SOLUTION TOOL



Solution Tool Production

Equipped with equipment to produce micro end mills and mass production!
Excellent precision tolerance with world-class measuring equipment!



SOLUTION TOOL ha notevolmente migliorato la qualità utilizzando attrezzature di alta precisione riducendo al minimo il tempo di esecuzione con la velocità dei 5 assi. Macchina CNC e braccio robotico di carico utensili a 6 assi.

Solution Tool has greatly improved the quality by using high-precision equipment, and has minimized the loading time with 5-axis CNC machine and 6-axis robot arm.

SOLUTION TOOL utilizza una Macchina di misura 3D super precisa senza contatto per la totale gestione delle tolleranze.
Può misurare il diametro degli utensili da 0,1 mm a 100 mm.

Solution Tool uses a non-contact super-precision 3D easuring machine to manage tolerances thoroughly.
It can measure from 0.1 mm to 100 mm in tools diameter, all tools are measured and managed.







Produzione di frese di qualità top al mondo!
World-class quality end mill production

Alto livello di tolleranza e di precisione.
High level of precision tolerance

Equipment Lineup

Dotato di attrezzature per la produzione di massa di micro frese !
Tolleranza di precisione eccellente con apparecchiature di misurazione di alto livello.



Possono essere costruiti vari tipi di frese per soddisfare le esigenze del cliente.
La rettifica è dotata di un laser di misurazione che consente il controllo accurato e ripetitivo della fresa all'interno del ciclo di lavoro.

Various types of end mills can be manufactured to meet customer needs. The product is equipped with a measuring laser, which allows accurate and repetitive measurement of the end mill inside the instrument.

Solution Tool è in grado di produrre micro frese (0.1Ø) grazie l'ultima rettifica di precisione a 6 assi, la qualità è stata notevolmente migliorata.

Solution Tool is able to manufacture micro end mills (0.1Ø~) by introducing the latest 6-axis precision machine, and the quality has been greatly improved.



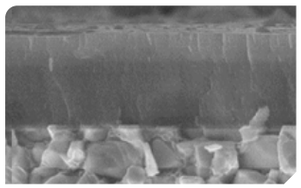


Solution Tool produce frese rastremate con svariate lunghezze per lavorare anche su pezzi molto profondi.

Solution Tool produces tapered end mills with various lengths to work even on very deep workpiece.

Solution Tool Description

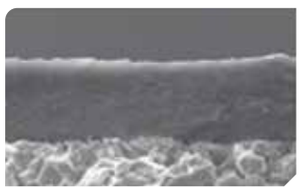
Coating of
Endmill for Super Hardened Steels



Durezza dello strato di rivestimento (Hv0,05): 4.000
Caratteristiche: struttura nanocomposita con contenuto di Si più elevato rispetto a hardcut, resistenza all'usura e all'ossidazione ulteriormente migliorata.

Coating layer hardness (Hv0,05): 4,000
Features: Nano-composite structure with higher Si content compared to hardcut, further improved wear and oxidation resistance

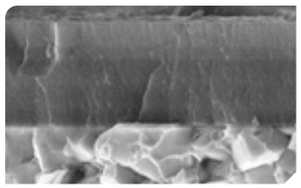
Coating of
Endmill for Hardened Steels



Durezza dello strato di rivestimento (Hv0,05): 3.600
Caratteristiche: struttura nanocomposita TiSiN con durezza ultra elevata anti usura. Alta resistenza rispetto ad AlTiN ed eccellente resistenza all'ossidazione.

Coating layer hardness (Hv0,05): 3,600
Features: TiSiN nanocomposite structure with ultra-high hardness, wear resistance compared to AlTiN, and excellent oxidation resistance.

Coating of
Endmill for Multipurpose

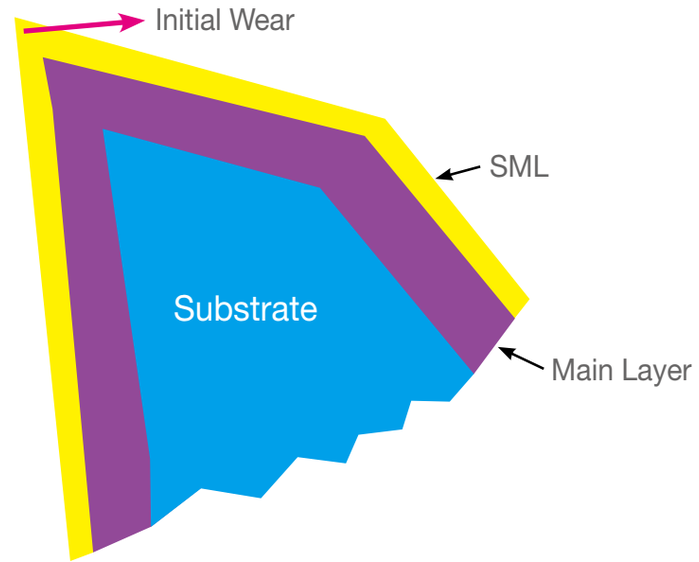


Durezza dello strato di rivestimento (Hv0,05): 3.600
Caratteristiche: tenacità migliorata rispetto a hardcut, taglio notevolmente migliorato realizzando un basso attrito/basso trasferimento di calore e un'usura particolarmente uniforme anche su lavorazioni interrotte.

Coating layer hardness (Hv0,05): 3,600
Features: Improved toughness compared to hardcut, greatly improved cutting range by realizing low friction/low heat transfer especially uniform wear in interrupted machining.

HR coating

Endmill for Multipurpose

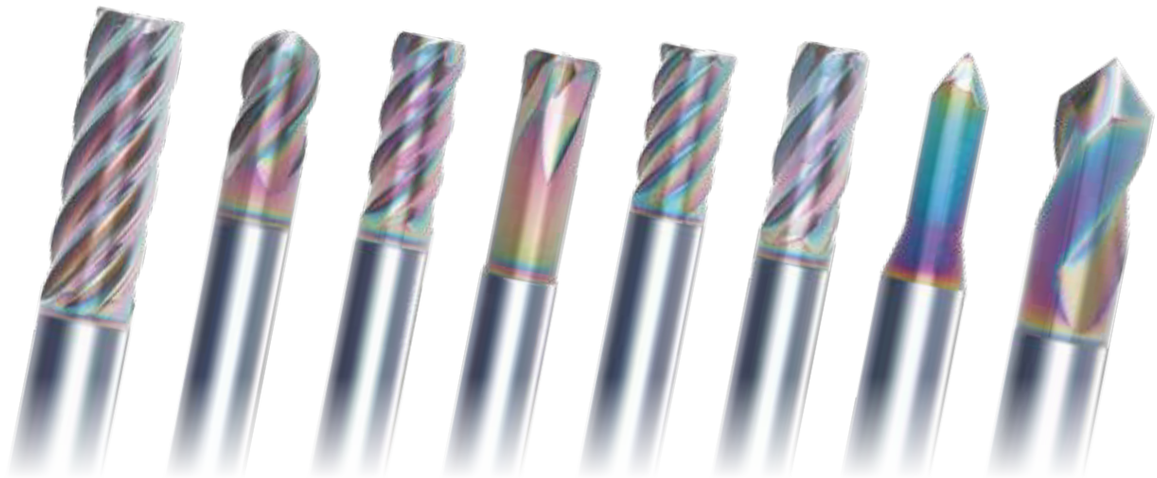


Caratteristiche

1. Applicazione di più strati di rivestimento sulla superficie (SML) su Hardcut
2. Migliore resistenza alla scheggiatura aumentando la tenacità.
3. Migliori prestazioni nella lavorazione interrotta
4. Taglio possibile sia in ambienti umidi/asciutti (shock termico e soppressione dell'idrossilazione del Si)
5. Aumentare la durata degli utensili
6. Ampliamento della gamma di lavorazioni non ferrose diverse da acciaio/ghisa (Ni, Ti, Co, Ta, ecc.)

Features

1. Applying a Surface Modification Layer (SML) to Hardcut
2. Improved chipping resistance by increasing toughness.
3. Improved performance in interrupted machining
4. Cutting possible in both wet/dry environments(thermal cracking and Si hydroxylation suppression)
5. Increase tools life
6. Expansion of non-ferrous machining range other than steel/cast iron (Ni, Ti, Co, Ta, etc.)



Endmill for Super Hardened Steels ~HRC68

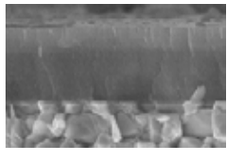


CARATTERISTICHE

- Metallo duro integrale super micrograna eccellente per il taglio ad alta velocità
- Maggiore rigidità e vibrazioni ridotte grazie alla geometria ottimizzata
- Aumentare la durata degli utensili mediante il processo di post-trattamento

FEATURES

- Used super micrograin solid carbide excellent for high speed cutting
- Greater rigidity and reduced chattering through optimized geometry
- Increase tools life by post-treatment process



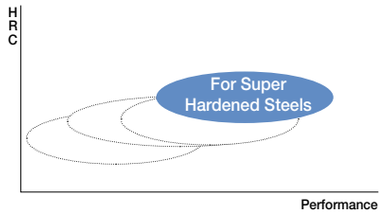
RIVESTIMENTO

Applicazioni: Taglio a secco ad alta velocità su acciaio super temprato (fino a HRC68)

COATING

Applications: High-speed dry cutting on super hardened steel(up to HRC68)

APPLICATION



Endmill for Multipurpose ~HRC55

NEW

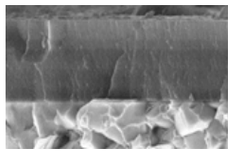


CARATTERISTICHE

- Metallo duro integrale micrograna con alto TRS eccellente per il taglio a bassa/alta velocità
- Maggiore rigidità e vibrazioni ridotte grazie alla geometria ottimizzata
- Design ottimale per lavorazioni multiuso

FEATURES

- Used micrograin solid carbide with high TRS excellent for low/high speed cutting
- Greater rigidity and reduced chattering through optimized geometry
- Optimal design for multipurpose machining



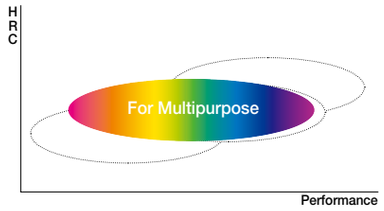
RIVESTIMENTO

Applicazioni: Rivestimento polivalente in grado di lavorare acciai di durezza medio/alta e materiali speciali (Inconel, lega di Ti, Inox, ecc.) a bassa/alta velocità

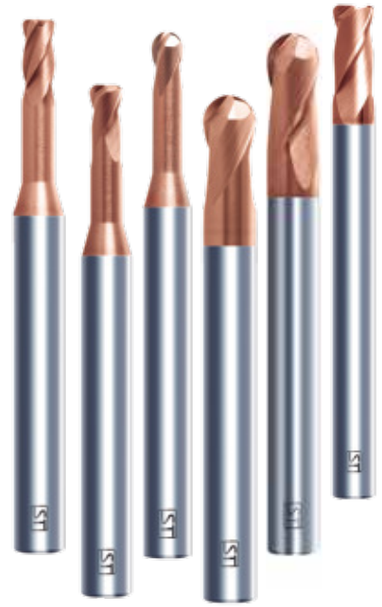
COATING

Applications: Multi-purpose coating capable of processing medium/high-hardness steels and special materials(Inconel, Ti alloy, SUS, etc.) at low/high speed

APPLICATION



Endmill for Hardened Steels ~HRC55

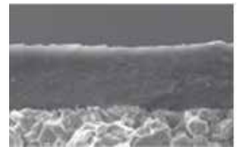


CARATTERISTICHE

- Metallo duro integrale super micrograna eccellente per il taglio ad alta velocità
- Maggiore rigidità e vibrazioni ridotte grazie alla geometria ottimizzata
- Aumentare la durata degli utensili mediante il processo di post-trattamento

FEATURES

- Used super micrograin solid carbide excellent for high speed cutting
- Greater rigidity and reduced chattering through optimized geometry
- Increase tools life by post-treatment process



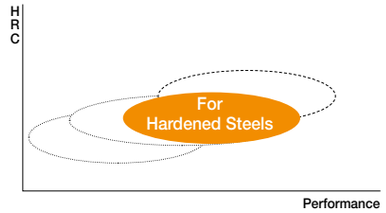
RIVESTIMENTO

Applicazioni: Lavorazione ad alta velocità su acciaio ad alta durezza fino a HRC55, fresatura ad alta velocità su materiali difficili da tagliare, ottimo sia a umido e a secco.

COATING

Applications: High-speed machining of high-hardness steel with up to HRC55, high-speed, high-load drilling of difficult-to-cut materials, and high-speed wet, dry gear machining.

APPLICATION



Diamond Coating

Il rivestimento diamantato più adatto per lavorazione di materiali non ferrosi!

The most suitable diamond coating for machining non-ferrous materials!

2BD, 4BD, 2CD, 4CD

Applicazioni / Applications



Copper Alloy



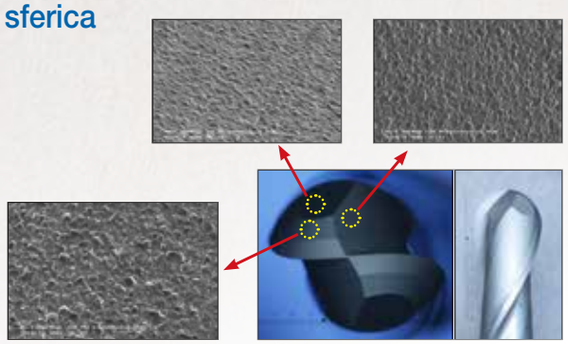
Alumium Alloy



Graphite

Information of Diamond Coating

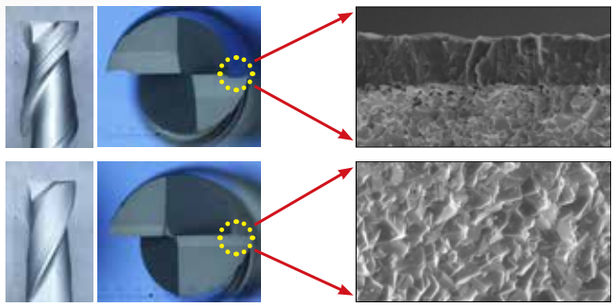
■ Fresa sferica
Ball



- Adatto per la lavorazione di metalli non ferrosi come grafite/alluminio
- Granulometria uniforme
- Buona finitura superficiale
- Aumentare la durata dell'utensile

- Suitable for non-ferrous processing such as graphite/aluminum
- Uniform particle size
- Good surface finish
- Increase tool life

■ Fresa piana e torica / Square & Corner R



Struttura densa, compatta

Dense section structure (x 10.000)

Struttura Diamante cubico

Cubic Diamond (x 20.000)

High-Feed! High-Speed!

NEW

Torica Alto Avanzamento

Corner Radius for High Feed Rate

4CF, 4CHF, 4CHFHR

- Ottimizzato per la lavorazione ad avanzamenti elevati
- Design ottimale adatto per sgrossatura e semisgrossatura ad alto avanzamento
- Angolo elica ottimale per ogni applicazione
- Riduzione del tempo di lavoro

- Optimized for high-feed machining with a material with excellent TRS
- Optimal design suitable for high-feed roughing and semi-roughing
- Applying the optimal helix angle for each application
- Work time reduction

Helix 0°



Helix 12°



Helix 10°



NEW

TROCHOIDAL

Eccellente per lavorazioni di sgrossatura avanzate
[Applicabile a vari materiali]

Excellent for in advanced roughing machining
[Applicable to various materials]

5 & 6 TROHR

- Riduce le vibrazioni e aumenta la durata dell'utensile con l'elica e passo variabile
- Eccellente gestione e evacuazione del truciolo grazie all'applicazione del rompitruciolo
- Ottimizzato per lavorazioni di sgrossatura

- Reduce chattering and increase tool life with variable helix and unequal divided flute
- Excellent chip evacuation by applying chip break
- Optimized for roughing machining with a material with excellent TRS



NEW

Engraving Ball Endmill

Fresa da incisioni

2EBTHR

- Design ottimizzato per l'incisione
- Maggiore rigidità e vibrazioni ridotte grazie alla geometria ottimizzata
- Svariate misure e angoli standard

- Design optimized for engraving
- Greater rigidity and reduced chattering through optimized geometry
- Various standards



NEW

Inserts, Milling Heads & Carbide Extensions

Perfette per lavorazioni di copiatura con “grandi diametri”.

- Inserti per copiatura sferici e torici con geometria a elica per ridurre le forze di taglio e ottima resistenza all’usura grazie ai rivestimenti proposti (S-HC o AlTiSiN)
- Grande rigidità per ridurre al minimo le scheggiature attraverso un accoppiamento ultrapreciso con le testine che garantisce un’ottima concentricità per finiture più precise
- Testine di altissima precisione disponibili sia in versione “forata” che “non forata”
- Steli in metallo duro integrale calettabili con una vasta gamma di lunghezze e diametri sia pari che dispari.

Perfect for copying operations with "large diameters".

- Ball end and corner radius copying inserts with helical geometry to reduce cutting forces and excellent wear resistance thanks to the proposed coatings (S-HC or AlTiSiN)
- Great rigidity to minimize chipping through an ultra-precise fit with the modular heads that guarantees excellent concentricity for more precise finishes
- High precision milling heads available in both “drilled” and “non-drilled” versions
- Shrinkable solid carbide shanks in a wide range of lengths and both odd and even diameters



Icon Guide

Guida alle icone

Materiale / Tool Material

- SMG Carbide • Metallo duro super micrograna • Super Micrograin carbide
- MG Carbide • Metallo duro micrograna • Micrograin carbide

Rivestimento / Coating

- S-HC Coated • Rivestimento nanocomposito per acciai super temprati • Nanocomposite coating for Super hardened steels
- AlTiSiN Coated • AlTiSiN • AlTiSiN
- HR Coated • HR Hardcut • HR Hardcut
- AlTiCrSiN Coated • AlTiCrSiN • AlTiCrSiN
- Diamond Coated • Rivestimento Diamantato • Diamond
- AlTiN Coated • AlTiN • AlTiN
- Uncoated • Senza rivestimento • Uncoated

Angolo elica / Helix Angle

- HX 0° • Helix 0°
- HX 10° • Helix 10°
- HX 12° • Helix 12°
- HX 15° • Helix 15°
- HX 20° • Helix 20°
- HX 27° • Helix 27°
- HX 30° • Helix 30°
- HX 35/38° • Helix 35/38°
- HX 37/38° • Helix 37/38°
- HX 37,5° • Helix 37,5°
- HX 38° • Helix 38°
- HX 40° • Helix 40°
- HX 45° • Helix 45°

Numero di denti / Number of Flute

- 1 • 1 Flute
- 2 • 2 Flute
- 3 • 3 Flute
- 4 • 4 Flute
- 5 • 5 Flute
- 6 • 6 Flute

Applicazioni / Application

- Side • Side
- Slot • Slot
- 3D • 3D
- Face • Face
- Plunge • Plunging
- C • C chamfering
- R • R Chamfering

Durezza / HRC

- ≦68 HRC • ~68 HRC
- ≦55 HRC • ~55 HRC
- ≦50 HRC • ~50 HRC

Geometrie di Affilatura / Shape

- Unequal Flute Spacing • Passo e elica Variabile • Unequal Flute Spacing

Indice / Index _By Use

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Per uso su: Use	Tipologia End Feature	Z # of Flute	Famiglia Code Name	Descrizione Utensile Tool Description	Ø utensile Tool Dia	Rivestimento Coating	Pagina Page		Acciaio Basso Legato Acciaio per Utensili Carbon Steel/Alloy Steel/Tool Steel (Up to 350 HB)	Acciaio Inox Stainless Steel (Up to 240 HB)	Ghisa Cast Iron (Up to 260 HB)	Acciaio Alto Legato Prehardened Steel (Up to 50 HRC)	Bonificati Temprati Hardened Steel (45 to 55 HRC)	Temprati fino a 68HRC Super Hardened Steel (55 to 68 HRC)	Leghe di Nichel e Titanio Nickel & Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine / ABS Resin & Plastics	Grafite Graphite
PER ACCIAI FINO A (~HRC68) For Super Hardened Steels (~HRC68)	SFERICA Ball End	2F	2NBH	Z2 Frese Sferiche Rastremate 2F Necked Ball End for Super Hardened Steels	0.2~12	S-HC	22		○	△	○		○	◎					
			2BH	Z2 Frese Sferiche 2F Ball End for Super Hardened Steels	0.2~12	S-HC	27		○	△	○		○	◎					
			2BTH	Z2 Frese Sferiche Rastremate Coniche 2F Ball End-Tapered Neck	0.5~4	S-HC	29		○	△	○		○	◎					
		3F	3BH NEW	Z3 Frese Sferiche 3F Ball End for Super Hardened Steels	1~6	S-HC	34		○	△	○		○	◎					
	TORICA Corner Radius	2F	2NCH	Z2 Frese Toriche Rastremate 2F Necked Corner Radius for Super Hardened Steels	0.2~12	S-HC	35		○	△	○		○	◎					
			2CLH	Z2 Frese Toriche 2F Corner Radius Long for Super Hardened Steels	0.8~12	S-HC	44		○	△	○		○	◎					
		4F	4NCH	Z4 Frese Toriche Rastremate 4F Necked Corner Raduus for Hardened Steels	1~12	S-HC	46		○	△	○		○	◎					
			4CLH	Z4 Frese Toriche 4F Corner Radius Long for Super Hardened Steels	1.5~12	S-HC	52		○	△	○		○	◎					
	CILINDRICA Square End	2F	2NSH	Z2 Frese Piane Rastremate 2F Necked Square End for Super Hardened Steels	0.1~8	S-HC	54		○	△	○		○	◎					
			2SH	Z2 Frese Piane 2F Square End for Super Hardened Steels	0.2~12	S-HC	59		○	△	○		○	◎					
		4F	4NSH NEW	Z4 Frese Piane Rastremate 4F Necked Square End for Super Hardened Steels	1~4	S-HC	61		○	△	○		○	◎					
			4SH	Z4 Frese Piane 4F Square End for Super Hardened Steels	1~12	S-HC	63		○	△	○		○	◎					
			4SHH NEW	Z4 Frese Piane Elica 45° 4F Square End for Super Hardened Steels H/X45°	1~20	S-HC	64		○	△	○		○	◎					
		6F	6SH	Z6 Frese Piane Elica 45° 6F Square Endmill for Super Hardened Steels	6~20	S-HC	66		○	△	○		○	◎					
PER ACCIAI FINO A (~HRC55) For Hardened Steels (~HRC55)	SFERICA Ball End	2F	2NB	Z2 Frese Sferiche Rastremate 2F Necked Ball End	0.2~12	AlTiSiN	70		○	△	○	○	◎	○	○	△			
			2BS	Z2 Frese Sferiche Serie Corta 2F Ball End-Short	0.5~12	AlTiSiN	75		○	△	○	○	◎	○	○	△			
			2BR	Z2 Frese Sferiche Serie Standard 2F Ball End-Regular	0.2~20	AlTiSiN	76		○	△	○	○	◎	○	○	△			
			2TB NEW	Z2 Frese Sferiche Coniche 2F Tapered Ball End	0.5~3	AlTiSiN	78		○	△	○	○	◎	○	○	△			
	TORICA Corner Radius	2F	2NC	Z2 Frese Toriche Rastremate 2F Necked Corner Radius	0.2~12	AlTiSiN	80		○	△	○	○	◎	○	○	△			
			2CL	Z2 Frese Toriche 2F Corner Radius-Long	0.8~12	AlTiSiN	89		○	△	○	○	◎	○	○	△			
			2CT NEW	Z2 Frese Toriche Coniche 2F Tapered Corner Radius	0.3~3	AlTiSiN	91		○	△	○	○	◎	○	○	△			
		4F	4NC	Z4 Frese Toriche Rastremate 4F Necked Corner Radius	1~12	AlTiSiN	93		○	△	○	○	◎	○	○	△			
			4CL	Z4 Frese Toriche 4F Corner Radius-Long	1.5~12	AlTiSiN	99		○	△	○	○	◎	○	○	△			
			4CF	Z4 Frese Toriche Alto Avanzamento 4F Corner Radius-High Feed Rate	4~12	AlTiSiN	101		○	△	○	○	◎	○	○	△			
			4CHF NEW	Z4 Frese Toriche Alto Avanzamento 12° 4F Corner Radius-High Feed Rate H/X12°	5~12	AlTiSiN	102		○	△	○	○	◎	○	○	△			

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PER ACCIAI FINO A (~HRC55) For Hardened Steels (~HRC55)	CILINDRICA Square End	2F	2NS	Z2 Frese Piane Rastremate 2F Necked Square End	0.1~8	AlTiSiN	103		○	△	○	○	◎	○	○	△			
			2SR	Z2 Frese Piane 2F Square End-Regular	0.2~20	AlTiSiN	108		○	△	○	○	◎	○	○	△			
			2SL	Z2 Frese Piane Serie Lunga 2F Square End-Long	1~20	AlTiSiN	110		○	△	○	○	◎	○	○	△			
		4F	NEW 4NS	Z4 Frese Piane Rastremate 4F Necked Square End	1~6	AlTiSiN	111		○	△	○	○	◎	○	○	△			
			4SR	Z4 Frese Piane 4F Square End-Regular	1~20	AlTiSiN	113		○	△	○	○	◎	○	○	△			
			4SL	Z4 Frese Piane Serie Lunga 4F Square End-Long	2~20	AlTiSiN	115		○	△	○	○	◎	○	○	△			
			NEW 4TE	Z4 Frese Piane Coniche 4F Tapered Square End Mill	0.7~1	AlTiSiN	116		○	△	○	○	◎	○	○	△			
		6F	6SR	Z6 Frese Piane Elica 45° 6F Square End-Regular	6~20	AlTiSiN	117		○	△	○	○	◎	○	○	△			
MULTIUSO (~HRC55) For multipurpose (~HRC55)	SFERICA Ball End	2F	NEW 2BRHR	Z2 Frese Sferiche 2F Ball End for Multipurpose	1~12	HR	120		○	◎	○	◎	◎	○	◎	○			
		4F	NEW 4BRHR	Z4 Frese Sferiche 4F Ball End for Multipurpose	2~12	HR	121		○	◎	○	◎	◎	○	◎	○			
	TORICA Corner Radius		NEW 4CLHR	Z4 Frese Toriche Serie Lunga 4F Corner Radius-Long for Multipurpose	6~12	HR	122		○	◎	○	◎	◎	○	◎	○			
			NEW 4CHFHR	Z4 Frese Toriche Alto Avanzamento 10° 4F Corner Radius-High Feed Rate for Multipurpose	6~12	HR	123		○	◎	○	◎	◎	○	◎	○			
		6F	NEW 6CLHR	Z6 Frese Toriche Multiuso 6F Corner Radius End Mill for Multipurpose	6~12	HR	124		○	◎	○	◎	◎	○	◎	○			
	CILINDRICA Square End	4F	NEW 4SRHR	Z4 Frese Piane 4F Square End for Multipurpose	3~12	HR	125		○	◎	○	◎	◎	○	◎	○			
		4F	NEW 4SSHR	Z4 Frese Cilindriche con Smusso 4F Square End with Chamfer for Multipurpose	6-16	HR	126		○	◎	○	◎	◎	○	◎	○			
PER SGROSSATURA For Roughing	TORICA Corner Radius	5/6F	NEW 5 & 6 TROHR	Z5-6 Frese Toriche Trocoidali con Rompitruciolo 5,4F Trochoidal End for Multipurpose	6~20	HR	130		◎	△	◎	◎	○		○	△			
	CILINDRICA Square End	4F	NEW 4SRR	Z4 Frese Cilindriche con Rompitruciolo 4F Square Roughing End	6~12	AlTiCrSiN	131		◎	△	◎	◎	○		○	△			
PER ALLUMINIO For Aluminum	TORICA Corner Radius	3F	3CA	Z3 Frese Toriche per Alluminio 3F Corner Radius End for Aluminum	3~16	Uncoated	134									△	◎	△	
	CILINDRICA Square End	2F	2SA	Z Frese Cilindriche per Alluminio 2F Square End for Aluminum	1~12	Uncoated	135									△	◎	△	
		3F	3SA	Z3 Frese Cilindriche per Alluminio 3F Square End for Aluminum	1~20	Uncoated	136									△	◎	△	
PER ACCIAIO INOX For Stainless steel	CILINDRICA Square End	4F	4SST	Z4 Frese Cilindriche per Acciaio Inox 4F Square for Stainless Steels	1~12	AlTiN	140		○	◎	○				◎	○	○	△	
	TORICA Corner Radius		4CST	Z4 Frese Toriche per Acciaio Inox 4F Corner Radius for Ctainless Steels	1~12	AlTiN	141		○	◎	○				◎	○	○	△	
PER GRAFITE For Graphite	SFERICA Ball End	2F	2BD	Z2 Frese Sferiche Rastremate per Grafite-Rivestimento Diamantato 2F Ball End-Diamond Coating	0.5~12	Diamond	146											△	◎
		4F	4BD	Z4 Frese Sferiche Rastremate per Grafite-Rivestimento Diamantato 4F Ball End-Diamond Coating	1.5~12	Diamond	149											△	◎
	TORICA Corner Radius	2F	2CD	Z2 Frese Toriche Rastremata per Grafite-Rivestimento Diamantato 2F Corner Radius-Diamond Coating	0.5~4	Diamond	151											△	◎
		4F	4CD	Z4 Frese Toriche Rastremate per Grafite-Rivestimento Diamantato 4F Corner Radius-Diamond Coating	2~12	Diamond	152											△	◎

Indice / Index By Use

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Per uso su: Use	Tipologia End Feature	Z # of Flute	Famiglia Code Name	Descrizione Utensile Tool Description	Ø utensile Tool Dia	Rivestimento Coating	Pagina Page		Acciaio Basso Legato Acciaio per Utensili Carbon Steel/Alloy Steel/Tool Steel (Up to 350 HB)	Acciaio Inox Stainless Steel (Up to 240 HB)	Ghisa Cast Iron (Up to 260 HB)	Acciaio Alto Legato Prehardened Steel (Up to 50 HRC)	Bonificati Temprati Hardened Steel (45 to 55 HRC)	Temprati fino a 68HRC Super Hardened Steel (55 to 68 HRC)	Leghe di Nichel e Titanio Nickel & Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine / ABS Resin & Plastics	Grafite Graphite
PER RAME For Copper	SFERICA Ball End	2F	NEW 2NBC	Z2 Frese Sferiche Rastremate per Rame 2F Necked Ball End for Copper	0.2~6	AlTiN	158		△		△				△	◎	△		
	TORICA Corner Radius		NEW 2NCC	Z2 Frese Toriche Rastremate per Rame 2F Necked Corner Radius for Copper	0.2~6	AlTiN	159		△		△				△	◎	△		
PER MATERIALI SINTETICI For Synthetic Material	SFERICA Ball End	2F	2BY	Z2 Frese Sferiche Rastremate per Materiali Sintetici 2F Ball End for Synthetic Materials	0.3~12	Uncoated	162										△	◎	△
	CILINDRICA Square End		2SY	Z2 Frese Cilindriche Rastremate per Materiali Sintetici 2F Square End for Synthetic Materials	0.3~12	Uncoated	164										△	◎	△
SPECIALI Special	SFERICA Ball End	2F	NEW 2EBTHR	Z2 Frese Sferiche Coniche per Incisioni 2F Engraving Ball-Tapered for Multipurpose	0.2~1	HR	168		○	◎	○	◎	◎	○	◎	○			
	CILINDRICA Square End	1F	1FE	Z1 Frese Monotagliente per Alluminio e ABS 1F End Mill	0.2~6	Uncoated	169		△	△	△					△	◎	◎	
		2F	NEW 2NCDHR	Z2 Frese 90° Multifunzione - Centrini e Svasature Rivestite 2F NC Drill for Multipurpose	4~12	HR	170		○	◎	○	◎	◎	○	◎	○			
			2CRRC	Z2 Frese a Raggio Concavo 2F Corner Rounding R-C	1~12	AlTiN	171		◎		◎		◎		○	○	◎	◎	
			2CE	Z2 Punte da Centro 2F Centering	3~12	Uncoated	172		△	△	△					△	○	◎	
			2TC	Z2 Frese per Cave a "T" 2F T Slot Cutter	3~12	Uncoated	173		△	△	△					△	○	◎	
		4F	4RTCC	Z4 Frese per Cave a "T" con Raggio 4F Round T Slot Cutter-C	6~10	AlTiN	174		◎		◎		◎		○	○	◎	◎	
INSERTI TESTINE E STELI MODULARI Inserts, Modular Heads and Carbide Extensions	INSERTO Insert	2F	NEW STSFH	Z2 Inserti Sferici High Precision fino a 68 HRC 2F High Precision Ball End Inserts up to 68 HRC	10~25	S-HC	178		○	△	○		○	◎					
			NEW STTRH	Z2 Inserti Torici High Precision fino a 68 HRC 2F High Precision Corner Radius Inserts up to 68 HRC	10~25	S-HC	179		○	△	○		○	◎					
			NEW STSF	Z2 Inserti Sferici High Precision fino a 55 HRC 2F High Precision Ball End Inserts up to 55 HRC	10~25	AlTiN	180		○	△	○	○	◎	○	○	△			
			NEW STTR	Z2 Inserti Torici High Precision fino a 55 HRC 2F High Precision Corner Radius Inserts up to 55 HRC	10~25	AlTiN	181		○	△	○	○	◎	○	○	△			
	TESTINA Head		NEW ST00	Testine per Inserti Sferici High Precision Indexable Milling Heads for High Precision Ball End Inserts	10~25		182												
			NEW ST90	Testine per Inserti Torici High Precision Indexable Milling Heads for High Precision Corner Radius Inserts	10~25		183												
	STELO Stem		NEW STH	Steli in Metallo duro Integrale Carbide Extensions for Indexable Milling Heads	10~32		184												

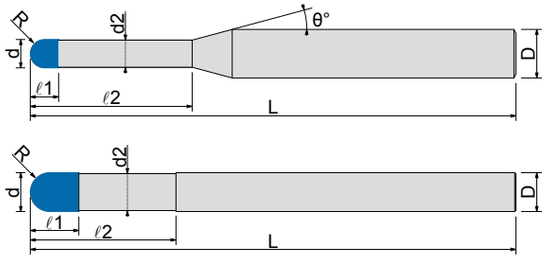
SOLUTION TOOL



2NBH Z2 Frese Sferiche Rastremate per Acciai fino a 68 HRC

2F Necked Ball End for Super Hardened Steels





Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati fino a 68 HRC
- Solo per taglio a secco

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material:

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30´	1°	1°30´	2°	3°
2NBH020050	0.2 X R0.1	0.15	0.50	0.18	15	45	4	0.55	0.56	0.58	0.60	0.64
2NBH020075	0.2 X R0.1	0.15	0.75	0.18	15	45	4	0.81	0.83	0.86	0.89	0.95
2NBH020100	0.2 X R0.1	0.15	1.00	0.18	15	45	4	1.06	1.10	1.13	1.17	1.26
2NBH020125	0.2 X R0.1	0.15	1.25	0.18	15	45	4	1.32	1.37	1.41	1.46	1.57
2NBH020150	0.2 X R0.1	0.15	1.50	0.18	15	45	4	1.58	1.63	1.69	1.75	1.88
2NBH020200	0.2 X R0.1	0.15	2.00	0.18	15	45	4	2.10	2.17	2.24	2.32	2.50
2NBH020250	0.2 X R0.1	0.15	2.50	0.18	15	45	4	2.61	2.70	2.80	2.90	3.13
2NBH020300	0.2 X R0.1	0.15	3.00	0.18	15	45	4	3.13	3.24	3.35	3.47	3.75
2NBH030050	0.3 X R0.15	0.25	0.50	0.28	15	45	4	0.55	0.56	0.57	0.59	0.63
2NBH030075	0.3 X R0.15	0.25	0.75	0.28	15	45	4	0.80	0.83	0.85	0.88	0.94
2NBH030100	0.3 X R0.15	0.25	1.00	0.28	15	45	4	1.06	1.09	1.13	1.17	1.25
2NBH030125	0.3 X R0.15	0.25	1.25	0.28	15	45	4	1.32	1.36	1.41	1.45	1.56
2NBH030150	0.3 X R0.15	0.25	1.50	0.28	15	45	4	1.58	1.63	1.68	1.74	1.87
2NBH030200	0.3 X R0.15	0.25	2.00	0.28	15	45	4	2.10	2.16	2.24	2.32	2.49
2NBH030250	0.3 X R0.15	0.25	2.50	0.28	15	45	4	2.61	2.70	2.79	2.89	3.11
2NBH030300	0.3 X R0.15	0.25	3.00	0.28	15	45	4	3.13	3.23	3.35	3.47	3.74
2NBH040100	0.4 X R0.2	0.30	1.00	0.37	15	45	4	1.08	1.11	1.14	1.18	1.26
2NBH040150	0.4 X R0.2	0.30	1.50	0.37	15	45	4	1.60	1.65	1.70	1.75	1.88
2NBH040200	0.4 X R0.2	0.30	2.00	0.37	15	45	4	2.11	2.18	2.25	2.33	2.50
2NBH040250	0.4 X R0.2	0.30	2.50	0.37	15	45	4	2.63	2.72	2.81	2.90	3.13
2NBH040300	0.4 X R0.2	0.30	3.00	0.37	15	45	4	3.15	3.25	3.36	3.48	3.75

2NBH Z2 Frese Sferiche Rastremate per Acciai fino a 68 HRC
2F Necked Ball End for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30´	1°	1°30´	2°	3°
2NBH040350	0.4 X R0.2	0.30	3.50	0.37	15	45	4	3.66	3.78	3.91	4.05	4.37
2NBH040400	0.4 X R0.2	0.30	4.00	0.37	15	45	4	4.18	4.32	4.47	4.63	4.99
2NBH040450	0.4 X R0.2	0.30	4.50	0.37	15	45	4	4.70	4.85	5.02	5.20	5.61
2NBH040500	0.4 X R0.2	0.30	5.00	0.37	15	45	4	5.21	5.39	5.58	5.78	6.23
2NBH040600	0.4 X R0.2	0.30	6.00	0.37	15	45	4	6.25	6.46	6.69	6.93	7.48
2NBH040800	0.4 X R0.2	0.30	8.00	0.37	15	45	4	8.32	8.60	8.90	9.23	9.96
2NBH050100	0.5 X R0.25	0.35	1.00	0.47	15	45	4	1.08	1.11	1.14	1.17	1.25
2NBH050150	0.5 X R0.25	0.35	1.50	0.47	15	45	4	1.59	1.64	1.69	1.75	1.87
2NBH050200	0.5 X R0.25	0.35	2.00	0.47	15	45	4	2.11	2.18	2.25	2.32	2.49
2NBH050250	0.5 X R0.25	0.35	2.50	0.47	15	45	4	2.63	2.71	2.80	2.90	3.11
2NBH050300	0.5 X R0.25	0.35	3.00	0.47	15	45	4	3.15	3.25	3.36	3.47	3.73
2NBH050400	0.5 X R0.25	0.35	4.00	0.47	15	45	4	4.18	4.32	4.46	4.62	4.98
2NBH050500	0.5 X R0.25	0.35	5.00	0.47	15	45	4	5.21	5.39	5.57	5.77	6.22
2NBH050600	0.5 X R0.25	0.35	6.00	0.47	15	45	4	6.25	6.46	6.68	6.92	7.46
2NBH050800	0.5 X R0.25	0.35	8.00	0.47	15	45	4	8.31	8.60	8.90	9.22	9.95
2NBH0501000	0.5 X R0.25	0.35	10.00	0.47	15	45	4	10.38	10.73	11.11	11.52	12.44
2NBH060100	0.6 X R0.3	0.40	1.00	0.57	15	45	4	1.08	1.10	1.13	1.17	1.24
2NBH060200	0.6 X R0.3	0.40	2.00	0.57	15	45	4	2.11	2.17	2.24	2.31	2.48
2NBH060250	0.6 X R0.3	0.40	2.50	0.57	15	45	4	2.63	2.71	2.80	2.89	3.10
2NBH060300	0.6 X R0.3	0.40	3.00	0.57	15	45	4	3.14	3.24	3.35	3.46	3.72
2NBH060350	0.6 X R0.3	0.40	3.50	0.57	15	45	4	3.66	3.78	3.90	4.04	4.34
2NBH060400	0.6 X R0.3	0.40	4.00	0.57	15	45	4	4.18	4.31	4.46	4.61	4.97
2NBH060450	0.6 X R0.3	0.40	4.50	0.57	15	45	4	4.69	4.85	5.01	5.19	5.59
2NBH060500	0.6 X R0.3	0.40	5.00	0.57	15	45	4	5.21	5.38	5.57	5.76	6.21
2NBH060550	0.6 X R0.3	0.40	5.50	0.57	15	45	4	5.73	5.92	6.12	6.34	6.83
2NBH060600	0.6 X R0.3	0.40	6.00	0.57	15	45	4	6.24	6.45	6.67	6.91	7.45
2NBH060800	0.6 X R0.3	0.40	8.00	0.57	15	45	4	8.31	8.59	8.89	9.21	9.94
2NBH0601000	0.6 X R0.3	0.40	10.00	0.57	15	45	4	10.38	10.73	11.11	11.51	12.43
2NBH0601200	0.6 X R0.3	0.40	12.00	0.57	15	45	4	12.45	12.87	13.32	13.81	14.91
2NBH070200	0.7 X R0.35	0.45	2.00	0.66	15	45	4	2.13	2.19	2.26	2.33	2.49
2NBH070400	0.7 X R0.35	0.45	4.00	0.66	15	45	4	4.20	4.33	4.47	4.63	4.98
2NBH070600	0.7 X R0.35	0.45	6.00	0.66	15	45	4	6.26	6.47	6.69	6.93	7.46
2NBH070800	0.7 X R0.35	0.45	8.00	0.66	15	45	4	8.33	8.61	8.91	9.23	9.95
2NBH080200	0.8 X R0.4	0.50	2.00	0.77	15	45	4	2.11	2.17	2.23	2.30	2.46
2NBH080300	0.8 X R0.4	0.50	3.00	0.77	15	45	4	3.14	3.24	3.34	3.45	3.70
2NBH080400	0.8 X R0.4	0.50	4.00	0.77	15	45	4	4.17	4.31	4.45	4.60	4.94
2NBH080500	0.8 X R0.4	0.50	5.00	0.77	15	45	4	5.21	5.38	5.56	5.75	6.19
2NBH080600	0.8 X R0.4	0.50	6.00	0.77	15	45	4	6.24	6.45	6.66	6.90	7.43
2NBH080800	0.8 X R0.4	0.50	8.00	0.77	15	45	4	8.31	8.58	8.88	9.20	9.92
2NBH0801000	0.8 X R0.4	0.50	10.00	0.77	15	45	4	10.38	10.72	11.10	11.50	12.40
2NBH0801200	0.8 X R0.4	0.50	12.00	0.77	15	45	4	12.44	12.86	13.31	13.80	14.89
2NBH090200	0.9 X R0.45	0.60	2.00	0.85	15	45	4	2.14	2.20	2.27	2.34	2.49
2NBH090400	0.9 X R0.45	0.60	4.00	0.85	15	45	4	4.21	4.34	4.48	4.64	4.98
2NBH090600	0.9 X R0.45	0.60	6.00	0.85	15	45	4	6.28	6.48	6.70	6.94	7.46
2NBH090800	0.9 X R0.45	0.60	8.00	0.85	15	45	4	8.35	8.62	8.92	9.23	9.95
2NBH0901000	0.9 X R0.45	0.60	10.00	0.85	15	45	4	10.41	10.76	11.13	11.53	12.44

2NBH Z2 Frese Sferiche Rastremate per Acciai fino a 68 HRC

2F Necked Ball End for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30´	1°	1°30´	2°	3°
2NBH100200	1.0 X R0.5	0.80	2.00	0.95	15	45	4	2.14	2.20	2.26	2.33	2.48
2NBH100300	1.0 X R0.5	0.80	3.00	0.95	15	45	4	3.18	3.27	3.37	3.48	3.72
2NBH100400	1.0 X R0.5	0.80	4.00	0.95	15	45	4	4.21	4.34	4.48	4.63	4.97
2NBH100400S6	1.0 X R0.5	0.80	4.00	0.95	15	50	6	4.21	4.34	4.48	4.63	4.97
2NBH100500	1.0 X R0.5	0.80	5.00	0.95	15	45	4	5.24	5.41	5.59	5.78	6.21
2NBH100600	1.0 X R0.5	0.80	6.00	0.95	15	45	4	6.28	6.48	6.69	6.93	7.45
2NBH100600S6	1.0 X R0.5	0.80	6.00	0.95	15	50	6	6.28	6.48	6.69	6.93	7.45
2NBH100800	1.0 X R0.5	0.80	8.00	0.95	15	45	4	8.34	8.62	8.91	9.23	9.94
2NBH100800S6	1.0 X R0.5	0.80	8.00	0.95	15	50	6	8.34	8.62	8.91	9.23	9.94
2NBH1001000	1.0 X R0.5	0.80	10.00	0.95	15	45	4	10.41	10.76	11.13	11.53	12.42
2NBH1001000S6	1.0 X R0.5	0.80	10.00	0.95	15	50	6	10.41	10.76	11.13	11.53	12.42
2NBH1001200	1.0 X R0.5	0.80	12.00	0.95	15	45	4	12.48	12.90	13.34	13.83	14.91
2NBH1001200S6	1.0 X R0.5	0.80	12.00	0.95	15	50	6	12.48	12.90	13.34	13.83	14.91
2NBH1001400	1.0 X R0.5	0.80	14.00	0.95	15	45	4	14.55	15.04	15.56	16.13	17.40
2NBH1001600	1.0 X R0.5	0.80	16.00	0.95	15	50	4	16.61	17.18	17.78	18.43	19.88
2NBH1001600S6	1.0 X R0.5	0.80	16.00	0.95	15	60	6	16.61	17.18	17.78	18.43	19.88
2NBH1001800	1.0 X R0.5	0.80	18.00	0.95	15	50	4	18.68	19.31	19.99	20.73	22.37
2NBH1002000	1.0 X R0.5	0.80	20.00	0.95	15	50	4	20.75	21.45	22.21	23.03	24.86
2NBH1002000S6	1.0 X R0.5	0.80	20.00	0.95	15	60	6	20.75	21.45	22.21	23.03	24.86
2NBH120400	1.2 X R0.6	1.20	4.00	1.14	15	45	4	4.23	4.35	4.49	4.63	4.96
2NBH120600	1.2 X R0.6	1.20	6.00	1.14	15	45	4	6.29	6.49	6.70	6.93	7.45
2NBH120800	1.2 X R0.6	1.20	8.00	1.14	15	45	4	8.36	8.63	8.92	9.23	9.94
2NBH1201000	1.2 X R0.6	1.20	10.00	1.14	15	45	4	10.43	10.77	11.14	11.53	12.42
2NBH1201200	1.2 X R0.6	1.20	12.00	1.14	15	45	4	12.49	12.91	13.35	13.83	14.91
2NBH1201600	1.2 X R0.6	1.20	16.00	1.14	15	50	4	16.63	17.19	17.79	18.43	19.88
2NBH1202000	1.2 X R0.6	1.20	20.00	1.14	15	50	4	20.76	21.47	22.22	23.03	24.86
2NBH150300	1.5 X R0.75	1.35	3.00	1.44	15	45	4	3.19	3.27	3.36	3.46	3.69
2NBH150400	1.5 X R0.75	1.35	4.00	1.44	15	45	4	4.22	4.34	4.47	4.61	4.93
2NBH150400S6	1.5 X R0.75	1.35	4.00	1.44	15	50	6	4.22	4.34	4.47	4.61	4.93
2NBH150600	1.5 X R0.75	1.35	6.00	1.44	15	45	4	6.29	6.48	6.69	6.91	7.42
2NBH150600S6	1.5 X R0.75	1.35	6.00	1.44	15	50	6	6.29	6.48	6.69	6.91	7.42
2NBH150800	1.5 X R0.75	1.35	8.00	1.44	15	45	4	8.35	8.62	8.91	9.21	9.90
2NBH150800S6	1.5 X R0.75	1.35	8.00	1.44	15	50	6	8.35	8.62	8.91	9.21	9.90
2NBH1501000	1.5 X R0.75	1.35	10.00	1.44	15	45	4	10.42	10.76	11.12	11.51	12.39
2NBH1501000S6	1.5 X R0.75	1.35	10.00	1.44	15	50	6	10.42	10.76	11.12	11.51	12.39
2NBH1501200	1.5 X R0.75	1.35	12.00	1.44	15	45	4	12.49	12.90	13.34	13.81	14.87
2NBH1501200S6	1.5 X R0.75	1.35	12.00	1.44	15	50	6	12.49	12.90	13.34	13.81	14.87
2NBH1501400	1.5 X R0.75	1.35	14.00	1.44	15	45	4	14.56	15.04	15.56	16.11	17.36
2NBH1501600	1.5 X R0.75	1.35	16.00	1.44	15	50	4	16.62	17.18	17.77	18.41	19.85
2NBH1501600S6	1.5 X R0.75	1.35	16.00	1.44	15	60	6	16.62	17.18	17.77	18.41	19.85
2NBH1502000	1.5 X R0.75	1.35	20.00	1.44	15	50	4	20.76	21.46	22.21	23.01	Free
2NBH1502000S6	1.5 X R0.75	1.35	20.00	1.44	15	60	6	20.76	21.46	22.21	23.01	24.82
2NBH1502500	1.5 X R0.75	1.35	25.00	1.44	15	60	4	25.93	26.81	27.75	28.76	Free
2NBH1503000	1.5 X R0.75	1.35	30.00	1.44	15	70	4	31.10	32.15	33.29	34.51	Free
2NBH160600	1.6 X R0.8	1.60	6.00	1.55	15	45	4	6.27	6.46	6.66	6.88	7.38
2NBH160800	1.6 X R0.8	1.60	8.00	1.55	15	45	4	8.33	8.60	8.88	9.18	9.87

2NBH Z2 Frese Sferiche Rastremate per Acciai fino a 68 HRC

2F Necked Ball End for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30´	1°	1°30´	2°	3°
2NBH1601000	1.6 X R0.8	1.60	10.00	1.55	15	45	4	10.40	10.74	11.10	11.48	12.35
2NBH1601200	1.6 X R0.8	1.60	12.00	1.55	15	45	4	12.47	12.88	13.31	13.78	14.84
2NBH1601600	1.6 X R0.8	1.60	16.00	1.55	15	50	4	16.60	17.15	17.75	18.38	19.81
2NBH1602000	1.6 X R0.8	1.60	20.00	1.55	15	50	4	20.74	21.43	22.18	22.98	Free
2NBH200400	2.0 X R1.0	1.80	4.00	1.92	15	45	4	4.25	4.36	4.49	4.62	4.92
2NBH200600	2.0 X R1.0	1.80	6.00	1.92	15	45	4	6.32	6.50	6.70	6.92	7.40
2NBH200600S6	2.0 X R1.0	1.80	6.00	1.92	15	50	6	6.32	6.50	6.70	6.92	7.40
2NBH200800	2.0 X R1.0	1.80	8.00	1.92	15	45	4	8.39	8.64	8.92	9.22	9.89
2NBH200800S6	2.0 X R1.0	1.80	8.00	1.92	15	50	6	8.39	8.64	8.92	9.22	9.89
2NBH2001000	2.0 X R1.0	1.80	10.00	1.92	15	45	4	10.45	10.78	11.14	11.52	12.38
2NBH2001000S6	2.0 X R1.0	1.80	10.00	1.92	15	50	6	10.45	10.78	11.14	11.52	12.38
2NBH2001200	2.0 X R1.0	1.80	12.00	1.92	15	45	4	12.52	12.92	13.35	13.82	14.86
2NBH2001200S6	2.0 X R1.0	1.80	12.00	1.92	15	50	6	12.52	12.92	13.35	13.82	14.86
2NBH2001400	2.0 X R1.0	1.80	14.00	1.92	15	45	4	14.59	15.06	15.57	16.12	17.35
2NBH2001600	2.0 X R1.0	1.80	16.00	1.92	15	50	4	16.65	17.20	17.79	18.42	19.83
2NBH2001600S6	2.0 X R1.0	1.80	16.00	1.92	15	60	6	16.65	17.20	17.79	18.42	19.83
2NBH2001800	2.0 X R1.0	1.80	18.00	1.92	15	50	4	18.72	19.34	20.00	20.72	Free
2NBH2002000	2.0 X R1.0	1.80	20.00	1.92	15	50	4	20.79	21.48	22.22	23.02	Free
2NBH2002000S6	2.0 X R1.0	1.80	20.00	1.92	15	60	6	20.79	21.48	22.22	23.02	24.81
2NBH2002500	2.0 X R1.0	1.80	25.00	1.92	15	60	4	25.96	26.83	27.76	28.77	Free
2NBH2002500S6	2.0 X R1.0	1.80	25.00	1.92	15	60	6	25.96	26.83	27.76	28.77	31.02
2NBH2003000	2.0 X R1.0	1.80	30.00	1.92	15	70	4	31.13	32.18	33.30	Free	Free
2NBH2003500	2.0 X R1.0	1.80	35.00	1.92	15	70	4	36.29	37.52	38.84	Free	Free
2NBH2004000	2.0 X R1.0	1.80	40.00	1.92	15	80	4	41.46	42.87	Free	Free	Free
2NBH250800	2.5 X R1.25	2.50	8.00	2.39	15	45	4	8.43	8.69	8.96	9.25	9.90
2NBH2501000	2.5 X R1.25	2.50	10.00	2.39	15	45	4	10.50	10.83	11.17	11.55	12.39
2NBH2501200	2.5 X R1.25	2.50	12.00	2.39	15	45	4	12.57	12.96	13.39	13.85	14.87
2NBH2501600	2.5 X R1.25	2.50	16.00	2.39	15	50	4	16.70	17.24	17.82	18.44	Free
2NBH2502000	2.5 X R1.25	2.50	20.00	2.39	15	50	4	20.84	21.52	22.26	Free	Free
2NBH2502500	2.5 X R1.25	2.50	25.00	2.39	15	60	4	26.01	26.87	27.80	Free	Free
2NBH300600	3.0 X R1.5	3.00	6.00	2.86	15	50	6	6.42	6.59	6.77	6.97	7.42
2NBH300800	3.0 X R1.5	3.00	8.00	2.86	15	50	6	8.48	8.73	8.99	9.27	9.91
2NBH3001000	3.0 X R1.5	3.00	10.00	2.86	15	50	6	10.55	10.87	11.21	11.57	12.40
2NBH3001200	3.0 X R1.5	3.00	12.00	2.86	15	50	6	12.62	13.01	13.42	13.87	14.88
2NBH3001400	3.0 X R1.5	3.00	14.00	2.86	15	50	6	14.69	15.15	15.64	16.17	17.37
2NBH3001600	3.0 X R1.5	3.00	16.00	2.86	15	60	6	16.75	17.29	17.86	18.47	19.85
2NBH3001800	3.0 X R1.5	3.00	18.00	2.86	15	60	6	18.82	19.43	20.07	20.77	22.34
2NBH3002000	3.0 X R1.5	3.00	20.00	2.86	15	60	6	20.89	21.56	22.29	23.07	24.83
2NBH3002500	3.0 X R1.5	3.00	25.00	2.86	15	60	6	26.06	26.91	27.83	28.82	Free
2NBH3003000	3.0 X R1.5	3.00	30.00	2.86	15	70	6	31.22	32.26	33.37	34.57	Free
2NBH3003500	3.0 X R1.5	3.00	35.00	2.86	15	70	6	36.39	37.61	38.92	40.32	Free
2NBH3004000	3.0 X R1.5	3.00	40.00	2.86	15	80	6	41.56	42.96	44.46	Free	Free
2NBH3005000	3.0 X R1.5	3.00	50.00	2.86	15	100	6	51.90	53.65	55.54	Free	Free
2NBH3501500	3.5 X R1.75	3.50	15.00	3.35	15	60	6	15.73	16.22	16.74	17.31	18.58
2NBH3502000	3.5 X R1.75	3.50	20.00	3.35	15	60	6	20.90	21.57	22.28	23.06	24.79
2NBH3502500	3.5 X R1.75	3.50	25.00	3.35	15	60	6	26.07	26.92	27.83	28.81	Free

2NBH Z2 Frese Sferiche Rastremate per Acciai fino a 68 HRC

2F Necked Ball End for Super Hardened Steels

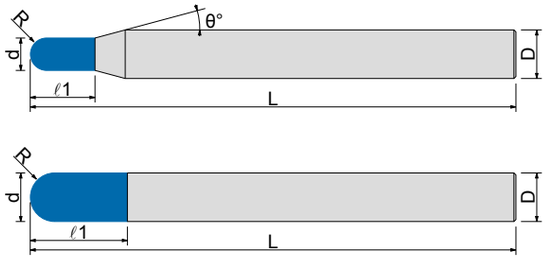
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30´	1°	1°30´	2°	3°
2NBH3503000	3.5 X R1.75	3.50	30.00	3.35	15	70	6	31.24	32.26	33.37	34.55	Free
2NBH3504000	3.5 X R1.75	3.50	40.00	3.35	15	80	6	41.57	42.96	44.45	Free	Free
2NBH4001000	4.0 X R2.0	4.00	10.00	3.80	15	50	6	10.65	10.95	11.28	11.63	12.42
2NBH4001200	4.0 X R2.0	4.00	12.00	3.80	15	50	6	12.72	13.09	13.49	13.93	14.90
2NBH4001600	4.0 X R2.0	4.00	16.00	3.80	15	60	6	16.85	17.37	17.93	18.53	19.88
2NBH4002000	4.0 X R2.0	4.00	20.00	3.80	15	60	6	20.99	21.65	22.36	23.13	Free
2NBH4002500	4.0 X R2.0	4.00	25.00	3.80	15	60	6	26.16	27.00	27.90	28.88	Free
2NBH4003000	4.0 X R2.0	4.00	30.00	3.80	15	70	6	31.32	32.35	33.44	Free	Free
2NBH4003500	4.0 X R2.0	4.00	35.00	3.80	15	70	6	36.49	37.69	38.99	Free	Free
2NBH4004000	4.0 X R2.0	4.00	40.00	3.80	15	80	6	41.66	43.04	Free	Free	Free
2NBH4005000	4.0 X R2.0	4.00	50.00	3.80	15	100	6	52.00	53.74	Free	Free	Free
2NBH6001500	6.0 X R3.0	7.00	15.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NBH6002000	6.0 X R3.0	7.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NBH6003000	6.0 X R3.0	7.00	30.00	5.70	-	110	6	Free	Free	Free	Free	Free
2NBH8002000	8.0 X R4.0	10.00	20.00	7.60	-	60	8	Free	Free	Free	Free	Free
2NBH8002500	8.0 X R4.0	10.00	25.00	7.60	-	60	8	Free	Free	Free	Free	Free
2NBH8003000	8.0 X R4.0	10.00	30.00	7.60	-	100	8	Free	Free	Free	Free	Free
2NBH10002500	10.0 X R5.0	12.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
2NBH10003000	10.0 X R5.0	12.00	30.00	9.50	-	70	10	Free	Free	Free	Free	Free
2NBH10003500	10.0 X R5.0	12.00	35.00	9.50	-	100	10	Free	Free	Free	Free	Free
2NBH12003000	12.0 X R6.0	14.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
2NBH12004000	12.0 X R6.0	14.00	40.00	11.50	-	110	12	Free	Free	Free	Free	Free

2BH Z2 Frese Sferiche per Acciai fino a 68 HRC

2F Ball End for Super Hardened Steels





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BH020040S4	0.2 X R0.1	0.40	15	45	4	
2BH030060S4	0.3 X R0.15	0.60	15	45	4	
2BH040080S4	0.4 X R0.2	0.80	15	45	4	
2BH050100S4	0.5 X R0.25	1.00	15	45	4	
2BH060120S4	0.6 X R0.3	1.20	15	45	4	
2BH070150S4	0.7 X R0.35	1.50	15	45	4	
2BH080200S4	0.8 X R0.4	2.00	15	45	4	
2BH100250S4	1.0 X R0.5	2.50	15	45	4	
2BH100250S6	1.0 X R0.5	2.50	15	50	6	
2BH120300S4	1.2 X R0.6	3.00	15	45	4	
2BH150300S4	1.5 X R0.75	3.00	15	45	4	
2BH150300S6	1.5 X R0.75	3.00	15	50	6	
2BH200500S4	2.0 X R1.0	5.00	15	45	4	
2BH200500S6	2.0 X R1.0	5.00	15	50	6	
2BH250600S4	2.5 X R1.25	6.00	15	45	4	
2BH250600S6	2.5 X R1.25	6.00	15	50	6	
2BH300800S4	3.0 X R1.5	8.00	15	50	4	
2BH300800S6	3.0 X R1.5	8.00	15	60	6	
2BH350800S4	3.5 X R1.75	8.00	15	50	4	
2BH400800S4	4.0 X R2.0	8.00	-	60	4	
2BH400800S6	4.0 X R2.0	8.00	15	60	6	

