
0.6mm	40,000	160	30,000	90	25,000	60	20,000	35
0.8mm	30,000	165	25,000	100	19,000	65	16,000	40
1mm	25,500	408	20,500	248	16,000	152	12,500	100
2mm	17,500	480	14,500	296	11,000	184	9,500	132
3mm	11,500	480	9,500	296	7,500	184	6,400	132
4mm	8,800	500	7,200	308	5,600	192	4,750	136
5mm	8,300	568	6,400	328	5,100	208	4,450	152
6mm	6,900	552	5,300	320	4,200	204	3,700	148
8mm	5,200	508	4,000	292	3,200	188	2,800	136
10mm	4,100	472	3,200	272	2,550	176	2,200	128
12mm	3,500	472	2,650	272	2,100	176	1,860	128
Prof. di Taglio								

4JJCR/4JJTC

• RPM : giri/min • Avanzamento (AV) : mm/min

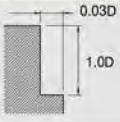
Taglio Laterale

Materiale	Acciai Bonificati / Acciai Temprati				Acciai Temprati			
	STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 68HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.4mm	40,000	580	33,000	350	25,000	240	20,000	150
0.5mm	40,000	600	33,000	365	25,000	245	20,000	140
0.6mm	40,000	650	30,000	380	25,000	250	20,000	150
0.8mm	30,000	660	25,500	400	19,000	260	16,000	155
1mm	25,500	710	20,500	430	16,000	270	12,500	175
2mm	17,500	840	14,500	520	11,000	320	9,500	230
3mm	11,500	840	9,500	520	7,500	320	6,400	230
4mm	8,800	880	7,200	540	5,600	335	4,750	240
5mm	8,300	1,000	6,400	580	5,100	370	4,450	270
6mm	6,900	950	5,300	560	4,200	350	3,700	260
8mm	5,200	900	4,000	520	3,200	330	2,800	240
10mm	4,100	840	3,200	480	2,550	310	2,200	220
12mm	3,500	840	2,650	480	2,100	300	1,860	220
Prof. di Taglio								

4JJC

• RPM : giri/min • Avanzamento (AV) : mm/min

Taglio Laterale

Materiale	Acciai Bonificati / Acciai Temprati						Acciai Temprati			
	NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 68HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	38,000	840	25,500	568	20,500	344	16,000	216	12,500	140
2mm	26,000	1,000	17,500	672	14,500	416	11,000	256	9,500	184
3mm	17,300	1,000	11,500	672	9,500	416	7,500	256	6,400	184
4mm	13,200	1,040	8,800	704	7,200	432	5,600	268	4,750	192
5mm	12,500	1,200	8,300	800	6,400	464	5,100	296	4,450	216
6mm	10,350	1,120	6,900	760	5,300	448	4,200	280	3,700	208
8mm	7,800	1,080	5,200	720	4,000	416	3,200	264	2,800	192
10mm	6,150	1,008	4,100	672	3,200	384	2,550	248	2,200	176
12mm	5,250	1,008	3,500	672	2,650	384	2,100	240	1,860	176
Prof. di Taglio										

2JJC

• RPM : giri/min • Avanzamento (AV) : mm/min

Fresatura dal Pieno

Materiale	Acciai Bonificati / Acciai Temprati				Acciai Temprati					
	NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 68HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.4mm	45,000	100	45,000	100	45,000	100	45,000	100	45,000	100
0.5mm	45,000	115	45,000	115	45,000	115	45,000	115	45,000	115
0.6mm	45,000	140	45,000	140	45,000	140	45,000	140	45,000	140
0.8mm	45,000	180	45,000	180	45,000	180	45,000	180	45,000	180
1mm	45,000	280	45,000	280	45,000	280	45,000	280	45,000	280
2mm	45,000	360	45,000	360	45,000	360	45,000	360	45,000	360
3mm	40,000	440	40,000	440	40,000	440	40,000	440	40,000	440
4mm	39,000	520	39,000	520	39,000	520	39,000	520	39,000	520
5mm	38,000	570	38,000	570	38,000	570	38,000	570	38,000	570
6mm	26,000	680	26,000	680	26,000	680	26,000	680	26,000	680
8mm	17,300	680	17,300	680	17,300	680	17,300	680	17,300	680
10mm	13,200	700	13,200	700	13,200	700	13,200	700	13,200	700
12mm	12,50	805	12,50	805	12,50	805	12,50	805	12,50	805
Prof. di Taglio					1.0D, 0.05D				1.0D, 0.02D	

Taglio Laterale

Materiale	Acciai Bonificati / Acciai Temprati				Acciai Temprati					
	NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11		SKD11 / SKS / SKH51	
Durezza	40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc		65HRc ~ 68HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.4mm	45,000	120	40,000	110	33,000	70	25,000	40	25,000	40
0.5mm	45,000	160	40,000	125	33,000	80	25,000	45	20,000	30
0.6mm	45,000	200	40,000	160	30,000	90	25,000	60	20,000	35
0.8mm	40,000	245	30,000	165	25,000	100	19,000	65	16,000	40
1mm	38,000	656	25,500	408	20,500	248	16,000	152	12,500	100
2mm	26,000	776	17,500	480	14,500	296	11,000	184	9,500	132
3mm	17,300	776	11,500	480	9,500	296	7,500	184	6,400	132
4mm	13,200	800	8,800	500	7,200	308	5,600	192	4,750	136
5mm	12,500	920	8,300	568	6,400	328	5,100	208	4,450	152
6mm	10,350	880	6,900	552	5,300	320	4,200	204	3,700	148
8mm	7,800	824	5,200	508	4,000	292	3,200	188	2,800	136
10mm	6,150	776	4,100	472	3,200	272	2,550	176	2,200	128
12mm	5,250	776	3,500	472	2,650	272	2,100	176	1,860	128
Prof. di Taglio					0.03D, 1.0D					

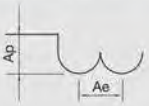
2HRB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Rame				Acciai Bonificati / Acciai Temprati				Acciai Temprati SKD / SKT				Acciai Temprati SKD / SKT			
Durezza						30HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 65HRc			
Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R0.05	0.3	50,000	85	0.004	0.004	45,000	70	0.004	0.004	45,000	50	0.002	0.002	45,000	40	0.002	0.002
"	0.5	50,000	75	0.004	0.004	45,000	60	0.002	0.002	45,000	30	0.002	0.002	45,000	30	0.002	0.002
R0.1	0.5	50,000	492	0.010	0.010	45,000	396	0.006	0.007	45,000	260	0.006	0.006	45,000	220	0.005	0.006
"	1	50,000	432	0.007	0.008	45,000	372	0.004	0.005	45,000	276	0.004	0.004	45,000	200	0.004	0.004
"	1.5	50,000	360	0.006	0.006	42,000	276	0.003	0.004	42,000	216	0.003	0.004	42,000	180	0.003	0.003
R0.15	1	50,000	744	0.012	0.013	45,000	552	0.010	0.010	38,000	420	0.090	0.010	38,000	348	0.007	0.009
"	3	48,000	528	0.008	0.009	40,800	360	0.006	0.007	33,600	264	0.005	0.005	33,600	216	0.004	0.005
"	5	39,600	336	0.004	0.005	28,800	216	0.003	0.003	24,000	168	0.003	0.003	21,600	120	0.002	0.002
R0.2	1	61,200	1,020	0.021	0.034	54,000	768	0.016	0.022	39,600	516	0.013	0.022	39,600	432	0.011	0.021
"	3	55,200	768	0.015	0.016	44,400	480	0.010	0.010	32,400	312	0.009	0.010	32,400	264	0.008	0.010
"	5	39,600	468	0.008	0.016	30,000	372	0.008	0.010	26,400	288	0.006	0.010	26,400	228	0.004	0.005
R0.25	1	63,600	1,560	0.026	0.047	45,600	960	0.020	0.033	33,600	636	0.014	0.032	33,600	312	0.007	0.020
"	5	52,800	1,032	0.012	0.014	34,800	552	0.008	0.008	31,200	444	0.007	0.010	31,200	216	0.006	0.009
"	10	38,400	528	0.008	0.016	28,800	456	0.007	0.010	28,800	372	0.005	0.010	27,600	216	0.005	0.009
R0.3	1	63,600	1,956	0.030	0.140	39,600	960	0.022	0.091	27,600	600	0.019	0.091	26,400	516	0.014	0.091
"	5	50,400	1,104	0.014	0.068	28,800	504	0.012	0.043	26,400	396	0.008	0.042	26,400	336	0.007	0.040
"	10	31,200	540	0.006	0.032	24,000	360	0.005	0.020	22,800	312	0.004	0.020	22,800	240	0.003	0.018
R0.4	2	61,200	2,280	0.054	0.160	34,800	816	0.045	0.100	27,600	552	0.038	0.100	26,400	456	0.030	0.010
"	6	51,600	1,452	0.035	0.100	28,800	636	0.028	0.068	21,600	420	0.020	0.068	21,600	348	0.015	0.065
"	10	22,800	672	0.022	0.080	2,040	468	0.020	0.050	19,200	408	0.015	0.050	16,800	336	0.010	0.050
R0.5	2	50,400	2,160	0.068	0.320	33,600	900	0.052	0.220	21,600	540	0.040	0.220	18,000	540	0.008	0.140
"	5	50,400	2,160	0.068	0.320	33,600	900	0.052	0.220	21,600	540	0.040	0.220	18,000	540	0.008	0.014
"	10	30,000	1,164	0.024	0.086	16,320	600	0.020	0.056	15,000	456	0.014	0.056	13,680	312	0.008	0.050
"	16	17,640	720	0.018	0.086	13,680	480	0.016	0.056	12,360	384	0.012	0.056	11,520	252	0.005	0.030
R0.75	3	31,200	2,400	0.167	0.320	21,600	1,152	0.120	0.210	12,960	672	0.100	0.210	12,000	600	0.090	0.210
"	10	26,400	1,680	0.100	0.220	14,760	780	0.080	0.170	9,720	480	0.062	0.170	9,720	456	0.050	0.160
"	18	12,120	624	0.030	0.160	12,120	504	0.022	0.110	9,600	432	0.020	0.110	9,600	408	0.012	0.110
"	30	9,840	516	0.014	0.080	9,840	456	0.012	0.050	9,480	420	0.010	0.050	9,480	396	0.010	0.050
R1	4	26,400	2,448	0.220	0.520	21,000	1,392	0.180	0.350	14,640	1,080	0.140	0.350	14,640	900	0.120	0.350
"	10	26,400	2,256	0.180	0.350	21,000	1,224	0.140	0.230	14,640	972	0.110	0.230	14,640	792	0.090	0.230
"	20	15,960	1,164	0.090	0.165	15,960	600	0.060	0.110	12,720	600	0.055	0.110	12,720	492	0.035	0.110
"	30	10,200	636	0.025	0.070	10,200	480	0.020	0.050	10,200	480	0.015	0.050	10,200	384	0.015	0.045
R1.5	6	16,800	3,240	0.250	0.500	14,400	1,824	0.200	0.340	9,840	1,320	0.160	0.320	6,480	732	0.160	0.320
"	10	16,800	3,240	0.250	0.500	14,400	1,824	0.200	0.340	9,840	1,320	0.160	0.320	6,480	732	0.160	0.300
"	20	14,040	2,244	0.200	0.450	12,360	1,476	0.145	0.320	8,520	1,128	0.120	0.310	5,760	660	0.080	0.300
"	30	10,920	1,620	0.120	0.220	9,360	816	0.100	0.150	8,520	816	0.080	0.150	5,760	384	0.070	0.300
R2	8	12,600	3,012	0.350	0.850	10,440	1,752	0.290	0.550	7,200	1,332	0.220	0.500	7,200	1,056	0.150	0.500
"	20	12,600	3,012	0.350	0.850	10,440	1,752	0.290	0.550	7,200	1,332	0.220	0.500	7,200	1,056	0.150	0.500
"	30	11,160	2,040	0.250	0.500	8,880	1,380	0.200	0.320	6,600	1,056	0.150	0.300	6,600	816	0.130	0.300
"	40	8,160	1,464	0.150	0.500	7,200	1,056	0.132	0.320	6,600	1,056	0.100	0.300	6,600	816	0.090	0.300
R2.5	15	10,800	2,880	0.380	0.800	8,400	1,500	0.300	0.700	6,000	1,140	0.220	0.700	6,000	900	0.200	0.650
"	25	10,800	2,400	0.380	0.800	8,400	1,380	0.300	0.550	6,000	1,080	0.220	0.550	6,000	816	0.200	0.500
"	40	9,360	1,320	0.250	0.800	6,720	840	0.200	0.550	4,920	660	0.150	0.550	4,920	504	0.130	0.500
R3	15	8,400	2,676	0.560	1.000	8,160	1,764	0.420	0.800	5,760	1,320	0.300	0.800	4,440	864	0.300	0.800
"	30	8,400	1,812	0.380	0.900	7,200	1,680	0.300	0.650	5,040	1,176	0.220	0.650	4,440	792	0.220	0.600
R4	25	8,160	1,764	0.410	1.000	7,200	1,176	0.350	0.750	4,920	912	0.180	0.600	4,560	732	0.200	0.630
"	30	7,680	1,680	0.880	1.000	6,960	1,128	0.300	0.750	4,800	864	0.160	0.600	4,320	720	0.200	0.600
R5	30	6,240	1,344	0.560	1.200	5,880	1,128	0.370	0.900	4,800	852	0.200	0.670	4,200	708	0.200	0.650
"	35	6,000	1,296	0.500	1.000	5,400	1,080	0.350	0.850	4,560	816	0.150	0.600	3,840	648	0.200	0.600
R6	30	5,160	1,104	0.650	1.400	4,800	984	0.420	0.900	4,320	828	0.250	0.600	3,600	600	0.250	0.600
"	40	4,920	1,080	0.600	1.200	4,560	9,600	0.400	0.850	4,080	780	0.200	0.600	3,600	600	0.200	0.600

Prof. di Taglio

- Ap : Prof. Taglio
- Ae : Passo radiale
- D : Diametro Esterno
- n : Velocità
- Vf : Avanzamento



- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.
- Si raccomanda l'uso di aria o olio nebulizzato.
- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Per lavorazioni su rame si raccomanda emulsione o olio appositi.
- Fino al D. 1 tolleranze sotto i 5micron.

2PHCB / 2HSB / 2HCB

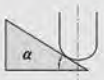
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Rame				Acciai Bonificati / Acciai Temprati NAK / SKD				Acciai Temprati SKD / SKT				Acciai Temprati SKD / SKT			
Durezza						30HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 65HRc			
Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ae	Ap	RPM	AV	Ae	Ap	RPM	AV	Ae	Ap	RPM	AV	Ae	Ap
R0.05	0.2	40,000	300	0.010	0.050	40,000	300	0.005	0.040	30,000	200	0.004	0.040	X	X	X	X
R0.1	0.2	54,000	430	0.012	0.008	54,000	630	0.020	0.060	44,300	450	0.040	0.012	30,000	300	0.023	0.008
"	0.4	54,000	430	0.007	0.008	54,000	430	0.020	0.051	44,300	345	0.016	0.040	32,800	260	0.010	0.023
R0.15	0.3	54,000	720	0.020	0.013	54,000	750	0.030	0.090	44,300	600	0.024	0.072	32,800	450	0.015	0.042
"	0.6	54,000	720	0.012	0.013	54,000	715	0.030	0.075	44,300	575	0.024	0.060	32,800	430	0.015	0.035
R0.2	0.4	54,000	870	0.028	0.016	54,000	1,000	0.040	0.120	44,300	800	0.032	0.096	32,800	600	0.020	0.056
"	0.8	54,000	870	0.016	0.016	54,000	880	0.040	0.105	44,300	700	0.032	0.084	32,800	525	0.020	0.049
R0.25	0.5	56,000	1,250	0.035	0.022	53,000	1,250	0.050	0.150	43,500	1,000	0.040	0.120	32,200	750	0.025	0.070
"	1	56,000	1,250	0.021	0.022	50,000	1,000	0.050	0.125	41,350	800	0.040	0.100	30,600	600	0.025	0.058
R0.3	0.6	58,000	1,510	0.042	0.026	52,000	1,380	0.060	0.180	42,650	1,100	0.048	0.144	31,500	825	0.030	0.084
"	1.2	58,000	1,510	0.025	0.026	48,500	1,020	0.060	0.155	40,500	810	0.048	0.124	30,000	610	0.030	0.072
R0.4	0.8	52,000	1,870	0.056	0.036	48,000	1,500	0.080	0.240	39,500	1,200	0.064	0.192	29,250	900	0.040	0.112
"	2	52,000	1,870	0.033	0.036	45,000	1,085	0.080	0.200	37,500	870	0.064	0.160	27,800	650	0.040	0.093
R0.5	1	41,000	1,660	0.063	0.040	45,000	1,560	0.100	0.300	36,900	1,250	0.080	0.240	27,300	940	0.050	0.140
"	2.5	41,000	1,660	0.022	0.040	40,000	1,000	0.100	0.200	31,500	800	0.080	0.160	23,000	600	0.050	0.090
R0.6	3	34,000	1,740	0.072	0.051	40,100	1,550	0.120	0.360	32,800	1,250	0.096	0.288	24,400	940	0.060	0.168
R0.75	1.5	27,000	1,830	0.087	0.068	35,000	1,600	0.150	0.450	28,700	1,280	0.120	0.360	21,500	960	0.075	0.210
"	4	27,000	1,830	0.052	0.068	34,000	1,000	0.150	0.325	26,000	800	0.120	0.260	19,250	600	0.075	0.152
R1	2	20,000	1,780	0.112	0.089	30,000	1,850	0.200	0.600	24,600	1,480	0.160	0.480	18,250	1,110	0.100	0.280
"	5	20,000	1,780	0.067	0.089	26,500	1,350	0.200	0.435	22,000	1,080	0.160	0.348	16,250	810	0.100	0.203
R1.25	6	16,000	1,840	0.067	0.115	25,500	1,600	0.250	0.542	21,000	1,280	0.200	0.430	15,500	960	0.125	0.251
R1.5	3	13,000	2,220	0.197	0.171	25,500	2,520	0.300	0.957	21,000	2,050	0.240	0.766	15,500	1,530	0.150	0.447
"	8	13,000	2,220	0.100	0.171	25,500	2,350	0.300	0.765	21,000	1,880	0.240	0.612	15,500	1,410	0.150	0.357
R2	4	10,000	2,080	0.266	0.208	21,000	2,450	0.400	1.380	17,300	1,960	0.320	1.100	12,800	1,470	0.200	0.644
"	8	10,000	2,080	0.134	0.208	21,000	2,350	0.400	1.020	17,300	1,880	0.320	0.816	12,800	1,410	0.200	0.476
R2.5	5	8,300	1,990	0.215	0.240	18,000	2,560	0.500	1.660	14,800	2,050	0.400	1.330	11,000	1,530	0.250	0.770
"	10	8,300	1,990	0.180	0.240	18,000	2,300	0.500	1.275	14,800	1,840	0.400	1.020	11,000	1,380	0.250	0.595
R3	6	6,900	1,940	0.290	0.281	16,000	2,700	0.600	2.340	13,000	2,160	0.480	1.870	9,600	1,620	0.300	1.090
"	12	6,900	1,940	0.230	0.281	16,000	2,400	0.600	1.530	13,000	1,920	0.480	1.225	9,600	1,440	0.300	0.715
R4	8	5,720	1,000	0.400	0.175	12,500	2,300	0.800	3.100	10,250	1,840	0.640	2.480	7,600	1,380	0.400	1.446
"	14	5,720	1,000	0.400	0.175	12,500	2,000	0.800	2.050	10,250	1,600	0.640	1.640	7,600	1,200	0.400	0.957
R5	10	4,550	700	0.500	0.154	10,500	2,200	1.000	3.750	8,650	1,780	0.800	3.000	6,400	1,340	0.500	1.750
"	18	4,550	700	0.500	0.154	10,500	1,700	1.000	2.550	8,650	1,360	0.800	2.040	6,400	1,020	0.500	1.190
R6	12	3,770	600	0.600	0.159	9,000	1,850	1.200	4.420	7,380	1,480	0.960	3.540	5,450	1,110	0.600	2.060
"	22	3,770	600	0.600	0.159	9,000	1,600	1.200	3.050	7,380	1,280	0.960	2.440	5,450	960	0.600	1.423
R8	30	2,200	460	0.115	0.450	6,800	1,630	3.870	1.120	4,900	1,100	2.350	0.790	4,000	810	1.742	0.500
R10	38	2,000	470	0.100	0.400	6,200	1,450	4.120	1.100	3,900	1,100	2.530	0.840	3,100	800	1.866	0.520
Profondità di Taglio		• Ap : Prof. Taglio • Ae : Passo radiale • D : Diametro Esterno • n : Velocità • Vf : Avanzamento															

- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.
- Si raccomanda l'uso di aria o olio nebulizzato.
- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Per lavorazioni su rame si raccomanda emulsione o olio appositi.
- Fino al D. 1 tolleranze sotto i 5micron.

3HCB

• RPM : giri/min • Avanzamento (AV) : mm/min

	per Sgrossatura								per Finitura							
Materiale	Acciai Legati/ Acciai per Utensili/ Acciai Bonificati SKD61 / NAK				Acciai Temprati SKD61				Acciai Legati/ Acciai per Utensili/ Acciai Bonificati SKD61 / NAK				Acciai Temprati SKD61			
Durezza	~ 45HRc				45 ~ 55HRc				~ 45HRc				45 ~ 55HRc			
Raggio	α≦15°		α>15°		α≦15°		α>15°		α≦15°		α>15°		α≦15°		α>15°	
	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
R1	32,000	3,000	25,000	1,170	18,000	1,440	16,000	640	32,000	3,200	32,000	1,500	25,000	2,000	20,000	800
R1.5	27,000	3,350	19,700	1,320	14,000	1,600	12,000	690	28,750	4,100	26,000	1,750	21,000	2,350	16,500	900
R2	18,500	3,700	14,500	1,460	11,000	1,760	9,200	740	25,500	5,000	20,000	2,000	17,000	2,700	13,000	1,000
R2.5	15,700	3,850	12,250	1,480	9,350	1,840	7,800	770	22,750	5,550	17,500	2,100	15,000	2,950	11,500	1,100
R3	13,000	4,000	10,000	1,500	7,700	1,920	6,400	800	20,000	6,100	15,000	2,200	13,000	3,200	10,000	1,200
R4	10,000	5,000	8,000	2,000	6,000	2,300	4,800	920	15,000	7,500	11,000	2,700	10,000	3,800	7,500	1,400
R5	8,000	5,000	6,500	2,000	4,800	2,200	3,800	870	12,000	7,500	9,000	2,700	8,000	3,700	6,000	1,400
R6	6,600	4,600	5,300	1,800	4,000	2,100	3,200	840	10,000	7,000	7,500	2,500	6,600	3,500	5,000	1,300
Prof. di Taglio																

- Alfa è l'angolo di inclinazione della superficie da lavorare.
- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

4HCB

• RPM : giri/min • Avanzamento (AV) : mm/min

	Taglio Laterale															
Materiale	Acciai Temprati SKD61					Acciai Temprati SKD11					Acciai Temprati SKS / SKH					
Durezza	45 ~ 55HRc					55 ~ 62HRc					62 ~ 68HRc					
Raggio	α≦15°		α>15°		Ap	α≦15°		α>15°		Ap	α≦15°		α>15°		Ap	
	RPM	AV	RPM	AV		RPM	AV	RPM	AV		RPM	AV	RPM	AV		
R1.5	40,000	12,000	32,000	5,600	0.13	32,000	7,700	19,000	2,900	0.12	16,000	4,200	11,000	1,100	0.07	
R2	32,000	11,000	24,000	4,700	0.15	24,000	6,200	14,000	2,500	0.13	12,000	3,100	8,000	1,000	0.08	
R2.5	25,000	9,000	19,000	3,800	0.2	19,000	5,300	12,000	2,200	0.15	9,600	2,700	6,000	780	0.08	
R3	21,000	8,400	15,000	3,400	0.25	16,000	4,800	9,600	2,000	0.2	8,000	2,300	5,000	780	0.09	
R4	16,000	6,400	12,000	2,600	0.3	12,000	3,600	7,200	1,600	0.2	6,000	1,900	4,000	620	0.09	
R5	13,000	5,200	9,600	2,200	0.5	10,000	3,200	5,800	1,300	0.2	4,800	1,500	3,000	550	0.1	
R6	9,000	3,600	7,200	1,700	0.5	7,800	2,200	4,300	940	0.3	3,600	1,100	2,200	400	0.1	
Prof. di Taglio																

- Alfa è l'angolo di inclinazione della superficie da lavorare.
- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