2BH Z2 Frese Sferiche per Acciai fino a 68 HRC

2F Ball End for Super Hardened Steels

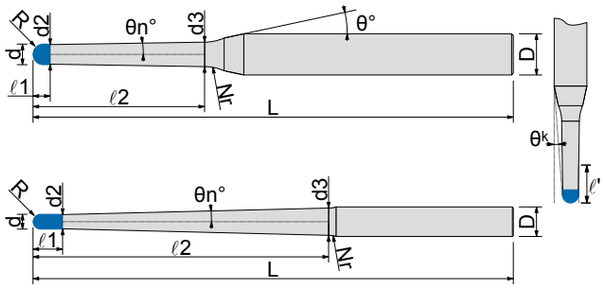
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BH5001000S6	5.0 X R2.5	10.00	15	60	6	
2BH600120060	6.0 X R3.0	12.00	-	60	6	
2BH600120070	6.0 X R3.0	12.00	-	70	6	
2BH600120080	6.0 X R3.0	12.00	-	80	6	
2BH600120090	6.0 X R3.0	12.00	-	90	6	
2BH6001200100	6.0 X R3.0	12.00	-	100	6	
2BH700140080	7.0 X R3.5	14.00	15	80	8	
2BH800140060	8.0 X R4.0	14.00	-	60	8	
2BH800140090	8.0 X R4.0	14.00	-	90	8	
2BH8001400100	8.0 X R4.0	14.00	-	100	8	
2BH8001400110	8.0 X R4.0	14.00	-	110	8	
2BH9001600100	9.0 X R4.5	16.00	15	100	10	
2BH1000180070	10.0 X R5.0	18.00	-	70	10	
2BH1000180090	10.0 X R5.0	18.00	-	90	10	
2BH10001800100	10.0 X R5.0	18.00	-	100	10	
2BH1200220075	12.0 X R6.0	22.00	-	75	12	
2BH12002200100	12.0 X R6.0	22.00	-	100	12	
2BH12002200110	12.0 X R6.0	22.00	-	110	12	

2BTH Z2 Frese Sferiche Rastremate Coniche per Acciai fino a 68 HRC

2F Ball Endmill-Tapered Neck for Super Hardened Steels





Caratteristiche

- Fresa con rastremazione conica per ridurre le vibrazioni
- Rastremazioni lunghe per applicazioni su difficili situazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Solo per taglio a secco

Features

- Tapered neck for vibration-reduced cutting
- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- Only for Dry cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Angolo Conicità Taper Angle θn°	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Diametro Massimo Scarico Under Neck Dia d3	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia D	Raggio di Raccordo Neck R Nr	Angolo scarico Neck Angle Θ°	Utile Cilindrico Teorico Approx neck length ℓ'	Angolo di interferenza Interference Angle θk	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
													0.5°	1°	1.5°	2°	3°
2BTH050040400	0.5 X R0.25	0.4	0.35	4.00	0.47	0.521	50	4	7	12	2.49	8.33	4.62	5.00	5.30	5.55	5.99
2BTH050040600	0.5 X R0.25	0.4	0.35	6.00	0.47	0.549	50	4	10	12	2.49	7.18	6.80	7.41	7.86	8.24	8.89
2BTH050090600	0.5 X R0.25	0.9	0.35	6.00	0.47	0.648	50	4	10	12	1.3	7.3	2.62	6.92	7.52	7.97	8.69
2BTH050090800	0.5 X R0.25	0.9	0.35	8.00	0.47	0.710	50	4	10	12	1.3	6.44	2.62	8.96	9.67	10.18	10.99
2BTH0500901200	0.5 X R0.25	0.9	0.35	12.00	0.47	0.836	50	4	10	12	1.3	5.2	2.62	13.05	13.94	14.55	15.49
2BTH060040200	0.6 X R0.3	0.4	0.40	2.00	0.57	0.592	50	4	4	12	2.17	9.89	2.42	2.59	2.73	2.85	3.08
2BTH060040400	0.6 X R0.3	0.4	0.40	4.00	0.57	0.620	50	4	7	12	2.54	8.28	4.62	5.00	5.29	5.54	5.98
2BTH060040600	0.6 X R0.3	0.4	0.40	6.00	0.57	0.648	50	4	10	12	2.54	7.12	6.80	7.41	7.85	8.23	8.88
2BTH060040800	0.6 X R0.3	0.4	0.40	8.00	0.57	0.676	50	4	10	12	2.54	6.24	8.85	9.56	10.07	10.50	11.22
2BTH0600401000	0.6 X R0.3	0.4	0.40	10.00	0.57	0.704	50	4	10	12	2.54	5.55	10.89	11.70	12.27	12.73	13.52
2BTH0600401200	0.6 X R0.3	0.4	0.40	12.00	0.57	0.732	55	4	10	12	2.54	5	12.94	13.83	14.44	14.95	15.79
2BTH0600401500	0.6 X R0.3	0.4	0.40	15.00	0.57	0.774	55	4	10	12	2.54	4.35	15.99	17.01	17.68	18.24	19.27
2BTH060090400	0.6 X R0.3	0.9	0.40	4.00	0.57	0.683	50	4	7	12	1.35	8.39	2.67	4.70	5.07	5.37	5.85
2BTH060090600	0.6 X R0.3	0.9	0.40	6.00	0.57	0.746	50	4	10	12	1.35	7.24	2.67	6.92	7.52	7.96	8.68
2BTH060090800	0.6 X R0.3	0.9	0.40	8.00	0.57	0.809	50	4	10	12	1.35	6.37	2.67	8.96	9.67	10.18	10.98
2BTH0600901000	0.6 X R0.3	0.9	0.40	10.00	0.57	0.872	50	4	10	12	1.35	5.68	2.67	11.01	11.81	12.37	13.25
2BTH0600901200	0.6 X R0.3	0.9	0.40	12.00	0.57	0.934	55	4	10	12	1.35	5.13	2.67	13.05	13.94	14.54	15.49
2BTH0600901500	0.6 X R0.3	0.9	0.40	15.00	0.57	1.029	55	4	10	12	1.35	4.47	2.67	16.10	17.11	17.78	18.81
2BTH060140400	0.6 X R0.3	1.4	0.40	4.00	0.57	0.746	50	4	7	12	1.01	8.49	1.41	2.80	4.78	5.16	5.70
2BTH060140500	0.6 X R0.3	1.4	0.40	5.00	0.57	0.795	50	4	7	12	1.01	7.89	1.41	2.80	5.80	6.23	6.83

2BTH Z2 Frese Sferiche Rastremate Coniche per Acciai fino a 68 HRC

2F Ball Endmill-Tapered Neck for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Angolo Conicità Taper Angle θn°	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Diametro Massimo Scarico Under Neck Dia d3	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia D	Raggio di Raccordo Neck R Nr	Angolo scarico Neck Angle Θ°	Utile Cilindrico Teorico Approx neck length ℓ'	Angolo di interferenza Interference Angle θk	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
													0.5°	1°	1.5°	2°	3°
2BTH060140600	0.6 X R0.3	1.4	0.40	6.00	0.57	0.844	50	4	10	12	1.01	7.36	1.41	2.80	7.04	7.63	8.45
2BTH060140800	0.6 X R0.3	1.4	0.40	8.00	0.57	0.941	50	4	10	12	1.01	6.5	1.41	2.80	9.08	9.78	10.71
2BTH0601401000	0.6 X R0.3	1.4	0.40	10.00	0.57	1.039	50	4	10	12	1.01	5.81	1.41	2.80	11.13	11.92	12.94
2BTH0601401500S4	0.6 X R0.3	1.4	0.40	15.00	0.57	1.284	60	4	10	12	1.01	4.6	1.41	2.80	16.22	17.21	18.43
2BTH0601402000	0.6 X R0.3	1.4	0.40	20.00	0.57	1.528	60	4	10	12	1.01	3.81	1.41	2.80	21.31	22.47	23.84
2BTH060290600	0.6 X R0.3	2.9	0.40	6.00	0.57	1.137	50	4	10	12	0.69	7.77	0.77	0.90	1.12	1.58	7.45
2BTH060290800	0.6 X R0.3	2.9	0.40	8.00	0.57	1.340	50	4	10	12	0.69	6.93	0.77	0.90	1.12	1.58	9.49
2BTH0602901200	0.6 X R0.3	2.9	0.40	12.00	0.57	1.745	55	4	10	12	0.69	5.7	0.77	0.90	1.12	1.58	13.56
2BTH080040400	0.8 X R0.4	0.4	0.50	4.00	0.77	0.819	50	4	7	12	2.64	8.19	4.61	4.99	5.28	5.53	5.97
2BTH080040600	0.8 X R0.4	0.4	0.50	6.00	0.77	0.847	50	4	7	12	2.64	6.99	6.66	7.14	7.50	7.79	8.30
2BTH080040800	0.8 X R0.4	0.4	0.50	8.00	0.77	0.875	50	4	10	12	2.64	6.09	8.85	9.56	10.06	10.49	11.21
2BTH0800401200	0.8 X R0.4	0.4	0.50	12.00	0.77	0.931	55	4	10	12	2.64	4.85	12.93	13.83	14.44	14.94	15.77
2BTH080090800	0.8 X R0.4	0.9	0.50	8.00	0.77	1.006	50	4	10	12	1.45	6.22	2.77	8.96	9.66	10.17	10.97
2BTH0800901200	0.8 X R0.4	0.9	0.50	12.00	0.77	1.131	55	4	10	12	1.45	4.97	2.77	13.04	13.93	14.54	15.48
2BTH0800901600	0.8 X R0.4	0.9	0.50	16.00	0.77	1.257	55	4	10	12	1.45	4.14	2.77	17.12	18.16	18.85	19.90
2BTH100040600	1.0 X R0.5	0.4	0.80	6.00	0.94	1.013	50	6	7	12	5.09	8.23	6.82	7.24	7.57	7.85	8.34
2BTH100040800S4	1.0 X R0.5	0.4	0.80	8.00	0.94	1.041	55	4	7	12	5.09	5.91	8.85	9.36	9.74	10.07	10.62
2BTH100040800	1.0 X R0.5	0.4	0.80	8.00	0.94	1.041	55	6	7	12	5.09	7.41	8.85	9.36	9.74	10.07	10.62
2BTH1000401000S4	1.0 X R0.5	0.4	0.80	10.00	0.94	1.068	55	4	10	12	5.09	5.22	11.07	11.79	12.33	12.78	13.54
2BTH1000401000	1.0 X R0.5	0.4	0.80	10.00	0.94	1.068	55	6	10	12	5.09	6.74	11.07	11.79	12.33	12.78	13.54
2BTH1000401200S4	1.0 X R0.5	0.4	0.80	12.00	0.94	1.096	55	4	10	12	5.09	4.67	13.11	13.92	14.50	14.99	15.81
2BTH1000401500S4	1.0 X R0.5	0.4	0.80	15.00	0.94	1.138	60	4	10	12	5.09	4.03	16.16	17.08	17.73	18.27	19.31
2BTH1000401500	1.0 X R0.5	0.4	0.80	15.00	0.94	1.138	60	6	10	12	5.09	5.5	16.16	17.08	17.73	18.27	19.31
2BTH1000402000S4	1.0 X R0.5	0.4	0.80	20.00	0.94	1.208	65	4	10	12	5.09	3.29	21.23	22.33	23.08	23.69	25.73
2BTH1000402000	1.0 X R0.5	0.4	0.80	20.00	0.94	1.208	65	6	10	12	5.09	4.64	21.23	22.33	23.08	23.69	25.73
2BTH1000402500	1.0 X R0.5	0.4	0.80	25.00	0.94	1.278	70	6	10	12	5.09	4.01	26.31	27.56	28.38	29.05	32.15
2BTH1000403000	1.0 X R0.5	0.4	0.80	30.00	0.94	1.348	75	6	10	12	5.09	3.53	31.37	32.76	33.66	34.82	38.57
2BTH1000405000	1.0 X R0.5	0.4	0.80	50.00	0.94	1.627	95	6	10	12	5.09	2.39	51.62	53.44	55.27	57.96	Free
2BTH1000407000	1.0 X R0.5	0.4	0.80	70.00	0.94	1.906	115	6	10	12	5.09	1.8	71.83	73.98	77.33	Free	Free
2BTH100090600	1.0 X R0.5	0.9	0.80	6.00	0.94	1.103	50	6	7	12	2.7	8.33	5.47	6.91	7.32	7.65	8.19
2BTH100090800S4	1.0 X R0.5	0.9	0.80	8.00	0.94	1.166	55	4	10	12	2.7	6.03	5.47	9.16	9.78	10.25	11.02
2BTH1000901000S4	1.0 X R0.5	0.9	0.80	10.00	0.94	1.229	55	4	10	12	2.7	5.34	5.47	11.20	11.91	12.44	13.28
2BTH1000901000	1.0 X R0.5	0.9	0.80	10.00	0.94	1.229	55	6	10	12	2.7	6.86	5.47	11.20	11.91	12.44	13.28
2BTH1000901200S4	1.0 X R0.5	0.9	0.80	12.00	0.94	1.292	55	4	10	12	2.7	4.79	5.47	13.23	14.03	14.61	15.52
2BTH1000901500S4	1.0 X R0.5	0.9	0.80	15.00	0.94	1.386	60	4	10	12	2.7	4.15	5.47	16.28	17.19	17.84	18.84
2BTH1000901500	1.0 X R0.5	0.9	0.80	15.00	0.94	1.386	60	6	10	12	2.7	5.62	5.47	16.28	17.19	17.84	18.84
2BTH1000901600	1.0 X R0.5	0.9	0.80	16.00	0.94	1.418	60	6	10	12	2.7	5.42	5.47	17.29	18.24	18.91	19.94
2BTH1000902000S4	1.0 X R0.5	0.9	0.80	20.00	0.94	1.543	65	4	10	12	2.7	3.39	5.47	21.35	22.44	23.18	24.68
2BTH1000902000	1.0 X R0.5	0.9	0.80	20.00	0.94	1.543	65	6	10	12	2.7	4.76	5.47	21.35	22.44	23.18	24.68
2BTH1000902500	1.0 X R0.5	0.9	0.80	25.00	0.94	1.700	70	6	10	12	2.7	4.12	5.47	26.42	27.66	28.48	30.83
2BTH1000903000	1.0 X R0.5	0.9	0.80	30.00	0.94	1.857	75	6	10	12	2.7	3.64	5.47	31.49	32.86	33.75	36.98
2BTH1000903500	1.0 X R0.5	0.9	0.80	35.00	0.94	2.015	80	6	10	12	2.7	3.26	5.47	36.55	38.04	39.00	43.12
2BTH1000904000	1.0 X R0.5	0.9	0.80	40.00	0.94	2.172	85	6	10	12	2.7	2.94	5.47	41.61	43.22	44.46	Free
2BTH1000905000	1.0 X R0.5	0.9	0.80	50.00	0.94	2.486	95	6	10	12	2.7	2.47	5.47	51.73	53.53	55.55	Free

2BTH Z2 Frese Sferiche Rastremate Coniche per Acciai fino a 68 HRC

2F Ball Endmill-Tapered Neck for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Angolo Conicità Taper Angle θn°	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Diametro Massimo Scarico Under Neck Dia d3	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia D	Raggio di Raccordo Neck R Nr	Angolo scarico Neck Angle Θ°	Utile Cilindrico Teorico Approx neck length ℓ'	Angolo di interferenza Interference Angle θk	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
													0.5°	1°	1.5°	2°	3°
2BTH1000906000	1.0 X R0.5	0.9	0.80	60.00	0.94	2.800	105	6	10	12	2.7	2.13	5.47	61.84	63.81	66.63	Free
2BTH1000907000	1.0 X R0.5	0.9	0.80	70.00	0.94	3.114	115	6	10	12	2.7	1.87	5.47	71.93	74.09	Free	Free
2BTH100140600	1.0 X R0.5	1.4	0.80	6.00	0.94	1.194	50	6	7	12	2.02	8.44	2.87	5.85	7.01	7.41	8.01
2BTH100140800S4	1.0 X R0.5	1.4	0.80	8.00	0.94	1.292	55	4	10	12	2.02	6.16	2.87	5.85	9.29	9.90	10.77
2BTH1001401000S4	1.0 X R0.5	1.4	0.80	10.00	0.94	1.390	55	4	10	12	2.02	5.46	2.87	5.85	11.33	12.02	13.00
2BTH1001401200S4	1.0 X R0.5	1.4	0.80	12.00	0.94	1.487	55	4	10	12	2.02	4.91	2.87	5.85	13.36	14.14	15.20
2BTH1001401200	1.0 X R0.5	1.4	0.80	12.00	0.94	1.487	60	6	10	12	2.02	6.44	2.87	5.85	13.36	14.14	15.20
2BTH1001401500S4	1.0 X R0.5	1.4	0.80	15.00	0.94	1.634	60	4	10	12	2.02	4.27	2.87	5.85	16.40	17.30	18.48
2BTH1001401600	1.0 X R0.5	1.4	0.80	16.00	0.94	1.683	60	6	10	12	2.02	5.56	2.87	5.85	17.42	18.36	19.56
2BTH1001402000S4	1.0 X R0.5	1.4	0.80	20.00	0.94	1.878	65	4	10	12	2.02	3.5	2.87	5.85	21.48	22.55	23.88
2BTH1001402000	1.0 X R0.5	1.4	0.80	20.00	0.94	1.878	65	6	10	12	2.02	4.89	2.87	5.85	21.48	22.55	23.88
2BTH1001402200	1.0 X R0.5	1.4	0.80	22.00	0.94	1.976	70	6	10	12	2.02	4.61	2.87	5.85	23.50	24.64	26.03
2BTH1001402500	1.0 X R0.5	1.4	0.80	25.00	0.94	2.123	70	6	10	12	2.02	4.25	2.87	5.85	26.55	27.76	29.51
2BTH1001405000	1.0 X R0.5	1.4	0.80	50.00	0.94	3.345	95	6	10	12	2.02	2.56	2.87	5.85	51.84	53.63	Free
2BTH1002901000	1.0 X R0.5	2.9	0.80	10.00	0.94	1.872	55	6	10	12	1.39	7.4	1.57	1.86	2.35	3.39	11.74
2BTH1002901500	1.0 X R0.5	2.9	0.80	15.00	0.94	2.379	60	6	10	12	1.39	6.19	1.57	1.86	2.35	3.39	16.81
2BTH1002902000	1.0 X R0.5	2.9	0.80	20.00	0.94	2.885	65	6	10	12	1.39	5.31	1.57	1.86	2.35	3.39	21.88
2BTH1002903000	1.0 X R0.5	2.9	0.80	30.00	0.94	3.898	75	6	10	12	1.39	4.14	1.57	1.86	2.35	3.39	32.00
2BTH150040800	1.5 X R0.75	0.4	1.35	8.00	1.42	1.513	55	6	7	12	7.07	7.18	8.95	9.41	9.78	10.09	10.62
2BTH1500401000S4	1.5 X R0.75	0.4	1.35	10.00	1.42	1.541	55	4	7	12	7.07	4.74	10.97	11.52	11.93	12.28	12.90
2BTH1500401000	1.5 X R0.75	0.4	1.35	10.00	1.42	1.541	55	6	7	12	7.07	6.48	10.97	11.52	11.93	12.28	12.90
2BTH1500401200S4	1.5 X R0.75	0.4	1.35	12.00	1.42	1.569	55	4	7	12	7.07	4.2	13.00	13.62	14.07	14.45	15.47
2BTH1500401200	1.5 X R0.75	0.4	1.35	12.00	1.42	1.569	55	6	7	12	7.07	5.91	13.00	13.62	14.07	14.45	15.47
2BTH1500401500S4	1.5 X R0.75	0.4	1.35	15.00	1.42	1.611	60	4	10	12	7.07	3.59	16.26	17.13	17.76	18.29	19.32
2BTH1500402000S4	1.5 X R0.75	0.4	1.35	20.00	1.42	1.680	65	4	10	12	7.07	2.89	21.33	22.38	23.10	23.70	Free
2BTH1500403000	1.5 X R0.75	0.4	1.35	30.00	1.42	1.820	75	6	10	12	7.07	3.29	31.46	32.79	33.68	34.85	38.57
2BTH1500901000S4	1.5 X R0.75	0.9	1.35	10.00	1.42	1.692	55	4	7	12	3.89	4.85	7.83	11.08	11.61	12.02	12.67
2BTH1500901000	1.5 X R0.75	0.9	1.35	10.00	1.42	1.692	55	6	7	12	3.89	6.6	7.83	11.08	11.61	12.02	12.67
2BTH1500901200S4	1.5 X R0.75	0.9	1.35	12.00	1.42	1.755	55	4	7	12	3.89	4.31	7.83	13.10	13.71	14.15	14.89
2BTH1500901500S4	1.5 X R0.75	0.9	1.35	15.00	1.42	1.849	60	4	10	12	3.89	3.69	7.83	16.40	17.25	17.88	18.86
2BTH1500901500	1.5 X R0.75	0.9	1.35	15.00	1.42	1.849	60	6	10	12	3.89	5.34	7.83	16.40	17.25	17.88	18.86
2BTH1500902000S4	1.5 X R0.75	0.9	1.35	20.00	1.42	2.006	65	4	10	12	3.89	2.98	7.83	21.47	22.49	23.21	Free
2BTH1500902000	1.5 X R0.75	0.9	1.35	20.00	1.42	2.006	65	6	10	12	3.89	4.48	7.83	21.47	22.49	23.21	24.72
2BTH1500903000	1.5 X R0.75	0.9	1.35	30.00	1.42	2.320	75	6	10	12	3.89	3.39	7.83	31.59	32.90	33.78	37.01
2BTH1501401000S4	1.5 X R0.75	1.4	1.35	10.00	1.42	1.843	55	4	7	12	2.98	4.97	4.23	8.59	11.19	11.70	12.45
2BTH1501401000	1.5 X R0.75	1.4	1.35	10.00	1.42	1.843	55	6	7	12	2.98	6.72	4.23	8.59	11.19	11.70	12.45
2BTH1501401200S4	1.5 X R0.75	1.4	1.35	12.00	1.42	1.941	55	4	7	12	2.98	4.43	4.23	8.59	13.21	13.80	14.61
2BTH1501401500S4	1.5 X R0.75	1.4	1.35	15.00	1.42	2.087	60	4	10	12	2.98	3.8	4.23	8.59	16.54	17.38	18.51
2BTH1501402000S4	1.5 X R0.75	1.4	1.35	20.00	1.42	2.332	65	4	10	-	2.98	3.07	4.23	8.59	21.61	22.61	23.91
2BTH1501402000	1.5 X R0.75	1.4	1.35	20.00	1.42	2.332	65	6	10	12	2.98	4.6	4.23	8.59	21.61	22.61	23.91
2BTH1501403000	1.5 X R0.75	1.4	1.35	30.00	1.42	2.820	75	6	10	12	2.98	3.5	4.23	8.59	31.73	33.02	35.45
2BTH1501404000	1.5 X R0.75	1.4	1.35	40.00	1.42	3.309	85	6	10	12	2.98	2.82	4.23	8.59	41.84	43.36	Free
2BTH1501405000	1.5 X R0.75	1.4	1.35	50.00	1.42	3.798	95	6	10	12	2.98	2.36	4.23	8.59	51.95	53.67	Free
2BTH1502902000	1.5 X R0.75	2.9	1.35	20.00	1.42	3.310	65	6	10	12	2.13	5.02	2.42	2.87	3.63	5.25	22.05

2BTH Z2 Frese Sferiche Rastremate Coniche per Acciai fino a 68 HRC
2F Ball Endmill-Tapered Neck for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Angolo Conicità Taper Angle θn°	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Diametro Massimo Scarico Under Neck Dia d3	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia D	Raggio di Raccordo Neck R Nr	Angolo scarico Neck Angle Θ°	Utile Cilindrico Teorico Approx neck length ℓ'	Angolo di interferenza Interference Angle θk	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 0.5°	1°	1.5°	2°	3°
2BTH200040800S4	2.0 X R1.0	0.4	1.70	8.00	1.92	2.008	55	4	4	12	7.42	4.87	8.70	9.03	9.28	9.50	10.27
2BTH200040800	2.0 X R1.0	0.4	1.70	8.00	1.92	2.008	50	6	4	12	7.42	6.93	8.70	9.03	9.28	9.50	10.27
2BTH2000401200S4	2.0 X R1.0	0.4	1.70	12.00	1.92	2.064	55	4	7	12	7.42	3.67	13.00	13.61	14.06	14.43	15.40
2BTH2000401200	2.0 X R1.0	0.4	1.70	12.00	1.92	2.064	55	6	7	12	7.42	5.62	13.00	13.61	14.06	14.43	15.40
2BTH2000401600S4	2.0 X R1.0	0.4	1.70	16.00	1.92	2.120	60	4	7	12	7.42	2.94	17.05	17.79	18.31	18.74	Free
2BTH2000401600	2.0 X R1.0	0.4	1.70	16.00	1.92	2.120	60	6	7	12	7.42	4.73	17.05	17.79	18.31	18.74	20.54
2BTH2000402000S4	2.0 X R1.0	0.4	1.70	20.00	1.92	2.176	65	4	10	12	7.42	2.45	21.33	22.37	23.09	23.68	Free
2BTH2000402000	2.0 X R1.0	0.4	1.70	20.00	1.92	2.176	65	6	10	12	7.42	4.08	21.33	22.37	23.09	23.68	25.67
2BTH2000402500	2.0 X R1.0	0.4	1.70	25.00	1.92	2.245	65	6	10	12	7.42	3.48	26.40	27.59	28.39	29.05	32.09
2BTH2000403000	2.0 X R1.0	0.4	1.70	30.00	1.92	2.315	70	6	10	12	7.42	3.03	31.46	32.79	33.67	34.81	38.51
2BTH2000403500	2.0 X R1.0	0.4	1.70	35.00	1.92	2.385	75	6	10	12	7.42	2.69	36.52	37.97	38.92	40.60	Free
2BTH2000404000	2.0 X R1.0	0.4	1.70	40.00	1.92	2.455	80	6	10	12	7.42	2.41	41.58	43.14	44.26	46.39	Free
2BTH2000408000	2.0 X R1.0	0.4	1.70	80.00	1.92	3.013	120	6	10	12	7.42	1.33	81.98	84.47	Free	Free	Free
2BTH2000901200S4	2.0 X R1.0	0.9	1.70	12.00	1.92	2.244	55	4	7	12	4.24	3.77	8.30	13.11	13.70	14.14	14.84
2BTH2000901200	2.0 X R1.0	0.9	1.70	12.00	1.92	2.244	55	6	7	12	4.24	5.74	8.30	13.11	13.70	14.14	14.84
2BTH2000901600S4	2.0 X R1.0	0.9	1.70	16.00	1.92	2.369	60	4	7	12	4.24	3.03	8.30	17.16	17.88	18.39	19.76
2BTH2000901600	2.0 X R1.0	0.9	1.70	16.00	1.92	2.369	60	6	7	12	4.24	4.84	8.30	17.16	17.88	18.39	19.76
2BTH2000902000S4	2.0 X R1.0	0.9	1.70	20.00	1.92	2.495	65	4	10	-	4.24	2.5	8.30	21.48	22.49	23.20	Free
2BTH2000902000	2.0 X R1.0	0.9	1.70	20.00	1.92	2.495	65	6	10	12	4.24	4.19	8.30	21.48	22.49	23.20	24.68
2BTH2000902500	2.0 X R1.0	0.9	1.70	25.00	1.92	2.652	65	6	10	12	4.24	3.58	8.30	26.54	27.70	28.50	30.82
2BTH2000903000	2.0 X R1.0	0.9	1.70	30.00	1.92	2.809	70	6	10	12	4.24	3.13	8.30	31.60	32.90	33.77	36.97
2BTH2000903500	2.0 X R1.0	0.9	1.70	35.00	1.92	2.966	75	6	10	12	4.24	2.78	8.30	36.66	38.08	39.02	Free
2BTH2000904000	2.0 X R1.0	0.9	1.70	40.00	1.92	3.123	80	6	10	12	4.24	2.5	8.30	41.72	43.25	44.50	Free
2BTH2000905000	2.0 X R1.0	0.9	1.70	50.00	1.92	3.438	90	6	10	12	4.24	2.08	8.30	51.82	53.56	55.58	Free
2BTH2000906000	2.0 X R1.0	0.9	1.70	60.00	1.92	3.752	100	6	10	12	4.24	1.78	8.30	61.92	63.84	Free	Free
2BTH2000907000	2.0 X R1.0	0.9	1.70	70.00	1.92	4.066	110	6	10	12	4.24	1.55	8.30	72.02	74.15	Free	Free
2BTH2001401000	2.0 X R1.0	1.4	1.70	10.00	1.92	2.326	55	6	7	12	3.33	6.44	4.63	9.19	11.20	11.70	12.43
2BTH2001401200S4	2.0 X R1.0	1.4	1.70	12.00	1.92	2.423	55	4	7	12	3.33	3.88	4.63	9.19	13.22	13.80	14.60
2BTH2001401600S4	2.0 X R1.0	1.4	1.70	16.00	1.92	2.619	60	4	7	12	3.33	3.13	4.63	9.19	17.27	17.97	18.98
2BTH2001401600	2.0 X R1.0	1.4	1.70	16.00	1.92	2.619	60	6	7	12	3.33	4.97	4.63	9.19	17.27	17.97	18.98
2BTH2001402000S4	2.0 X R1.0	1.4	1.70	20.00	1.92	2.814	65	4	10	-	3.33	2.55	4.63	9.19	21.62	22.61	Free
2BTH2001402000	2.0 X R1.0	1.4	1.70	20.00	1.92	2.814	65	6	10	12	3.33	4.31	4.63	9.19	21.62	22.61	23.90
2BTH2001402200	2.0 X R1.0	1.4	1.70	22.00	1.92	2.912	65	6	10	12	3.33	4.04	4.63	9.19	23.65	24.70	26.05
2BTH2001402500	2.0 X R1.0	1.4	1.70	25.00	1.92	3.059	65	6	10	12	3.33	3.69	4.63	9.19	26.68	27.82	29.55
2BTH2001403000	2.0 X R1.0	1.4	1.70	30.00	1.92	3.303	70	6	10	12	3.33	3.23	4.63	9.19	31.74	33.02	35.42
2BTH2001403500	2.0 X R1.0	1.4	1.70	35.00	1.92	3.548	75	6	10	12	3.33	2.87	4.63	9.19	36.80	38.20	Free
2BTH2001404000	2.0 X R1.0	1.4	1.70	40.00	1.92	3.792	80	6	10	12	3.33	2.58	4.63	9.19	41.85	43.36	Free
2BTH2002901200	2.0 X R1.0	2.9	1.70	12.00	1.92	2.964	55	6	7	12	2.48	6.27	2.80	3.27	4.09	5.83	13.57
2BTH2002901500	2.0 X R1.0	2.9	1.70	15.00	1.92	3.267	60	6	7	12	2.48	5.57	2.80	3.27	4.09	5.83	16.59
2BTH2002902000	2.0 X R1.0	2.9	1.70	20.00	1.92	3.774	65	6	10	12	2.48	4.7	2.80	3.27	4.09	5.83	22.08
2BTH300040800	3.0 X R1.5	0.4	2.50	8.00	2.86	2.937	50	6	4	12	8.5	6.2	8.87	9.13	9.35	9.55	10.33
2BTH3000401600	3.0 X R1.5	0.4	2.50	16.00	2.86	3.048	55	6	7	12	12.52	3.99	17.25	17.89	18.38	18.79	20.60
2BTH3000402000	3.0 X R1.5	0.4	2.50	20.00	2.86	3.104	60	6	7	12	12.52	3.38	21.29	22.04	22.60	23.34	25.74
2BTH3000402500	3.0 X R1.5	0.4	2.50	25.00	2.86	3.174	70	6	10	12	12.52	2.84	26.62	27.69	28.46	29.13	Free
2BTH3000403000	3.0 X R1.5	0.4	2.50	30.00	2.86	3.244	70	6	10	12	12.52	2.45	31.67	32.88	33.73	34.92	Free

2BTH Z2 Frese Sferiche Rastremate Coniche per Acciai fino a 68 HRC
2F Ball Endmill-Tapered Neck for Super Hardened Steels

(Unit: mm)

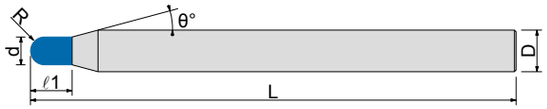
Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Angolo Conicità Taper Angle θn°	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Diametro Massimo Scarico Under Neck Dia d3	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia D	Raggio di Raccordo Neck R Nr	Angolo scarico Neck Angle Θ°	Utile Cilindrico Teorico Approx neck length ℓ'	Angolo di interferenza Interference Angle θk	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 0.5°	1°	1.5°	2°	3°
2BTH3000403500	3.0 X R1.5	0.4	2.50	35.00	2.86	3.314	75	6	10	12	12.52	2.15	36.72	38.06	38.97	40.70	Free
2BTH3000404000	3.0 X R1.5	0.4	2.50	40.00	2.86	3.384	80	6	10	12	12.52	1.92	41.78	43.23	44.38	Free	Free
2BTH3000405000	3.0 X R1.5	0.4	2.50	50.00	2.86	3.523	90	6	10	12	12.52	1.58	51.87	53.53	55.41	Free	Free
2BTH3000408000	3.0 X R1.5	0.4	2.50	80.00	2.86	3.942	120	6	10	12	12.52	1.03	82.14	84.60	Free	Free	Free
2BTH3000901500	3.0 X R1.5	0.9	2.50	15.00	2.86	3.253	55	6	7	12	6.95	4.28	13.78	16.35	16.95	17.41	18.64
2BTH3000902000	3.0 X R1.5	0.9	2.50	20.00	2.86	3.410	60	6	7	12	6.95	3.48	13.78	21.40	22.14	22.68	24.78
2BTH3000902500	3.0 X R1.5	0.9	2.50	25.00	2.86	3.567	70	6	7	12	6.95	2.93	13.78	26.45	27.31	28.02	Free
2BTH3000903000	3.0 X R1.5	0.9	2.50	30.00	2.86	3.724	70	6	10	12	6.95	2.53	13.78	31.82	33.00	33.84	Free
2BTH3000903500	3.0 X R1.5	0.9	2.50	35.00	2.86	3.881	75	6	10	12	6.95	2.23	13.78	36.87	38.18	39.11	Free
2BTH3000904000	3.0 X R1.5	0.9	2.50	40.00	2.86	4.038	80	6	10	12	6.95	1.99	13.78	41.92	43.34	Free	Free
2BTH3000905000	3.0 X R1.5	0.9	2.50	50.00	2.86	4.352	90	6	10	-	6.95	1.63	13.78	52.01	53.65	Free	Free
2BTH3000906000	3.0 X R1.5	0.9	2.50	60.00	2.86	4.667	100	6	10	-	6.95	1.38	13.78	62.10	Free	Free	Free
2BTH3000907000	3.0 X R1.5	0.9	2.50	70.00	2.86	4.981	110	6	10	-	6.95	1.19	13.78	72.19	Free	Free	Free
2BTH3000909000	3.0 X R1.5	0.9	2.50	90.00	2.86	5.609	130	6	10	-	6.95	0.94	13.78	Free	Free	Free	Free
2BTH3001403000	3.0 X R1.5	1.4	2.50	30.00	2.86	4.204	70	6	10	12	5.36	2.62	7.51	15.05	31.97	33.13	Free
2BTH3001404000	3.0 X R1.5	1.4	2.50	40.00	2.86	4.693	80	6	10	-	5.36	2.04	7.51	15.05	42.06	43.46	Free
2BTH3001405000	3.0 X R1.5	1.4	2.50	50.00	2.86	5.182	90	6	10	-	5.36	1.67	7.51	15.05	52.16	Free	Free
2BTH4000402000	4.0 X R2.0	0.4	8.00	20.00	3.86	4.028	70	8	10	12	18.02	4.17	21.77	22.60	23.25	23.79	25.82
2BTH4000402500	4.0 X R2.0	0.4	8.00	25.00	3.86	4.097	70	8	10	12	18.02	3.54	26.82	27.80	28.53	29.25	32.23
2BTH4000403000	4.0 X R2.0	0.4	8.00	30.00	3.86	4.167	80	8	10	12	18.02	3.08	31.87	32.99	33.79	35.04	38.65
2BTH4000403500	4.0 X R2.0	0.4	8.00	35.00	3.86	4.237	85	8	10	12	18.02	2.73	36.92	38.16	39.03	40.82	Free
2BTH4000404000	4.0 X R2.0	0.4	8.00	40.00	3.86	4.307	90	8	10	12	18.02	2.45	41.96	43.32	44.51	46.61	Free
2BTH4000406000	4.0 X R2.0	0.4	8.00	60.00	3.86	4.586	110	8	10	12	18.02	1.73	62.14	63.88	66.58	Free	Free
2BTH4000902000S6	4.0 X R2.0	0.9	8.00	20.00	3.86	4.237	65	6	7	12	12.45	2.58	20.80	21.76	22.37	22.87	Free
2BTH4000902000	4.0 X R2.0	0.9	8.00	20.00	3.86	4.237	70	8	7	12	12.45	4.24	20.80	21.76	22.37	22.87	25.16
2BTH4000902500	4.0 X R2.0	0.9	8.00	25.00	3.86	4.394	70	8	10	12	12.45	3.62	25.37	27.19	28.08	28.77	31.31
2BTH4000903000	4.0 X R2.0	0.9	8.00	30.00	3.86	4.551	80	8	7	12	12.45	3.16	25.53	31.83	32.66	33.95	37.45
2BTH4000903500	4.0 X R2.0	0.9	8.00	35.00	3.86	4.708	85	8	7	12	12.45	2.8	25.53	36.87	37.79	39.50	Free
2BTH4000904000	4.0 X R2.0	0.9	8.00	40.00	3.86	4.865	90	8	7	12	12.45	2.52	25.53	41.90	43.02	45.04	Free
2BTH4000905000	4.0 X R2.0	0.9	8.00	50.00	3.86	5.180	100	8	7	12	12.45	2.09	25.53	51.96	53.58	56.12	Free
2BTH4000906000	4.0 X R2.0	0.9	8.00	60.00	3.86	5.494	110	8	7	12	12.45	1.79	25.53	62.03	64.14	Free	Free
2BTH4001404500	4.0 X R2.0	1.4	8.00	45.00	3.86	5.669	95	8	7	12	10.86	2.36	15.79	33.06	47.18	48.76	Free
2BTH4001408000	4.0 X R2.0	1.4	8.00	80.00	3.86	7.379	130	8	7	-	10.86	1.43	15.79	33.06	Free	Free	Free
2BTH4002902500	4.0 X R2.0	2.9	8.00	25.00	3.86	5.582	75	8	7	12	9.38	3.97	10.91	13.27	17.30	25.73	27.74

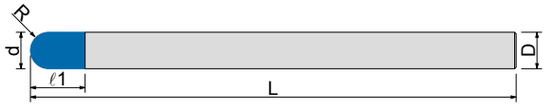
3BH Z3 Frese Sferiche per Acciai fino a 68 HRC

3F Ball End for Super Hardened Steels

NEW







Caratteristiche

- Lavorazione ad alta efficienza grazie al design unico delle 3 eliche a divisione irregolare e conseguente diminuzione delle vibrazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Solo per taglio a secco

Features

- High-efficiency machining is realized by suppressing chattering with a unique 3 flute design and unequal divided flute
- Greater rigidity and reduced chattering through optimized geometry
- Only for Dry cutting

3 | HX 40° | SMG Carbide | S-HC Coated | ≦68 HRC | Unequal Flute Spacing | 3D | CUTTING P. 194

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

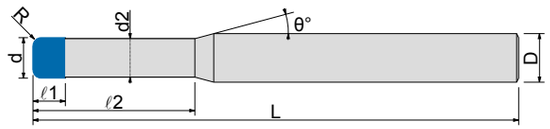
(Unit: mm)

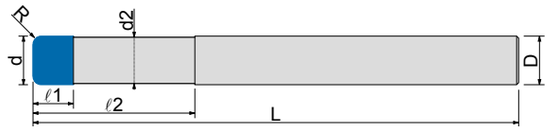
Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
3BH100150S6	1.0 X R0.5	1.50	15	50	6	
3BH150300S6	1.5 X R0.75	3.00	15	50	6	
3BH200300S6	2.0 X R1.0	3.00	15	50	6	
3BH300500S6	3.0 X R1.5	5.00	15	50	6	
3BH400600S6	4.0 X R2.0	6.00	15	70	6	
3BH600900S6	6.0 X R3.0	9.00	-	80	6	

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

2F Necked Corner Radius for Super Hardened Steels







Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting

2 | HX 30° | SMG Carbide | S-HC Coated | ≦68 HRC | Side | Slot | Face | R | CUTTING P. 195

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NCH020R002050	0.2 X R0.02	0.15	0.50	0.18	15	45	4	0.55	0.57	0.59	0.61	0.66
2NCH020R002100	0.2 X R0.02	0.15	1.00	0.18	15	45	4	1.07	1.10	1.14	1.18	1.28
2NCH020R002200	0.2 X R0.02	0.15	2.00	0.18	15	45	4	2.10	2.17	2.25	2.33	2.52
2NCH020R005050	0.2 X R0.05	0.15	0.50	0.18	15	45	4	0.55	0.57	0.59	0.61	0.65
2NCH020R005100	0.2 X R0.05	0.15	1.00	0.18	15	45	4	1.07	1.10	1.14	1.18	1.27
2NCH020R005150	0.2 X R0.05	0.15	1.50	0.18	15	45	4	1.58	1.64	1.69	1.76	1.89
2NCH020R005200	0.2 X R0.05	0.15	2.00	0.18	15	45	4	2.10	2.17	2.25	2.33	2.52
2NCH030R002100	0.3 X R0.02	0.25	1.00	0.28	15	45	4	1.07	1.10	1.14	1.18	1.28
2NCH030R002200	0.3 X R0.02	0.25	2.00	0.28	15	45	4	2.10	2.17	2.25	2.33	2.52
2NCH030R002300	0.3 X R0.02	0.25	3.00	0.28	15	45	4	3.13	3.24	3.36	3.48	3.77
2NCH030R005100	0.3 X R0.05	0.25	1.00	0.28	15	45	4	1.07	1.10	1.14	1.18	1.27
2NCH030R005150	0.3 X R0.05	0.25	1.50	0.28	15	45	4	1.58	1.64	1.69	1.76	1.89
2NCH030R005200	0.3 X R0.05	0.25	2.00	0.28	15	45	4	2.10	2.17	2.25	2.33	2.52
2NCH030R005250	0.3 X R0.05	0.25	2.50	0.28	15	45	4	2.62	2.71	2.80	2.91	3.14
2NCH030R005300	0.3 X R0.05	0.25	3.00	0.28	15	45	4	3.13	3.24	3.36	3.48	3.76
2NCH040R002100	0.4 X R0.02	0.30	1.00	0.37	15	45	4	1.09	1.12	1.16	1.21	1.30
2NCH040R002200	0.4 X R0.02	0.30	2.00	0.37	15	45	4	2.12	2.19	2.27	2.36	2.55
2NCH040R002300	0.4 X R0.02	0.30	3.00	0.37	15	45	4	3.15	3.26	3.38	3.51	3.79
2NCH040R002400	0.4 X R0.02	0.30	4.00	0.37	15	45	4	4.19	4.33	4.49	4.66	5.03
2NCH040R005100	0.4 X R0.05	0.30	1.00	0.37	15	45	4	1.08	1.12	1.16	1.20	1.30

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

2F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NCH040R005200	0.4 X R0.05	0.30	2.00	0.37	15	45	4	2.12	2.19	2.27	2.35	2.54
2NCH040R005300	0.4 X R0.05	0.30	3.00	0.37	15	45	4	3.15	3.26	3.38	3.50	3.78
2NCH040R005400	0.4 X R0.05	0.30	4.00	0.37	15	45	4	4.19	4.33	4.48	4.65	5.03
2NCH040R010100	0.4 X R0.1	0.30	1.00	0.37	15	45	4	1.08	1.12	1.15	1.19	1.28
2NCH040R010200	0.4 X R0.1	0.30	2.00	0.37	15	45	4	2.12	2.19	2.26	2.34	2.53
2NCH040R010300	0.4 X R0.1	0.30	3.00	0.37	15	45	4	3.15	3.26	3.37	3.49	3.77
2NCH040R010400	0.4 X R0.1	0.30	4.00	0.37	15	45	4	4.18	4.33	4.48	4.64	5.01
2NCH050R002100	0.5 X R0.02	0.40	1.00	0.47	15	45	4	1.09	1.12	1.16	1.21	1.30
2NCH050R002200	0.5 X R0.02	0.40	2.00	0.47	15	45	4	2.12	2.19	2.27	2.36	2.55
2NCH050R002300	0.5 X R0.02	0.40	3.00	0.47	15	45	4	3.15	3.26	3.38	3.51	3.79
2NCH050R002400	0.5 X R0.02	0.40	4.00	0.47	15	45	4	4.19	4.33	4.49	4.66	5.03
2NCH050R002500	0.5 X R0.02	0.40	5.00	0.47	15	45	4	5.22	5.40	5.60	5.81	6.28
2NCH050R005100	0.5 X R0.05	0.40	1.00	0.47	15	45	4	1.08	1.12	1.16	1.20	1.30
2NCH050R005200	0.5 X R0.05	0.40	2.00	0.47	15	45	4	2.12	2.19	2.27	2.35	2.54
2NCH050R005300	0.5 X R0.05	0.40	3.00	0.47	15	45	4	3.15	3.26	3.38	3.50	3.78
2NCH050R005400	0.5 X R0.05	0.40	4.00	0.47	15	45	4	4.19	4.33	4.48	4.65	5.03
2NCH050R005500	0.5 X R0.05	0.40	5.00	0.47	15	45	4	5.22	5.40	5.59	5.80	6.27
2NCH050R010100	0.5 X R0.1	0.40	1.00	0.47	15	45	4	1.08	1.12	1.15	1.19	1.28
2NCH050R010200	0.5 X R0.1	0.40	2.00	0.47	15	45	4	2.12	2.19	2.26	2.34	2.53
2NCH050R010300	0.5 X R0.1	0.40	3.00	0.47	15	45	4	3.15	3.26	3.37	3.49	3.77
2NCH050R010400	0.5 X R0.1	0.40	4.00	0.47	15	45	4	4.18	4.33	4.48	4.64	5.01
2NCH050R010500	0.5 X R0.1	0.40	5.00	0.47	15	45	4	5.22	5.40	5.59	5.79	6.26
2NCH060R002200	0.6 X R0.02	0.50	2.00	0.57	15	45	4	2.12	2.19	2.27	2.36	2.55
2NCH060R002400	0.6 X R0.02	0.50	4.00	0.57	15	45	4	4.19	4.33	4.49	4.66	5.03
2NCH060R002600	0.6 X R0.02	0.50	6.00	0.57	15	45	4	6.25	6.47	6.70	6.96	7.52
2NCH060R005200	0.6 X R0.05	0.50	2.00	0.57	15	45	4	2.12	2.19	2.27	2.35	2.54
2NCH060R005400	0.6 X R0.05	0.50	4.00	0.57	15	45	4	4.19	4.33	4.48	4.65	5.03
2NCH060R005600	0.6 X R0.05	0.50	6.00	0.57	15	45	4	6.25	6.47	6.70	6.95	7.51
2NCH060R010200	0.6 X R0.1	0.50	2.00	0.57	15	45	4	2.12	2.19	2.26	2.34	2.53
2NCH060R010400	0.6 X R0.1	0.50	4.00	0.57	15	45	4	4.18	4.33	4.48	4.64	5.01
2NCH060R010600	0.6 X R0.1	0.50	6.00	0.57	15	45	4	6.25	6.47	6.70	6.94	7.50
2NCH070R005400	0.7 X R0.05	0.55	4.00	0.66	15	45	4	4.21	4.35	4.51	4.67	5.05
2NCH070R005600	0.7 X R0.05	0.55	6.00	0.66	15	45	4	6.27	6.49	6.72	6.97	7.53
2NCH070R010400	0.7 X R0.1	0.55	4.00	0.66	15	45	4	4.20	4.35	4.50	4.67	5.04
2NCH070R010600	0.7 X R0.1	0.55	6.00	0.66	15	45	4	6.27	6.49	6.72	6.97	7.52
2NCH080R002200	0.8 X R0.02	0.65	2.00	0.77	15	45	4	2.12	2.19	2.27	2.36	2.55
2NCH080R002400	0.8 X R0.02	0.65	4.00	0.77	15	45	4	4.19	4.33	4.49	4.66	5.03
2NCH080R002600	0.8 X R0.02	0.65	6.00	0.77	15	45	4	6.25	6.47	6.70	6.96	7.52
2NCH080R002800	0.8 X R0.02	0.65	8.00	0.77	15	45	4	8.32	8.61	8.92	9.26	10.01
2NCH080R005200	0.8 X R0.05	0.65	2.00	0.77	15	45	4	2.12	2.19	2.27	2.35	2.54
2NCH080R005400	0.8 X R0.05	0.65	4.00	0.77	15	45	4	4.19	4.33	4.48	4.65	5.03
2NCH080R005600	0.8 X R0.05	0.65	6.00	0.77	15	45	4	6.25	6.47	6.70	6.95	7.51
2NCH080R005800	0.8 X R0.05	0.65	8.00	0.77	15	45	4	8.32	8.61	8.92	9.25	10.00
2NCH080R010200	0.8 X R0.1	0.65	2.00	0.77	15	45	4	2.12	2.19	2.26	2.34	2.53
2NCH080R010400	0.8 X R0.1	0.65	4.00	0.77	15	45	4	4.18	4.33	4.48	4.64	5.01

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

2F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NCH080R010600	0.8 X R0.1	0.65	6.00	0.77	15	45	4	6.25	6.47	6.70	6.94	7.50
2NCH080R010800	0.8 X R0.1	0.65	8.00	0.77	15	45	4	8.32	8.61	8.91	9.24	9.99
2NCH080R020200	0.8 X R0.2	0.65	2.00	0.77	15	45	4	2.11	2.18	2.25	2.33	2.50
2NCH080R020400	0.8 X R0.2	0.65	4.00	0.77	15	45	4	4.18	4.32	4.47	4.63	4.99
2NCH080R020600	0.8 X R0.2	0.65	6.00	0.77	15	45	4	6.25	6.46	6.69	6.93	7.48
2NCH080R020800	0.8 X R0.2	0.65	8.00	0.77	15	45	4	8.32	8.60	8.90	9.23	9.96
2NCH090R010400	0.9 X R0.1	0.70	4.00	0.85	15	45	4	4.22	4.37	4.52	4.69	5.06
2NCH090R010800	0.9 X R0.1	0.70	8.00	0.85	15	45	4	8.36	8.65	8.95	9.29	10.03
2NCH100R002200	1.0 X R0.02	0.80	2.00	0.95	15	45	4	2.16	2.23	2.31	2.40	2.59
2NCH100R002400	1.0 X R0.02	0.80	4.00	0.95	15	45	4	4.23	4.37	4.53	4.70	5.08
2NCH100R002600	1.0 X R0.02	0.80	6.00	0.95	15	45	4	6.29	6.51	6.75	7.00	7.57
2NCH100R002800	1.0 X R0.02	0.80	8.00	0.95	15	45	4	8.36	8.65	8.96	9.30	10.05
2NCH100R0021000	1.0 X R0.02	0.80	10.00	0.95	15	45	4	10.43	10.79	11.18	11.60	12.54
2NCH100R005200	1.0 X R0.05	0.80	2.00	0.95	15	45	4	2.16	2.23	2.31	2.39	2.59
2NCH100R005400	1.0 X R0.05	0.80	4.00	0.95	15	45	4	4.22	4.37	4.53	4.69	5.07
2NCH100R005600	1.0 X R0.05	0.80	6.00	0.95	15	45	4	6.29	6.51	6.74	6.99	7.56
2NCH100R005800	1.0 X R0.05	0.80	8.00	0.95	15	45	4	8.36	8.65	8.96	9.29	10.04
2NCH100R0051000	1.0 X R0.05	0.80	10.00	0.95	15	45	4	10.43	10.79	11.18	11.59	12.53
2NCH100R0051200	1.0 X R0.05	0.80	12.00	0.95	15	45	4	12.49	12.93	13.39	13.89	15.02
2NCH100R0051600	1.0 X R0.05	0.80	16.00	0.95	15	50	4	16.63	17.21	17.83	18.49	19.99
2NCH100R0052000	1.0 X R0.05	0.80	20.00	0.95	15	50	4	20.76	21.48	22.26	23.09	24.96
2NCH100R010200	1.0 X R0.1	0.80	2.00	0.95	15	45	4	2.16	2.23	2.30	2.39	2.57
2NCH100R010400	1.0 X R0.1	0.80	4.00	0.95	15	45	4	4.22	4.37	4.52	4.69	5.06
2NCH100R010600	1.0 X R0.1	0.80	6.00	0.95	15	45	4	6.29	6.51	6.74	6.99	7.55
2NCH100R010800	1.0 X R0.1	0.80	8.00	0.95	15	45	4	8.36	8.65	8.95	9.29	10.03
2NCH100R0101000	1.0 X R0.1	0.80	10.00	0.95	15	45	4	10.42	10.78	11.17	11.59	12.52
2NCH100R0101200	1.0 X R0.1	0.80	12.00	0.95	15	45	4	12.49	12.92	13.39	13.89	15.01
2NCH100R0101600	1.0 X R0.1	0.80	16.00	0.95	15	50	4	16.63	17.20	17.82	18.49	19.98
2NCH100R0102000	1.0 X R0.1	0.80	20.00	0.95	15	50	4	20.76	21.48	22.25	23.08	24.95
2NCH100R020200	1.0 X R0.2	0.80	2.00	0.95	15	45	4	2.15	2.22	2.29	2.37	2.55
2NCH100R020400	1.0 X R0.2	0.80	4.00	0.95	15	45	4	4.22	4.36	4.51	4.67	5.04
2NCH100R020600	1.0 X R0.2	0.80	6.00	0.95	15	45	4	6.29	6.50	6.73	6.97	7.52
2NCH100R020800	1.0 X R0.2	0.80	8.00	0.95	15	45	4	8.35	8.64	8.94	9.27	10.01
NEW 2NCH100R020800S6	1.0 X R0.2	0.80	8.00	0.95	15	50	6	8.35	8.64	8.94	9.27	10.01
2NCH100R0201000	1.0 X R0.2	0.80	10.00	0.95	15	45	4	10.42	10.78	11.16	11.57	12.50
2NCH100R0201200	1.0 X R0.2	0.80	12.00	0.95	15	45	4	12.49	12.92	13.38	13.87	14.98
2NCH100R0201600	1.0 X R0.2	0.80	16.00	0.95	15	50	4	16.62	17.20	17.81	18.47	19.95
2NCH100R0202000	1.0 X R0.2	0.80	20.00	0.95	15	50	4	20.76	21.47	22.24	23.07	24.93
2NCH100R030200	1.0 X R0.3	0.80	2.00	0.95	15	45	4	2.15	2.21	2.28	2.36	2.53
2NCH100R030400	1.0 X R0.3	0.80	4.00	0.95	15	45	4	4.22	4.35	4.50	4.66	5.01
2NCH100R030600	1.0 X R0.3	0.80	6.00	0.95	15	45	4	6.28	6.49	6.72	6.96	7.50
2NCH100R030800	1.0 X R0.3	0.80	8.00	0.95	15	45	4	8.35	8.63	8.93	9.26	9.99
2NCH100R0301000	1.0 X R0.3	0.80	10.00	0.95	15	45	4	10.42	10.77	11.15	11.56	12.47
2NCH100R0301200	1.0 X R0.3	0.80	12.00	0.95	15	45	4	12.49	12.91	13.37	13.86	14.96
2NCH100R0301600	1.0 X R0.3	0.80	16.00	0.95	15	50	4	16.62	17.19	17.80	18.46	19.93

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

2F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NCH100R0302000	1.0 X R0.3	0.80	20.00	0.95	15	50	4	20.75	21.47	22.23	23.06	24.90
2NCH120R010400	1.2 X R0.1	1.00	4.00	1.14	15	45	4	4.24	4.39	4.54	4.71	5.08
2NCH120R010600	1.2 X R0.1	1.00	6.00	1.14	15	45	4	6.31	6.53	6.76	7.01	7.57
2NCH120R0101000	1.2 X R0.1	1.00	10.00	1.14	15	45	4	10.44	10.80	11.19	11.61	12.54
2NCH120R020400	1.2 X R0.2	1.00	4.00	1.14	15	45	4	4.24	4.38	4.53	4.69	5.06
2NCH120R020600	1.2 X R0.2	1.00	6.00	1.14	15	45	4	6.31	6.52	6.75	6.99	7.55
2NCH120R0201000	1.2 X R0.2	1.00	10.00	1.14	15	45	4	10.44	10.80	11.18	11.59	12.52
NEW 2NCH120R0201200	1.2 X R0.2	1.00	12.00	1.14	15	45	4	12.51	12.94	13.40	13.89	15.00
NEW 2NCH120R0201600	1.2 X R0.2	1.00	16.00	1.14	15	50	4	16.64	17.22	17.83	18.49	19.98
NEW 2NCH120R0202000	1.2 X R0.2	1.00	20.00	1.14	15	50	4	20.78	21.49	22.26	23.09	24.95
2NCH120R030400	1.2 X R0.3	1.00	4.00	1.14	15	45	4	4.24	4.37	4.52	4.68	5.04
2NCH120R030600	1.2 X R0.3	1.00	6.00	1.14	15	45	4	6.30	6.51	6.74	6.98	7.52
2NCH120R0301000	1.2 X R0.3	1.00	10.00	1.14	15	45	4	10.44	10.79	11.17	11.58	12.49
NEW 2NCH120R0301200	1.2 X R0.3	1.00	12.00	1.14	15	45	4	12.50	12.93	13.39	13.88	14.98
NEW 2NCH120R0301600	1.2 X R0.3	1.00	16.00	1.14	15	50	4	16.64	17.21	17.82	18.48	19.95
NEW 2NCH120R0302000	1.2 X R0.3	1.00	20.00	1.14	15	50	4	20.77	21.49	22.25	23.08	24.93
2NCH150R005300	1.5 X R0.05	1.50	3.00	1.44	15	45	4	3.21	3.32	3.44	3.57	3.85
2NCH150R005400	1.5 X R0.05	1.50	4.00	1.44	15	45	4	4.24	4.39	4.55	4.72	5.09
2NCH150R005600	1.5 X R0.05	1.50	6.00	1.44	15	45	4	6.31	6.53	6.76	7.02	7.58
2NCH150R005800	1.5 X R0.05	1.50	8.00	1.44	15	45	4	8.38	8.67	8.98	9.32	10.07
2NCH150R0051000	1.5 X R0.05	1.50	10.00	1.44	15	45	4	10.45	10.81	11.20	11.61	12.55
2NCH150R0051200	1.5 X R0.05	1.50	12.00	1.44	15	45	4	12.51	12.95	13.41	13.91	15.04
2NCH150R0051600	1.5 X R0.05	1.50	16.00	1.44	15	50	4	16.65	17.23	17.85	18.51	20.01
2NCH150R0052000	1.5 X R0.05	1.50	20.00	1.44	15	50	4	20.78	21.50	22.28	23.11	Free
2NCH150R010300	1.5 X R0.1	1.50	3.00	1.44	15	45	4	3.21	3.32	3.43	3.56	3.84
2NCH150R010400	1.5 X R0.1	1.50	4.00	1.44	15	45	4	4.24	4.39	4.54	4.71	5.08
2NCH150R010600	1.5 X R0.1	1.50	6.00	1.44	15	45	4	6.31	6.53	6.76	7.01	7.57
2NCH150R010800	1.5 X R0.1	1.50	8.00	1.44	15	45	4	8.38	8.67	8.97	9.31	10.06
2NCH150R0101000	1.5 X R0.1	1.50	10.00	1.44	15	45	4	10.44	10.80	11.19	11.61	12.54
2NCH150R0101200	1.5 X R0.1	1.50	12.00	1.44	15	45	4	12.51	12.94	13.41	13.91	15.03
2NCH150R0101600	1.5 X R0.1	1.50	16.00	1.44	15	50	4	16.65	17.22	17.84	18.51	20.00
2NCH150R0102000	1.5 X R0.1	1.50	20.00	1.44	15	50	4	20.78	21.50	22.27	23.11	Free
2NCH150R020300	1.5 X R0.2	1.50	3.00	1.44	15	45	4	3.21	3.31	3.42	3.54	3.82
2NCH150R020400	1.5 X R0.2	1.50	4.00	1.44	15	45	4	4.24	4.38	4.53	4.69	5.06
2NCH150R020600	1.5 X R0.2	1.50	6.00	1.44	15	45	4	6.31	6.52	6.75	6.99	7.55
2NCH150R020800	1.5 X R0.2	1.50	8.00	1.44	15	45	4	8.37	8.66	8.96	9.29	10.03
2NCH150R0201000	1.5 X R0.2	1.50	10.00	1.44	15	45	4	10.44	10.80	11.18	11.59	12.52
NEW 2NCH150R0201000S6	1.5 X R0.2	1.50	10.00	1.44	15	50	6	10.44	10.80	11.18	11.59	12.52
2NCH150R0201200	1.5 X R0.2	1.50	12.00	1.44	15	45	4	12.51	12.94	13.40	13.89	15.00
2NCH150R0201600	1.5 X R0.2	1.50	16.00	1.44	15	50	4	16.64	17.22	17.83	18.49	19.98
2NCH150R0202000	1.5 X R0.2	1.50	20.00	1.44	15	50	4	20.78	21.49	22.26	23.09	Free
2NCH150R030300	1.5 X R0.3	1.50	3.00	1.44	15	45	4	3.20	3.30	3.41	3.53	3.79
2NCH150R030400	1.5 X R0.3	1.50	4.00	1.44	15	45	4	4.24	4.37	4.52	4.68	5.04
2NCH150R030600	1.5 X R0.3	1.50	6.00	1.44	15	45	4	6.30	6.51	6.74	6.98	7.52
2NCH150R030800	1.5 X R0.3	1.50	8.00	1.44	15	45	4	8.37	8.65	8.95	9.28	10.01