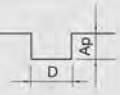
2HRE

• RPM : giri/min • Avanzamento (AV) : mm/min

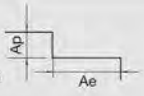
Materiale		Acciai al Carbonio			Acciai Legati SK / SCM / SJS			Acciai Bonificati / Acciai Temprati NAK / SKD			Acciai Temprati SKD / SKT			Acciai Temprati SKD / SKT			Importo fresatura per taglio laterale
Durezza		(S45C/S50C) ~225HB			225 ~ 325HB			35HRc ~ 45HRc			45HRc ~ 55HRc			55HRc ~ 60HRc			
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	Ae
0.1mm	0.3	30,000	30	0.004	30,000	15	0.004	30,000	16	0.002							X
"	0.5	28,000	28	0.004	28,000	14	0.004	28,000	14	0.002			0.001			X	X
0.2mm	0.5	56,000	340	0.006	56,000	310	0.005	56,000	270	0.003	44,800	180	0.002	15,000	10	0.001	0.160
"	1	50,900	290	0.005	50,900	260	0.005	50,900	230	0.004	40,800	160	0.003	-	-	-	0.020
"	1.5	48,200	250	0.003	48,200	230	0.003	48,200	200	0.002	38,500	140	0.002	-	-	-	0.006
0.3mm	1	60,000	560	0.009	60,000	500	0.008	60,000	400	0.006	52,100	330	0.004	14,600	14	0.003	0.101
"	1.5	50,800	460	0.008	50,800	410	0.007	50,800	360	0.005	42,700	260	0.004	14,600	13	0.003	0.057
"	2	41,500	350	0.006	41,500	320	0.005	41,500	280	0.004	33,200	190	0.003	14,600	12	0.002	0.013
"	3	31,900	240	0.002	31,900	220	0.002	31,900	190	0.001	25,500	130	0.001	14,600	10	0.001	0.004
"	4	26,200	170	0.001	26,200	160	0.001	26,200	140	0.001	20,900	100	0.001	14,600	9	0.001	0.003
"	5	20,400	100	0.001	20,400	90	0.001	20,400	80	0.001	16,300	60	0.001	-	-	-	-
0.4mm	1	52,700	660	0.012	57,700	640	0.010	48,100	470	0.008	38,500	320	0.005	14,300	17	0.003	0.054
"	5	38,500	380	0.003	34,200	300	0.003	30,100	240	0.002	24,100	160	0.001	14,300	14	0.001	0.003
"	10	33,700	260	0.001	27,300	190	0.001	24,600	150	0.001	19,700	100	0.001	14,300	11	0.001	0.001
0.5mm	2	56,800	900	0.020	54,000	760	0.016	40,600	510	0.014	32,500	350	0.010	14,000	20	0.005	0.098
"	3	44,200	660	0.080	39,900	530	0.090	32,200	370	0.008	25,700	260	0.006	14,000	19	0.004	0.016
"	4	40,600	580	0.009	36,100	460	0.008	29,700	330	0.008	23,700	230	0.005	14,000	18	0.003	0.012
"	5	37,000	500	0.080	32,300	390	0.008	27,200	290	0.006	21,700	200	0.004	14,000	17	0.003	0.008
"	6	33,400	420	0.005	28,500	320	0.005	24,700	250	0.003	19,700	170	0.002	14,000	16	0.001	0.004
"	8	29,100	320	0.002	24,100	240	0.002	21,600	190	0.001	17,400	130	0.001	14,000	14	0.001	0.002
"	10	26,100	250	0.001	21,200	180	0.001	19,600	150	0.001	15,600	100	0.001	14,000	12	0.001	0.001
"	14	21,500	120	0.001	16,700	80	0.001	16,300	70	0.001	13,000	50	0.001	-	-	-	-
0.6mm	2	63,600	1,240	0.025	53,300	930	0.020	39,100	600	0.016	31,300	410	0.011	12,000	23	0.006	0.203
"	3	52,500	990	0.018	44,000	740	0.016	33,500	500	0.013	26,800	340	0.009	12,000	22	0.005	0.114
"	4	41,300	740	0.012	34,700	550	0.011	27,900	390	0.009	22,300	270	0.006	12,000	21	0.003	0.025
"	5	36,700	630	0.010	30,900	470	0.009	25,500	340	0.007	20,400	240	0.005	12,000	20	0.003	0.017
"	6	32,100	520	0.007	27,000	390	0.006	23,000	290	0.005	18,400	200	0.003	12,000	19	0.002	0.008
"	8	26,800	390	0.004	22,600	300	0.004	20,000	230	0.003	16,000	160	0.002	12,000	17	0.001	0.003
"	10	23,400	30	0.002	19,700	230	0.002	17,900	180	0.002	14,300	130	0.001	12,000	15	0.001	0.002
"	12	20,900	240	0.002	17,600	180	0.001	16,400	150	0.001	13,100	100	0.001	12,000	13	0.001	0.001
"	16	16,200	100	0.001	13,700	80	0.001	13,500	70	0.001	10,800	50	0.001	-	-	-	-
0.7mm	2	59,800	1,380	0.030	50,200	1,040	0.027	36,100	660	0.021	28,800	430	0.015	10,000	24	0.010	0.038
"	4	38,900	840	0.017	32,700	630	0.015	25,800	440	0.012	20,600	290	0.009	10,000	22	0.006	0.047
"	6	30,200	600	0.010	25,400	450	0.009	21,200	330	0.007	16,900	230	0.005	10,000	20	0.003	0.014
"	8	25,300	460	0.006	21,300	350	0.005	18,400	260	0.004	14,700	190	0.003	10,000	18	0.002	0.006
"	10	22,000	360	0.004	18,500	270	0.003	16,500	220	0.003	13,200	160	0.002	10,000	16	0.001	0.003
0.8mm	2	41,200	1,050	0.033	34,500	460	0.029	26,200	530	0.023	21,000	370	0.016	8,000	21	0.012	0.108
"	4	37,100	930	0.027	31,100	700	0.024	24,100	480	0.019	19,300	330	0.013	8,000	20	0.010	0.080
"	6	28,800	680	0.015	24,200	510	0.013	19,800	370	0.010	15,800	250	0.007	8,000	18	0.005	0.024
"	8	24,100	520	0.009	20,300	390	0.008	17,200	300	0.006	13,800	200	0.004	8,000	16	0.003	0.010
"	10	21,000	420	0.006	17,700	320	0.005	15,500	240	0.040	12,400	170	0.003	8,000	14	0.002	0.005
"	12	18,700	340	0.004	15,800	260	0.003	14,100	200	0.003	11,300	140	0.002	8,000	12	0.001	0.003
"	14	15,600	230	0.002	13,200	180	0.020	12,300	150	0.001	980	100	0.001	-	-	-	0.001
0.9mm	6	27,600	790	0.019	23,000	590	0.017	18,500	420	0.013	14,800	290	0.010	7,200	18	0.007	0.038
"	8	23,000	600	0.012	19,300	450	0.011	16,100	330	0.008	12,900	230	0.006	7,200	16	0.004	0.016
"	10	20,000	470	0.008	16,800	360	0.007	14,500	270	0.005	11,600	190	0.004	7,200	14	0.002	0.008
1mm	2	37,900	1,340	0.048	31,500	990	0.043	23,400	6,500	0.034	18,700	440	0.024	6,500	15	0.011	0.263
"	3	37,900	1,340	0.048	31,500	990	0.043	23,400	6,500	0.034	18,700	440	0.024	6,500	15	0.011	0.263
"	4	34,100	1,170	0.040	28,400	870	0.036	21,500	580	0.028	17,200	400	0.020	6,500	15	0.010	0.195
"	5	30,300	1,000	0.032	25,300	750	0.029	19,600	510	0.022	15,700	360	0.016	6,500	15	0.009	0.013
"	6	26,500	830	0.023	22,100	630	0.021	17,600	440	0.016	14,100	310	0.012	6,500	14	0.007	0.058
"	8	22,100	660	0.014	18,600	490	0.013	15,300	360	0.010	12,300	250	0.007	6,500	13	0.040	0.024
"	10	19,200	530	0.010	16,200	400	0.009	13,800	300	0.007	11,000	210	0.005	6,500	12	0.003	0.013
"	12	17,200	440	0.007	14,500	330	0.006	12,600	250	0.005	10,100	170	0.003	6,500	11	0.002	0.007
"	14	15,600	360	0.005	13,200	270	0.004	11,700	210	0.003	9,400	150	0.002	650	10	0.001	0.005
"	16	14,300	300	0.004	12,100	230	0.003	11,000	180	0.003	8,800	130	0.002	-	-	-	0.003
"	20	12,500	200	0.003	10,600	160	0.003	9,800	130	0.002	7,900	90	0.001	-	-	-	0.001
"	25	10,800	120	0.003	9,200	90	0.002	8,800	80	0.002	7,100	50	0.001	-	-	-	0.001
"	30	9,700	50	0.002	8,200	40	0.002	8,100	30	0.001	6,500	30	0.001	-	-	-	-

Prof. di Taglio

Fresatura dal Pieno
- Ap : Prof. Taglio
- D : Diametro Esterno



Spallamento
- Ap : Prof. Taglio
- Ae : Passo radiale



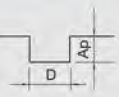
2HRE

• RPM : giri/min • Avanzamento (AV) : mm/min

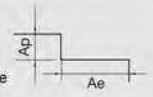
Materiale		Acciai al Carbonio			Acciai Legati SK / SCM / SUS			Acciai Bonificati / Acciai Temprati NAK / SKD			Acciai Temprati SKD / SKT			Acciai Temprati SKD / SKT			Importo fresatura per taglio laterale
Durezza		(S45C/S50C) ~225HB			225 ~ 325HB			35HRc ~ 45HRc			45HRc ~ 55HRc			55HRc ~ 60HRc			
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	Ae
1.2mm	4	28,900	1,180	0.050	24,100	870	0.047	18,300	580	0.036	14,500	400	0.026	9,600	34	0.015	0.189
"	6	24,800	970	0.037	20,700	720	0.034	16,100	490	0.026	12,800	340	0.019	9,600	22	0.011	0.120
"	8	20,700	760	0.024	17,300	570	0.021	13,900	400	0.016	11,100	280	0.012	9,600	10	0.007	0.051
"	10	18,000	620	0.016	15,100	470	0.014	12,400	340	0.011	9,900	230	0.008	-	-	-	0.026
"	12	16,100	520	0.011	13,500	390	0.010	11,400	290	0.008	9,100	200	0.005	-	-	-	0.015
"	16	13,400	380	0.006	11,300	290	0.005	9,800	220	0.004	7,900	150	0.003	-	-	-	0.006
"	20	11,700	280	0.004	9,900	210	0.004	8,800	170	0.003	7,000	120	0.002	-	-	-	0.003
"	25	10,800	120	0.003	9,200	90	0.002	8,800	80	0.002	7,100	50	0.001	-	-	-	0.001
"	30	9,700	50	0.002	8,200	40	0.002	8,100	30	0.001	6,500	30	0.001	-	-	-	-
1.4mm	6	23,300	1,070	0.052	19,400	800	0.047	14,800	540	0.060	11,900	370	0.026	9,600	44	0.015	0.222
"	8	19,500	850	0.035	16,300	640	0.032	12,900	440	0.025	10,300	310	0.018	9,600	18	0.010	0.094
"	10	16,900	710	0.025	14,200	530	0.022	11,500	380	0.017	9,200	260	0.012	-	-	-	0.048
"	14	13,700	510	0.013	11,500	390	0.012	9,700	290	0.009	7,800	200	0.007	-	-	-	0.018
"	16	12,600	450	0.010	10,600	340	0.009	9,100	250	0.007	7,300	180	0.005	-	-	-	0.012
"	20	10,300	300	0.006	8,700	230	0.005	7,800	180	0.004	6,200	120	0.003	-	-	-	0.005
1.5mm	4	26,600	1,340	0.073	22,100	1,000	0.065	16,300	640	0.051	13,000	440	0.036	9,600	95	0.020	0.462
"	6	22,800	1,120	0.057	19,000	840	0.051	14,400	550	0.040	11,500	380	0.028	9,600	60	0.016	0.293
"	8	19,000	900	0.041	15,900	670	0.037	12,500	460	0.029	10,000	320	0.020	9,600	25	0.012	0.124
"	10	16,600	750	0.030	13,800	560	0.027	11,200	390	0.021	8,900	270	0.015	9,600	13	0.009	0.063
"	12	14,800	630	0.023	12,400	470	0.020	10,200	340	0.016	8,200	240	0.011	-	-	-	0.037
"	14	13,400	550	0.017	11,200	410	0.016	9,500	300	0.012	7,600	210	0.009	-	-	-	0.023
"	16	12,300	480	0.013	10,300	360	0.012	8,900	270	0.009	7,100	190	0.007	-	-	-	0.015
"	18	11,500	420	0.011	9,600	310	0.010	8,400	240	0.007	6,700	170	0.005	-	-	-	0.011
"	20	10,700	370	0.009	9,000	280	0.008	7,900	220	0.006	6,300	150	0.004	-	-	-	0.008
"	25	9,300	270	0.005	7,800	200	0.005	7,100	160	0.004	5,700	110	0.003	-	-	-	0.004
"	30	8,300	200	0.004	7,000	150	0.004	6,500	120	0.003	5,200	90	0.002	-	-	-	0.002
1.6mm	10	16,100	780	0.035	13,500	580	0.032	10,800	410	0.028	8,500	280	0.018	9,600	15	0.010	0.082
"	14	13,000	580	0.020	10,900	430	0.018	9,100	320	0.014	7,300	220	0.010	-	-	-	0.030
"	18	11,100	450	0.013	9,300	340	0.012	8,000	260	0.009	6,400	180	0.006	-	-	-	0.014
2.0mm	4	23,000	1,500	0.070	20,000	1,200	0.060	14,000	750	0.052	12,000	500	0.040	9,600	230	0.022	0.966
"	6	20,300	1,350	0.064	17,400	1,030	0.058	12,500	650	0.045	10,000	450	0.032	9,600	211	0.019	0.926
"	8	17,000	1,090	0.054	14,500	830	0.048	10,800	540	0.038	8,700	380	0.027	9,600	89	0.016	0.391
"	10	14,800	920	0.045	12,600	700	0.040	9,700	470	0.031	7,800	330	0.022	9,600	45	0.013	0.200
"	12	13,200	790	0.037	11,200	600	0.034	8,900	420	0.026	7,100	290	0.019	9,600	56	0.011	0.116
"	14	12,000	700	0.031	10,200	530	0.028	8,200	370	0.022	6,600	260	0.016	9,600	16	0.009	0.073
"	16	11,100	620	0.026	9,400	470	0.024	7,700	340	0.018	6,100	230	0.013	9,600	11	0.007	0.049
"	18	10,300	550	0.022	8,700	420	0.020	7,200	310	0.015	5,800	210	0.011	-	-	-	0.034
"	20	9,600	500	0.018	8,100	380	0.016	6,900	280	0.013	5,500	190	0.009	-	-	-	0.025
"	22	8,700	420	0.014	7,500	320	0.014	6,500	250	0.010	5,200	170	0.008	-	-	-	0.018
"	25	8,400	390	0.012	7,100	290	0.011	6,200	230	0.008	4,900	160	0.006	-	-	-	0.013
"	30	7,500	310	0.008	6,300	230	0.007	5,600	180	0.005	4,500	130	0.004	-	-	-	0.007
2.5mm	8	15,000	1,340	0.077	12,800	1,020	0.069	9,600	670	0.054	7,700	460	0.039	9,600	227	0.023	0.954
"	10	13,100	1,140	0.068	11,100	860	0.061	8,600	590	0.048	6,900	400	0.034	9,600	116	0.020	0.488
"	12	11,800	1,000	0.060	10,000	750	0.054	7,900	520	0.042	6,300	360	0.030	9,600	67	0.018	0.283
"	16	9,900	790	0.045	8,400	590	0.040	6,800	430	0.031	5,500	290	0.022	9,600	28	0.013	0.119
"	20	8,700	650	0.033	7,300	490	0.030	6,100	360	0.023	4,900	250	0.017	9,600	14	0.010	0.061
"	25	7,600	520	0.022	6,400	390	0.019	5,500	300	0.015	4,400	210	0.011	-	-	-	0.031
"	30	6,800	430	0.014	5,700	320	0.012	5,000	250	0.010	4,000	1,700	0.007	-	-	-	0.018
"	35	6,200	380	0.009	5,200	280	0.008	4,800	190	0.007	3,800	1,400	0.005	-	-	-	0.012
"	40	5,700	290	0.005	4,800	220	0.004	4,400	170	0.003	3,500	120	0.002	-	-	-	0.008
"	50	5,000	190	0.001	4,200	140	0.001	3,900	120	0.001	3,100	80	0.001	-	-	-	0.004

Prof. di Taglio

Fresatura dal Pieno
• Ap : Prof. Taglio
• D : Diametro Esterno



Spallamento
• Ap : Prof. Taglio
• Ae : Passo radiale



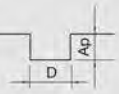
2HRE

• RPM : giri/min • Avanzamento (AV) : mm/min

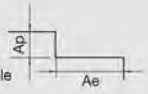
Materiale		Acciai al Carbonio			Acciai Legati SK / SCM / SUS			Acciai Bonificati / Acciai Temprati NAK / SKD			Acciai Temprati SKD / SKT			Acciai Temprati SKD / SKT			Importo fresatura per taglio laterale
Durezza		(S45C/S50C) ~225HB			225 ~ 325HB			35HRc ~ 45HRc			45HRc ~ 55HRc			55HRc ~ 60HRc			
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	Ae
3mm	6	13,200	1,470	0.103	10,900	1,080	0.093	8,000	700	0.072	6,400	480	0.052	8,000	435	0.031	1.978
"	10	11,600	1,270	0.092	9,600	930	0.083	7,200	620	0.064	5,800	430	0.046	8,000	222	0.027	1.013
"	12	10,500	1,110	0.081	8,700	830	0.073	6,700	560	0.057	5,300	380	0.041	8,000	128	0.024	0.586
"	16	8,900	900	0.064	7,400	670	0.058	5,900	470	0.045	4,700	320	0.032	8,000	54	0.019	0.247
"	20	7,800	750	0.050	6,600	560	0.045	5,300	400	0.035	4,300	280	0.025	8,000	27	0.015	0.127
"	25	6,900	620	0.036	5,800	460	0.032	4,800	340	0.025	3,900	230	0.018	8,000	14	0.010	0.065
"	30	6,200	520	0.026	5,200	390	0.023	4,500	290	0.018	3,600	200	0.013	8,000	10	0.007	0.038
"	35	5,700	440	0.018	4,800	330	0.016	4,200	250	0.013	3,300	170	0.009	-	-	-	0.024
"	40	5,300	370	0.013	4,500	280	0.012	3,900	220	0.009	3,100	150	0.006	-	-	-	0.016
"	45	5,000	330	0.008	4,200	230	0.008	3,700	180	0.006	2,900	130	0.005	-	-	-	0.012
"	50	4700	270	0.006	3900	200	0.005	3600	160	0.004	2800	110	0.003	-	-	-	0.008
"	60	4,500	250	0.003	3,600	180	0.003	3,200	130	0.003	2,500	90	0.002	-	-	-	0.005
4mm	8	10,000	1,600	0.014	8,800	1,100	0.140	6,800	770	0.093	5,300	500	0.070	6,000	450	0.050	1.990
"	10	9,200	1,400	0.120	8,000	1,000	0.120	5,900	690	0.085	4,700	460	0.066	6,000	420	0.040	1.960
"	12	8,500	1,280	0.112	7,100	950	0.101	5,100	600	0.078	4,100	410	0.056	6,000	388	0.033	1.852
"	16	7,200	1,050	0.093	6,000	770	0.084	4,400	510	0.065	3,600	350	0.046	6,000	164	0.027	0.781
"	20	6,300	880	0.077	5,200	650	0.069	4,000	440	0.054	3,200	300	0.038	6,000	84	0.022	0.400
"	25	5,600	750	0.061	4,600	540	0.055	3,600	380	0.042	2,900	260	0.030	6,000	43	0.018	0.205
"	30	5,000	630	0.048	4,100	460	0.043	3,300	330	0.033	2,600	230	0.024	6,000	24	0.014	0.119
"	35	4,600	540	0.038	3,800	400	0.034	3,100	290	0.026	2,500	200	0.019	6,000	15	0.011	0.075
"	40	4,200	470	0.030	3,500	350	0.027	2,900	250	0.021	2,300	180	0.015	6,000	10	0.009	0.050
"	45	3,900	410	0.023	3,300	300	0.021	2,700	230	0.016	2,200	160	0.012	-	-	-	0.035
"	50	3700	360	0.018	3100	270	0.016	2600	200	0.013	2100	140	0.009	-	-	-	0.026
"	55	3,500	320	0.015	2,950	250	0.015	2,500	180	0.010	2,000	130	0.007	-	-	-	0.020
"	60	3,300	280	0.011	2,800	210	0.010	2,400	160	0.008	1,900	110	0.006	-	-	-	0.015
5mm	16	6,000	1,140	0.127	5,100	860	0.114	3,500	520	0.089	2,800	360	0.064	4,800	457	0.038	1.907
"	20	5,300	980	0.121	4,400	730	0.109	3,100	440	0.085	2,500	310	0.061	4,800	234	0.036	0.977
"	25	4,600	820	0.109	3,800	600	0.099	2,800	390	0.077	2,200	270	0.055	4,800	120	0.033	0.500
"	30	4,200	710	0.094	3,400	510	0.085	2,500	340	0.066	2,000	230	0.047	4,800	69	0.028	0.289
"	35	3,800	620	0.077	3,100	450	0.069	2,300	300	0.054	1,900	210	0.038	4,800	43	0.022	0.182
"	40	3,500	540	0.060	2,800	390	0.054	2,200	270	0.042	1,700	180	0.030	4,800	29	0.018	0.122
"	50	3,100	430	0.031	2,400	300	0.028	1,900	210	0.022	1,500	150	0.016	4,800	15	0.009	0.063
"	60	2,800	350	0.013	2,100	240	0.012	1,800	170	0.009	1,400	120	0.007	4,800	10	0.004	0.036
6mm	20	4,200	960	0.126	3,800	780	0.114	2,600	470	0.088	2,100	330	0.063	4,000	607	0.037	2.025
"	30	3,400	730	0.109	2,800	540	0.099	2,000	340	0.077	1,600	240	0.055	4,000	180	0.033	0.600
"	40	3,000	600	0.083	2,300	410	0.074	1,700	260	0.058	1,300	170	0.041	4,000	75	0.024	0.253
"	50	2,600	480	0.054	1,900	310	0.049	1,500	220	0.038	1,200	160	0.027	4,000	38	0.016	0.130
"	60	2,400	410	0.031	1,700	260	0.028	1,300	170	0.022	1,000	120	0.016	4,000	22	0.009	0.075
8mm	20	3,200	910	0.180	2,800	710	0.160	2,300	450	0.130	1,700	330	0.090	3,400	580	0.050	1.600
"	40	2,600	600	0.120	2,000	410	0.100	1,500	250	0.800	1,100	160	0.060	3,400	84	0.035	0.200
"	25	2,900	890	0.200	2,700	680	0.180	2,100	430	0.130	1,500	310	0.080	3,200	540	0.050	1.760
"	45	2,200	580	0.140	2,000	400	0.120	1,300	220	0.700	900	150	0.050	3,200	76	0.030	0.240
"	30	2,500	710	0.220	2,300	580	0.200	2,000	400	0.140	1,400	280	0.080	3,000	540	0.050	1.840
"	50	1,900	420	0.160	1,700	350	0.130	1,500	200	0.800	800	140	0.050	3,000	72	0.030	0.280

Prof. di Taglio

Fresatura dal Pieno
• Ap : Prof. Taglio
• D : Diametro Esterno



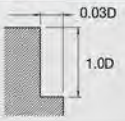
Spallamento
• Ap : Prof. Taglio
• Ae : Passo radiale



- Si raccomanda l'uso di aria o olio nebulizzato.
- Rimuovere i trucioli per prevenire infortuni.
- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.

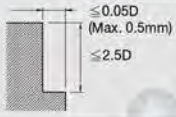
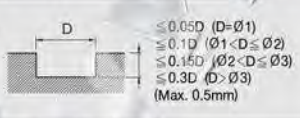
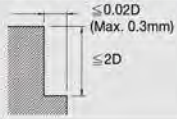
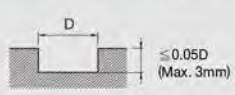
4HRE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Legati/ Acciai resistenti al calore		Acciai Bonificati / Acciai Temprati				Acciai Temprati			
			NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11	
Durezza	30HRc ~ 40HRc		40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	48,000	1,480	38,000	1,050	25,500	710	20,500	430	16,000	270
2mm	33,300	1,750	26,000	1,250	17,500	840	14,500	520	11,000	320
3mm	21,800	1,750	17,300	1,250	11,500	840	9,500	520	7,500	320
4mm	16,700	1,800	13,200	1,300	8,800	880	7,200	540	335	4,750
5mm	15,700	2,000	12,500	1,500	8,300	1,000	6,400	580	5,100	370
6mm	13,100	1,950	10,350	1,400	6,900	950	5,300	560	4,200	350
8mm	9,880	1,880	7,800	1,350	5,200	900	4,000	520	3,200	330
10mm	7,800	1,750	6,150	1,260	4,100	840	3,200	480	2,550	310
12mm	6,650	1,750	5,250	1,260	3,500	840	2,650	480	2,100	300
Prof. di Taglio										

2LEM

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio / Acciai Legati S45C / S50C / SK / SCM		Acciai Temprati/ Acciai Bonificati NAK / SKD		Acciai Inox SUS304 / SUS316		Acciai Temprati SKD61	
Durezza	~ 30HRc		30 ~ 45HRc				45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	13,000	60 (60)	9,000	35 (35)	6,500 (6,500)	20 (20)	5,700	20 (15)
1.5mm	10,000	60 (60)	6,000	45 (45)	5,000 (4,500)	35 (35)	4,500	25 (15)
2mm	6,400	60 (60)	4,800	45 (45)	3,500 (3,500)	30 (30)	3,000	25 (15)
3mm	4,200	65 (60)	3,400	55 (55)	2,600 (2,600)	40 (40)	2,100	30 (20)
4mm	3,400	80 (60)	2,700	65 (30)	2,100 (1,600)	50 (20)	1,700	35 (20)
5mm	2,900	100 (60)	2,300	80 (40)	1,800 (1,350)	60 (25)	1,500	40 (20)
6mm	2,500	120 (60)	2,000	100 (50)	1,500 (1,100)	75 (30)	1,300	50 (25)
8mm	1,900	130 (60)	1,500	100 (50)	1,200 (900)	85 (35)	1,000	50 (25)
10mm	1,600	130 (60)	1,300	100 (50)	950 (710)	75 (30)	800	50 (25)
12mm	1,300	120 (60)	1,100	90 (45)	800 (600)	60 (25)	670	40 (20)
16mm	1,000	80 (40)	820	65 (30)	600 (450)	45 (20)	500	30 (15)
20mm	800	65 (30)	650	50 (25)	480 (360)	40 (15)	400	25 (13)
25mm	650	50 (25)	520	40 (20)	380 (280)	30 (12)	320	20 (10)
Prof. di Taglio	 				 			

- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- In foratura portare i valori di avanzamento ad 1/3 della tabella indicata.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

2HSE / 2HCE

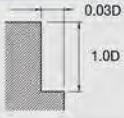
■ Aumentare del 20% i valori sotto riportati per 2HSE

• RPM : giri/min • Avanzamento (AV) : mm/min

Fresatura dal Pieno

Materiale	Acciai Legati/ Acciai resistenti al calore		Acciai Bonificati / Acciai Temprati				Acciai Temprati			
			NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11	
Durezza	30HRc ~ 40HRc		40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.1mm	50,000	100	45,000	100	40,000	90	33,000	50	33,000	40
0.2mm	50,000	130	45,000	115	40,000	95	33,000	60	33,000	45
0.3mm	50,000	190	45,000	140	40,000	115	33,000	70	25,000	50
0.4mm	50,000	235	45,000	180	40,000	140	33,000	90	25,000	55
0.5mm	50,000	370	45,000	280	40,000	220	33,000	140	25,000	85
0.6mm	50,000	470	45,000	360	40,000	285	30,000	160	25,000	105
0.8mm	50,000	600	40,000	440	30,000	295	25,000	185	19,000	110
0.9mm	49,000	655	39,000	520	27,800	330	22,700	205	17,500	125
1mm	48,000	750	38,000	570	25,500	360	20,500	215	16,000	135
2mm	33,300	850	26,000	680	17,500	420	14,500	260	11,000	160
3mm	21,800	850	17,300	680	11,500	420	9,500	260	7,500	160
4mm	16,700	880	13,200	700	8,800	440	7,200	270	5,600	170
5mm	15,700	1,000	12,500	805	8,300	500	6,400	285	5,100	180
6mm	13,100	950	10,350	770	6,900	480	5,300	280	4,200	180
8mm	9,880	930	7,800	720	5,200	445	4,000	255	3,200	165
10mm	7,800	850	6,150	680	4,100	415	3,200	240	2,550	155
12mm	6,650	850	5,250	680	3,500	415	2,650	240	2,100	155
16mm	5,540	780	4,340	610	2,600	360	1,840	180	1,800	100
18mm	5,540	780	4,340	610	2,600	360	1,840	180	1,800	100
20mm	4,640	720	3,650	570	2,100	300	1,460	180	1,400	100
Prof. di Taglio										