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

2F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NCH150R0301000	1.5 X R0.3	1.50	10.00	1.44	15	45	4	10.44	10.79	11.17	11.58	12.49
2NCH150R0301200	1.5 X R0.3	1.50	12.00	1.44	15	45	4	12.50	12.93	13.39	13.88	14.98
2NCH150R0301600	1.5 X R0.3	1.50	16.00	1.44	15	50	4	16.64	17.21	17.82	18.48	19.95
2NCH150R0302000	1.5 X R0.3	1.50	20.00	1.44	15	50	4	20.77	21.49	22.25	23.08	Free
2NCH150R050300	1.5 X R0.5	1.50	3.00	1.44	15	45	4	3.19	3.29	3.39	3.50	3.75
2NCH150R050400	1.5 X R0.5	1.50	4.00	1.44	15	45	4	4.23	4.36	4.50	4.65	4.99
2NCH150R050600	1.5 X R0.5	1.50	6.00	1.44	15	45	4	6.30	6.50	6.72	6.95	7.47
2NCH150R050800	1.5 X R0.5	1.50	8.00	1.44	15	45	4	8.36	8.64	8.93	9.25	9.96
2NCH150R0501000	1.5 X R0.5	1.50	10.00	1.44	15	45	4	10.43	10.78	11.15	11.55	12.45
2NCH150R0501200	1.5 X R0.5	1.50	12.00	1.44	15	45	4	12.50	12.92	13.37	13.85	14.93
2NCH150R0501600	1.5 X R0.5	1.50	16.00	1.44	15	50	4	16.63	17.20	17.80	18.45	19.91
2NCH150R0502000	1.5 X R0.5	1.50	20.00	1.44	15	50	4	20.77	21.47	22.23	23.05	Free
2NCH200R005400	2.0 X R0.05	1.70	4.00	1.92	15	45	4	4.28	4.43	4.59	4.76	5.14
2NCH200R005600	2.0 X R0.05	1.70	6.00	1.92	15	45	4	6.35	6.57	6.80	7.06	7.63
2NCH200R005800	2.0 X R0.05	1.70	8.00	1.92	15	45	4	8.42	8.71	9.02	9.36	10.11
2NCH200R0051000	2.0 X R0.05	1.70	10.00	1.92	15	45	4	10.48	10.84	11.23	11.65	12.59
2NCH200R0051200	2.0 X R0.05	1.70	12.00	1.92	15	45	4	12.55	12.99	13.45	13.96	15.09
2NCH200R0051600	2.0 X R0.05	1.70	16.00	1.92	15	50	4	16.69	17.27	17.89	18.56	Free
2NCH200R0052000	2.0 X R0.05	1.70	20.00	1.92	15	50	4	20.82	21.54	22.32	23.16	Free
2NCH200R010400	2.0 X R0.1	1.70	4.00	1.92	15	45	4	4.28	4.43	4.58	4.75	5.13
2NCH200R010600	2.0 X R0.1	1.70	6.00	1.92	15	45	4	6.35	6.57	6.80	7.05	7.62
2NCH200R010800	2.0 X R0.1	1.70	8.00	1.92	15	45	4	8.42	8.71	9.02	9.35	10.10
2NCH200R0101000	2.0 X R0.1	1.70	10.00	1.92	15	45	4	10.48	10.84	11.23	11.65	12.59
2NCH200R0101200	2.0 X R0.1	1.70	12.00	1.92	15	45	4	12.55	12.98	13.45	13.95	15.07
2NCH200R0101600	2.0 X R0.1	1.70	16.00	1.92	15	50	4	16.68	17.26	17.88	18.55	Free
2NCH200R0102000	2.0 X R0.1	1.70	20.00	1.92	15	50	4	20.82	21.54	22.32	23.15	Free
2NCH200R020400	2.0 X R0.2	1.70	4.00	1.92	15	45	4	4.28	4.42	4.57	4.74	5.11
2NCH200R020600	2.0 X R0.2	1.70	6.00	1.92	15	45	4	6.34	6.56	6.79	7.04	7.59
2NCH200R020800	2.0 X R0.2	1.70	8.00	1.92	15	45	4	8.41	8.70	9.01	9.34	10.08
2NCH200R0201000	2.0 X R0.2	1.70	10.00	1.92	15	45	4	10.48	10.84	11.22	11.64	12.56
2NCH200R0201200	2.0 X R0.2	1.70	12.00	1.92	15	45	4	12.55	12.98	13.44	13.94	15.05
2NCH200R0201600	2.0 X R0.2	1.70	16.00	1.92	15	50	4	16.68	17.26	17.87	18.53	Free
2NCH200R0202000	2.0 X R0.2	1.70	20.00	1.92	15	50	4	20.82	21.53	22.31	23.13	Free
2NCH200R030400	2.0 X R0.3	1.70	4.00	1.92	15	45	4	4.27	4.41	4.56	4.72	5.08
2NCH200R030600	2.0 X R0.3	1.70	6.00	1.92	15	45	4	6.34	6.55	6.78	7.02	7.57
2NCH200R030800	2.0 X R0.3	1.70	8.00	1.92	15	45	4	8.41	8.69	8.99	9.32	10.05
2NCH200R0301000	2.0 X R0.3	1.70	10.00	1.92	15	45	4	10.48	10.83	11.21	11.62	12.54
2NCH200R0301200	2.0 X R0.3	1.70	12.00	1.92	15	45	4	12.54	12.97	13.43	13.92	15.03
2NCH200R0301600	2.0 X R0.3	1.70	16.00	1.92	15	50	4	16.68	17.25	17.86	18.52	Free
2NCH200R0302000	2.0 X R0.3	1.70	20.00	1.92	15	50	4	20.81	21.53	22.29	23.12	Free
2NCH200R050400	2.0 X R0.5	1.70	4.00	1.92	15	45	4	4.27	4.40	4.54	4.69	5.03
2NCH200R050600	2.0 X R0.5	1.70	6.00	1.92	15	45	4	6.33	6.54	6.76	6.99	7.52
2NCH200R050800	2.0 X R0.5	1.70	8.00	1.92	15	45	4	8.40	8.68	8.97	9.29	10.01
2NCH200R0501000	2.0 X R0.5	1.70	10.00	1.92	15	45	4	10.47	10.82	11.19	11.59	12.49
2NCH200R0501200	2.0 X R0.5	1.70	12.00	1.92	15	45	4	12.54	12.96	13.41	13.89	14.98

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

2F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
NEW 2NCH200R0501200S6	2.0 X R0.5	1.70	12.00	1.92	15	55	6	12.54	12.96	13.41	13.89	14.98
2NCH200R0501600	2.0 X R0.5	1.70	16.00	1.92	15	50	4	16.67	17.24	17.84	18.49	Free
2NCH200R0502000	2.0 X R0.5	1.70	20.00	1.92	15	50	4	20.81	21.51	22.27	23.09	Free
2NCH250R0101000	2.5 X R0.1	2.00	10.00	2.39	15	45	4	10.54	10.90	11.29	11.71	12.66
2NCH250R0102000	2.5 X R0.1	2.00	20.00	2.39	15	50	4	20.88	21.60	22.38	Free	Free
2NCH250R0103000	2.5 X R0.1	2.00	30.00	2.39	15	70	4	31.21	32.30	Free	Free	Free
2NCH250R0201000	2.5 X R0.2	2.00	10.00	2.39	15	45	4	10.54	10.90	11.28	11.70	12.63
2NCH250R0202000	2.5 X R0.2	2.00	20.00	2.39	15	50	4	20.87	21.59	22.37	Free	Free
2NCH250R0203000	2.5 X R0.2	2.00	30.00	2.39	15	70	4	31.21	32.29	Free	Free	Free
2NCH250R0301000	2.5 X R0.3	2.00	10.00	2.39	15	45	4	10.53	10.89	11.27	11.69	12.61
2NCH250R0302000	2.5 X R0.3	2.00	20.00	2.39	15	50	4	20.87	21.59	22.36	Free	Free
2NCH250R0303000	2.5 X R0.3	2.00	30.00	2.39	15	70	4	31.21	32.28	Free	Free	Free
2NCH250R0501000	2.5 X R0.5	2.00	10.00	2.39	15	45	4	10.53	10.88	11.25	11.66	12.56
2NCH250R0502000	2.5 X R0.5	2.00	20.00	2.39	15	50	4	20.86	21.57	22.34	Free	Free
2NCH250R0503000	2.5 X R0.5	2.00	30.00	2.39	15	70	4	31.20	32.27	Free	Free	Free
2NCH300R005400	3.0 X R0.05	2.50	4.00	2.86	15	50	6	4.40	4.55	4.71	4.89	5.28
2NCH300R005600	3.0 X R0.05	2.50	6.00	2.86	15	50	6	6.47	6.69	6.93	7.19	7.77
2NCH300R005800	3.0 X R0.05	2.50	8.00	2.86	15	50	6	8.53	8.83	9.15	9.49	10.25
2NCH300R0051000	3.0 X R0.05	2.50	10.00	2.86	15	50	6	10.60	10.97	11.36	11.79	12.74
2NCH300R0051200	3.0 X R0.05	2.50	12.00	2.86	15	50	6	12.67	13.11	13.58	14.09	15.23
2NCH300R0051600	3.0 X R0.05	2.50	16.00	2.86	15	60	6	16.80	17.39	18.01	18.69	20.20
2NCH300R0052000	3.0 X R0.05	2.50	20.00	2.86	15	60	6	20.94	21.66	22.45	23.29	25.17
2NCH300R010400	3.0 X R0.1	2.50	4.00	2.86	15	50	6	4.40	4.55	4.71	4.88	5.27
2NCH300R010600	3.0 X R0.1	2.50	6.00	2.86	15	50	6	6.46	6.69	6.92	7.18	7.75
2NCH300R010800	3.0 X R0.1	2.50	8.00	2.86	15	50	6	8.53	8.83	9.14	9.48	10.24
2NCH300R0101000	3.0 X R0.1	2.50	10.00	2.86	15	50	6	10.60	10.96	11.36	11.78	12.73
2NCH300R0101200	3.0 X R0.1	2.50	12.00	2.86	15	50	6	12.67	13.10	13.57	14.08	15.21
2NCH300R0101600	3.0 X R0.1	2.50	16.00	2.86	15	60	6	16.80	17.38	18.01	18.68	20.19
2NCH300R0102000	3.0 X R0.1	2.50	20.00	2.86	15	60	6	20.94	21.66	22.44	23.28	25.16
2NCH300R0102500	3.0 X R0.1	2.50	25.00	2.86	15	60	6	26.10	27.01	27.98	29.03	Free
2NCH300R0103000	3.0 X R0.1	2.50	30.00	2.86	15	70	6	31.27	32.36	33.52	34.78	Free
2NCH300R0103500	3.0 X R0.1	2.50	35.00	2.86	15	70	6	36.44	37.71	39.06	40.53	Free
2NCH300R020400	3.0 X R0.2	2.50	4.00	2.86	15	50	6	4.39	4.54	4.70	4.87	5.24
2NCH300R020600	3.0 X R0.2	2.50	6.00	2.86	15	50	6	6.46	6.68	6.91	7.17	7.73
2NCH300R020800	3.0 X R0.2	2.50	8.00	2.86	15	50	6	8.53	8.82	9.13	9.46	10.22
2NCH300R0201000	3.0 X R0.2	2.50	10.00	2.86	15	50	6	10.59	10.96	11.35	11.76	12.70
2NCH300R0201200	3.0 X R0.2	2.50	12.00	2.86	15	50	6	12.66	13.10	13.56	14.06	15.19
2NCH300R0201600	3.0 X R0.2	2.50	16.00	2.86	15	60	6	16.80	17.38	18.00	18.66	20.16
2NCH300R0202000	3.0 X R0.2	2.50	20.00	2.86	15	60	6	20.93	21.65	22.43	23.26	25.14
2NCH300R0202500	3.0 X R0.2	2.50	25.00	2.86	15	60	6	26.10	27.00	27.97	29.01	Free
2NCH300R0203000	3.0 X R0.2	2.50	30.00	2.86	15	70	6	31.27	32.35	33.51	34.76	Free
2NCH300R0203500	3.0 X R0.2	2.50	35.00	2.86	15	70	6	36.44	37.70	39.05	40.51	Free
2NCH300R030400	3.0 X R0.3	2.50	4.00	2.86	15	50	6	4.39	4.53	4.69	4.85	5.22
2NCH300R030600	3.0 X R0.3	2.50	6.00	2.86	15	50	6	6.46	6.67	6.90	7.15	7.71
2NCH300R030800	3.0 X R0.3	2.50	8.00	2.86	15	50	6	8.52	8.81	9.12	9.45	10.19

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

2F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NCH300R0301000	3.0 X R0.3	2.50	10.00	2.86	15	50	6	10.59	10.95	11.34	11.75	12.68
2NCH300R0301200	3.0 X R0.3	2.50	12.00	2.86	15	50	6	12.66	13.09	13.55	14.05	15.17
2NCH300R0301600	3.0 X R0.3	2.50	16.00	2.86	15	60	6	16.79	17.37	17.99	18.65	20.14
2NCH300R0302000	3.0 X R0.3	2.50	20.00	2.86	15	60	6	20.93	21.65	22.42	23.25	25.11
2NCH300R0302500	3.0 X R0.3	2.50	25.00	2.86	15	60	6	26.10	27.00	27.96	29.00	Free
2NCH300R0303000	3.0 X R0.3	2.50	30.00	2.86	15	70	6	31.26	32.34	33.50	34.75	Free
2NCH300R0303500	3.0 X R0.3	2.50	35.00	2.86	15	70	6	36.43	37.69	39.04	40.50	Free
2NCH300R050400	3.0 X R0.5	2.50	4.00	2.86	15	50	6	4.38	4.52	4.66	4.82	5.17
2NCH300R050600	3.0 X R0.5	2.50	6.00	2.86	15	50	6	6.45	6.66	6.88	7.12	7.66
2NCH300R050800	3.0 X R0.5	2.50	8.00	2.86	15	50	6	8.52	8.80	9.10	9.42	10.15
2NCH300R0501000	3.0 X R0.5	2.50	10.00	2.86	15	50	6	10.58	10.94	11.31	11.72	12.63
2NCH300R0501200	3.0 X R0.5	2.50	12.00	2.86	15	50	6	12.65	13.08	13.53	14.02	15.12
2NCH300R0501600	3.0 X R0.5	2.50	16.00	2.86	15	60	6	16.79	17.35	17.96	18.62	20.09
2NCH300R0502000	3.0 X R0.5	2.50	20.00	2.86	15	60	6	20.92	21.63	22.40	23.22	25.06
2NCH300R0502500	3.0 X R0.5	2.50	25.00	2.86	15	60	6	26.09	26.98	27.94	28.97	Free
2NCH300R0503000	3.0 X R0.5	2.50	30.00	2.86	15	70	6	31.26	32.33	33.48	34.72	Free
2NCH300R0503500	3.0 X R0.5	2.50	35.00	2.86	15	70	6	36.43	37.68	39.02	40.47	Free
2NCH300R100800	3.0 X R1.0	2.50	8.00	2.86	15	50	6	8.50	8.76	9.04	9.35	10.03
2NCH300R1001000	3.0 X R1.0	2.50	10.00	2.86	15	50	6	10.57	10.90	11.26	11.65	12.51
2NCH300R1001200	3.0 X R1.0	2.50	12.00	2.86	15	50	6	12.64	13.04	13.48	13.95	15.00
2NCH300R1001600	3.0 X R1.0	2.50	16.00	2.86	15	60	6	16.77	17.32	17.91	18.55	19.97
2NCH300R1002000	3.0 X R1.0	2.50	20.00	2.86	15	60	6	20.90	21.60	22.34	23.15	24.95
2NCH300R1002500	3.0 X R1.0	2.50	25.00	2.86	15	60	6	26.07	26.95	27.89	28.89	Free
2NCH300R1003000	3.0 X R1.0	2.50	30.00	2.86	15	70	6	31.24	32.30	33.43	34.64	Free
2NCH300R1003500	3.0 X R1.0	2.50	35.00	2.86	15	70	6	36.41	37.64	38.97	40.39	Free
2NCH400R010800	4.0 X R0.1	3.50	8.00	3.80	15	50	6	8.65	8.94	9.26	9.61	10.38
2NCH400R0101000	4.0 X R0.1	3.50	10.00	3.80	15	50	6	10.71	11.08	11.48	11.91	12.87
2NCH400R0101200	4.0 X R0.1	3.50	12.00	3.80	15	50	6	12.78	13.22	13.70	14.21	15.35
2NCH400R0101600	4.0 X R0.1	3.50	16.00	3.80	15	60	6	16.92	17.50	18.13	18.81	Free
2NCH400R0102000	4.0 X R0.1	3.50	20.00	3.80	15	60	6	21.05	21.78	22.56	23.41	Free
2NCH400R0102500	4.0 X R0.1	3.50	25.00	3.80	15	60	6	26.22	27.13	28.11	Free	Free
2NCH400R0103000	4.0 X R0.1	3.50	30.00	3.80	15	70	6	31.39	32.48	33.65	Free	Free
2NCH400R0104000	4.0 X R0.1	3.50	40.00	3.80	15	80	6	41.72	43.17	Free	Free	Free
2NCH400R020800	4.0 X R0.2	3.50	8.00	3.80	15	50	6	8.64	8.94	9.25	9.59	10.36
2NCH400R0201000	4.0 X R0.2	3.50	10.00	3.80	15	50	6	10.71	11.08	11.47	11.89	12.84
2NCH400R0201200	4.0 X R0.2	3.50	12.00	3.80	15	50	6	12.78	13.22	13.69	14.19	15.33
2NCH400R0201600	4.0 X R0.2	3.50	16.00	3.80	15	60	6	16.91	17.50	18.12	18.79	Free
2NCH400R0202000	4.0 X R0.2	3.50	20.00	3.80	15	60	6	21.05	21.77	22.55	23.39	Free
2NCH400R0202500	4.0 X R0.2	3.50	25.00	3.80	15	60	6	26.22	27.12	28.10	Free	Free
2NCH400R0203000	4.0 X R0.2	3.50	30.00	3.80	15	70	6	31.38	32.47	33.64	Free	Free
2NCH400R0204000	4.0 X R0.2	3.50	40.00	3.80	15	80	6	41.72	43.17	Free	Free	Free
2NCH400R030800	4.0 X R0.3	3.50	8.00	3.80	15	50	6	8.64	8.93	9.24	9.58	10.33
2NCH400R0301000	4.0 X R0.3	3.50	10.00	3.80	15	50	6	10.71	11.07	11.46	11.88	12.82
2NCH400R0301200	4.0 X R0.3	3.50	12.00	3.80	15	50	6	12.77	13.21	13.68	14.18	15.31
2NCH400R0301600	4.0 X R0.3	3.50	16.00	3.80	15	60	6	16.91	17.49	18.11	18.78	Free

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

2F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NCH400R0302000	4.0 X R0.3	3.50	20.00	3.80	15	60	6	21.04	21.77	22.54	23.38	Free
2NCH400R0302500	4.0 X R0.3	3.50	25.00	3.80	15	60	6	26.21	27.12	28.08	Free	Free
2NCH400R0303000	4.0 X R0.3	3.50	30.00	3.80	15	70	6	31.38	32.46	33.63	Free	Free
2NCH400R0304000	4.0 X R0.3	3.50	40.00	3.80	15	80	6	41.72	43.16	Free	Free	Free
2NCH400R050800	4.0 X R0.5	3.50	8.00	3.80	15	50	6	8.63	8.92	9.22	9.55	10.29
2NCH400R0501000	4.0 X R0.5	3.50	10.00	3.80	15	50	6	10.70	11.06	11.44	11.85	12.77
2NCH400R0501200	4.0 X R0.5	3.50	12.00	3.80	15	50	6	12.77	13.20	13.65	14.15	15.26
2NCH400R0501600	4.0 X R0.5	3.50	16.00	3.80	15	60	6	16.90	17.47	18.09	18.75	Free
2NCH400R0502000	4.0 X R0.5	3.50	20.00	3.80	15	60	6	21.04	21.75	22.52	23.35	Free
2NCH400R0502500	4.0 X R0.5	3.50	25.00	3.80	15	60	6	26.21	27.10	28.06	29.10	Free
2NCH400R0503000	4.0 X R0.5	3.50	30.00	3.80	15	70	6	31.37	32.45	33.60	Free	Free
2NCH400R0504000	4.0 X R0.5	3.50	40.00	3.80	15	80	6	41.71	43.15	Free	Free	Free
2NCH400R100800	4.0 X R1.0	3.50	8.00	3.80	15	50	6	8.62	8.88	9.17	9.48	10.17
2NCH400R1001000	4.0 X R1.0	3.50	10.00	3.80	15	50	6	10.68	11.02	11.38	11.78	12.65
2NCH400R1001200	4.0 X R1.0	3.50	12.00	3.80	15	50	6	12.75	13.16	13.60	14.08	15.14
2NCH400R1001600	4.0 X R1.0	3.50	16.00	3.80	15	60	6	16.89	17.44	18.03	18.67	Free
2NCH400R1002000	4.0 X R1.0	3.50	20.00	3.80	15	60	6	21.02	21.72	22.47	23.27	Free
2NCH400R1002500	4.0 X R1.0	3.50	25.00	3.80	15	60	6	26.19	27.07	28.01	29.02	Free
2NCH400R1003000	4.0 X R1.0	3.50	30.00	3.80	15	70	6	31.36	32.42	33.55	Free	Free
2NCH400R1004000	4.0 X R1.0	3.50	40.00	3.80	15	80	6	41.69	43.11	Free	Free	Free
2NCH500R0102000	5.0 X R0.1	4.00	20.00	4.75	15	60	6	21.15	21.88	Free	Free	Free
2NCH500R0104000	5.0 X R0.1	4.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
2NCH500R0202000	5.0 X R0.2	4.00	20.00	4.75	15	60	6	21.14	21.87	Free	Free	Free
2NCH500R0204000	5.0 X R0.2	4.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
2NCH500R0302000	5.0 X R0.3	4.00	20.00	4.75	15	60	6	21.14	21.87	Free	Free	Free
2NCH500R0304000	5.0 X R0.3	4.00	40.00	4.75	15	80	6	41.81	Free	Free	Free	Free
2NCH500R0502000	5.0 X R0.5	4.00	20.00	4.75	15	60	6	21.13	21.85	Free	Free	Free
2NCH500R0504000	5.0 X R0.5	4.00	40.00	4.75	15	80	6	41.81	Free	Free	Free	Free
2NCH500R1002000	5.0 X R1.0	4.00	20.00	4.75	15	60	6	21.12	21.82	Free	Free	Free
2NCH500R1004000	5.0 X R1.0	4.00	40.00	4.75	15	80	6	41.79	Free	Free	Free	Free
2NCH600R0101200	6.0 X R0.1	5.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NCH600R0101600	6.0 X R0.1	5.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R0102000	6.0 X R0.1	5.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R0103000	6.0 X R0.1	5.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NCH600R0201200	6.0 X R0.2	5.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NCH600R0201600	6.0 X R0.2	5.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R0202000	6.0 X R0.2	5.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R0203000	6.0 X R0.2	5.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NCH600R0301200	6.0 X R0.3	5.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NCH600R0301600	6.0 X R0.3	5.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R0302000	6.0 X R0.3	5.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R0303000	6.0 X R0.3	5.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NCH600R0501200	6.0 X R0.5	5.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NCH600R0501600	6.0 X R0.5	5.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R0502000	6.0 X R0.5	5.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free

2NCH Z2 Frese Toriche Rastremate per Acciai fino a 68 HRC

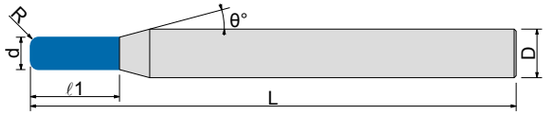
2F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NCH600R0503000	6.0 X R0.5	5.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NCH600R1001200	6.0 X R1.0	5.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NCH600R1001600	6.0 X R1.0	5.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R1002000	6.0 X R1.0	5.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R1003000	6.0 X R1.0	5.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NCH600R1502000	6.0 X R1.5	5.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NCH600R1503000	6.0 X R1.5	5.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NCH800R0202400	8.0 X R0.2	8.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NCH800R0302400	8.0 X R0.3	8.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NCH800R0502400	8.0 X R0.5	8.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NCH800R1002400	8.0 X R1.0	8.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NCH800R1502400	8.0 X R1.5	8.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NCH1000R0502500	10.0 X R0.5	10.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
2NCH1000R1002500	10.0 X R1.0	10.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
2NCH1200R0502500	12.0 X R0.5	12.00	25.00	11.50	-	80	12	Free	Free	Free	Free	Free
2NCH1200R1002500	12.0 X R1.0	12.00	25.00	11.50	-	80	12	Free	Free	Free	Free	Free

2CLH Z2 Frese Toriche per Acciai fino a 68 HRC
2F Corner Radius Long for Super Hardened Steels







Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d x R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CLH080R02050	0.8 X R0.2	1.60	15	50	6	
2CLH100R01050	1.0 X R0.1	2.50	15	50	6	
2CLH100R02050	1.0 X R0.2	2.50	15	50	6	
2CLH100R03050	1.0 X R0.3	2.50	15	50	6	
2CLH120R01050	1.2 X R0.1	3.00	15	50	6	
2CLH120R02050	1.2 X R0.2	3.00	15	50	6	
2CLH150R01050	1.5 X R0.1	4.00	15	50	6	
2CLH150R02050	1.5 X R0.2	4.00	15	50	6	
2CLH150R03050	1.5 X R0.3	4.00	15	50	6	
2CLH150R05050	1.5 X R0.5	4.00	15	50	6	
2CLH200R01050	2.0 X R0.1	6.00	15	50	6	
2CLH200R02050	2.0 X R0.2	6.00	15	50	6	
2CLH200R03050	2.0 X R0.3	6.00	15	50	6	
2CLH200R05050	2.0 X R0.5	6.00	15	50	6	
2CLH300R01060	3.0 X R0.1	8.00	15	60	6	
2CLH300R02060	3.0 X R0.2	8.00	15	60	6	
2CLH300R03060	3.0 X R0.3	8.00	15	60	6	
2CLH300R05060	3.0 X R0.5	8.00	15	60	6	
2CLH300R10060	3.0 X R1.0	8.00	15	60	6	

2CLH Z2 Frese Toriche per Acciai fino a 68 HRC
2F Corner Radius Long for Super Hardened Steels

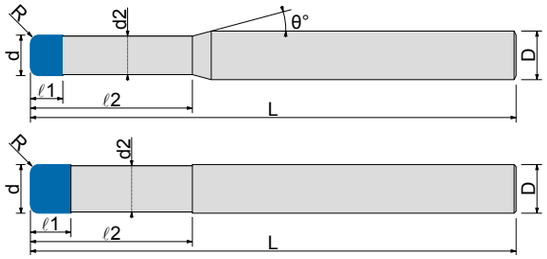
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d x R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CLH400R01060	4.0 X R0.1	11.00	15	60	6	
2CLH400R02060	4.0 X R0.2	11.00	15	60	6	
2CLH400R03060	4.0 X R0.3	11.00	15	60	6	
2CLH400R05060	4.0 X R0.5	11.00	15	60	6	
2CLH400R10060	4.0 X R1.0	11.00	15	60	6	
2CLH500R02060	5.0 X R0.2	15.00	15	60	6	
2CLH600R01060	6.0 X R0.1	15.00	-	60	6	
2CLH600R02060	6.0 X R0.2	15.00	-	60	6	
2CLH600R03060	6.0 X R0.3	15.00	-	60	6	
2CLH600R05060	6.0 X R0.5	15.00	-	60	6	
2CLH600R10060	6.0 X R1.0	15.00	-	60	6	
2CLH600R15060	6.0 X R1.5	15.00	-	60	6	
2CLH800R01060	8.0 X R0.1	19.00	-	60	8	
2CLH800R02060	8.0 X R0.2	19.00	-	60	8	
2CLH800R03060	8.0 X R0.3	19.00	-	60	8	
2CLH800R05060	8.0 X R0.5	19.00	-	60	8	
2CLH800R10060	8.0 X R1.0	19.00	-	60	8	
2CLH800R20060	8.0 X R2.0	19.00	-	60	8	
2CLH1000R02070	10.0 X R0.2	22.00	-	70	10	
2CLH1000R03070	10.0 X R0.3	22.00	-	70	10	
2CLH1000R05070	10.0 X R0.5	22.00	-	70	10	
2CLH1000R10070	10.0 X R1.0	22.00	-	70	10	
2CLH1000R15070	10.0 X R1.5	22.00	-	70	10	
2CLH1000R20070	10.0 X R2.0	22.00	-	70	10	
2CLH1000R25070	10.0 X R2.5	22.00	-	70	10	
2CLH1200R05075	12.0 X R0.5	26.00	-	75	12	
2CLH1200R10075	12.0 X R1.0	26.00	-	75	12	
2CLH1200R15075	12.0 X R1.5	26.00	-	75	12	
2CLH1200R20075	12.0 X R2.0	26.00	-	75	12	

4NCH Z4 Frese Toriche Rastremate per Acciai fino a 68 HRC

4F Necked Corner Radius for Super Hardened Steels





Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
4NCH100R005400	1.0 X R0.05	0.80	4.00	0.95	15	45	4	4.22	4.37	4.53	4.69	5.07
4NCH100R005500	1.0 X R0.05	0.80	5.00	0.95	15	45	4	5.26	5.44	5.63	5.84	6.31
4NCH100R005600	1.0 X R0.05	0.80	6.00	0.95	15	45	4	6.29	6.51	6.74	6.99	7.56
4NCH100R005800	1.0 X R0.05	0.80	8.00	0.95	15	45	4	8.36	8.65	8.96	9.29	10.04
4NCH100R0051000	1.0 X R0.05	0.80	10.00	0.95	15	45	4	10.43	10.79	11.18	11.59	12.53
4NCH100R0051200	1.0 X R0.05	0.80	12.00	0.95	15	45	4	12.49	12.93	13.39	13.89	15.02
4NCH100R0051600	1.0 X R0.05	0.80	16.00	0.95	15	50	4	16.63	17.21	17.83	18.49	19.99
4NCH100R010400	1.0 X R0.1	0.80	4.00	0.95	15	45	4	4.22	4.37	4.52	4.69	5.06
4NCH100R010500	1.0 X R0.1	0.80	5.00	0.95	15	45	4	5.26	5.44	5.63	5.84	6.30
4NCH100R010600	1.0 X R0.1	0.80	6.00	0.95	15	45	4	6.29	6.51	6.74	6.99	7.55
4NCH100R010800	1.0 X R0.1	0.80	8.00	0.95	15	45	4	8.36	8.65	8.95	9.29	10.03
4NCH100R0101000	1.0 X R0.1	0.80	10.00	0.95	15	45	4	10.42	10.78	11.17	11.59	12.52
4NCH100R0101200	1.0 X R0.1	0.80	12.00	0.95	15	45	4	12.49	12.92	13.39	13.89	15.01
4NCH100R0101600	1.0 X R0.1	0.80	16.00	0.95	15	50	4	16.63	17.20	17.82	18.49	19.98
4NCH100R020400	1.0 X R0.2	0.80	4.00	0.95	15	45	4	4.22	4.36	4.51	4.67	5.04
4NCH100R020500	1.0 X R0.2	0.80	5.00	0.95	15	45	4	5.25	5.43	5.62	5.82	6.28
4NCH100R020600	1.0 X R0.2	0.80	6.00	0.95	15	45	4	6.29	6.50	6.73	6.97	7.52
4NCH100R020800	1.0 X R0.2	0.80	8.00	0.95	15	45	4	8.35	8.64	8.94	9.27	10.01

4NCH Z4 Frese Toriche Rastremate per Acciai fino a 68 HRC

4F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
4NCH100R0201000	1.0 X R0.2	0.80	10.00	0.95	15	45	4	10.42	10.78	11.16	11.57	12.50
4NCH100R0201200	1.0 X R0.2	0.80	12.00	0.95	15	45	4	12.49	12.92	13.38	13.87	14.98
4NCH100R0201600	1.0 X R0.2	0.80	16.00	0.95	15	50	4	16.62	17.20	17.81	18.47	19.95
4NCH100R030400	1.0 X R0.3	0.80	4.00	0.95	15	45	4	4.22	4.35	4.50	4.66	5.01
4NCH100R030500	1.0 X R0.3	0.80	5.00	0.95	15	45	4	5.25	5.42	5.61	5.81	6.26
4NCH100R030600	1.0 X R0.3	0.80	6.00	0.95	15	45	4	6.28	6.49	6.72	6.96	7.50
4NCH100R030800	1.0 X R0.3	0.80	8.00	0.95	15	45	4	8.35	8.63	8.93	9.26	9.99
4NCH100R0301000	1.0 X R0.3	0.80	10.00	0.95	15	45	4	10.42	10.77	11.15	11.56	12.47
4NCH100R0301200	1.0 X R0.3	0.80	12.00	0.95	15	45	4	12.49	12.91	13.37	13.86	14.96
4NCH100R0301600	1.0 X R0.3	0.80	16.00	0.95	15	50	4	16.62	17.19	17.80	18.46	19.93
4NCH120R010400	1.2 X R0.1	1.00	4.00	1.14	15	45	4	4.24	4.39	4.54	4.71	5.08
4NCH120R010600	1.2 X R0.1	1.00	6.00	1.14	15	45	4	6.31	6.53	6.76	7.01	7.57
4NCH120R010800	1.2 X R0.1	1.00	8.00	1.14	15	45	4	8.38	8.67	8.97	9.31	10.06
4NCH120R0101200	1.2 X R0.1	1.00	12.00	1.14	15	45	4	12.51	12.94	13.41	13.91	15.03
4NCH120R020400	1.2 X R0.2	1.00	4.00	1.14	15	45	4	4.24	4.38	4.53	4.69	5.06
4NCH120R020600	1.2 X R0.2	1.00	6.00	1.14	15	45	4	6.31	6.52	6.75	6.99	7.55
4NCH120R020800	1.2 X R0.2	1.00	8.00	1.14	15	45	4	8.37	8.66	8.96	9.29	10.03
4NCH120R0201200	1.2 X R0.2	1.00	12.00	1.14	15	45	4	12.51	12.94	13.40	13.89	15.00
4NCH120R030400	1.2 X R0.3	1.00	4.00	1.14	15	45	4	4.24	4.37	4.52	4.68	5.04
4NCH120R030600	1.2 X R0.3	1.00	6.00	1.14	15	45	4	6.30	6.51	6.74	6.98	7.52
4NCH120R030800	1.2 X R0.3	1.00	8.00	1.14	15	45	4	8.37	8.65	8.95	9.28	10.01
4NCH120R0301200	1.2 X R0.3	1.00	12.00	1.14	15	45	4	12.50	12.93	13.39	13.88	14.98
4NCH150R010600	1.5 X R0.1	1.35	6.00	1.44	15	45	4	6.31	6.53	6.76	7.01	7.57
4NCH150R010800	1.5 X R0.1	1.35	8.00	1.44	15	45	4	8.38	8.67	8.97	9.31	10.06
4NCH150R0101200	1.5 X R0.1	1.35	12.00	1.44	15	45	4	12.51	12.94	13.41	13.91	15.03
4NCH150R0101600	1.5 X R0.1	1.35	16.00	1.44	15	50	4	16.65	17.22	17.84	18.51	20.00
4NCH150R0102000	1.5 X R0.1	1.35	20.00	1.44	15	50	4	20.78	21.50	22.27	23.11	Free
4NCH150R020600	1.5 X R0.2	1.35	6.00	1.44	15	45	4	6.31	6.52	6.75	6.99	7.55
4NCH150R020800	1.5 X R0.2	1.35	8.00	1.44	15	45	4	8.37	8.66	8.96	9.29	10.03
4NCH150R0201200	1.5 X R0.2	1.35	12.00	1.44	15	45	4	12.51	12.94	13.40	13.89	15.00
4NCH150R0201600	1.5 X R0.2	1.35	16.00	1.44	15	50	4	16.64	17.22	17.83	18.49	19.98
4NCH150R0202000	1.5 X R0.2	1.35	20.00	1.44	15	50	4	20.78	21.49	22.26	23.09	Free
4NCH150R030600	1.5 X R0.3	1.35	6.00	1.44	15	45	4	6.30	6.51	6.74	6.98	7.52
4NCH150R030800	1.5 X R0.3	1.35	8.00	1.44	15	45	4	8.37	8.65	8.95	9.28	10.01
4NCH150R0301200	1.5 X R0.3	1.35	12.00	1.44	15	45	4	12.50	12.93	13.39	13.88	14.98
4NCH150R0301600	1.5 X R0.3	1.35	16.00	1.44	15	50	4	16.64	17.21	17.82	18.48	19.95
4NCH150R0302000	1.5 X R0.3	1.35	20.00	1.44	15	50	4	20.77	21.49	22.25	23.08	Free
4NCH150R050600	1.5 X R0.5	1.35	6.00	1.44	15	45	4	6.30	6.50	6.72	6.95	7.47
4NCH150R050800	1.5 X R0.5	1.35	8.00	1.44	15	45	4	8.36	8.64	8.93	9.25	9.96
4NCH150R0501200	1.5 X R0.5	1.35	12.00	1.44	15	45	4	12.50	12.92	13.37	13.85	14.93
4NCH150R0501600	1.5 X R0.5	1.35	16.00	1.44	15	50	4	16.63	17.20	17.80	18.45	19.91
4NCH150R0502000	1.5 X R0.5	1.35	20.00	1.44	15	50	4	20.77	21.47	22.23	23.05	Free
4NCH200R010600	2.0 X R0.1	1.70	6.00	1.92	15	45	4	6.35	6.57	6.80	7.05	7.62
4NCH200R010800	2.0 X R0.1	1.70	8.00	1.92	15	45	4	8.42	8.71	9.02	9.35	10.10
4NCH200R0101000	2.0 X R0.1	1.70	10.00	1.92	15	45	4	10.48	10.84	11.23	11.65	12.59
4NCH200R0101200	2.0 X R0.1	1.70	12.00	1.92	15	45	4	12.55	12.98	13.45	13.95	15.07
4NCH200R0101600	2.0 X R0.1	1.70	16.00	1.92	15	50	4	16.68	17.26	17.88	18.55	Free

4NCH Z4 Frese Toriche Rastremate per Acciai fino a 68 HRC

4F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
4NCH200R0102000	2.0 X R0.1	1.70	20.00	1.92	15	50	4	20.82	21.54	22.32	23.15	Free
4NCH200R0102500	2.0 X R0.1	1.70	25.00	1.92	15	60	4	25.99	26.89	27.86	Free	Free
4NCH200R020600	2.0 X R0.2	1.70	6.00	1.92	15	45	4	6.34	6.56	6.79	7.04	7.59
4NCH200R020800	2.0 X R0.2	1.70	8.00	1.92	15	45	4	8.41	8.70	9.01	9.34	10.08
4NCH200R0201000	2.0 X R0.2	1.70	10.00	1.92	15	45	4	10.48	10.84	11.22	11.64	12.56
4NCH200R0201200	2.0 X R0.2	1.70	12.00	1.92	15	45	4	12.55	12.98	13.44	13.94	15.05
4NCH200R0201600	2.0 X R0.2	1.70	16.00	1.92	15	50	4	16.68	17.26	17.87	18.53	Free
4NCH200R0202000	2.0 X R0.2	1.70	20.00	1.92	15	50	4	20.82	21.53	22.31	23.13	Free
4NCH200R0202500	2.0 X R0.2	1.70	25.00	1.92	15	60	4	25.98	26.88	27.85	Free	Free
4NCH200R030600	2.0 X R0.3	1.70	6.00	1.92	15	45	4	6.34	6.55	6.78	7.02	7.57
4NCH200R030800	2.0 X R0.3	1.70	8.00	1.92	15	45	4	8.41	8.69	8.99	9.32	10.05
4NCH200R0301000	2.0 X R0.3	1.70	10.00	1.92	15	45	4	10.48	10.83	11.21	11.62	12.54
4NCH200R0301200	2.0 X R0.3	1.70	12.00	1.92	15	45	4	12.54	12.97	13.43	13.92	15.03
4NCH200R0301600	2.0 X R0.3	1.70	16.00	1.92	15	50	4	16.68	17.25	17.86	18.52	Free
4NCH200R0302000	2.0 X R0.3	1.70	20.00	1.92	15	50	4	20.81	21.53	22.29	23.12	Free
4NCH200R0302500	2.0 X R0.3	1.70	25.00	1.92	15	60	4	25.98	26.88	27.84	28.87	Free
4NCH200R050600	2.0 X R0.5	1.70	6.00	1.92	15	45	4	6.33	6.54	6.76	6.99	7.52
4NCH200R050800	2.0 X R0.5	1.70	8.00	1.92	15	45	4	8.40	8.68	8.97	9.29	10.01
4NCH200R0501000	2.0 X R0.5	1.70	10.00	1.92	15	45	4	10.47	10.82	11.19	11.59	12.49
4NCH200R0501200	2.0 X R0.5	1.70	12.00	1.92	15	45	4	12.54	12.96	13.41	13.89	14.98
4NCH200R0501600	2.0 X R0.5	1.70	16.00	1.92	15	50	4	16.67	17.24	17.84	18.49	Free
4NCH200R0502000	2.0 X R0.5	1.70	20.00	1.92	15	50	4	20.81	21.51	22.27	23.09	Free
4NCH200R0502500	2.0 X R0.5	1.70	25.00	1.92	15	60	4	25.97	26.86	27.81	28.84	Free
4NCH250R0101000	2.5 X R0.1	2.00	10.00	2.39	15	45	4	10.54	10.90	11.29	11.71	12.66
4NCH250R0101600	2.5 X R0.1	2.00	16.00	2.39	15	50	4	16.74	17.32	17.94	18.61	Free
4NCH250R0102500	2.5 X R0.1	2.00	25.00	2.39	15	60	4	26.05	26.95	27.92	Free	Free
4NCH250R0201000	2.5 X R0.2	2.00	10.00	2.39	15	45	4	10.54	10.90	11.28	11.70	12.63
4NCH250R0201600	2.5 X R0.2	2.00	16.00	2.39	15	50	4	16.74	17.32	17.93	18.60	Free
4NCH250R0202500	2.5 X R0.2	2.00	25.00	2.39	15	60	4	26.04	26.94	27.91	Free	Free
4NCH250R0301000	2.5 X R0.3	2.00	10.00	2.39	15	45	4	10.53	10.89	11.27	11.69	12.61
4NCH250R0301600	2.5 X R0.3	2.00	16.00	2.39	15	50	4	16.74	17.31	17.92	18.58	Free
4NCH250R0302500	2.5 X R0.3	2.00	25.00	2.39	15	60	4	26.04	26.94	27.90	Free	Free
4NCH250R0501000	2.5 X R0.5	2.00	10.00	2.39	15	45	4	10.53	10.88	11.25	11.66	12.56
4NCH250R0501600	2.5 X R0.5	2.00	16.00	2.39	15	50	4	16.73	17.29	17.90	18.56	Free
4NCH250R0502500	2.5 X R0.5	2.00	25.00	2.39	15	60	4	26.03	26.92	27.88	Free	Free
4NCH300R0101000	3.0 X R0.1	2.50	10.00	2.86	15	50	6	10.60	10.96	11.36	11.78	12.73
4NCH300R0101200	3.0 X R0.1	2.50	12.00	2.86	15	50	6	12.67	13.10	13.57	14.08	15.21
4NCH300R0101600	3.0 X R0.1	2.50	16.00	2.86	15	60	6	16.80	17.38	18.01	18.68	20.19
4NCH300R0102000	3.0 X R0.1	2.50	20.00	2.86	15	60	6	20.94	21.66	22.44	23.28	25.16
4NCH300R0102500	3.0 X R0.1	2.50	25.00	2.86	15	60	6	26.10	27.01	27.98	29.03	Free
4NCH300R0103000	3.0 X R0.1	2.50	30.00	2.86	15	70	6	31.27	32.36	33.52	34.78	Free
4NCH300R0103500	3.0 X R0.1	2.50	35.00	2.86	15	70	6	36.44	37.71	39.06	40.53	Free
4NCH300R0201000	3.0 X R0.2	2.50	10.00	2.86	15	50	6	10.59	10.96	11.35	11.76	12.70
4NCH300R0201200	3.0 X R0.2	2.50	12.00	2.86	15	50	6	12.66	13.10	13.56	14.06	15.19
4NCH300R0201600	3.0 X R0.2	2.50	16.00	2.86	15	60	6	16.80	17.38	18.00	18.66	20.16
4NCH300R0202000	3.0 X R0.2	2.50	20.00	2.86	15	60	6	20.93	21.65	22.43	23.26	25.14
4NCH300R0202500	3.0 X R0.2	2.50	25.00	2.86	15	60	6	26.10	27.00	27.97	29.01	Free

4NCH Z4 Frese Toriche Rastremate per Acciai fino a 68 HRC

4F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
4NCH300R0203000	3.0 X R0.2	2.50	30.00	2.86	15	70	6	31.27	32.35	33.51	34.76	Free
4NCH300R0203500	3.0 X R0.2	2.50	35.00	2.86	15	70	6	36.44	37.70	39.05	40.51	Free
4NCH300R0301000	3.0 X R0.3	2.50	10.00	2.86	15	50	6	10.59	10.95	11.34	11.75	12.68
4NCH300R0301200	3.0 X R0.3	2.50	12.00	2.86	15	50	6	12.66	13.09	13.55	14.05	15.17
4NCH300R0301600	3.0 X R0.3	2.50	16.00	2.86	15	60	6	16.79	17.37	17.99	18.65	20.14
4NCH300R0302000	3.0 X R0.3	2.50	20.00	2.86	15	60	6	20.93	21.65	22.42	23.25	25.11
4NCH300R0302500	3.0 X R0.3	2.50	25.00	2.86	15	60	6	26.10	27.00	27.96	29.00	Free
4NCH300R0303000	3.0 X R0.3	2.50	30.00	2.86	15	70	6	31.26	32.34	33.50	34.75	Free
4NCH300R0303500	3.0 X R0.3	2.50	35.00	2.86	15	70	6	36.43	37.69	39.04	40.50	Free
4NCH300R0501000	3.0 X R0.5	2.50	10.00	2.86	15	50	6	10.58	10.94	11.31	11.72	12.63
4NCH300R0501200	3.0 X R0.5	2.50	12.00	2.86	15	50	6	12.65	13.08	13.53	14.02	15.12
4NCH300R0501600	3.0 X R0.5	2.50	16.00	2.86	15	60	6	16.79	17.35	17.96	18.62	20.09
4NCH300R0502000	3.0 X R0.5	2.50	20.00	2.86	15	60	6	20.92	21.63	22.40	23.22	25.06
4NCH300R0502500	3.0 X R0.5	2.50	25.00	2.86	15	60	6	26.09	26.98	27.94	28.97	Free
4NCH300R0503000	3.0 X R0.5	2.50	30.00	2.86	15	70	6	31.26	32.33	33.48	34.72	Free
4NCH300R0503500	3.0 X R0.5	2.50	35.00	2.86	15	70	6	36.43	37.68	39.02	40.47	Free
4NCH300R1001000	3.0 X R1.0	2.50	10.00	2.86	15	50	6	10.57	10.90	11.26	11.65	12.51
4NCH300R1001200	3.0 X R1.0	2.50	12.00	2.86	15	50	6	12.64	13.04	13.48	13.95	15.00
4NCH300R1001600	3.0 X R1.0	2.50	16.00	2.86	15	60	6	16.77	17.32	17.91	18.55	19.97
4NCH300R1002000	3.0 X R1.0	2.50	20.00	2.86	15	60	6	20.90	21.60	22.34	23.15	24.95
4NCH300R1002500	3.0 X R1.0	2.50	25.00	2.86	15	60	6	26.07	26.95	27.89	28.89	Free
4NCH300R1003000	3.0 X R1.0	2.50	30.00	2.86	15	70	6	31.24	32.30	33.43	34.64	Free
4NCH300R1003500	3.0 X R1.0	2.50	35.00	2.86	15	70	6	36.41	37.64	38.97	40.39	Free
4NCH400R0101200	4.0 X R0.1	4.00	12.00	3.80	15	50	6	12.78	13.22	13.70	14.21	15.35
4NCH400R0101600	4.0 X R0.1	4.00	16.00	3.80	15	60	6	16.92	17.50	18.13	18.81	Free
4NCH400R0102000	4.0 X R0.1	4.00	20.00	3.80	15	60	6	21.05	21.78	22.56	23.41	Free
4NCH400R0102500	4.0 X R0.1	4.00	25.00	3.80	15	60	6	26.22	27.13	28.11	Free	Free
4NCH400R0103000	4.0 X R0.1	4.00	30.00	3.80	15	70	6	31.39	32.48	33.65	Free	Free
4NCH400R0103500	4.0 X R0.1	4.00	35.00	3.80	15	70	6	36.56	37.83	Free	Free	Free
4NCH400R0104000	4.0 X R0.1	4.00	40.00	3.80	15	80	6	41.72	43.17	Free	Free	Free
4NCH400R0201200	4.0 X R0.2	4.00	12.00	3.80	15	50	6	12.78	13.22	13.69	14.19	15.33
4NCH400R0201600	4.0 X R0.2	4.00	16.00	3.80	15	60	6	16.91	17.50	18.12	18.79	Free
4NCH400R0202000	4.0 X R0.2	4.00	20.00	3.80	15	60	6	21.05	21.77	22.55	23.39	Free
4NCH400R0202500	4.0 X R0.2	4.00	25.00	3.80	15	60	6	26.22	27.12	28.10	Free	Free
4NCH400R0203000	4.0 X R0.2	4.00	30.00	3.80	15	70	6	31.38	32.47	33.64	Free	Free
4NCH400R0203500	4.0 X R0.2	4.00	35.00	3.80	15	70	6	36.55	37.82	Free	Free	Free
4NCH400R0204000	4.0 X R0.2	4.00	40.00	3.80	15	80	6	41.72	43.17	Free	Free	Free
4NCH400R0301200	4.0 X R0.3	4.00	12.00	3.80	15	50	6	12.77	13.21	13.68	14.18	15.31
4NCH400R0301600	4.0 X R0.3	4.00	16.00	3.80	15	60	6	16.91	17.49	18.11	18.78	Free
4NCH400R0302000	4.0 X R0.3	4.00	20.00	3.80	15	60	6	21.04	21.77	22.54	23.38	Free
4NCH400R0302500	4.0 X R0.3	4.00	25.00	3.80	15	60	6	26.21	27.12	28.08	Free	Free
4NCH400R0303000	4.0 X R0.3	4.00	30.00	3.80	15	70	6	31.38	32.46	33.63	Free	Free
4NCH400R0303500	4.0 X R0.3	4.00	35.00	3.80	15	70	6	36.55	37.81	Free	Free	Free
4NCH400R0304000	4.0 X R0.3	4.00	40.00	3.80	15	80	6	41.72	43.16	Free	Free	Free
4NCH400R0501200	4.0 X R0.5	4.00	12.00	3.80	12	50	6	12.77	13.20	13.65	14.15	15.26
4NCH400R0501600	4.0 X R0.5	4.00	16.00	3.80	16	60	6	16.90	17.47	18.09	18.75	Free
4NCH400R0502000	4.0 X R0.5	4.00	20.00	3.80	20	60	6	21.04	21.75	22.52	23.35	Free

4NCH Z4 Frese Toriche Rastremate per Acciai fino a 68 HRC

4F Necked Corner Radius for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
4NCH400R0502500	4.0 X R0.5	4.00	25.00	3.80	25	60	6	26.21	27.10	28.06	29.10	Free
4NCH400R0503000	4.0 X R0.5	4.00	30.00	3.80	15	70	6	31.37	32.45	33.60	Free	Free
4NCH400R0503500	4.0 X R0.5	4.00	35.00	3.80	15	70	6	36.54	37.80	Free	Free	Free
4NCH400R0504000	4.0 X R0.5	4.00	40.00	3.80	15	80	6	41.71	43.15	Free	Free	Free
4NCH400R1001200	4.0 X R1.0	4.00	12.00	3.80	15	50	6	12.75	13.16	13.60	14.08	15.14
4NCH400R1001600	4.0 X R1.0	4.00	16.00	3.80	15	60	6	16.89	17.44	18.03	18.67	Free
4NCH400R1002000	4.0 X R1.0	4.00	20.00	3.80	15	60	6	21.02	21.72	22.47	23.27	Free
4NCH400R1002500	4.0 X R1.0	4.00	25.00	3.80	15	60	6	26.19	27.07	28.01	29.02	Free
4NCH400R1003000	4.0 X R1.0	4.00	30.00	3.80	15	70	6	31.36	32.42	33.55	Free	Free
4NCH400R1003500	4.0 X R1.0	4.00	35.00	3.80	15	70	6	36.53	37.76	39.09	Free	Free
4NCH400R1004000	4.0 X R1.0	4.00	40.00	3.80	15	80	6	41.69	43.11	Free	Free	Free
4NCH400R1005000	4.0 X R1.0	4.00	50.00	3.80	15	100	6	52.03	53.81	Free	Free	Free
4NCH500R0102000	5.0 X R0.1	5.00	20.00	4.75	15	60	6	21.15	21.88	Free	Free	Free
4NCH500R0104000	5.0 X R0.1	5.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
4NCH500R0202000	5.0 X R0.2	5.00	20.00	4.75	15	60	6	21.14	21.87	Free	Free	Free
4NCH500R0204000	5.0 X R0.2	5.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
4NCH500R0302000	5.0 X R0.3	5.00	20.00	4.75	15	60	6	21.14	21.87	Free	Free	Free
4NCH500R0304000	5.0 X R0.3	5.00	40.00	4.75	15	80	6	41.81	Free	Free	Free	Free
4NCH500R0502000	5.0 X R0.5	5.00	20.00	4.75	15	60	6	21.13	21.85	Free	Free	Free
4NCH500R0504000	5.0 X R0.5	5.00	40.00	4.75	15	80	6	41.81	Free	Free	Free	Free
4NCH500R1002000	5.0 X R1.0	5.00	20.00	4.75	15	60	6	21.12	21.82	Free	Free	Free
4NCH500R1004000	5.0 X R1.0	5.00	40.00	4.75	15	80	6	41.79	Free	Free	Free	Free
4NCH600R0102000	6.0 X R0.1	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NCH600R0104000	6.0 X R0.1	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NCH600R0202000	6.0 X R0.2	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NCH600R0202500	6.0 X R0.2	6.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NCH600R0203000	6.0 X R0.2	6.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NCH600R0203500	6.0 X R0.2	6.00	35.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NCH600R0204000	6.0 X R0.2	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NCH600R0302000	6.0 X R0.3	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NCH600R0304000	6.0 X R0.3	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NCH600R0502000	6.0 X R0.5	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NCH600R0502500	6.0 X R0.5	6.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NCH600R0503000	6.0 X R0.5	6.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NCH600R0503500	6.0 X R0.5	6.00	35.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NCH600R0504000	6.0 X R0.5	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NCH600R1002000	6.0 X R1.0	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NCH600R1002500	6.0 X R1.0	6.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NCH600R1003000	6.0 X R1.0	6.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NCH600R1003500	6.0 X R1.0	6.00	35.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NCH600R1004000	6.0 X R1.0	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NCH800R0302500	8.0 X R0.3	9.00	25.00	7.60	-	65	8	Free	Free	Free	Free	Free
4NCH800R0502500	8.0 X R0.5	9.00	25.00	7.60	-	65	8	Free	Free	Free	Free	Free
4NCH800R0504000	8.0 X R0.5	9.00	40.00	7.60	-	80	8	Free	Free	Free	Free	Free
4NCH800R1002500	8.0 X R1.0	9.00	25.00	7.60	-	65	8	Free	Free	Free	Free	Free
4NCH800R1004000	8.0 X R1.0	9.00	40.00	7.60	-	80	8	Free	Free	Free	Free	Free
4NCH800R1502500	8.0 X R1.5	9.00	25.00	7.60	-	65	8	Free	Free	Free	Free	Free

4NCH Z4 Frese Toriche Rastremate per Acciai fino a 68 HRC

4F Necked Corner Radius for Super Hardened Steels

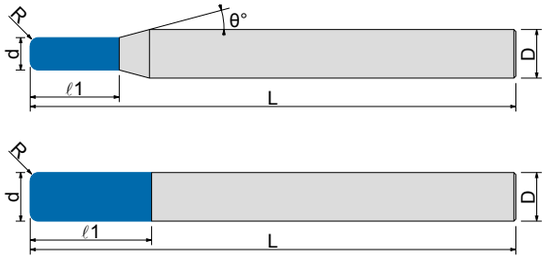
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
4NCH1000R0502500	10.0 X R0.5	11.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
4NCH1000R0504000	10.0 X R0.5	11.00	40.00	9.50	-	90	10	Free	Free	Free	Free	Free
4NCH1000R0504500	10.0 X R0.5	11.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
4NCH1000R0505500	10.0 X R0.5	11.00	55.00	9.50	-	100	10	Free	Free	Free	Free	Free
4NCH1000R1002500	10.0 X R1.0	11.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
4NCH1000R1004000	10.0 X R1.0	11.00	40.00	9.50	-	90	10	Free	Free	Free	Free	Free
4NCH1000R1004500	10.0 X R1.0	11.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
4NCH1000R1005500	10.0 X R1.0	11.00	55.00	9.50	-	100	10	Free	Free	Free	Free	Free
4NCH1000R1502500	10.0 X R1.5	11.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
4NCH1000R2002500	10.0 X R2.0	11.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
4NCH1000R2004500	10.0 X R2.0	11.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
4NCH1200R0503000	12.0 X R0.5	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
4NCH1200R0504000	12.0 X R0.5	12.00	40.00	11.50	-	90	12	Free	Free	Free	Free	Free
4NCH1200R0505000	12.0 X R0.5	12.00	50.00	11.50	-	110	12	Free	Free	Free	Free	Free
4NCH1200R1003000	12.0 X R1.0	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
4NCH1200R1004000	12.0 X R1.0	12.00	40.00	11.50	-	90	12	Free	Free	Free	Free	Free
4NCH1200R1005000	12.0 X R1.0	12.00	50.00	11.50	-	110	12	Free	Free	Free	Free	Free
4NCH1200R1503000	12.0 X R1.5	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
4NCH1200R2003000	12.0 X R2.0	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
4NCH1200R2005000	12.0 X R2.0	12.00	50.00	11.50	-	90	12	Free	Free	Free	Free	Free
4NCH1200R2006000	12.0 X R2.0	12.00	60.00	11.50	-	110	12	Free	Free	Free	Free	Free
4NCH1200R3003000	12.0 X R3.0	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free