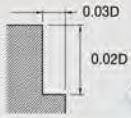
Taglio Laterale

Materiale	Acciai Legati/ Acciai resistenti al calore		Acciai Bonificati / Acciai Temprati				Acciai Temprati			
			NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11	
Durezza	30HRc ~ 40HRc		40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	50,000	100	45,000	100	40,000	90	33,000	50	33,000	40
2mm	50,000	130	45,000	115	40,000	95	33,000	60	33,000	45
3mm	50,000	190	45,000	140	40,000	115	33,000	70	25,000	50
4mm	50,000	235	45,000	180	40,000	140	33,000	90	25,000	55
5mm	50,000	370	45,000	280	40,000	220	33,000	140	25,000	85
6mm	50,000	470	45,000	360	40,000	285	30,000	160	25,000	105
8mm	50,000	600	40,000	440	30,000	295	25,000	185	19,000	110
10mm	49,000	655	39,000	520	27,800	330	22,700	205	17,500	125
12mm	48,000	750	38,000	570	25,500	360	20,500	215	16,000	135
16mm	33,300	850	26,000	680	17,500	420	14,500	260	11,000	160
18mm	21,800	850	17,300	680	11,500	420	9,500	260	7,500	160
20mm	16,700	880	13,200	700	8,800	440	7,200	270	5,600	170
Prof. di Taglio										

4HSE/4HCE

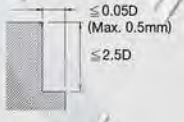
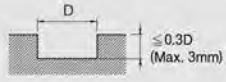
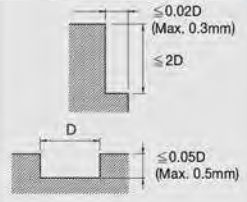
■ Aumentare del 20% i valori sotto riportati per 4HSE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Legati/ Acciai resistenti al calore		Acciai Temprati NAK / SKD	
Durezza	30HRc ~ 40HRc		40 ~ 50HRc	
Diametro Esterno	RPM	AV	RPM	AV
1mm	48,000	1,480	38,000	1,050
2mm	33,300	1,750	26,000	1,250
3mm	21,800	1,750	17,300	1,250
4mm	16,700	1,800	13,200	1,300
5mm	15,700	2,000	12,500	1,500
6mm	13,100	1,950	10,350	1,400
7mm	11,000	1,900	9,000	1,380
8mm	9,880	1,880	7,800	1,350
9mm	7,800	1,750	6,150	1,260
10mm	6,650	1,750	5,250	1,260
11mm	5,600	1,680	4,300	1,150
12mm	5,600	1,680	4,300	1,150
14mm	4,650	1,600	3,500	1,050
16mm	4,650	1,600	3,500	1,050
18mm	3,750	1,560	2,800	1,000
20mm	3,500	1,460	2,600	980
Milling Amount of Side Milling				

4LEM

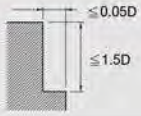
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio S50 / SCM		Acciai Temprati/ Acciai Bonificati NAK / SKD61		Acciai Inox SUS304 / SUS316		Acciai Temprati SKD61	
Durezza	~ 30HRc		30 ~ 45HRc				45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	6,800	85	5,800	85	4,800	55	4,000	25
1.5mm	6,000	90	5,000	90	4,100	60	3,400	30
2mm	5,000	100	4,000	80	3,200	65	2,800	40
3mm	4,200	110	3,400	95	2,600	70	2,100	50
4mm	3,400	140	2,700	110	2,100	85	1,700	60
5mm	2,900	170	2,300	140	1,800	100	1,500	70
6mm	2,500	200	2,000	170	1,500	130	1,300	85
8mm	1,900	220	1,500	170	1,200	150	1,000	85
10mm	1,600	220	1,300	170	950	130	800	85
12mm	1,300	170	1,100	150	800	100	670	70
16mm	1,000	140	820	110	600	80	500	50
20mm	800	110	650	85	480	70	400	40
25mm	650	85	520	70	380	50	320	35
Prof. di Taglio	 							

- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- In foratura portare i valori di avanzamento ad 1/3 della tabella indicata.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

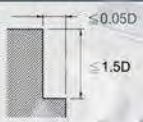
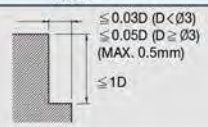
4HEM

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Temprati SKD61			Acciai Temprati SKD11		
Durezza	45HRc ~ 55HRc			55HRc ~ 62HRc		
Diametro Esterno	RPM	AV	Ap	RPM	AV	Ap
1mm	40,000	1,200	0.05	40,000	800	0.03
1.5mm	40,000	1,500	0.05	40,000	900	0.04
2mm	40,000	2,000	0.1	24,000	1,000	0.05
3mm	38,400	4,560	0.2	19,200	2,280	0.1
4mm	28,800	5,280	0.2	14,400	2,640	0.1
5mm	24,000	6,000	0.2	12,000	3,000	0.1
6mm	19,200	6,960	0.3	9,600	3,480	0.2
8mm	14,400	6,960	0.4	7,200	3,480	0.2
10mm	11,520	6,960	0.5	5,760	3,480	0.3
12mm	9,600	5,760	0.6	4,800	2,880	0.3
16mm	7,200	4,320	0.8	3,600	2,160	0.5
20mm	5,760	3,480	1	2,880	1,680	0.5
Prof. di Taglio						

6&8HEM

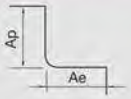
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Temprati SKD61			Acciai Temprati SKD11		
Durezza	45HRc ~ 55HRc			55HRc ~ 62HRc		
Diametro Esterno	RPM	AV	Ap	RPM	AV	Ap
3mm	32,000	3,800	0.2	16,000	1,900	0.1
4mm	24,000	4,400	0.2	12,000	2,200	0.1
5mm	20,000	5,000	0.2	10,000	2,500	0.1
6mm	16,000	5,800	0.3	8,000	2,900	0.2
8mm	12,000	5,800	0.4	6,000	2,900	0.2
10mm	9,600	5,800	0.5	4,800	2,900	0.3
12mm	8,000	4,800	0.6	4,000	2,400	0.3
16mm	6,000	3,600	0.8	3,000	1,800	0.5
20mm	4,800	2,900	1	2,400	1,400	0.5
25mm	3,000	2,000	1	2,000	1,000	0.5
Prof. di Taglio						

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Rame				Acciai Bonificati / Acciai Temprati NAK / SKD				Acciai Temprati SKD / SKT				Acciai Temprati SKD / SKT			
Durezza						30HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 65HRc			
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
0.2mm	1mm	50,000	196	0.264	0.020	50,000	196	0.006	0.020	34,500	150	0.004	0.020	14,950	24	0.001	0.015
"	1.5	50,000	173	0.017	0.010	50,000	173	0.005	0.010	26,450	104	0.003	0.010	11,730	20	0.001	0.007
0.3mm	1	50,000	483	0.029	0.020	50,000	495	0.007	0.020	34,500	345	0.005	0.015	21,505	34	0.004	0.015
"	3	50,000	207	0.029	0.015	50,000	219	0.006	0.015	24,150	81	0.003	0.010	14,605	20	0.002	0.010
0.4mm	1	47,150	598	0.047	0.062	50,000	495	0.013	0.070	39,675	368	0.011	0.070	23,575	39	0.004	0.070
"	3	33,350	449	0.026	0.053	26,450	380	0.008	0.026	26,450	276	0.007	0.026	15,755	29	0.003	0.026
0.5mm	1	48,300	1,334	0.079	0.114	48,300	1,116	0.033	0.119	39,100	840	0.029	0.119	24,150	92	0.013	0.119
"	3	31,050	748	0.056	0.088	31,050	621	0.022	0.110	25,415	460	0.020	0.110	15,755	51	0.008	0.110
"	5	25,760	552	0.026	0.044	25,760	459	0.011	0.010	20,700	345	0.010	0.010	12,995	38	0.004	0.010
0.6mm	2	27,945	598	0.111	0.158	27,945	495	0.010	0.214	23,000	380	0.010	0.214	14,835	42	0.004	0.214
"	6	16,445	288	0.035	0.044	16,445	242	0.003	0.010	13,570	184	0.003	0.010	8,740	21	0.001	0.010
0.8mm	4	17,250	529	0.129	0.194	17,020	437	0.014	0.114	14,720	345	0.015	0.114	9,890	40	0.007	0.114
"	8	12,650	299	0.029	0.098	12,650	264	0.005	0.088	10,695	184	0.004	0.088	7,475	20	0.002	0.088
1mm	4	13,800	955	0.196	0.396	13,800	805	0.029	0.264	11,730	655	0.034	0.264	8,280	78	0.017	0.264
"	10	8,625	380	0.047	0.308	8,625	311	0.011	0.123	7,475	264	0.013	0.123	5,290	31	0.006	0.123
"	16	6,900	230	0.018	0.220	6,900	184	0.004	0.026	5,980	161	0.005	0.026	4,255	19	0.002	0.026
1.2mm	6	9,200	690	0.182	0.457	9,200	575	0.018	0.088	8,165	483	0.215	0.088	6,095	59	0.011	0.088
"	12	6,670	437	0.053	0.396	6,670	368	0.007	0.070	5,980	299	0.008	0.070	4,370	37	0.004	0.070
1.5mm	4	12,880	1,265	0.293	0.660	12,880	1,070	0.044	0.440	11,730	920	0.059	0.440	8,970	121	0.032	0.440
"	10	8,280	874	0.147	0.554	8,280	736	0.031	0.282	7,590	633	0.041	0.282	5,865	83	0.022	0.282
"	20	5,865	472	0.041	0.352	5,865	403	0.005	0.106	5,405	345	0.006	0.106	4,140	45	0.003	0.106
2mm	6	12,535	1,185	0.314	0.836	12,535	1,001	0.042	0.792	11,730	909	0.059	0.792	9,430	130	0.035	0.792
"	12	9,200	955	0.182	0.704	9,200	805	0.030	0.440	8,280	725	0.043	0.440	6,785	105	0.025	0.440
"	20	6,900	748	0.091	0.651	6,900	633	0.017	0.194	6,440	564	0.023	0.194	5,175	82	0.014	0.194
"	30	5,865	655	0.049	0.440	5,865	541	0.005	0.132	5,405	495	0.005	0.132	4,255	68	0.002	0.132
2.5mm	10	10,350	1,185	0.331	0.836	10,350	1,001	0.051	0.528	9,775	943	0.073	0.528	8,165	151	0.047	0.528
"	30	6,210	529	0.067	0.616	6,210	437	0.011	0.176	5,865	414	0.016	0.176	4,830	65	0.010	0.176
3mm	12	10,350	1,564	0.381	0.831	10,350	1,127	0.103	0.616	9,775	874	0.103	0.655	8,740	196	0.073	0.655
"	20	8,165	1,024	0.254	0.762	8,165	863	0.071	0.567	7,705	667	0.071	0.567	6,900	147	0.043	0.567
"	30	6,900	850	0.137	0.674	6,900	702	0.049	0.371	6,325	541	0.049	0.371	5,865	115	0.028	0.352
4mm	12	8,740	1,265	0.401	1.525	8,740	1,058	0.081	1.124	7,860	920	0.117	1.124	6,210	210	0.083	1.124
"	20	6,785	1,150	0.375	1.325	6,785	978	0.053	0.880	5,750	840	0.078	0.880	4,830	194	0.057	0.880
"	30	5,750	897	0.196	1.210	5,750	748	0.028	0.671	4,715	656	0.041	0.671	4,025	149	0.030	0.708
"	45	4,715	437	0.096	1.118	4,715	368	0.007	0.326	4,025	322	0.010	0.326	3,450	75	0.007	0.326
5mm	15	7,705	2,047	0.697	2.277	7,705	1,702	0.106	1.346	5,520	1,139	0.150	1.346	4,600	342	0.110	1.346
"	30	5,290	978	0.342	1.760	5,290	817	0.053	1.035	3,795	541	0.075	1.035	3,220	164	0.055	1.035
6mm	20	5,980	1,380	0.600	2.194	5,980	1,219	0.476	1.356	3,565	1,035	0.186	1.356	3,105	393	0.145	1.356
"	40	4,600	1,150	0.565	2.049	4,600	909	0.410	1.304	2,645	759	0.164	1.304	2,300	304	0.123	1.304
8mm	22	5,520	1,265	0.528	2.542	5,520	1,081	0.419	1.518	3,220	909	0.164	1.518	2,760	346	0.128	1.518
"	40	4,140	965	0.497	2.277	4,140	805	0.361	1.323	2,415	667	0.144	1.323	1,955	268	0.108	1.323
10mm	24	4,600	1,035	0.449	2.887	4,485	920	0.356	1.645	2,760	771	0.139	1.645	2,300	294	0.108	1.645
"	45	3,450	817	0.423	2.438	3,450	679	0.307	1.334	1,955	564	0.122	1.334	1,725	228	0.092	1.334
12mm	26	3,795	874	0.377	3.013	3,795	771	0.299	2.024	2,300	644	0.117	2.024	1,955	247	0.091	2.024
"	50	2,875	690	0.355	2.415	2,875	575	0.258	1.403	1,725	483	0.103	1.403	1,380	191	0.077	1.403
16mm	35	2,990	702	0.302	2.921	2,990	610	0.239	2.162	1,725	518	0.094	2.162	1,610	198	0.073	2.162

• Ap : Prof. Taglio
• Ae : Passo radiale

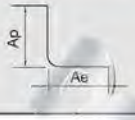


4CRE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Acciai Bonificati / Acciai Temprati NAK / SKD				Acciai Temprati SKD / SKT			
Durezza		30HRc ~ 45HRc				45HRc ~ 55HRc			
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
1mm	4	13,455	1,265	0.038	0.264	11,730	1,046	0.030	0.238
"	10	8,625	495	0.011	0.123	7,475	495	0.009	0.098
1.2mm	4	12,880	1,380	0.031	0.440	11,730	1,070	0.023	0.293
"	10	8,855	782	0.017	0.176	7,130	587	0.009	0.147
1.5mm	6	11,385	1,265	0.040	0.475	10,350	1,150	0.037	0.435
"	12	8,280	817	0.028	0.317	7,590	759	0.025	0.290
2mm	6	12,650	1,265	0.063	0.633	11,730	1,173	0.059	0.713
"	12	8,970	1,012	0.045	0.396	8,280	943	0.043	0.396
2.5mm	10	10,580	1,380	0.065	0.528	9,775	1,150	0.065	0.528
"	20	7,590	1,150	0.047	0.264	7,360	655	0.030	0.220
3mm	10	11,040	2,070	0.094	0.684	10,235	2,070	0.059	0.684
"	20	8,165	1,495	0.057	0.567	7,705	1,495	0.035	0.567
4mm	13	9,085	1,576	0.105	1.150	7,590	1,530	0.082	1.150
"	20	7,130	1,380	0.069	0.920	5,980	1,288	0.054	0.920
"	30	6,325	1,104	0.043	0.745	5,290	1,058	0.033	0.745
6mm	20	5,635	1,691	0.176	2.305	3,335	978	0.176	1.281
"	40	2,875	782	0.098	1.320	1,610	460	0.098	0.733
8mm	22	4,600	1,840	0.212	2.921	2,760	782	0.212	1.518
10mm	24	3,680	2,013	0.242	3.140	2,185	621	0.253	1.645
12mm	26	2,875	2,070	0.265	3.105	1,725	495	0.276	1.714

• Ap : Axial Depth
• Ae : Radial Depth



6CRL

• RPM : giri/min • Avanzamento (AV) : mm/min

Spallamento															
Materiale	Acciai Legati SKD				Acciai Bonificati CENA1, NAK80				Acciai Temprati SKD61~SKT4				Acciai Temprati SKD11~SKH51			
Durezza	25HRc ~ 35HRc				35HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 65HRc			
Diametro Esterno	High Speed		General		High Speed		General		High Speed		General		High Speed		General	
	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
6mm	13,000	4,910	6,400	2,420	13,000	4,390	5,300	1,250	11,000	3,270	4,200	870	8,000	2,160	3,200	600
8mm	10,000	5,040	4,800	2,420	10,000	4,500	4,000	1,260	8,000	3,170	3,200	890	6,000	2,160	2,400	600
10mm	8,000	4,840	3,800	2,300	8,000	4,320	3,200	1,210	6,400	3,040	2,500	830	4,800	2,070	1,900	570
12mm	6,600	4,440	3,200	2,150	6,600	3,960	2,700	1,130	5,300	2,800	2,100	780	4,000	1,920	1,600	540
16mm	5,000	4,200	2,400	2,070	5,000	3,750	2,000	1,080	4,000	2,640	1,600	760	3,000	1,800	1,200	520

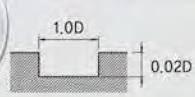
Prof. di Taglio



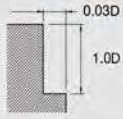
- Utilizzate macchine più rigide e precise possibile.
- Utilizzare il refrigerante/lubrificante appropriato in funzione del materiale lavorato.
- Questi parametri sono solo un riferimento. Si raccomanda un ottimizzazione in funzione delle macchina, rigidità del pezzo e percorso utensile.
- Se il numero di giri della macchina è inferiore a quello indicato, ridurre proporzionalmente anche l'avanzamento.

• RPM : giri/min • Avanzamento (AV) : mm/min

Fresatura dal Pieno

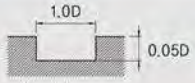
Materiale	Acciai Legati/ Acciai resistenti al calore		Acciai Bonificati / Acciai Temprati				Acciai Temprati			
			NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11	
Durezza	30HRc ~ 40HRc		40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.4mm	50,000	250	45,000	200	40,000	155	33,000	105	25,000	60
0.5mm	50,000	295	45,000	225	40,000	175	33,000	110	25,000	65
0.6mm	50,000	375	45,000	285	40,000	225	30,000	125	25,000	85
0.8mm	50,000	480	45,000	350	30,000	235	25,000	145	19,000	90
1mm	48,000	600	38,000	456	25,500	288	20,500	172	16,000	108
2mm	33,300	680	26,000	544	17,500	336	14,500	208	11,000	128
3mm	21,800	680	17,300	544	11,500	336	9,500	208	7,500	128
4mm	16,700	704	13,200	560	8,800	352	7,200	216	5,600	136
5mm	15,700	800	12,500	644	8,300	400	6,400	228	5,100	144
6mm	13,100	760	10,350	616	6,900	384	5,300	224	4,200	144
8mm	9,880	744	7,800	576	5,200	356	4,000	204	3,200	132
10mm	7,800	680	6,150	544	4,100	332	3,200	192	2,550	124
12mm	6,650	680	5,250	544	3,500	332	2,650	192	2,100	124
Prof. di Taglio										

Taglio Laterale

Materiale	Acciai Legati/ Acciai resistenti al calore		Acciai Bonificati / Acciai Temprati				Acciai Temprati			
			NAK / SKD		STAVX / SKD / SKT		SKD11 / SKD61		SKD / SKD11	
Durezza	30HRc ~ 40HRc		40HRc ~ 50HRc		50HRc ~ 55HRc		55HRc ~ 60HRc		60HRc ~ 65HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.4mm	50,000	185	45,000	120	40,000	110	33,000	70	25,000	40
0.5mm	50,000	205	45,000	160	40,000	125	33,000	80	25,000	45
0.6mm	50,000	265	45,000	200	40,000	160	30,000	90	25,000	60
0.8mm	50,000	335	40,000	245	30,000	165	25,000	100	19,000	65
1mm	48,000	840	38,000	656	25,500	408	20,500	248	16,000	152
2mm	33,300	960	26,000	776	17,500	480	14,500	296	11,000	184
3mm	21,800	960	17,300	776	11,500	480	9,500	296	7,500	184
4mm	16,700	1,000	13,200	800	8,800	500	7,200	308	5,600	192
5mm	15,700	1,160	12,500	920	8,800	568	6,400	328	5,100	208
6mm	13,100	1,080	10,350	880	6,900	552	5,300	320	4,200	204
8mm	9,880	1,056	7,800	824	5,200	508	4,000	292	3,200	188
10mm	7,800	960	6,150	776	4,100	472	3,200	272	2,550	176
12mm	6,650	960	5,250	776	3,500	472	2,650	272	2,100	176
Prof. di Taglio										

• RPM : giri/min • Avanzamento (AV) : mm/min

Fresatura dal Pieno

Materiale	Acciai Legati SKD61 / SKD11				Acciai Legati SCM440				Acciai Temprati NAK80				Acciai Temprati SKD61~SKT4			
Durezza	200~250HB				25HRc ~ 35HRc				35HRc ~ 45HRc				45HRc ~ 55HRc			
Diametro Esterno	High Speed		General		High Speed		General		High Speed		General		High Speed		General	
	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
3mm	8,500	820	6,400	490	-	-	6,400	440	-	-	5,800	360	-	-	5,300	240
4mm	6,400	920	4,800	550	-	-	4,800	500	-	-	4,400	410	-	-	4,000	280
6mm	4,200	1,010	3,200	610	-	-	3,200	550	-	-	2,900	450	-	-	2,700	310
8mm	3,200	1,090	2,400	650	-	-	2,400	590	-	-	2,200	480	-	-	2,000	330
10mm	2,500	950	1,900	580	-	-	1,900	520	-	-	1,800	440	-	-	1,600	290
12mm	2,100	880	1,600	540	-	-	1,600	480	-	-	1,500	400	-	-	1,300	260
Prof. di Taglio																

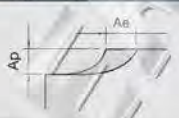
Taglio Laterale

Materiale	Acciai Legati SKD61 / SKD11				Acciai Legati SCM440				Acciai Temprati NAK80				Acciai Temprati SKD61~SKT4			
Durezza	200~250HB				25HRc ~ 35HRc				35HRc ~ 45HRc				45HRc ~ 55HRc			
Diametro Esterno	High Speed		General		High Speed		General		High Speed		General		High Speed		General	
	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
3mm	16,000	1,800	9,600	860	14,000	1,400	9,600	770	12,000	1,100	8,500	610	11,000	860	7,400	460
4mm	12,000	1,900	7,200	920	10,000	1,400	7,200	830	8,800	1,100	6,400	660	8,000	900	5,600	500
6mm	8,000	2,200	4,800	1,080	6,900	1,700	4,800	970	5,800	1,300	5,100	720	5,300	1,040	3,700	580
8mm	6,000	2,400	3,600	1,150	5,200	1,900	3,600	1,040	4,400	1,400	4,200	750	4,000	1,120	2,800	630
10mm	4,800	2,200	2,900	1,070	4,100	1,700	2,900	960	3,500	1,300	2,500	740	3,200	1,030	2,200	570
12mm	4,000	2,100	2,400	1,000	3,500	1,600	2,400	900	2,900	1,200	2,100	700	2,700	980	1,900	550
Prof. di Taglio																

- Utilizzate macchine più rigide e precise possibile.
- Utilizzare il refrigerante/lubrificante appropriato in funzione del materiale lavorato.
- Questi parametri sono solo un riferimento. Si raccomanda un ottimizzazione in funzione delle macchina, rigidità del pezzo e percorso utensile.
- Se il numero di giri della macchina è inferiore a quello indicato, ridurre proporzionalmente anche l'avanzamento.