4CLH Z4 Frese Toriche per Acciai fino a 68 HRC

4F Corner Radius Long for Super Hardened Steels





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d x R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CLH150R02045	1.5 X R0.2	4.00	15	45	4	
4CLH150R03045	1.5 X R0.3	4.00	15	45	4	
4CLH200R02045	2.0 X R0.2	6.00	15	45	4	
4CLH200R03045	2.0 X R0.3	6.00	15	45	4	
4CLH200R05045	2.0 X R0.5	6.00	15	45	4	
4CLH300R02060	3.0 X R0.2	8.00	15	60	6	
4CLH300R03060	3.0 X R0.3	8.00	15	60	6	
4CLH300R05060	3.0 X R0.5	8.00	15	60	6	
4CLH400R02060	4.0 X R0.2	11.00	15	60	6	
4CLH400R03060	4.0 X R0.3	11.00	15	60	6	
NEW **4CLH400R050S460**	4.0 X R0.5	11.00	-	60	4	
4CLH400R05060	4.0 X R0.5	11.00	15	60	6	
4CLH400R10060	4.0 X R1.0	11.00	15	60	6	
4CLH500R05060	5.0 X R0.5	11.00	15	60	6	
4CLH600R02070	6.0 X R0.2	15.00	-	70	6	
4CLH600R03070	6.0 X R0.3	15.00	-	70	6	
4CLH600R05070	6.0 X R0.5	15.00	-	70	6	
NEW **4CLH600R050100**	6.0 X R0.5	15.00	-	100	6	
4CLH600R10070	6.0 X R1.0	15.00	-	70	6	
4CLH600R15070	6.0 X R1.5	15.00	-	70	6	

4CLH Z4 Frese Toriche per Acciai fino a 68 HRC

4F Corner Radius Long for Super Hardened Steels

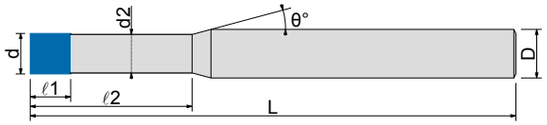
(Unit: mm)

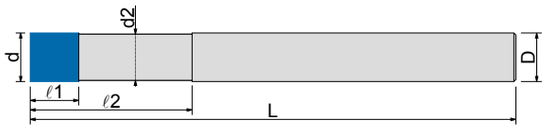
Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d x R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
NEW **4CLH800R05060**	8.0 X R0.5	19.00	-	60	8	
NEW **4CLH800R050100**	8.0 X R0.5	19.00	-	100	8	
NEW **4CLH800R10060**	8.0 X R1.0	19.00	-	60	8	
4CLH800R10080	8.0 X R1.0	19.00	-	80	8	
4CLH800R20080	8.0 X R2.0	19.00	-	80	8	
4CLH1000R05080	10.0 X R0.5	22.00	-	80	10	
NEW **4CLH1000R050100**	10.0 X R0.5	22.00	-	100	10	
4CLH1000R10080	10.0 X R1.0	22.00	-	80	10	
4CLH1000R100100	10.0 X R1.0	22.00	-	100	10	
4CLH1000R15080	10.0 X R1.5	22.00	-	80	10	
4CLH1000R200100	10.0 X R2.0	22.00	-	100	10	
4CLH1000R20080	10.0 X R2.0	22.00	-	80	10	
4CLH1200R05080	12.0 X R0.5	26.00	-	80	12	
4CLH1200R050110	12.0 X R0.5	26.00	-	110	12	
4CLH1200R10080	12.0 X R1.0	26.00	-	80	12	
4CLH1200R100110	12.0 X R1.0	26.00	-	110	12	
4CLH1200R20080	12.0 X R2.0	26.00	-	80	12	

2NSH Z2 Frese Cilindriche Rastremate per Acciai fino a 68 HRC

2F Necked Square End for Super Hardened Steel







Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°	3°
2NSH010030	0.1	0.10	0.30	0.09	15	45	4	0.33	0.35	0.36	0.37	0.40
2NSH010050	0.1	0.10	0.50	0.09	15	45	4	0.54	0.56	0.58	0.60	0.65
2NSH010100	0.1	0.10	1.00	0.09	15	45	4	1.06	1.09	1.13	1.18	1.27
2NSH015030	0.15	0.15	0.30	0.13	15	45	4	0.34	0.36	0.37	0.38	0.41
2NSH015050	0.15	0.15	0.50	0.13	15	45	4	0.55	0.57	0.59	0.61	0.66
2NSH015100	0.15	0.15	1.00	0.13	15	45	4	1.07	1.10	1.14	1.19	1.28
2NSH020050	0.2	0.20	0.50	0.18	15	45	4	0.55	0.57	0.59	0.61	0.66
2NSH020100	0.2	0.20	1.00	0.18	15	45	4	1.07	1.10	1.14	1.19	1.28
2NSH020150	0.2	0.20	1.50	0.18	15	45	4	1.58	1.64	1.70	1.76	1.91
2NSH020200	0.2	0.20	2.00	0.18	15	45	4	2.10	2.17	2.25	2.34	2.53
2NSH020300	0.2	0.20	3.00	0.18	15	45	4	3.13	3.24	3.36	3.49	3.77
2NSH020400	0.2	0.20	4.00	0.18	15	45	4	4.17	4.31	4.47	4.64	5.01
2NSH030100	0.3	0.30	1.00	0.28	15	45	4	1.07	1.10	1.14	1.19	1.28
2NSH030150	0.3	0.30	1.50	0.28	15	45	4	1.58	1.64	1.70	1.76	1.91
2NSH030200	0.3	0.30	2.00	0.28	15	45	4	2.10	2.17	2.25	2.34	2.53
2NSH030300	0.3	0.30	3.00	0.28	15	45	4	3.13	3.24	3.36	3.49	3.77
2NSH030400	0.3	0.30	4.00	0.28	15	45	4	4.17	4.31	4.47	4.64	5.01
2NSH030600	0.3	0.30	6.00	0.28	15	45	4	6.24	6.45	6.69	6.94	7.50
2NSH030800	0.3	0.30	8.00	0.28	15	45	4	8.30	8.59	8.90	9.24	9.99
2NSH040100	0.4	0.40	1.00	0.37	15	45	4	1.09	1.12	1.17	1.21	1.31

2NSH Z2 Frese Cilindriche Rastremate per Acciai fino a 68 HRC

2F Necked Square End for Super Hardened Steel

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°	3°
2NSH040150	0.4	0.40	1.50	0.37	15	45	4	1.60	1.66	1.72	1.78	1.93
2NSH040200	0.4	0.40	2.00	0.37	15	45	4	2.12	2.19	2.27	2.36	2.55
2NSH040250	0.4	0.40	2.50	0.37	15	45	4	2.64	2.73	2.83	2.93	3.17
2NSH040300	0.4	0.40	3.00	0.37	15	45	4	3.15	3.26	3.38	3.51	3.79
2NSH040350	0.4	0.40	3.50	0.37	15	45	4	3.67	3.80	3.94	4.08	4.42
2NSH040400	0.4	0.40	4.00	0.37	15	45	4	4.19	4.33	4.49	4.66	5.04
2NSH040500	0.4	0.40	5.00	0.37	15	45	4	5.22	5.40	5.60	5.81	6.28
2NSH040600	0.4	0.40	6.00	0.37	15	45	4	6.25	6.47	6.71	6.96	7.52
2NSH040800	0.4	0.40	8.00	0.37	15	45	4	8.32	8.61	8.92	9.26	10.01
2NSH0401000	0.4	0.40	10.00	0.37	15	45	4	10.39	10.75	11.14	11.56	12.50
2NSH0401200	0.4	0.40	12.00	0.37	15	45	4	12.46	12.89	13.36	13.86	14.98
2NSH050100	0.5	0.50	1.00	0.47	15	45	4	1.09	1.12	1.17	1.21	1.31
2NSH050150	0.5	0.50	1.50	0.47	15	45	4	1.60	1.66	1.72	1.78	1.93
2NSH050200	0.5	0.50	2.00	0.47	15	45	4	2.12	2.19	2.27	2.36	2.55
2NSH050250	0.5	0.50	2.50	0.47	15	45	4	2.64	2.73	2.83	2.93	3.17
2NSH050300	0.5	0.50	3.00	0.47	15	45	4	3.15	3.26	3.38	3.51	3.79
2NSH050350	0.5	0.50	3.50	0.47	15	45	4	3.67	3.80	3.94	4.08	4.42
2NSH050400	0.5	0.50	4.00	0.47	15	45	4	4.19	4.33	4.49	4.66	5.04
2NSH050500	0.5	0.50	5.00	0.47	15	45	4	5.22	5.40	5.60	5.81	6.28
2NSH050600	0.5	0.50	6.00	0.47	15	45	4	6.25	6.47	6.71	6.96	7.52
2NSH050800	0.5	0.50	8.00	0.47	15	45	4	8.32	8.61	8.92	9.26	10.01
2NSH0501000	0.5	0.50	10.00	0.47	15	45	4	10.39	10.75	11.14	11.56	12.50
2NSH0501200	0.5	0.50	12.00	0.47	15	45	4	12.46	12.89	13.36	13.86	14.98
2NSH060150	0.6	0.60	1.50	0.57	15	45	4	1.60	1.66	1.72	1.78	1.93
2NSH060200	0.6	0.60	2.00	0.57	15	45	4	2.12	2.19	2.27	2.36	2.55
2NSH060300	0.6	0.60	3.00	0.57	15	45	4	3.15	3.26	3.38	3.51	3.79
2NSH060400	0.6	0.60	4.00	0.57	15	45	4	4.19	4.33	4.49	4.66	5.04
2NSH060500	0.6	0.60	5.00	0.57	15	45	4	5.22	5.40	5.60	5.81	6.28
2NSH060600	0.6	0.60	6.00	0.57	15	45	4	6.25	6.47	6.71	6.96	7.52
2NSH060800	0.6	0.60	8.00	0.57	15	45	4	8.32	8.61	8.92	9.26	10.01
2NSH0601000	0.6	0.60	10.00	0.57	15	45	4	10.39	10.75	11.14	11.56	12.50
2NSH0601200	0.6	0.60	12.00	0.57	15	45	4	12.46	12.89	13.36	13.86	14.98
2NSH0601600	0.6	0.60	16.00	0.57	15	50	4	16.59	17.17	17.79	18.46	19.95
2NSH070200	0.7	0.70	2.00	0.66	15	45	4	2.14	2.21	2.29	2.38	2.57
2NSH070300	0.7	0.70	3.00	0.66	15	45	4	3.17	3.28	3.40	3.53	3.82
2NSH070400	0.7	0.70	4.00	0.66	15	45	4	4.21	4.35	4.51	4.68	5.06
2NSH070600	0.7	0.70	6.00	0.66	15	45	4	6.27	6.49	6.73	6.98	7.55
2NSH070800	0.7	0.70	8.00	0.66	15	45	4	8.34	8.63	8.94	9.28	10.03
2NSH0701000	0.7	0.70	10.00	0.66	15	45	4	10.41	10.77	11.16	11.58	12.52
2NSH080200	0.8	0.80	2.00	0.77	15	45	4	2.12	2.19	2.27	2.36	2.55
2NSH080300	0.8	0.80	3.00	0.77	15	45	4	3.15	3.26	3.38	3.51	3.79
2NSH080400	0.8	0.80	4.00	0.77	15	45	4	4.19	4.33	4.49	4.66	5.04
2NSH080500	0.8	0.80	5.00	0.77	15	45	4	5.22	5.40	5.60	5.81	6.28
2NSH080600	0.8	0.80	6.00	0.77	15	45	4	6.25	6.47	6.71	6.96	7.52
2NSH080800	0.8	0.80	8.00	0.77	15	45	4	8.32	8.61	8.92	9.26	10.01
2NSH0801000	0.8	0.80	10.00	0.77	15	45	4	10.39	10.75	11.14	11.56	12.50

2NSH Z2 Frese Cilindriche Rastremate per Acciai fino a 68 HRC

2F Necked Square End for Super Hardened Steel

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°	3°
2NSH0801200	0.8	0.80	12.00	0.77	15	45	4	12.46	12.89	13.36	13.86	14.98
2NSH0801600	0.8	0.80	16.00	0.77	15	50	4	16.59	17.17	17.79	18.46	19.95
2NSH0802000	0.8	0.80	20.00	0.77	15	50	4	20.73	21.45	22.22	23.06	24.93
2NSH0802500	0.8	0.80	25.00	0.77	15	60	4	25.89	26.80	27.76	28.81	Free
2NSH090200	0.9	0.90	2.00	0.85	15	45	4	2.16	2.23	2.32	2.40	2.60
2NSH090400	0.9	0.90	4.00	0.85	15	45	4	4.23	4.37	4.53	4.70	5.08
2NSH090600	0.9	0.90	6.00	0.85	15	45	4	6.29	6.51	6.75	7.00	7.57
2NSH090800	0.9	0.90	8.00	0.85	15	45	4	8.36	8.65	8.96	9.30	10.06
2NSH0901000	0.9	0.90	10.00	0.85	15	45	4	10.43	10.79	11.18	11.60	12.54
2NSH100200	1.0	1.00	2.00	0.95	15	45	4	2.16	2.23	2.32	2.40	2.60
2NSH100300	1.0	1.00	3.00	0.95	15	45	4	3.19	3.30	3.42	3.55	3.84
2NSH100400	1.0	1.00	4.00	0.95	15	45	4	4.23	4.37	4.53	4.70	5.08
2NSH100500	1.0	1.00	5.00	0.95	15	45	4	5.26	5.44	5.64	5.85	6.33
2NSH100600	1.0	1.00	6.00	0.95	15	45	4	6.29	6.51	6.75	7.00	7.57
2NSH100800	1.0	1.00	8.00	0.95	15	45	4	8.36	8.65	8.96	9.30	10.06
2NSH1001000	1.0	1.00	10.00	0.95	15	45	4	10.43	10.79	11.18	11.60	12.54
2NSH1001200	1.0	1.00	12.00	0.95	15	45	4	12.50	12.93	13.40	13.90	15.03
2NSH1001400	1.0	1.00	14.00	0.95	15	45	4	14.56	15.07	15.61	16.20	17.52
2NSH1001600	1.0	1.00	16.00	0.95	15	50	4	16.63	17.21	17.83	18.50	20.00
2NSH1001800	1.0	1.00	18.00	0.95	15	50	4	18.70	19.35	20.05	20.80	22.49
2NSH1002000	1.0	1.00	20.00	0.95	15	50	4	20.76	21.49	22.26	23.10	24.97
2NSH1002500	1.0	1.00	25.00	0.95	15	60	4	25.93	26.84	27.81	28.85	Free
2NSH1003000	1.0	1.00	30.00	0.95	15	70	4	31.10	32.19	33.35	34.60	Free
2NSH120400	1.2	1.20	4.00	1.14	15	45	4	4.25	4.39	4.55	4.72	5.11
2NSH120600	1.2	1.20	6.00	1.14	15	45	4	6.31	6.53	6.77	7.02	7.59
2NSH120800	1.2	1.20	8.00	1.14	15	45	4	8.38	8.67	8.99	9.32	10.08
2NSH1201000	1.2	1.20	10.00	1.14	15	45	4	10.45	10.81	11.20	11.62	12.57
2NSH1201200	1.2	1.20	12.00	1.14	15	45	4	12.51	12.95	13.42	13.92	15.05
2NSH1201600	1.2	1.20	16.00	1.14	15	50	4	16.65	17.23	17.85	18.52	20.02
2NSH1202000	1.2	1.20	20.00	1.14	15	50	4	20.78	21.51	22.29	23.12	25.00
2NSH1202500	1.2	1.20	25.00	1.14	15	60	4	25.95	26.86	27.83	28.87	Free
2NSH150400	1.5	1.50	4.00	1.44	15	45	4	4.25	4.39	4.55	4.72	5.11
2NSH150600	1.5	1.50	6.00	1.44	15	45	4	6.31	6.53	6.77	7.02	7.59
2NSH150800	1.5	1.50	8.00	1.44	15	45	4	8.38	8.67	8.99	9.32	10.08
2NSH1501000	1.5	1.50	10.00	1.44	15	45	4	10.45	10.81	11.20	11.62	12.57
2NSH1501200	1.5	1.50	12.00	1.44	15	45	4	12.51	12.95	13.42	13.92	15.05
2NSH1501600	1.5	1.50	16.00	1.44	15	50	4	16.65	17.23	17.85	18.52	20.02
2NSH1501800	1.5	1.50	18.00	1.44	15	50	4	18.72	19.37	20.07	20.82	22.51
2NSH1502000	1.5	1.50	20.00	1.44	15	50	4	20.78	21.51	22.29	23.12	Free
2NSH1502500	1.5	1.50	25.00	1.44	15	60	4	25.95	26.86	27.83	28.87	Free
2NSH1503000	1.5	1.50	30.00	1.44	15	70	4	31.12	32.21	33.37	34.62	Free
2NSH1504000	1.5	1.50	40.00	1.44	15	80	4	41.46	42.90	44.45	Free	Free
2NSH160800	1.6	1.60	8.00	1.55	15	45	4	8.36	8.65	8.96	9.30	10.06
2NSH1601000	1.6	1.60	10.00	1.55	15	45	4	10.43	10.79	11.18	11.60	12.54
2NSH1601200	1.6	1.60	12.00	1.55	15	45	4	12.50	12.93	13.40	13.90	15.03
2NSH1601400	1.6	1.60	14.00	1.55	15	45	4	14.56	15.07	15.61	16.20	17.52

2NSH Z2 Frese Cilindriche Rastremate per Acciai fino a 68 HRC

2F Necked Square End for Super Hardened Steel

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°	3°
2NSH1601600	1.6	1.60	16.00	1.55	15	50	4	16.63	17.21	17.83	18.50	20.00
2NSH1601800	1.6	1.60	18.00	1.55	15	50	4	18.70	19.35	20.05	20.80	22.49
2NSH1602000	1.6	1.60	20.00	1.55	15	50	4	20.76	21.49	22.26	23.10	Free
2NSH180800	1.8	1.80	8.00	1.75	15	45	4	8.36	8.65	8.96	9.30	10.06
2NSH1801000	1.8	1.80	10.00	1.75	15	45	4	10.43	10.79	11.18	11.60	12.54
2NSH1801200	1.8	1.80	12.00	1.75	15	45	4	12.50	12.93	13.40	13.90	15.03
2NSH1801400	1.8	1.80	14.00	1.75	15	45	4	14.56	15.07	15.61	16.20	17.52
2NSH1801600	1.8	1.80	16.00	1.75	15	50	4	16.63	17.21	17.83	18.50	20.00
2NSH1801800	1.8	1.80	18.00	1.75	15	50	4	18.70	19.35	20.05	20.80	Free
2NSH1802000	1.8	1.80	20.00	1.75	15	50	4	20.76	21.49	22.26	23.10	Free
2NSH200400	2.0	2.00	4.00	1.92	15	45	4	4.28	4.43	4.59	4.77	5.15
2NSH200600	2.0	2.00	6.00	1.92	15	45	4	6.35	6.57	6.81	7.07	7.64
2NSH200800	2.0	2.00	8.00	1.92	15	45	4	8.42	8.71	9.03	9.37	10.13
2NSH2001000	2.0	2.00	10.00	1.92	15	45	4	10.49	10.85	11.24	11.67	12.61
2NSH2001200	2.0	2.00	12.00	1.92	15	45	4	12.55	12.99	13.46	13.96	15.10
2NSH2001400	2.0	2.00	14.00	1.92	15	45	4	14.62	15.13	15.68	16.26	17.58
2NSH2001600	2.0	2.00	16.00	1.92	15	50	4	16.69	17.27	17.89	18.56	Free
2NSH2001800	2.0	2.00	18.00	1.92	15	50	4	18.76	19.41	20.11	20.86	Free
2NSH2002000	2.0	2.00	20.00	1.92	15	50	4	20.82	21.55	22.33	23.16	Free
2NSH2002500	2.0	2.00	25.00	1.92	15	60	4	25.99	26.90	27.87	Free	Free
2NSH2003000	2.0	2.00	30.00	1.92	15	70	4	31.16	32.25	33.41	Free	Free
2NSH2004000	2.0	2.00	40.00	1.92	15	80	4	41.50	42.94	Free	Free	Free
2NSH2501000	2.5	2.50	10.00	2.39	15	45	4	10.54	10.91	11.31	11.73	12.68
2NSH2501200	2.5	2.50	12.00	2.39	15	45	4	12.61	13.05	13.52	14.03	Free
2NSH2501600	2.5	2.50	16.00	2.39	15	50	4	16.75	17.33	17.96	18.63	Free
2NSH2502000	2.5	2.50	20.00	2.39	15	50	4	20.88	21.61	22.39	Free	Free
2NSH2502500	2.5	2.50	25.00	2.39	15	60	4	26.05	26.96	27.93	Free	Free
2NSH2503000	2.5	2.50	30.00	2.39	15	70	4	31.22	32.31	Free	Free	Free
2NSH300800	3.0	3.00	8.00	2.86	15	50	6	8.53	8.83	9.15	9.49	10.26
2NSH3001000	3.0	3.00	10.00	2.86	15	50	6	10.60	10.97	11.37	11.79	12.75
2NSH3001200	3.0	3.00	12.00	2.86	15	50	6	12.67	13.11	13.58	14.09	15.24
2NSH3001600	3.0	3.00	16.00	2.86	15	60	6	16.80	17.39	18.02	18.69	20.21
2NSH3002000	3.0	3.00	20.00	2.86	15	60	6	20.94	21.67	22.45	23.29	25.18
2NSH3002500	3.0	3.00	25.00	2.86	15	60	6	26.11	27.02	27.99	29.04	Free
2NSH3003000	3.0	3.00	30.00	2.86	15	70	6	31.28	32.36	33.53	34.79	Free
2NSH3003500	3.0	3.00	35.00	2.86	15	70	6	36.44	37.71	39.08	40.54	Free
2NSH3004000	3.0	3.00	40.00	2.86	15	80	6	41.61	43.06	44.62	Free	Free
2NSH4001000	4.0	4.00	10.00	3.80	15	50	6	10.72	11.09	11.49	11.92	12.89
2NSH4001200	4.0	4.00	12.00	3.80	15	50	6	12.78	13.23	13.71	14.22	15.38
2NSH4001400	4.0	4.00	14.00	3.80	15	50	6	14.85	15.37	15.92	16.52	17.86
2NSH4001600	4.0	4.00	16.00	3.80	15	60	6	16.92	17.51	18.14	18.82	Free
2NSH4002000	4.0	4.00	20.00	3.80	15	60	6	21.05	21.79	22.57	23.42	Free
2NSH4002500	4.0	4.00	25.00	3.80	15	60	6	26.22	27.14	28.12	Free	Free
2NSH4003000	4.0	4.00	30.00	3.80	15	70	6	31.39	32.48	33.66	Free	Free
2NSH4003500	4.0	4.00	35.00	3.80	15	70	6	36.56	37.83	Free	Free	Free
2NSH4004000	4.0	4.00	40.00	3.80	15	80	6	41.73	43.18	Free	Free	Free

2NSH Z2 Frese Cilindriche Rastremate per Acciai fino a 68 HRC

2F Necked Square End for Super Hardened Steel

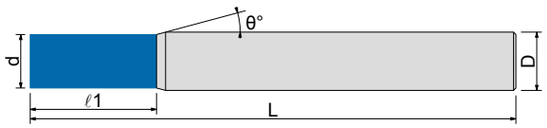
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°	3°
2NSH4005000	4.0	4.00	50.00	3.80	15	100	6	52.06	53.88	Free	Free	Free
2NSH5001600	5.0	5.00	16.00	4.75	15	60	6	17.02	17.61	18.25	Free	Free
2NSH5002000	5.0	5.00	20.00	4.75	15	60	6	21.15	21.89	Free	Free	Free
2NSH5002500	5.0	5.00	25.00	4.75	15	60	6	26.32	27.24	Free	Free	Free
2NSH5003000	5.0	5.00	30.00	4.75	15	70	6	31.49	Free	Free	Free	Free
2NSH5003500	5.0	5.00	35.00	4.75	15	70	6	36.66	Free	Free	Free	Free
2NSH5004000	5.0	5.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
2NSH5005000	5.0	5.00	50.00	4.75	15	100	6	52.16	Free	Free	Free	Free
2NSH6001500	6.0	6.00	15.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NSH6002000	6.0	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NSH6003000	6.0	6.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NSH6004000	6.0	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
2NSH8002000	8.0	8.00	20.00	7.60	-	80	8	Free	Free	Free	Free	Free
2NSH8003000	8.0	8.00	30.00	7.60	-	80	8	Free	Free	Free	Free	Free
2NSH8004000	8.0	8.00	40.00	7.60	-	100	8	Free	Free	Free	Free	Free

2SH Z2 Frese Cilindriche per Acciai fino a 68 HRC

2F Square End for Super Hardened Steels





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01
d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2SH020040S4	0.2	0.40	15	38	4	
2SH030060S4	0.3	0.60	15	38	4	
2SH040080S4	0.4	0.80	15	38	4	
2SH050100S4	0.5	1.00	15	38	4	
2SH060120S4	0.6	1.20	15	38	4	
2SH070140S4	0.7	1.40	15	38	4	
2SH080160S4	0.8	1.60	15	38	4	
2SH100250S4	1.0	2.50	15	40	4	
2SH100250S6	1.0	2.50	15	40	6	
2SH120300S4	1.2	3.00	15	40	4	
2SH150400S4	1.5	4.00	15	40	4	
2SH150400S6	1.5	4.00	15	40	6	
2SH200600S4	2.0	6.00	15	40	4	
2SH200600S6	2.0	6.00	15	40	6	
2SH250800S4	2.5	8.00	15	40	4	
2SH250800S6	2.5	8.00	15	40	6	
2SH300800S4	3.0	8.00	15	45	4	
2SH300800S6	3.0	8.00	15	45	6	
2SH350800S4	3.5	8.00	15	45	4	
2SH4001000S4	4.0	10.00	-	45	4	

2SH Z2 Frese Cilindriche per Acciai fino a 68 HRC

2F Square End for Super Hardened Steels

(Unit: mm)

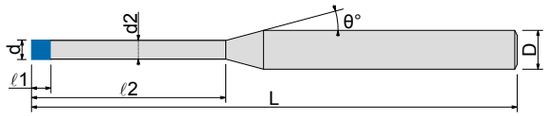
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2SH4001100S6	4.0	11.00	15	45	6	
2SH4501100S6	4.5	11.00	15	45	6	
2SH5001300S6	5.0	13.00	15	50	6	
2SH5501300S6	5.5	13.00	15	50	6	
2SH6001300S6	6.0	13.00	-	50	6	
2SH6501500S8	6.5	15.00	15	60	8	
2SH7001600S8	7.0	16.00	15	60	8	
2SH7501600S8	7.5	16.00	15	60	8	
2SH8001900S8	8.0	19.00	-	60	8	
2SH8501900S10	8.5	19.00	15	70	10	
2SH9001900S10	9.0	19.00	15	70	10	
2SH9501900S10	9.5	19.00	15	70	10	
2SH10002200S10	10.0	22.00	-	70	10	
2SH10502200S12	10.5	22.00	15	75	12	
2SH11002200S12	11.0	22.00	15	75	12	
2SH12002600S12	12.0	26.00	-	75	12	

4NSH Z4 Frese Cilindriche Rastremate per Acciai fino a 68 HRC

NEW

4F Necked Square End for Super Hardened Steels







Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting

Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
4NSH100400	1.0	1.00	4.00	0.95	15	45	4	4.23	4.37	4.53	4.70	5.08
4NSH100600	1.0	1.00	6.00	0.95	15	45	4	6.29	6.51	6.75	7.00	7.57
4NSH100800	1.0	1.00	8.00	0.95	15	45	4	8.36	8.65	8.96	9.30	10.06
4NSH1001000	1.0	1.00	10.00	0.95	15	50	4	10.43	10.79	11.18	11.60	12.54
4NSH1001200	1.0	1.00	12.00	0.95	15	50	4	12.50	12.93	13.40	13.90	15.03
4NSH1001600	1.0	1.00	16.00	0.95	15	50	4	16.63	17.21	17.83	18.50	20.00
4NSH1002000	1.0	1.00	20.00	0.95	15	60	4	20.76	21.49	22.26	23.10	24.97
4NSH150600	1.5	1.50	6.00	1.44	15	45	4	6.31	6.53	6.77	7.02	7.59
4NSH150800	1.5	1.50	8.00	1.44	15	45	4	8.38	8.67	8.99	9.32	10.08
4NSH1501000	1.5	1.50	10.00	1.44	15	50	4	10.45	10.81	11.20	11.62	12.57
4NSH1501200	1.5	1.50	12.00	1.44	15	50	4	12.51	12.95	13.42	13.92	15.05
4NSH1501600	1.5	1.50	16.00	1.44	15	50	4	16.65	17.23	17.85	18.52	20.02
4NSH1502000	1.5	1.50	20.00	1.44	15	60	4	20.78	21.51	22.29	23.12	Free
4NSH200800	2.0	2.00	8.00	1.92	15	45	4	8.42	8.71	9.03	9.37	10.13
4NSH2001000	2.0	2.00	10.00	1.92	15	50	4	10.49	10.85	11.24	11.67	12.61
4NSH2001200	2.0	2.00	12.00	1.92	15	50	4	12.55	12.99	13.46	13.96	15.10
4NSH2001600	2.0	2.00	16.00	1.92	15	50	4	16.69	17.27	17.89	18.56	Free
4NSH2002000	2.0	2.00	20.00	1.92	15	50	4	20.82	21.55	22.33	23.16	Free
4NSH3001200	3.0	3.00	12.00	2.86	15	50	6	12.67	13.11	13.58	14.09	15.24
4NSH3001600	3.0	3.00	16.00	2.86	15	55	6	16.80	17.39	18.02	18.69	20.21
4NSH3002000	3.0	3.00	20.00	2.86	15	60	6	20.94	21.67	22.45	23.29	25.18

4NSH Z4 Frese Cilindriche Rastremate per Acciai fino a 68 HRC

4F Necked Square End for Super Hardened Steels

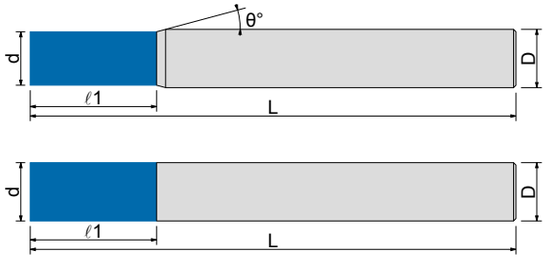
(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°	3°
4NSH3002500	3.0	3.00	25.00	2.86	15	65	6	26.11	27.02	27.99	29.04	Free
4NSH3003000	3.0	3.00	30.00	2.86	15	70	6	31.28	32.36	33.53	34.79	Free
4NSH4001600	4.0	4.00	16.00	3.80	15	55	6	16.92	17.51	18.14	18.82	Free
4NSH4002000	4.0	4.00	20.00	3.80	15	60	6	21.05	21.79	22.57	23.42	Free
4NSH4002500	4.0	4.00	25.00	3.80	15	65	6	26.22	27.14	28.12	Free	Free
4NSH4003000	4.0	4.00	30.00	3.80	15	70	8	31.39	32.48	33.66	34.92	37.75

4SH Z4 Frese Cilindriche per Acciai fino a 68 HRC

4F Square End for Super Hardened Steels





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

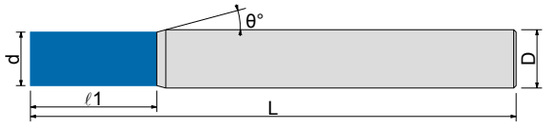
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SH100250S4	1.0	2.50	15	40	4	
4SH100250S6	1.0	2.50	15	40	6	
4SH150400S4	1.5	4.00	15	40	4	
4SH150400S6	1.5	4.00	15	40	6	
4SH200600S4	2.0	6.00	15	40	4	
4SH200600S6	2.0	6.00	15	40	6	
4SH250800S4	2.5	8.00	15	40	4	
4SH250800S6	2.5	8.00	15	40	6	
4SH300800S4	3.0	8.00	15	45	4	
4SH300800S6	3.0	8.00	15	45	6	
4SH350800S4	3.5	8.00	15	45	4	
4SH4001100S4	4.0	11.00	-	45	4	
4SH4001100S6	4.0	11.00	15	45	6	
4SH4501100S6	4.5	11.00	15	45	6	
4SH5001300S6	5.0	13.00	15	50	6	
4SH6001500S6	6.0	15.00	-	50	6	
NEW **4SH6001500S6100**	6.0	15.00	-	100	6	
4SH8001900S8	8.0	19.00	-	60	8	
4SH10002200S10	10.0	22.00	-	70	10	
NEW **4SH10002200S10100**	10.0	22.00	-	100	10	
4SH12002600S12	12.0	26.00	-	75	12	

4SHH Z4 Frese Cilindriche per Acciai fino a 68 HRC 45°

4F Square End for Super Hardened Steels

NEW





Caratteristiche

- Con elica a 45° appositamente studiata per prevenire scheggiature
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Suitable for heavy cutting with Helix 45°
- Flute design to prevent chipping
- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SHH100250S6	1.0	2.50	15	40	6	
4SHH100500S6	1.0	5.00	15	40	6	
4SHH150400S6	1.5	4.00	15	40	6	
4SHH150600S6	1.5	6.00	15	40	6	
4SHH200500S6	2.0	5.00	15	40	6	
4SHH200800S6	2.0	8.00	15	40	6	
4SHH2001000S6	2.0	10.00	15	50	6	
4SHH250800S6	2.5	8.00	15	45	6	
4SHH2501000S6	2.5	10.00	15	50	6	
4SHH300800S6	3.0	8.00	15	45	6	
4SHH3001200S3	3.0	12.00	-	50	3	
4SHH3001200S6	3.0	12.00	15	50	6	
4SHH3001500S6	3.0	15.00	15	55	6	
4SHH4001000S6	4.0	10.00	15	45	6	
4SHH4001500S6	4.0	15.00	15	55	6	
4SHH4002000S4	4.0	20.00	-	60	4	
4SHH4002000S6	4.0	20.00	15	60	6	
4SHH5001500S6	5.0	15.00	15	55	6	
4SHH5002500S6	5.0	25.00	15	60	6	
4SHH6001500S6	6.0	15.00	-	55	6	

4SHH Z4 Frese Cilindriche per Acciai fino a 68 HRC 45°

4F Square End for Super Hardened Steels

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SHH6001500100	6.0	15.00	-	100	6	
4SHH6002000S6	6.0	20.00	-	60	6	
4SHH6002500S6	6.0	25.00	-	65	6	
4SHH6003000S6	6.0	30.00	-	70	6	
4SHH8002000S8	8.0	20.00	-	60	8	
4SHH8002000100	8.0	20.00	-	100	8	
4SHH8002500S8	8.0	25.00	-	65	8	
4SHH8003000S8	8.0	30.00	-	70	8	
4SHH8004000S8	8.0	40.00	-	80	8	
4SHH10002000S10	10.0	20.00	-	60	10	
4SHH10002200100	10.0	22.00	-	100	10	
4SHH10003000S10	10.0	30.00	-	70	10	
4SHH10004000S10	10.0	40.00	-	80	10	
4SHH10005000S10	10.0	50.00	-	100	10	
4SHH12003000S12	12.0	30.00	-	75	12	
4SHH12004000S12	12.0	40.00	-	80	12	
4SHH12005000S12	12.0	50.00	-	100	12	
4SHH14003500S14	14.0	35.00	-	80	14	
4SHH16003500S16	16.0	35.00	-	80	16	
4SHH16005000S16	16.0	50.00	-	100	16	
4SHH16007000S16	16.0	70.00	-	120	16	
4SHH20005000S20	20.0	50.00	-	110	20	
4SHH20007000S20	20.0	70.00	-	130	20	

6SH Z6 Frese Cilindriche per Acciai fino a 68 HRC

6F Square End for Super Hardened Steels







Caratteristiche

- Con elica a 45° appositamente studiata per prevenire scheggiature
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Geometria di taglio studiata appositamente per acciai temprati
- fino a 68 HRC
- Solo per taglio a secco

Features

- Greater rigidity and reduced chattering through optimized geometry
- Cutting geometry specifically designed for super hardened steels
- Only for Dry cutting

Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

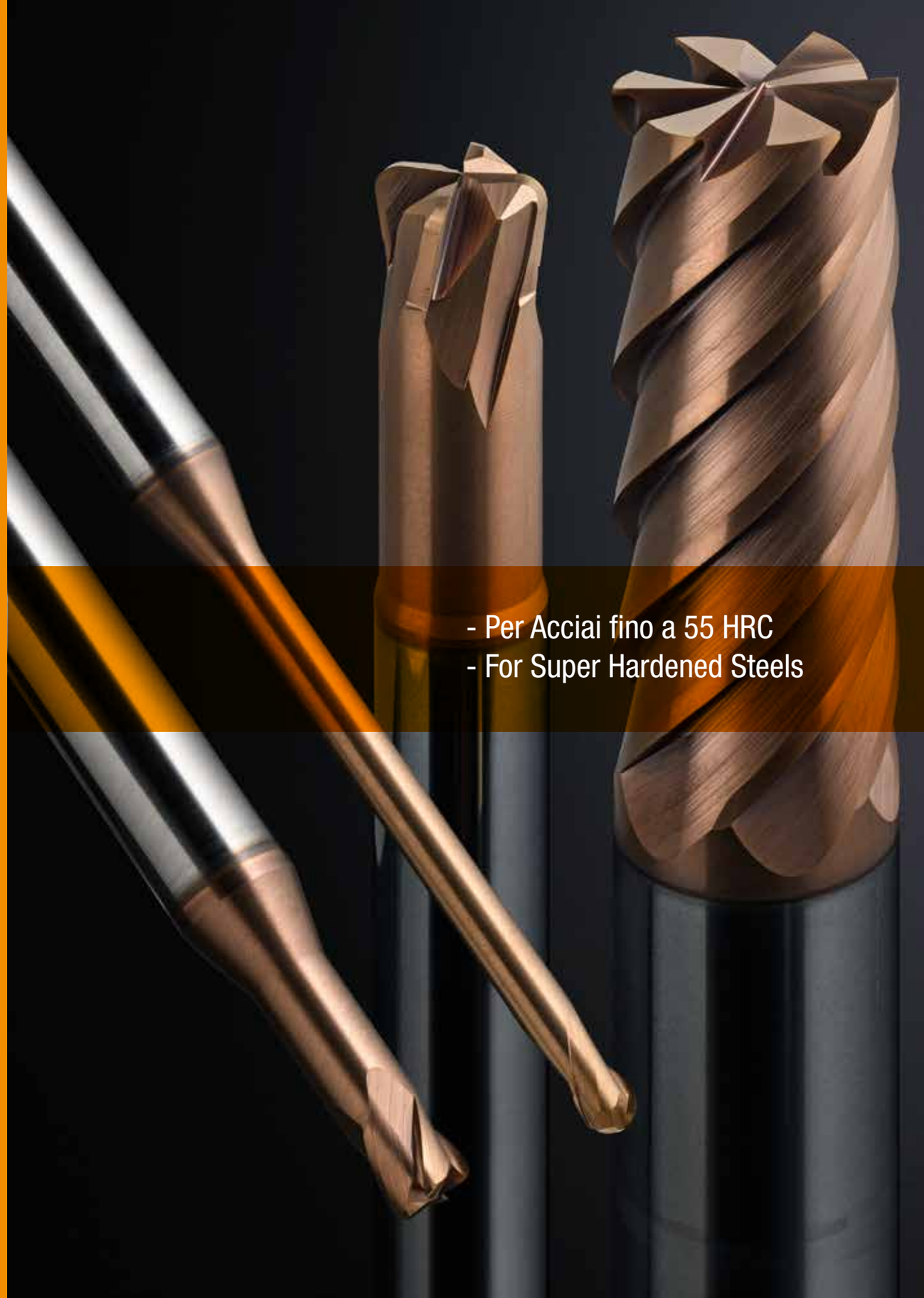
Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○		○	◎					

(Unit: mm)

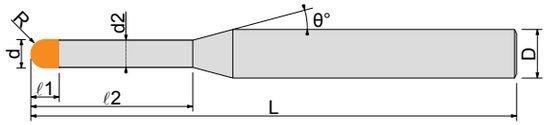
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
6SH600150050	6.0	15.00	50	6	
6SH600200060	6.0	20.00	60	6	
6SH600250065	6.0	25.00	65	6	
6SH600300070	6.0	30.00	70	6	
6SH800250065	8.0	25.00	65	8	
6SH800300070	8.0	30.00	70	8	
6SH800350090	8.0	35.00	90	8	
6SH800400090	8.0	40.00	90	8	
6SH1000350080	10.0	35.00	80	10	
6SH10004500100	10.0	45.00	100	10	
6SH10005500110	10.0	55.00	110	10	
6SH1200400090	12.0	40.00	90	12	
6SH12005000100	12.0	50.00	100	12	
6SH12006000110	12.0	60.00	110	12	
6SH16004500100	16.0	45.00	100	16	
6SH16005000110	16.0	50.00	110	16	
6SH16008000150	16.0	80.00	150	16	
6SH20005000110	20.0	50.00	110	20	
6SH20008000150	20.0	80.00	150	20	
6SH200010000160	20.0	100.00	160	20	

SOLUTION TOOL



2NB Z2 Frese Sferiche Rastremate per Acciai fino a 55 HRC
2F Necked Ball End





Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°
2NB020050	0.2 X R0.1	0.15	0.50	0.18	15	4	0.55	0.56	0.58	0.60	0.64
2NB020075	0.2 X R0.1	0.15	0.75	0.18	15	4	0.81	0.83	0.86	0.89	0.95
2NB020100	0.2 X R0.1	0.15	1.00	0.18	15	4	1.06	1.10	1.13	1.17	1.26
2NB020125	0.2 X R0.1	0.15	1.25	0.18	15	4	1.32	1.37	1.41	1.46	1.57
2NB020150	0.2 X R0.1	0.15	1.50	0.18	15	4	1.58	1.63	1.69	1.75	1.88
2NB020200	0.2 X R0.1	0.15	2.00	0.18	15	4	2.10	2.17	2.24	2.32	2.50
2NB020250	0.2 X R0.1	0.15	2.50	0.18	15	4	2.61	2.70	2.80	2.90	3.13
2NB020300	0.2 X R0.1	0.15	3.00	0.18	15	4	3.13	3.24	3.35	3.47	3.75
2NB030050	0.3 X R0.15	0.25	0.50	0.28	15	4	0.55	0.56	0.57	0.59	0.63
2NB030075	0.3 X R0.15	0.25	0.75	0.28	15	4	0.80	0.83	0.85	0.88	0.94
2NB030100	0.3 X R0.15	0.25	1.00	0.28	15	4	1.06	1.09	1.13	1.17	1.25
2NB030125	0.3 X R0.15	0.25	1.25	0.28	15	4	1.32	1.36	1.41	1.45	1.56
2NB030150	0.3 X R0.15	0.25	1.50	0.28	15	4	1.58	1.63	1.68	1.74	1.87
2NB030200	0.3 X R0.15	0.25	2.00	0.28	15	4	2.10	2.16	2.24	2.32	2.49
2NB030250	0.3 X R0.15	0.25	2.50	0.28	15	4	2.61	2.70	2.79	2.89	3.11
2NB030300	0.3 X R0.15	0.25	3.00	0.28	15	4	3.13	3.23	3.35	3.47	3.74
2NB040100	0.4 X R0.2	0.30	1.00	0.37	15	4	1.08	1.11	1.14	1.18	1.26
2NB040150	0.4 X R0.2	0.30	1.50	0.37	15	4	1.60	1.65	1.70	1.75	1.88
2NB040200	0.4 X R0.2	0.30	2.00	0.37	15	4	2.11	2.18	2.25	2.33	2.50
2NB040250	0.4 X R0.2	0.30	2.50	0.37	15	4	2.63	2.72	2.81	2.90	3.13

2NB Z2 Frese Sferiche Rastremate per Acciai fino a 55 HRC
2F Necked Ball End

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°
2NB040300	0.4 X R0.2	0.30	3.00	0.37	15	4	3.15	3.25	3.36	3.48	3.75
2NB040350	0.4 X R0.2	0.30	3.50	0.37	15	4	3.66	3.78	3.91	4.05	4.37
2NB040400	0.4 X R0.2	0.30	4.00	0.37	15	4	4.18	4.32	4.47	4.63	4.99
2NB040450	0.4 X R0.2	0.30	4.50	0.37	15	4	4.70	4.85	5.02	5.20	5.61
2NB040500	0.4 X R0.2	0.30	5.00	0.37	15	4	5.21	5.39	5.58	5.78	6.23
2NB040600	0.4 X R0.2	0.30	6.00	0.37	15	4	6.25	6.46	6.69	6.93	7.48
2NB040800	0.4 X R0.2	0.30	8.00	0.37	15	4	8.32	8.60	8.90	9.23	9.96
2NB050100	0.5 X R0.25	0.35	1.00	0.47	15	4	1.08	1.11	1.14	1.17	1.25
2NB050150	0.5 X R0.25	0.35	1.50	0.47	15	4	1.59	1.64	1.69	1.75	1.87
2NB050200	0.5 X R0.25	0.35	2.00	0.47	15	4	2.11	2.18	2.25	2.32	2.49
2NB050250	0.5 X R0.25	0.35	2.50	0.47	15	4	2.63	2.71	2.80	2.90	3.11
2NB050300	0.5 X R0.25	0.35	3.00	0.47	15	4	3.15	3.25	3.36	3.47	3.73
2NB050400	0.5 X R0.25	0.35	4.00	0.47	15	4	4.18	4.32	4.46	4.62	4.98
2NB050500	0.5 X R0.25	0.35	5.00	0.47	15	4	5.21	5.39	5.57	5.77	6.22
2NB050600	0.5 X R0.25	0.35	6.00	0.47	15	4	6.25	6.46	6.68	6.92	7.46
2NB050800	0.5 X R0.25	0.35	8.00	0.47	15	4	8.31	8.60	8.90	9.22	9.95
2NB0501000	0.5 X R0.25	0.35	10.00	0.47	15	4	10.38	10.73	11.11	11.52	12.44
2NB060100	0.6 X R0.3	0.40	1.00	0.57	15	4	1.08	1.10	1.13	1.17	1.24
2NB060200	0.6 X R0.3	0.40	2.00	0.57	15	4	2.11	2.17	2.24	2.31	2.48
2NB060250	0.6 X R0.3	0.40	2.50	0.57	15	4	2.63	2.71	2.80	2.89	3.10
2NB060300	0.6 X R0.3	0.40	3.00	0.57	15	4	3.14	3.24	3.35	3.46	3.72
2NB060350	0.6 X R0.3	0.40	3.50	0.57	15	4	3.66	3.78	3.90	4.04	4.34
2NB060400	0.6 X R0.3	0.40	4.00	0.57	15	4	4.18	4.31	4.46	4.61	4.97
2NB060450	0.6 X R0.3	0.40	4.50	0.57	15	4	4.69	4.85	5.01	5.19	5.59
2NB060500	0.6 X R0.3	0.40	5.00	0.57	15	4	5.21	5.38	5.57	5.76	6.21
2NB060550	0.6 X R0.3	0.40	5.50	0.57	15	4	5.73	5.92	6.12	6.34	6.83
2NB060600	0.6 X R0.3	0.40	6.00	0.57	15	4	6.24	6.45	6.67	6.91	7.45
2NB060800	0.6 X R0.3	0.40	8.00	0.57	15	4	8.31	8.59	8.89	9.21	9.94
2NB0601000	0.6 X R0.3	0.40	10.00	0.57	15	4	10.38	10.73	11.11	11.51	12.43
2NB0601200	0.6 X R0.3	0.40	12.00	0.57	15	4	12.45	12.87	13.32	13.81	14.91
2NB070200	0.7 X R0.35	0.45	2.00	0.66	15	4	2.13	2.19	2.26	2.33	2.49
2NB070400	0.7 X R0.35	0.45	4.00	0.66	15	4	4.20	4.33	4.47	4.63	4.98
2NB070600	0.7 X R0.35	0.45	6.00	0.66	15	4	6.26	6.47	6.69	6.93	7.46
2NB070800	0.7 X R0.35	0.45	8.00	0.66	15	4	8.33	8.61	8.91	9.23	9.95
2NB080200	0.8 X R0.4	0.50	2.00	0.77	15	4	2.11	2.17	2.23	2.30	2.46
2NB080300	0.8 X R0.4	0.50	3.00	0.77	15	4	3.14	3.24	3.34	3.45	3.70
2NB080400	0.8 X R0.4	0.50	4.00	0.77	15	4	4.17	4.31	4.45	4.60	4.94
2NB080500	0.8 X R0.4	0.50	5.00	0.77	15	4	5.21	5.38	5.56	5.75	6.19
2NB080600	0.8 X R0.4	0.50	6.00	0.77	15	4	6.24	6.45	6.66	6.90	7.43
2NB080800	0.8 X R0.4	0.50	8.00	0.77	15	4	8.31	8.58	8.88	9.20	9.92
2NB0801000	0.8 X R0.4	0.50	10.00	0.77	15	4	10.38	10.72	11.10	11.50	12.40
2NB0801200	0.8 X R0.4	0.50	12.00	0.77	15	4	12.44	12.86	13.31	13.80	14.89
2NB090200	0.9 X R0.45	0.60	2.00	0.85	15	4	2.14	2.20	2.27	2.34	2.49
2NB090400	0.9 X R0.45	0.60	4.00	0.85	15	4	4.21	4.34	4.48	4.64	4.98
2NB090600	0.9 X R0.45	0.60	6.00	0.85	15	4	6.28	6.48	6.70	6.94	7.46

2NB Z2 Frese Sferiche Rastremate per Acciai fino a 55 HRC

2F Necked Ball End

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece			
								30'	1°	1°30'	2°
2NB090800	0.9 X R0.45	0.60	8.00	0.85	15	4	8.35	8.62	8.92	9.23	9.95
2NB0901000	0.9 X R0.45	0.60	10.00	0.85	15	4	10.41	10.76	11.13	11.53	12.44
2NB100200	1.0 X R0.5	0.80	2.00	0.95	15	4	2.14	2.20	2.26	2.33	2.48
2NB100300	1.0 X R0.5	0.80	3.00	0.95	15	4	3.18	3.27	3.37	3.48	3.72
2NB100300S6	1.0 X R0.5	0.80	3.00	0.95	15	6	3.18	3.27	3.37	3.48	3.72
2NB100400	1.0 X R0.5	0.80	4.00	0.95	15	4	4.21	4.34	4.48	4.63	4.97
2NB100400S6	1.0 X R0.5	0.80	4.00	0.95	15	6	4.21	4.34	4.48	4.63	4.97
2NB100500	1.0 X R0.5	0.80	5.00	0.95	15	4	5.24	5.41	5.59	5.78	6.21
2NB100500S6	1.0 X R0.5	0.80	5.00	0.95	15	6	5.24	5.41	5.59	5.78	6.21
2NB100600	1.0 X R0.5	0.80	6.00	0.95	15	4	6.28	6.48	6.69	6.93	7.45
2NB100600S6	1.0 X R0.5	0.80	6.00	0.95	15	6	6.28	6.48	6.69	6.93	7.45
2NB100800	1.0 X R0.5	0.80	8.00	0.95	15	4	8.34	8.62	8.91	9.23	9.94
2NB100800S6	1.0 X R0.5	0.80	8.00	0.95	15	6	8.34	8.62	8.91	9.23	9.94
2NB1001000	1.0 X R0.5	0.80	10.00	0.95	15	4	10.41	10.76	11.13	11.53	12.42
2NB1001000S6	1.0 X R0.5	0.80	10.00	0.95	15	6	10.41	10.76	11.13	11.53	12.42
2NB1001200	1.0 X R0.5	0.80	12.00	0.95	15	4	12.48	12.90	13.34	13.83	14.91
2NB1001200S6	1.0 X R0.5	0.80	12.00	0.95	15	6	12.48	12.90	13.34	13.83	14.91
2NB1001400	1.0 X R0.5	0.80	14.00	0.95	15	4	14.55	15.04	15.56	16.13	17.40
2NB1001600	1.0 X R0.5	0.80	16.00	0.95	15	4	16.61	17.18	17.78	18.43	19.88
2NB1001600S6	1.0 X R0.5	0.80	16.00	0.95	15	6	16.61	17.18	17.78	18.43	19.88
2NB1001800	1.0 X R0.5	0.80	18.00	0.95	15	4	18.68	19.31	19.99	20.73	22.37
2NB1002000	1.0 X R0.5	0.80	20.00	0.95	15	4	20.75	21.45	22.21	23.03	24.86
2NB1002000S6	1.0 X R0.5	0.80	20.00	0.95	15	6	20.75	21.45	22.21	23.03	24.86
2NB120400	1.2 X R0.6	1.20	4.00	1.14	15	4	4.23	4.35	4.49	4.63	4.96
2NB120600	1.2 X R0.6	1.20	6.00	1.14	15	4	6.29	6.49	6.70	6.93	7.45
2NB120800	1.2 X R0.6	1.20	8.00	1.14	15	4	8.36	8.63	8.92	9.23	9.94
2NB1201000	1.2 X R0.6	1.20	10.00	1.14	15	4	10.43	10.77	11.14	11.53	12.42
2NB1201200	1.2 X R0.6	1.20	12.00	1.14	15	4	12.49	12.91	13.35	13.83	14.91
2NB1201600	1.2 X R0.6	1.20	16.00	1.14	15	4	16.63	17.19	17.79	18.43	19.88
2NB1202000	1.2 X R0.6	1.20	20.00	1.14	15	4	20.76	21.47	22.22	23.03	24.86
2NB150300	1.5 X R0.75	1.35	3.00	1.44	15	4	3.19	3.27	3.36	3.46	3.69
2NB150400	1.5 X R0.75	1.35	4.00	1.44	15	4	4.22	4.34	4.47	4.61	4.93
2NB150400S6	1.5 X R0.75	1.35	4.00	1.44	15	6	4.22	4.34	4.47	4.61	4.93
2NB150600	1.5 X R0.75	1.35	6.00	1.44	15	4	6.29	6.48	6.69	6.91	7.42
2NB150600S6	1.5 X R0.75	1.35	6.00	1.44	15	6	6.29	6.48	6.69	6.91	7.42
2NB150800	1.5 X R0.75	1.35	8.00	1.44	15	4	8.35	8.62	8.91	9.21	9.90
2NB150800S6	1.5 X R0.75	1.35	8.00	1.44	15	6	8.35	8.62	8.91	9.21	9.90
2NB1501000	1.5 X R0.75	1.35	10.00	1.44	15	4	10.42	10.76	11.12	11.51	12.39
2NB1501000S6	1.5 X R0.75	1.35	10.00	1.44	15	6	10.42	10.76	11.12	11.51	12.39
2NB1501200	1.5 X R0.75	1.35	12.00	1.44	15	4	12.49	12.90	13.34	13.81	14.87
2NB1501200S6	1.5 X R0.75	1.35	12.00	1.44	15	6	12.49	12.90	13.34	13.81	14.87
2NB1501400	1.5 X R0.75	1.35	14.00	1.44	15	4	14.56	15.04	15.56	16.11	17.36
2NB1501600	1.5 X R0.75	1.35	16.00	1.44	15	4	16.62	17.18	17.77	18.41	19.85
2NB1501600S6	1.5 X R0.75	1.35	16.00	1.44	15	6	16.62	17.18	17.77	18.41	19.85
2NB1502000	1.5 X R0.75	1.35	20.00	1.44	15	4	20.76	21.46	22.21	23.01	Free
2NB1502000S6	1.5 X R0.75	1.35	20.00	1.44	15	6	20.76	21.46	22.21	23.01	24.82

2NB Z2 Frese Sferiche Rastremate per Acciai fino a 55 HRC

2F Necked Ball End

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece			
								30'	1°	1°30'	2°
2NB1502500	1.5 X R0.75	1.35	25.00	1.44	15	4	25.93	26.81	27.75	28.76	Free
2NB1503000	1.5 X R0.75	1.35	30.00	1.44	15	4	31.10	32.15	33.29	34.51	Free
2NB160600	1.6 X R0.8	1.60	6.00	1.55	15	4	6.27	6.46	6.66	6.88	7.38
2NB160800	1.6 X R0.8	1.60	8.00	1.55	15	4	8.33	8.60	8.88	9.18	9.87
2NB1601000	1.6 X R0.8	1.60	10.00	1.55	15	4	10.40	10.74	11.10	11.48	12.35
2NB1601200	1.6 X R0.8	1.60	12.00	1.55	15	4	12.47	12.88	13.31	13.78	14.84
2NB1601600	1.6 X R0.8	1.60	16.00	1.55	15	4	16.60	17.15	17.75	18.38	19.81
2NB1602000	1.6 X R0.8	1.60	20.00	1.55	15	4	20.74	21.43	22.18	22.98	Free
2NB200400	2.0 X R1.0	1.80	4.00	1.92	15	4	4.25	4.36	4.49	4.62	4.92
2NB200500	2.0 X R1.0	1.80	5.00	1.92	15	4	5.28	5.43	5.60	5.77	6.16
2NB200600	2.0 X R1.0	1.80	6.00	1.92	15	4	6.32	6.50	6.70	6.92	7.40
2NB200600S6	2.0 X R1.0	1.80	6.00	1.92	15	6	6.32	6.50	6.70	6.92	7.40
2NB200800	2.0 X R1.0	1.80	8.00	1.92	15	4	8.39	8.64	8.92	9.22	9.89
2NB200800S6	2.0 X R1.0	1.80	8.00	1.92	15	6	8.39	8.64	8.92	9.22	9.89
2NB2001000	2.0 X R1.0	1.80	10.00	1.92	15	4	10.45	10.78	11.14	11.52	12.38
2NB2001000S6	2.0 X R1.0	1.80	10.00	1.92	15	6	10.45	10.78	11.14	11.52	12.38
2NB2001200	2.0 X R1.0	1.80	12.00	1.92	15	4	12.52	12.92	13.35	13.82	14.86
2NB2001200S6	2.0 X R1.0	1.80	12.00	1.92	15	6	12.52	12.92	13.35	13.82	14.86
2NB2001400	2.0 X R1.0	1.80	14.00	1.92	15	4	14.59	15.06	15.57	16.12	17.35
2NB2001600	2.0 X R1.0	1.80	16.00	1.92	15	4	16.65	17.20	17.79	18.42	19.83
2NB2001600S6	2.0 X R1.0	1.80	16.00	1.92	15	6	16.65	17.20	17.79	18.42	19.83
NEW **2NB2001800**	2.0 X R1.0	1.80	18.00	1.92	15	4	18.72	19.34	20.00	20.72	Free
2NB2001800S6	2.0 X R1.0	1.80	18.00	1.92	15	6	18.72	19.34	20.00	20.72	22.32
2NB2002000	2.0 X R1.0	1.80	20.00	1.92	15	4	20.79	21.48	22.22	23.02	Free
NEW **2NB2002000S6**	2.0 X R1.0	1.80	20.00	1.92	15	6	20.79	21.48	22.22	23.02	24.81
2NB2002200	2.0 X R1.0	1.80	22.00	1.92	15	4	22.86	23.62	24.44	25.32	Free
2NB2002500	2.0 X R1.0	1.80	25.00	1.92	15	4	25.96	26.83	27.76	28.77	Free
2NB2002500S6	2.0 X R1.0	1.80	25.00	1.92	15	6	25.96	26.83	27.76	28.77	31.02
2NB2003000	2.0 X R1.0	1.80	30.00	1.92	15	4	31.13	32.18	33.30	Free	Free
2NB2003500	2.0 X R1.0	1.80	35.00	1.92	15	4	36.29	37.52	38.84	Free	Free
2NB2004000	2.0 X R1.0	1.80	40.00	1.92	15	4	41.46	42.87	Free	Free	Free
2NB250800	2.5 X R1.25	2.50	8.00	2.39	15	4	8.43	8.69	8.96	9.25	9.90
2NB2501000	2.5 X R1.25	2.50	10.00	2.39	15	4	10.50	10.83	11.17	11.55	12.39
2NB2501200	2.5 X R1.25	2.50	12.00	2.39	15	4	12.57	12.96	13.39	13.85	14.87
2NB2501600	2.5 X R1.25	2.50	16.00	2.39	15	4	16.70	17.24	17.82	18.44	Free
2NB2502000	2.5 X R1.25	2.50	20.00	2.39	15	4	20.84	21.52	22.26	Free	Free
2NB2502500	2.5 X R1.25	2.50	25.00	2.39	15	4	26.01	26.87	27.80	Free	Free
2NB300600	3.0 X R1.5	3.00	6.00	2.86	15	6	6.42	6.59	6.77	6.97	7.42
2NB300800	3.0 X R1.5	3.00	8.00	2.86	15	6	8.48	8.73	8.99	9.27	9.91
2NB3001000	3.0 X R1.5	3.00	10.00	2.86	15	6	10.55	10.87	11.21	11.57	12.40
2NB3001200	3.0 X R1.5	3.00	12.00	2.86	15	6	12.62	13.01	13.42	13.87	14.88
2NB3001400	3.0 X R1.5	3.00	14.00	2.86	15	6	14.69	15.15	15.64	16.17	17.37
2NB3001600	3.0 X R1.5	3.00	16.00	2.86	15	6	16.75	17.29	17.86	18.47	19.85
2NB3001800	3.0 X R1.5	3.00	18.00	2.86	15	6	18.82	19.43	20.07	20.77	22.34
2NB3002000	3.0 X R1.5	3.00	20.00	2.86	15	6	20.89	21.56	22.29	23.07	24.83
2NB3002500	3.0 X R1.5	3.00	25.00	2.86	15	6	26.06	26.91	27.83	28.82	Free