4RCU

• RPM : giri/mn • Avanzamento (AV) : mm/min

Materiale		Acciai Legati S50C / FC 250 / SCM				Acciai Legati/ Acciai per Utensili SKD61 / SK / NAK				Acciai Temprati SKD61				Acciai Temprati SKD11			
Durezza		~ 30HRc				30HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 62HRc			
Diametro Esterno	Raggio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
1mm	R0.2	45,000	7,000	0.05	0.05	42,000	7,800	0.03	0.05	35,000	6,800	0.02	0.05	25,000	2,600	0.02	0.05
1.5mm	R0.5	40,000	9,000	0.06	0.06	40,000	8,000	0.04	0.06	30,000	7,000	0.03	0.60	21,000	2,800	0.02	0.06
2mm	R0.5	33,000	10,000	0.08	0.80	27,000	8,400	0.05	0.08	24,000	7,500	0.04	0.80	16,000	3,000	0.03	0.80
3mm	R0.5	22,000	11,000	0.12	1.20	18,000	9,000	0.08	1.20	16,000	8,500	0.06	1.20	11,000	3,300	0.05	1.20
4mm	R0.5	19,000	1,300	0.17	1.70	16,000	10,000	0.13	1.70	13,000	10,000	0.09	1.70	900	4,000	0.08	1.70
"	R1.0	17,000	12,000	0.15	1.50	14,000	9,500	0.12	1.50	12,000	8,800	0.08	1.50	8,000	3,500	0.07	1.50
5mm	R0.5	15,000	14,000	0.23	2.30	12,000	12,000	0.17	2.30	11,000	10,000	0.12	2.30	7,300	4,300	0.09	2.30
"	R1.0	13,000	13,000	0.20	2.00	11,000	11,000	0.15	2.00	9,600	9,500	0.10	2.00	6,400	3,800	0.08	2.00
6mm	R0.3	13,310	15,730	0.30	2.95	10,900	13,200	0.18	2.95	10,000	13,000	0.12	2.95	6,500	4,600	0.12	2.95
"	R0.5	12,980	15,340	0.29	2.85	10,600	13,000	0.17	2.85	9,500	12,000	0.11	2.85	6,300	4,500	0.11	2.85
"	R1.0	12,600	12,600	0.28	2.80	12,654	12,600	0.17	2.80	9,000	11,000	0.11	2.80	5,800	4,100	0.11	2.80
"	R1.5	11,000	13,000	0.25	2.50	9,000	11,000	0.15	2.50	8,000	9,600	0.10	2.50	5,300	3,800	0.10	2.50
8mm	R0.3	9,800	17,500	0.35	3.54	8,400	13,500	0.24	3.54	7,300	15,000	0.18	3.54	4,700	4,484	0.15	3.54
"	R0.5	8,800	16,500	0.34	3.42	8,200	13,000	0.23	3.42	7,100	13,000	0.17	3.42	4,600	4,370	0.15	3.42
"	R1.0	8,400	15,000	0.34	3.36	8,000	12,000	0.22	3.36	6,700	11,000	0.17	3.36	4,520	4,294	0.15	3.36
"	R2.0	8,200	13,000	0.30	3.00	7,000	11,000	0.20	3.00	6,000	9,600	0.15	3.00	4,000	3,800	0.13	3.00
10mm	R0.3	7,670	15,340	0.35	5.31	6,490	12,980	0.24	5.31	5,664	11,210	0.18	5.31	3,776	4,484	0.15	5.31
"	R0.5	7,475	14,950	0.34	5.13	6,325	12,650	0.23	5.13	5,520	10,925	0.17	5.13	3,680	4,370	0.15	5.13
"	R1.0	7,280	14,560	0.34	5.04	6,160	12,320	0.22	5.04	5,376	10,640	0.17	5.04	3,584	4,256	0.15	5.04
"	R2.0	6,500	13,000	0.30	4.50	5,500	11,000	0.20	4.50	4,800	9,500	0.15	4.50	3,200	3,800	0.13	4.50
12mm	R0.5	7,000	1,500	0.53	5.31	5,428	11,800	0.35	5.31	4,838	10,620	0.30	5.31	3,186	4,130	0.24	5.31
"	R1.0	6,400	14,000	0.51	5.13	5,290	11,500	0.34	5.13	4,715	10,350	0.29	5.13	3,105	4,025	0.23	5.13
"	R2.0	6,000	12,500	0.50	5.04	5,152	11,200	0.34	5.04	4,592	10,080	0.28	5.04	3,024	3,920	0.22	5.04
"	R3.0	5,500	12,000	0.45	4.50	4,600	10,000	0.30	4.50	4,100	9,000	0.25	4.50	2,700	3,500	0.20	4.50
16mm	R1.0	4,838	11,800	0.42	7.32	4,012	10,384	0.25	7.10	3,540	9,204	0.22	7.15	2,360	3,776	0.13	7.35
"	R2.0	4,100	10,000	0.45	7.50	3,400	8,800	0.30	7.50	3,000	7,800	0.25	7.50	2,000	3,200	0.20	7.50
Prof. di Taglio																	

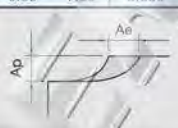
- La tabella sopra indicata si riferisce a condizioni di lavoro impiegando frese toriche.
- I parametri si riferiscono a lavorazioni con frese di lunghezza utile fino a 5D, per lunghezze superiori ridurre proporzionalmente numero di giri, avanzamento e profondità di taglio.
- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- Si raccomanda l'utilizzo di getto d'aria o olio nebulizzato per un ottima evacuazione del truciolo.
- Per lavorazioni di copiatura/profilatura i parametri indicati posso variare sensibilmente in base al pezzo da lavorare, al percorso utensile e alla profondità di taglio. Ridurre considerevolmente l'avanzamento in percorsi utensile non lineari.
- Per l'ingresso in rampa ridurre l'avanzamento del 50% e impostare un angolo di 2°.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

■ COEFFICENTI DI RIDUZIONE PER LE RELATIVE LUNGHEZZE UTILI

Geometria	Sporgenza	N. giri	Avanzamento	Prof. di Taglio
Cilindrica	L/D ≤ 5	100%	100%	100%
	L/D = 6	90%	80%	80%
	L/D = 7	80%	70%	70%
Conica	L/D = 6	100%	100%	100%
	L/D = 8	90%	80%	80%
	L/D ≥10	80%	70%	70%

6RCU

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Acciai Legati S50C / FC 250 / SCM				Acciai Legati/ Acciai per Utensili SKD61 / SK / NAK				Acciai Temprati SKD61				Acciai Temprati SKD11			
Durezza		~ 30HRc				30HRc ~ 45HRc				45HRc ~ 55HRc				55HRc ~ 62HRc			
Diametro Esterno	Raggio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
1mm	R0.2	45,000	7,700	0.05	0.05	42,000	8,580	0.03	0.05	35,000	7,480	0.02	0.05	25,000	2,860	0.02	0.05
1.5mm	R0.5	40,000	9,900	0.06	0.06	40,000	8,800	0.04	0.06	30,000	7,700	0.03	0.60	21,000	3,080	0.02	0.06
2mm	R0.5	33,000	11,000	0.08	0.80	27,000	9,240	0.05	0.08	24,000	8,250	0.04	0.80	16,000	3,300	0.03	0.80
3mm	R0.5	22,000	12,100	0.12	1.20	18,000	9,900	0.08	1.20	16,000	9,350	0.06	1.20	11,000	3,630	0.05	1.20
4mm	R0.5	19,000	1,430	0.17	1.70	16,000	11,000	0.13	1.70	13,000	11,000	0.09	1.70	900	4,400	0.08	1.70
"	R1.0	17,000	13,200	0.15	1.50	14,000	10,450	0.12	1.50	12,000	9,680	0.08	1.50	8,000	3,850	0.07	1.50
5mm	R0.5	15,000	15,400	0.23	2.30	12,000	13,200	0.17	2.30	11,000	11,000	0.12	2.30	7,300	4,730	0.09	2.30
"	R1.0	13,000	14,300	0.20	2.00	11,000	12,100	0.15	2.00	9,600	10,450	0.10	2.00	6,400	4,180	0.08	2.00
6mm	R0.3	13,310	17,303	0.30	2.95	10,900	14,520	0.18	2.95	10,000	14,300	0.12	2.95	6,500	5,060	0.12	2.95
"	R0.5	12,980	16,874	0.29	2.85	10,600	14,300	0.17	2.85	9,500	13,200	0.11	2.85	6,300	4,950	0.11	2.85
"	R1.0	12,600	13,860	0.28	2.80	12,654	13,860	0.17	2.80	9,000	12,100	0.11	2.80	5,800	4,510	0.11	2.80
"	R1.5	11,000	14,300	0.25	2.50	9,000	12,100	0.15	2.50	8,000	10,560	0.10	2.50	5,300	4,180	0.10	2.50
8mm	R0.3	9,800	19,250	0.35	3.54	8,400	14,850	0.24	3.54	7,300	16,500	0.18	3.54	4,700	4,932	0.15	3.54
"	R0.5	8,800	18,150	0.34	3.42	8,200	14,300	0.23	3.42	7,100	14,300	0.17	3.42	4,600	4,807	0.15	3.42
"	R1.0	8,400	16,500	0.34	3.36	8,000	13,200	0.22	3.36	6,700	12,100	0.17	3.36	4,520	4,723	0.15	3.36
"	R2.0	8,200	14,300	0.30	3.00	7,000	12,100	0.20	3.00	6,000	10,560	0.15	3.00	4,000	4,180	0.13	3.00
10mm	R0.3	7,670	16,874	0.35	5.31	6,490	14,278	0.24	5.31	5,664	12,331	0.18	5.31	3,776	4,932	0.15	5.31
"	R0.5	7,475	16,445	0.34	5.13	6,325	13,915	0.23	5.13	5,520	12,018	0.17	5.13	3,680	4,807	0.15	5.13
"	R1.0	7,280	16,016	0.34	5.04	6,160	13,552	0.22	5.04	5,376	11,704	0.17	5.04	3,584	4,682	0.15	5.04
"	R2.0	6,500	14,300	0.30	4.50	5,500	12,100	0.20	4.50	4,800	10,450	0.15	4.50	3,200	4,180	0.13	4.50
12mm	R0.5	7,000	1,650	0.53	5.31	5,428	12,980	0.35	5.31	4,838	11,682	0.30	5.31	3,186	4,543	0.24	5.31
"	R1.0	6,400	15,400	0.51	5.13	5,290	12,650	0.34	5.13	4,715	11,385	0.29	5.13	3,105	4,428	0.23	5.13
"	R2.0	6,000	13,750	0.50	5.04	5,152	12,320	0.34	5.04	4,592	11,088	0.28	5.04	3,024	4,312	0.22	5.04
"	R3.0	5,500	13,200	0.45	4.50	4,600	11,000	0.30	4.50	4,100	9,900	0.25	4.50	2,700	3,850	0.20	4.50
16mm	R1.0	4,838	12,980	0.42	7.32	4,012	11,422	0.25	7.10	3,540	10,124	0.22	7.15	2,360	4,154	0.13	7.35
"	R2.0	4,100	11,000	0.45	7.50	3,400	9,680	0.30	7.50	3,000	8,580	0.25	7.50	2,000	3,520	0.20	7.50
Prof. di Taglio																	

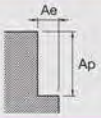
- La tabella sopra indicata si riferisce a condizioni di lavoro impiegando frese toriche.
- I parametri si riferiscono a lavorazioni con frese di lunghezza utile fino a 5D, per lunghezze superiori ridurre proporzionalmente numero di giri, avanzamento e profondità di taglio.
- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- Si raccomanda l'utilizzo di getto d'aria o olio nebulizzato per un ottima evacuazione del truciolo.
- Per lavorazioni di copiatura/profilatura i parametri indicati posso variare sensibilmente in base al pezzo da lavorare, al percorso utensile e alla profondità di taglio. Ridurre considerevolmente l'avanzamento in percorsi utensile non lineari.
- Per l'ingresso in rampa ridurre l'avanzamento del 50% e impostare un angolo di 2°.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

■ COEFFICENTI DI RIDUZIONE PER LE RELATIVE LUNGHEZZE UTILI

Geometria	Sporgenza	N. giri	Avanzamento	Prof. di Taglio
Cilindrica	L/D ≤ 5	100%	100%	100%
	L/D = 6	90%	80%	80%
	L/D = 7	80%	70%	70%
Conica	L/D = 6	100%	100%	100%
	L/D = 8	90%	80%	80%
	L/D ≥10	80%	70%	70%

• RPM : giri/min • Avanzamento (AV) : mm/min

Taglio Laterale

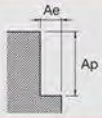
Materiale	Acciai Dolci/ Acciai al Carbonio SS400 / S55C		Acciai Legati/ Acciai per Utensili SCM / SKT / SKD		Acciai per Utensili/ Acciai Bonificati SKD / SKT / NAK55 / HPM1		Acciai per Utensili/ Stainless Steels SUS304 / SKD	
Durezza	~750N/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
4mm	5,000	510	4,200	260	3,600	180	2,800	130
5mm	5,000	510	4,200	270	3,200	200	2,400	150
6mm	4,200	510	3,600	290	2,800	220	2,100	170
8mm	3,200	510	2,700	330	2,100	250	1,600	190
10mm	2,600	510	2,200	345	1,600	260	1,300	210
12mm	2,100	510	1,800	360	1,400	270	1,100	215
16mm	1,600	510	1,400	385	1,000	290	800	220
20mm	1,300	480	1,100	375	800	280	640	210
Prof. di Taglio	Ap 1.5D / Ae 0.4D				Ap 1.5D / Ae 0.3D			

Fresatura dal Pieno

Materiale	Acciai Dolci/ Acciai al Carbonio SS400 / S55C		Acciai Legati/ Acciai per Utensili SCM / SKT / SKD		Acciai per Utensili/ Acciai Bonificati SKD / SKT / NAK55 / HPM1		Acciai per Utensili/ Stainless Steels SUS304 / SKD	
Durezza	~750N/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
4mm	4,000	430	3,800	200	2,800	140	2,400	110
5mm	4,000	430	3,400	220	2,500	160	2,200	130
6mm	3,600	430	3,000	240	2,300	185	1,900	150
8mm	2,700	430	2,200	270	1,800	210	1,400	180
10mm	2,200	430	1,800	290	1,400	220	1,200	185
12mm	1,800	430	1,500	300	1,200	230	960	190
16mm	1,400	430	1,100	310	900	250	720	200
20mm	1,100	410	900	310	700	240	560	185
Prof. di Taglio	Ap : 0.75D ApMax=12mm				Ap : 0.5D			

• RPM : giri/min • Avanzamento (AV) : mm/min

Taglio Laterale

Materiale	Acciai Dolci/ Acciai al Carbonio SS400 / S55C		Acciai Legati/ Acciai per Utensili SCM / SKT / SKD		Acciai per Utensili/ Acciai Bonificati SKD / SKT / NAK55 / HPM1		Acciai per Utensili/ Stainless Steels SUS304 / SKD	
Durezza	~750N/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
4mm	5,800	600	4,800	300	4,100	200	3,200	150
5mm	5,800	600	4,800	310	3,700	230	2,800	170
6mm	4,800	600	4,200	330	3,200	250	2,400	200
8mm	3,700	600	3,100	380	2,400	290	1,800	220
10mm	3,000	600	2,500	400	1,800	300	1,500	250
12mm	2,400	600	2,100	410	1,600	310	1,300	250
16mm	1,850	600	1,600	440	1,200	330	1,000	250
20mm	1,500	550	1,300	430	900	320	750	240
Prof. di Taglio	Ap 1.5D / Ae 0.4D				Ap 1.5D / Ae 0.3D			

Fresatura dal Pieno

Materiale	Acciai Dolci/ Acciai al Carbonio SS400 / S55C		Acciai Legati/ Acciai per Utensili SCM / SKT / SKD		Acciai per Utensili/ Acciai Bonificati SKD / SKT / NAK55 / HPM1		Acciai per Utensili/ Stainless Steels SUS304 / SKD	
Durezza	~750N/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
4mm	4,600	500	4,400	230	3,200	160	2,800	130
5mm	4,600	500	4,000	250	2,900	180	2,500	150
6mm	4,100	500	3,500	280	2,700	210	2,200	170
8mm	3,100	500	2,500	310	2,100	240	1,700	210
10mm	2,500	500	2,100	330	1,600	250	1,300	210
12mm	2,100	500	1,700	350	1,400	270	1,100	220
16mm	1,600	500	1,300	360	1,000	290	800	230
20mm	1,300	480	1,000	360	800	270	650	210
Prof. di Taglio	Ap : 0.75D ApMax=12mm				Ap : 0.5D			

2HRBG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Rame				Acciai Bonificati / Acciai Temprati NAK / SKD				Acciai Temprati SKD / SKT			
Durezza						30 ~ 45HRc				45 ~ 55HRc			
Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R0.05	—	54,000	85	0.004	0.004	48,000	75	0.004	0.004	48,000	55	0.002	0.002
R0.1	0.5	54,000	430	0.010	0.010	48,000	350	0.006	0.007	48,000	280	0.006	0.007
	1	54,000	380	0.008	0.008	48,000	330	0.005	0.005	48,000	250	0.005	0.005
	1.5	47,000	320	0.006	0.006	47,000	250	0.004	0.004	47,000	200	0.004	0.004
	2	42,000	290	0.004	0.004	42,000	200	0.003	0.003	42,000	200	0.003	0.003
R0.15	1.5	54,000	640	0.014	0.015	48,000	480	0.010	0.010	41,000	370	0.009	0.010
	2	49,000	530	0.011	0.011	43,000	370	0.008	0.008	37,000	270	0.008	0.008
	3	43,000	460	0.009	0.010	38,000	320	0.007	0.006	32,000	240	0.006	0.006
	4	37,000	300	0.004	0.006	28,000	200	0.003	0.004	24,000	160	0.003	0.004
	5	31,000	200	0.002	0.004	26,000	125	0.001	0.003	18,000	110	0.002	0.003
R0.2	1	54,000	870	0.023	0.036	48,000	660	0.018	0.024	37,000	450	0.015	0.024
	2	54,000	790	0.022	0.036	48,000	590	0.018	0.024	37,000	400	0.015	0.020
	3	50,000	660	0.017	0.018	41,000	420	0.012	0.012	31,000	280	0.011	0.012
	4	50,000	640	0.012	0.018	38,000	400	0.009	0.012	30,000	270	0.009	0.012
	5	37,000	410	0.009	0.018	29,000	330	0.008	0.012	26,000	260	0.007	0.012
	6	37,000	360	0.006	0.010	29,000	260	0.005	0.006	26,000	200	0.004	0.006
	8	27,000	200	0.003	0.006	27,000	170	0.003	0.003	23,000	150	0.002	0.003
	10	20,000	110	0.002	0.004	25,000	110	0.002	0.002	20,000	110	0.001	0.002
R0.25	1	57,000	1,380	0.029	0.054	42,000	830	0.023	0.036	32,000	550	0.018	0.036
	2	57,000	1,250	0.028	0.054	42,000	750	0.022	0.036	32,000	500	0.018	0.036
	3	55,000	1,010	0.021	0.036	38,000	580	0.017	0.024	31,000	400	0.014	0.024
	4	55,000	1,010	0.021	0.036	38,000	580	0.017	0.024	31,000	400	0.014	0.024
	5	48,000	800	0.016	0.018	33,000	480	0.012	0.012	30,000	390	0.009	0.012
	6	36,000	610	0.009	0.018	28,000	400	0.008	0.012	27,000	330	0.005	0.012
	8	36,000	590	0.009	0.018	28,000	400	0.008	0.012	27,000	330	0.005	0.012
	10	36,000	460	0.009	0.018	28,000	400	0.008	0.012	27,000	330	0.005	0.012
	12	24,000	280	0.004	0.010	26,000	280	0.004	0.006	24,000	280	0.002	0.006
	14	16,000	170	0.001	0.006	24,000	200	0.002	0.003	21,000	240	0.001	0.003
R0.3	1	57,000	1,670	0.035	0.144	37,000	840	0.027	0.096	27,000	540	0.023	0.096
	2	57,000	1,540	0.034	0.144	37,000	770	0.027	0.096	27,000	500	0.021	0.096
	3	57,000	1,540	0.034	0.144	37,000	770	0.027	0.096	27,000	500	0.021	0.096
	4	54,000	1,130	0.026	0.108	35,000	600	0.020	0.072	26,000	380	0.016	0.072
	5	46,000	960	0.019	0.072	28,000	460	0.016	0.048	26,000	370	0.012	0.048
	6	46,000	960	0.019	0.072	28,000	460	0.016	0.048	26,000	370	0.012	0.048
	8	30,000	570	0.010	0.054	24,000	400	0.009	0.036	23,000	320	0.006	0.036
	10	30,000	490	0.007	0.036	24,000	330	0.006	0.024	23,000	290	0.004	0.024
	12	30,000	490	0.007	0.036	24,000	330	0.006	0.024	23,000	290	0.004	0.024
	14	20,000	300	0.004	0.027	22,000	300	0.004	0.018	20,000	250	0.002	0.018
	16	13,000	180	0.002	0.020	21,000	260	0.002	0.014	18,000	220	0.001	0.014
R0.35	2	56,000	1,800	0.050	0.162	35,000	740	0.039	0.108	27,000	500	0.031	0.108
	4	54,500	1,500	0.045	0.063	33,000	600	0.035	0.042	26,500	410	0.029	0.096
	8	32,000	800	0.019	0.072	12,215	420	0.020	0.048	22,500	355	0.012	0.048
	10	26,500	540	0.017	0.063	22,500	380	0.014	0.042	21,500	330	0.011	0.042
	12	23,000	420	0.017	0.063	21,500	380	0.012	0.032	21,500	320	0.010	0.042
R0.4	2	55,000	2,060	0.063	0.180	33,000	710	0.050	0.120	27,000	500	0.041	0.120
	4	55,000	1,860	0.063	0.018	31,000	600	0.050	0.012	27,000	440	0.041	0.120
	6	47,000	1,410	0.038	0.108	28,000	570	0.030	0.072	22,000	390	0.024	0.072
	8	34,000	1,040	0.027	0.090	21,000	430	0.021	0.060	22,000	390	0.018	0.060
	10	23,000	600	0.027	0.090	21,000	430	0.021	0.060	20,000	370	0.017	0.060
	12	16,000	350	0.027	0.090	19,000	430	0.018	0.040	20,000	350	0.016	0.060
	14	11,000	200	0.027	0.090	19,000	430	0.015	0.027	20,000	330	0.015	0.060
	16	7,600	115	0.027	0.090	16,000	430	0.013	0.018	20,000	310	0.014	0.060
R0.45	4	50,500	1,900	0.067	0.190	32,000	685	0.054	0.130	24,500	460	0.043	0.180
R0.5	2	46,000	2,000	0.072	0.360	32,000	770	0.057	0.240	22,000	480	0.045	0.240
	3	46,000	2,000	0.072	0.360	32,000	770	0.057	0.240	22,000	480	0.045	0.240
	4	46,000	2,000	0.071	0.360	32,000	770	0.057	0.240	22,000	480	0.045	0.240
	5	46,000	2,000	0.071	0.360	32,000	770	0.057	0.240	22,000	480	0.045	0.240
	6	39,000	1,500	0.071	0.180	26,000	760	0.055	0.120	17,600	480	0.009	0.120
	8	39,000	1,500	0.043	0.180	26,000	760	0.034	0.120	17,600	480	0.027	0.120
	10	29,000	1,110	0.028	0.090	17,600	530	0.024	0.060	16,500	420	0.018	0.060
	12	18,700	660	0.027	0.090	17,600	530	0.024	0.060	16,500	420	0.018	0.060
	14	18,700	640	0.022	0.090	15,400	440	0.018	0.060	14,300	360	0.014	0.060
	16	18,700	640	0.022	0.090	15,400	440	0.018	0.060	14,300	360	0.014	0.060
	18	18,700	540	0.017	0.090	14,300	440	0.013	0.060	13,200	360	0.009	0.060

2HRBG

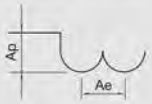
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Rame				Acciai Bonificati / Acciai Temprati NAK / SKD				Acciai Temprati SKD / SKT			
Durezza						30 ~ 45HRc				45 ~ 55HRc			
Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R0.5	20	18,700	540	0.017	0.054	14,300	360	0.013	0.036	13,200	300	0.009	0.036
	22	18,700	540	0.017	0.054	14,300	360	0.013	0.036	13,200	300	0.009	0.036
	25	18,700	540	0.016	0.052	14,300	360	0.013	0.030	13,200	300	0.009	0.030
R0.6	4	38,000	2,000	0.085	0.360	26,000	770	0.068	0.024	18,200	480	0.054	0.240
	6	38,000	2,000	0.085	0.360	26,000	770	0.068	0.240	18,200	480	0.054	0.240
	8	32,000	1,490	0.084	0.360	21,000	700	0.067	0.240	15,100	440	0.054	0.240
	10	24,000	1,080	0.036	0.180	16,400	530	0.027	0.120	15,100	420	0.022	0.120
	12	24,000	1,080	0.036	0.018	15,300	530	0.027	0.120	14,100	420	0.022	0.120
	16	15,400	580	0.024	0.144	13,100	460	0.019	0.096	11,900	380	0.016	0.096
	20	15,400	580	0.017	0.090	12,100	380	0.013	0.060	11,000	320	0.009	0.060
	24	15,400	580	0.010	0.060	11,100	320	0.009	0.040	9,800	290	0.070	0.040
R0.7	6	28,000	1,470	0.099	0.270	17,600	680	0.076	0.180	13,600	440	0.063	0.180
	8	28,000	1,470	0.099	0.270	17,600	680	0.079	0.180	13,600	440	0.063	0.180
	12	19,800	1,080	0.042	0.270	13,800	530	0.033	0.180	13,600	420	0.027	0.180
	16	13,200	620	0.033	0.180	13,100	480	0.027	0.120	11,900	390	0.021	0.120
R0.75	3	30,000	2,200	0.171	0.324	21,000	1060	0.137	0.216	14,800	660	0.110	0.216
	4	30,000	2,200	0.171	0.324	21,000	1060	0.137	0.216	14,800	660	0.110	0.216
	6	30,000	1,980	0.147	0.324	21,000	940	0.117	0.216	14,800	580	0.090	0.216
	8	26,000	1,500	0.106	0.270	16,300	700	0.084	0.180	12,100	450	0.069	0.180
	10	26,000	1,500	0.106	0.270	16,300	700	0.084	0.180	12,100	450	0.069	0.180
	12	26,000	1,500	0.106	0.270	16,300	700	0.084	0.180	12,100	450	0.069	0.180
	14	18,700	1,100	0.045	0.180	12,600	530	0.036	0.120	12,100	440	0.027	0.120
	16	12,100	620	0.036	0.180	12,400	480	0.027	0.120	11,600	390	0.022	0.120
	18	12,100	620	0.036	0.180	12,400	480	0.027	0.120	11,600	390	0.022	0.120
	20	12,100	620	0.019	0.090	12,400	480	0.016	0.060	11,600	390	0.012	0.060
	22	12,100	620	0.019	0.090	12,400	480	0.016	0.060	11,000	390	0.012	0.060
	25	11,000	500	0.019	0.090	12,400	440	0.016	0.060	11,000	390	0.012	0.060
	30	10,700	450	0.019	0.090	10,900	400	0.016	0.060	11,000	390	0.012	0.060
	35	10,700	410	0.019	0.090	9,000	380	0.016	0.060	11,000	390	0.012	0.060
R0.8	6	27,040	2,600	0.220	0.580	18,900	1,200	0.180	0.390	1,650	760	0.150	0.390
	8	26,000	1,970	0.157	0.324	18,900	940	0.126	0.216	13,800	580	0.102	0.216
	12	25,000	1,490	0.112	0.180	15,100	700	0.090	0.120	11,500	440	0.072	0.120
	16	17,600	110	0.046	0.144	12,300	530	0.036	0.096	11,400	440	0.030	0.096
	20	11,000	630	0.036	0.090	11,500	480	0.030	0.060	10,900	400	0.024	0.060
R0.9	6	32,000	2,600	0.230	0.021	18,400	1,200	0.185	0.320	18,400	738	0.150	0.320
	8	26,000	1,950	0.165	0.270	16,300	930	0.132	0.240	13,800	570	0.108	0.240
	12	21,000	1,480	0.120	0.270	13,800	700	0.094	0.180	10,300	440	0.077	0.180
	16	15,400	1,080	0.048	0.180	10,800	530	0.039	0.120	9,900	420	0.031	0.120
	20	10,500	630	0.039	0.090	10,200	480	0.031	0.060	9,700	400	0.025	0.060
R1	4	22,000	2,140	0.232	0.540	18,500	12,600	0.185	0.360	13,200	960	0.150	0.360
	6	22,000	2,140	0.232	0.540	18,500	12,600	0.185	0.360	13,200	960	0.150	0.360
	8	22,000	1,920	0.185	0.360	18,500	1,120	0.147	0.240	13,200	870	0.120	0.240
	10	22,000	1,920	0.185	0.360	18,500	1,120	0.147	0.240	13,200	870	0.120	0.240
	12	18,700	1,470	0.166	0.360	16,000	990	0.133	0.240	11,700	780	0.107	0.240
	14	18,700	1,470	0.166	0.360	16,000	990	0.133	0.240	11,700	780	0.107	0.240
	16	18,700	1,470	0.148	0.360	16,000	990	0.118	0.240	11,700	780	0.090	0.240
	18	14,300	1,070	0.093	0.180	14,700	580	0.074	0.120	11,600	580	0.061	0.120
	20	14,300	1,070	0.093	0.180	14,700	580	0.074	0.120	11,600	580	0.061	0.120
	22	9,500	630	0.074	0.180	10,600	450	0.058	0.120	10,200	450	0.045	0.120
	25	9,500	630	0.074	0.180	10,600	450	0.058	0.120	10,200	450	0.045	0.120
	30	9,500	530	0.033	0.090	10,600	450	0.026	0.060	10,200	380	0.021	0.060
	35	9,500	530	0.026	0.090	10,600	380	0.019	0.060	10,200	380	0.017	0.060
	40	9,500	530	0.026	0.090	10,600	380	0.019	0.060	10,200	380	0.017	0.060
	45	9,500	445	0.011	0.045	10,000	380	0.009	0.030	10,200	320	0.008	0.030
R1.25	8	18,400	2,400	0.232	0.360	14,500	1,400	0.185	0.240	9,700	1,080	0.150	0.240
	10	18,400	2,400	0.232	0.360	14,500	1,400	0.185	0.240	9,700	1,080	0.150	0.240
	16	16,100	1,810	0.208	0.360	13,500	1,230	0.166	0.240	8,400	980	0.135	0.240
	20	11,500	1,330	0.116	0.180	10,200	950	0.093	0.120	8,400	980	0.074	0.120
	25	6,900	770	0.093	0.180	8,400	540	0.074	0.120	8,400	560	0.061	0.120
	30	6,900	770	0.040	0.090	8,400	540	0.033	0.060	8,400	560	0.026	0.060
	35	6,900	770	0.018	0.050	8,400	540	0.015	0.030	8,400	560	0.011	0.030
R1.5	6	15,000	2,890	0.278	0.540	12,900	1,680	0.222	0.360	9,200	1,300	0.180	0.360
	8	15,000	2,890	0.278	0.540	12,900	1,680	0.222	0.360	9,200	1,300	0.180	0.360
	10	15,000	2,600	0.278	0.540	12,900	1,680	0.222	0.360	9,200	1,300	0.180	0.360