2NB Z2 Frese Sferiche Rastremate per Acciai fino a 55 HRC

2F Necked Ball End

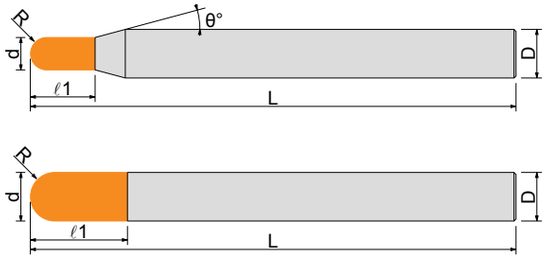
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece			
								30'	1°	1°30'	2°
2NB3003000	3.0 X R1.5	3.00	30.00	2.86	15	6	31.22	32.26	33.37	34.57	Free
2NB3003500	3.0 X R1.5	3.00	35.00	2.86	15	6	36.39	37.61	38.92	40.32	Free
2NB3004000	3.0 X R1.5	3.00	40.00	2.86	15	6	41.56	42.96	44.46	Free	Free
2NB3005000	3.0 X R1.5	3.00	50.00	2.86	15	6	51.90	53.65	55.54	Free	Free
2NB3501500	3.5 X R1.75	3.50	15.00	3.35	15	6	15.73	16.22	16.74	17.31	18.58
2NB3502000	3.5 X R1.75	3.50	20.00	3.35	15	6	20.90	21.57	22.28	23.06	24.79
2NB3502500	3.5 X R1.75	3.50	25.00	3.35	15	6	26.07	26.92	27.83	28.81	Free
2NB3503000	3.5 X R1.75	3.50	30.00	3.35	15	6	31.24	32.26	33.37	34.55	Free
2NB3504000	3.5 X R1.75	3.50	40.00	3.35	15	6	41.57	42.96	44.45	Free	Free
2NB4001000	4.0 X R2.0	4.00	10.00	3.80	15	6	10.65	10.95	11.28	11.63	12.42
2NB4001200	4.0 X R2.0	4.00	12.00	3.80	15	6	12.72	13.09	13.49	13.93	14.90
2NB4001600	4.0 X R2.0	4.00	16.00	3.80	15	6	16.85	17.37	17.93	18.53	19.88
2NB4002000	4.0 X R2.0	4.00	20.00	3.80	15	6	20.99	21.65	22.36	23.13	Free
2NB4002500	4.0 X R2.0	4.00	25.00	3.80	15	6	26.16	27.00	27.90	28.88	Free
2NB4003000	4.0 X R2.0	4.00	30.00	3.80	15	6	31.32	32.35	33.44	Free	Free
2NB4003500	4.0 X R2.0	4.00	35.00	3.80	15	6	36.49	37.69	38.99	Free	Free
2NB4004000	4.0 X R2.0	4.00	40.00	3.80	15	6	41.66	43.04	Free	Free	Free
2NB4005000	4.0 X R2.0	4.00	50.00	3.80	15	6	52.00	53.74	Free	Free	Free
2NB6001500	6.0 X R3.0	7.00	15.00	5.70	-	6	Free	Free	Free	Free	Free
2NB6002000	6.0 X R3.0	7.00	20.00	5.70	-	6	Free	Free	Free	Free	Free
2NB6003000	6.0 X R3.0	7.00	30.00	5.70	-	6	Free	Free	Free	Free	Free
2NB8002000	8.0 X R4.0	10.00	20.00	7.60	-	8	Free	Free	Free	Free	Free
2NB8003000	8.0 X R4.0	10.00	30.00	7.60	-	8	Free	Free	Free	Free	Free
2NB10002500	10.0 X R5.0	12.00	25.00	9.50	-	10	Free	Free	Free	Free	Free
2NB10003500	10.0 X R5.0	12.00	35.00	9.50	-	10	Free	Free	Free	Free	Free
2NB12003000	12.0 X R6.0	14.00	30.00	11.50	-	12	Free	Free	Free	Free	Free
2NB12004000	12.0 X R6.0	14.00	40.00	11.50	-	12	Free	Free	Free	Free	Free

2BS Z2 Frese Sferiche per Acciai fino a 55 HRC - Serie Corta

2F Ball End-Short





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Adatto per mandrini a calettamento termico
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- Suitable for heat shrink fit chucks
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

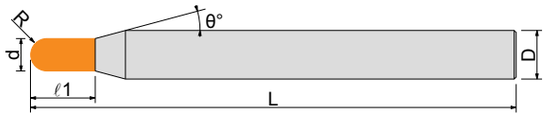
(Unit: mm)

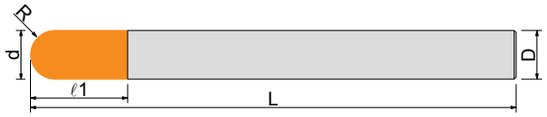
Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BS050050S4	0.5 X R0.25	0.50	15	45	4	
2BS100100S4	1.0 X R0.5	1.00	15	45	4	
2BS150150S4	1.5 X R0.75	1.50	15	45	4	
2BS200200S4	2.0 X R1.0	2.00	15	45	4	
2BS300300S4	3.0 X R1.5	3.00	15	45	4	
2BS400400S4	4.0 X R2.0	4.00	-	45	4	
2BS600600S6	6.0 X R3.0	6.00	-	50	6	
2BS8001000S8	8.0 X R4.0	10.00	-	60	8	
2BS10001000S10	10.0 X R5.0	10.00	-	70	10	
2BS12001200S12	12.0 X R6.0	12.00	-	75	12	

2BR Z2 Frese Sferiche per Acciai fino a 55 HRC - Serie Standard

2F Ball End-Regular







Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BR020040S4	0.2 X R0.1	0.40	15	45	4	
2BR030060S4	0.3 X R0.15	0.60	15	45	4	
2BR040080S4	0.4 X R0.2	0.80	15	45	4	
2BR050100S4	0.5 X R0.25	1.00	15	45	4	
2BR060120S4	0.6 X R0.3	1.20	15	45	4	
2BR070150S4	0.7 X R0.35	1.50	15	45	4	
2BR080200S4	0.8 X R0.4	2.00	15	45	4	
2BR100250S4	1.0 X R0.5	2.50	15	45	4	
2BR100250S6	1.0 X R0.5	2.50	15	50	6	
2BR120300S4	1.2 X R0.6	3.00	15	45	4	
2BR150300S4	1.5 X R0.75	3.00	15	45	4	
2BR150300S6	1.5 X R0.75	3.00	15	50	6	
2BR200500S4	2.0 X R1.0	5.00	15	45	4	
2BR200500S6	2.0 X R1.0	5.00	15	50	6	
2BR250600S4	2.5 X R1.25	6.00	15	45	4	
2BR250600S6	2.5 X R1.25	6.00	15	50	6	
2BR300800S4	3.0 X R1.5	8.00	15	50	4	
2BR300800S6	3.0 X R1.5	8.00	15	60	6	
2BR350800S4	3.5 X R1.75	8.00	15	50	4	
2BR400800S4	4.0 X R2.0	8.00	-	60	4	
2BR400800S6	4.0 X R2.0	8.00	15	60	6	

2BR Z2 Frese Sferiche per Acciai fino a 55 HRC - Serie Standard

2F Ball Endmill-Tapered Neck for Super Hardened Steels

(Unit: mm)

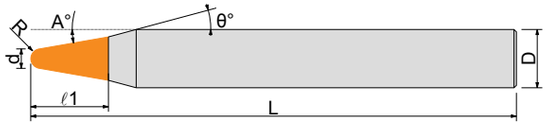
Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BR5001000S6	5.0 X R2.5	10.00	15	70	6	
2BR600120060	6.0 X R3.0	12.00	-	60	6	
2BR600120070	6.0 X R3.0	12.00	-	70	6	
2BR600120080	6.0 X R3.0	12.00	-	80	6	
2BR600120090	6.0 X R3.0	12.00	-	90	6	
2BR6001200100	6.0 X R3.0	12.00	-	100	6	
2BR700140080	7.0 X R3.5	14.00	15	80	8	
2BR800140060	8.0 X R4.0	14.00	-	60	8	
NEW **2BR800140080**	8.0 X R4.0	14.00	-	80	8	
2BR800140090	8.0 X R4.0	14.00	-	90	8	
2BR8001400100	8.0 X R4.0	14.00	-	100	8	
2BR8001400110	8.0 X R4.0	14.00	-	110	8	
2BR9001600100	9.0 X R4.5	16.00	15	100	10	
2BR1000180070	10.0 X R5.0	18.00	-	70	10	
2BR1000180090	10.0 X R5.0	18.00	-	90	10	
2BR10001800100	10.0 X R5.0	18.00	-	100	10	
2BR1200220075	12.0 X R6.0	22.00	-	75	12	
2BR12002200100	12.0 X R6.0	22.00	-	100	12	
2BR12002200110	12.0 X R6.0	22.00	-	110	12	
2BR12002200130	12.0 X R6.0	22.00	-	130	12	
2BR14002400105	14.0 X R7.0	24.00	-	105	14	
2BR16003000105	16.0 X R8.0	30.00	-	105	16	
2BR16003000160	16.0 X R8.0	30.00	-	160	16	
2BR20003800160	20.0 X R10.0	38.00	-	160	20	

2TB Z2 Frese Sferiche Coniche per Acciai fino a 55 HRC

2F Ball Tapered End Mill

NEW





Caratteristiche

- Riduzione delle vibrazioni e migliore qualità della superficie del pezzo grazie al tagliente conico
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Reduce vibration and improve workpiece surface quality by tapered neck
- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting

2 | HX 30° | SMG Carbide | AlTiSiN Coated | ≦55 HRC | 3D | CUTTING P. 206

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Angolo Angle A°	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2TB050200S4	0.5 X R0.25	2	3.00	15	45	4	
2TB050300S4	0.5 X R0.25	3	3.00	15	45	4	
2TB050400S4	0.5 X R0.25	4	3.50	15	45	4	
2TB050500S4	0.5 X R0.25	5	3.50	15	45	4	
2TB050700S4	0.5 X R0.25	7	3.50	15	45	4	
2TB0501000S4	0.5 X R0.25	10	3.50	15	45	4	
2TB060200S4	0.6 X R0.3	2	3.00	15	45	4	
2TB060300S4	0.6 X R0.3	3	3.00	15	45	4	
2TB060400S4	0.6 X R0.3	4	3.50	15	45	4	
2TB060500S4	0.6 X R0.3	5	3.50	15	45	4	
2TB060700S4	0.6 X R0.3	7	3.50	15	45	4	
2TB0601000S4	0.6 X R0.3	10	3.50	15	45	4	
2TB080200S4	0.8 X R0.4	2	3.00	15	45	4	
2TB080300S4	0.8 X R0.4	3	3.00	15	45	4	
2TB080400S4	0.8 X R0.4	4	4.00	15	45	4	
2TB080500S4	0.8 X R0.4	5	4.00	15	45	4	
2TB080700S4	0.8 X R0.4	7	4.00	15	45	4	
2TB0801000S4	0.8 X R0.4	10	4.00	15	45	4	
2TB100100S4	1.0 X R0.5	1	3.00	15	45	4	
2TB100200S4	1.0 X R0.5	2	4.00	15	45	4	
2TB100300S4	1.0 X R0.5	3	4.00	15	45	4	

2TB Z2 Frese Sferiche Coniche per Acciai fino a 55 HRC

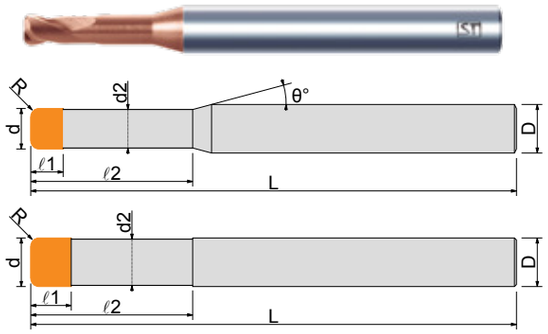
2F Ball Tapered End Mill

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Angolo Angle A°	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2TB100400S4	1.0 X R0.5	4	6.00	15	45	4	
2TB100500S4	1.0 X R0.5	5	6.00	15	45	4	
2TB100700S4	1.0 X R0.5	7	6.00	15	45	4	
2TB1001000S4	1.0 X R0.5	10	6.00	15	45	4	
2TB150100S4	1.5 X R0.75	1	6.00	15	45	4	
2TB150200S4	1.5 X R0.75	2	6.00	15	45	4	
2TB150300S4	1.5 X R0.75	3	6.00	15	45	4	
2TB150400S4	1.5 X R0.75	4	6.00	15	45	4	
2TB150500S4	1.5 X R0.75	5	6.00	15	45	4	
2TB150700S4	1.5 X R0.75	7	6.00	15	45	4	
2TB1501000S4	1.5 X R0.75	10	6.00	15	45	4	
2TB200100S4	2.0 X R1.0	1	8.00	15	45	4	
2TB200200S4	2.0 X R1.0	2	8.00	15	45	4	
2TB200300S4	2.0 X R1.0	3	8.00	15	45	4	
2TB200400S4	2.0 X R1.0	4	8.00	15	45	4	
2TB200500S4	2.0 X R1.0	5	8.00	15	45	4	
2TB200700S4	2.0 X R1.0	7	8.00	15	45	4	
2TB2001000S6	2.0 X R1.0	10	8.00	15	50	6	
2TB300100S6	3.0 X R1.5	1	12.00	15	60	6	
2TB300200S6	3.0 X R1.5	2	12.00	15	60	6	
2TB300300S6	3.0 X R1.5	3	12.00	15	60	6	
2TB300400S6	3.0 X R1.5	4	12.00	15	60	6	
2TB300500S6	3.0 X R1.5	5	12.00	15	60	6	
2TB300700S6	3.0 X R1.5	7	12.00	15	60	6	
2TB3001000S8	3.0 X R1.5	10	12.00	15	60	8	

2NC Z2 Frese Toriche Rastremate per Acciai fino a 55 HRC

2F Necked Corner Radius





Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material:

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°	3°
2NC020R002050	0.2 X R0.02	0.15	0.50	0.18	15	45	4	0.55	0.57	0.59	0.61	0.66
2NC020R002100	0.2 X R0.02	0.15	1.00	0.18	15	45	4	1.07	1.10	1.14	1.18	1.28
2NC020R002200	0.2 X R0.02	0.15	2.00	0.18	15	45	4	2.10	2.17	2.25	2.33	2.52
2NC020R005050	0.2 X R0.05	0.15	0.50	0.18	15	45	4	0.55	0.57	0.59	0.61	0.65
2NC020R005100	0.2 X R0.05	0.15	1.00	0.18	15	45	4	1.07	1.10	1.14	1.18	1.27
2NC020R005150	0.2 X R0.05	0.15	1.50	0.18	15	45	4	1.58	1.64	1.69	1.76	1.89
2NC020R005200	0.2 X R0.05	0.15	2.00	0.18	15	45	4	2.10	2.17	2.25	2.33	2.52
2NC030R002100	0.3 X R0.02	0.25	1.00	0.28	15	45	4	1.07	1.10	1.14	1.18	1.28
2NC030R002200	0.3 X R0.02	0.25	2.00	0.28	15	45	4	2.10	2.17	2.25	2.33	2.52
2NC030R002300	0.3 X R0.02	0.25	3.00	0.28	15	45	4	3.13	3.24	3.36	3.48	3.77
2NC030R005100	0.3 X R0.05	0.25	1.00	0.28	15	45	4	1.07	1.10	1.14	1.18	1.27
2NC030R005150	0.3 X R0.05	0.25	1.50	0.28	15	45	4	1.58	1.64	1.69	1.76	1.89
2NC030R005200	0.3 X R0.05	0.25	2.00	0.28	15	45	4	2.10	2.17	2.25	2.33	2.52
2NC030R005250	0.3 X R0.05	0.25	2.50	0.28	15	45	4	2.62	2.71	2.80	2.91	3.14
2NC030R005300	0.3 X R0.05	0.25	3.00	0.28	15	45	4	3.13	3.24	3.36	3.48	3.76
2NC040R002100	0.4 X R0.02	0.30	1.00	0.37	15	45	4	1.09	1.12	1.16	1.21	1.30
2NC040R002200	0.4 X R0.02	0.30	2.00	0.37	15	45	4	2.12	2.19	2.27	2.36	2.55
2NC040R002300	0.4 X R0.02	0.30	3.00	0.37	15	45	4	3.15	3.26	3.38	3.51	3.79
2NC040R002400	0.4 X R0.02	0.30	4.00	0.37	15	45	4	4.19	4.33	4.49	4.66	5.03
2NC040R005100	0.4 X R0.05	0.30	1.00	0.37	15	45	4	1.08	1.12	1.16	1.20	1.30
2NC040R005200	0.4 X R0.05	0.30	2.00	0.37	15	45	4	2.12	2.19	2.27	2.35	2.54

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1°30'	2°	3°
2NC040R005300	0.4 X R0.05	0.30	3.00	0.37	15	45	4	3.15	3.26	3.38	3.50	3.78
2NC040R005400	0.4 X R0.05	0.30	4.00	0.37	15	45	4	4.19	4.33	4.48	4.65	5.03
2NC040R010100	0.4 X R0.1	0.30	1.00	0.37	15	45	4	1.08	1.12	1.15	1.19	1.28
2NC040R010200	0.4 X R0.1	0.30	2.00	0.37	15	45	4	2.12	2.19	2.26	2.34	2.53
2NC040R010300	0.4 X R0.1	0.30	3.00	0.37	15	45	4	3.15	3.26	3.37	3.49	3.77
2NC040R010400	0.4 X R0.1	0.30	4.00	0.37	15	45	4	4.18	4.33	4.48	4.64	5.01
2NC050R002100	0.5 X R0.02	0.40	1.00	0.47	15	45	4	1.09	1.12	1.16	1.21	1.30
2NC050R002200	0.5 X R0.02	0.40	2.00	0.47	15	45	4	2.12	2.19	2.27	2.36	2.55
2NC050R002300	0.5 X R0.02	0.40	3.00	0.47	15	45	4	3.15	3.26	3.38	3.51	3.79
2NC050R002400	0.5 X R0.02	0.40	4.00	0.47	15	45	4	4.19	4.33	4.49	4.66	5.03
2NC050R002500	0.5 X R0.02	0.40	5.00	0.47	15	45	4	5.22	5.40	5.60	5.81	6.28
2NC050R005100	0.5 X R0.05	0.40	1.00	0.47	15	45	4	1.08	1.12	1.16	1.20	1.30
2NC050R005200	0.5 X R0.05	0.40	2.00	0.47	15	45	4	2.12	2.19	2.27	2.35	2.54
2NC050R005300	0.5 X R0.05	0.40	3.00	0.47	15	45	4	3.15	3.26	3.38	3.50	3.78
2NC050R005400	0.5 X R0.05	0.40	4.00	0.47	15	45	4	4.19	4.33	4.48	4.65	5.03
2NC050R005500	0.5 X R0.05	0.40	5.00	0.47	15	45	4	5.22	5.40	5.59	5.80	6.27
2NC050R010100	0.5 X R0.1	0.40	1.00	0.47	15	45	4	1.08	1.12	1.15	1.19	1.28
2NC050R010200	0.5 X R0.1	0.40	2.00	0.47	15	45	4	2.12	2.19	2.26	2.34	2.53
2NC050R010300	0.5 X R0.1	0.40	3.00	0.47	15	45	4	3.15	3.26	3.37	3.49	3.77
2NC050R010400	0.5 X R0.1	0.40	4.00	0.47	15	45	4	4.18	4.33	4.48	4.64	5.01
2NC050R010500	0.5 X R0.1	0.40	5.00	0.47	15	45	4	5.22	5.40	5.59	5.79	6.26
2NC060R002200	0.6 X R0.02	0.50	2.00	0.57	15	45	4	2.12	2.19	2.27	2.36	2.55
2NC060R002400	0.6 X R0.02	0.50	4.00	0.57	15	45	4	4.19	4.33	4.49	4.66	5.03
2NC060R002600	0.6 X R0.02	0.50	6.00	0.57	15	45	4	6.25	6.47	6.70	6.96	7.52
2NC060R005200	0.6 X R0.05	0.50	2.00	0.57	15	45	4	2.12	2.19	2.27	2.35	2.54
2NC060R005400	0.6 X R0.05	0.50	4.00	0.57	15	45	4	4.19	4.33	4.48	4.65	5.03
2NC060R005600	0.6 X R0.05	0.50	6.00	0.57	15	45	4	6.25	6.47	6.70	6.95	7.51
2NC060R010200	0.6 X R0.1	0.50	2.00	0.57	15	45	4	2.12	2.19	2.26	2.34	2.53
2NC060R010400	0.6 X R0.1	0.50	4.00	0.57	15	45	4	4.18	4.33	4.48	4.64	5.01
2NC060R010600	0.6 X R0.1	0.50	6.00	0.57	15	45	4	6.25	6.47	6.70	6.94	7.50
2NC070R005400	0.7 X R0.05	0.55	4.00	0.66	15	45	4	4.21	4.35	4.51	4.67	5.05
2NC070R005600	0.7 X R0.05	0.55	6.00	0.66	15	45	4	6.27	6.49	6.72	6.97	7.53
2NC070R010400	0.7 X R0.1	0.55	4.00	0.66	15	45	4	4.20	4.35	4.50	4.67	5.04
2NC070R010600	0.7 X R0.1	0.55	6.00	0.66	15	45	4	6.27	6.49	6.72	6.97	7.52
2NC080R002200	0.8 X R0.02	0.65	2.00	0.77	15	45	4	2.12	2.19	2.27	2.36	2.55
2NC080R002400	0.8 X R0.02	0.65	4.00	0.77	15	45	4	4.19	4.33	4.49	4.66	5.03
2NC080R002600	0.8 X R0.02	0.65	6.00	0.77	15	45	4	6.25	6.47	6.70	6.96	7.52
2NC080R002800	0.8 X R0.02	0.65	8.00	0.77	15	45	4	8.32	8.61	8.92	9.26	10.01
2NC080R005200	0.8 X R0.05	0.65	2.00	0.77	15	45	4	2.12	2.19	2.27	2.35	2.54
2NC080R005400	0.8 X R0.05	0.65	4.00	0.77	15	45	4	4.19	4.33	4.48	4.65	5.03
2NC080R005600	0.8 X R0.05	0.65	6.00	0.77	15	45	4	6.25	6.47	6.70	6.95	7.51
2NC080R005800	0.8 X R0.05	0.65	8.00	0.77	15	45	4	8.32	8.61	8.92	9.25	10.00
2NC080R010200	0.8 X R0.1	0.65	2.00	0.77	15	45	4	2.12	2.19	2.26	2.34	2.53
2NC080R010400	0.8 X R0.1	0.65	4.00	0.77	15	45	4	4.18	4.33	4.48	4.64	5.01
2NC080R010600	0.8 X R0.1	0.65	6.00	0.77	15	45	4	6.25	6.47	6.70	6.94	7.50
2NC080R010800	0.8 X R0.1	0.65	8.00	0.77	15	45	4	8.32	8.61	8.91	9.24	9.99
2NC080R020200	0.8 X R0.2	0.65	2.00	0.77	15	45	4	2.11	2.18	2.25	2.33	2.50

2NC Z2 Frese Toriche Rastremate per Acciai fino a 55 HRC

2F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NC080R020400	0.8 X R0.2	0.65	4.00	0.77	15	45	4	4.18	4.32	4.47	4.63	4.99
2NC080R020600	0.8 X R0.2	0.65	6.00	0.77	15	45	4	6.25	6.46	6.69	6.93	7.48
2NC080R020800	0.8 X R0.2	0.65	8.00	0.77	15	45	4	8.32	8.60	8.90	9.23	9.96
2NC090R010400	0.9 X R0.1	0.70	4.00	0.85	15	45	4	4.22	4.37	4.52	4.69	5.06
2NC090R010800	0.9 X R0.1	0.70	8.00	0.85	15	45	4	8.36	8.65	8.95	9.29	10.03
2NC100R002200	1.0 X R0.02	0.80	2.00	0.95	15	45	4	2.16	2.23	2.31	2.40	2.59
2NC100R002400	1.0 X R0.02	0.80	4.00	0.95	15	45	4	4.23	4.37	4.53	4.70	5.08
2NC100R002600	1.0 X R0.02	0.80	6.00	0.95	15	45	4	6.29	6.51	6.75	7.00	7.57
2NC100R002800	1.0 X R0.02	0.80	8.00	0.95	15	45	4	8.36	8.65	8.96	9.30	10.05
2NC100R0021000	1.0 X R0.02	0.80	10.00	0.95	15	45	4	10.43	10.79	11.18	11.60	12.54
2NC100R005200	1.0 X R0.05	0.80	2.00	0.95	15	45	4	2.16	2.23	2.31	2.39	2.59
2NC100R005400	1.0 X R0.05	0.80	4.00	0.95	15	45	4	4.22	4.37	4.53	4.69	5.07
2NC100R005600	1.0 X R0.05	0.80	6.00	0.95	15	45	4	6.29	6.51	6.74	6.99	7.56
2NC100R005800	1.0 X R0.05	0.80	8.00	0.95	15	45	4	8.36	8.65	8.96	9.29	10.04
2NC100R0051000	1.0 X R0.05	0.80	10.00	0.95	15	45	4	10.43	10.79	11.18	11.59	12.53
2NC100R0051200	1.0 X R0.05	0.80	12.00	0.95	15	45	4	12.49	12.93	13.39	13.89	15.02
2NC100R0051600	1.0 X R0.05	0.80	16.00	0.95	15	50	4	16.63	17.21	17.83	18.49	19.99
2NC100R0052000	1.0 X R0.05	0.80	20.00	0.95	15	50	4	20.76	21.48	22.26	23.09	24.96
2NC100R010200	1.0 X R0.1	0.80	2.00	0.95	15	45	4	2.16	2.23	2.30	2.39	2.57
2NC100R010400	1.0 X R0.1	0.80	4.00	0.95	15	45	4	4.22	4.37	4.52	4.69	5.06
2NC100R010600	1.0 X R0.1	0.80	6.00	0.95	15	45	4	6.29	6.51	6.74	6.99	7.55
2NC100R010800	1.0 X R0.1	0.80	8.00	0.95	15	45	4	8.36	8.65	8.95	9.29	10.03
2NC100R0101000	1.0 X R0.1	0.80	10.00	0.95	15	45	4	10.42	10.78	11.17	11.59	12.52
2NC100R0101200	1.0 X R0.1	0.80	12.00	0.95	15	45	4	12.49	12.92	13.39	13.89	15.01
2NC100R0101600	1.0 X R0.1	0.80	16.00	0.95	15	50	4	16.63	17.20	17.82	18.49	19.98
2NC100R0102000	1.0 X R0.1	0.80	20.00	0.95	15	50	4	20.76	21.48	22.25	23.08	24.95
2NC100R020200	1.0 X R0.2	0.80	2.00	0.95	15	45	4	2.15	2.22	2.29	2.37	2.55
2NC100R020400	1.0 X R0.2	0.80	4.00	0.95	15	45	4	4.22	4.36	4.51	4.67	5.04
2NC100R020600	1.0 X R0.2	0.80	6.00	0.95	15	45	4	6.29	6.50	6.73	6.97	7.52
2NC100R020800	1.0 X R0.2	0.80	8.00	0.95	15	45	4	8.35	8.64	8.94	9.27	10.01
2NC100R0201000	1.0 X R0.2	0.80	10.00	0.95	15	45	4	10.42	10.78	11.16	11.57	12.50
2NC100R0201200	1.0 X R0.2	0.80	12.00	0.95	15	45	4	12.49	12.92	13.38	13.87	14.98
2NC100R0201600	1.0 X R0.2	0.80	16.00	0.95	15	50	4	16.62	17.20	17.81	18.47	19.95
2NC100R0202000	1.0 X R0.2	0.80	20.00	0.95	15	50	4	20.76	21.47	22.24	23.07	24.93
2NC100R030200	1.0 X R0.3	0.80	2.00	0.95	15	45	4	2.15	2.21	2.28	2.36	2.53
2NC100R030400	1.0 X R0.3	0.80	4.00	0.95	15	45	4	4.22	4.35	4.50	4.66	5.01
2NC100R030600	1.0 X R0.3	0.80	6.00	0.95	15	45	4	6.28	6.49	6.72	6.96	7.50
2NC100R030800	1.0 X R0.3	0.80	8.00	0.95	15	45	4	8.35	8.63	8.93	9.26	9.99
2NC100R0301000	1.0 X R0.3	0.80	10.00	0.95	15	45	4	10.42	10.77	11.15	11.56	12.47
2NC100R0301200	1.0 X R0.3	0.80	12.00	0.95	15	45	4	12.49	12.91	13.37	13.86	14.96
2NC100R0301600	1.0 X R0.3	0.80	16.00	0.95	15	50	4	16.62	17.19	17.80	18.46	19.93
2NC100R0302000	1.0 X R0.3	0.80	20.00	0.95	15	50	4	20.75	21.47	22.23	23.06	24.90
2NC120R010400	1.2 X R0.1	1.00	4.00	1.14	15	45	4	4.24	4.39	4.54	4.71	5.08
2NC120R010600	1.2 X R0.1	1.00	6.00	1.14	15	45	4	6.31	6.53	6.76	7.01	7.57
2NC120R0101000	1.2 X R0.1	1.00	10.00	1.14	15	45	4	10.44	10.80	11.19	11.61	12.54
2NC120R020400	1.2 X R0.2	1.00	4.00	1.14	15	45	4	4.24	4.38	4.53	4.69	5.06
2NC120R020600	1.2 X R0.2	1.00	6.00	1.14	15	45	4	6.31	6.52	6.75	6.99	7.55

2NC Z2 Frese Toriche Rastremate per Acciai fino a 55 HRC

2F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NC120R0201000	1.2 X R0.2	1.00	10.00	1.14	15	45	4	10.44	10.80	11.18	11.59	12.52
NEW 2NC120R0201200	1.2 X R0.2	1.00	12.00	1.14	15	45	4	12.51	12.94	13.40	13.89	15.00
NEW 2NC120R0201600	1.2 X R0.2	1.00	16.00	1.14	15	50	4	16.64	17.22	17.83	18.49	19.98
NEW 2NC120R0202000	1.2 X R0.2	1.00	20.00	1.14	15	50	4	20.78	21.49	22.26	23.09	24.95
2NC120R030400	1.2 X R0.3	1.00	4.00	1.14	15	45	4	4.24	4.37	4.52	4.68	5.04
2NC120R030600	1.2 X R0.3	1.00	6.00	1.14	15	45	4	6.30	6.51	6.74	6.98	7.52
2NC120R0301000	1.2 X R0.3	1.00	10.00	1.14	15	45	4	10.44	10.79	11.17	11.58	12.49
NEW 2NC120R0301200	1.2 X R0.3	1.00	12.00	1.14	15	45	4	12.50	12.93	13.39	13.88	14.98
NEW 2NC120R0301600	1.2 X R0.3	1.00	16.00	1.14	15	50	4	16.64	17.21	17.82	18.48	19.95
NEW 2NC120R0302000	1.2 X R0.3	1.00	20.00	1.14	15	50	4	20.77	21.49	22.25	23.08	24.93
2NC150R005300	1.5 X R0.05	1.50	3.00	1.44	15	45	4	3.21	3.32	3.44	3.57	3.85
2NC150R005400	1.5 X R0.05	1.50	4.00	1.44	15	45	4	4.24	4.39	4.55	4.72	5.09
2NC150R005600	1.5 X R0.05	1.50	6.00	1.44	15	45	4	6.31	6.53	6.76	7.02	7.58
2NC150R005800	1.5 X R0.05	1.50	8.00	1.44	15	45	4	8.38	8.67	8.98	9.32	10.07
2NC150R0051000	1.5 X R0.05	1.50	10.00	1.44	15	45	4	10.45	10.81	11.20	11.61	12.55
2NC150R0051200	1.5 X R0.05	1.50	12.00	1.44	15	45	4	12.51	12.95	13.41	13.91	15.04
2NC150R0051600	1.5 X R0.05	1.50	16.00	1.44	15	50	4	16.65	17.23	17.85	18.51	20.01
2NC150R0052000	1.5 X R0.05	1.50	20.00	1.44	15	50	4	20.78	21.50	22.28	23.11	Free
2NC150R010300	1.5 X R0.1	1.50	3.00	1.44	15	45	4	3.21	3.32	3.43	3.56	3.84
2NC150R010400	1.5 X R0.1	1.50	4.00	1.44	15	45	4	4.24	4.39	4.54	4.71	5.08
2NC150R010600	1.5 X R0.1	1.50	6.00	1.44	15	45	4	6.31	6.53	6.76	7.01	7.57
2NC150R010800	1.5 X R0.1	1.50	8.00	1.44	15	45	4	8.38	8.67	8.97	9.31	10.06
2NC150R0101000	1.5 X R0.1	1.50	10.00	1.44	15	45	4	10.44	10.80	11.19	11.61	12.54
2NC150R0101200	1.5 X R0.1	1.50	12.00	1.44	15	45	4	12.51	12.94	13.41	13.91	15.03
2NC150R0101600	1.5 X R0.1	1.50	16.00	1.44	15	50	4	16.65	17.22	17.84	18.51	20.00
2NC150R0102000	1.5 X R0.1	1.50	20.00	1.44	15	50	4	20.78	21.50	22.27	23.11	Free
2NC150R020300	1.5 X R0.2	1.50	3.00	1.44	15	45	4	3.21	3.31	3.42	3.54	3.82
2NC150R020400	1.5 X R0.2	1.50	4.00	1.44	15	45	4	4.24	4.38	4.53	4.69	5.06
2NC150R020600	1.5 X R0.2	1.50	6.00	1.44	15	45	4	6.31	6.52	6.75	6.99	7.55
2NC150R020800	1.5 X R0.2	1.50	8.00	1.44	15	45	4	8.37	8.66	8.96	9.29	10.03
2NC150R0201000	1.5 X R0.2	1.50	10.00	1.44	15	45	4	10.44	10.80	11.18	11.59	12.52
2NC150R0201200	1.5 X R0.2	1.50	12.00	1.44	15	45	4	12.51	12.94	13.40	13.89	15.00
2NC150R0201600	1.5 X R0.2	1.50	16.00	1.44	15	50	4	16.64	17.22	17.83	18.49	19.98
2NC150R0202000	1.5 X R0.2	1.50	20.00	1.44	15	50	4	20.78	21.49	22.26	23.09	Free
2NC150R030300	1.5 X R0.3	1.50	3.00	1.44	15	45	4	3.20	3.30	3.41	3.53	3.79
2NC150R030400	1.5 X R0.3	1.50	4.00	1.44	15	45	4	4.24	4.37	4.52	4.68	5.04
2NC150R030600	1.5 X R0.3	1.50	6.00	1.44	15	45	4	6.30	6.51	6.74	6.98	7.52
2NC150R030800	1.5 X R0.3	1.50	8.00	1.44	15	45	4	8.37	8.65	8.95	9.28	10.01
2NC150R0301000	1.5 X R0.3	1.50	10.00	1.44	15	45	4	10.44	10.79	11.17	11.58	12.49
2NC150R0301200	1.5 X R0.3	1.50	12.00	1.44	15	45	4	12.50	12.93	13.39	13.88	14.98
2NC150R0301600	1.5 X R0.3	1.50	16.00	1.44	15	50	4	16.64	17.21	17.82	18.48	19.95
2NC150R0302000	1.5 X R0.3	1.50	20.00	1.44	15	50	4	20.77	21.49	22.25	23.08	Free
2NC150R050300	1.5 X R0.5	1.50	3.00	1.44	15	45	4	3.19	3.29	3.39	3.50	3.75
2NC150R050400	1.5 X R0.5	1.50	4.00	1.44	15	45	4	4.23	4.36	4.50	4.65	4.99
2NC150R050600	1.5 X R0.5	1.50	6.00	1.44	15	45	4	6.30	6.50	6.72	6.95	7.47
2NC150R050800	1.5 X R0.5	1.50	8.00	1.44	15	45	4	8.36	8.64	8.93	9.25	9.96
2NC150R0501000	1.5 X R0.5	1.50	10.00	1.44	15	45	4	10.43	10.78	11.15	11.55	12.45

2NC Z2 Frese Toriche Rastremate per Acciai fino a 55 HRC

2F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NC150R0501200	1.5 X R0.5	1.50	12.00	1.44	15	45	4	12.50	12.92	13.37	13.85	14.93
2NC150R0501600	1.5 X R0.5	1.50	16.00	1.44	15	50	4	16.63	17.20	17.80	18.45	19.91
2NC150R0502000	1.5 X R0.5	1.50	20.00	1.44	15	50	4	20.77	21.47	22.23	23.05	Free
2NC200R005400	2.0 X R0.05	1.70	4.00	1.92	15	45	4	4.28	4.43	4.59	4.76	5.14
2NC200R005600	2.0 X R0.05	1.70	6.00	1.92	15	45	4	6.35	6.57	6.80	7.06	7.63
2NC200R005800	2.0 X R0.05	1.70	8.00	1.92	15	45	4	8.42	8.71	9.02	9.36	10.11
2NC200R0051000	2.0 X R0.05	1.70	10.00	1.92	15	45	4	10.48	10.85	11.24	11.66	12.60
2NC200R0051200	2.0 X R0.05	1.70	12.00	1.92	15	45	4	12.55	12.99	13.45	13.96	15.09
2NC200R0051600	2.0 X R0.05	1.70	16.00	1.92	15	50	4	16.69	17.27	17.89	18.56	Free
2NC200R0052000	2.0 X R0.05	1.70	20.00	1.92	15	50	4	20.82	21.54	22.32	23.16	Free
2NC200R010400	2.0 X R0.1	1.70	4.00	1.92	15	45	4	4.28	4.43	4.58	4.75	5.13
2NC200R010600	2.0 X R0.1	1.70	6.00	1.92	15	45	4	6.35	6.57	6.80	7.05	7.62
2NC200R010800	2.0 X R0.1	1.70	8.00	1.92	15	45	4	8.42	8.71	9.02	9.35	10.10
2NC200R0101000	2.0 X R0.1	1.70	10.00	1.92	15	45	4	10.48	10.84	11.23	11.65	12.59
2NC200R0101200	2.0 X R0.1	1.70	12.00	1.92	15	45	4	12.55	12.98	13.45	13.95	15.07
2NC200R0101600	2.0 X R0.1	1.70	16.00	1.92	15	50	4	16.68	17.26	17.88	18.55	Free
2NC200R0102000	2.0 X R0.1	1.70	20.00	1.92	15	50	4	20.82	21.54	22.32	23.15	Free
2NC200R020400	2.0 X R0.2	1.70	4.00	1.92	15	45	4	4.28	4.42	4.57	4.74	5.11
2NC200R020600	2.0 X R0.2	1.70	6.00	1.92	15	45	4	6.34	6.56	6.79	7.04	7.59
2NC200R020800	2.0 X R0.2	1.70	8.00	1.92	15	45	4	8.41	8.70	9.01	9.34	10.08
2NC200R0201000	2.0 X R0.2	1.70	10.00	1.92	15	45	4	10.48	10.84	11.22	11.64	12.56
2NC200R0201200	2.0 X R0.2	1.70	12.00	1.92	15	45	4	12.55	12.98	13.44	13.94	15.05
2NC200R0201600	2.0 X R0.2	1.70	16.00	1.92	15	50	4	16.68	17.26	17.87	18.53	Free
2NC200R0202000	2.0 X R0.2	1.70	20.00	1.92	15	50	4	20.82	21.53	22.31	23.13	Free
2NC200R030400	2.0 X R0.3	1.70	4.00	1.92	15	45	4	4.27	4.41	4.56	4.72	5.08
2NC200R030600	2.0 X R0.3	1.70	6.00	1.92	15	45	4	6.34	6.55	6.78	7.02	7.57
2NC200R030800	2.0 X R0.3	1.70	8.00	1.92	15	45	4	8.41	8.69	8.99	9.32	10.05
2NC200R0301000	2.0 X R0.3	1.70	10.00	1.92	15	45	4	10.48	10.83	11.21	11.62	12.54
2NC200R0301200	2.0 X R0.3	1.70	12.00	1.92	15	45	4	12.54	12.97	13.43	13.92	15.03
2NC200R0301600	2.0 X R0.3	1.70	16.00	1.92	15	50	4	16.68	17.25	17.86	18.52	Free
2NC200R0302000	2.0 X R0.3	1.70	20.00	1.92	15	50	4	20.81	21.53	22.29	23.12	Free
2NC200R050400	2.0 X R0.5	1.70	4.00	1.92	15	45	4	4.27	4.40	4.54	4.69	5.03
2NC200R050600	2.0 X R0.5	1.70	6.00	1.92	15	45	4	6.33	6.54	6.76	6.99	7.52
2NC200R050800	2.0 X R0.5	1.70	8.00	1.92	15	45	4	8.40	8.68	8.97	9.29	10.01
2NC200R0501000	2.0 X R0.5	1.70	10.00	1.92	15	45	4	10.47	10.82	11.19	11.59	12.49
2NC200R0501200	2.0 X R0.5	1.70	12.00	1.92	15	45	4	12.54	12.96	13.41	13.89	14.98
2NC200R0501600	2.0 X R0.5	1.70	16.00	1.92	15	50	4	16.67	17.24	17.84	18.49	Free
2NC200R0502000	2.0 X R0.5	1.70	20.00	1.92	15	50	4	20.81	21.51	22.27	23.09	Free
2NC200R0502500	2.0 X R0.5	1.70	25.00	1.92	15	60	4	25.97	26.86	27.81	28.84	Free
2NC200R0503000	2.0 X R0.5	1.70	30.00	1.92	15	70	4	31.14	32.21	33.36	Free	Free
2NC250R0101000	2.5 X R0.1	2.00	10.00	2.39	15	45	4	10.54	10.90	11.29	11.71	12.66
2NC250R0102000	2.5 X R0.1	2.00	20.00	2.39	15	50	4	20.88	21.60	22.38	Free	Free
2NC250R0103000	2.5 X R0.1	2.00	30.00	2.39	15	70	4	31.21	32.30	Free	Free	Free
2NC250R0201000	2.5 X R0.2	2.00	10.00	2.39	15	45	4	10.54	10.90	11.28	11.70	12.63
2NC250R0202000	2.5 X R0.2	2.00	20.00	2.39	15	50	4	20.87	21.59	22.37	Free	Free
2NC250R0203000	2.5 X R0.2	2.00	30.00	2.39	15	70	4	31.21	32.29	Free	Free	Free
2NC250R0301000	2.5 X R0.3	2.00	10.00	2.39	15	45	4	10.53	10.89	11.27	11.69	12.61

2NC Z2 Frese Toriche Rastremate per Acciai fino a 55 HRC

2F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NC250R0302000	2.5 X R0.3	2.00	20.00	2.39	15	50	4	20.87	21.59	22.36	Free	Free
2NC250R0303000	2.5 X R0.3	2.00	30.00	2.39	15	70	4	31.21	32.28	Free	Free	Free
2NC250R0501000	2.5 X R0.5	2.00	10.00	2.39	15	45	4	10.53	10.88	11.25	11.66	12.56
2NC250R0502000	2.5 X R0.5	2.00	20.00	2.39	15	50	4	20.86	21.57	22.34	Free	Free
2NC250R0503000	2.5 X R0.5	2.00	30.00	2.39	15	70	4	31.20	32.27	Free	Free	Free
2NC300R005400	3.0 X R0.05	4.00	4.00	2.86	15	50	6	4.40	4.55	4.71	4.89	5.28
2NC300R005600	3.0 X R0.05	4.00	6.00	2.86	15	50	6	6.47	6.69	6.93	7.19	7.77
2NC300R005800	3.0 X R0.05	4.00	8.00	2.86	15	50	6	8.53	8.83	9.15	9.49	10.25
2NC300R0051000	3.0 X R0.05	4.00	10.00	2.86	15	50	6	10.60	10.97	11.36	11.79	12.74
2NC300R0051200	3.0 X R0.05	4.00	12.00	2.86	15	50	6	12.67	13.11	13.58	14.09	15.23
2NC300R0051600	3.0 X R0.05	4.00	16.00	2.86	15	60	6	16.80	17.39	18.01	18.69	20.20
2NC300R0052000	3.0 X R0.05	4.00	20.00	2.86	15	60	6	20.94	21.66	22.45	23.29	25.17
2NC300R010400	3.0 X R0.1	4.00	4.00	2.86	15	50	6	4.40	4.55	4.71	4.88	5.27
2NC300R010600	3.0 X R0.1	4.00	6.00	2.86	15	50	6	6.46	6.69	6.92	7.18	7.75
2NC300R010800	3.0 X R0.1	4.00	8.00	2.86	15	50	6	8.53	8.83	9.14	9.48	10.24
2NC300R0101000	3.0 X R0.1	4.00	10.00	2.86	15	50	6	10.60	10.96	11.36	11.78	12.73
2NC300R0101200	3.0 X R0.1	4.00	12.00	2.86	15	50	6	12.67	13.10	13.57	14.08	15.21
2NC300R0101600	3.0 X R0.1	4.00	16.00	2.86	15	60	6	16.80	17.38	18.01	18.68	20.19
2NC300R0102000	3.0 X R0.1	4.00	20.00	2.86	15	60	6	20.94	21.66	22.44	23.28	25.16
2NC300R0102500	3.0 X R0.1	4.00	25.00	2.86	15	60	6	26.10	27.01	27.98	29.03	Free
2NC300R0103000	3.0 X R0.1	4.00	30.00	2.86	15	70	6	31.27	32.36	33.52	34.78	Free
2NC300R0103500	3.0 X R0.1	4.00	35.00	2.86	15	70	6	36.44	37.71	39.06	40.53	Free
2NC300R020400	3.0 X R0.2	4.00	4.00	2.86	15	50	6	4.39	4.54	4.70	4.87	5.24
2NC300R020600	3.0 X R0.2	4.00	6.00	2.86	15	50	6	6.46	6.68	6.91	7.17	7.73
2NC300R020800	3.0 X R0.2	4.00	8.00	2.86	15	50	6	8.53	8.82	9.13	9.46	10.22
2NC300R0201000	3.0 X R0.2	4.00	10.00	2.86	15	50	6	10.59	10.96	11.35	11.76	12.70
2NC300R0201200	3.0 X R0.2	4.00	12.00	2.86	15	50	6	12.66	13.10	13.56	14.06	15.19
2NC300R0201600	3.0 X R0.2	4.00	16.00	2.86	15	60	6	16.80	17.38	18.00	18.66	20.16
2NC300R0202000	3.0 X R0.2	4.00	20.00	2.86	15	60	6	20.93	21.65	22.43	23.26	25.14
2NC300R0202500	3.0 X R0.2	4.00	25.00	2.86	15	60	6	26.10	27.00	27.97	29.01	Free
2NC300R0203000	3.0 X R0.2	4.00	30.00	2.86	15	70	6	31.27	32.35	33.51	34.76	Free
2NC300R0203500	3.0 X R0.2	4.00	35.00	2.86	15	70	6	36.44	37.70	39.05	40.51	Free
2NC300R030400	3.0 X R0.3	4.00	4.00	2.86	15	50	6	4.39	4.53	4.69	4.85	5.22
2NC300R030600	3.0 X R0.3	4.00	6.00	2.86	15	50	6	6.46	6.67	6.90	7.15	7.71
2NC300R030800	3.0 X R0.3	4.00	8.00	2.86	15	50	6	8.52	8.81	9.12	9.45	10.19
2NC300R0301000	3.0 X R0.3	4.00	10.00	2.86	15	50	6	10.59	10.95	11.34	11.75	12.68
2NC300R0301200	3.0 X R0.3	4.00	12.00	2.86	15	50	6	12.66	13.09	13.55	14.05	15.17
2NC300R0301600	3.0 X R0.3	4.00	16.00	2.86	15	60	6	16.79	17.37	17.99	18.65	20.14
2NC300R0302000	3.0 X R0.3	4.00	20.00	2.86	15	60	6	20.93	21.65	22.42	23.25	25.11
2NC300R0302500	3.0 X R0.3	4.00	25.00	2.86	15	60	6	26.10	27.00	27.96	29.00	Free
2NC300R0303000	3.0 X R0.3	4.00	30.00	2.86	15	70	6	31.26	32.34	33.50	34.75	Free
2NC300R0303500	3.0 X R0.3	4.00	35.00	2.86	15	70	6	36.43	37.69	39.04	40.50	Free
2NC300R050400	3.0 X R0.5	4.00	4.00	2.86	15	50	6	4.38	4.52	4.66	4.82	5.17
2NC300R050600	3.0 X R0.5	4.00	6.00	2.86	15	50	6	6.45	6.66	6.88	7.12	7.66
2NC300R050800	3.0 X R0.5	4.00	8.00	2.86	15	50	6	8.52	8.80	9.10	9.42	10.15
2NC300R0501000	3.0 X R0.5	4.00	10.00	2.86	15	50	6	10.58	10.94	11.31	11.72	12.63
2NC300R0501200	3.0 X R0.5	4.00	12.00	2.86	15	50	6	12.65	13.08	13.53	14.02	15.12

2NC Z2 Frese Toriche Rastremate per Acciai fino a 55 HRC

2F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NC300R0501600	3.0 X R0.5	4.00	16.00	2.86	15	60	6	16.79	17.35	17.96	18.62	20.09
2NC300R0502000	3.0 X R0.5	4.00	20.00	2.86	15	60	6	20.92	21.63	22.40	23.22	25.06
2NC300R0502500	3.0 X R0.5	4.00	25.00	2.86	15	60	6	26.09	26.98	27.94	28.97	Free
2NC300R0503000	3.0 X R0.5	4.00	30.00	2.86	15	70	6	31.26	32.33	33.48	34.72	Free
2NC300R0503500	3.0 X R0.5	4.00	35.00	2.86	15	70	6	36.43	37.68	39.02	40.47	Free
2NC300R100800	3.0 X R1.0	4.00	8.00	2.86	15	50	6	8.50	8.76	9.04	9.35	10.03
2NC300R1001000	3.0 X R1.0	4.00	10.00	2.86	15	50	6	10.57	10.90	11.26	11.65	12.51
2NC300R1001200	3.0 X R1.0	4.00	12.00	2.86	15	50	6	12.64	13.04	13.48	13.95	15.00
2NC300R1001600	3.0 X R1.0	4.00	16.00	2.86	15	60	6	16.77	17.32	17.91	18.55	19.97
2NC300R1002000	3.0 X R1.0	4.00	20.00	2.86	15	60	6	20.90	21.60	22.34	23.15	24.95
2NC300R1002500	3.0 X R1.0	4.00	25.00	2.86	15	60	6	26.07	26.95	27.89	28.89	Free
2NC300R1003000	3.0 X R1.0	4.00	30.00	2.86	15	70	6	31.24	32.30	33.43	34.64	Free
2NC300R1003500	3.0 X R1.0	4.00	35.00	2.86	15	70	6	36.41	37.64	38.97	40.39	Free
2NC400R010800	4.0 X R0.1	5.00	8.00	3.80	15	50	6	8.65	8.94	9.26	9.61	10.38
2NC400R0101000	4.0 X R0.1	5.00	10.00	3.80	15	50	6	10.71	11.08	11.48	11.91	12.87
2NC400R0101200	4.0 X R0.1	5.00	12.00	3.80	15	50	6	12.78	13.22	13.70	14.21	15.35
2NC400R0101600	4.0 X R0.1	5.00	16.00	3.80	15	60	6	16.92	17.50	18.13	18.81	Free
2NC400R0102000	4.0 X R0.1	5.00	20.00	3.80	15	60	6	21.05	21.78	22.56	23.41	Free
2NC400R0102500	4.0 X R0.1	5.00	25.00	3.80	15	60	6	26.22	27.13	28.11	Free	Free
2NC400R0103000	4.0 X R0.1	5.00	30.00	3.80	15	70	6	31.39	32.48	33.65	Free	Free
2NC400R0104000	4.0 X R0.1	5.00	40.00	3.80	15	80	6	41.72	43.17	Free	Free	Free
2NC400R020800	4.0 X R0.2	5.00	8.00	3.80	15	50	6	8.64	8.94	9.25	9.59	10.36
2NC400R0201000	4.0 X R0.2	5.00	10.00	3.80	15	50	6	10.71	11.08	11.47	11.89	12.84
2NC400R0201200	4.0 X R0.2	5.00	12.00	3.80	15	50	6	12.78	13.22	13.69	14.19	15.33
2NC400R0201600	4.0 X R0.2	5.00	16.00	3.80	15	60	6	16.91	17.50	18.12	18.79	Free
2NC400R0202000	4.0 X R0.2	5.00	20.00	3.80	15	60	6	21.05	21.77	22.55	23.39	Free
2NC400R0202500	4.0 X R0.2	5.00	25.00	3.80	15	60	6	26.22	27.12	28.10	Free	Free
2NC400R0203000	4.0 X R0.2	5.00	30.00	3.80	15	70	6	31.38	32.47	33.64	Free	Free
2NC400R0204000	4.0 X R0.2	5.00	40.00	3.80	15	80	6	41.72	43.17	Free	Free	Free
2NC400R030800	4.0 X R0.3	5.00	8.00	3.80	15	50	6	8.64	8.93	9.24	9.58	10.33
2NC400R0301000	4.0 X R0.3	5.00	10.00	3.80	15	50	6	10.71	11.07	11.46	11.88	12.82
2NC400R0301200	4.0 X R0.3	5.00	12.00	3.80	15	50	6	12.77	13.21	13.68	14.18	15.31
2NC400R0301600	4.0 X R0.3	5.00	16.00	3.80	15	60	6	16.91	17.49	18.11	18.78	Free
2NC400R0302000	4.0 X R0.3	5.00	20.00	3.80	15	60	6	21.04	21.77	22.54	23.38	Free
2NC400R0302500	4.0 X R0.3	5.00	25.00	3.80	15	60	6	26.21	27.12	28.08	Free	Free
2NC400R0303000	4.0 X R0.3	5.00	30.00	3.80	15	70	6	31.38	32.46	33.63	Free	Free
2NC400R0304000	4.0 X R0.3	5.00	40.00	3.80	15	80	6	41.72	43.16	Free	Free	Free
2NC400R050800	4.0 X R0.5	5.00	8.00	3.80	15	50	6	8.63	8.92	9.22	9.55	10.29
2NC400R0501000	4.0 X R0.5	5.00	10.00	3.80	15	50	6	10.70	11.06	11.44	11.85	12.77
2NC400R0501200	4.0 X R0.5	5.00	12.00	3.80	15	50	6	12.77	13.20	13.65	14.15	15.26
2NC400R0501600	4.0 X R0.5	5.00	16.00	3.80	15	60	6	16.90	17.47	18.09	18.75	Free
2NC400R0502000	4.0 X R0.5	5.00	20.00	3.80	15	60	6	21.04	21.75	22.52	23.35	Free
2NC400R0502500	4.0 X R0.5	5.00	25.00	3.80	15	60	6	26.21	27.10	28.06	29.10	Free
2NC400R0503000	4.0 X R0.5	5.00	30.00	3.80	15	70	6	31.37	32.45	33.60	Free	Free
NEW **2NC400R0503500**	4.0 X R0.5	5.00	35.00	3.80	15	75	6	36.54	37.80	39.14	Free	Free
2NC400R0504000	4.0 X R0.5	5.00	40.00	3.80	15	80	6	41.71	43.15	Free	Free	Free
2NC400R100800	4.0 X R1.0	5.00	8.00	3.80	15	50	6	8.62	8.88	9.17	9.48	10.17

2NC Z2 Frese Toriche Rastremate per Acciai fino a 55 HRC

2F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NC400R1001000	4.0 X R1.0	5.00	10.00	3.80	15	50	6	10.68	11.02	11.38	11.78	12.65
2NC400R1001200	4.0 X R1.0	5.00	12.00	3.80	15	50	6	12.75	13.16	13.60	14.08	15.14
2NC400R1001600	4.0 X R1.0	5.00	16.00	3.80	15	60	6	16.89	17.44	18.03	18.67	Free
2NC400R1002000	4.0 X R1.0	5.00	20.00	3.80	15	60	6	21.02	21.72	22.47	23.27	Free
2NC400R1002500	4.0 X R1.0	5.00	25.00	3.80	15	60	6	26.19	27.07	28.01	29.02	Free
2NC400R1003000	4.0 X R1.0	5.00	30.00	3.80	15	70	6	31.36	32.42	33.55	Free	Free
2NC400R1003500	4.0 X R1.0	5.00	35.00	3.80	15	75	6	36.53	37.76	39.09	Free	Free
2NC400R1004000	4.0 X R1.0	5.00	40.00	3.80	15	80	6	41.69	43.11	Free	Free	Free
2NC500R0102000	5.0 X R0.1	4.00	20.00	4.75	15	60	6	21.15	21.88	Free	Free	Free
2NC500R0104000	5.0 X R0.1	4.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
2NC500R0202000	5.0 X R0.2	4.00	20.00	4.75	15	60	6	21.14	21.87	Free	Free	Free
2NC500R0204000	5.0 X R0.2	4.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
2NC500R0302000	5.0 X R0.3	4.00	20.00	4.75	15	60	6	21.14	21.87	Free	Free	Free
2NC500R0304000	5.0 X R0.3	4.00	40.00	4.75	15	80	6	41.81	Free	Free	Free	Free
2NC500R0502000	5.0 X R0.5	4.00	20.00	4.75	15	60	6	21.13	21.85	Free	Free	Free
2NC500R0504000	5.0 X R0.5	4.00	40.00	4.75	15	80	6	41.81	Free	Free	Free	Free
2NC500R1002000	5.0 X R1.0	4.00	20.00	4.75	15	60	6	21.12	21.82	Free	Free	Free
2NC500R1004000	5.0 X R1.0	4.00	40.00	4.75	15	80	6	41.79	Free	Free	Free	Free
2NC600R0101200	6.0 X R0.1	8.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NC600R0101600	6.0 X R0.1	8.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0102000	6.0 X R0.1	8.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0103000	6.0 X R0.1	8.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC600R0201200	6.0 X R0.2	8.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NC600R0201600	6.0 X R0.2	8.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0202000	6.0 X R0.2	8.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0202500	6.0 X R0.2	8.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0203000	6.0 X R0.2	8.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC600R0203500	6.0 X R0.2	8.00	35.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC600R0301200	6.0 X R0.3	8.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NC600R0301600	6.0 X R0.3	8.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0302000	6.0 X R0.3	8.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0303000	6.0 X R0.3	8.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC600R0501200	6.0 X R0.5	8.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NC600R0501600	6.0 X R0.5	8.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0502000	6.0 X R0.5	8.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0502500	6.0 X R0.5	8.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R0503000	6.0 X R0.5	8.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC600R0503500	6.0 X R0.5	8.00	35.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC600R0504000	6.0 X R0.5	8.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
2NC600R1001200	6.0 X R1.0	8.00	12.00	5.70	-	50	6	Free	Free	Free	Free	Free
2NC600R1001600	6.0 X R1.0	8.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R1002000	6.0 X R1.0	8.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R1002500	6.0 X R1.0	8.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NC600R1003000	6.0 X R1.0	8.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC600R1003500	6.0 X R1.0	8.00	35.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC600R1004000	6.0 X R1.0	8.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
2NC600R1502000	6.0 X R1.5	8.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free