2HRBG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Rame				Acciai Bonificati / Acciai Temprati NAK / SKD				Acciai Temprati SKD / SKT			
Durezza						30 ~ 45HRc				45 ~ 55HRc			
Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R1.5	12	15,000	2,600	0.278	0.540	12,900	1,510	0.222	0.360	9,200	1,170	0.180	0.360
	16	12,700	1,970	0.029	0.504	11,300	1,330	0.166	0.360	8,100	1,040	0.135	0.360
	20	12,700	1,970	0.029	0.504	11,300	1,330	0.166	0.360	8,100	1,040	0.135	0.360
	25	10,100	1,450	0.139	0.270	8,800	1,040	0.111	0.180	8,100	1,040	0.090	0.180
	30	10,100	1,450	0.139	0.270	8,800	780	0.111	0.180	8,100	780	0.090	0.180
	35	6,600	840	0.073	0.270	7,900	620	0.055	0.180	7,500	650	0.045	0.180
	40	6,600	840	0.073	0.270	7,900	620	0.055	0.180	7,500	520	0.045	0.180
	45	4,500	500	0.040	0.270	6,200	500	0.035	0.100	7,000	450	0.023	0.180
	50	4,300	490	0.040	0.270	6,200	500	0.030	0.090	7,000	350	0.023	0.180
	60	3,700	420	0.034	0.360	5,900	450	0.030	0.080	6,000	300	0.020	0.150
R2	8	11,500	2,710	0.370	0.900	9,700	1,560	0.297	0.600	6,800	1,210	0.241	0.600
	10	11,500	2,710	0.370	0.900	9,700	1,560	0.297	0.600	6,800	1,210	0.241	0.600
	12	11,500	2,710	0.390	0.900	9,700	1,560	0.297	0.600	6,800	1,210	0.241	0.600
	16	11,500	2,710	0.390	0.900	9,700	1,560	0.297	0.600	6,800	1,210	0.241	0.600
	20	11,500	2,710	0.390	0.900	9,700	1,560	0.297	0.600	6,800	1,210	0.241	0.600
	25	10,300	1,850	0.279	0.540	8,400	1,250	0.223	0.360	6,000	980	0.180	0.360
	30	10,300	1,850	0.279	0.540	8,400	1,250	0.223	0.360	6,000	980	0.180	0.361
	35	7,500	1,360	0.185	0.540	6,600	950	0.148	0.360	6,000	700	0.120	0.360
	40	7,500	1,360	0.185	0.540	6,600	950	0.148	0.360	6,000	700	0.120	0.360
	45	5,000	780	0.093	0.360	5,900	470	0.074	0.240	5,600	490	0.060	0.240
	50	5,000	780	0.093	0.360	5,900	470	0.074	0.240	5,600	490	0.060	0.240
	55	4,500	640	0.090	0.330	5,200	375	0.068	0.225	5,400	370	0.050	0.251
	60	4,000	500	0.078	0.300	5,000	280	0.062	0.210	5,200	250	0.040	0.180
R2.5	15	9,600	2,590	0.406	0.900	7,800	1,350	0.324	0.800	5,600	1,050	0.252	0.800
	20	9,600	2,100	0.406	0.900	7,800	1,240	0.324	0.600	5,600	950	0.252	0.600
	25	9,600	2,100	0.406	0.900	7,800	1,240	0.324	0.600	5,600	950	0.252	0.600
	30	8,200	1,320	0.305	0.900	7,800	760	0.243	0.600	4,800	600	0.197	0.600
	40	7,000	830	0.230	0.900	7,800	470	0.200	0.600	4,300	380	0.154	0.600
	45	5,000	520	0.173	0.900	6,800	290	0.165	0.600	3,900	240	0.120	0.600
	50	4,500	330	0.131	0.900	6,800	180	0.135	0.600	3,500	150	0.094	0.600
	60	4,000	300	0.099	0.800	6,800	110	0.112	0.600	3,300	100	0.074	0.600
R3	15	8,000	2,530	0.555	1.800	7,400	1,670	0.443	1.200	5,200	1,300	0.360	1.200
	30	8,000	1,810	0.418	1.080	7,400	1,500	0.334	0.720	4,600	1,170	0.270	0.720
R4	25	9,000	2,400	0.600	1.500	7,200	1,200	0.500	1.000	5,200	920	0.350	1.000
	30	7,700	1,500	0.450	1.200	7,200	740	0.380	0.800	4,500	580	0.300	0.800
R5	30	7,800	1,300	0.300	0.900	6,800	720	0.230	0.600	4,600	570	0.190	0.570
	35	7,125	1,292	0.176	0.513	6,800	902.5	0.140	0.340	5,700	665	0.110	0.340
R6	30	7,410	1,235	0.285	0.855	6,350	684	0.210	0.570	4,370	541.5	0.181	0.550
	40	6,800	1,100	0.260	0.780	6,350	630	0.200	0.520	4,020	500	0.160	0.500
Prof. di Taglio		• Ap : Prof. Taglio • Ae : Passo radiale • D : Diametro Esterno • n : Velocità • Vf : Avanzamento											



- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.
- Si raccomanda l'utilizzo di getto d'aria o olio nebulizzato per un ottima evacuazione del truciolo.
- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Per lavorazioni su rame si raccomanda emulsione o olio appositi.
- Fino al D. 1 tolleranze sotto i 5micron.

2HREG

• RPM : gr/min • Avanzamento (AV) : mm/min

Materiale		Acciai al Carbonio / Ghisa / Acciai Legati S50C / FC250 / SCM / NAK		
Durezza		35 ~ 45HRc		
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap
0.1	–	40,000	500	0.001
0.2	0.5	40,000	600	0.004
	1	40,000	400	0.001
	1.5	40,000	200	0.002
	2	40,000	200	0.005
0.3	1	40,000	650	0.007
	1.5	40,000	600	0.005
	2	40,000	550	0.004
	3	40,000	500	0.002
	4	30,000	200	0.001
	5	22,000	150	0.001
0.4	1	40,000	800	0.007
	2	40,000	800	0.007
	3	40,000	800	0.005
	4	40,000	800	0.003
	5	35,000	500	0.002
	6	28,000	350	0.001
	8	20,000	200	0.001
	10	17,000	150	0.001
0.5	2	40,000	950	0.003
	3	40,000	900	0.003
	4	40,000	850	0.003
	5	40,000	800	0.003
	6	40,000	700	0.003
	8	30,000	500	0.002
	10	25,000	400	0.002
	12	20,000	300	0.001
	14	14,000	150	0.001
0.6	2	40,000	950	0.010
	3	40,000	950	0.010
	4	40,000	950	0.010
	5	40,000	950	0.010
	6	40,000	800	0.005
	8	35,000	500	0.004
	10	25,000	450	0.003
	12	20,000	300	0.002
	14	15,000	200	0.001
	16	12,000	150	0.001
0.7	2	40,000	1,000	0.020
	4	40,000	950	0.015
	6	40,000	900	0.010
	8	30,000	700	0.005
	10	11,000	300	0.005
	12	9,000	200	0.002
0.8	2	40,000	1,200	0.020
	4	40,000	1,100	0.015
	6	40,000	1,100	0.010
	8	40,000	1,000	0.010
	10	30,000	500	0.010
	12	25,000	400	0.030
	14	20,000	300	0.020
0.9	6	40,000	1,300	0.020
	8	38,000	1,200	0.010
	10	35,000	1,000	0.010
1	2	40,000	1,600	0.040
	3	40,000	1,600	0.040
	4	40,000	1,600	0.040
	5	40,000	1,600	0.040
	6	40,000	1,600	0.040
	8	40,000	1,600	0.030
	10	38,000	1,300	0.025
	12	30,000	1,000	0.020

Materiale		Acciai al Carbonio / Ghisa / Acciai Legati S50C / FC250 / SCM / NAK		
Durezza		35 ~ 45HRc		
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap
1	14	28,000	700	0.015
	16	23,000	600	0.010
	18	19,000	500	0.006
	20	15,000	400	0.005
	25	10,000	200	0.002
	30	8,000	150	0.001
1.2	4	40,000	1,900	0.060
	6	40,000	1,900	0.060
	8	40,000	1,900	0.040
	10	35,000	1,500	0.040
	12	25,000	1,000	0.030
	16	15,000	500	0.02
	20	6,500	150	0.01
	25	6,000	100	0.01
	30	5,500	50	0.01
1.4	6	40,000	1,900	0.060
	8	40,000	1,900	0.040
	10	35,000	1,500	0.040
	14	25,000	1,000	0.030
	16	15,000	500	0.02
	20	6,500	150	0.01
1.5	4	40,000	2,400	0.1
	6	40,000	2,400	0.1
	8	35,000	2,000	0.08
	10	30,000	1,800	0.05
	12	28,000	1,300	0.04
	14	23,000	1,000	0.03
	16	20,000	800	0.02
	18	16,000	700	0.02
	20	15,000	600	0.02
	25	10,000	350	0.008
	30	7,500	300	0.005
1.6	10	30,000	1,800	0.07
	14	25,000	1,500	0.05
	18	20,000	1,000	0.04
1.8	10	30,000	1,800	0.07
	14	25,000	1,500	0.05
	18	20,000	1,000	0.04
2	4	40,000	2,500	0.2
	6	40,000	2,400	0.18
	8	35,000	2,000	0.15
	10	30,000	1,800	0.1
	12	25,000	1,500	0.08
	14	23,000	1,300	0.07
	16	20,000	1,000	0.06
	18	15,000	900	0.05
	20	12,000	800	0.05
	22	10,000	700	0.05
	25	9,000	600	0.04
	30	8,000	500	0.04
	35	6,500	300	0.02
	40	6,000	250	0.01
	45	5,000	200	0.005
	50	4,200	150	0.003
2.5	8	25,000	2,500	0.2
	10	22,000	2,300	0.18
	12	20,000	2,000	0.15
	16	18,000	1,700	0.1
	20	12,000	1,000	0.08
	25	10,000	700	0.07
	30	9,000	600	0.06
	35	8,500	500	0.05

2HREG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Acciai al Carbonio / Ghisa / Acciai Legati S50C / FC250 / SCM / NAK		
Durezza		35 ~ 45HRc		
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap
2.5mm	40	8,000	400	0.03
	50	4,000	150	0.15
3mm	6	20,000	2,000	0.3
	8	20,000	2,000	0.3
	10	20,000	1,600	0.25
	12	20,000	1,500	0.18
	16	15,000	1,400	0.15
	20	10,000	800	0.1
	25	8,000	600	0.08
	30	7,000	450	0.06
	35	6,000	300	0.05
	40	5,000	250	0.02
	45	4,500	200	0.01
	50	3,700	150	0.01
	60	3,500	100	0.01
4mm	8	20,000	3,500	0.3
	10	20,000	3,200	0.3
	12	15,000	3,000	0.3
	16	13,000	2,500	0.25
	20	11,000	2,200	0.22
	25	8,000	1,500	0.15
	30	6,400	1,200	0.12
	35	5,000	700	0.08
	40	4,500	400	0.05
	45	3,500	300	0.03

Materiale		Acciai al Carbonio / Ghisa / Acciai Legati S50C / FC250 / SCM / NAK		
Durezza		35 ~ 45HRc		
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap
4mm	50	2,800	150	0.018
	55	2,500	100	0.015
	60	2,300	80	0.01
5mm	15	12,000	2,500	0.35
	20	10,000	1,200	0.3
	25	8,000	1,000	0.25
	30	6,000	900	0.2
	35	5,100	750	0.15
	40	4,000	450	0.05
	50	3,000	300	0.03
	60	2,200	150	0.02
6mm	20	10,000	2,000	0.4
	30	6,000	1,200	0.3
	40	4,200	800	0.2
	50	3,000	300	0.1
	60	1,900	150	0.1
8mm	20	3,200	910	0.18
	30	3,000	800	0.15
	40	2,600	600	0.12
10mm	25	2,900	890	0.20
	35	2,500	700	0.16
	45	2,200	580	0.14
12mm	30	2,500	710	0.22
	40	2,300	500	0.18
	50	1,900	420	0.16

4HEMG

• RPM : giri/min • Avanzamento (AV) : mm/min

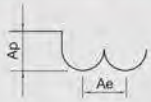
Materiale	Acciai Generici			SKD61		
Durezza	~ 45 HRc			45 ~ 55 HRc		
Diametro Esterno	RPM	AV	Ap	RPM	AV	Ap
1mm	40,000	3,000	0.06	32,000	2,400	0.06
1.5mm	40,000	4,500	0.12	32,000	3,600	0.08
2mm	30,000	4,500	0.18	24,000	3,600	0.10
2.5mm	24,000	3,900	0.25	19,000	3,000	0.13
2mm	20,000	3,500	0.30	16,000	2,700	0.15
4mm	15,000	3,000	0.40	12,000	2,400	0.20
5mm	12,000	2,400	0.50	9,000	1,800	0.25
6mm	10,000	2,100	0.60	7,000	1,500	0.30
8mm	8,000	1,500	0.80	5,600	1,100	0.40
10mm	6,400	1,400	1.00	4,500	950	0.50
12mm	5,400	1,200	1.00	3,800	860	0.50
16mm	2,400	550	3.00	1,200	120	0.80
20mm	1,900	480	4.00	1,000	100	1.00
Prof. di Taglio	≤ AP, ≤1D			D, ≤ AP		

- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- Nelle lavorazioni dal pieno ridurre il numero di giri del 40/60% e l'avanzamento del 50/70%.
- In foratura portare i valori di avanzamento ad 1/3 della tabella indicata.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

2HSBG / 2HCBG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Rame				Acciai Bonificati / Acciai Temprati NAK / SKD				Acciai Temprati SKD / SKT			
Durezza						30 ~ 45HRc				45 ~ 55HRc			
Raggio	Lunghezza Effettiva Tagl.	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae	RPM	AV	Ap	Ae
R0.05	0.2	40,000	300	Meno di 0.010	0.050	40,000	300	Meno di 0.005	0.040	30,000	200	Less than 0.004	0.040
R0.075	0.15	50,000	380	0.010	0.030	45,000	500	0.005	0.050	40,000	350	0.004	0.043
R0.1	0.2	54,000	430	0.012	0.008	54,000	630	0.020	0.060	44,300	500	0.016	0.048
	0.4	54,000	430	0.005	0.008	54,000	410	0.020	0.049	44,300	320	0.016	0.038
R0.1.5	0.3	54,000	720	0.020	0.013	54,000	750	0.030	0.090	44,300	600	0.024	0.072
	0.6	54,000	720	0.010	0.013	54,000	700	0.030	0.065	44,300	570	0.020	0.058
R0.2	0.4	54,000	870	0.028	0.016	54,000	1,000	0.040	0.120	44,300	800	0.032	0.096
	0.8	54,000	870	0.014	0.016	54,000	840	0.040	0.100	44,300	650	0.032	0.075
R0.25	0.5	56,000	1,250	0.035	0.022	53,000	1,250	0.050	0.150	43,500	1,000	0.040	0.120
R0.3	0.6	58,000	1,510	0.042	0.026	52,000	1,380	0.060	0.180	42,650	1,100	0.048	0.144
R0.35	0.7	55,000	1,690	0.049	0.031	50,000	1,440	0.070	0.210	41,075	1,150	0.056	0.168
R0.4	0.8	52,000	1,870	0.056	0.036	48,000	1,500	0.080	0.240	39,500	1,200	0.064	0.192
	2	52,000	1,870	0.300	0.036	45,000	1,075	0.080	0.150	35,000	810	0.064	0.100
R0.5	1	41,000	1,660	0.063	0.040	45,000	1,560	0.100	0.300	36,900	1,250	0.080	0.240
	2.5	41,000	1,660	0.022	0.040	40,000	1,000	0.100	0.200	31,500	800	0.080	0.160
R0.6	3	34,000	1,740	0.650	0.400	40,100	1,550	0.100	0.280	32,800	1,250	0.800	0.266
R0.75	1.5	27,000	1,830	0.087	0.068	35,000	1,600	0.150	0.450	28,700	1,280	0.120	0.360
	4	27,000	1,830	0.052	0.068	34,500	1,000	0.145	0.325	26,000	800	0.120	0.260
R1	2	20,000	1,780	0.112	0.089	30,000	1,850	0.200	0.600	24,600	1,480	0.160	0.480
	5	20,000	1,780	0.070	0.091	27,000	1,450	0.200	0.485	22,800	1,100	0.160	0.388
R1.25	6	16,000	1,840	0.067	0.115	25,500	1,600	0.250	0.542	21,000	1,280	0.200	0.430
R1.5	3	13,000	2,220	0.197	0.171	25,500	2,520	0.300	0.957	21,000	2,050	0.240	0.766
	8	13,000	2,220	0.100	0.171	25,500	2,350	0.300	0.765	21,000	18,800	0.240	0.612
R1.75	8	11,500	2,150	0.183	0.190	23,000	2,400	0.350	1.073	19,150	10,380	0.280	0.856
R2	4	10,000	2,080	0.266	0.208	21,000	2,450	0.400	1.380	17,300	1,960	0.320	1.100
	8	10,000	2,080	0.134	0.208	21,000	2,350	0.400	1.020	17,300	1,880	0.320	0.816
R2.5	5	8,300	1,990	0.215	0.240	18,000	2,560	0.500	1.660	14,800	2,050	0.400	1.330
	8	8,300	1,990	0.200	0.240	18,000	2,450	0.500	1.500	14,800	1,960	0.400	1.200
	10	8,300	1,990	0.190	0.240	18,000	2,400	0.500	1.300	14,800	1,900	0.400	1.020
R3	6	6,900	1,940	0.290	0.281	16,000	2,700	0.600	2.340	13,000	2,160	0.480	1.870
	10	6,900	1,940	0.250	0.281	16,000	2,500	0.600	1.800	13,000	2,000	0.480	1.440
	12	6,900	1,940	0.230	0.281	16,000	2,400	0.600	1.530	13,000	1,920	0.480	1.225
R3.5	14	6,310	1,470	0.315	0.228	14,500	2,350	0.700	2.315	11,625	1,880	0.560	1.853
R4	8	5,720	1,000	0.400	0.175	12,500	2,300	0.800	3.100	10,250	1,840	0.640	2.480
	14	5,720	1,000	0.400	0.175	12,500	2,000	0.800	2.050	10,250	1,600	0.640	1.640
R4.5	16	5,135	850	0.450	0.165	11,000	2,100	0.900	2.900	9,450	1,690	0.720	2.320
R5	10	4,550	700	0.500	0.154	10,500	2,200	1.000	3.750	8,650	1,780	0.800	3.000
	15	4,550	700	0.500	0.154	10,500	1,900	1.000	3.000	8,650	1,520	0.800	2.400
	18	4,550	700	0.500	0.154	10,500	1,700	1.000	2.550	8,650	1,360	0.800	2.040
R5.5	20	4,160	650	0.550	0.157	10,000	1,700	1.100	3.075	8,015	1,360	0.880	2.460
R0.6	18	3,770	600	0.600	0.159	9,000	1,700	1.200	3.600	7,380	1,360	0.960	2.880
	22	3,770	600	0.600	0.159	9,000	1,850	1.200	4.420	7,380	1,480	0.960	3.540
R6.5	24	3,728	653	0.549	0.156	9,000	1,825	1.098	3.938	7,193	1,540	0.878	3.152
R7	24	3,686	706	0.498	0.153	7,000	1,800	0.996	3.456	7,007	1,600	0.797	2.765
R8	30	2,985	600	0.413	0.147	7,000	1,700	0.827	3.318	5,675	1,360	0.661	2.654
R10	38	2,429	360	0.276	0.133	7,000	1,600	0.551	3.015	4,617	816	0.441	2.412
Prof. di Taglio						• Ap : Prof. Taglio • Ae : Passo radiale • D : Diametro Esterno • n : Velocità • Vf : Avanzamento							



- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.
- Si raccomanda l'utilizzo di getto d'aria o olio nebulizzato per un ottima evacuazione del truciolo.
- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Per lavorazioni su rame si raccomanda emulsione o olio appositi.
- Fino al D. 1 tolleranze sotto i 5micron.

4HREG

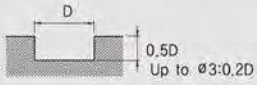
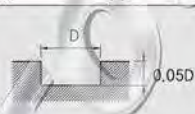
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		Acciai al Carbonio / Ghisa / Acciai Legati S50C / FC250 / SCM / NAK		
Durezza		35 ~ 45HRc		
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap
0.8mm	2	40,000	3,000	0.025
	4	40,000	3,000	0.020
	6	38,000	2,800	0.020
	8	36,000	2,400	0.010
	10	30,000	1,500	0.009
	12	20,000	1,000	0.009
	16	10,000	500	0.005
0.9mm	2	40,000	3,000	0.030
	6	40,000	3,000	0.025
	8	38,000	2,800	0.020
	10	36,000	2,400	0.020
1mm	3	40,000	3,000	0.040
	4	40,000	3,000	0.040
	6	38,000	2,800	0.035
	8	36,000	2,400	0.030
	10	30,000	1,500	0.025
	12	20,000	1,000	0.020
	16	10,000	500	0.005
1.2mm	6	40,000	3,000	0.050
	8	38,000	2,800	0.045
	10	36,000	2,400	0.040
	12	20,000	1,200	0.030
	16	12,000	600	0.010
1.5mm	6	40,000	3,200	0.060
	8	38,000	2,600	0.050
	10	35,000	2,500	0.050
	12	32,000	2,400	0.050
	16	16,000	1,100	0.030
	20	10,000	600	0.010
	25	9,000	500	0.009
2mm	6	40,000	4,000	0.100
	8	38,000	3,600	0.090
	10	35,000	3,500	0.080
	12	32,000	3,200	0.070
	16	24,000	2,400	0.050
	20	12,000	1,200	0.030
	25	10,000	800	0.020
	30	5,000	500	0.010
2.5mm	10	32,000	4,000	0.200
	12	28,000	2,500	0.120

Materiale		Acciai al Carbonio / Ghisa / Acciai Legati S50C / FC250 / SCM / NAK		
Durezza		35 ~ 45HRc		
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap
2.5mm	16	23,000	1,800	0.100
	20	20,000	1,500	0.060
	25	9,000	1,100	0.040
	30	2,500	300	0.005
3mm	10	25,000	3,600	0.400
	12	23,000	3,000	0.300
	16	18,000	2,500	0.200
	20	15,000	2,000	0.150
	25	12,000	1,700	0.100
	30	7,000	800	0.050
	35	5,000	300	0.030
	40	4,200	250	0.030
4mm	10	20,000	3,200	1.200
	12	18,000	3,000	1.000
	16	15,000	2,500	1.000
	20	12,000	2,000	0.500
	25	10,000	1,800	0.400
	30	8,000	1,300	0.200
	40	4,200	700	0.080
	45	3,500	550	0.050
	50	2,400	400	0.030
5mm	15	14,000	2,700	1.000
	20	12,000	2,300	1.000
	25	9,500	1,800	0.500
	30	6,400	1,200	0.200
	40	5,000	750	0.100
	50	3,200	600	0.050
6mm	20	11,000	2,200	1.200
	30	8,000	1,600	0.600
	40	5,400	1,100	0.250
	50	3,200	640	0.150
8mm	20	8,000	1,600	1.600
	30	4,000	800	0.500
	40	4,000	800	0.500
10mm	25	6,400	1,300	2.000
	35	3,200	640	0.600
	45	3,200	640	0.600
12mm	30	6,000	1,200	2.000
	40	3,200	640	0.600
	50	3,200	640	0.600

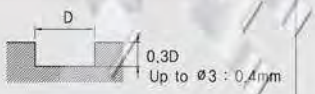
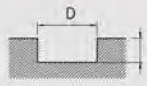
2HCEG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio / Acciai Legati SCM / SNCM / S45C		Acciai Bonificati NAK / CENA / KP4		Acciai Inox SUS		Acciai Temprati SKD / SKT / STAVAX	
Durezza	~ 35 HRc ~1,100N/mm²		35 ~ 45 HRc 1,100~1,500N/mm²				45 ~ 55HRc 1500~2000N/mm²	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	13,020	170	9,000	100	8,100	70	7,020	30
1.5mm	12,300	180	8,880	110	7,360	80	5,940	30
2mm	11,560	190	7,560	120	6,300	90	5,040	35
2.5mm	10,300	200	6,620	130	5,480	110	4,320	35
3mm	8,920	210	5,560	140	4,620	120	3,360	40
4mm	7,560	300	4,620	180	3,880	150	2,940	40
5mm	6,300	320	3,780	190	3,160	160	2,320	50
6mm	5,560	350	3,360	220	2,840	180	2,000	55
8mm	4,200	380	2,520	200	2,100	180	1,680	75
10mm	3,260	330	2,000	160	1,680	160	1,360	60
12mm	2,740	280	1,680	130	1,360	130	1,160	55
16mm	2,200	220	1,360	110	1,060	110	900	40
20mm	1,680	170	1,060	80	840	80	680	30
Prof. di Taglio								

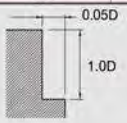
2LEMG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio S50 / SCM		Acciai Legati / Acciai Bonificati SKD61 / NAK		Acciai Temprati SKD61	
Durezza	~ 30HRc		30 ~ 45HRc		45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1mm	8,570	45	6,570	40	4,200	15
1.5mm	7,800	50	6,000	45	3,700	20
2mm	6,300	60	5,040	50	3,150	25
3mm	4,410	70	3,570	60	2,200	30
4mm	3,570	85	2,840	70	1,790	35
5mm	3,050	105	2,420	85	1,580	40
6mm	2,630	125	2,100	105	1,370	50
8mm	2,000	135	1,580	105	1,050	50
10mm	1,680	135	1,370	105	840	50
12mm	1,370	105	1,160	95	700	40
16mm	1,160	95	890	75	560	35
20mm	840	70	680	50	420	25
25mm	600	55	510	35	300	15
Prof. di Taglio						