2NC Z2 Frese Toriche Rastremate per Acciai fino a 55 HRC

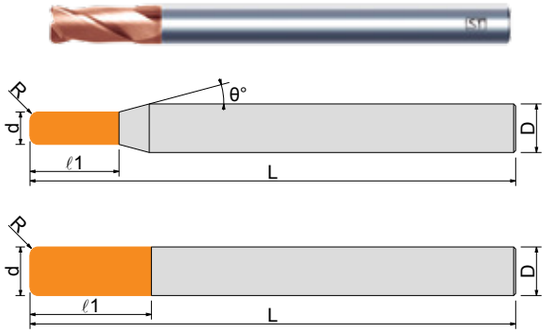
2F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1°30'	2°	3°
2NC600R1503000	6.0 X R1.5	8.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NC800R0202400	8.0 X R0.2	12.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NC800R0204000	8.0 X R0.2	12.00	40.00	7.60	-	80	8	Free	Free	Free	Free	Free
2NC800R0302400	8.0 X R0.3	12.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NC800R0502400	8.0 X R0.5	12.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NC800R0504000	8.0 X R0.5	12.00	40.00	7.60	-	80	8	Free	Free	Free	Free	Free
2NC800R1002400	8.0 X R1.0	12.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NC800R1004000	8.0 X R1.0	12.00	40.00	7.60	-	80	8	Free	Free	Free	Free	Free
2NC800R1502400	8.0 X R1.5	12.00	24.00	7.60	-	65	8	Free	Free	Free	Free	Free
2NC1000R0502500	10.0 X R0.5	15.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
2NC1000R0504500	10.0 X R0.5	15.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
2NC1000R1002500	10.0 X R1.0	15.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
2NC1000R1004500	10.0 X R1.0	15.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
2NC1000R1502500	10.0 X R1.5	15.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
2NC1000R1504500	10.0 X R1.5	15.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
2NC1200R0502500	12.0 X R0.5	15.00	25.00	11.50	-	80	12	Free	Free	Free	Free	Free
2NC1200R0505000	12.0 X R0.5	15.00	50.00	11.50	-	110	12	Free	Free	Free	Free	Free
2NC1200R1002500	12.0 X R1.0	15.00	25.00	11.50	-	80	12	Free	Free	Free	Free	Free
2NC1200R1005000	12.0 X R1.0	15.00	50.00	11.50	-	110	12	Free	Free	Free	Free	Free

2CL Z2 Frese Toriche per Acciai fino a 55 HRC

2F Corner Radius-Long



Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CL080R02045	0.8 X R0.2	1.60	15	45	4	
2CL100R01045	1.0 X R0.1	2.50	15	45	4	
2CL100R02045	1.0 X R0.2	2.50	15	45	4	
2CL100R03045	1.0 X R0.3	2.50	15	45	4	
2CL120R01045	1.2 X R0.1	3.00	15	45	4	
2CL120R02045	1.2 X R0.2	3.00	15	45	4	
2CL150R01045	1.5 X R0.1	4.00	15	45	4	
2CL150R02045	1.5 X R0.2	4.00	15	45	4	
2CL150R03045	1.5 X R0.3	4.00	15	45	4	
2CL150R05045	1.5 X R0.5	4.00	15	45	4	
2CL200R01045	2.0 X R0.1	6.00	15	45	4	
2CL200R02045	2.0 X R0.2	6.00	15	45	4	
2CL200R03045	2.0 X R0.3	6.00	15	45	4	
2CL200R05045	2.0 X R0.5	6.00	15	45	4	
2CL300R01060	3.0 X R0.1	8.00	15	60	6	
2CL300R02060	3.0 X R0.2	8.00	15	60	6	
2CL300R03060	3.0 X R0.3	8.00	15	60	6	
2CL300R05060	3.0 X R0.5	8.00	15	60	6	
2CL400R01070	4.0 X R0.1	11.00	15	70	6	
2CL400R02070	4.0 X R0.2	11.00	15	70	6	
2CL400R03070	4.0 X R0.3	11.00	15	70	6	
2CL400R05070	4.0 X R0.5	11.00	15	70	6	

2CL Z2 Frese Toriche per Acciai fino a 55 HRC

2F Corner Radius-Long

(Unit: mm)

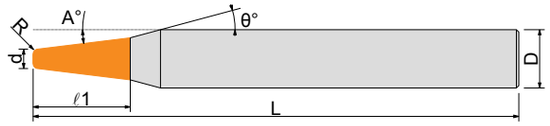
Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CL400R10070	4.0 X R1.0	11.00	15	70	6	
2CL500R02075	5.0 X R0.2	13.00	15	75	6	
2CL600R01090	6.0 X R0.1	13.00	-	90	6	
2CL600R02090	6.0 X R0.2	13.00	-	90	6	
2CL600R03090	6.0 X R0.3	13.00	-	90	6	
2CL600R05060	6.0 X R0.5	11.00	-	60	6	
2CL600R05090	6.0 X R0.5	13.00	-	90	6	
NEW **2CL600R10060**	6.0 X R1.0	13.00	-	60	6	
2CL600R10090	6.0 X R1.0	13.00	-	90	6	
2CL600R15090	6.0 X R1.5	13.00	-	90	6	
2CL800R01090	8.0 X R0.1	19.00	-	90	8	
2CL800R02090	8.0 X R0.2	19.00	-	90	8	
2CL800R03090	8.0 X R0.3	19.00	-	90	8	
2CL800R05090	8.0 X R0.5	19.00	-	90	8	
2CL800R050100	8.0 X R0.5	19.00	-	100	8	
2CL800R10070	8.0 X R1.0	16.00	-	70	8	
2CL800R10090	8.0 X R1.0	19.00	-	90	8	
2CL800R100100	8.0 X R1.0	19.00	-	100	8	
2CL800R20090	8.0 X R2.0	19.00	-	90	8	
2CL1000R020100	10.0 X R0.2	22.00	-	100	10	
2CL1000R030100	10.0 X R0.3	22.00	-	100	10	
2CL1000R050100	10.0 X R0.5	22.00	-	100	10	
2CL1000R050130	10.0 X R0.5	22.00	-	130	10	
2CL1000R100100	10.0 X R1.0	22.00	-	100	10	
2CL1000R100130	10.0 X R1.0	22.00	-	130	10	
2CL1000R150100	10.0 X R1.5	22.00	-	100	10	
2CL1000R200100	10.0 X R2.0	22.00	-	100	10	
2CL1000R250100	10.0 X R2.5	22.00	-	100	10	
2CL1200R050100	12.0 X R0.5	26.00	-	100	12	
2CL1200R050130	12.0 X R0.5	26.00	-	130	12	
2CL1200R100100	12.0 X R1.0	26.00	-	100	12	
2CL1200R100130	12.0 X R1.0	26.00	-	130	12	
2CL1200R150100	12.0 X R1.5	26.00	-	100	12	
2CL1200R200100	12.0 X R2.0	26.00	-	100	12	

NEW

2CT Z2 Frese Toriche Coniche per Acciai fino a 55 HRC

2F Corner R Tapered End Mill





Caratteristiche

- Riduzione delle vibrazioni e migliore qualità della superficie del pezzo grazie al tagliente conico
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Reduce vibration and improve workpiece surface quality by tapered neck
- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Angolo Angle A°	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CT030050S4	0.3 X R0.05	0.5	1.20	15	45	4	
2CT030100S4	0.3 X R0.05	1	1.20	15	45	4	
2CT030150S4	0.3 X R0.05	1.5	1.20	15	45	4	
2CT030200S4	0.3 X R0.05	2	1.20	15	45	4	
2CT030500S4	0.3 X R0.05	5	1.20	15	45	4	
2CT030700S4	0.3 X R0.05	7	1.50	15	45	4	
2CT0301000S4	0.3 X R0.05	10	1.50	15	45	4	
2CT0301500S4	0.3 X R0.05	15	1.50	15	45	4	
2CT050050S4	0.5 X R0.1	0.5	2.00	15	45	4	
2CT050100S4	0.5 X R0.1	1	2.00	15	45	4	
2CT050150S4	0.5 X R0.1	1.5	2.00	15	45	4	
2CT050200S4	0.5 X R0.1	2	2.00	15	45	4	
2CT050500S4	0.5 X R0.1	5	2.00	15	45	4	
2CT050700S4	0.5 X R0.1	7	2.50	15	45	4	
2CT0501000S4	0.5 X R0.1	10	2.50	15	45	4	
2CT0501500S4	0.5 X R0.1	15	2.50	15	45	4	
2CT100050S4	1.0 X R0.25	0.5	4.00	15	45	4	
2CT100100S4	1.0 X R0.25	1	4.00	15	45	4	
2CT100150S4	1.0 X R0.25	1.5	4.00	15	45	4	
2CT100200S4	1.0 X R0.25	2	4.00	15	45	4	
2CT100500S4	1.0 X R0.25	5	4.00	15	45	4	

2CT Z2 Frese Toriche Coniche per Acciai fino a 55 HRC

2F Corner R Tapered End Mill

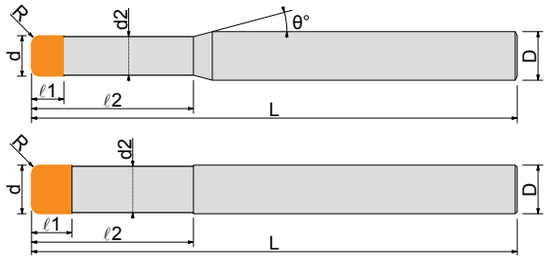
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Angolo Angle A°	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CT100700S4	1.0 X R0.25	7	4.00	15	45	4	
2CT1001000S4	1.0 X R0.25	10	4.00	15	45	4	
2CT1001500S445	1.0 X R0.25	15	5.60	15	45	4	
2CT1001500S4	1.0 X R0.25	15	4.00	15	50	4	
2CT150050S4	1.5 X R0.4	0.5	5.00	15	45	4	
2CT150100S4	1.5 X R0.4	1	5.00	15	45	4	
2CT150150S4	1.5 X R0.4	1.5	6.00	15	45	4	
2CT150200S4	1.5 X R0.4	2	7.00	15	45	4	
2CT150500S4	1.5 X R0.4	5	10.00	15	50	4	
2CT150700S4	1.5 X R0.4	7	10.00	15	50	4	
2CT1501000S6	1.5 X R0.4	10	10.00	15	50	6	
2CT1501500S6	1.5 X R0.4	15	6.00	15	50	6	
2CT200050S4	2.0 X R0.5	0.5	6.00	15	45	4	
2CT200100S4	2.0 X R0.5	1	6.00	15	45	4	
2CT200150S4	2.0 X R0.5	1.5	6.00	15	45	4	
2CT200200S4	2.0 X R0.5	2	8.00	15	45	4	
2CT200500S4	2.0 X R0.5	5	10.00	15	50	4	
2CT200700S6	2.0 X R0.5	7	10.00	15	50	6	
2CT2001000S6	2.0 X R0.5	10	11.00	15	50	6	
2CT2001500S6	2.0 X R0.5	15	7.00	15	50	6	
2CT300050S6	3.0 X R0.75	0.5	12.00	15	50	6	
2CT300100S6	3.0 X R0.75	1	12.00	15	50	6	
2CT300150S6	3.0 X R0.75	1.5	12.00	15	50	6	
2CT300200S6	3.0 X R0.75	2	12.00	15	50	6	
2CT300500S6	3.0 X R0.75	5	12.00	15	50	6	
2CT300700S6	3.0 X R0.75	7	12.00	15	50	6	
2CT3001000S6	3.0 X R0.75	10	8.00	15	50	6	
2CT3001500S8	3.0 X R0.75	15	9.00	15	60	8	

4NC Z4 Frese Toriche Rastremate per Acciai fino a 55 HRC

4F Necked Corner Radius





Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1° 30'	2°	3°
4NC100R005400	1.0 X R0.05	0.80	4.00	0.95	15	45	4	4.22	4.37	4.53	4.69	5.07
4NC100R005500	1.0 X R0.05	0.80	5.00	0.95	15	45	4	5.26	5.44	5.63	5.84	6.31
4NC100R005600	1.0 X R0.05	0.80	6.00	0.95	15	45	4	6.29	6.51	6.74	6.99	7.56
4NC100R005800	1.0 X R0.05	0.80	8.00	0.95	15	45	4	8.36	8.65	8.96	9.29	10.04
4NC100R0051000	1.0 X R0.05	0.80	10.00	0.95	15	45	4	10.43	10.79	11.18	11.59	12.53
4NC100R0051200	1.0 X R0.05	0.80	12.00	0.95	15	45	4	12.49	12.93	13.39	13.89	15.02
4NC100R0051600	1.0 X R0.05	0.80	16.00	0.95	15	50	4	16.63	17.21	17.83	18.49	19.99
4NC100R010400	1.0 X R0.1	0.80	4.00	0.95	15	45	4	4.22	4.37	4.52	4.69	5.06
4NC100R010500	1.0 X R0.1	0.80	5.00	0.95	15	45	4	5.26	5.44	5.63	5.84	6.30
4NC100R010600	1.0 X R0.1	0.80	6.00	0.95	15	45	4	6.29	6.51	6.74	6.99	7.55
4NC100R010800	1.0 X R0.1	0.80	8.00	0.95	15	45	4	8.36	8.65	8.95	9.29	10.03
4NC100R0101000	1.0 X R0.1	0.80	10.00	0.95	15	45	4	10.42	10.78	11.17	11.59	12.52
4NC100R0101200	1.0 X R0.1	0.80	12.00	0.95	15	45	4	12.49	12.92	13.39	13.89	15.01
4NC100R0101600	1.0 X R0.1	0.80	16.00	0.95	15	50	4	16.63	17.20	17.82	18.49	19.98
4NC100R020400	1.0 X R0.2	0.80	4.00	0.95	15	45	4	4.22	4.36	4.51	4.67	5.04
4NC100R020500	1.0 X R0.2	0.80	5.00	0.95	15	45	4	5.25	5.43	5.62	5.82	6.28
4NC100R020600	1.0 X R0.2	0.80	6.00	0.95	15	45	4	6.29	6.50	6.73	6.97	7.52
4NC100R020800	1.0 X R0.2	0.80	8.00	0.95	15	45	4	8.35	8.64	8.94	9.27	10.01
4NC100R0201000	1.0 X R0.2	0.80	10.00	0.95	15	45	4	10.42	10.78	11.16	11.57	12.50
4NC100R0201200	1.0 X R0.2	0.80	12.00	0.95	15	45	4	12.49	12.92	13.38	13.87	14.98
4NC100R0201600	1.0 X R0.2	0.80	16.00	0.95	15	50	4	16.62	17.20	17.81	18.47	19.95

4NC Z4 Frese Toriche Rastremate per Acciai fino a 55 HRC

4F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1° 30'	2°	3°
4NC100R030400	1.0 X R0.3	0.80	4.00	0.95	15	45	4	4.22	4.35	4.50	4.66	5.01
4NC100R030500	1.0 X R0.3	0.80	5.00	0.95	15	45	4	5.25	5.42	5.61	5.81	6.26
4NC100R030600	1.0 X R0.3	0.80	6.00	0.95	15	45	4	6.28	6.49	6.72	6.96	7.50
4NC100R030800	1.0 X R0.3	0.80	8.00	0.95	15	45	4	8.35	8.63	8.93	9.26	9.99
4NC100R0301000	1.0 X R0.3	0.80	10.00	0.95	15	45	4	10.42	10.77	11.15	11.56	12.47
4NC100R0301200	1.0 X R0.3	0.80	12.00	0.95	15	45	4	12.49	12.91	13.37	13.86	14.96
4NC100R0301600	1.0 X R0.3	0.80	16.00	0.95	15	50	4	16.62	17.19	17.80	18.46	19.93
4NC120R010400	1.2 X R0.1	1.00	4.00	1.14	15	45	4	4.24	4.39	4.54	4.71	5.08
4NC120R010600	1.2 X R0.1	1.00	6.00	1.14	15	45	4	6.31	6.53	6.76	7.01	7.57
4NC120R010800	1.2 X R0.1	1.00	8.00	1.14	15	45	4	8.38	8.67	8.97	9.31	10.06
4NC120R0101200	1.2 X R0.1	1.00	12.00	1.14	15	45	4	12.51	12.94	13.41	13.91	15.03
4NC120R020400	1.2 X R0.2	1.00	4.00	1.14	15	45	4	4.24	4.38	4.53	4.69	5.06
4NC120R020600	1.2 X R0.2	1.00	6.00	1.14	15	45	4	6.31	6.52	6.75	6.99	7.55
4NC120R020800	1.2 X R0.2	1.00	8.00	1.14	15	45	4	8.37	8.66	8.96	9.29	10.03
4NC120R0201200	1.2 X R0.2	1.00	12.00	1.14	15	45	4	12.51	12.94	13.40	13.89	15.00
4NC120R030400	1.2 X R0.3	1.00	4.00	1.14	15	45	4	4.24	4.37	4.52	4.68	5.04
4NC120R030600	1.2 X R0.3	1.00	6.00	1.14	15	45	4	6.30	6.51	6.74	6.98	7.52
4NC120R030800	1.2 X R0.3	1.00	8.00	1.14	15	45	4	8.37	8.65	8.95	9.28	10.01
4NC120R0301200	1.2 X R0.3	1.00	12.00	1.14	15	45	4	12.50	12.93	13.39	13.88	14.98
4NC150R010600	1.5 X R0.1	1.35	6.00	1.44	15	45	4	6.31	6.53	6.76	7.01	7.57
4NC150R010800	1.5 X R0.1	1.35	8.00	1.44	15	45	4	8.38	8.67	8.97	9.31	10.06
4NC150R0101200	1.5 X R0.1	1.35	12.00	1.44	15	45	4	12.51	12.94	13.41	13.91	15.03
4NC150R0101600	1.5 X R0.1	1.35	16.00	1.44	15	50	4	16.65	17.22	17.84	18.51	20.00
4NC150R0102000	1.5 X R0.1	1.35	20.00	1.44	15	50	4	20.78	21.50	22.27	23.11	Free
4NC150R020600	1.5 X R0.2	1.35	6.00	1.44	15	45	4	6.31	6.52	6.75	6.99	7.55
4NC150R020800	1.5 X R0.2	1.35	8.00	1.44	15	45	4	8.37	8.66	8.96	9.29	10.03
4NC150R0201200	1.5 X R0.2	1.35	12.00	1.44	15	45	4	12.51	12.94	13.40	13.89	15.00
4NC150R0201600	1.5 X R0.2	1.35	16.00	1.44	15	50	4	16.64	17.22	17.83	18.49	19.98
4NC150R0202000	1.5 X R0.2	1.35	20.00	1.44	15	50	4	20.78	21.49	22.26	23.09	Free
4NC150R030600	1.5 X R0.3	1.35	6.00	1.44	15	45	4	6.30	6.51	6.74	6.98	7.52
4NC150R030800	1.5 X R0.3	1.35	8.00	1.44	15	45	4	8.37	8.65	8.95	9.28	10.01
4NC150R0301200	1.5 X R0.3	1.35	12.00	1.44	15	45	4	12.50	12.93	13.39	13.88	14.98
4NC150R0301600	1.5 X R0.3	1.35	16.00	1.44	15	50	4	16.64	17.21	17.82	18.48	19.95
4NC150R0302000	1.5 X R0.3	1.35	20.00	1.44	15	50	4	20.77	21.49	22.25	23.08	Free
4NC150R050600	1.5 X R0.5	1.35	6.00	1.44	15	45	4	6.30	6.50	6.72	6.95	7.47
4NC150R050800	1.5 X R0.5	1.35	8.00	1.44	15	45	4	8.36	8.64	8.93	9.25	9.96
4NC150R0501200	1.5 X R0.5	1.35	12.00	1.44	15	45	4	12.50	12.92	13.37	13.85	14.93
4NC150R0501600	1.5 X R0.5	1.35	16.00	1.44	15	50	4	16.63	17.20	17.80	18.45	19.91
4NC150R0502000	1.5 X R0.5	1.35	20.00	1.44	15	50	4	20.77	21.47	22.23	23.05	Free
4NC200R010600	2.0 X R0.1	1.70	6.00	1.92	15	45	4	6.35	6.57	6.80	7.05	7.62
4NC200R010800	2.0 X R0.1	1.70	8.00	1.92	15	45	4	8.42	8.71	9.02	9.35	10.10
4NC200R0101000	2.0 X R0.1	1.70	10.00	1.92	15	45	4	10.48	10.84	11.23	11.65	12.59
4NC200R0101200	2.0 X R0.1	1.70	12.00	1.92	15	45	4	12.55	12.98	13.45	13.95	15.07
4NC200R0101600	2.0 X R0.1	1.70	16.00	1.92	15	50	4	16.68	17.26	17.88	18.55	Free
4NC200R0102000	2.0 X R0.1	1.70	20.00	1.92	15	50	4	20.82	21.54	22.32	23.15	Free
4NC200R0102500	2.0 X R0.1	1.70	25.00	1.92	15	60	4	25.99	26.89	27.86	Free	Free
4NC200R020600	2.0 X R0.2	1.70	6.00	1.92	15	45	4	6.34	6.56	6.79	7.04	7.59

4NC Z4 Frese Toriche Rastremate per Acciai fino a 55 HRC

4F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1° 30'	2°	3°
4NC200R020800	2.0 X R0.2	1.70	8.00	1.92	15	45	4	8.41	8.70	9.01	9.34	10.08
4NC200R0201000	2.0 X R0.2	1.70	10.00	1.92	15	45	4	10.48	10.84	11.22	11.64	12.56
4NC200R0201200	2.0 X R0.2	1.70	12.00	1.92	15	45	4	12.55	12.98	13.44	13.94	15.05
4NC200R0201600	2.0 X R0.2	1.70	16.00	1.92	15	50	4	16.68	17.26	17.87	18.53	Free
4NC200R0202000	2.0 X R0.2	1.70	20.00	1.92	15	50	4	20.82	21.53	22.31	23.13	Free
4NC200R0202500	2.0 X R0.2	1.70	25.00	1.92	15	60	4	25.98	26.88	27.85	28.88	Free
4NC200R030600	2.0 X R0.3	1.70	6.00	1.92	15	45	4	6.34	6.55	6.78	7.02	7.57
4NC200R030800	2.0 X R0.3	1.70	8.00	1.92	15	45	4	8.41	8.69	8.99	9.32	10.05
4NC200R0301000	2.0 X R0.3	1.70	10.00	1.92	15	45	4	10.48	10.83	11.21	11.62	12.54
4NC200R0301200	2.0 X R0.3	1.70	12.00	1.92	15	45	4	12.54	12.97	13.43	13.92	15.03
4NC200R0301600	2.0 X R0.3	1.70	16.00	1.92	15	50	4	16.68	17.25	17.86	18.52	Free
4NC200R0302000	2.0 X R0.3	1.70	20.00	1.92	15	50	4	20.81	21.53	22.29	23.12	Free
4NC200R0302500	2.0 X R0.3	1.70	25.00	1.92	15	60	4	25.98	26.88	27.84	28.87	Free
4NC200R050600	2.0 X R0.5	1.70	6.00	1.92	15	45	4	6.33	6.54	6.76	6.99	7.52
4NC200R050800	2.0 X R0.5	1.70	8.00	1.92	15	45	4	8.40	8.68	8.97	9.29	10.01
4NC200R0501000	2.0 X R0.5	1.70	10.00	1.92	15	45	4	10.47	10.82	11.19	11.59	12.49
4NC200R0501200	2.0 X R0.5	1.70	12.00	1.92	15	45	4	12.54	12.96	13.41	13.89	14.98
4NC200R0501600	2.0 X R0.5	1.70	16.00	1.92	15	50	4	16.67	17.24	17.84	18.49	Free
4NC200R0502000	2.0 X R0.5	1.70	20.00	1.92	15	50	4	20.81	21.51	22.27	23.09	Free
4NC200R0502500	2.0 X R0.5	1.70	25.00	1.92	15	60	4	25.97	26.86	27.81	28.84	Free
4NC250R0101000	2.5 X R0.1	2.00	10.00	2.39	15	45	4	10.54	10.90	11.29	11.71	12.66
4NC250R0101600	2.5 X R0.1	2.00	16.00	2.39	15	50	4	16.74	17.32	17.94	18.61	Free
4NC250R0102500	2.5 X R0.1	2.00	25.00	2.39	15	60	4	26.05	26.95	27.92	Free	Free
4NC250R0201000	2.5 X R0.2	2.00	10.00	2.39	15	45	4	10.54	10.90	11.28	11.70	12.63
4NC250R0201600	2.5 X R0.2	2.00	16.00	2.39	15	50	4	16.74	17.32	17.93	18.60	Free
4NC250R0202500	2.5 X R0.2	2.00	25.00	2.39	15	60	4	26.04	26.94	27.91	Free	Free
4NC250R0301000	2.5 X R0.3	2.00	10.00	2.39	15	45	4	10.53	10.89	11.27	11.69	12.61
4NC250R0301600	2.5 X R0.3	2.00	16.00	2.39	15	50	4	16.74	17.31	17.92	18.58	Free
4NC250R0302500	2.5 X R0.3	2.00	25.00	2.39	15	60	4	26.04	26.94	27.90	Free	Free
4NC250R0501000	2.5 X R0.5	2.00	10.00	2.39	15	45	4	10.53	10.88	11.25	11.66	12.56
4NC250R0501600	2.5 X R0.5	2.00	16.00	2.39	15	50	4	16.73	17.29	17.90	18.56	Free
4NC250R0502500	2.5 X R0.5	2.00	25.00	2.39	15	60	4	26.03	26.92	27.88	Free	Free
4NC300R0101000	3.0 X R0.1	2.50	10.00	2.86	15	50	6	10.60	10.96	11.36	11.78	12.73
4NC300R0101200	3.0 X R0.1	2.50	12.00	2.86	15	50	6	12.67	13.10	13.57	14.08	15.21
4NC300R0101600	3.0 X R0.1	2.50	16.00	2.86	15	60	6	16.80	17.38	18.01	18.68	20.19
4NC300R0102000	3.0 X R0.1	2.50	20.00	2.86	15	60	6	20.94	21.66	22.44	23.28	25.16
4NC300R0102500	3.0 X R0.1	2.50	25.00	2.86	15	60	6	26.10	27.01	27.98	29.03	Free
4NC300R0103000	3.0 X R0.1	2.50	30.00	2.86	15	70	6	31.27	32.36	33.52	34.78	Free
4NC300R0103500	3.0 X R0.1	2.50	35.00	2.86	15	70	6	36.44	37.71	39.06	40.53	Free
4NC300R0201000	3.0 X R0.2	2.50	10.00	2.86	15	50	6	10.59	10.96	11.35	11.76	12.70
4NC300R0201200	3.0 X R0.2	2.50	12.00	2.86	15	50	6	12.66	13.10	13.56	14.06	15.19
4NC300R0201600	3.0 X R0.2	2.50	16.00	2.86	15	60	6	16.80	17.38	18.00	18.66	20.16
4NC300R0202000	3.0 X R0.2	2.50	20.00	2.86	15	60	6	20.93	21.65	22.43	23.26	25.14
4NC300R0202500	3.0 X R0.2	2.50	25.00	2.86	15	60	6	26.10	27.00	27.97	29.01	Free
4NC300R0203000	3.0 X R0.2	2.50	30.00	2.86	15	70	6	31.27	32.35	33.51	34.76	Free
4NC300R0203500	3.0 X R0.2	2.50	35.00	2.86	15	70	6	36.44	37.70	39.05	40.51	Free
4NC300R0301000	3.0 X R0.3	2.50	10.00	2.86	15	50	6	10.59	10.95	11.34	11.75	12.68

4NC Z4 Frese Toriche Rastremate per Acciai fino a 55 HRC

4F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1° 30'	2°	3°
4NC300R0301200	3.0 X R0.3	2.50	12.00	2.86	15	50	6	12.66	13.09	13.55	14.05	15.17
4NC300R0301600	3.0 X R0.3	2.50	16.00	2.86	15	60	6	16.79	17.37	17.99	18.65	20.14
4NC300R0302000	3.0 X R0.3	2.50	20.00	2.86	15	60	6	20.93	21.65	22.42	23.25	25.11
4NC300R0302500	3.0 X R0.3	2.50	25.00	2.86	15	60	6	26.10	27.00	27.96	29.00	Free
4NC300R0303000	3.0 X R0.3	2.50	30.00	2.86	15	70	6	31.26	32.34	33.50	34.75	Free
4NC300R0303500	3.0 X R0.3	2.50	35.00	2.86	15	70	6	36.43	37.69	39.04	40.50	Free
4NC300R0501000	3.0 X R0.5	2.50	10.00	2.86	15	50	6	10.58	10.94	11.31	11.72	12.63
4NC300R0501200	3.0 X R0.5	2.50	12.00	2.86	15	50	6	12.65	13.08	13.53	14.02	15.12
4NC300R0501600	3.0 X R0.5	2.50	16.00	2.86	15	60	6	16.79	17.35	17.96	18.62	20.09
4NC300R0502000	3.0 X R0.5	2.50	20.00	2.86	15	60	6	20.92	21.63	22.40	23.22	25.06
4NC300R0502500	3.0 X R0.5	2.50	25.00	2.86	15	60	6	26.09	26.98	27.94	28.97	Free
4NC300R0503000	3.0 X R0.5	2.50	30.00	2.86	15	70	6	31.26	32.33	33.48	34.72	Free
4NC300R0503500	3.0 X R0.5	2.50	35.00	2.86	15	70	6	36.43	37.68	39.02	40.47	Free
4NC300R1001000	3.0 X R1.0	2.50	10.00	2.86	15	50	6	10.57	10.90	11.26	11.65	12.51
4NC300R1001200	3.0 X R1.0	2.50	12.00	2.86	15	50	6	12.64	13.04	13.48	13.95	15.00
4NC300R1001600	3.0 X R1.0	2.50	16.00	2.86	15	60	6	16.77	17.32	17.91	18.55	19.97
4NC300R1002000	3.0 X R1.0	2.50	20.00	2.86	15	60	6	20.90	21.60	22.34	23.15	24.95
4NC300R1002500	3.0 X R1.0	2.50	25.00	2.86	15	60	6	26.07	26.95	27.89	28.89	Free
4NC300R1003000	3.0 X R1.0	2.50	30.00	2.86	15	70	6	31.24	32.30	33.43	34.64	Free
4NC300R1003500	3.0 X R1.0	2.50	35.00	2.86	15	70	6	36.41	37.64	38.97	40.39	Free
4NC400R0101000	4.0 X R0.1	4.00	10.00	3.80	15	50	6	10.71	11.08	11.48	11.91	12.87
4NC400R0101200	4.0 X R0.1	4.00	12.00	3.80	15	50	6	12.78	13.22	13.70	14.21	15.35
4NC400R0101600	4.0 X R0.1	4.00	16.00	3.80	15	60	6	16.92	17.50	18.13	18.81	Free
4NC400R0102000	4.0 X R0.1	4.00	20.00	3.80	15	60	6	21.05	21.78	22.56	23.41	Free
4NC400R0102500	4.0 X R0.1	4.00	25.00	3.80	15	60	6	26.22	27.13	28.11	Free	Free
4NC400R0103000	4.0 X R0.1	4.00	30.00	3.80	15	70	6	31.39	32.48	33.65	Free	Free
4NC400R0103500	4.0 X R0.1	4.00	35.00	3.80	15	70	6	36.56	37.83	Free	Free	Free
4NC400R0104000	4.0 X R0.1	4.00	40.00	3.80	15	80	6	41.72	43.17	Free	Free	Free
4NC400R0201000	4.0 X R0.2	4.00	10.00	3.80	15	50	6	10.71	11.08	11.47	11.89	12.84
4NC400R0201200	4.0 X R0.2	4.00	12.00	3.80	15	50	6	12.78	13.22	13.69	14.19	15.33
4NC400R0201600	4.0 X R0.2	4.00	16.00	3.80	15	60	6	16.91	17.50	18.12	18.79	Free
4NC400R0202000	4.0 X R0.2	4.00	20.00	3.80	15	60	6	21.05	21.77	22.55	23.39	Free
4NC400R0202500	4.0 X R0.2	4.00	25.00	3.80	15	60	6	26.22	27.12	28.10	Free	Free
4NC400R0203000	4.0 X R0.2	4.00	30.00	3.80	15	70	6	31.38	32.47	33.64	Free	Free
4NC400R0203500	4.0 X R0.2	4.00	35.00	3.80	15	70	6	36.55	37.82	Free	Free	Free
4NC400R0204000	4.0 X R0.2	4.00	40.00	3.80	15	80	6	41.72	43.17	Free	Free	Free
4NC400R0301000	4.0 X R0.3	4.00	10.00	3.80	15	50	6	10.71	11.07	11.46	11.88	12.82
4NC400R0301200	4.0 X R0.3	4.00	12.00	3.80	15	50	6	12.77	13.21	13.68	14.18	15.31
4NC400R0301600	4.0 X R0.3	4.00	16.00	3.80	15	60	6	16.91	17.49	18.11	18.78	Free
4NC400R0302000	4.0 X R0.3	4.00	20.00	3.80	15	60	6	21.04	21.77	22.54	23.38	Free
4NC400R0302500	4.0 X R0.3	4.00	25.00	3.80	15	60	6	26.21	27.12	28.08	Free	Free
4NC400R0303000	4.0 X R0.3	4.00	30.00	3.80	15	70	6	31.38	32.46	33.63	Free	Free
4NC400R0303500	4.0 X R0.3	4.00	35.00	3.80	15	70	6	36.55	37.81	Free	Free	Free
4NC400R0304000	4.0 X R0.3	4.00	40.00	3.80	15	80	6	41.72	43.16	Free	Free	Free
4NC400R0501000	4.0 X R0.5	4.00	10.00	3.80	15	50	6	10.70	11.06	11.44	11.85	12.77
4NC400R0501200	4.0 X R0.5	4.00	12.00	3.80	15	50	6	12.77	13.20	13.65	14.15	15.26

4NC Z4 Frese Toriche Rastremate per Acciai fino a 55 HRC

4F Necked Corner Radius

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1° 30'	2°	3°
4NC400R0501600	4.0 X R0.5	4.00	16.00	3.80	15	60	6	16.90	17.47	18.09	18.75	Free
4NC400R0502000	4.0 X R0.5	4.00	20.00	3.80	15	60	6	21.04	21.75	22.52	23.35	Free
4NC400R0502500	4.0 X R0.5	4.00	25.00	3.80	15	60	6	26.21	27.10	28.06	29.10	Free
4NC400R0503000	4.0 X R0.5	4.00	30.00	3.80	15	70	6	31.37	32.45	33.60	Free	Free
4NC400R0503500	4.0 X R0.5	4.00	35.00	3.80	15	70	6	36.54	37.80	Free	Free	Free
4NC400R0504000	4.0 X R0.5	4.00	40.00	3.80	15	80	6	41.71	43.15	Free	Free	Free
4NC400R0505000	4.0 X R0.5	4.00	50.00	3.80	15	100	6	52.05	53.84	Free	Free	Free
4NC400R1001000	4.0 X R1.0	4.00	10.00	3.80	15	50	6	10.68	11.02	11.38	11.78	12.65
4NC400R1001200	4.0 X R1.0	4.00	12.00	3.80	15	50	6	12.75	13.16	13.60	14.08	15.14
4NC400R1001600	4.0 X R1.0	4.00	16.00	3.80	15	60	6	16.89	17.44	18.03	18.67	Free
4NC400R1002000	4.0 X R1.0	4.00	20.00	3.80	15	60	6	21.02	21.72	22.47	23.27	Free
4NC400R1002500	4.0 X R1.0	4.00	25.00	3.80	15	60	6	26.19	27.07	28.01	29.02	Free
4NC400R1003000	4.0 X R1.0	4.00	30.00	3.80	15	70	6	31.36	32.42	33.55	Free	Free
4NC400R1003500	4.0 X R1.0	4.00	35.00	3.80	15	70	6	36.53	37.76	39.09	Free	Free
4NC400R1004000	4.0 X R1.0	4.00	40.00	3.80	15	80	6	41.69	43.11	Free	Free	Free
4NC400R1005000	4.0 X R1.0	4.00	50.00	3.80	15	100	6	52.03	53.81	Free	Free	Free
4NC500R0102000	5.0 X R0.1	5.00	20.00	4.75	15	60	6	21.15	21.88	Free	Free	Free
4NC500R0104000	5.0 X R0.1	5.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
4NC500R0201200	5.0 X R0.2	5.00	12.00	4.75	15	50	6	12.87	13.32	13.79	14.30	Free
4NC500R0201600	5.0 X R0.2	5.00	16.00	4.75	15	60	6	17.01	17.60	18.22	Free	Free
4NC500R0202000	5.0 X R0.2	5.00	20.00	4.75	15	60	6	21.14	21.87	Free	Free	Free
4NC500R0204000	5.0 X R0.2	5.00	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
4NC500R0302000	5.0 X R0.3	5.00	20.00	4.75	15	60	6	21.14	21.87	Free	Free	Free
4NC500R0304000	5.0 X R0.3	5.00	40.00	4.75	15	80	6	41.81	Free	Free	Free	Free
4NC500R0501200	5.0 X R0.5	5.00	12.00	4.75	15	50	6	12.86	13.30	13.76	14.26	Free
4NC500R0501600	5.0 X R0.5	5.00	16.00	4.75	15	60	6	17.00	17.57	18.19	Free	Free
4NC500R0502000	5.0 X R0.5	5.00	20.00	4.75	15	60	6	21.13	21.85	Free	Free	Free
4NC500R0504000	5.0 X R0.5	5.00	40.00	4.75	15	80	6	41.81	Free	Free	Free	Free
4NC500R1002000	5.0 X R1.0	5.00	20.00	4.75	15	60	6	21.12	21.82	Free	Free	Free
4NC500R1004000	5.0 X R1.0	5.00	40.00	4.75	15	80	6	41.79	Free	Free	Free	Free
4NC600R0102000	6.0 X R0.1	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R0104000	6.0 X R0.1	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NC600R0201600	6.0 X R0.2	6.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R0202000	6.0 X R0.2	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R0202500	6.0 X R0.2	6.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R0203000	6.0 X R0.2	6.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NC600R0203500	6.0 X R0.2	6.00	35.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NC600R0204000	6.0 X R0.2	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NC600R0205000	6.0 X R0.2	6.00	50.00	5.70	-	100	6	Free	Free	Free	Free	Free
4NC600R0301600	6.0 X R0.3	6.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R0302000	6.0 X R0.3	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R0304000	6.0 X R0.3	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NC600R0501600	6.0 X R0.5	6.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R0502000	6.0 X R0.5	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R0502500	6.0 X R0.5	6.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
NEW **4NC600R0503000**	6.0 X R0.5	6.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free

4NC Z4 Frese Toriche Rastremate per Acciai fino a 55 HRC

4F Necked Corner Radius

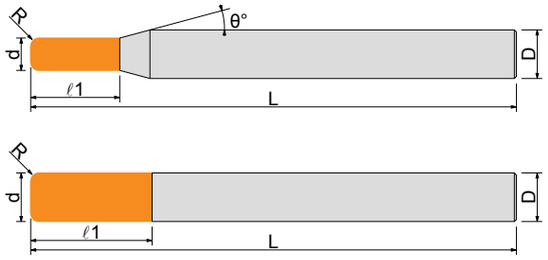
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1° 30'	2°	3°
NEW 4NC600R0503500	6.0 X R0.5	6.00	35.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NC600R0504000	6.0 X R0.5	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NC600R0505000	6.0 X R0.5	6.00	50.00	5.70	-	100	6	Free	Free	Free	Free	Free
4NC600R1001600	6.0 X R1.0	6.00	16.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R1002000	6.0 X R1.0	6.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
4NC600R1002500	6.0 X R1.0	6.00	25.00	5.70	-	60	6	Free	Free	Free	Free	Free
NEW 4NC600R1003000	6.0 X R1.0	6.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
4NC600R1003500	6.0 X R1.0	6.00	35.00	5.70	-	70	6	Free	Free	Free	Free	Free
NEW 4NC600R1004000	6.0 X R1.0	6.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NC600R1005000	6.0 X R1.0	6.00	50.00	5.70	-	100	6	Free	Free	Free	Free	Free
4NC800R0302500	8.0 X R0.3	9.00	25.00	7.60	-	65	8	Free	Free	Free	Free	Free
4NC800R0502500	8.0 X R0.5	9.00	25.00	7.60	-	65	8	Free	Free	Free	Free	Free
NEW 4NC800R0504000	8.0 X R0.5	9.00	40.00	7.60	-	80	8	Free	Free	Free	Free	Free
4NC800R0505000	8.0 X R0.5	9.00	50.00	7.60	-	90	8	Free	Free	Free	Free	Free
4NC800R1002500	8.0 X R1.0	9.00	25.00	7.60	-	65	8	Free	Free	Free	Free	Free
NEW 4NC800R1004000	8.0 X R1.0	9.00	40.00	7.60	-	80	8	Free	Free	Free	Free	Free
4NC800R1005000	8.0 X R1.0	9.00	50.00	7.60	-	90	8	Free	Free	Free	Free	Free
4NC800R1502500	8.0 X R1.5	9.00	25.00	7.60	-	65	8	Free	Free	Free	Free	Free
4NC1000R0502500	10.0 X R0.5	11.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
4NC1000R0504000	10.0 X R0.5	11.00	40.00	9.50	-	80	10	Free	Free	Free	Free	Free
NEW 4NC1000R0504500	10.0 X R0.5	11.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
4NC1000R0505500	10.0 X R0.5	11.00	55.00	9.50	-	100	10	Free	Free	Free	Free	Free
4NC1000R1002500	10.0 X R1.0	11.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
4NC1000R1004000	10.0 X R1.0	11.00	40.00	9.50	-	80	10	Free	Free	Free	Free	Free
4NC1000R1004500	10.0 X R1.0	11.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
4NC1000R1005500	10.0 X R1.0	11.00	55.00	9.50	-	100	10	Free	Free	Free	Free	Free
4NC1000R1502500	10.0 X R1.5	11.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
4NC1000R2002500	10.0 X R2.0	11.00	25.00	9.50	-	70	10	Free	Free	Free	Free	Free
4NC1000R2004500	10.0 X R2.0	11.00	45.00	9.50	-	90	10	Free	Free	Free	Free	Free
4NC1200R0503000	12.0 X R0.5	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
4NC1200R0504000	12.0 X R0.5	12.00	40.00	11.50	-	90	12	Free	Free	Free	Free	Free
4NC1200R0505000	12.0 X R0.5	12.00	50.00	11.50	-	110	12	Free	Free	Free	Free	Free
4NC1200R1003000	12.0 X R1.0	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
4NC1200R1004000	12.0 X R1.0	12.00	40.00	11.50	-	90	12	Free	Free	Free	Free	Free
NEW 4NC1200R1005000	12.0 X R1.0	12.00	50.00	11.50	-	110	12	Free	Free	Free	Free	Free
4NC1200R1503000	12.0 X R1.5	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
4NC1200R2003000	12.0 X R2.0	12.00	30.00	11.50	-	80	12	Free	Free	Free	Free	Free
4NC1200R3005000	12.0 X R3.0	12.00	50.00	11.50	-	110	12	Free	Free	Free	Free	Free

4CL Z4 Frese Toriche per Acciai fino a 55 HRC

4F Corner Radius-Long





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CL150R02045	1.5 X R0.2	4.00	15	45	4	
4CL150R03045	1.5 X R0.3	4.00	15	45	4	
4CL200R02045	2.0 X R0.2	6.00	15	45	4	
4CL200R03045	2.0 X R0.3	6.00	15	45	4	
4CL200R05045	2.0 X R0.5	6.00	15	45	4	
4CL300R02060	3.0 X R0.2	8.00	15	60	6	
4CL300R03060	3.0 X R0.3	8.00	15	60	6	
4CL300R05060	3.0 X R0.5	8.00	15	60	6	
4CL400R02070	4.0 X R0.2	11.00	15	70	6	
NEW 4CL400R030S460	4.0 X R0.3	11.00	-	60	4	
4CL400R03070	4.0 X R0.3	11.00	15	70	6	
NEW 4CL400R050S460	4.0 X R0.5	11.00	-	60	4	
4CL400R05070	4.0 X R0.5	11.00	15	70	6	
4CL400R10070	4.0 X R1.0	11.00	15	70	6	
4CL500R05070	5.0 X R0.5	11.00	15	70	6	
4CL600R02080	6.0 X R0.2	13.00	-	80	6	
4CL600R03060	6.0 X R0.3	13.00	-	60	6	
4CL600R03080	6.0 X R0.3	13.00	-	80	6	
4CL600R05060	6.0 X R0.5	13.00	-	60	6	
4CL600R05080	6.0 X R0.5	13.00	-	80	6	
4CL600R10060	6.0 X R1.0	13.00	-	60	6	
4CL600R10080	6.0 X R1.0	13.00	-	80	6	

4CL Z4 Frese Toriche per Acciai fino a 55 HRC

4F Corner Radius-Long

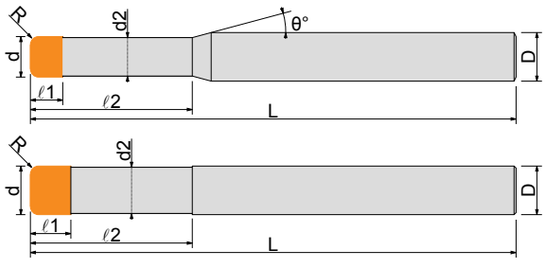
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CL600R15080	6.0 X R1.5	13.00	-	80	6	
4CL800R02090	8.0 X R0.2	19.00	-	90	8	
4CL800R03090	8.0 X R0.3	19.00	-	90	8	
4CL800R05070	8.0 X R0.5	19.00	-	70	8	
4CL800R05090	8.0 X R0.5	19.00	-	90	8	
NEW **4CL800R050100**	8.0 X R0.5	19.00	-	100	8	
4CL800R10070	8.0 X R1.0	19.00	-	70	8	
4CL800R10090	8.0 X R1.0	19.00	-	90	8	
4CL800R20070	8.0 X R2.0	19.00	-	70	8	
4CL800R20090	8.0 X R2.0	19.00	-	90	8	
4CL1000R05075	10.0 X R0.5	22.00	-	75	10	
4CL1000R050100	10.0 X R0.5	22.00	-	100	10	
4CL1000R10075	10.0 X R1.0	22.00	-	75	10	
4CL1000R100100	10.0 X R1.0	22.00	-	100	10	
NEW **4CL1000R100120**	10.0 X R1.0	22.00	-	120	10	
4CL1000R150100	10.0 X R1.5	22.00	-	100	10	
4CL1000R20080	10.0 X R2.0	22.00	-	80	10	
4CL1000R200100	10.0 X R2.0	22.00	-	100	10	
4CL1200R05080	12.0 X R0.5	26.00	-	80	12	
4CL1200R050110	12.0 X R0.5	26.00	-	110	12	
4CL1200R10080	12.0 X R1.0	26.00	-	80	12	
4CL1200R100110	12.0 X R1.0	26.00	-	110	12	
4CL1200R200110	12.0 X R2.0	26.00	-	110	12	

4CF Z4 Frese Toriche Alto Avanzamento per Acciai fino a 55 HRC

4F Corner Radius for High Feed Rate





Caratteristiche

- Tempo di lavoro di sgrossatura ridotto grazie all' alta velocità di taglio
- Adatto per sgrossatura e semisgrossatura ad alto avanzamento
- Per taglio a secco e con refrigerante

Features

- Reduced roughing work time by high-speed cutting
- Suitable for high-feed roughing and semi-roughing
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material:

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

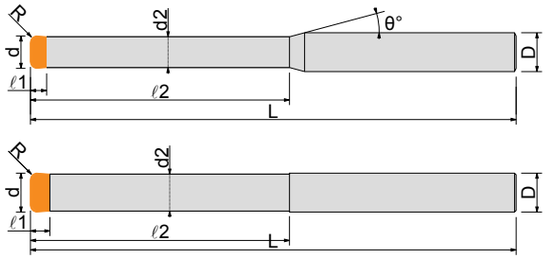
Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D
NEW **4CF400R10060**	4.0 X R1.0	4.00	12.00	3.86	15	60	6
4CF600R10060	6.0 X R1.0	9.00	16.00	5.80	-	60	6
4CF800R10065	8.0 X R1.0	12.00	25.00	7.80	-	65	8
4CF1000R20070	10.0 X R2.0	15.00	25.00	9.80	-	70	10
4CF1000R200100	10.0 X R2.0	15.00	30.00	9.80	-	100	10
4CF1200R20070	12.0 X R2.0	18.00	30.00	11.80	-	70	12
4CF1200R200100	12.0 X R2.0	18.00	35.00	11.80	-	100	12

NEW

4CHF Z4 Frese Toriche Alto Avanzamento per Acciai fino a 55 HRC Elica a 12°

4F Corner Radius for High Feed Rate





Caratteristiche

- Il robusto tagliente scaricato posteriormente riduce le vibrazioni e la resistenza al taglio
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Adatto per sgrossatura e semisgrossatura ad alto avanzamento
- Per taglio a secco e con refrigerante

Features

- Strong back taper suppresses chattering vibration and reduces cutting resistance
- Greater rigidity and reduced chattering through optimized geometry
- Suitable for high-feed roughing and semi-roughing
- For Dry cutting and Wet cutting

4 | HX 12° | SMG Carbide | AlTiSiN Coated | ≦55 HRC

Side | Slot | Face | R | CUTTING P. 210

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

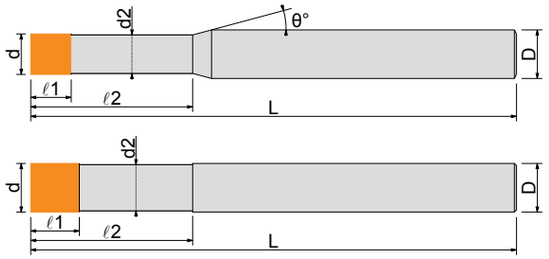
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle ϴ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D
4CHF500R10075	5.0 X R1.0	2.50	40.00	4.85	15	75	6
4CHF600R10060	6.0 X R1.0	3.00	18.00	5.80	-	60	6
4CHF600R10075	6.0 X R1.0	3.00	40.00	5.80	-	75	6
4CHF800R10075	8.0 X R1.0	4.00	24.00	7.80	-	75	8
4CHF800R100450075	8.0 X R1.0	4.00	45.00	7.80	-	75	8
4CHF1000R20070	10.0 X R2.0	5.00	25.00	9.80	-	70	10
4CHF1000R200100	10.0 X R2.0	5.00	30.00	9.80	-	100	10
4CHF1200R20070	12.0 X R2.0	6.00	25.00	11.80	-	70	12
4CHF1200R200100	12.0 X R2.0	6.00	30.00	11.80	-	100	12

2NS Z2 Frese Cilindriche Rastremate per Acciai fino a 55 HRC

2F Necked Square End





Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting

2 | HX 30° | SMG Carbide | AlTiSiN Coated | ≦55 HRC

Side | Slot | Face | C | CUTTING P. 211

Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle ϴ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1° 30'	2°	3°
2NS010030	0.1	0.15	0.30	0.09	15	45	4	0.33	0.35	0.36	0.37	0.40
2NS010050	0.1	0.15	0.50	0.09	15	45	4	0.54	0.56	0.58	0.60	0.65
2NS010100	0.1	0.15	1.00	0.09	15	45	4	1.06	1.09	1.13	1.18	1.27
2NS015030	0.15	0.20	0.30	0.13	15	45	4	0.34	0.36	0.37	0.38	0.41
2NS015050	0.15	0.20	0.50	0.13	15	45	4	0.55	0.57	0.59	0.61	0.66
2NS015100	0.15	0.20	1.00	0.13	15	45	4	1.07	1.10	1.14	1.19	1.28
2NS020050	0.2	0.30	0.50	0.18	15	45	4	0.55	0.57	0.59	0.61	0.66
2NS020100	0.2	0.30	1.00	0.18	15	45	4	1.07	1.10	1.14	1.19	1.28
2NS020150	0.2	0.30	1.50	0.18	15	45	4	1.58	1.64	1.70	1.76	1.91
2NS020200	0.2	0.30	2.00	0.18	15	45	4	2.10	2.17	2.25	2.34	2.53
2NS020300	0.2	0.30	3.00	0.18	15	45	4	3.13	3.24	3.36	3.49	3.77
2NS020400	0.2	0.30	4.00	0.18	15	45	4	4.17	4.31	4.47	4.64	5.01
2NS030100	0.3	0.40	1.00	0.28	15	45	4	1.07	1.10	1.14	1.19	1.28
2NS030150	0.3	0.40	1.50	0.28	15	45	4	1.58	1.64	1.70	1.76	1.91
2NS030200	0.3	0.40	2.00	0.28	15	45	4	2.10	2.17	2.25	2.34	2.53
2NS030300	0.3	0.40	3.00	0.28	15	45	4	3.13	3.24	3.36	3.49	3.77
2NS030400	0.3	0.40	4.00	0.28	15	45	4	4.17	4.31	4.47	4.64	5.01
2NS030600	0.3	0.40	6.00	0.28	15	45	4	6.24	6.45	6.69	6.94	7.50

2NS Z2 Frese Cilindriche Rastremate per Acciai fino a 55 HRC

2F Necked Square End

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1° 30'	2°	3°
2NS030800	0.3	0.40	8.00	0.28	15	45	4	8.30	8.59	8.90	9.24	9.99
2NS040100	0.4	0.60	1.00	0.37	15	45	4	1.09	1.12	1.17	1.21	1.31
2NS040150	0.4	0.60	1.50	0.37	15	45	4	1.60	1.66	1.72	1.78	1.93
2NS040200	0.4	0.60	2.00	0.37	15	45	4	2.12	2.19	2.27	2.36	2.55
2NS040250	0.4	0.60	2.50	0.37	15	45	4	2.64	2.73	2.83	2.93	3.17
2NS040300	0.4	0.60	3.00	0.37	15	45	4	3.15	3.26	3.38	3.51	3.79
2NS040350	0.4	0.60	3.50	0.37	15	45	4	3.67	3.80	3.94	4.08	4.42
2NS040400	0.4	0.60	4.00	0.37	15	45	4	4.19	4.33	4.49	4.66	5.04
2NS040500	0.4	0.60	5.00	0.37	15	45	4	5.22	5.40	5.60	5.81	6.28
2NS040600	0.4	0.60	6.00	0.37	15	45	4	6.25	6.47	6.71	6.96	7.52
2NS040800	0.4	0.60	8.00	0.37	15	45	4	8.32	8.61	8.92	9.26	10.01
2NS0401000	0.4	0.60	10.00	0.37	15	45	4	10.39	10.75	11.14	11.56	12.50
2NS0401200	0.4	0.60	12.00	0.37	15	45	4	12.46	12.89	13.36	13.86	14.98
2NS050100	0.5	0.70	1.00	0.47	15	45	4	1.09	1.12	1.17	1.21	1.31
2NS050150	0.5	0.70	1.50	0.47	15	45	4	1.60	1.66	1.72	1.78	1.93
2NS050200	0.5	0.70	2.00	0.47	15	45	4	2.12	2.19	2.27	2.36	2.55
2NS050250	0.5	0.70	2.50	0.47	15	45	4	2.64	2.73	2.83	2.93	3.17
2NS050300	0.5	0.70	3.00	0.47	15	45	4	3.15	3.26	3.38	3.51	3.79
2NS050350	0.5	0.70	3.50	0.47	15	45	4	3.67	3.80	3.94	4.08	4.42
2NS050400	0.5	0.70	4.00	0.47	15	45	4	4.19	4.33	4.49	4.66	5.04
2NS050500	0.5	0.70	5.00	0.47	15	45	4	5.22	5.40	5.60	5.81	6.28
2NS050600	0.5	0.70	6.00	0.47	15	45	4	6.25	6.47	6.71	6.96	7.52
2NS050800	0.5	0.70	8.00	0.47	15	45	4	8.32	8.61	8.92	9.26	10.01
2NS0501000	0.5	0.70	10.00	0.47	15	45	4	10.39	10.75	11.14	11.56	12.50
2NS0501200	0.5	0.70	12.00	0.47	15	45	4	12.46	12.89	13.36	13.86	14.98
2NS060150	0.6	0.70	1.50	0.57	15	45	4	1.60	1.66	1.72	1.78	1.93
2NS060200	0.6	0.70	2.00	0.57	15	45	4	2.12	2.19	2.27	2.36	2.55
2NS060300	0.6	0.70	3.00	0.57	15	45	4	3.15	3.26	3.38	3.51	3.79
2NS060400	0.6	0.70	4.00	0.57	15	45	4	4.19	4.33	4.49	4.66	5.04
2NS060500	0.6	0.70	5.00	0.57	15	45	4	5.22	5.40	5.60	5.81	6.28
2NS060600	0.6	0.70	6.00	0.57	15	45	4	6.25	6.47	6.71	6.96	7.52
2NS060800	0.6	0.70	8.00	0.57	15	45	4	8.32	8.61	8.92	9.26	10.01
2NS0601000	0.6	0.70	10.00	0.57	15	45	4	10.39	10.75	11.14	11.56	12.50
2NS0601200	0.6	0.70	12.00	0.57	15	45	4	12.46	12.89	13.36	13.86	14.98
2NS0601600	0.6	0.70	16.00	0.57	15	50	4	16.59	17.17	17.79	18.46	19.95
2NS070200	0.7	0.80	2.00	0.66	15	45	4	2.14	2.21	2.29	2.38	2.57
2NS070300	0.7	0.80	3.00	0.66	15	45	4	3.17	3.28	3.40	3.53	3.82
2NS070400	0.7	0.80	4.00	0.66	15	45	4	4.21	4.35	4.51	4.68	5.06
2NS070600	0.7	0.80	6.00	0.66	15	45	4	6.27	6.49	6.73	6.98	7.55
2NS070800	0.7	0.80	8.00	0.66	15	45	4	8.34	8.63	8.94	9.28	10.03
2NS0701000	0.7	0.80	10.00	0.66	15	45	4	10.41	10.77	11.16	11.58	12.52
2NS080200	0.8	1.00	2.00	0.77	15	45	4	2.12	2.19	2.27	2.36	2.55
2NS080300	0.8	1.00	3.00	0.77	15	45	4	3.15	3.26	3.38	3.51	3.79
2NS080400	0.8	1.00	4.00	0.77	15	45	4	4.19	4.33	4.49	4.66	5.04
2NS080500	0.8	1.00	5.00	0.77	15	45	4	5.22	5.40	5.60	5.81	6.28
2NS080600	0.8	1.00	6.00	0.77	15	45	4	6.25	6.47	6.71	6.96	7.52
2NS080800	0.8	1.00	8.00	0.77	15	45	4	8.32	8.61	8.92	9.26	10.01

2NS Z2 Frese Cilindriche Rastremate per Acciai fino a 55 HRC

2F Necked Square End

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1° 30'	2°	3°
2NS0801000	0.8	1.00	10.00	0.77	15	45	4	10.39	10.75	11.14	11.56	12.50
2NS0801200	0.8	1.00	12.00	0.77	15	45	4	12.46	12.89	13.36	13.86	14.98
2NS0801600	0.8	1.00	16.00	0.77	15	50	4	16.59	17.17	17.79	18.46	19.95
2NS0802000	0.8	1.00	20.00	0.77	15	50	4	20.73	21.45	22.22	23.06	24.93
2NS0802500	0.8	1.00	25.00	0.77	15	60	4	25.89	26.80	27.76	28.81	Free
2NS090200	0.9	1.10	2.00	0.85	15	45	4	2.16	2.23	2.32	2.40	2.60
2NS090400	0.9	1.10	4.00	0.85	15	45	4	4.23	4.37	4.53	4.70	5.08
2NS090600	0.9	1.10	6.00	0.85	15	45	4	6.29	6.51	6.75	7.00	7.57
2NS090800	0.9	1.10	8.00	0.85	15	45	4	8.36	8.65	8.96	9.30	10.06
2NS0901000	0.9	1.10	10.00	0.85	15	45	4	10.43	10.79	11.18	11.60	12.54
2NS100200	1.0	1.20	2.00	0.95	15	45	4	2.16	2.23	2.32	2.40	2.60
2NS100300	1.0	1.20	3.00	0.95	15	45	4	3.19	3.30	3.42	3.55	3.84
2NS100400	1.0	1.20	4.00	0.95	15	45	4	4.23	4.37	4.53	4.70	5.08
2NS100500	1.0	1.20	5.00	0.95	15	45	4	5.26	5.44	5.64	5.85	6.33
2NS100600	1.0	1.20	6.00	0.95	15	45	4	6.29	6.51	6.75	7.00	7.57
2NS100800	1.0	1.20	8.00	0.95	15	45	4	8.36	8.65	8.96	9.30	10.06
2NS1001000	1.0	1.20	10.00	0.95	15	45	4	10.43	10.79	11.18	11.60	12.54
2NS1001200	1.0	1.20	12.00	0.95	15	45	4	12.50	12.93	13.40	13.90	15.03
2NS1001400	1.0	1.20	14.00	0.95	15	45	4	14.56	15.07	15.61	16.20	17.52
2NS1001600	1.0	1.20	16.00	0.95	15	50	4	16.63	17.21	17.83	18.50	20.00
2NS1001800	1.0	1.20	18.00	0.95	15	50	4	18.70	19.35	20.05	20.80	22.49
2NS1002000	1.0	1.20	20.00	0.95	15	50	4	20.76	21.49	22.26	23.10	24.97
2NS1002500	1.0	1.20	25.00	0.95	15	60	4	25.93	26.84	27.81	28.85	Free
2NS1003000	1.0	1.20	30.00	0.95	15	70	4	31.10	32.19	33.35	34.60	Free
2NS120400	1.2	1.50	4.00	1.14	15	45	4	4.25	4.39	4.55	4.72	5.11
2NS120600	1.2	1.50	6.00	1.14	15	45	4	6.31	6.53	6.77	7.02	7.59
2NS120800	1.2	1.50	8.00	1.14	15	45	4	8.38	8.67	8.99	9.32	10.08
2NS1201000	1.2	1.50	10.00	1.14	15	45	4	10.45	10.81	11.20	11.62	12.57
2NS1201200	1.2	1.50	12.00	1.14	15	45	4	12.51	12.95	13.42	13.92	15.05
2NS1201600	1.2	1.50	16.00	1.14	15	50	4	16.65	17.23	17.85	18.52	20.02
2NS1202000	1.2	1.50	20.00	1.14	15	50	4	20.78	21.51	22.29	23.12	25.00
2NS1202500	1.2	1.50	25.00	1.14	15	60	4	25.95	26.86	27.83	28.87	Free
2NS150400	1.5	1.80	4.00	1.44	15	45	4	4.25	4.39	4.55	4.72	5.11
2NS150600	1.5	1.80	6.00	1.44	15	45	4	6.31	6.53	6.77	7.02	7.59
2NS150800	1.5	1.80	8.00	1.44	15	45	4	8.38	8.67	8.99	9.32	10.08
2NS1501000	1.5	1.80	10.00	1.44	15	45	4	10.45	10.81	11.20	11.62	12.57
2NS1501200	1.5	1.80	12.00	1.44	15	45	4	12.51	12.95	13.42	13.92	15.05
2NS1501600	1.5	1.80	16.00	1.44	15	50	4	16.65	17.23	17.85	18.52	20.02
2NS1501800	1.5	1.80	18.00	1.44	15	50	4	18.72	19.37	20.07	20.82	22.51
2NS1502000	1.5	1.80	20.00	1.44	15	50	4	20.78	21.51	22.29	23.12	Free
2NS1502500	1.5	1.80	25.00	1.44	15	60	4	25.95	26.86	27.83	28.87	Free
2NS1503000	1.5	1.80	30.00	1.44	15	70	4	31.12	32.21	33.37	34.62	Free
2NS1504000	1.5	1.80	40.00	1.44	15	80	4	41.46	42.90	44.45	Free	Free
2NS160800	1.6	2.00	8.00	1.55	15	45	4	8.36	8.65	8.96	9.30	10.06
2NS1601000	1.6	2.00	10.00	1.55	15	45	4	10.43	10.79	11.18	11.60	12.54
2NS1601200	1.6	2.00	12.00	1.55	15	45	4	12.50	12.93	13.40	13.90	15.03
2NS1601400	1.6	2.00	14.00	1.55	15	45	4	14.56	15.07	15.61	16.20	17.52

2NS Z2 Frese Cilindriche Rastremate per Acciai fino a 55 HRC

2F Necked Square End

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1° 30'	2°	3°
2NS1601600	1.6	2.00	16.00	1.55	15	50	4	16.63	17.21	17.83	18.50	20.00
2NS1601800	1.6	2.00	18.00	1.55	15	50	4	18.70	19.35	20.05	20.80	22.49
2NS1602000	1.6	2.00	20.00	1.55	15	50	4	20.76	21.49	22.26	23.10	Free
2NS180800	1.8	2.20	8.00	1.75	15	45	4	8.36	8.65	8.96	9.30	10.06
2NS1801000	1.8	2.20	10.00	1.75	15	45	4	10.43	10.79	11.18	11.60	12.54
2NS1801200	1.8	2.20	12.00	1.75	15	45	4	12.50	12.93	13.40	13.90	15.03
2NS1801400	1.8	2.20	14.00	1.75	15	45	4	14.56	15.07	15.61	16.20	17.52
2NS1801600	1.8	2.20	16.00	1.75	15	50	4	16.63	17.21	17.83	18.50	20.00
2NS1801800	1.8	2.20	18.00	1.75	15	50	4	18.70	19.35	20.05	20.80	Free
2NS1802000	1.8	2.20	20.00	1.75	15	50	4	20.76	21.49	22.26	23.10	Free
2NS200400	2.0	2.50	4.00	1.92	15	45	4	4.28	4.43	4.59	4.77	5.15
2NS200600	2.0	2.50	6.00	1.92	15	45	4	6.35	6.57	6.81	7.07	7.64
2NS200800	2.0	2.50	8.00	1.92	15	45	4	8.42	8.71	9.03	9.37	10.13
2NS2001000	2.0	2.50	10.00	1.92	15	45	4	10.49	10.85	11.24	11.67	12.61
2NS2001200	2.0	2.50	12.00	1.92	15	45	4	12.55	12.99	13.46	13.96	15.10
2NS2001400	2.0	2.50	14.00	1.92	15	45	4	14.62	15.13	15.68	16.26	17.58
2NS2001600	2.0	2.50	16.00	1.92	15	50	4	16.69	17.27	17.89	18.56	Free
2NS2001800	2.0	2.50	18.00	1.92	15	50	4	18.76	19.41	20.11	20.86	Free
2NS2002000	2.0	2.50	20.00	1.92	15	50	4	20.82	21.55	22.33	23.16	Free
2NS2002500	2.0	2.50	25.00	1.92	15	60	4	25.99	26.90	27.87	Free	Free
2NS2003000	2.0	2.50	30.00	1.92	15	70	4	31.16	32.25	33.41	Free	Free
2NS2004000	2.0	2.50	40.00	1.92	15	80	4	41.50	42.94	Free	Free	Free
2NS2501000	2.5	3.00	10.00	2.39	15	45	4	10.54	10.91	11.31	11.73	12.68
2NS2501200	2.5	3.00	12.00	2.39	15	45	4	12.61	13.05	13.52	14.03	Free
2NS2501600	2.5	3.00	16.00	2.39	15	50	4	16.75	17.33	17.96	18.63	Free
2NS2502000	2.5	3.00	20.00	2.39	15	50	4	20.88	21.61	22.39	Free	Free
2NS2502500	2.5	3.00	25.00	2.39	15	60	4	26.05	26.96	27.93	Free	Free
2NS2503000	2.5	3.00	30.00	2.39	15	70	4	31.22	32.31	Free	Free	Free
2NS300800	3.0	4.00	8.00	2.86	15	50	6	8.53	8.83	9.15	9.49	10.26
2NS3001000	3.0	4.00	10.00	2.86	15	50	6	10.60	10.97	11.37	11.79	12.75
2NS3001200	3.0	4.00	12.00	2.86	15	50	6	12.67	13.11	13.58	14.09	15.24
2NS3001600	3.0	4.00	16.00	2.86	15	60	6	16.80	17.39	18.02	18.69	20.21
2NS3002000	3.0	4.00	20.00	2.86	15	60	6	20.94	21.67	22.45	23.29	25.18
2NS3002500	3.0	4.00	25.00	2.86	15	60	6	26.11	27.02	27.99	29.04	Free
2NS3003000	3.0	4.00	30.00	2.86	15	70	6	31.28	32.36	33.53	34.79	Free
2NS3003500	3.0	4.00	35.00	2.86	15	70	6	36.44	37.71	39.08	40.54	Free
2NS3004000	3.0	4.00	40.00	2.86	15	80	6	41.61	43.06	44.62	Free	Free
2NS4001200	4.0	5.00	12.00	3.80	15	50	6	12.78	13.23	13.71	14.22	15.38
2NS4001400	4.0	5.00	14.00	3.80	15	50	6	14.85	15.37	15.92	16.52	17.86
2NS4001600	4.0	5.00	16.00	3.80	15	60	6	16.92	17.51	18.14	18.82	Free
2NS4002000	4.0	5.00	20.00	3.80	15	60	6	21.05	21.79	22.57	23.42	Free
2NS4002500	4.0	5.00	25.00	3.80	15	60	6	26.22	27.14	28.12	Free	Free
2NS4003000	4.0	5.00	30.00	3.80	15	70	6	31.39	32.48	33.66	Free	Free
2NS4003500	4.0	5.00	35.00	3.80	15	70	6	36.56	37.83	Free	Free	Free
2NS4004000	4.0	5.00	40.00	3.80	15	80	6	41.73	43.18	Free	Free	Free
2NS4005000	4.0	5.00	50.00	3.80	15	100	6	52.06	53.88	Free	Free	Free

2NS Z2 Frese Cilindriche Rastremate per Acciai fino a 55 HRC

2F Necked Square End

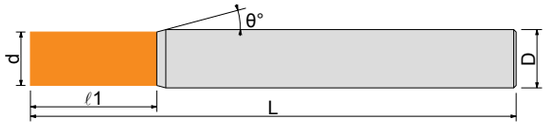
(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1° 30'	2°	3°
2NS5001600	5.0	7.50	16.00	4.75	15	60	6	17.02	17.61	18.25	Free	Free
2NS5002000	5.0	7.50	20.00	4.75	15	60	6	21.15	21.89	Free	Free	Free
2NS5002500	5.0	7.50	25.00	4.75	15	60	6	26.32	27.24	Free	Free	Free
2NS5003000	5.0	7.50	30.00	4.75	15	70	6	31.49	Free	Free	Free	Free
2NS5003500	5.0	7.50	35.00	4.75	15	70	6	36.66	Free	Free	Free	Free
2NS5004000	5.0	7.50	40.00	4.75	15	80	6	41.82	Free	Free	Free	Free
2NS5005000	5.0	7.50	50.00	4.75	15	100	6	52.16	Free	Free	Free	Free
2NS6001500	6.0	9.00	15.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NS6002000	6.0	9.00	20.00	5.70	-	60	6	Free	Free	Free	Free	Free
2NS6003000	6.0	9.00	30.00	5.70	-	70	6	Free	Free	Free	Free	Free
2NS6004000	6.0	9.00	40.00	5.70	-	80	6	Free	Free	Free	Free	Free
2NS8002000	8.0	12.00	20.00	7.60	-	80	8	Free	Free	Free	Free	Free
2NS8003000	8.0	12.00	30.00	7.60	-	80	8	Free	Free	Free	Free	Free
2NS8004000	8.0	12.00	40.00	7.60	-	100	8	Free	Free	Free	Free	Free

2SR Z2 Frese Cilindriche per Acciai fino a 55 HRC

2F Square End-Regular





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2SR020030S4	0.2	0.30	15	45	4	
2SR030050S4	0.3	0.50	15	45	4	
2SR040080S4	0.4	0.80	15	45	4	
2SR050100S4	0.5	1.00	15	45	4	
2SR060120S4	0.6	1.20	15	45	4	
2SR070140S4	0.7	1.40	15	45	4	
2SR080160S4	0.8	1.60	15	45	4	
2SR100250S4	1.0	2.50	15	45	4	
2SR100250S6	1.0	2.50	15	45	6	
2SR120300S4	1.2	3.00	15	45	4	
2SR150400S4	1.5	4.00	15	45	4	
2SR150400S6	1.5	4.00	15	45	6	
2SR200600S4	2.0	6.00	15	45	4	
2SR200600S6	2.0	6.00	15	45	6	
2SR250800S4	2.5	8.00	15	45	4	
2SR250800S6	2.5	8.00	15	45	6	
2SR300800S4	3.0	8.00	15	45	4	
2SR300800S6	3.0	8.00	15	45	6	
2SR350800S4	3.5	8.00	15	45	4	

2SR Z2 Frese Cilindriche per Acciai fino a 55 HRC
2F Square End-Regular

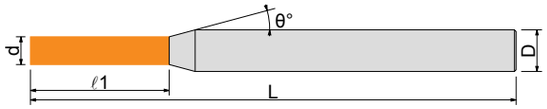
(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2SR350800S6	3.5	8.00	15	45	6	
2SR4001000S4	4.0	10.00	-	45	4	
2SR4001000S6	4.0	10.00	15	45	6	
2SR4501000S6	4.5	10.00	15	45	6	
2SR5001300S6	5.0	13.00	15	50	6	
2SR5501300S6	5.5	13.00	15	50	6	
2SR6001500S6	6.0	15.00	-	50	6	
2SR6501500S8	6.5	15.00	15	60	8	
2SR7001600S8	7.0	16.00	15	60	8	
2SR7501600S8	7.5	16.00	15	60	8	
2SR8001900S8	8.0	19.00	-	60	8	
2SR8501900S10	8.5	19.00	15	70	10	
2SR9001900S10	9.0	19.00	15	70	10	
2SR9501900S10	9.5	19.00	15	70	10	
2SR10002200S10	10.0	22.00	-	70	10	
2SR10502200S12	10.5	22.00	15	75	12	
2SR11002200S12	11.0	22.00	15	75	12	
2SR12002600S12	12.0	26.00	-	75	12	
2SR14002600S14	14.0	26.00	-	80	14	
2SR16003500S16	16.0	35.00	-	100	16	
2SR20004000S20	20.0	40.00	-	100	20	

2SL Z2 Frese Cilindriche per Acciai fino a 55 HRC - Serie Lunga

2F Square End-Long







Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

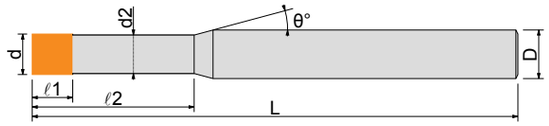
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2SL10050060	1.0	5.00	15	60	6	
2SL150100060	1.5	10.00	15	60	6	
2SL200100060	2.0	10.00	15	60	6	
2SL300150070	3.0	15.00	15	70	6	
2SL400200070	4.0	20.00	15	70	6	
2SL500200070	5.0	20.00	15	70	6	
2SL600200070	6.0	20.00	-	70	6	
2SL600250075	6.0	25.00	-	75	6	
2SL600300080	6.0	30.00	-	80	6	
2SL800250075	8.0	25.00	-	75	8	
2SL800300080	8.0	30.00	-	80	8	
2SL800400090	8.0	40.00	-	90	8	
2SL1000300080	10.0	30.00	-	80	10	
2SL1000350080	10.0	35.00	-	80	10	
2SL1000400090	10.0	40.00	-	90	10	
2SL10005000100	10.0	50.00	-	100	10	
2SL1200300080	12.0	30.00	-	80	12	
2SL12004000100	12.0	40.00	-	100	12	
2SL12005000110	12.0	50.00	-	110	12	
2SL16008000150	16.0	80.00	-	150	16	
2SL20008000160	20.0	80.00	-	160	20	

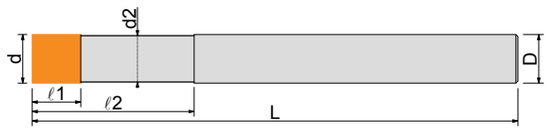
4NS Z4 Frese Cilindriche Rastremate per Acciai fino a 55 HRC

NEW

4F Necked Square End







Caratteristiche

- Ampia gamma di rastremature per l'utilizzo su varie applicazioni
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Extended neck style for long reach applications
- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece				
								30'	1°	1° 30'	2°	3°
4NS100400	1.0	1.00	4.00	0.95	15	50	4	4.23	4.37	4.53	4.70	5.08
4NS100600	1.0	1.00	6.00	0.95	15	50	4	6.29	6.51	6.75	7.00	7.57
4NS100800	1.0	1.00	8.00	0.95	15	50	4	8.36	8.65	8.96	9.30	10.06
4NS1001000	1.0	1.00	10.00	0.95	15	50	4	10.43	10.79	11.18	11.60	12.54
4NS150600	1.5	1.20	6.00	1.44	15	50	4	6.31	6.53	6.77	7.02	7.59
4NS150800	1.5	1.20	8.00	1.44	15	50	4	8.38	8.67	8.99	9.32	10.08
4NS1501000	1.5	1.20	10.00	1.44	15	50	4	10.45	10.81	11.20	11.62	12.57
4NS1501200	1.5	1.20	12.00	1.44	15	50	4	12.51	12.95	13.42	13.92	15.05
4NS1501400	1.5	1.20	14.00	1.44	15	60	4	14.58	15.09	15.64	16.22	17.54
4NS1501600	1.5	1.20	16.00	1.44	15	60	4	16.65	17.23	17.85	18.52	20.02
4NS200600	2.0	1.60	6.00	1.92	15	50	4	6.35	6.57	6.81	7.07	7.64
4NS200800	2.0	1.60	8.00	1.92	15	50	4	8.42	8.71	9.03	9.37	10.13
4NS2001000	2.0	1.60	10.00	1.92	15	50	4	10.49	10.85	11.24	11.67	12.61
4NS2001200	2.0	1.60	12.00	1.92	15	50	4	12.55	12.99	13.46	13.96	15.10
4NS2001400	2.0	1.60	14.00	1.92	15	60	4	14.62	15.13	15.68	16.26	17.58
4NS2001600	2.0	1.60	16.00	1.92	15	60	4	16.69	17.27	17.89	18.56	Free
4NS2001800	2.0	1.60	18.00	1.92	15	60	4	18.76	19.41	20.11	20.86	Free
4NS2002000	2.0	1.60	20.00	1.92	15	60	4	20.82	21.55	22.33	23.16	Free
4NS250800	2.5	2.00	8.00	2.39	15	50	4	8.48	8.77	9.09	9.43	10.20
4NS2501200	2.5	2.00	12.00	2.39	15	50	4	12.61	13.05	13.52	14.03	Free

4NS Z4 Frese Cilindriche Rastremate per Acciai fino a 55 HRC

4F Necked Square End

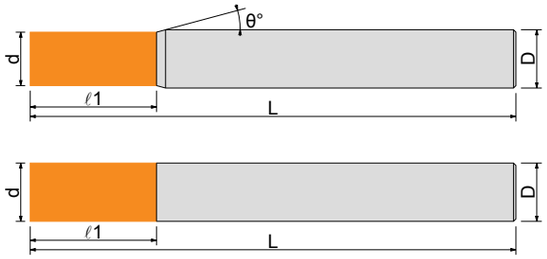
(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Utile Effettivo Fresa in base all'inclinazione del pezzo Actual Effective Length depending on inclined angle of workpiece 30'	1°	1° 30'	2°	3°
4NS2501600	2.5	2.00	16.00	2.39	15	60	4	16.75	17.33	17.96	18.63	Free
4NS2502000	2.5	2.00	20.00	2.39	15	60	4	20.88	21.61	22.39	Free	Free
4NS2502500	2.5	2.00	25.00	2.39	15	70	4	26.05	26.96	27.93	Free	Free
4NS300800	3.0	4.50	8.00	2.86	15	50	6	8.53	8.83	9.15	9.49	10.26
4NS3001200	3.0	4.50	12.00	2.86	15	50	6	12.67	13.11	13.58	14.09	15.24
4NS3001600	3.0	4.50	16.00	2.86	15	60	6	16.80	17.39	18.02	18.69	20.21
4NS3002000	3.0	4.50	20.00	2.86	15	60	6	20.94	21.67	22.45	23.29	25.18
4NS3002500	3.0	4.50	25.00	2.86	15	70	6	26.11	27.02	27.99	29.04	Free
4NS3003000	3.0	4.50	30.00	2.86	15	70	6	31.28	32.36	33.53	34.79	Free
4NS4001200	4.0	3.80	12.00	3.80	15	50	6	12.78	13.23	13.71	14.22	15.38
4NS4001600	4.0	3.80	16.00	3.80	15	60	6	16.92	17.51	18.14	18.82	Free
4NS4002000	4.0	3.80	20.00	3.80	15	60	6	21.05	21.79	22.57	23.42	Free
4NS4002500	4.0	3.80	25.00	3.80	15	70	6	26.22	27.14	28.12	Free	Free
4NS4003000	4.0	3.80	30.00	3.80	15	70	6	31.39	32.48	33.66	Free	Free
4NS4003500	4.0	3.80	35.00	3.80	15	80	6	36.56	37.83	Free	Free	Free
4NS4004000	4.0	3.80	40.00	3.80	15	90	6	41.73	43.18	Free	Free	Free
4NS6002000	6.0	5.80	20.00	5.70	-	80	6	Free	Free	Free	Free	Free
4NS6003000	6.0	5.80	30.00	5.70	-	90	6	Free	Free	Free	Free	Free
4NS6004000	6.0	5.80	40.00	5.70	-	100	6	Free	Free	Free	Free	Free
4NS6005000	6.0	5.80	50.00	5.70	-	110	6	Free	Free	Free	Free	Free

4SR Z4 Frese Cilindriche per Acciai fino a 55 HRC

4F Square End-Regular





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SR100250S4	1.0	2.50	15	45	4	
4SR100250S6	1.0	2.50	15	45	6	
4SR150400S4	1.5	4.00	15	45	4	
4SR150400S6	1.5	4.00	15	45	6	
4SR200600S4	2.0	6.00	15	45	4	
4SR200600S6	2.0	6.00	15	45	6	
4SR250800S4	2.5	8.00	15	45	4	
4SR250800S6	2.5	8.00	15	45	6	
4SR300800S4	3.0	8.00	15	45	4	
4SR300800S6	3.0	8.00	15	45	6	
4SR350800S4	3.5	8.00	15	45	4	
4SR4001000S4	4.0	10.00	-	45	4	
4SR4001000S6	4.0	10.00	15	45	6	
4SR4501000S6	4.5	10.00	15	45	6	
4SR5001300S6	5.0	13.00	15	50	6	
4SR5501300S6	5.5	13.00	15	50	6	
4SR6001500S6	6.0	15.00	-	50	6	
4SR6501500S8	6.5	15.00	15	50	8	
4SR7001600S8	7.0	16.00	15	60	8	

4SR Z4 Frese Cilindriche per Acciai fino a 55 HRC

4F Square End-Regular

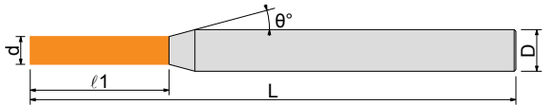
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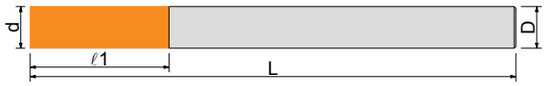
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SR7501600S8	7.5	16.00	15	60	8	
4SR8001900S8	8.0	19.00	-	60	8	
4SR8501900S10	8.5	19.00	15	70	10	
4SR9001900S10	9.0	19.00	15	70	10	
4SR10002200S10	10.0	22.00	-	70	10	
NEW **4SR10002200S10100**	10.0	22.00	-	100	10	
4SR10502200S12	10.5	22.00	15	75	12	
4SR12002600S12	12.0	26.00	-	75	12	
4SR14002600S14	14.0	26.00	-	80	14	
4SR16003500S16	16.0	35.00	-	100	16	
4SR20004000S20	20.0	40.00	-	100	20	
4SR20004000S20	20.0	40.00	-	100	20	

4SL Z4 Frese Cilindriche per Acciai fino a 55 HRC - Serie Lunga

4F Square End-Long









Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting

Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

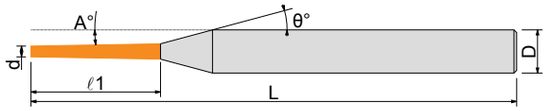
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SL10050060	1.0	5.00	15	60	6	
4SL200100060	2.0	10.00	15	60	6	
4SL300150070	3.0	15.00	15	70	6	
4SL300200070	3.0	20.00	15	70	6	
4SL400150070	4.0	15.00	15	70	6	
4SL400200070	4.0	20.00	15	70	6	
4SL500250070	5.0	25.00	15	70	6	
4SL600200070	6.0	20.00	-	70	6	
4SL600300080	6.0	30.00	-	80	6	
4SL800300080	8.0	30.00	-	80	8	
4SL800350090	8.0	35.00	-	90	8	
4SL800400090	8.0	40.00	-	90	8	
4SL1000350090	10.0	35.00	-	90	10	
4SL1000400090	10.0	40.00	-	90	10	
4SL10005000100	10.0	50.00	-	100	10	
4SL10006000110	10.0	60.00	-	110	10	
4SL1200300090	12.0	30.00	-	90	12	
4SL12004000100	12.0	40.00	-	100	12	
4SL12006000105	12.0	60.00	-	105	12	
4SL16005500105	16.0	55.00	-	105	16	
4SL20008000160	20.0	80.00	-	160	20	

NEW

4TE Z2 Frese Cilindriche Coniche per Acciai fino a 55 HRC

4F Tapered End Mill





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Angolo Angle A°	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4TE050070400	0.7	0.5	4.00	15	45	4	
4TE050070600	0.7	0.5	6.00	15	45	4	
4TE050070800	0.7	0.5	8.00	15	45	4	
4TE050080400	0.8	0.5	4.00	15	45	4	
4TE050080600	0.8	0.5	6.00	15	45	4	
4TE050080800	0.8	0.5	8.00	15	45	4	
4TE0500801000	0.8	0.5	10.00	15	45	4	
4TE050100600	1.0	0.5	6.00	15	45	4	
4TE050100800	1.0	0.5	8.00	15	45	4	
4TE0501001000	1.0	0.5	10.00	15	45	4	
4TE0501001200	1.0	0.5	12.00	15	45	4	
4TE100070400	0.7	1	4.00	15	45	4	
4TE100070600	0.7	1	6.00	15	45	4	
4TE100070800	0.7	1	8.00	15	45	4	
4TE100080400	0.8	1	4.00	15	45	4	
4TE100080600	0.8	1	6.00	15	45	4	
4TE100080800	0.8	1	8.00	15	45	4	
4TE1000801000	0.8	1	10.00	15	45	4	
4TE100100600	1.0	1	6.00	15	45	4	
4TE100100800	1.0	1	8.00	15	45	4	
4TE1001001000	1.0	1	10.00	15	45	4	
4TE1001001200	1.0	1	12.00	15	45	4	

6SR Z6 Frese Cilindriche per Acciai fino a 55 HRC

6F Square-Regular





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Migliore qualità della superficie del pezzo
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- Imporved workpiece surface quality
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
6SR600150050	6.0	15.00	50	6	
6SR600200060	6.0	20.00	60	6	
6SR600250065	6.0	25.00	65	6	
6SR600300070	6.0	30.00	70	6	
6SR800250065	8.0	25.00	65	8	
6SR800300070	8.0	30.00	70	8	
6SR800350090	8.0	35.00	90	8	
6SR800400090	8.0	40.00	90	8	
6SR1000350080	10.0	35.00	80	10	
6SR10004500100	10.0	45.00	100	10	
6SR10005500110	10.0	55.00	110	10	
6SR1200400090	12.0	40.00	90	12	
6SR12005000100	12.0	50.00	100	12	
6SR12006000105	12.0	60.00	105	12	
6SR16004500100	16.0	45.00	100	16	
6SR16005000105	16.0	50.00	105	16	
6SR16008000150	16.0	80.00	150	16	
6SR20005000105	20.0	50.00	105	20	
6SR20008000150	20.0	80.00	150	20	
6SR200010000160	20.0	100.00	160	20	

SOLUTION TOOL

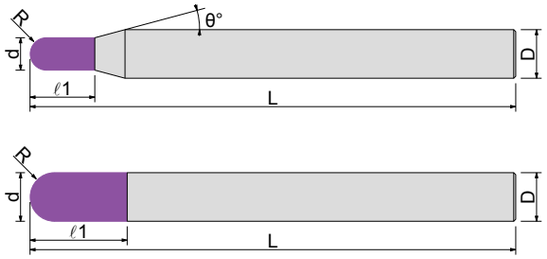


2BRHR Z2 Frese Sferiche Multiuso

2F Ball End for Multi Purpose

NEW





Caratteristiche

- Alte efficienza di lavorazione e riduzione delle vibrazioni grazie allo speciale design dell' elica a 27°
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza che con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Per taglio a secco e con refrigerante

Features

- High-efficiency machining is realized by suppressing chattering with a unique flute design
- Greater rigidity and reduced chattering through optimized geometry
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○	◎	◎	○	◎	○			

(Unit: mm)

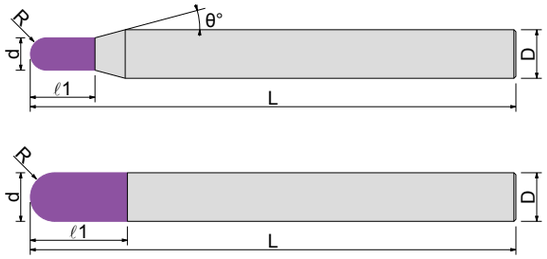
Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BRHR100150S4	1.0 X R0.5	1.50	15	50	4	
2BRHR150230S4	1.5 X R0.75	2.30	15	50	4	
2BRHR200300S4	2.0 X R1.0	3.00	15	60	4	
2BRHR250380S6	2.5 X R1.25	3.80	15	60	6	
2BRHR300800S3	3.0 X R1.5	8.00	-	50	3	
2BRHR400800S4	4.0 X R2.0	8.00	-	60	4	
2BRHR500800S6	5.0 X R2.5	8.00	15	70	6	
2BRHR600100080	6.0 X R3.0	10.00	-	80	6	
2BRHR800120090	8.0 X R4.0	12.00	-	90	8	
2BRHR10001500100	10.0 X R5.0	15.00	-	100	10	
2BRHR10001800150	10.0 X R5.0	18.00	-	150	10	
2BRHR12002000110	12.0 X R6.0	20.00	-	110	12	

4BRHR Z4 Frese Sferiche Multiuso a Passo Variabile

4F Ball End for Multi Purpose

NEW





Caratteristiche

- Alte efficienza di lavorazione e riduzione delle vibrazioni grazie allo speciale design dell' elica a 40° a passo variabile
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza che con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Per taglio a secco e con refrigerante

Features

- High-efficiency machining is realized by suppressing chattering with a unique flute design
- Greater rigidity and reduced chattering through optimized geometry
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○	◎	◎	○	◎	○			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4BRHR200400S6	2.0 X R1.0	4.00	15	50	6	
4BRHR300400S6	3.0 X R1.5	4.00	15	70	6	
4BRHR400600S6	4.0 X R2.0	6.00	15	70	6	
4BRHR600900S6	6.0 X R3.0	9.00	-	90	6	
4BRHR8001200S8	8.0 X R4.0	12.00	-	100	8	
4BRHR10001500S10	10.0 X R5.0	15.00	-	100	10	
4BRHR12001800S12	12.0 X R6.0	18.00	-	110	12	

4CLHR Z4 Frese Toriche Multiuso a Passo Variabile

4F Corner Radius End for Multi Purpose

NEW





Caratteristiche

- Adatta per lavorazioni ad alta velocità con elica a 45 gradi
- Sopprime le vibrazioni e aumenta la durata degli utensili grazie alla geometria a passo variabile
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza che con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Per taglio a secco e con refrigerante

Features

- Easy for high-speed machining with 45 degree helix
- Suppresses vibration and increase tools life by unequal divided flute
- Greater rigidity and reduced chattering through optimized geometry
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material:

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○	◎	◎	○	◎	○			

(Unit: mm)

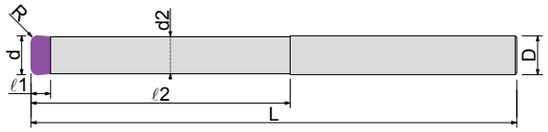
Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CLHR600R05090	6.0 X R0.5	15.00	90	6	
4CLHR600R050100	6.0 X R0.5	15.00	100	6	
4CLHR600R10090	6.0 X R1.0	15.00	90	6	
4CLHR800R050100	8.0 X R0.5	20.00	100	8	
4CLHR800R100100	8.0 X R1.0	20.00	100	8	
4CLHR1000R050100	10.0 X R0.5	25.00	100	10	
4CLHR1000R050110	10.0 X R0.5	25.00	110	10	
4CLHR1000R100100	10.0 X R1.0	25.00	100	10	
4CLHR1200R050110	12.0 X R0.5	30.00	110	12	
4CLHR1200R100110	12.0 X R1.0	30.00	110	12	

4CHFHR Z4 Frese Toriche Alto Avanzamento Multiuso a 10°

4F Corner Radius for High Feed Rate for Multi Purpose

NEW





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza che con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Eccellente resistenza, adatta per sgrossatura ad alto avanzamento e semisgrossatura
- Per taglio a secco e con refrigerante

Features

- Greater rigidity and reduced chattering through optimized geometry
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- Excellent tensile strength, suitable for high-feed roughing and medium cutting
- • For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material:

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○	◎	◎	○	◎	○			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CHFHR600R10060	6.0 X R1.0	3.00	18.00	5.80	60	6	
4CHFHR600R15060	6.0 X R1.5	3.00	18.00	5.80	60	6	
4CHFHR800R10075	8.0 X R1.0	4.00	24.00	7.80	75	8	
4CHFHR800R20075	8.0 X R2.0	4.00	24.00	7.80	75	8	
4CHFHR1000R20080	10.0 X R2.0	5.00	30.00	9.80	80	10	
4CHFHR1200R200100	12.0 X R2.0	6.00	36.00	11.80	100	12	

NEW

6CLHR Z6 Frese Toriche Multiuso

6F Corner Radius End for Multi Purpose





Caratteristiche

- Adatta per lavorazioni ad alta velocità con elica a 45 gradi
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza che con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Per taglio a secco e con refrigerante

Features

- Easy for high-speed machining with 45 degree helix
- Greater rigidity and reduced chattering through optimized geometry
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○	◎	◎	○	◎	○			

(Unit: mm)

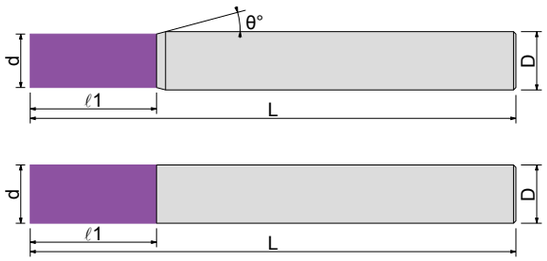
Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
6CLHR600R05060	6.0 X R0.5	12.00	60	6	
6CLHR600R10060	6.0 X R1.0	12.00	60	6	
6CLHR800R05065	8.0 X R0.5	16.00	65	8	
6CLHR800R10065	8.0 X R1.0	16.00	65	8	
6CLHR1000R05075	10.0 X R0.5	20.00	75	10	
6CLHR1000R10075	10.0 X R1.0	20.00	75	10	
6CLHR1200R05080	12.0 X R0.5	24.00	80	12	
6CLHR1200R10080	12.0 X R1.0	24.00	80	12	

NEW

4SRHR Z4 Frese Cilindriche Multiuso

4F Square End for Multi Purpose





Caratteristiche

- Alta efficienza di lavorazione, riduzione delle vibrazioni e aumento della vita utensile grazie all' elica e al passo variabile (35~38)
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Per taglio a secco e con refrigerante

Features

- High-efficiency machining is realized by suppressing chattering and increasing tool life with variable helix (35~38) and unequal division
- Greater rigidity and reduced chattering through optimized geometry
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○	◎	◎	○	◎	○			

(Unit: mm)

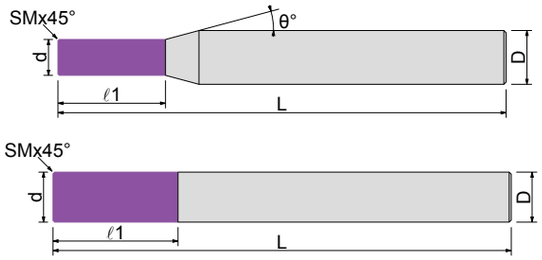
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SRHR300800S6	3.0	8.00	15	50	6	
4SRHR4001000S6	4.0	10.00	15	50	6	
4SRHR5001500S6	5.0	15.00	15	60	6	
4SRHR6001500S6	6.0	15.00	-	60	6	
4SRHR7002000S8	7.0	20.00	15	60	8	
4SRHR8002000S8	8.0	20.00	-	70	8	
4SRHR9002200S10	9.0	22.00	15	70	10	
4SRHR10002500S10	10.0	25.00	-	75	10	
4SRHR12003000S12	12.0	30.00	-	80	12	

NEW

4SSHR Z4 Frese Cilindriche con Smusso

4F Square End with Chamfer for Multipurpose







Caratteristiche

- Alta efficienza di lavorazione, riduzione delle vibrazioni e aumento della vita utensile grazie all' elica e al passo variabile (35~38)
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria e al piccolo smusso sull'angolo
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Per taglio a secco e con refrigerante

Features

- High-efficiency machining is realized by suppressing chattering and increasing tool life with variable helix (35~38) and unequal division
- Greater rigidity and reduced chattering through optimized geometry and the small chamfer at corner
- HR coating enables cutting low-speed/low-hardness materials-high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- For Dry cutting and Wet cutting

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material:

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○	◎	◎	○	◎	○			

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Smusso Chamfer SMx45°	NOTE
4SSHR400120050	4.0	12.00	15	50	6	0.15	
4SSHR600150055	6.0	15.00	-	55	6	0.20	
4SSHR800190060	8.0	19.00	-	60	8	0.25	
4SSHR1000220070	10.0	22.00	-	70	10	0.30	
4SSHR1200260075	12.0	26.00	-	75	12	0.35	
4SSHR1600340090	16.0	34.00	-	90	16	0.40	

SOLUTION TOOL



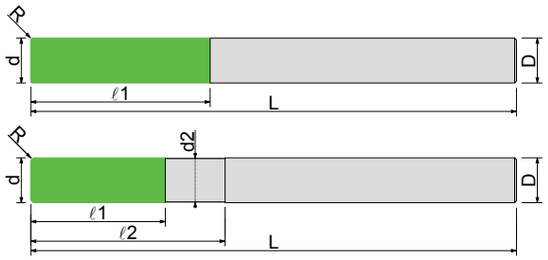
- Serie per Sgrossatura
- For Roughing

5 & 6 TROHR Z5-Z6 Frese Trocoidali per multiuso

5/6F Trochoidal for miltipurpose

NEW





5 | 6 | HX 37/38° | MG Carbide | HR Coated | ≤55 HRC

Unequal Flute Spacing | Side | Slot | Face | R | Plunge

CUTTING P. 224

Caratteristiche

- Alte efficienza di lavorazione, riduzione delle vibrazioni e aumento della vita utensile grazie all' elica e al passo variabile (35~38)
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza che con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Facile evacuazione del truciolo grazie all'applicazione del rompitruciolo sul tagliente
- Tacca WELDON applicato dal Ø 10 in sù
- Per taglio a secco e con refrigerante

Features

- High-efficiency machining is realized by suppressing chattering and increasing tools life with variable helix(37°~38°) and unequal divided flute.
- Greater rigidity and reduced chattering through optimized geometry
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- Easy chip evacuation by applying chip break
- WELDON applied to 10 dia or more
- For Dry cutting and Wet cutting

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	Numero Taglienti Flute No	NOTE
5TROHR600R02065	6.0 X R0.2	24.00	-	-	65	6	5	
5TROHR600R0502600	6.0 X R0.5	18.00	26.00	5.80	65	6	5	
5TROHR800R02068	8.0 X R0.2	24.00	-	-	68	8	5	
5TROHR800R0503100	8.0 X R0.5	24.00	31.00	7.80	80	8	5	
5TROHR1000R02080	10.0 X R0.2	30.00	-	-	80	10	5	
5TROHR1000R0503800	10.0 X R0.5	30.00	38.00	9.80	80	10	5	
5TROHR1200R05090	12.0 X R0.5	36.00	-	-	90	12	5	
5TROHR1200R0504600	12.0 X R0.5	36.00	46.00	11.70	90	12	5	
5TROHR1600R1005800	16.0 X R1.0	48.00	58.00	15.50	110	16	5	
5TROHR2000R1007400	20.0 X R1.0	60.00	74.00	19.40	120	20	5	
6TROHR1000R05080	10.0 X R0.5	30.00	-	-	80	10	6	
6TROHR1200R05090	12.0 X R0.5	36.00	-	-	90	12	6	
6TROHR1600R100120	16.0 X R1.0	36.00	-	-	120	16	6	
6TROHR2000R100130	20.0 X R1.0	60.00	-	-	130	20	6	

4SRR z4 Frese Cilindriche Sgrossatura e Semifinitura

4F Square Semi-finishing End-Economic

NEW





4 | HX 38° | MG Carbide | AlTiCrSiN Coated | ≤50 HRC

Unequal Flute Spacing | Side | Slot | Face | C

CUTTING P. 225

Caratteristiche

- Il rompitruciolo sull' elica e il passo variabile aumentano la durata dell'utensile e consentono un taglio più stabile
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Per sgrossatura e semisgrossatura
- Per taglio a secco e con refrigerante

Features

- Chip break and unequal divided flute increase tool life and enable stable cutting
- Greater rigidity and reduced chattering through optimized geometry
- For roughing and semi-roughing
- For Dry cutting and Wet cutting

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	△	○	○	◎	○	○	△			

(Unit: mm)

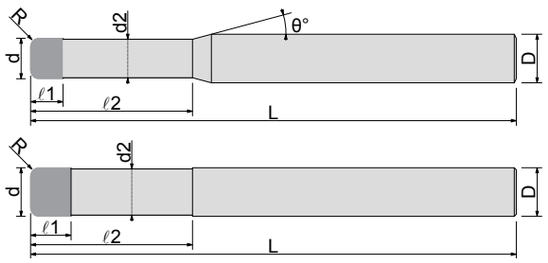
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SRR6002000S6	6.0	20.00	60	6	
4SRR8002400S8	8.0	24.00	65	8	
4SRR10003000S10	10.0	30.00	80	10	
4SRR12003600S12	12.0	36.00	82	12	

SOLUTION TOOL



3CA Z3 Frese Toriche per Alluminio
3F Corner Radius End for Aluminum





Caratteristiche

- Per uso su leghe di alluminio e materiali non ferrosi
- Costruite per alta velocità di asportazione truciolo
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- For use on aluminum alloy and non-ferrous materials
- Provides higher metal removal rate
- Greater rigidity and reduced chattering through optimized geometry

3 | HX 45° | MG Carbide | Uncoated

Side | Slot | Face | R | CUTTING P. 226

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

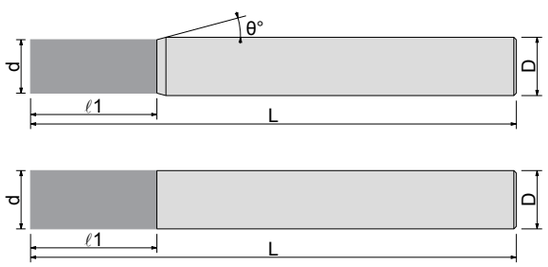
Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
							△	◎	△	

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
3CA300R02050	3.0 X R0.2	8.00	15	50	6	
3CA300R03050	3.0 X R0.3	8.00	15	50	6	
3CA300R05050	3.0 X R0.5	8.00	15	50	6	
3CA400R03050	4.0 X R0.3	11.00	15	50	6	
3CA400R05050	4.0 X R0.5	11.00	15	50	6	
3CA400R10050	4.0 X R1.0	11.00	15	50	6	
3CA600R03060	6.0 X R0.3	16.00	-	60	6	
3CA600R05060	6.0 X R0.5	16.00	-	60	6	
3CA600R10060	6.0 X R1.0	16.00	-	60	6	
3CA800R05065	8.0 X R0.5	20.00	-	65	8	
3CA800R10065	8.0 X R1.0	20.00	-	65	8	
3CA1000R05070	10.0 X R0.5	25.00	-	70	10	
3CA1000R10070	10.0 X R1.0	25.00	-	70	10	
3CA1000R20070	10.0 X R2.0	25.00	-	70	10	
3CA1200R05075	12.0 X R0.5	26.00	-	75	12	
3CA1200R10075	12.0 X R1.0	26.00	-	75	12	
3CA1200R20075	12.0 X R2.0	26.00	-	75	12	
3CA1200R30075	12.0 X R3.0	26.00	-	75	12	
3CA1600R10090	16.0 X R1.0	35.00	-	90	16	
3CA1600R20090	16.0 X R2.0	35.00	-	90	16	
3CA1600R30090	16.0 X R3.0	35.00	-	90	16	

2SA Z2 Frese Cilindriche per Alluminio
2F Square End for Aluminum





Caratteristiche

- Per uso su leghe di alluminio e materiali non ferrosi
- Costruite per alta velocità di asportazione truciolo
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- For use on aluminum alloy and non-ferrous materials
- Provides higher metal removal rate
- Greater rigidity and reduced chattering through optimized geometry

2 | HX 45° | MG Carbide | Uncoated

Side | Slot | Face | C | CUTTING P. 226

Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

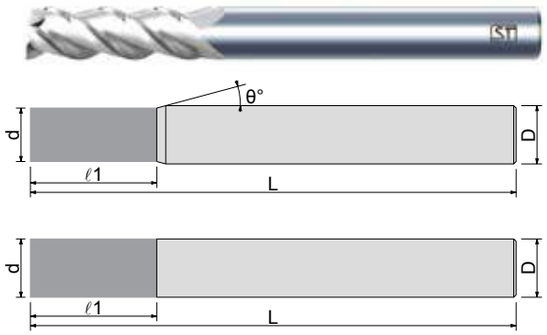
Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
							△	◎	△	

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2SA100250	1.0	2.50	15	45	6	
2SA150400	1.5	4.00	15	45	6	
2SA200600	2.0	6.00	15	50	6	
2SA2001000	2.0	10.00	15	50	6	
2SA300800	3.0	8.00	15	50	6	
2SA3001500	3.0	15.00	15	50	6	
2SA4001100	4.0	11.00	15	50	6	
2SA4001600	4.0	16.00	15	60	6	
2SA6001600	6.0	16.00	-	50	6	
2SA6002000	6.0	20.00	-	60	6	
2SA6002500	6.0	25.00	-	65	6	
2SA8002000	8.0	20.00	-	60	8	
2SA8003000	8.0	30.00	-	70	8	
2SA10002500	10.0	25.00	-	75	10	
2SA10003500	10.0	35.00	-	80	10	
2SA12003000	12.0	30.00	-	80	12	
2SA12003500	12.0	35.00	-	80	12	

3SA Z3 Frese Cilindriche per Alluminio
3F Square End for Aluminum



Caratteristiche

- Per uso su leghe di alluminio e materiali non ferrosi
- Costruite per alta velocità di asportazione truciolo
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- For use on aluminum alloy and non-ferrous materials
- Provides higher metal removal rate
- Greater rigidity and reduced chattering through optimized geometry



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material:

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
							△	◎	△	

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
3SA100200	1.0	2.00	15	45	6	
3SA100300	1.0	3.00	15	45	6	
3SA100500	1.0	5.00	15	45	6	
3SA150300	1.5	3.00	15	45	6	
3SA150500	1.5	5.00	15	45	6	
3SA150800	1.5	8.00	15	45	6	
3SA200300	2.0	3.00	15	45	6	
3SA200700	2.0	7.00	15	45	6	
3SA2001000	2.0	10.00	15	50	6	
3SA2001200	2.0	12.00	15	50	6	
3SA300400	3.0	4.00	15	45	6	
3SA300800	3.0	8.00	15	50	6	
3SA3001300	3.0	13.00	15	50	6	
3SA3001500	3.0	15.00	15	50	6	
3SA3002000	3.0	20.00	15	55	6	
3SA3002500	3.0	25.00	15	60	6	
3SA400600	4.0	6.00	15	45	6	
3SA4001100	4.0	11.00	15	50	6	
3SA4001600	4.0	16.00	15	50	6	
3SA4002000	4.0	20.00	15	55	6	
3SA4002500	4.0	25.00	15	60	6	

3SA Z3 Frese Cilindriche per Alluminio
3F Square End for Aluminum

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
3SA4003000	4.0	30.00	15	70	6	
3SA500700	5.0	7.00	15	50	6	
3SA5002000	5.0	20.00	15	55	6	
3SA5003000	5.0	30.00	15	65	6	
3SA600900	6.0	9.00	-	50	6	
3SA6001600	6.0	16.00	-	50	6	
3SA6002000	6.0	20.00	-	60	6	
3SA6002500	6.0	25.00	-	60	6	
3SA6003000	6.0	30.00	-	70	6	
3SA8001200	8.0	12.00	-	60	8	
3SA8002000	8.0	20.00	-	60	8	
3SA8003000	8.0	30.00	-	70	8	
3SA8004000	8.0	40.00	-	80	8	
3SA8005500	8.0	55.00	-	100	8	
3SA10001500	10.0	15.00	-	70	10	
3SA10002500	10.0	25.00	-	70	10	
3SA10003500	10.0	35.00	-	80	10	
3SA10005500	10.0	55.00	-	100	10	
3SA12002600	12.0	26.00	-	75	12	
3SA12003000	12.0	30.00	-	80	12	
3SA12003500	12.0	35.00	-	80	12	
3SA12005000	12.0	50.00	-	100	12	
3SA14004500	14.0	45.00	-	100	14	
3SA16006000	16.0	60.00	-	110	16	
3SA20007500	20.0	75.00	-	130	20	

SOLUTION TOOL

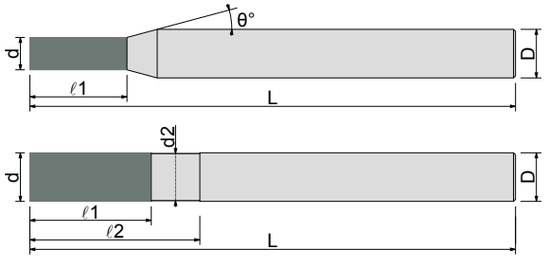


- Serie per Acciaio Inox
- For Stainless Steel

4SST Z4 Frese Cilindriche per Acciaio Inox

4F Square for Stainless Steel







Caratteristiche

- Studiata per ridurre al minimo la resistenza al taglio, migliorare la finitura superficiale del pezzo e
- massimizzare la durata dell'utensile grazie al rivestimento AlTiN
- Riduce le vibrazioni e le scheggiature grazie al piccolo smusso sull'angolo
- Progettato con passo e elica variabile (35˚~38˚)
- Azione di taglio più rapida e facile evacuazione del truciolo

Features

- Minimize friction resistance, improve workpiece surface, and maximize tool life by applying AlTiN coating
- Reduce chattering and chipping by small chamfer at corner
- Designed with variable helix angle(35˚~38˚) and unequal divided flutes for only stainless steel.
- Faster cutting action and easy chip evacuation

Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○				◎	○	○	△	

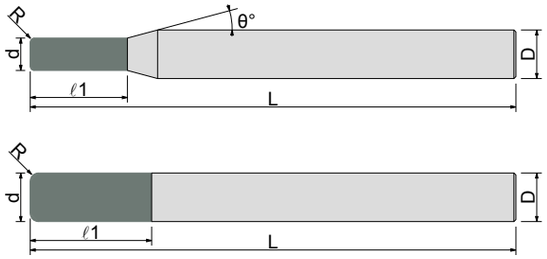
(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4SST10025050	1.0	2.50	-	-	15	50	4	
4SST15040050	1.5	4.00	-	-	15	50	4	
4SST20060050	2.0	6.00	-	-	15	50	6	
4SST25070050	2.5	7.00	-	-	15	50	6	
4SST300100060	3.0	10.00	-	-	15	60	6	
4SST400120060	4.0	12.00	-	-	15	60	6	
4SST400210060	4.0	12.00	21.00	3.80	15	60	6	
4SST500150060	5.0	15.00	-	-	15	60	6	
4SST500210060	5.0	15.00	21.00	4.80	15	60	6	
4SST600150050	6.0	15.00	-	-	-	50	6	
4SST600200070	6.0	20.00	-	-	-	70	6	
4SST600210060	6.0	15.00	21.00	5.80	-	60	6	
4SST800190060	8.0	19.00	-	-	-	60	8	
4SST800270060	8.0	19.00	27.00	7.80	-	60	8	
4SST1000220070	10.0	22.00	-	-	-	70	10	
4SST1000320070	10.0	22.00	32.00	9.80	-	70	10	
4SST1200260075	12.0	26.00	-	-	-	75	12	
4SST1200380080	12.0	26.00	38.00	11.80	-	80	12	
4SST1600340092	16.0	34.00	-	-	-	92	16	
4SST1600450090	16.0	32.00	45.00	15.80	-	90	16	

4CST Z4 Frese Toriche per Acciaio Inox

4F Corner Radius for Stainless Steel







Caratteristiche

- Studiata per ridurre al minimo la resistenza al taglio, migliorare la finitura superficiale del pezzo e
- massimizzare la durata dell'utensile grazie al rivestimento AlTiN
- Riduce le vibrazioni e le scheggiature grazie al piccolo smusso sull'angolo
- Progettato con passo e elica variabile (35˚~38˚)
- Azione di taglio più rapida e facile evacuazione del truciolo

Features

- Minimize friction resistance, improve workpiece surface, and maximize tool life by applying AlTiN coating
- Reduce chattering and chipping by small chamfer at corner
- Designed with variable helix angle(35˚~38˚) and unequal divided flutes for only stainless steel.
- Faster cutting action and easy chip evacuation

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○				◎	○	○	△	

(Unit: mm)

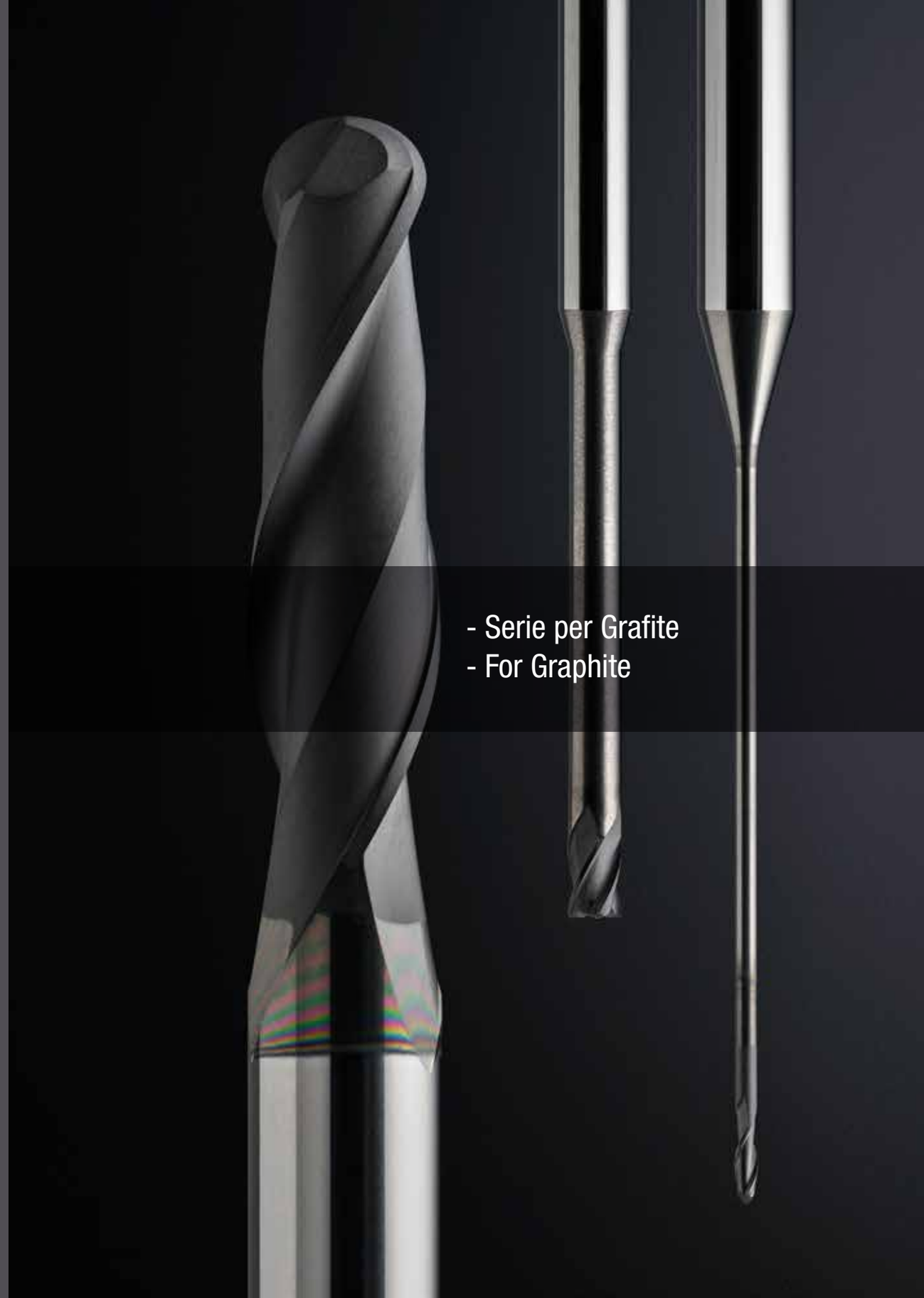
Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CST100R010S4	1.0 X R0.1	2.50	15	50	4	
4CST100R020S4	1.0 X R0.2	2.50	15	50	4	
4CST150R010S4	1.5 X R0.1	4.00	15	50	4	
4CST150R020S4	1.5 X R0.2	4.00	15	50	4	
4CST200R010S4	2.0 X R0.1	6.00	15	50	4	
4CST200R020S4	2.0 X R0.2	6.00	15	50	4	
4CST250R020S4	2.5 X R0.2	7.00	15	50	4	
4CST300R020S6	3.0 X R0.2	10.00	15	60	6	
4CST300R050S6	3.0 X R0.5	10.00	15	60	6	
4CST400R020S6	4.0 X R0.2	12.00	15	60	6	
4CST400R050S6	4.0 X R0.5	12.00	15	60	6	
4CST500R020S6	5.0 X R0.2	15.00	15	60	6	
4CST500R050S6	5.0 X R0.5	15.00	15	60	6	
4CST600R030S6	6.0 X R0.3	15.00	-	60	6	
4CST600R050S6	6.0 X R0.5	15.00	-	60	6	
4CST600R100S6	6.0 X R1.0	15.00	-	60	6	
4CST800R030S8	8.0 X R0.3	20.00	-	80	8	
4CST800R050S8	8.0 X R0.5	20.00	-	80	8	
4CST800R100S8	8.0 X R1.0	20.00	-	80	8	
4CST1000R030S10	10.0 X R0.3	25.00	-	80	10	

4CST Z4 Frese Toriche per Acciaio Inox
4F Corner Radius for Stainless Steel

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CST1000R050S10	10.0 X R0.5	25.00	-	80	10	
4CST1000R100S10	10.0 X R1.0	25.00	-	80	10	
4CST1000R150S10	10.0 X R1.5	25.00	-	80	10	
4CST1000R200S10	10.0 X R2.0	25.00	-	80	10	
4CST1200R050S12	12.0 X R0.5	30.00	-	80	12	
4CST1200R100S12	12.0 X R1.0	30.00	-	80	12	
4CST1200R150S12	12.0 X R1.5	30.00	-	80	12	
4CST1200R200S12	12.0 X R2.0	30.00	-	80	12	