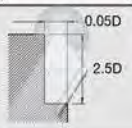
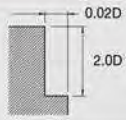
4HCEG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio / Acciai Legati SCM / SNCM / S45C		Acciai Bonificati NAK / CENA / KP4		Acciai Inox SUS		Acciai Temprati SKD / SKT / STAVAX	
Durezza	~ 35 HRc		35 ~ 45 HRc				45 ~ 55HRc	
	~1100N/mm²		1100~1500N/mm²				1500~2000N/mm²	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
2mm	11,560	280	7,560	170	6,300	140	5,040	50
3mm	8,920	320	5,560	200	4,620	170	3,360	60
4mm	7,560	570	4,620	350	3,880	280	2,940	60
5mm	6,300	600	3,780	360	3,160	300	2,320	70
6mm	5,560	660	3,360	410	2,840	330	2,000	80
8mm	4,200	710	2,520	380	2,100	350	1,680	110
10mm	3,260	610	2,000	300	1,680	300	1,360	90
12mm	2,740	520	1,680	250	1,360	240	1,160	80
14mm	2,420	510	1,460	225	1,210	220	960	70
16mm	2,200	410	1,360	200	1,100	200	900	60
18mm	1820	350	1210	180	950	175	820	50
20mm	1,680	320	1,060	160	840	150	680	40
Prof. di Taglio								

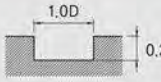
4LEMG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio S50 / SCM		Acciai Legati / Acciai Bonificati SKD61 / NAK		Acciai Temprati SKD61	
Durezza	~ 30HRc		30 ~ 45HRc		45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1mm	8,200	85	6,100	65	4,300	30
1.5mm	7,100	95	5,500	75	3,500	40
2mm	6,300	100	5,040	80	3,150	45
3mm	4,410	115	3,570	100	2,200	55
4mm	3,570	140	2,840	115	1,790	60
5mm	3,050	180	2,420	140	1,580	70
6mm	2,630	215	2,100	180	1,370	90
8mm	2,000	230	1,580	180	1,050	90
10mm	1,680	230	1,370	180	840	90
12mm	1,370	180	1,160	160	700	70
16mm	1,160	160	890	125	560	60
20mm	840	115	680	90	420	45
25mm	650	80	790	65	310	30
Prof. di Taglio						

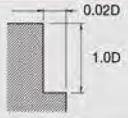
2CREG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio / Acciai Legati SCM / SNCM / S45		Acciai Bonificati NAK / CENA / KP4		Acciai Temprati SKD / SKT / STAVAX	
Durezza	~ 35HRc		35 ~ 45HRc		45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
0.2mm	50,000	170	34,500	75	21,150	45
0.3mm	50,000	200	32,000	85	20,000	50
0.4mm	50,000	200	32,000	85	20,000	50
0.5mm	43,000	220	28,000	95	17,100	60
0.6mm	36,400	250	24,000	110	14,500	65
0.8mm	36,400	250	24,000	110	14,500	65
1mm	33,100	280	21,600	120	13,200	70
1.2mm	30,000	300	18,000	125	12,000	70
1.5mm	26,400	300	16,200	130	10,200	70
2mm	21,600	310	13,800	140	8,640	80
2.5mm	18,000	320	11,400	150	7,320	80
3mm	15,900	330	10,300	160	6,300	80
4mm	12,800	400	8,200	200	5,150	95
5mm	11,000	500	7,000	240	4,560	120
6mm	9,500	600	6,000	300	3,930	140
8mm	7,200	640	4,550	300	3,020	140
10mm	6,000	640	4,000	300	2,420	140
12mm	5,000	500	3,340	270	2,000	120
16mm	3,720	450	2,520	210	1,540	95
Prof. di Taglio						

4CREG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio / Acciai Legati SCM / SNCM / S45		Acciai Bonificati NAK / CENA / KP4		Acciai Temprati SKD / SKT / STAVAX	
Durezza	~ 35HRc		35 ~ 45HRc		45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1mm	33,100	360	21,600	260	13,200	140
1.2mm	30,000	65	18,200	265	12,100	140
1.5mm	26,400	370	16,200	270	10,200	140
2mm	21,600	380	13,800	280	8,640	150
2.5mm	18,000	390	11,400	300	7,320	150
3mm	15,900	400	10,300	310	6,300	150
4mm	12,800	500	8,200	360	5,150	160
5mm	11,000	510	7,000	430	4,560	200
6mm	9,500	510	6,000	430	3,930	200
8mm	7,200	550	4,550	430	3,020	200
10mm	6,000	550	400	430	2,420	200
12mm	5,000	430	3,340	380	2,000	160
Prof. di Taglio						

2NCRG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Generali			SKD61		
Durezza	~45 HRc			45~55 HRc		
Diametro Esterno	RPM	AV	Ap	RPM	AV	Ap
0.1mm	40,000	40	0.001	40,000	40	0.001
0.2mm	40,000	100	0.002	40,000	100	0.002
0.3mm	40,000	200	0.005	40,000	200	0.005
0.4mm	40,000	600	0.010	40,000	600	0.010
0.5mm	40,000	1,000	0.015	40,000	960	0.015
0.6mm	40,000	1,200	0.020	40,000	1,200	0.020
0.7mm	40,000	1,400	0.020	40,000	1,400	0.020
0.8mm	40,000	1,600	0.030	40,000	1,600	0.030
0.9mm	40,000	1,800	0.040	40,000	1,600	0.040
1mm	40,000	2,000	0.060	32,000	1,600	0.060
1.5mm	40,000	3,000	0.120	32,000	1,900	0.080
2mm	30,000	3,000	0.180	24,000	1,900	0.100
2.5mm	24,000	2,600	0.250	19,000	1,600	0.130
3mm	20,000	2,300	0.300	16,000	1,400	0.150
4mm	15,000	2,000	0.400	12,000	1,200	0.200
5mm	12,000	1,600	0.500	9,000	900	0.250
6mm	10,000	1,400	0.600	7,000	700	0.300
8mm	8,000	1,000	0.800	5,600	550	0.400
10mm	6,400	900	1.000	4,500	500	0.500
12mm	5,400	820	1.000	3,800	450	0.500
16mm	2,400	380	3.000	1,200	100	0.800
20mm	1,900	320	4.000	1,000	80	1.000
Prof. di Taglio	≤ AP, ≤1D			D, ≤ AP		

- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- Nelle lavorazioni dal pieno ridurre il numero di giri del 40/60% e l'avanzamento del 50/70%.
- In foratura portare i valori di avanzamento ad 1/3 della tabella indicata.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

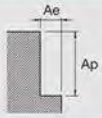
4NCRG

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio / Acciai Legati SCM / SNCM / S45		Acciai Bonificati NAK / CENA / KP4		Acciai Temprati SKD / SKT / STAVAX	
Durezza	~ 35HRc		35 ~ 45HRc		45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1mm	27,600	300	18,000	220	11,000	120
1.5mm	22,000	310	13,500	230	8,500	120
2mm	18,000	320	11,560	240	7,200	130
2.5mm	15,000	330	9,500	250	6,100	130
3mm	13,240	340	8,560	260	5,280	130
4mm	10,720	420	6,820	300	4,300	140
5mm	9,160	430	5,800	360	3,800	170
6mm	7,900	430	5,040	360	3,280	170
8mm	6,000	460	3,800	360	2,520	170
10mm	5,040	460	3,280	360	2,020	170
12mm	4,120	360	2,780	320	1,680	140
16mm	3,100	280	2,100	230	1,280	115
Prof. di Taglio	0.05D, 2.0D				0.02D, 2.0D	

• RPM : gir/min • Avanzamento (AV) : mm/min

Taglio Laterale

Materiale	Acciai Dolci/ Acciai al Carbonio SS400 / S55C		Acciai Legati/ Acciai per Utensili SCM / SKT / SKD		Acciai per Utensili/ Acciai Bonificati SKD / SKT / NAK55 / HPM1		Acciai per Utensili/ Acciai Inox SUS304 / SKD	
Durezza	~750N/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
4mm	5,000	510	4,200	260	3,600	180	2,800	130
5mm	5,000	510	4,200	270	3,200	200	2,400	150
6mm	4,200	510	3,600	290	2,800	220	2,100	170
8mm	3,200	510	2,700	330	2,100	250	1,600	190
10mm	2,600	510	2,200	345	1,600	260	1,300	210
12mm	2,100	510	1,800	360	1,400	270	1,100	215
16mm	1,600	510	1,400	385	1,000	290	800	220
20mm	1,300	480	1,100	375	800	280	640	210
Prof. di Taglio	Ap: 1.5D, Ae: 0.4D				Ap: 1.5D, Ae: 0.3D			

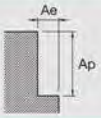
Fresatura dal pieno

Materiale	Acciai Dolci/ Acciai al Carbonio SS400 / S55C		Acciai Legati/ Acciai per Utensili SCM / SKT / SKD		Acciai per Utensili/ Acciai Bonificati SKD / SKT / NAK55 / HPM1		Acciai per Utensili/ Acciai Inox SUS304 / SKD	
Durezza	~750N/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
4mm	4,000	430	3,800	200	2,800	140	2,400	110
5mm	4,000	430	3,400	220	2,500	160	2,200	130
6mm	3,600	430	3,000	240	2,300	185	1,900	150
8mm	2,700	430	2,200	270	1,800	210	1,400	180
10mm	2,200	430	1,800	290	1,400	220	1,200	185
12mm	1,800	430	1,500	300	1,200	230	960	190
16mm	1,400	430	1,100	310	900	250	720	200
20mm	1,100	410	900	310	700	240	560	185
Prof. di Taglio	Ap : 0.75D ApMax=12mm				Ap : 0.5D			

3&4HROUG

• RPM : giri/min • Avanzamento (AV) : mm/min

Taglio Laterale

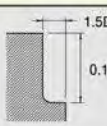
Materiale	Acciai Dolci/ Acciai al Carbonio SS400 / S55C		Acciai Legati/ Acciai per Utensili SCM / SKT / SKD		Acciai per Utensili/ Acciai Bonificati SKD / SKT / NAK55 / HPM1		Acciai per Utensili/ Acciai Inox SUS304 / SKD	
Durezza	~750N/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
4mm	5,800	600	4,800	300	4,100	200	3,200	150
5mm	5,800	600	4,800	310	3,700	230	2,800	170
6mm	4,800	600	4,200	330	3,200	250	2,400	200
8mm	3,700	600	3,100	380	2,400	290	1,800	220
10mm	3,000	600	2,500	400	1,800	300	1,500	250
12mm	2,400	600	2,100	410	1,600	310	1,300	250
16mm	1,850	600	1,600	440	1,200	330	1,000	250
20mm	1,500	550	1,300	430	900	320	750	240
Prof. di Taglio	Ap: 1.5D, Ae: 0.4D				Ap: 1.5D, Ae: 0.3D			

Fresatura dal Pieno

Materiale	Acciai Dolci/ Acciai al Carbonio SS400 / S55C		Acciai Legati/ Acciai per Utensili SCM / SKT / SKD		Acciai per Utensili/ Acciai Bonificati SKD / SKT / NAK55 / HPM1		Acciai per Utensili/ Acciai Inox SUS304 / SKD	
Durezza	~750N/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
4mm	4,600	500	4,400	230	3,200	160	2,800	130
5mm	4,600	500	4,000	250	2,900	180	2,500	150
6mm	4,100	500	3,500	280	2,700	210	2,200	170
8mm	3,100	500	2,500	310	2,100	240	1,700	210
10mm	2,500	500	2,100	330	1,600	250	1,300	210
12mm	2,100	500	1,700	350	1,400	270	1,100	220
16mm	1,600	500	1,300	360	1,000	290	800	230
20mm	1,300	480	1,000	360	800	270	650	210
Prof. di Taglio	Ap : 0.75D ApMax=12mm				Ap : 0.5D			

2DEM/4DEM/6DEM

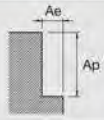
• RPM : giri/min • Avanzamento (AV) : mm/min

	2DEM		4DEM		6DEM	
Materiale	Grafite		Grafite		Grafite	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
0.2mm	40,000	100	-	-	-	-
0.4mm	40,000	200	-	-	-	-
0.6mm	40,000	350	-	-	-	-
0.8mm	40,000	550	-	-	-	-
1mm	40,000	700	-	-	-	-
2mm	25,000	800	-	-	-	-
3mm	20,000	800	20,000	1,600	-	-
4mm	18,000	950	18,000	1,900	-	-
5mm	14,000	1,200	14,000	2,400	-	-
6mm	11,000	1,400	11,000	2,800	22,200	8,000
8mm	8,000	1,300	8,000	2,600	16,800	8,000
10mm	6,500	1,200	6,500	2,400	13,400	8,000
12mm	5,500	1,200	5,500	2,400	11,350	6,700
16mm	5,500	1,200	-	-	8,400	5,000
Prof. di Taglio						

2GEM/4GEM/6GEM

• RPM : giri/min • Avanzamento (AV) : mm/min

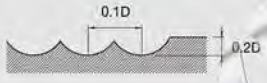
	2GEM		4GEM		6GEM	
Materiale	Grafite		Grafite		Grafite	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1mm	8,000	160	-	-	-	-
2mm	8,000	250	-	-	-	-
3mm	8,000	380	8,000	430	-	-
4mm	8,000	510	8,000	570	-	-
5mm	8,000	640	8,000	720	-	-
6mm	8,000	770	8,000	860	8,000	960
8mm	8,000	1,000	8,000	1,100	8,000	1,300
10mm	8,000	1,250	8,000	1,400	8,000	1,600
12mm	8,000	1,500	7,000	1,400	7,000	1,600
16mm	8,000	1,600	7,000	1,500	7,000	1,800
20mm	8,000	1,600	7,000	1,500	7,000	1,800
Prof. di Taglio	Ap: 1D, Ae: 0.1D					

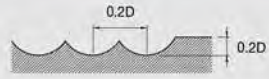


2DBE/4DBE

• RPM : giri/min • Avanzamento (AV) : mm/min

	2DBE		4DBE	
Materiale	Grafite		Grafite	
Diametro Esterno	RPM	AV	RPM	AV
1mm	16,000	400	20,000	700
2mm	16,000	800	16,000	1,200
3mm	16,000	1,450	16,000	2,000
4mm	16,000	2,100	16,000	3,100
5mm	15,500	2,550	15,000	3,800
6mm	15,000	2,950	15,000	4,400
8mm	13,000	3,000	13,000	4,500
10mm	11,500	3,000	12,000	4,600
12mm	10,700	3,200	10,000	4,700
Prof. di Taglio				

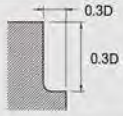




2DCR/4DCR

• RPM : giri/min • Avanzamento (AV) : mm/min

	2DCR		4DCR	
Materiale	Grafite		Grafite	
Diametro Esterno	RPM	AV	RPM	AV
0.2mm	40,000	100	-	-
0.4mm	40,000	200	-	-
0.5mm	40,000	300	-	-
0.6mm	40,000	400	-	-
0.8mm	40,000	500	-	-
1mm	40,000	900	-	-
2mm	36,000	900	-	-
3mm	32,000	1,300	-	-
4mm	26,000	1,500	40,000	3,500
5mm	24,000	1,100	-	-
6mm	21,000	1,100	40,000	5,600
8mm	-	-	32,000	5,600
10mm	-	-	26,000	5,700
12mm	-	-	21,000	5,500
16mm	-	-	15,800	5,500
Prof. di Taglio				



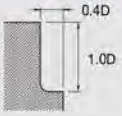
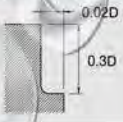
3CPR_RIVESTIMENTO DLC

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	CFRP			
Diametro Esterno	RPM	AV	Vc (m/min)	Fz (mm/rev)
6mm	8,000	600	100~200	0.03~0.12
8mm	6,000	600	100~200	0.04~0.15
10mm	4,800	540	100~200	0.04~0.15
12mm	4,000	540	100~200	0.05~0.17

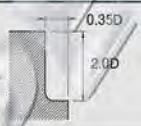
4&6CPR_RIVESTIMENTO DLC

• RPM : giri/min • Avanzamento (AV) : mm/min • Vc : m/min • Fz : mm/t

Materiale	CFRP				GFRP				CFRP				GFRP			
Diametro Esterno	RPM	AV	Vc	Fz	RPM	AV	Vc	Fz	RPM	AV	Vc	Fz	RPM	AV	Vc	Fz
6mm	7,900	1,100	150	0.035	4,200	430	80	0.025	10,500	1,950	200	0.047	5,300	740	100	0.035
8mm	5,960	1,600	150	0.045	3,200	590	80	0.031	7,970	2,950	200	0.062	3,900	930	100	0.04
10mm	4,750	1,500	150	0.05	2,550	560	80	0.037	6,350	2,930	200	0.077	3,120	850	100	0.045
12mm	3,950	2,060	150	0.06	2,120	725	80	0.043	5,300	3,900	200	0.092	2,600	1,050	100	0.05
Prof. di Taglio																

8 ~16CPO

• RPM : giri/min • Avanzamento (AV) : mm/min • Vc : m/min • Fz : mm/t

Materiale	CFRP			GFRP		
Diametro Esterno	RPM	AV	Vc (m/min)	RPM	AV	Vc (m/min)
4mm	15,900	1,400	200	7,900	700	100
5mm	1,300	1,900	200	6,300	950	100
6mm	10,600	2,200	200	5,300	1,000	100
8mm	7,950	2,600	200	3,900	1,300	100
10mm	6300	3050	200	3100	1500	100
12mm	5300	3300	200	2600	1600	100
Prof. di Taglio						

2DDC

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	CFRP		
Diametro Esterno	SPEED (m/min)	RPM	AV (mm/rev)
2mm	100 ~ 150	13,000 ~ 20,000	0.03 ~ 0.07
2.5mm	100 ~ 150	11,000 ~ 16,000	0.03 ~ 0.07
3mm	100 ~ 150	8,000 ~ 12,000	0.03 ~ 0.07
4mm	100 ~ 150	6,500 ~ 9,700	0.03 ~ 0.07
5mm	100 ~ 150	5,300 ~ 8,100	0.03 ~ 0.07
6mm	100 ~ 150	4,000 ~ 6,000	0.03 ~ 0.07
8mm	100 ~ 150	13,000 ~ 20,000	0.03 ~ 0.07
9mm	100 ~ 150	3,500 ~ 5,300	0.03 ~ 0.07
10mm	100 ~ 150	3,500 ~ 4,700	0.03 ~ 0.07
11mm	100 ~ 150	2,900 ~ 4,300	0.03 ~ 0.07
12mm	100 ~ 150	2,700 ~ 3,900	0.03 ~ 0.07

4SUE/4SUC

• RPM : giri/min • Avanzamento (AV) : mm/min

Taglio Laterale

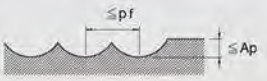
Materiale	Acciai Legati/ Acciai per Utensili SKD61 / SK / NAK		SUS SUS304 / SUS316 / Ti6A		Acciai Temprati Inconel 718	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
2mm	21,000	1,100	14,000	560	4,800	130
3mm	15,000	1,250	10,600	850	4,200	200
4mm	11,000	1,400	8,000	960	3,200	220
5mm	9,600	1,900	6,400	1,000	2,500	250
6mm	8,000	2,200	5,300	1,000	2,100	230
7mm	6,800	1,900	4,500	1,000	1,800	260
8mm	6,000	1,600	4,000	960	1,600	260
9mm	5,300	1,480	3,500	840	1,400	220
10mm	4,800	1,440	3,200	770	1,300	210
11mm	4,400	1,350	2,900	760	1,200	190
12mm	4,000	1,250	2,700	760	1,100	180
16mm	3,000	1,140	2,000	560	800	130
20mm	2,400	860	1,600	510	600	100
Prof. di Taglio	≤0.2D ≤1.5D		≤0.1D ≤1.5D		≤0.05D ≤1.5D	

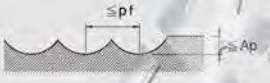
Fresatura dal pieno

Materiale	Acciai Legati/ Acciai per Utensili SKD61 / SK / NAK		SUS SUS304 / SUS316 / Ti6A		Acciai Temprati Inconel 718	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
2mm	10,000	400	9,600	310	3,200	80
3mm	6,900	410	7,400	380	2,700	110
4mm	5,600	490	5,600	400	2,000	120
5mm	4,500	630	4,500	410	1,600	130
6mm	3,700	740	3,700	440	1,300	160
7mm	3,200	700	3,200	410	1,100	140
8mm	2,800	670	2,800	390	1,000	130
9mm	2,500	600	2,500	350	900	130
10mm	2,200	530	2,200	350	800	130
11mm	2,000	530	2,000	320	720	120
12mm	1,900	530	1,900	300	660	110
16mm	1,400	390	1,400	280	500	80
20mm	1,100	350	1,100	260	400	60
Prof. di Taglio	D ≤1D (Max. 12mm)		D ≤0.5D		D ≤0.2D	

4SUB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	S45C, SCM440, SS400, S10C, NAK, PX5, SNCM439						4V, SUS630, SUS631, SUS431, SUS420J2				
Raggio	α≤15°		α>15°		Ap	pf	α≤15°		α>15°		Ap
	RPM	AV	RPM	AV			RPM	AV	RPM	AV	
R1.5	32,000	7,700	21,000	3,200	0.25	0.75	24,000	4,800	16,000	1,900	0.25
R2	24,000	5,800	16,000	2,800	0.33	1	18,000	4,000	12,000	1,700	0.33
R2.5	19,000	5,300	12,700	2,600	0.42	1.25	14,400	3,500	9,600	1,500	0.42
R3	16,000	4,800	10,600	2,100	0.5	1.5	12,000	3,200	8,000	1,400	0.5
R4	12,000	4,300	8,000	1,900	0.8	2	9,000	3,200	6,000	1,400	0.8
R5	9,600	4,100	6,400	1,800	1	2.5	7,200	3,000	4,800	1,300	1
R6	8,000	4,000	5,300	1,800	1.2	3	6,000	3,000	4,000	1,300	1.2
Prof. di Taglio											

Materiale	Rame						Inconel718					
Raggio	pf	α≤15°		α>15°		Ap	pf	α≤15°		α>15°		Ap	pf
		RPM	AV	RPM	AV			RPM	AV	RPM	AV		
R1.5	0.75	38,000	9,100	25,000	3,800	0.25	0.75	6,400	640	4,200	340	0.13	0.3
R2	1	29,000	7,000	19,000	3,300	0.33	1	4,800	580	3,200	260	0.17	0.4
R2.5	1.25	23,000	6,400	15,000	3,100	0.42	1.25	3,800	530	2,500	250	0.21	0.5
R3	1.5	19,000	5,700	13,000	2,600	0.5	1.5	3,200	500	2,100	210	0.25	0.6
R4	2	14,000	5,000	9,600	2,300	0.8	2	2,400	430	1,600	190	0.4	0.8
R5	2.5	12,000	5,100	7,700	2,200	1	2.5	2,000	420	1,300	180	0.5	1
R6	3	9,600	4,800	6,400	2,200	1.2	3	1,700	350	1,100	150	0.6	1.2
Prof. di Taglio													

3&4&5SUR

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		
Diametro Esterno	RPM	AV
3mm	4,400	380
4mm	3,800	350
5mm	3,300	350
6mm	3,000	340
7mm	2,700	340
8mm	2,200	340
9mm	2,000	340
10mm	1,750	330
12mm	1,300	330
14mm	5,000	310
16mm	4,800	300
20mm	4,700	210
Prof. di Taglio	 Ap Ø6 ~ 10 = 0.25 x D Ø12 ~ 16 = 0.15 x D Ø18 ~ 20 = 0.1 x D		

3SUE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio / Acciai Legati SS400 / S50C / SCM		Acciai Inox/ Acciai in lega di titanio SUS304 / SUS316 / Ti-6AL-4V		Acciai Temprati SKD61		Materiali difficile lavorazione / Inconel	
Durezza	~ 45HRc				45 ~ 55HRc			
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.8mm (3F)	7,200	80	6,400	60	3,900	30	2,000	10
1mm (3F)	6,400	100	5,600	70	3,500	30	1,700	15
2mm (3F)	5,600	110	4,800	80	2,900	34	1,400	20
3mm (3F)	4,800	200	4,000	90	2,200	45	1,400	25
4mm (3F)	4,000	200	3,300	140	1,800	70	1,200	35
5mm (3F)	3,200	230	2,700	170	1,500	90	1,000	45
6mm (3F)	2,900	250	2,400	180	1,400	90	900	45
8mm (3F)	2,200	270	1,800	190	1,000	100	720	40
10mm (3F)	1,700	260	1,400	190	900	110	600	40
12mm (3F)	1,400	230	1,200	150	700	90	500	35
16mm (3F)	1,000	160	900	120	550	60	360	30
Prof. di Taglio	≤0.2D, ≤1.5D		D, ≤0.5D (D≤Ø18), ≤0.3D (D>Ø18)		≤0.05D, ≤1D		D, ≤0.05D	

• Nelle lavorazioni dal pieno ridurre il numero di giri del 40/60% e l'avanzamento del 50/70%.

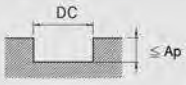
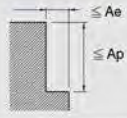
2COB

• RPM : giri/min • Avanzamento (AV) : mm/min

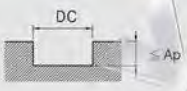
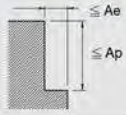
Materiale	Acciai Inox		Leghe di Rame		
Raggio	$\alpha \leq 15^\circ$		$\alpha > 15^\circ$		Ap
	RPM	AV	RPM	AV	
R0.5	40,000	8,000	40,000	3,200	0.06
R0.75	40,000	9,600	40,000	400	0.09
R1	40,000	9,600	39,000	4,700	0.11
R1.5	40,000	12,000	30,000	4,500	0.12
R2	40,000	12,000	27,000	4,300	0.13
R2.5	32,000	11,000	20,000	3,600	0.15
R3	25,000	9,000	16,000	2,900	0.2
R4	21,000	8,400	13,000	2,600	0.25
R5	16,000	6,400	10,000	2,000	0.3
R6	13,000	5,200	8,000	1,700	0.5
R8	9,000	3,600	6,000	1,300	0.5
Prof. di Taglio	1D, ≤0.2R, ≤Ap				

- Alfa è l'angolo di inclinazione della superficie da lavorare.
- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- Si raccomanda l'uso olio da taglio per acciai inossidabili e leghe resistenti al calore.
- Per lavorazioni su rame si raccomanda emulsione o olio appositi.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

• RPM : giri/min • Avanzamento (AV) : mm/min

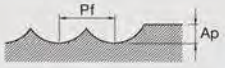
Materiale			Fresatura dal pieno Rame / Leghe di Rame			Taglio Laterale Rame / Leghe di Rame			
Diametro Esterno	Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	RPM	AV	Ap	Ap
1mm	R0.1, R0.2	3	45,000	2,500	0.036	45,000	4,500	0.036	0.2
"	R0.1, R0.2	6	40,000	2,000	0.03	40,000	3,000	0.03	0.2
"	R0.1, R0.2	10	35,000	1,600	0.025	35,000	2,000	0.025	0.2
1.5mm	R0.1, R0.2	5	23,000	1,800	0.08	50,000	6,000	0.08	0.3
"	R0.1, R0.2	8	26,000	1,600	0.06	45,000	5,500	0.06	0.3
"	R0.1, R0.2	12	30,000	1,500	0.05	40,000	4,500	0.04	0.3
2mm	R0.1, R0.2	6	35,000	1,800	0.14	45,000	5,000	0.12	0.8
"	R0.1, R0.2	10	30,000	1,600	0.12	40,000	4,700	0.1	0.6
"	R0.1, R0.2	14	30,000	1,200	0.08	30,000	3,800	0.06	0.4
3mm	R0.2, R0.3	10	30,000	2,200	0.14	40,000	6,500	0.12	1
"	R0.2, R0.3	16	20,000	2,000	0.12	35,000	6,000	0.1	0.6
"	R0.2, R0.3	20	20,000	2,000	0.12	35,000	6,000	0.1	0.6
"	R0.5	10	20,000	2,600	0.14	38,000	10,000	0.12	0.8
"	R0.5	16	20,000	2,200	0.12	35,000	8,000	0.1	0.6
"	R0.5	20	20,000	2,200	0.12	35,000	8,000	0.1	0.6
4mm	R0.2, R0.3	12	20,000	2,600	0.5	40,000	8,000	0.18	0.12
"	R0.2, R0.3	16	15,000	2,400	0.3	32,000	5,000	0.16	0.1
"	R0.2, R0.3	20	15,000	2,000	0.25	32,000	5,000	0.15	0.8
"	R0.5	12	20,000	2,400	0.5	35,000	10,000	0.3	0.1
"	R0.5	16	15,000	2,200	0.25	32,000	7,000	0.15	0.8
"	R0.5	20	15,000	2,200	0.25	32,000	7,000	0.15	0.8
6mm	R0.3, R0.5	20	10,000	1,400	0.6	20,000	5,200	0.25	1.2
"	R0.3, R0.5	30	10,000	1,200	0.4	20,000	5,000	0.25	1.2
"	R1	20	10,000	1,800	0.6	20,000	9,000	0.25	1.2
"	R1	30	10,000	1,500	0.4	20,000	7,000	0.25	1.2
8mm	R0.3, R0.5	25	8,000	1,000	0.3	15,000	5,000	0.3	1.5
"	R1	25	8,000	1,300	0.3	15,000	10,000	0.3	1.5
10mm	R0.5	30	7,000	1,300	0.3	13,000	7,000	0.2	1.5
"	R1	30	7,000	1,500	0.3	13,000	12,000	0.2	1.5
12mm	R0.5	35	6,000	1,100	0.2	10,000	9,000	0.15	2
"	R1	35	6,000	1,300	0.2	10,000	15,000	0.15	2
Prof. di Taglio									

• RPM : giri/min • Avanzamento (AV) : mm/min

			Fresatura dal pieno			Taglio Laterale			
Materiale			Rame / Leghe di Rame			Rame / Leghe di Rame			
Diametro Esterno	Raggio	Lunghezza Effettiva Taglio	RPM	AV	Ap	RPM	AV	Ap	Ap
1mm	R0.1, R0.2	3	45,000	2,500	0.036	45,000	4,500	0.036	0.2
"	R0.1, R0.2	6	40,000	2,000	0.03	40,000	3,000	0.03	0.2
"	R0.1, R0.2	10	35,000	1,600	0.025	35,000	2,000	0.025	0.2
1.5mm	R0.1, R0.2	5	32,000	1,800	0.08	50,000	6,000	0.08	0.3
"	R0.1, R0.2	8	30,000	1,600	0.06	45,000	5,500	0.06	0.3
"	R0.1, R0.2	12	30,000	1,500	0.05	40,000	4,500	0.04	0.3
2mm	R0.1, R0.2	6	35,000	1,800	0.14	45,000	5,000	0.12	0.8
"	R0.1, R0.2	10	30,000	1,600	0.12	40,000	4,700	0.1	0.6
"	R0.1, R0.2	14	30,000	1,200	0.08	30,000	3,800	0.06	0.4
2.5mm	R0.1, R0.2	8	32,000	2,000	0.15	40,000	5,300	0.08	0.6
"	R0.1, R0.2	12	30,000	1,900	0.13	38,000	5,300	0.1	0.7
"	R0.1, R0.2	16	30,000	1,600	0.13	38,000	5,100	0.1	0.7
"	R0.5	8	22,000	2,800	0.15	41,000	11,000	0.13	0.8
"	R0.5	12	20,000	2,600	0.14	40,000	10,500	0.12	0.7
"	R0.5	16	20,000	2,500	0.13	40,000	10,200	1.12	0.7
3mm	R0.2, R0.3	10	30,000	2,200	0.14	40,000	6,500	0.12	1
"	R0.2, R0.3	16	20,000	2,000	0.12	35,000	6,000	0.1	0.6
"	R0.2, R0.3	20	20,000	2,000	0.12	35,000	6,000	0.1	0.6
"	R0.5	10	20,000	2,600	0.14	38,000	10,000	0.12	0.8
"	R0.5	16	20,000	2,200	0.12	35,000	8,000	0.1	0.6
"	R0.5	20	20,000	2,200	0.12	35,000	8,000	0.1	0.6
4mm	R0.2, R0.3	12	20,000	2,600	0.5	40,000	8,000	0.18	0.12
"	R0.2, R0.3	16	15,000	2,400	0.3	32,000	5,000	0.16	0.1
"	R0.2, R0.3	20	15,000	2,000	0.25	32,000	5,000	0.15	0.8
"	R0.5	12	20,000	2,400	0.5	35,000	10,000	0.3	0.1
"	R0.5	16	15,000	2,200	0.25	32,000	7,000	0.15	0.8
"	R0.5	20	15,000	2,200	0.25	32,000	7,000	0.15	0.8
6mm	R0.3, R0.5	20	10,000	1,400	0.6	20,000	5,200	0.25	1.2
"	R0.3, R0.5	30	10,000	1,200	0.4	20,000	5,000	0.25	1.2
"	R1	20	10,000	1,800	0.6	20,000	9,000	0.25	1.2
"	R1	30	10,000	1,500	0.4	20,000	7,000	0.25	1.2
8mm	R0.3, R0.5	25	8,000	1,000	0.3	15,000	5,000	0.3	1.5
"	R1	25	8,000	1,300	0.3	15,000	10,000	0.3	1.5
10mm	R0.5	30	7,000	1,300	0.3	13,000	7,000	0.2	1.5
"	R1	30	7,000	1,500	0.3	13,000	12,000	0.2	1.5
12mm	R0.5	35	6,000	1,100	0.2	10,000	9,000	0.15	2
"	R1	35	6,000	1,300	0.2	10,000	15000	0.15	2
Prof. di Taglio									

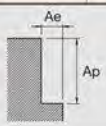
2DRB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Materiale lega di alluminio in espansione A7075				Leghe di Alluminio Casting / Die Casting Si 13%				Leghe di magnesio/ Leghe di Rame / CFRP AZ91 / AZ80A / C1100		Leghe di Rame C1100	
	Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità	
Raggio	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
R0.1	32,000	220	45,000	290	32,000	220	45,000	290	32,000	220	45,000	290
R0.3	32,000	480	45,000	660	32,000	480	45,000	660	32,000	480	45,000	660
R0.5	28,800	760	45,000	1,100	28,800	760	45,000	1,100	28,800	760	45,000	1,100
R0.8	28,800	850	45,000	1,400	28,800	850	45,000	1,400	25,200	850	35,900	1,300
R1	28,600	1,400	45,000	2,000	28,600	1,400	43,000	1,900	21,500	1,000	35,900	1,600
R1.5	19,100	1,400	45,000	3,000	19,100	1,400	28,600	1,900	14,300	1,000	23,900	1,600
R2	14,300	1,400	35,900	3,200	14,300	1,400	21,400	1,900	10,700	1,000	17,900	1,600
R3	9,500	1,400	23,900	3,200	9,500	1,400	14,300	1,900	7,200	1,000	12,000	1,600
R4	7,200	1,800	17,600	4,100	7,200	1,800	10,700	2,400	5,400	1,300	8,900	2,000
R5	5,700	1,600	14,000	3,600	5,700	1,600	8,600	2,200	4,300	1,200	7,200	1,800
R6	4,800	1,500	11,700	3,400	4,800	1,500	7,200	2,000	3,600	1,100	5,900	1,700
	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf
	0.1D	0.2D	0.05D	0.1D	0.1D	0.2D	0.05D	0.1D	0.1D	0.2D	0.02D	0.05D
Prof. di Taglio												

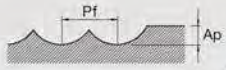
2DRE/3DRE ▪ Aumentare del 20% i valori sotto riportati per 3DRE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Materiale lega di alluminio in espansione A7075				Leghe di Alluminio Casting / Die Casting Si 13%				Leghe di Magnesio / Leghe di Rame / CFRP AZ91 / AZ80A / C1100		Leghe di Rame C1100	
	Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.5mm	28,800	160	45,000	500	28,800	160	45,000	450	28,800	140	45,000	410
0.6mm	28,800	180	45,000	590	28,800	180	45,000	540	28,800	160	45,000	500
0.8mm	28,800	200	45,000	770	28,800	200	45,000	720	26,100	180	45,000	590
1mm	28,800	200	45,000	900	28,800	200	45,000	960	20,700	200	37,800	630
1.2mm	28,800	210	45,000	1,100	28,800	210	45,000	1,000	17,100	200	32,400	630
1.5mm	28,800	250	45,000	1,400	28,800	250	45,000	1,100	14,000	200	26,600	630
2mm	28,800	400	45,000	1,800	28,800	380	45,000	1,100	13,000	200	25,200	680
2.5mm	22,500	540	43,200	1,900	22,500	540	27,900	1,100	8,600	230	18,000	680
3mm	18,900	630	36,000	1,900	18,900	630	23,400	1,100	7,200	230	15,300	680
4mm	14,000	650	29,700	2,000	14,000	650	18,000	1,200	5,400	250	12,600	720
5mm	11,300	680	27,900	2,500	11,300	680	17,280	1,500	4,300	270	11,300	860
6mm	9,500	750	23,400	2,500	9,500	750	14,310	1,500	3,600	280	9,500	900
8mm	7,200	800	17,550	2,600	7,200	800	10,800	1,600	2,600	270	7,100	900
10mm	5,700	900	13,950	2,900	5,700	900	8,640	1,700	2,100	330	5,700	1,000
12mm	4,800	950	11,700	2,900	4,800	950	7,200	1,700	1,800	350	4,800	1,000
	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap
	1.5D 0.1D	0.3D Ø0.5≤Dc≤Ø0.8 0.5D Ø1≤Dc	1D 0.1D	0.15D	1.5D 0.1D	0.3D Ø0.5≤Dc≤Ø0.8 0.5D Ø1≤Dc	1D 0.1D	0.15D	1.5D 0.1D	0.3D Ø0.5≤Dc≤Ø0.8 0.5D Ø1≤Dc	1D 0.05D	0.1D
												

2DLB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Materiale lega di alluminio in espansione A7075				Leghe di alluminio Casting / Die Casting Si 13%				Leghe di magnesio / Leghe di Rame / CFRP AZ91 / AZ80A / C1100		Leghe di Rame C1100	
	Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità	
Raggio	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
R0.1	28,800	180	40,000	240	28,800	180	36,100	230	28,800	180	31,600	200
R0.3	28,800	350	40,000	490	28,800	350	36,100	480	28,800	350	31,600	420
R0.5	23,400	720	31,500	950	23,400	720	25,200	900	23,400	720	20,700	800
R0.8	23,400	760	35,900	1,120	23,400	760	25,200	1,000	22,500	720	20,700	800
R1	22,500	950	31,500	1,260	22,500	950	25,200	1,100	17,100	720	20,700	800
R1.5	15,300	950	20,700	1,260	15,300	950	16,700	1,100	11,300	720	13,500	800
R2	11,300	950	15,800	1,260	11,300	950	12,600	1,100	8,600	720	10,400	800
R3	9,000	950	13,200	1,260	9,000	950	12,600	1,100	5,900	720	8,900	800
R4	6,400	1,150	11,600	1,260	6,400	1,150	9,800	1,000	4,800	880	6,400	950
R5	5,200	1,050	9,400	1,120	5,200	1,050	7,800	860	3,900	760	5,300	880
R6	4,100	1,000	6,700	950	4,100	1,000	5,400	520	3,000	740	4,600	840
	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf	Ap	Pf
	0.1D	0.2D	0.05D	0.1D	0.1D	0.2D	0.05D	0.1D	0.1D	0.2D	0.02D	0.05D
Prof. di Taglio												

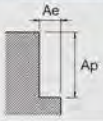
2DLE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Materiale lega di alluminio in espansione A7075				Leghe di alluminio Casting / Die Casting Si 13%				Leghe di magnesio / Leghe di Rame / CFRP AZ91 / AZ80A / C1100		Leghe di Rame C1100	
	Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
0.1mm	32,000	35	45,000	120	32,000	35	45,000	120	32,000	35	45,000	100
0.3mm	32,000	60	45,000	300	32,000	60	45,000	300	32,000	60	45,000	210
0.5mm	28,800	90	45,000	500	28,800	90	45,000	500	28,800	90	45,000	390
0.8mm	28,800	120	45,000	700	28,800	130	45,000	700	23,000	110	45,000	500
1mm	28,800	170	45,000	900	28,800	170	45,000	900	20,700	125	37,800	630
1.5mm	28,800	230	40,500	1,100	28,800	230	40,500	1,100	14,000	130	26,700	630
2mm	23,000	270	30,600	1,100	23,000	270	30,600	1,100	10,400	135	21,600	675
3mm	15,300	460	20,700	1,100	15,300	460	20,700	1,100	7,200	200	15,300	675
4mm	11,300	470	15,300	1,100	11,300	470	15,300	1,100	5,400	210	11,700	675
5mm	9,000	490	12,200	1,100	9,000	490	12,200	1,100	4,300	225	9,000	675
6mm	7,700	540	10,000	1,100	7,700	540	10,000	1,100	3,600	225	7,200	675
8mm	6,000	600	8,200	1,200	6,000	600	8,200	1,200	2,600	300	5,900	720
10mm	4,500	650	6,000	1,400	4,500	650	6,000	1,400	2,100	300	4,300	800
12mm	3,100	690	4,500	1,500	3,100	690	4,500	1,500	1,600	320	3,200	850
	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap
	1.2D 0.1D	0.3D	1D 0.1D	0.15D	1.2D 0.1D	0.3D	1D 0.1D	0.15D	1D 0.1D	0.3D	1D 0.05D	0.1D
Prof. di Taglio												

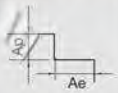
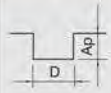
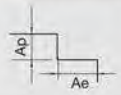
2DLC

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Materiale lega di alluminio in espansione A7075				Leghe di alluminio Casting / Die Casting Si 13%				Leghe di magnesio / Leghe di Rame / CRP AZ91 / AZ80A / C1100		Leghe di Rame C1100	
	Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità		Fresatura Normale		Fresatura Alta Velocità	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	37,500	220	50,000	1,170	37,400	220	50,000	1,170	27,000	160	49,000	820
1.5mm	37,500	300	50,000	1,430	37,400	300	50,000	1,430	18,000	170	34,700	820
2mm	30,000	350	40,000	1,430	30,000	350	40,000	1,430	13,500	180	28,000	880
3mm	20,000	600	27,000	1,430	20,000	600	27,000	1,430	9,400	260	20,000	880
4mm	15,000	610	20,000	1,430	14,700	610	20,000	1,430	7,000	270	15,200	880
6mm	10,000	700	13,000	1,430	10,000	700	13,000	1,430	4,700	290	9,400	880
8mm	7,800	780	11,000	1,560	7,800	780	10,700	1,560	3,400	390	7,700	940
10mm	5,900	850	7,800	1,820	5,900	850	7,800	1,820	2,700	390	5,600	1,000
12mm	4,000	900	5,900	1,950	4,000	900	5,900	1,950	2,100	410	4,200	1,100
	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap	Ap Ae	Ap
	1.2D 0.1D	0.3D	1D 0.1D	0.15D	1.2D 0.1D	0.3D	1D 0.1D	0.15D	1D 0.1D	0.3D	1D 0.05D	0.1D
Prof. di Taglio												

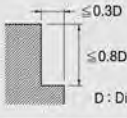
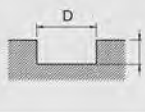
3ALR/3ALE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Leghe di alluminio etc.							
	3ALE				3ALR			
Diametro Esterno	RPM	AV Verticale	AV Fresatura dal pieno	AV Spallamento	RPM	AV Verticale	AV Fresatura dal pieno	AV Spallamento
1mm	25,500	130	770	930	30,000	150	900	1,100
2mm	25,500	190	1,530	1,800	30,000	225	1,800	2,150
3mm	18,400	190	1,700	2,000	21,600	225	2,000	2,400
4mm	14,000	255	1,700	2,000	16,200	300	2,000	2,400
5mm	11,000	255	1,700	2,000	13,000	300	2,000	2,400
6mm	9,200	255	1,700	2,000	10,800	300	2,000	2,400
8mm	7,000	255	1,700	2,000	8,100	300	2,000	2,400
10mm	5,500	210	1,700	2,000	6,480	250	2,000	2,400
12mm	4,400	170	1,700	2,000	5,400	200	2,000	2,400
16mm	3,200	130	1,530	1,900	-	-	-	-
20mm	2,000	85	1,360	1,700	-	-	-	-
Imorto Fresatura(mm)		Ap=0.75D	Ap=0.75D	Ap=0.75D/ Ae=0.3D		Ap=0.75D	Ap=0.75D	Ap=0.75D/ Ae=0.3D
Prof. di Taglio								

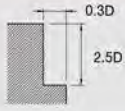
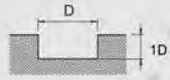
3ALC

• RPM : giri/min • Avanzamento (AV) : mm/min

	Taglio Laterale		Fresatura dal Pieno	
Materiale	Leghe di Alluminio / A7075 etc.		Leghe di Alluminio / A7075 etc.	
Diametro Esterno	RPM	AV	RPM	AV
6mm	20,000	8,400	20,000	6,600
8mm	18,000	7,500	18,000	5,400
10mm	15,000	6,000	15,000	4,000
12mm	13,000	5,400	13,000	3,200
16mm	10,000	5,400	10,000	3,200
20mm	8,000	5,000	8,000	3,000
Prof. di Taglio				

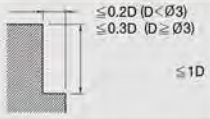
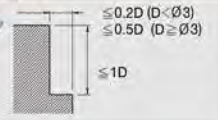
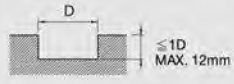
3ARE/3ARC

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Rame		Alluminio	
Velocità	80m/min		80 ~ 150m/min	
Diametro Esterno	RPM	AV	RPM	AV
6mm	4,200	320	8,000	1,200
8mm	3,200	320	6,000	1,200
10mm	2,600	320	4,800	1,200
12mm	2,100	320	4,000	1,200
16mm	1,600	320	3,000	1,200
20mm	1,300	320	2,400	1,200
Prof. di Taglio				

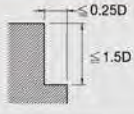
2ALE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Leghe di alluminio / A7075 etc.				Leghe di alluminio / AC4B etc.			
Velocità	300m/min		240m/min		240m/min		200m/min	
	Spallamento		Fresatura dal pieno		Spallamento		Fresatura dal pieno	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	34,000	500	34,000	400	34,000	400	34,000	300
2mm	34,000	950	32,300	720	32,300	720	27,200	470
3mm	27,200	1,200	21,300	800	21,300	800	18,000	510
4mm	20,400	1,300	16,000	850	16,000	850	14,000	550
5mm	16,200	1,400	13,000	850	13,000	850	11,000	600
6mm	13,600	1,600	11,000	940	11,000	940	9,400	640
8mm	10,200	1,600	8,000	1,000	8,000	1,000	6,800	680
10mm	8,100	1,600	6,500	1,000	6,500	1,000	5,400	680
12mm	6,800	1,600	5,400	1,000	5,400	1,000	4,500	680
16mm	5,100	1,600	4,100	1,000	4,100	1,000	3,400	610
20mm	4,100	1,300	3,200	850	3,200	850	2,700	560
Prof. di Taglio								

3ARO

• RPM : giri/min • Avanzamento (AV) : mm/min

	Taglio Laterale			
Materiale	Leghe di alluminio / A7075 etc.		Leghe di alluminio / AC4B etc.	
Diametro Esterno	RPM	AV	RPM	AV
4mm	30,000	4,200	16,000	1,800
5mm	27,000	4,900	14,400	2,000
6mm	24,300	5,500	11,700	2,100
8mm	18,000	5,400	9,000	2,200
10mm	14,400	5,200	7,200	2,100
12mm	11,700	4,800	5,900	1,900
16mm	9,000	4,600	4,500	1,800
20mm	7,200	4,300	3,600	1,700
Prof. di Taglio				

2CTB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Legati/ Acciai per Utensili/ / Acciai Bonificati S50C / FC250 / SCM / NAK					Acciai Temprati SKD61				
Durezza	~ 45HRc					45 ~ 55HRc				
Raggio	$\alpha \leq 15^\circ$		$\alpha > 15^\circ$		Ap Axial Depth	$\alpha \leq 15^\circ$		$\alpha > 15^\circ$		Ap
	RPM	AV	RPM	AV		RPM	AV	RPM	AV	
R0.5	40,000	5,600	40,000	3,200	0.06	40,000	5,600	40,000	3,000	0.05
R0.75	40,000	6,500	40,000	4,000	0.09	40,000	6,500	32,000	3,200	0.08
R1	40,000	6,500	39,000	4,700	0.11	40,000	6,500	31,000	3,500	0.11
R1.25	40,000	7,000	30,000	4,500	0.12	36,000	6,500	26,000	3,500	0.12
R1.5	40,000	7,500	27,000	4,300	0.13	32,000	6,000	22,000	3,400	0.13
R2	32,000	7,500	20,000	3,600	0.15	25,000	6,000	16,000	2,700	0.15
R2.5	25,000	6,000	16,000	2,900	0.2	20,000	5,400	13,000	2,300	0.2
R3	21,000	5,800	13,000	2,600	0.25	17,000	4,700	10,000	2,000	0.25
R4	16,000	4,500	10,000	2,000	0.3	13,000	3,600	8,000	1,500	0.3
R5	13,000	3,600	8,000	1,700	0.5	10,000	2,900	6,400	1,200	0.5
R6	9,000	2,500	6,000	1,300	0.5	7,200	2,000	4,800	1,000	0.5
Prof. di Taglio	≤0.2R ≤AP									

- Alfa è l'angolo di inclinazione della superficie da lavorare.
- Se la profondità di taglio è minima, giri e avanzamento possono essere incrementati.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

2CTE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Dolci / Acciai al Carbonio SS400 / S55C		Acciai Legati / Acciai per Utensili SCM / SKT / SKS / SKD		Acciai Temprati/ Acciai Bonificati SKT / SKD / NAK55 / HPM1		Acciai Temprati/ Acciai Inox SUS304 / SKD		Acciai Temprati	
Durezza	~750HN/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc		45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
1mm	15,500	155	15,500	130	13,000	90	12,000	90	10,500	40
1.5mm	10,500	155	10,500	130	8,900	90	8,250	90	7,000	40
2mm	7,950	155	7,950	130	6,650	90	6,200	90	5,250	40
2.5mm	6,200	145	6,200	125	5,300	90	4,950	90	4,200	40
3mm	5,150	145	5,150	125	4,450	90	4,100	90	3,500	40
4mm	3,850	145	3,850	125	3,300	90	3,100	85	2,600	40
5mm	3,100	145	3,100	125	2,650	90	2,450	85	2,100	40
6mm	2,600	145	2,600	125	2,200	90	2,050	85	1,750	40
8mm	1,950	145	1,950	125	1,650	90	1,550	85	1,300	40
10mm	1,550	145	1,550	120	1,300	90	1,200	85	1,050	40
Prof. di Taglio	Ap 2.5D, Ae 0.02D; Ae, Ap									

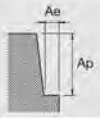
- Utilizzare mandrini precisi.
- In caso di vibrazioni, ridurre proporzionalmente avanzamento e numero di giri.
- Utilizzare il refrigerante/lubrificante appropriato in funzione del materiale lavorato.

4CTE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Dolci / Acciai al Carbonio SS400 / S55C		Acciai Legati / Acciai per Utensili SCM / SKT / SKS / SKD		Acciai Temprati/ Acciai Bonificati SKT / SKD / NAK55 / HPM1		Acciai Temprati/ Acciai Inox SUS304 / SKD		Acciai Temprati	
Durezza	~750HN/mm²		~ 30HRc		30 ~ 38HRc		38 ~ 45HRc		45 ~ 55HRc	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV	RPM	AV
3mm	5,300	225	4,450	225	4,450	180	4,100	130	3,500	130
4mm	3,950	245	3,300	245	3,300	195	3,100	150	2,600	150
5mm	3,150	275	2,650	275	2,650	225	2,450	160	2,100	160
6mm	2,200	275	2,200	275	2,200	225	2,050	175	1,750	175
8mm	1,950	270	1,650	270	1,650	225	1,550	190	1,300	190
10mm	1,550	270	1,300	270	1,300	225	1,200	180	1,050	180
Prof. di Taglio										

Ap	Ae
2.5D	0.02D



- Utilizzare mandrini precisi.
- In caso di vibrazioni, ridurre proporzionalmente avanzamento e numero di giri.
- Utilizzare il refrigerante/lubrificante appropriato in funzione del materiale lavorato.

4RTE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Dolci / Acciai al Carbonio SS400 / S55C			Acciai Legati / Acciai per Utensili SCM / SKT / SKS / SKD			Acciai Bonificati / Acciai Temprati SKT / SKD / NAK55 / HPM1			Acciai Temprati / Acciai Inox SUS304 / SKD			Acciai Temprati		
Durezza	~750HN/mm²			~ 30HRc			30HRc ~ 38HRc			38HRc ~ 45HRc			45HRc ~ 55HRc		
Diametro Esterno	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap
0.5mm	31,500	630	0.01~0.025	31,500	565	0.01~0.025	31,500	475	0.01~0.025	31,500	440	0.01~0.025	19,000	260	0.005~0.01
0.6mm	31,500	755	0.012~0.03	31,500	680	0.012~0.03	29,500	530	0.012~0.03	26,500	445	0.012~0.03	15,500	260	0.006~0.012
0.7mm	29,000	940	0.014~0.035	27,000	680	0.014~0.035	25,000	530	0.014~0.035	22,500	445	0.014~0.035	13,500	260	0.007~0.014
0.8mm	25,000	935	0.016~0.004	23,500	680	0.016~0.04	22,000	530	0.016~0.04	19,500	445	0.016~0.04	11,500	260	0.008~0.016
0.9mm	22,500	935	0.018~0.045	21,000	680	0.018~0.045	19,500	530	0.018~0.045	17,500	445	0.018~0.045	10,500	260	0.009~0.018
1mm	20,000	930	0.02~0.05	19,000	680	0.02~0.05	17,500	530	0.02~0.05	15,500	445	0.02~0.05	9,500	260	0.01~0.02
1.2mm	16,500	930	0.024~0.06	15,500	680	0.024~0.06	14,500	530	0.024~0.06	13,000	445	0.024~0.06	7,950	260	0.012~0.024
1.5mm	13,500	930	0.03~0.075	12,500	680	0.03~0.075	11,500	530	0.03~0.075	10,500	445	0.03~0.075	6,350	260	0.015~0.03
2mm	10,000	930	0.04~0.1	9,500	680	0.04~0.1	8,900	530	0.04~0.1	7,950	445	0.04~0.1	4,750	260	0.02~0.04
2.5mm	8,100	930	0.05~0.125	7,600	680	0.05~0.125	7,100	530	0.05~0.125	7,950	445	0.04~0.1	4,750	260	0.02~0.04
Prof. di Taglio															



- Per ottenere la profondità desiderata, utilizzare frese con lunghezze crescenti.
- Nelle lavorazioni sui raggi, ridurre l'avanzamento di circa il 50%.
- Utilizzare il refrigerante/lubrificante appropriato in funzione del materiale lavorato.

2CRC

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio S54C ~ S55C		Acciai Legati / Acciai per Utensili SKD / SUS / SCM		(35 ~ 45Hrc) Acciai Temprati NAK / HPM	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1.9mm	3,200	60	2,300	50	2,500	40
2.9mm	2,500	60	1,800	50	1,800	40
3.9mm	1,850	60	1,400	50	1,400	40
4.9mm	1,600	60	1,100	50	1,200	40
5.9mm	1,400	60	900	50	1,000	40

4CRC

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio S54C ~ S55C		Acciai Legati / Acciai per Utensili SKD / SUS / SCM		(35 ~ 45Hrc) Acciai Temprati NAK / HPM	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1.9mm	5,940	1,260	4,950	1,050	3,960	840
2.9mm	5,280	1,130	4,400	940	3,520	750
3.9mm	4,700	1,010	3,910	840	3,100	670
4.9mm	4,200	910	3,400	750	2,800	600
5.9mm	3,700	820	3,000	670	2,400	540

1STE/2STE/4STE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Dolci / Acciai al Carbonio S54C ~ S55C		Acciai Legati SKD / SUS / SCM		Acciai Bonificati NAK / HPM	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
2mm	3,400 ~ 7,000	70 ~100	2,600 ~ 5,200	50 ~ 90	2,000 ~ 4,000	40 ~ 60
3mm	2,700 ~ 5,300	60 ~ 85	2,100 ~ 4,200	45 ~ 70	1,600 ~ 3,200	35 ~ 50
4mm	2,000 ~ 4,000	50 ~ 70	1,600 ~ 3,200	40 ~ 55	1,200 ~ 2,400	30 ~ 40
5mm	1,700 ~ 3,400	45 ~ 60	1,400 ~ 2,600	35 ~ 50	1,000 ~ 2,000	26 ~ 35
6mm	1,300 ~ 2,700	40 ~ 50	1,100 ~ 2,100	30 ~ 40	800 ~ 1,600	22 ~ 30
7mm	1,150 ~ 2,400	35 ~ 45	950 ~ 1,900	28 ~ 37	700 ~ 1,400	21 ~ 28
8mm	1,000 ~ 2,000	30 ~ 40	800 ~ 1,600	26 ~ 34	600 ~ 1,200	20 ~ 25
9mm	900 ~ 1,800	30 ~ 40	700 ~ 1,450	24 ~ 32	550 ~ 1,100	18 ~ 23
10mm	800 ~ 1,600	30 ~ 37	600 ~ 1,300	23 ~ 29	500 ~ 1,000	17 ~ 22
11mm	750 ~ 1,450	30 ~ 37	550 ~ 1,200	22 ~ 28	450 ~ 900	16 ~ 21
12mm	700 ~ 1,300	28 ~ 35	500 ~ 1,100	21 ~ 27	400 ~ 800	16 ~ 20
Prof. di Taglio	Ad : 0.05D					



2CCMC

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	S45C - S55C			SCM / SKD			(35 ~ 40HRC) HPM / NAK			Rame			Alluminum		
Diametro Esterno	RPM	AV Spallamento	AV Fresatura dal Pieno	RPM	AV Spallamento	AV Fresatura dal Pieno	RPM	AV Spallamento	AV Fresatura dal Pieno	RPM	AV Spallamento	AV Fresatura dal Pieno	RPM	AV Spallamento	AV Fresatura dal Pieno
1mm	28,000	230	180	24,500	180	150	17,500	120	100	23,000	150	140	50,000	400	270
1.5mm	18,700	340	180	16,300	180	150	11,700	120	100	13,000	150	140	40,900	400	270
2mm	14,000	360	190	12,300	220	150	8,800	170	130	11,500	150	140	31,800	400	270
3mm	9,300	390	250	8,200	240	170	5,800	170	130	8,000	200	180	21,200	400	270
4mm	7,000	390	260	6,100	240	190	4,400	180	130	6,000	200	180	15,900	500	330
5mm	5,600	470	330	4,900	260	260	3,500	200	150	5,000	200	180	12,700	500	330
6mm	4,700	480	330	4,100	270	210	2,900	200	130	4,000	200	180	10,600	500	330
8mm	3,500	470	330	3,100	270	210	2,200	200	130	3,000	200	180	8,000	600	400
10mm	2,800	480	310	2,500	280	210	1,800	200	110	2,400	200	180	6,400	600	400
12mm	2,300	470	300	2,000	260	200	1,500	200	110	2,000	200	180	5,300	700	470
	Rd	Ad	Ad	Rd	Ad	Ad	Rd	Ad	Ad	Rd	Ad	Ad	Rd	Ad	Ad
(D)	Spallamento		Fresat.	Spallamento		Fresat.	Spallamento		Fresat.	Spallamento		Fresat.	Spallamento		Fresat.
D<1	≤0.05D	≤1.5D	≤0.02D	≤0.05D	≤1.5D	≤0.02D	≤0.05D	≤1.5D	≤0.02D	≤0.1D	≤1.5D	≤0.1D	≤0.2D	≤1.5D	≤0.2D
1≤D<3	≤0.07D	≤1.5D	≤0.05D	≤0.07D	≤1.5D	≤0.05D	≤0.07D	≤1.5D	≤0.05D	≤0.2D	≤1.5D	≤0.2D	≤0.2D	≤1.5D	≤0.2D
3≤D<6	≤0.1D	≤1.5D	≤0.15D	≤0.1D	≤1.5D	≤0.15D	≤0.1D	≤1.5D	≤0.15D	≤0.2D	≤1.5D	≤0.2D	≤0.2D	≤1.5D	≤0.2D
6≤D	0≤.15D	≤1.5D	≤0.2D	≤0.15D	≤1.5D	≤0.2D	≤0.15D	≤1.5D	≤0.2D	≤0.2D	≤1.5D	≤0.2D	≤0.2D	≤1.5D	≤0.2D

- Quando i parametri eccedono il numero massimo di giri della macchina, ridurre proporzionalmente giri e avanzamento.
- In caso di vibrazioni, mantenere Ap a circa 0,01mm.
- Se la rigidità della macchina o del pezzo lavorato non sono ottimali o se si avvertono vibrazioni o rumori, ridurre giri e avanzamento proporzionalmente.

2CHA

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio S45C / S50C		Acciai Legati SK / SCM / SUS		Acciai Bonificati/ Acciai Temprati NAK / SCM / SUS	
Durezza	~ 225HB		225 ~ 325HB		30 ~ 45HRc	
Velocità	Vc = 25 ~ 50m/min		Vc = 20 ~ 40m/min		Vc = 15 ~ 40m/min	
Diametro del gambo	RPM	AV	RPM	AV	RPM	AV
3mm	2,700 ~ 5,300	59 ~ 86	2,100 ~ 4,200	46 ~ 67	1,600 ~ 3,200	35 ~ 51
4mm	2,000 ~ 4,000	48 ~ 68	1,600 ~ 3,200	38 ~ 54	1,200 ~ 2,400	29 ~ 41
6mm	1,300 ~ 2,700	36 ~ 49	1,100 ~ 2,100	31 ~ 42	800 ~ 1,600	22 ~ 30
8mm	1,000 ~ 2,000	32 ~ 42	800 ~ 1,600	26 ~ 34	600 ~ 1,200	22 ~ 30
10mm	800 ~ 1,600	30 ~ 37	640 ~ 1,300	23 ~ 29	600 ~ 1,200	17 ~ 22
12mm	700 ~ 1,300	28 ~ 35	530 ~ 1,100	21 ~ 27	400 ~ 800	17 ~ 22
Prof. di Taglio	Ap : 0.1d Ap : Axial Depth d : Diametro del gambo 					

- Utilizzare il refrigerante/lubrificante appropriato in funzione del materiale lavorato.

3CHA

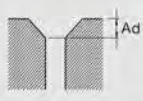
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio S45C / S50C		Acciai Legati SK / SCM / SUS		Acciai Bonificati/ Acciai Temprati NAK / SCM / SUS	
Durezza	~ 225HB		225 ~ 325HB		30 ~ 45HRc	
Velocità	Vc = 25 ~ 50m/min		Vc = 20 ~ 40m/min		Vc = 15 ~ 40m/min	
Diametro del gambo	RPM	AV	RPM	AV	RPM	AV
3mm	2,700 ~ 5,300	47 ~ 69	2,100 ~ 4,200	37 ~ 54	1,600 ~ 3,200	28 ~ 41
4mm	2,000 ~ 4,000	38 ~ 54	1,600 ~ 3,200	30 ~ 43	1,200 ~ 2,400	23 ~ 33
6mm	1,300 ~ 2,700	29 ~ 39	1,100 ~ 2,100	25 ~ 34	800 ~ 1,600	18 ~ 24
8mm	1,000 ~ 2,000	26 ~ 34	800 ~ 1,600	21 ~ 27	600 ~ 1,200	18 ~ 24
10mm	800 ~ 1,600	24 ~ 30	640 ~ 1,300	18 ~ 23	600 ~ 1,200	14 ~ 18
12mm	700 ~ 1,300	22 ~ 28	530 ~ 1,100	17 ~ 22	400 ~ 800	14 ~ 18
Prof. di Taglio	Ap : 0.1d Ap : Prof. Taglio d : Diametro del gambo 					

- Utilizzare il refrigerante/lubrificante appropriato in funzione del materiale lavorato.

2CEN

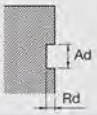
• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai Dolci / Acciai al Carbonio SS400 / S45C		Acciai legati / Acciai per Utensili SKD / SUS / SCM		Acciai Bonificati HPM / NAK (30~45HRC)		Leghe di Alluminio	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV	RPM	AV
2mm	1,400	100	800	50	650	40	4,800	280
3mm	1,400	100	800	50	650	40	4,800	280
4mm	1,280	100	690	50	580	40	4,200	280
5mm	1,300	100	640	50	520	40	3,300	280
6mm	1,150	100	600	50	480	40	2,900	280
8mm	1,000	100	530	50	420	40	2,600	280
10mm	850	90	490	40	390	30	2,400	260
12mm	720	90	410	40	310	30	1,900	260
14mm	610	90	340	40	270	30	1,700	240
16mm	550	90	310	40	250	30	1,500	230
Prof. di Taglio	Ad : 0.5D~1.0D 							

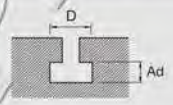
4TES/4TRS/4&6TDA/4&6TAC

• RPM : giri/min • Avanzamento (AV) : mm/min

Taglio Laterale

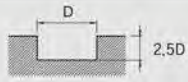
Materiale	Acciai Dolci / Acciai al Carbonio SS400 / S55C		Acciai Legati SKD / SUS / SCM		Acciai Bonificati NAK / HPM	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1.5mm	3,050	162	1,890	94	1,530	76
2mm	2,850	149	1,790	88	1,440	70
2.5mm	2,680	135	1,700	83	1,350	65
3mm	2,500	122	1,610	79	1,260	59
4mm	2,150	108	1,430	72	1,080	54
5mm	1,800	95	1,200	65	900	49
6mm	1,430	86	950	58	720	43
8mm	1,070	64	720	43	540	32
10mm	860	52	580	34	430	26
12mm	720	43	480	29	360	22
Prof. di Taglio	RD = 0.1D 					

Fresatura dal pieno

Materiale	Acciai Dolci / Acciai al Carbonio SS400 / S55C		Acciai Legati SKD / SUS / SCM		Acciai Bonificati NAK / HPM	
Diametro Esterno	RPM	AV	RPM	AV	RPM	AV
1.5mm	3,050	117	1,890	77	1,530	59
2mm	2,850	110	1,790	72	1,440	55
2.5mm	2,680	99	1,700	66	1,350	50
3mm	2,500	92	1,610	60	1,260	45
4mm	2,150	81	1,430	54	1,080	41
5mm	1,800	70	1,200	47	900	35
6mm	1,430	59	950	39	720	30
8mm	1,070	44	720	30	540	22
10mm	860	35	580	23	430	17
12mm	720	30	480	20	360	14
Prof. di Taglio						

1MEM/1REM

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acrilico		Acciai Legati	
Diametro Esterno	RPM	AV	RPM	AV
1mm	32,000	2,000	23,000	1,300
2mm	32,000	2,200	23,000	1,500
3mm	25,000	2,400	18,000	1,700
4mm	20,000	2,400	15,000	1,800
5mm	15,000	2,200	12,000	1,800
6mm	13,500	2,300	10,000	1,800
8mm	10,000	2,400	7,800	1,900
10mm	8,000	2,400	6,000	2,000
12mm	7,000	2,200	5,000	1,900
Prof. di Taglio				

2MRB / 3MRB

■ Aumentare del 10% i valori sotto riportati per 3MRB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Leghe di Alluminio			Plastica		
Velocità	Vc = 65 ~ 70m/min			Vc = 40 ~ 45m/min		
Raggio	RPM	AV	Ap	RPM	AV	Ap
R0.1	35,000	420	0.008~0.01	35,000	1,000	0.05~0.15
R0.2	35,000	560	0.005~0.01	35,000	1,100	0.07~0.2
R0.25	35,000	700	0.003~0.01	28,000	1,200	0.08~0.25
R0.3	35,000	910	0.006~0.03	24,000	1,200	0.1~0.3
R0.4	26,000	940	0.006~0.05	18,000	900	0.13~0.3
R0.5	21,000	970	0.005~0.08	14,000	700	0.17~0.5
R0.6	18,000	1,010	0.04~0.09	12,000	600	0.2~0.6
R0.7	15,000	1,020	0.05~0.1	10,000	500	0.23~0.7
R0.75	14,000	1,010	0.06~0.12	9,500	480	0.25~0.75
R0.8	13,000	1,010	0.08~0.13	9,000	450	0.27~0.8
R0.9	12,000	1,060	0.09~0.15	8,000	400	0.3~0.9
R1	11,000	1,100	0.03~0.21	7,000	350	0.33~1
R1.5	6,900	760	0.03~0.23	4,800	240	0.5~1.5
R2	5,200	690	0.01~0.28	3,600	180	0.6~2
R2.5	4,200	590	0.16~0.31	2,900	150	0.8~2.5
R3	3,500	550	0.22~0.36	2,400	120	1~3
Prof. di Taglio	Fresatura dal pieno • Ap : Prof. Taglio 					

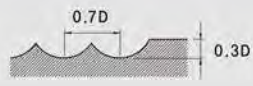
2MLE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	ABS / ACRILICO	
Diametro Esterno	RPM	AV
0.2mm	50,000	100
0.4mm	50,000	200
0.5mm	50,000	240
0.6mm	40,000	240
0.8mm	30,000	240
1mm	24,000	240
2mm	12,000	240
3mm	8,000	240
4mm	6,000	240
5mm	4,800	240
6mm	4,000	260
8mm	3,000	260
10mm	3,000	260
12mm	2,000	260
16mm	1,400	260
Prof. di Taglio		

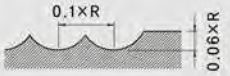
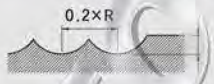
2MLB

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	ABS / ACRILICO	
Raggio	RPM	AV
R0.1	37,000	50
R0.2	37,000	100
R0.3	37,000	140
R0.4	37,000	190
R0.5	32,000	210
R1	16,000	210
R1.5	11,000	210
R2	8,200	210
R2.5	6,000	250
R3	5,500	250
R4	4,100	280
R5	3,200	280
R6	2,700	330
R8	2,200	330
Prof. di Taglio		

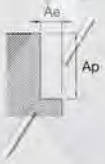
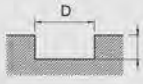
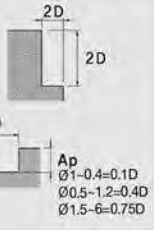
2MBE / 3MBE ▪ Aumentare del 10% i valori sotto riportati per 3MBE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Carbonic/ Acciai Legati/ Acciai Bonificati S50C / SCM / SKD / SUS / HPM / NAK		Acciai al Carbonio S50C		Acciai Legati SCM / SKD / SUS		Acciai Bonificati HPM / NAK (~45HRc)	
	R < 1		R > 1					
Velocità	50m/min		80m/min		70m/min		60m/min	
Raggio	RPM	AV	RPM	AV	RPM	AV	RPM	AV
R0.2	36,000	630	-	-	-	-	-	-
R0.3	24,300	675	-	-	-	-	-	-
R0.4	11,800	780	-	-	-	-	-	-
R0.5	12,000	780	-	-	-	-	-	-
R0.6	10,200	780	-	-	-	-	-	-
R0.75	9,000	780	-	-	-	-	-	-
R1	-	-	11,400	630	10,000	520	8,700	400
R1.5	-	-	7,700	630	6,700	520	5,800	400
R2	-	-	5,800	630	5,000	520	4,300	400
R3	-	-	3,800	630	3,300	520	2,900	400
R4	-	-	2,900	630	2,500	520	2,200	400
R5	-	-	2,300	630	2,000	520	1,700	400
R6	-	-	1,900	630	1,700	520	1,400	400
Prof. di Taglio			 0.1×R (R1~3=0.15×R)					

2MEM / 3MEM ▪ Aumentare del 10% i valori sotto riportati per 3MEM

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale	Acciai al Carbonio S50C			Acciai Legati SCM / SKD / SUS			Acciai Bonificati HPM / NAK			Aluminum			Rame		
Velocità	40~50m/min			35~45m/min			23~35m/min			100~200m/min			60~80m/min		
Diametro Esterno	RPM	AV		RPM	AV		RPM	AV		RPM	AV		RPM	AV	
		Spallamento	Fresatura dal Pieno		Spallamento	Fresatura dal Pieno		Spallamento	Fresatura dal Pieno		Spallamento	Fresatura dal Pieno		Spallamento	Fresatura dal Pieno
1mm	12,900	125	60	11,400	90	30	8,600	70	35	43,000	510	180	20,100	240	90
1.5mm	8,600	125	60	7,700	90	30	5,800	70	35	29,000	580	200	13,400	270	90
2mm	6,500	125	60	5,800	110	35	4,300	80	40	22,000	650	225	10,000	300	110
2.5mm	5,100	150	80	4,600	110	34	3,400	85	45	17,200	680	240	8,000	325	110
3mm	4,300	170	85	3,800	120	40	2,900	90	45	14,300	720	240	6,700	330	120
4mm	3,200	200	100	2,900	120	40	2,200	90	45	10,700	750	240	5,000	350	120
5mm	2,600	210	110	2,300	135	45	1,700	115	60	8,600	775	250	4,000	370	120
6mm	2,200	220	110	1,900	150	50	1,400	125	65	7,200	790	260	3,300	370	120
8mm	1,600	200	100	1,400	145	45	1,100	115	60	5,400	700	230	2,500	320	110
10mm	1,300	180	90	1,200	145	45	900	115	60	4,300	650	220	2,000	300	100
12mm	1,100	170	85	1,000	135	45	700	110	55	3,600	610	200	1,700	290	100
Prof. di Taglio	 **Ae** Ø1 ~ 2.9=0.07D Ø3 ~ 6=0.15D			 **Ap** Ø1 ~ 1.2=0.15D Ø1.5 ~ 3.5=0.5D Ø4 ~ 6=0.75D									 **Ap** Ø1~0.4=0.1D Ø0.5~1.2=0.4D Ø1.5~6=0.75D		

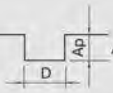
2MRE/3MRE ▪ Aumentare del 10% i valori sotto riportati per 3MRE

• RPM : giri/min • Avanzamento (AV) : mm/min

Materiale		ABS/MC Nylon			Acrilico/Polyaetal			Policarbonato		
Diametro Esterno	Lunghezza Effettiva Taglio	RPM	AV	Ap	RPM	AV	Ap	RPM	AV	Ap
0.5mm	2	6,000	300	0.20	15,000	300	0.20	9,000	300	0.20
"	4	6,000	300	0.20	15,000	300	0.20	9,000	300	0.20
"	6	6,000	300	0.20	15,000	300	0.20	9,000	300	0.20
0.6mm	4	6,000	340	0.20	14,400	300	0.20	8,800	540	0.20
"	6	6,000	340	0.20	14,400	300	0.20	8,800	540	0.20
0.7mm	4	6,000	380	0.20	13,800	300	0.20	8,600	780	0.20
"	6	6,000	380	0.20	13,800	300	0.20	8,600	780	0.20
0.8mm	6	6,000	420	0.20	13,200	300	0.20	8,400	1,000	0.20
"	8	6,000	420	0.20	12,900	280	0.20	8,200	960	0.20
0.9mm	6	6,000	460	0.20	12,600	300	0.20	8,200	1,300	0.20
"	10	6,000	460	0.20	11,800	260	0.20	7,800	1,000	0.20
1mm	6	6,000	500	0.30	12,000	300	0.30	8,000	1,500	0.30
"	8	6,000	500	0.30	11,500	270	0.30	7,700	1,400	0.30
"	10	6,000	500	0.30	11,000	240	0.30	7,500	1,200	0.30
"	12	6,000	500	0.30	10,400	220	0.30	7,200	1,100	0.30
"	16	6,000	500	0.30	9,300	160	0.30	6,700	830	0.30
"	20	6,000	500	0.30	8,000	90	0.30	6,000	500	0.30
1.2mm	6	6,000	610	0.40	11,700	330	0.40	8,000	1,500	0.40
"	8	6,000	610	0.40	11,200	300	0.40	7,700	1,400	0.40
"	10	6,000	600	0.40	10,700	280	0.40	7,500	1,300	0.40
"	12	6,000	600	0.40	10,200	250	0.40	7,200	1,200	0.40
1.4mm	6	6,000	720	0.40	11,340	360	0.40	8,000	1,600	0.40
"	10	6,000	700	0.40	10,700	310	0.40	7,700	1,400	0.40
"	16	6,000	680	0.40	9,800	230	0.40	7,200	1,000	0.40
1.5mm	6	6,100	780	0.50	11,200	380	0.50	8,000	1,600	0.50
"	10	6,000	760	0.50	10,200	330	0.50	7,500	1,400	0.50
"	14	6,000	730	0.50	9,600	270	0.50	7,000	1,100	0.50
"	16	6,000	730	0.50	8,800	250	0.50	6,700	1,000	0.50
"	20	5,900	700	0.50	7,600	180	0.50	6,100	750	0.50
1.6mm	6	6,100	830	0.80	11,000	390	0.80	8,000	1,600	0.80
2mm	8	6,100	1,000	1.00	10,100	440	1.00	7,900	1,700	1.00
"	10	6,000	980	1.00	9,800	420	1.00	7,700	1,600	1.00
"	12	6,000	970	1.00	9,500	400	1.00	7,500	1,600	1.00
"	14	5,900	950	1.00	9,100	380	1.00	7,300	1,500	1.00
"	16	5,900	930	1.00	8,800	360	1.00	7,100	1,400	1.00
"	18	5,800	920	1.00	8,500	340	1.00	6,900	1,300	1.00
"	20	5,700	890	1.00	8,000	300	1.00	6,500	1,200	1.00
"	25	5,600	850	1.00	7,200	250	1.00	6,000	1,100	1.00
"	30	5,400	800	1.00	6,200	190	1.00	5,400	850	1.00
2.5mm	12	6,000	1,300	1.20	8,600	480	1.20	7,400	1,600	1.20
"	20	5,700	1,100	1.00	6,800	350	1.00	6,200	1,300	1.00
3mm	8	6,200	1,600	1.50	8,700	610	1.50	8,000	1,900	1.50
"	12	6,000	1,500	1.50	8,000	560	1.50	7,500	1,800	1.50
"	16	5,800	1,400	1.50	7,300	510	1.50	7,000	1,700	1.50
"	20	5,600	1,300	1.50	6,400	440	1.50	6,300	1,800	1.50
"	25	5,400	1,200	1.50	5,500	370	1.50	5,600	1,400	1.50
"	30	5,200	1,100	1.50	4,500	290	1.50	4,800	1,200	1.50
"	40	4,800	960	1.50	2,700	160	1.50	3,500	840	1.50
4mm	12	5,000	1,400	2.00	7,000	520	2.00	5,800	1,500	2.00
"	16	4,900	1,400	2.00	6,500	480	2.00	5,500	1,400	2.00
"	18	4,800	1,400	2.00	6,300	470	2.00	5,400	1,400	2.00
"	20	4,800	1,400	2.00	6,000	440	2.00	5,100	1,300	2.00
"	25	4,700	1,300	2.00	5,600	410	2.00	4,900	1,300	2.00
"	30	4,500	1,300	2.00	4,700	340	2.00	4,400	1,100	2.00
"	35	4,300	1,300	2.00	4,200	300	2.00	4,100	1,100	2.00
"	40	4,200	1,300	2.00	3,600	250	2.00	3,600	960	2.00
"	50	3,900	1,200	2.00	2,400	160	2.00	2,900	780	2.00
5mm	16	3,400	1,200	2.50	5,800	470	2.50	4,000	1,200	2.50
"	35	3,200	1,100	2.50	3,900	260	2.50	2,900	910	2.50
6mm	35	2,400	960	3.00	2,600	240	3.00	1,900	760	3.00
"	50	2,200	890	3.00	1,900	170	3.00	1,700	670	3.00
"	60	2,000	800	3.00	1,000	90	3.00	1,500	600	3.00

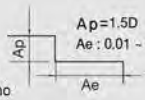
Prof. di Taglio

Fresatura dal Pieno
- Ap : Prof. Taglio
- D : Diametro Esterno



Ap≤0.5D

Spallamento
- Ap : Prof. Taglio
- Ae : Passo radiale
- D : Diametro Esterno



Ap=1.5D
Ae : 0.01 ~ 0.015D (Min. 0.01mm)

NOTE



150
Famiglie

10,680
Utensili



Rivenditore di zona :

www.hypertools.it

Hyper Tools S.r.l.
Via Canton Vigna, 8
10015 IVREA
Tel. : 0125.635991
Fax. : 0125.627763
info@hypertools.it
www.hypertools.it