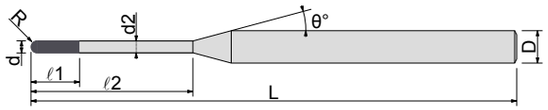
SOLUTION TOOL



- Serie per Grafite
- For Graphite

2BD Z2 Frese Sferiche Rastremate per Grafite - Rivestimento Diamantato
2F Ball End-Diamond Coated







Caratteristiche

- Rivestimento diamantato per una migliore resistenza all'abrasione e superiore velocità di avanzamento
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- Diamond coated for improved abrasion resistance and higher feed rates
- Greater rigidity and reduced chattering through optimized geometry



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
									△	◎

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BD05020045	0.5 X R0.25	2.00	-	-	15	45	4	
2BD05030045	0.5 X R0.25	2.00	3.00	0.475	15	45	4	
2BD05040045	0.5 X R0.25	2.00	4.00	0.475	15	45	4	
2BD05050045	0.5 X R0.25	2.00	5.00	0.475	15	45	4	
2BD05060045	0.5 X R0.25	2.00	6.00	0.475	15	45	4	
2BD05080045	0.5 X R0.25	2.00	8.00	0.475	15	45	4	
2BD06020045	0.6 X R0.3	2.00	-	-	15	45	4	
2BD06030045	0.6 X R0.3	2.00	3.00	0.57	15	45	4	
2BD06040045	0.6 X R0.3	2.00	4.00	0.57	15	45	4	
2BD06050045	0.6 X R0.3	2.00	5.00	0.57	15	45	4	
2BD06060045	0.6 X R0.3	2.00	6.00	0.57	15	45	4	
2BD06080045	0.6 X R0.3	2.00	8.00	0.57	15	45	4	
2BD060100045	0.6 X R0.3	2.00	10.00	0.57	15	45	4	
2BD060120045	0.6 X R0.3	2.00	12.00	0.57	15	45	4	
2BD08030045	0.8 X R0.4	3.00	-	-	15	45	4	
2BD08040045	0.8 X R0.4	3.00	4.00	0.77	15	45	4	
2BD08050045	0.8 X R0.4	3.00	5.00	0.77	15	45	4	
2BD08060045	0.8 X R0.4	3.00	6.00	0.77	15	45	4	
2BD08080045	0.8 X R0.4	3.00	8.00	0.77	15	45	4	
2BD080100045	0.8 X R0.4	3.00	10.00	0.77	15	45	4	
2BD080150045	0.8 X R0.4	3.00	15.00	0.77	15	45	4	

2BD Z2 Frese Sferiche Rastremate per Grafite - Rivestimento Diamantato
2F Ball End-Diamond Coated

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BD080200045	0.8 X R0.4	3.00	20.00	0.77	15	50	4	
2BD10030060	1.0 X R0.5	3.00	-	-	15	60	4	
2BD10040060	1.0 X R0.5	3.00	4.00	0.96	15	60	4	
2BD10050060	1.0 X R0.5	3.00	5.00	0.96	15	60	4	
2BD10060060	1.0 X R0.5	3.00	6.00	0.96	15	60	4	
2BD10080060	1.0 X R0.5	3.00	8.00	0.96	15	60	4	
2BD100100060	1.0 X R0.5	3.00	10.00	0.96	15	60	4	
2BD100120060	1.0 X R0.5	3.00	12.00	0.96	15	60	4	
2BD100150060	1.0 X R0.5	3.00	15.00	0.96	15	60	4	
2BD100200060	1.0 X R0.5	3.00	20.00	0.96	15	60	4	
2BD100250080	1.0 X R0.5	3.00	25.00	0.96	15	80	4	
2BD100300080	1.0 X R0.5	3.00	30.00	0.96	15	80	4	
2BD100350080	1.0 X R0.5	3.00	35.00	0.96	15	80	4	
2BD100400080	1.0 X R0.5	3.00	40.00	0.96	15	80	4	
2BD15060060	1.5 X R0.75	6.00	-	-	15	60	4	
2BD15080060	1.5 X R0.75	6.00	8.00	1.46	15	60	4	
2BD150100060	1.5 X R0.75	6.00	10.00	1.46	15	60	4	
2BD150120060	1.5 X R0.75	6.00	12.00	1.46	15	60	4	
2BD150150060	1.5 X R0.75	6.00	15.00	1.46	15	60	4	
2BD150200060	1.5 X R0.75	6.00	20.00	1.46	15	60	4	
2BD150250080	1.5 X R0.75	6.00	25.00	1.46	15	80	4	
2BD150300080	1.5 X R0.75	6.00	30.00	1.46	15	80	4	
2BD150350080	1.5 X R0.75	6.00	35.00	1.46	15	80	4	
2BD150400080	1.5 X R0.75	6.00	40.00	1.46	15	80	4	
2BD20080060	2.0 X R1.0	8.00	-	-	15	60	4	
2BD200100080	2.0 X R1.0	8.00	10.00	1.95	15	80	4	
2BD200150080	2.0 X R1.0	8.00	15.00	1.95	15	80	4	
2BD200200080	2.0 X R1.0	8.00	20.00	1.95	15	80	4	
2BD200250080	2.0 X R1.0	8.00	25.00	1.95	15	80	4	
2BD200300080	2.0 X R1.0	8.00	30.00	1.95	15	80	4	
2BD200350080	2.0 X R1.0	8.00	35.00	1.95	15	80	4	
2BD200400080	2.0 X R1.0	8.00	40.00	1.95	15	80	4	
2BD2004500100	2.0 X R1.0	8.00	45.00	1.95	15	100	4	
2BD2005000100	2.0 X R1.0	8.00	50.00	1.95	15	100	4	
2BD2006000100	2.0 X R1.0	8.00	60.00	1.95	15	100	4	
2BD3002000100	3.0 X R1.5	12.00	20.00	2.89	15	100	4	
2BD3002500100	3.0 X R1.5	12.00	25.00	2.89	15	100	4	
2BD3003000100	3.0 X R1.5	12.00	30.00	2.89	15	100	4	
2BD3003500100	3.0 X R1.5	12.00	35.00	2.89	15	100	4	
2BD3004000100	3.0 X R1.5	12.00	40.00	2.89	15	100	4	
2BD3005000100	3.0 X R1.5	12.00	50.00	2.89	15	100	4	
2BD3006000100	3.0 X R1.5	12.00	60.00	2.89	15	100	4	
2BD400160060	4.0 X R2.0	16.00	-	-	-	60	4	
2BD400160080	4.0 X R2.0	16.00	-	-	-	80	4	
2BD400300080	4.0 X R2.0	16.00	30.00	3.86	-	80	4	
2BD4001600100	4.0 X R2.0	16.00	-	-	-	100	4	

2BD Z2 Frese Sferiche Rastremate per Grafite - Rivestimento Diamantato

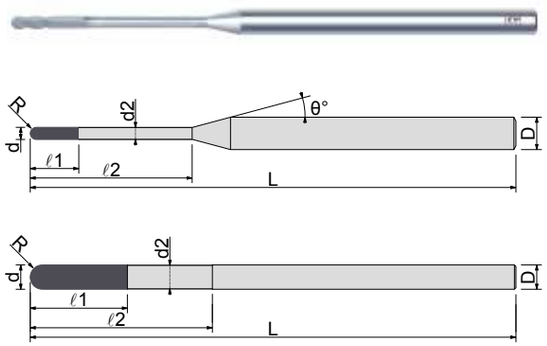
2F Ball End-Diamond Coated

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BD4004000100	4.0 X R2.0	16.00	40.00	3.86	-	100	4	
2BD4001600130	4.0 X R2.0	16.00	-	-	-	130	4	
2BD4004000130	4.0 X R2.0	16.00	40.00	3.86	-	130	4	
2BD4001600150	4.0 X R2.0	16.00	-	-	-	150	4	
2BD4005000150	4.0 X R2.0	16.00	50.00	3.86	-	150	4	
2BD5002000105	5.0 X R2.5	16.00	20.00	4.83	15	105	6	
2BD600250075	6.0 X R3.0	25.00	-	-	-	75	6	
2BD6002500105	6.0 X R3.0	25.00	-	-	-	105	6	
2BD6004000105	6.0 X R3.0	25.00	40.00	5.80	-	105	6	
2BD6002500150	6.0 X R3.0	25.00	-	-	-	150	6	
2BD6005000150	6.0 X R3.0	25.00	50.00	5.80	-	150	6	
2BD8003000105	8.0 X R4.0	30.00	-	-	-	105	8	
2BD8003500150	8.0 X R4.0	35.00	-	-	-	150	8	
2BD10003500105	10.0 X R5.0	35.00	-	-	-	105	10	
2BD10004000150	10.0 X R5.0	40.00	-	-	-	150	10	
2BD12005000150	12.0 X R6.0	50.00	-	-	-	150	12	

4BD Z4 Frese Sferiche Rastremate per Grafite - Rivestimento Diamantato

4F Ball End-Diamond Coated



Caratteristiche

- Rivestimento diamantato per una migliore resistenza all'abrasione e superiore velocità di avanzamento
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- Diamond coated for improved abrasion resistance and higher feed rates
- Greater rigidity and reduced chattering through optimized geometry

4 | HX 30° | MG Carbide | Diamond Coated | 3D | CUTTING P.230

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
									△	◎

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4BD15045060	1.5 X R0.75	4.50	-	-	15	60	4	
4BD150100060	1.5 X R0.75	4.50	10.00	1.46	15	60	4	
4BD150150060	1.5 X R0.75	4.50	15.00	1.46	15	60	4	
4BD150200060	1.5 X R0.75	4.50	20.00	1.46	15	60	4	
4BD150250060	1.5 X R0.75	4.50	25.00	1.46	15	60	4	
4BD20060060	2.0 X R1.0	6.00	-	-	15	60	4	
4BD200100080	2.0 X R1.0	6.00	10.00	1.95	15	80	4	
4BD200200080	2.0 X R1.0	6.00	20.00	1.95	15	80	4	
4BD200300080	2.0 X R1.0	6.00	30.00	1.95	15	80	4	
4BD200400080	2.0 X R1.0	6.00	40.00	1.95	15	80	4	
4BD30080060	3.0 X R1.5	8.00	-	-	15	60	4	
4BD3001500100	3.0 X R1.5	8.00	15.00	2.89	15	100	4	
4BD3002000100	3.0 X R1.5	8.00	20.00	2.89	15	100	4	
4BD3003000100	3.0 X R1.5	8.00	30.00	2.89	15	100	4	
4BD3004000100	3.0 X R1.5	8.00	40.00	2.89	15	100	4	
4BD3005000100	3.0 X R1.5	8.00	50.00	2.89	15	100	4	
4BD400160060	4.0 X R2.0	16.00	-	-	-	60	4	
4BD400160080	4.0 X R2.0	16.00	-	-	-	80	4	
4BD4001600100	4.0 X R2.0	16.00	-	-	-	100	4	
4BD4001600130	4.0 X R2.0	16.00	-	-	-	130	4	
4BD600250075	6.0 X R3.0	16.00	25.00	5.80	-	75	6	

4BD Z4 Frese Sferiche Rastremate per Grafite - Rivestimento Diamantato

4F Ball End-Diamond Coated

(Unit: mm)

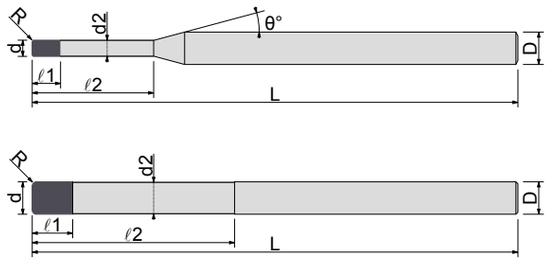
Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4BD6002500105	6.0 X R3.0	16.00	25.00	5.80	-	105	6	
4BD6003000150	6.0 X R3.0	16.00	30.00	5.80	-	150	6	
4BD800300075	8.0 X R4.0	20.00	30.00	7.80	-	75	8	
4BD8003000105	8.0 X R4.0	20.00	30.00	7.80	-	105	8	
4BD8003500150	8.0 X R4.0	20.00	35.00	7.80	-	150	8	
4BD8004000200	8.0 X R4.0	20.00	40.00	7.80	-	200	8	
4BD1000350075	10.0 X R5.0	22.00	35.00	9.80	-	75	10	
4BD10003500105	10.0 X R5.0	22.00	35.00	9.80	-	105	10	
4BD10004000160	10.0 X R5.0	22.00	40.00	9.80	-	160	10	
4BD10005000200	10.0 X R5.0	22.00	50.00	9.80	-	200	10	
4BD12005000105	12.0 X R6.0	25.00	50.00	11.80	-	105	12	
4BD12005000150	12.0 X R6.0	25.00	50.00	11.80	-	150	12	
4BD12006000200	12.0 X R6.0	25.00	60.00	11.80	-	200	12	

2CD Z2 Frese Toriche Rastremate per Grafite - Rivestimento Diamantato

NEW

2F Corner Radius-Diamond Coating







Caratteristiche

- Rivestimento diamantato per una migliore resistenza all'abrasione e superiore velocità di avanzamento
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- Diamond coated for improved abrasion resistance and higher feed rates
- Greater rigidity and reduced chattering through optimized geometry

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material:

◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

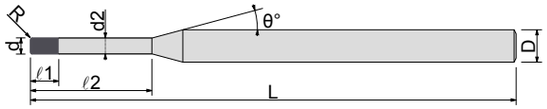
Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
									△	◎

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CD050R00550060	0.5 X R0.05	1.00	5.00	0.475	15	60	4	
2CD060R00590060	0.6 X R0.05	1.20	9.00	0.57	15	60	4	
2CD080R005100060	0.8 X R0.05	1.60	10.00	0.77	15	60	4	
2CD100R010100060	1.0 X R0.1	2.00	10.00	0.96	15	60	4	
2CD100R010150060	1.0 X R0.1	2.00	15.00	0.96	15	60	4	
2CD100R010200060	1.0 X R0.1	2.00	20.00	0.96	15	60	4	
2CD100R010250060	1.0 X R0.1	2.00	25.00	0.96	15	60	4	
2CD150R010150060	1.5 X R0.1	3.00	15.00	1.46	15	60	4	
2CD200R020150060	2.0 X R0.2	3.50	15.00	1.95	15	60	4	
2CD300R020300065	3.0 X R0.2	4.00	30.00	2.89	15	65	6	
2CD300R030300080	3.0 X R0.3	4.00	30.00	2.89	15	80	6	
2CD300R030600080	3.0 X R0.3	4.00	60.00	2.89	15	80	6	
2CD400R050250060	4.0 X R0.5	5.00	25.00	3.86	-	60	4	
2CD400R050250080	4.0 X R0.5	5.00	25.00	3.86	-	80	4	
2CD400R050350060	4.0 X R0.5	5.00	35.00	3.86	-	60	4	
2CD400R050350080	4.0 X R0.5	5.00	35.00	3.86	-	80	4	

4CD Z4 Frese Toriche Rastremate per Grafite - Rivestimento Diamantato
4F Corner Radius-Diamond Coating









Caratteristiche

- Rivestimento diamantato per una migliore resistenza all'abrasione e superiore velocità di avanzamento
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- Diamond coated for improved abrasion resistance and higher feed rates
- Greater rigidity and reduced chattering through optimized geometry

Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
									△	◎

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CD200R00535060	2.0 X R0.05	3.50	-	-	15	60	4	
4CD200R00560060	2.0 X R0.05	3.50	6.00	1.95	15	60	4	
4CD200R005120060	2.0 X R0.05	3.50	12.00	1.95	15	60	4	
4CD200R005180060	2.0 X R0.05	3.50	18.00	1.95	15	60	4	
4CD200R005250080	2.0 X R0.05	3.50	25.00	1.95	15	80	4	
4CD200R005300080	2.0 X R0.05	3.50	30.00	1.95	15	80	4	
4CD200R02035060	2.0 X R0.2	3.50	-	-	15	60	4	
4CD200R02060060	2.0 X R0.2	3.50	6.00	1.95	15	60	4	
4CD200R020120060	2.0 X R0.2	3.50	12.00	1.95	15	60	4	
4CD200R020180060	2.0 X R0.2	3.50	18.00	1.95	15	60	4	
4CD200R020250080	2.0 X R0.2	3.50	25.00	1.95	15	80	4	
4CD200R020300080	2.0 X R0.2	3.50	30.00	1.95	15	80	4	
4CD200R03035060	2.0 X R0.3	3.50	-	-	15	60	4	
4CD200R03060060	2.0 X R0.3	3.50	6.00	1.95	15	60	4	
4CD200R030120060	2.0 X R0.3	3.50	12.00	1.95	15	60	4	
4CD200R030180060	2.0 X R0.3	3.50	18.00	1.95	15	60	4	
4CD200R030250080	2.0 X R0.3	3.50	25.00	1.95	15	80	4	
4CD200R030300080	2.0 X R0.3	3.50	30.00	1.95	15	80	4	
4CD200R05035060	2.0 X R0.5	3.50	-	-	15	60	4	
4CD200R05060060	2.0 X R0.5	3.50	6.00	1.95	15	60	4	

4CD Z4 Frese Toriche Rastremate per Grafite - Rivestimento Diamantato
4F Corner Radius-Diamond Coating

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CD200R050120060	2.0 X R0.5	3.50	12.00	1.95	15	60	4	
4CD200R050180060	2.0 X R0.5	3.50	18.00	1.95	15	60	4	
4CD200R050250080	2.0 X R0.5	3.50	25.00	1.95	15	80	4	
4CD200R050300080	2.0 X R0.5	3.50	30.00	1.95	15	80	4	
4CD300R00540080	3.0 X R0.05	4.00	-	-	15	80	4	
4CD300R005100080	3.0 X R0.05	4.00	10.00	2.89	15	80	4	
4CD300R005200080	3.0 X R0.05	4.00	20.00	2.89	15	80	4	
4CD300R005300080	3.0 X R0.05	4.00	30.00	2.89	15	80	4	
4CD300R005400080	3.0 X R0.05	4.00	40.00	2.89	15	80	4	
4CD300R02040080	3.0 X R0.2	4.00	-	-	15	80	4	
4CD300R020100080	3.0 X R0.2	4.00	10.00	2.89	15	80	4	
4CD300R020200080	3.0 X R0.2	4.00	20.00	2.89	15	80	4	
4CD300R020300080	3.0 X R0.2	4.00	30.00	2.89	15	80	4	
4CD300R020400080	3.0 X R0.2	4.00	40.00	2.89	15	80	4	
4CD300R03040080	3.0 X R0.3	4.00	-	-	15	80	4	
4CD300R030100080	3.0 X R0.3	4.00	10.00	2.89	15	80	4	
4CD300R030200080	3.0 X R0.3	4.00	20.00	2.89	15	80	4	
4CD300R030300080	3.0 X R0.3	4.00	30.00	2.89	15	80	4	
4CD300R030400080	3.0 X R0.3	4.00	40.00	2.89	15	80	4	
4CD300R05040080	3.0 X R0.5	4.00	-	-	15	80	4	
4CD300R050100080	3.0 X R0.5	4.00	10.00	2.89	15	80	4	
4CD300R050200080	3.0 X R0.5	4.00	20.00	2.89	15	80	4	
4CD300R050300080	3.0 X R0.5	4.00	30.00	2.89	15	80	4	
4CD300R050400080	3.0 X R0.5	4.00	40.00	2.89	15	80	4	
4CD300R10040080	3.0 X R1.0	4.00	-	-	15	80	4	
4CD300R100100080	3.0 X R1.0	4.00	10.00	2.89	15	80	4	
4CD300R100200080	3.0 X R1.0	4.00	20.00	2.89	15	80	4	
4CD300R100300080	3.0 X R1.0	4.00	30.00	2.89	15	80	4	
4CD300R100400080	3.0 X R1.0	4.00	40.00	2.89	15	80	4	
4CD400R0302000100	4.0 X R0.3	6.00	20.00	3.86	-	100	4	
4CD400R0502000100	4.0 X R0.5	6.00	20.00	3.86	-	100	4	
4CD400R1002000100	4.0 X R1.0	6.00	20.00	3.86	-	100	4	
4CD600R0302500110	6.0 X R0.3	9.00	25.00	5.80	-	110	6	
4CD600R0502500110	6.0 X R0.5	9.00	25.00	5.80	-	110	6	
4CD600R0503000150	6.0 X R0.5	9.00	30.00	5.80	-	150	6	
4CD600R1002500110	6.0 X R1.0	9.00	25.00	5.80	-	110	6	
4CD600R1003000150	6.0 X R1.0	9.00	30.00	5.80	-	150	6	
4CD800R0303000110	8.0 X R0.3	12.00	30.00	7.80	-	110	8	
4CD800R0503000110	8.0 X R0.5	12.00	30.00	7.80	-	110	8	
4CD800R0505000150	8.0 X R0.5	12.00	50.00	7.80	-	150	8	
4CD800R1003000110	8.0 X R1.0	12.00	30.00	7.80	-	110	8	
4CD800R1005000150	8.0 X R1.0	12.00	50.00	7.80	-	150	8	
4CD1000R0503500110	10.0 X R0.5	15.00	35.00	9.80	-	110	10	
4CD1000R0504500160	10.0 X R0.5	15.00	45.00	9.80	-	160	10	
4CD1000R1003500110	10.0 X R1.0	15.00	35.00	9.80	-	110	10	

4CD Z4 Frese Toriche Rastremate per Grafite - Rivestimento Diamantato

4F Corner Radius-Diamond Coating

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia. d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4CD1000R1004500160	10.0 X R1.0	15.00	45.00	9.80	-	160	10	
4CD1200R0504000110	12.0 X R0.5	18.00	40.00	11.80	-	110	12	
4CD1200R0506000160	12.0 X R0.5	18.00	60.00	11.80	-	160	12	
4CD1200R1004000110	12.0 X R1.0	18.00	40.00	11.80	-	110	12	
4CD1200R1006000160	12.0 X R1.0	18.00	60.00	11.80	-	160	12	

SOLUTION TOOL

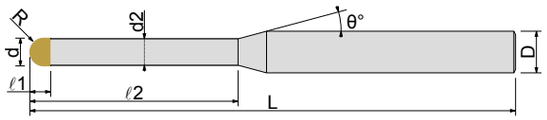


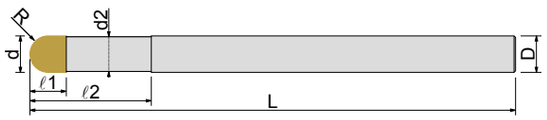
2NBC Z2 Frese Sferiche Rastremate per Rame

2F Necked Ball End for Copper

NEW







Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Rivestimento AlTiN per una migliore resistenza all'usura

Features

- Greater rigidity and reduced chattering through optimized geometry
- AlTiN coating for improved wear resistance



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
△		△				△	◎	△	△	

(Unit: mm)

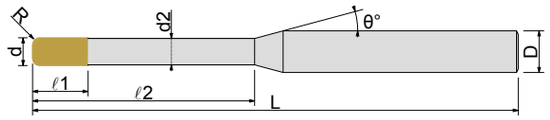
Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2NBC020100	0.2 X R0.1	0.15	1.00	0.18	15	45	4	
2NBC030100	0.3 X R0.15	0.20	1.00	0.28	15	45	4	
2NBC040200	0.4 X R0.2	0.30	2.00	0.37	15	45	4	
2NBC050200	0.5 X R0.25	0.35	2.00	0.46	15	45	4	
2NBC050400	0.5 X R0.25	0.35	4.00	0.46	15	45	4	
2NBC060200	0.6 X R0.3	0.45	2.00	0.56	15	45	4	
2NBC060400	0.6 X R0.3	0.45	4.00	0.56	15	45	4	
2NBC080300	0.8 X R0.4	0.60	3.00	0.76	15	45	4	
2NBC080600	0.8 X R0.4	0.60	6.00	0.76	15	45	4	
2NBC100600	1.0 X R0.5	0.75	6.00	0.95	15	45	4	
2NBC1001000	1.0 X R0.5	0.75	10.00	0.95	15	45	4	
2NBC1001200	1.0 X R0.5	0.75	12.00	0.95	15	45	4	
2NBC150600	1.5 X R0.75	1.10	6.00	1.45	15	45	4	
2NBC1501200	1.5 X R0.75	1.10	12.00	1.45	15	45	4	
2NBC1501800	1.5 X R0.75	1.10	18.00	1.45	15	45	4	
2NBC2001000	2.0 X R1.0	1.50	10.00	1.94	15	45	4	
2NBC2001200	2.0 X R1.0	1.50	12.00	1.94	15	45	4	
2NBC2001600	2.0 X R1.0	1.50	16.00	1.94	15	50	4	
2NBC2002000	2.0 X R1.0	1.50	20.00	1.94	15	50	4	
2NBC2002500	2.0 X R1.0	1.50	25.00	1.94	15	60	4	
2NBC3001000	3.0 X R1.5	2.50	10.00	2.85	15	50	6	
2NBC3001500	3.0 X R1.5	2.50	15.00	2.85	15	60	6	
2NBC3002000	3.0 X R1.5	2.50	20.00	2.85	15	60	6	
2NBC3002500	3.0 X R1.5	2.50	25.00	2.85	15	60	6	
2NBC4001500	4.0 X R2.0	3.00	15.00	3.80	15	60	6	
2NBC4002000	4.0 X R2.0	3.00	20.00	3.80	15	60	6	
2NBC4002500	4.0 X R2.0	3.00	25.00	3.80	15	60	6	
2NBC4003000	4.0 X R2.0	3.00	30.00	3.80	15	70	6	
2NBC6002000	6.0 X R3.0	6.00	20.00	5.70	-	80	6	

2NCC Z2 Frese Toriche Rastremate per Rame

2F Necked Corner Radius for Copper

NEW







Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Rivestimento AlTiN per una migliore resistenza all'usura

Features

- Greater rigidity and reduced chattering through optimized geometry
- AlTiN coating for improved wear resistance



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	±0.01

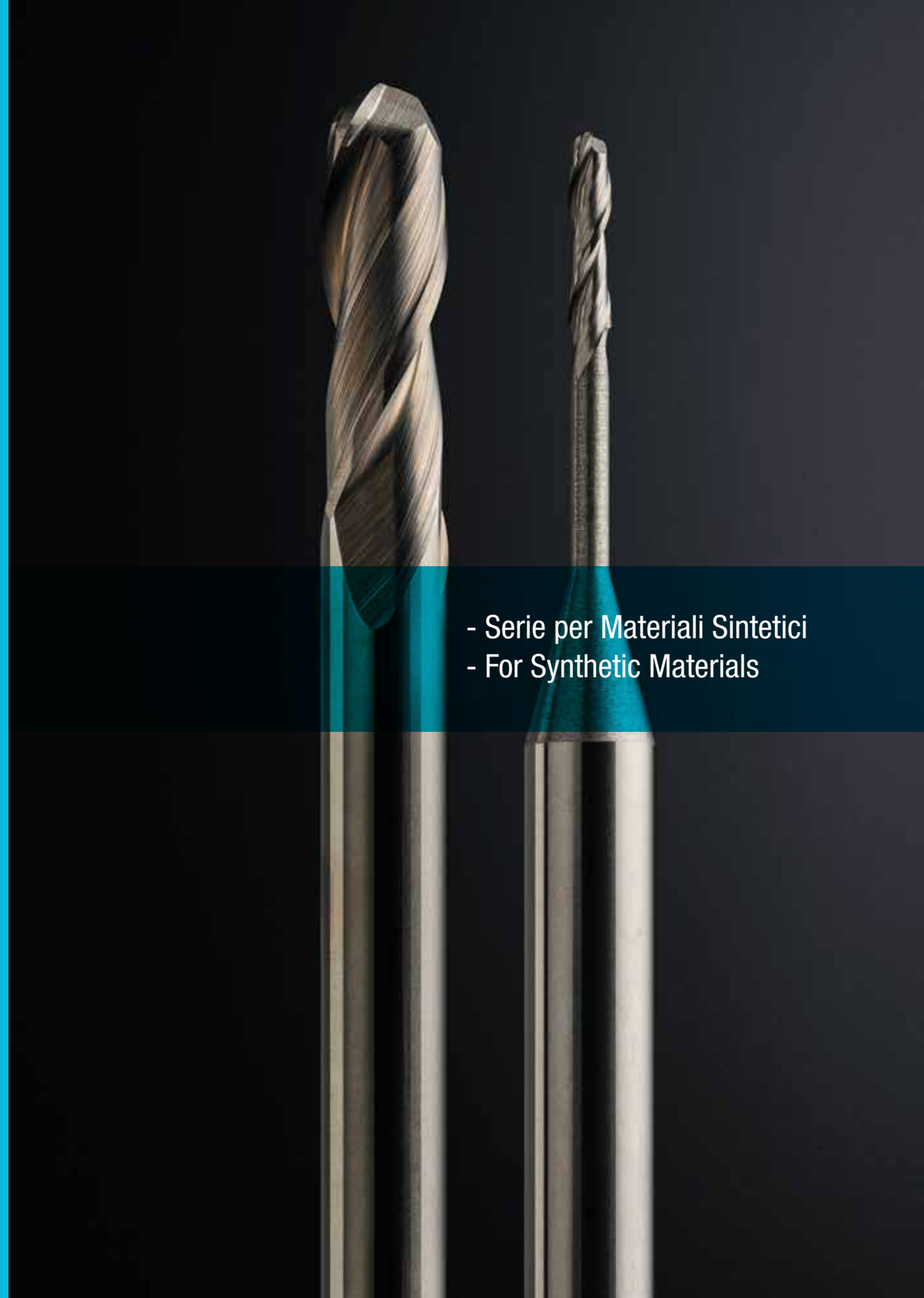
Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
△		△				△	◎	△		

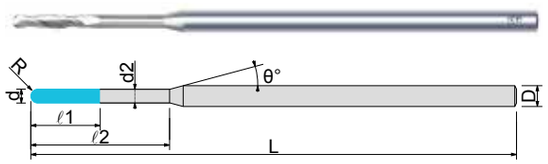
(Unit: mm)

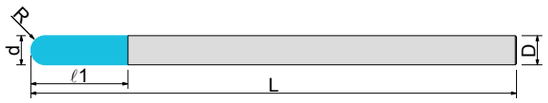
Codice Product No.	Diametro x Raggio Cutting Dia. X Corner R (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2NCC020R005100	0.2 X R0.05	0.40	1.00	0.18	15	45	4	
2NCC030R005150	0.3 X R0.05	0.60	1.50	0.28	15	45	4	
2NCC040R005200	0.4 X R0.05	0.80	2.00	0.37	15	45	4	
2NCC050R005200	0.5 X R0.05	1.00	2.00	0.46	15	45	4	
2NCC100R005300	1.0 X R0.05	2.00	3.00	0.95	15	45	4	
2NCC100R010300	1.0 X R0.1	2.00	3.00	0.95	15	45	4	
2NCC100R020500	1.0 X R0.2	2.00	5.00	0.95	15	45	4	
2NCC100R0201000	1.0 X R0.2	2.00	10.00	0.95	15	45	4	
2NCC150R0101000	1.5 X R0.1	3.00	10.00	1.45	15	45	4	
2NCC150R0201000	1.5 X R0.2	3.00	10.00	1.45	15	45	4	
2NCC150R0302000	1.5 X R0.3	3.00	20.00	1.45	15	45	4	
2NCC150R0502000	1.5 X R0.5	3.00	20.00	1.45	15	45	4	
2NCC200R0101500	2.0 X R0.1	4.00	15.00	1.94	15	50	4	
2NCC200R0301500	2.0 X R0.3	4.00	15.00	1.94	15	50	4	
2NCC200R0302000	2.0 X R0.3	4.00	20.00	1.94	15	50	4	
2NCC200R0502000	2.0 X R0.5	4.00	20.00	1.94	15	50	4	
2NCC300R0101200	3.0 X R0.1	6.00	12.00	2.85	15	50	6	
2NCC300R0201200	3.0 X R0.2	6.00	12.00	2.85	15	50	6	
2NCC300R0501200	3.0 X R0.5	6.00	12.00	2.85	15	50	6	
2NCC300R0503000	3.0 X R0.5	6.00	30.00	2.85	15	70	6	
2NCC400R0102400	4.0 X R0.1	8.00	24.00	3.80	15	60	6	
2NCC400R0202400	4.0 X R0.2	8.00	24.00	3.80	15	60	6	
2NCC400R0501600	4.0 X R0.5	8.00	16.00	3.80	15	60	6	
2NCC400R0502400	4.0 X R0.5	8.00	24.00	3.80	15	60	6	
2NCC400R0503200	4.0 X R0.5	8.00	32.00	3.80	15	70	6	
2NCC400R1002400	4.0 X R1.0	8.00	24.00	3.80	15	60	6	
2NCC400R1003200	4.0 X R1.0	8.00	32.00	3.80	15	70	6	
2NCC600R0202400	6.0 X R0.2	12.00	24.00	5.80	-	60	6	
2NCC600R0503000	6.0 X R0.5	12.00	30.00	5.80	-	70	6	

SOLUTION TOOL



2BY Z2 Frese Sferiche Rastremate per Materiali Sintetici
2F Ball End for Synthetic Materials





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- Greater rigidity and reduced chattering through optimized geometry



Tolerance :

Cutting Dia.	Radius
d≤6: 0/-0.01 d>6: 0/-0.015	R≤0.25: 0/-0.005 R>0.25: 0/-0.01

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
								△	◎	△

(Unit: mm)

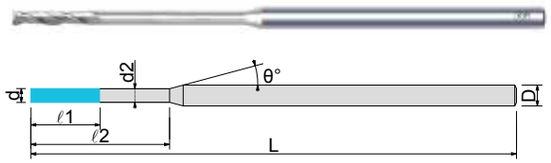
Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BY03007045	0.3 X R0.15	0.70	-	-	15	45	3	
2BY03018045	0.3 X R0.15	1.80	-	-	15	45	3	
2BY05010050	0.5 X R0.25	1.00	-	-	15	50	3	
2BY05020050	0.5 X R0.25	2.00	-	-	15	50	3	
2BY10050060	1.0 X R0.5	5.00	-	-	15	60	3	
2BY100100060	1.0 X R0.5	5.00	10.00	0.96	15	60	3	
2BY100150060	1.0 X R0.5	5.00	15.00	0.96	15	60	3	
2BY100200070	1.0 X R0.5	5.00	20.00	0.96	15	70	3	
2BY150100060	1.5 X R0.75	10.00	-	-	15	60	3	
2BY150150070	1.5 X R0.75	10.00	15.00	1.46	15	70	3	
2BY150200070	1.5 X R0.75	10.00	20.00	1.46	15	70	3	
2BY200100060	2.0 X R1.0	10.00	-	-	15	60	3	
2BY200150060	2.0 X R1.0	10.00	15.00	1.95	15	60	3	
2BY200200070	2.0 X R1.0	10.00	20.00	1.95	15	70	3	
2BY250100060	2.5 X R1.25	10.00	-	-	15	60	3	
2BY300100060	3.0 X R1.5	10.00	-	-	-	60	3	
2BY300150060	3.0 X R1.5	15.00	-	-	-	60	3	
2BY300200080	3.0 X R1.5	20.00	-	-	-	80	3	
2BY400200080	4.0 X R2.0	20.00	-	-	-	80	4	
2BY4002000100	4.0 X R2.0	20.00	-	-	-	100	4	

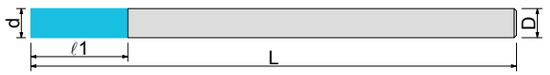
2BY Z2 Frese Sferiche Rastremate per Materiali Sintetici
2F Ball End for Synthetic Materials

(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2BY4002000130	4.0 X R2.0	20.00	-	-	-	130	4	
2BY5003000100	5.0 X R2.5	30.00	-	-	15	100	6	
2BY6002000100	6.0 X R3.0	20.00	-	-	-	100	6	
2BY600300080	6.0 X R3.0	30.00	-	-	-	80	6	
2BY6003000100	6.0 X R3.0	30.00	-	-	-	100	6	
2BY6004000100	6.0 X R3.0	40.00	-	-	-	100	6	
2BY6004000120	6.0 X R3.0	40.00	-	-	-	120	6	
2BY6004000150	6.0 X R3.0	40.00	-	-	-	150	6	
2BY8004500120	8.0 X R4.0	45.00	-	-	-	120	8	
2BY8004500150	8.0 X R4.0	45.00	-	-	-	150	8	
2BY10005000120	10.0 X R5.0	50.00	-	-	-	120	10	
2BY10005000150	10.0 X R5.0	50.00	-	-	-	150	10	
2BY12005000130	12.0 X R6.0	50.00	-	-	-	130	12	
2BY12005000150	12.0 X R6.0	50.00	-	-	-	150	12	

2SY Z2 Frese Cilindriche Rastremate per Materiali Sintetici
2F Square End for Synthetic Materials





Caratteristiche

- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria

Features

- Greater rigidity and reduced chattering through optimized geometry



Tolerance :

Cutting Dia.
d≤6: 0/-0.01 d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
								△	◎	△

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2SY03007045	0.3	0.70	-	-	15	45	3	
2SY03018045	0.3	1.80	-	-	15	45	3	
2SY05010050	0.5	1.00	-	-	15	50	3	
2SY05050050	0.5	1.50	5.00	0.475	15	50	3	
2SY05020050	0.5	2.00	-	-	15	50	3	
2SY07050050	0.7	1.50	5.00	0.67	15	50	3	
2SY10050060	1.0	5.00	-	-	15	60	3	
2SY100100060	1.0	5.00	10.00	0.96	15	60	3	
2SY100150060	1.0	5.00	15.00	0.96	15	60	3	
2SY100200070	1.0	5.00	20.00	0.96	15	70	3	
2SY150100060	1.5	10.00	-	-	15	60	3	
2SY150150070	1.5	10.00	15.00	1.46	15	70	3	
2SY150200070	1.5	10.00	20.00	1.46	15	70	3	
2SY200100060	2.0	10.00	-	-	15	60	3	
2SY200150070	2.0	10.00	15.00	1.95	15	70	3	
2SY200200070	2.0	10.00	20.00	1.95	15	70	3	
2SY250100060	2.5	10.00	-	-	15	60	3	
2SY300100050	3.0	10.00	-	-	-	50	3	
2SY300150060	3.0	15.00	-	-	-	60	3	
2SY300200080	3.0	20.00	-	-	-	80	3	

2SY Z2 Frese Cilindriche Rastremate per Materiali Sintetici
2F Square End for Synthetic Materials

(Unit: mm)

Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2SY400200080	4.0	20.00	-	-	-	80	4	
2SY5003000100	5.0	30.00	-	-	15	100	6	
2SY600300080	6.0	30.00	-	-	-	80	6	
2SY6004000100	6.0	40.00	-	-	-	100	6	
2SY6004000120	6.0	40.00	-	-	-	120	6	
2SY6004000150	6.0	40.00	-	-	-	150	6	
2SY8004500120	8.0	45.00	-	-	-	120	8	
2SY8004500150	8.0	45.00	-	-	-	150	8	
2SY1000300080	10.0	30.00	-	-	-	80	10	
2SY10005000120	10.0	50.00	-	-	-	120	10	
2SY10005000150	10.0	50.00	-	-	-	150	10	
2SY12005000130	12.0	50.00	-	-	-	130	12	
2SY12005000150	12.0	50.00	-	-	-	150	12	

SOLUTION TOOL



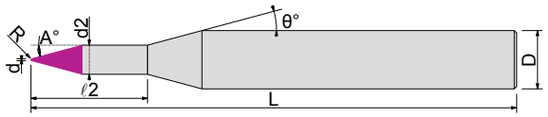
- Serie Frese Speciali
- Special End Mills

2EBTHR Z2 Frese Sferiche Coniche per Incisioni

2F Engraving Ball Tapered for Multi Purpose

NEW





Caratteristiche

- Design ottimizzato per l'incisione
- Maggiore rigidità e vibrazioni ridotte grazie all'ottimizzazione della geometria
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza che con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Per taglio a secco e con refrigerante

Features

- Design optimized for engraving
- Greater rigidity and reduced chattering through optimized geometry
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤5: 0/-0.02 d>5: 0/-0.003

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	○	○	○	○	△	△	○	◎	◎	

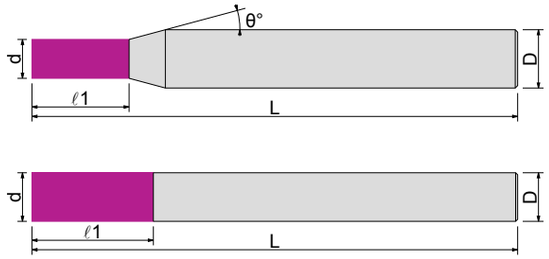
(Unit: mm)

Codice Product No.	Diametro x Raggio Cutting Dia. X Radius of Ball Nose (d X R)	Angolo Angle A°	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2EBTHR02015001200	0.2 X R0.1	15	12.00	3.00	15	50	6	
2EBTHR02030001200	0.2 X R0.1	30	12.00	4.00	15	50	6	
2EBTHR03015001200	0.3 X R0.15	15	12.00	3.00	15	50	6	
2EBTHR03020001200	0.3 X R0.15	20	12.00	3.00	15	50	6	
2EBTHR03030001200	0.3 X R0.15	30	12.00	4.00	15	50	6	
2EBTHR04015001200	0.4 X R0.2	15	12.00	3.00	15	50	6	
2EBTHR04030001200	0.4 X R0.2	30	12.00	4.00	15	50	6	
2EBTHR05015001200	0.5 X R0.25	15	12.00	3.00	15	50	6	
2EBTHR05030001200	0.5 X R0.25	30	12.00	4.00	15	50	6	
2EBTHR06015001200	0.6 X R0.3	15	12.00	3.00	15	50	6	
2EBTHR06020001200	0.6 X R0.3	20	12.00	3.00	15	50	6	
2EBTHR06030001200	0.6 X R0.3	30	12.00	4.00	15	50	6	
2EBTHR08015001200	0.8 X R0.4	15	12.00	3.00	15	50	6	
2EBTHR08030001200	0.8 X R0.4	30	12.00	4.00	15	50	6	
2EBTHR10015001200	1.0 X R0.5	15	12.00	3.00	15	50	6	
2EBTHR10030001200	1.0 X R0.5	30	12.00	4.00	15	50	6	
2EBTHR10045001200	1.0 X R0.5	45	12.00	4.00	15	50	6	

1FE Z1 Frese Monotagliente per Alluminio e ABS

1F End Mill





Caratteristiche

- La geometria dell' elica è progettata per prestazioni superiori in applicazioni di fresatura di alluminio e plastica

Features

- Flute geometry is designed for superior performance in alumium and plastic milling applications For Dry cutting and Wet cutting



Tolerance :

Cutting Dia.
d≤5: 0/-0.02 d>5: 0/-0.003

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
△	△	△					△	◎	◎	

(Unit: mm)

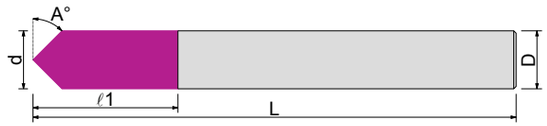
Codice Product No.	Diametro di Taglio Cutting Dia. d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
1FE020040	0.2	0.40	15	45	4	
1FE050150	0.5	1.50	15	45	4	
1FE080240	0.8	2.40	15	45	4	
1FE100300	1.0	3.00	15	50	6	
1FE120300	1.2	3.00	15	50	6	
1FE150400	1.5	4.00	15	50	6	
1FE200600	2.0	6.00	15	50	6	
1FE250600	2.5	6.00	15	50	6	
1FE300800	3.0	8.00	15	50	6	
1FE4001000	4.0	10.00	15	50	6	
1FE6001500	6.0	15.00	-	60	6	

NEW

2NCDHR Z2 Frese 90° Multifunzione - Centrini e Svasature Rivestita

2F NC Drill for Multi Purpose





Caratteristiche

- Forare, creare un centrino e svasare con un solo utensile
- Il rivestimento HR consente di lavorare sia con bassa velocità con materiali di bassa durezza che con alta velocità con materiali di alta durezza in varie condizioni di taglio
- Il rivestimento HR ha un'elevata tenacità, riducendo il rischio di scheggiatura del tagliente e aumentando la vita dell' utensile nel taglio interrotto
- Per taglio a secco e con refrigerante

Features

- Drill & countersink with one tool
- HR coating enables cutting low-speed/low-hardness materials~high-speed/high-hardness materials and heat resistant materials in various cutting condition and environments
- HR coating has high toughness, improving chipping resistance at interrupted and low speeds
- For Dry cutting and Wet cutting

2 | HX 20° | MG Carbide | HR Coated | ≦55 HRC | Plunge | C | CUTTING P. 237

Tolerance :

Cutting Dia.
d≤6: 0/-0.01
d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
○	◎	○	◎	◎	○	◎	○			

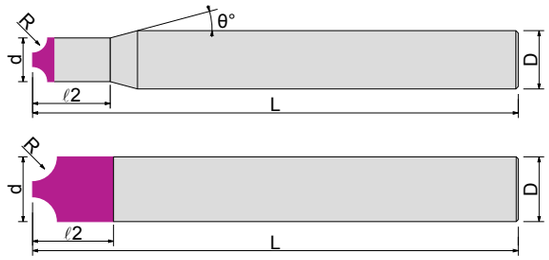
(Unit: mm)

Codice Product No.	Diametro Diameter d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Angle A°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2NCDHR3001000	3.0	10.00	45	45	3	
2NCDHR4001200	4.0	12.00	45	45	4	
2NCDHR6001500	6.0	15.00	45	50	6	
2NCDHR8002000	8.0	20.00	45	60	8	
2NCDHR10002200	10.0	22.00	45	70	10	
2NCDHR12002400	12.0	24.00	45	80	12	

2CRRC Z2 Frese a Raggio Concavo

2F Corner Rounding R-C





Caratteristiche

- Progettato con ampio spazio per l'evacuazione dei trucioli
- Rivestimento AlTiN per una migliore resistenza all'usura
- Per taglio a secco e con refrigerante

Features

- Designed with wide chip space
- Application of coatings with excellent wear-resistance
- For Dry cutting and Wey cutting

2 | HX 0° | MG Carbide | AlTiN Coated | Side | CUTTING P. 238

Tolerance :

Cutting Dia.
d≤6: 0/-0.01
d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
◎		◎		◎		○	○	◎	◎	

(Unit: mm)

Codice Product No.	Diametro Diameter d	Raggio Corner R. R	Lunghezza Utile Length of Cut ℓ1	Angolo Scarico Neck Angle θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CRRC020100	1.0	0.2	2.50	15	45	4	
2CRRC030120	1.2	0.3	2.50	15	45	4	
2CRRC050160	1.6	0.5	2.50	15	45	4	
2CRRC075300	3.0	0.75	5.00	15	45	4	
2CRRC100300	3.0	1.0	5.00	15	50	6	
2CRRC150450	4.5	1.5	8.00	15	50	6	
2CRRC200550	5.5	2.0	10.00	15	50	6	
2CRRC300800	8.0	3.0	10.00	-	60	8	
2CRRC4001000	10.0	4.0	10.00	-	60	10	
2CRRC5001200	12.0	5.0	10.00	-	70	12	

2CE Z2 Punte da Centro
2F Centering



Caratteristiche

- Per applicazioni di centraggio e foratura a punti
- Angolo di punta a 45°





Features

- For centering and spot drilling applications
- 45 deg point angle

2 | HX 30° | MG Carbide | Uncoated | Plunge | CUTTING P. 238

Tolerance :

Cutting Dia.
d≤6: 0/-0.01
d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
△	△	△					△	◎	◎	

(Unit: mm)

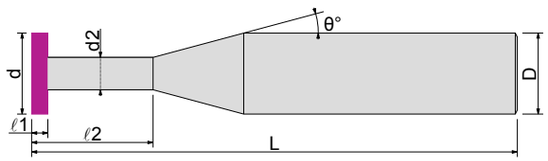
Codice Product No.	Diametro Diameter d	Lunghezza Tagliente Length of Cut ℓ1	Angolo Angle A°	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2CE300600	3.0	6.00	45	-	50	3	
2CE300600S4	3.0	6.00	45	15	50	4	
2CE400800	4.0	8.00	45	15	50	6	
2CE6001200	6.0	12.00	45	-	60	6	
2CE8001600	8.0	16.00	45	-	70	8	
2CE10001800	10.0	18.00	45	-	70	10	
2CE12002000	12.0	20.00	45	-	75	12	

2TC Z2 Frese per Cave a "T"
2F T Slot Cutter



Caratteristiche

- Elevata rigidità del tagliente con angolo della spirale ridotto



Features

- High cutting edge rigidity with smaller spiral angle

2 | HX 15° | MG Carbide | Uncoated | CUTTING P. 239

Tolerance :

Cutting Dia.
d≤6: 0/-0.01
d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite(Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
△	△	△					△	○	◎	

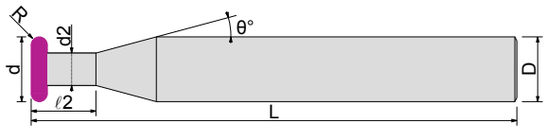
(Unit: mm)

Codice Product No.	Diametro Diameter d	Spessore Thickness T	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
2TC300030	3.0	0.3	10.00	1.20	15	50	6	
2TC300050	3.0	0.5	10.00	1.20	15	50	6	
2TC300100	3.0	1.0	10.00	1.20	15	50	6	
2TC400030	4.0	0.3	10.00	1.50	15	50	6	
2TC400050	4.0	0.5	10.00	1.50	15	50	6	
2TC400100	4.0	1.0	10.00	1.50	15	50	6	
2TC500100	5.0	1.0	10.00	2.00	15	50	6	
2TC600050	6.0	0.5	15.00	2.00	15	54	6	
2TC600100	6.0	1.0	15.00	2.00	15	54	6	
2TC600150	6.0	1.5	15.00	2.00	15	54	6	
2TC600200	6.0	2.0	15.00	2.00	15	54	6	
2TC800100	8.0	1.0	15.00	3.00	15	60	8	
2TC1000100	10.0	1.0	15.00	4.00	15	60	10	
2TC1000200	10.0	2.0	15.00	4.00	15	60	10	
2TC1200200	12.0	2.0	15.00	4.00	15	70	12	
2TC1200300	12.0	3.0	15.00	4.00	15	70	12	

4RTCC Z2 Frese per Cave a "T" con Raggio

4F Round T Slot Cutter-C





Caratteristiche

- Elevata rigidità del tagliente con angolo della spirale ridotto
- Rivestimento AlTiN per una migliore resistenza all'usura
- Per taglio a secco e con refrigerante

Features

- High cutting edge rigidity with smaller spiral angle
- Application of coatings with excellent wear-resistance
- For Dry cutting and Wey cutting



Tolerance :

Cutting Dia.
d≤6: 0/-0.01
d>6: 0/-0.015

Adatto per / Recommended workpiece Material: ◎ : Prima scelta (First choice), ○ : Scelta alternativa (Alternative choice), △ : Scelta limite (Limited choice)

Acciaio Basso Legato / Acciaio per utensili Carbon Steel / Alloy Steel / Tool Steel (~HB 350)	Acciaio Inox Stainless Steel (~HB 240)	Ghisa Cast Iron (~HB 260)	Acciai alto legati Prehardened Steel (~HRc 50)	Bonificati / Temprati Hardened Steel (HRc 45~55)	Temprati fino a 68 HRC Super Hardened Steel (HRc 55~68)	Leghe di Titanio Nickel& Titanium Alloy	Leghe di Rame Copper Alloy	Leghe di Alluminio Aluminum Alloy	Resine /ABS Resin & Plastics	Grafite Graphite
◎		◎		◎		○	○	◎	◎	

(Unit: mm)

Codice Product No.	Diametro Diameter d	Raggio Corner R R	Lunghezza Utile Length of Reach ℓ2	Diametro Scarico Neck Dia d2	Angolo Scarico Neck Angle Θ°	Lunghezza Totale Overall Length L	Diametro Gambo Shank Dia. D	NOTE
4RTCC600050	6.0	0.5	6.00	3.00	15	54	6	
4RTCC600075	6.0	0.75	6.00	3.00	15	54	6	
4RTCC600100	6.0	1.0	6.00	3.00	15	54	6	
4RTCC800100	8.0	1.0	8.00	4.00	15	60	8	
4RTCC800150	8.0	1.5	8.00	4.00	15	60	8	
4RTCC1000200	10.0	2.0	10.00	4.50	15	70	10	

SOLUTION TOOL



- Inserti, Testine e Steli
- Inserts, Modular Heads and Carbide Extensions

STSFH

Z2 Inserti Sferici High Precision fino a 68 HRC

2F High Precision Ball End Inserts up to 68 HRC

NEW

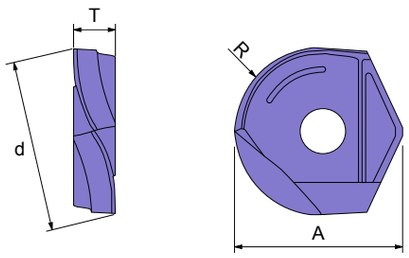


Caratteristiche

- Inserti sferici da copiatura per acciai temprati fino a 68 HRC
- Geometria a elica per ridurre le forze di taglio
- Grande rigidità per ridurre al minimo le scheggiature attraverso un accoppiamento ultrapreciso con le testine
- Ottima resistenza all'usura grazie al rivestimento specifico S-HC
- Solo per lavorazioni a secco

Features

- Spherical copying inserts for hardened steel up to 68 HRC
- Helix geometry to reduce cutting forces
- Great rigidity to minimize chipping through an ultra-precise fit with the modular head
- Excellent wear resistance thanks to the specific S-HC coating
- Only for dry cutting





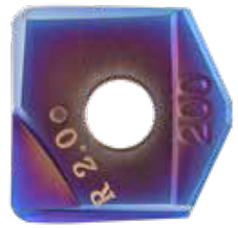
Codice Product No.	Diametro x Raggio Cutting Dia. d x R	Spessore Thickness T	Altezza Height A	NOTE
STSFH100	10.0 X R5.0	2.7	12.1	
STSFH120	12.0 X R6.0	3.2	14.6	
STSFH160	16.0 X R8.0	4.2	16.6	
STSFH200	20.0 X R10.0	5.2	20.3	
STSFH250	25.0 X R12.5	6.2	24.1	

STTRH

Z2 Inserti Torici High Precision fino a 68 HRC

2F High Precision Corner Radius Inserts up to 68 HRC

NEW

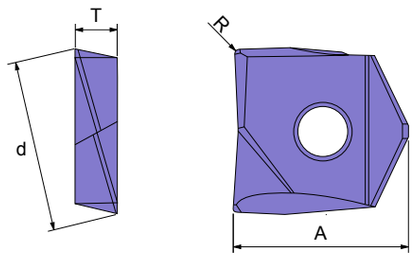


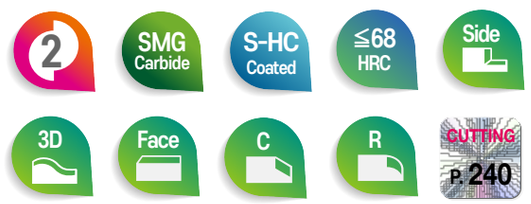
Caratteristiche

- Inserti torici da copiatura per acciai temprati fino a 68 HRC
- Geometria a elica per ridurre le forze di taglio
- Grande rigidità per ridurre al minimo le scheggiature attraverso un accoppiamento ultrapreciso con le testine
- Ottima resistenza all'usura grazie al rivestimento specifico S-HC
- Solo per lavorazioni a secco

Features

- Corner radius copying inserts for hardened steel up to 68 HRC
- Helix geometry to reduce cutting forces
- Great rigidity to minimize chipping through an ultra-precise fit with the modular head
- Excellent wear resistance thanks to the specific S-HC coating
- Only for dry cutting





Codice Product No.	Diametro x Raggio Cutting Dia. d x R	Spessore Thickness T	Altezza Height A	NOTE
STTRH1005	10.0 X R0.5	2.7	12.0	
STTRH1010	10.0 X R1.0	2.7	12.0	
STTRH1205	12.0 X R0.5	3.2	14.60	
STTRH1210	12.0 X R1.0	3.2	14.60	
STTRH1220	12.0 X R2.0	3.2	14.60	
STTRH1605	16.0 X R0.5	4.2	16.60	
STTRH1610	16.0 X R1.0	4.2	16.60	
STTRH1620	16.0 X R2.0	4.2	16.60	
STTRH2005	20.0 X R0.5	5.2	19.90	
STTRH2010	20.0 X R1.0	5.2	19.90	
STTRH2020	20.0 X R2.0	5.2	19.90	
STTRH2510	25.0 X R1.0	6.2	22.60	
STTRH2520	25.0 X R2.0	6.2	22.60	

STSF

Z2 Inserti Sferici High Precision fino a 55 HRC

2F High Precision Ball End Inserts up to 55 HRC

NEW

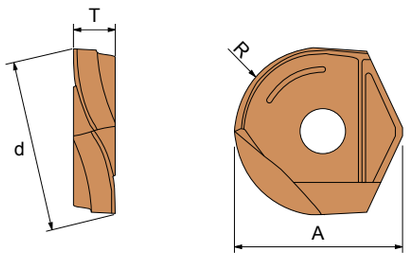


Caratteristiche

- Inserti sferici da copiatura per acciai bonificati e temprati fino a 55 HRC
- Geometria a elica per ridurre le forze di taglio
- Grande rigidità per ridurre al minimo le scheggiature attraverso un accoppiamento ultrapreciso con le testine
- Ottima resistenza all'usura grazie al rivestimento specifico AlTiSiN
- Per taglio a secco e con refrigerante

Features

- Spherical copying inserts for hardened steel up to 55 HRC
- Helix geometry to reduce cutting forces
- Great rigidity to minimize chipping through an ultra-precise fit with the modular head
- Excellent wear resistance thanks to the specific AlTiSiN coating
- For Dry cutting and Wet cutting





Codice Product No.	Diametro x Raggio Cutting Dia. d x R	Spessore Thickness T	Altezza Height A	NOTE
STSF100	10.0 X R5.0	2.7	12.1	
STSF120	12.0 X R6.0	3.2	14.6	
STSF160	16.0 X R8.0	4.2	16.6	
STSF200	20.0 X R10.0	5.2	20.3	
STSF250	25.0 X R12.5	6.2	24.1	

STTR

Z2 Inserti Torici High Precision fino a 55 HRC

2F High Precision Corner Radius Inserts up to 55 HRC

NEW

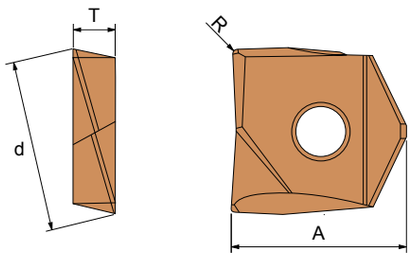


Caratteristiche

- Inserti torici da copiatura per acciai bonificati e temprati fino a 55 HRC
- Geometria a elica per ridurre le forze di taglio
- Grande rigidità per ridurre al minimo le scheggiature attraverso un accoppiamento ultrapreciso con le testine
- Ottima resistenza all'usura grazie al rivestimento specifico AlTiSiN
- Per taglio a secco e con refrigerante

Features

- Corner radius copying inserts for hardened steel up to 55 HRC
- Helix geometry to reduce cutting forces
- Great rigidity to minimize chipping through an ultra-precise fit with the modular head
- Excellent wear resistance thanks to the specific AlTiSiN coating
- For Dry cutting and Wet cutting





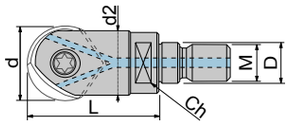
Codice Product No.	Diametro x Raggio Cutting Dia. d x R	Spessore Thickness T	Altezza Height A	NOTE
STTR1005	10.0 X R0.5	2.7	12.0	
STTR1010	10.0 X R1.0	2.7	12.0	
STTR1205	12.0 X R0.5	3.2	14.6	
STTR1210	12.0 X R1.0	3.2	14.6	
STTR1220	12.0 X R2.0	3.2	14.6	
STTR1605	16.0 X R0.5	4.2	16.6	
STTR1610	16.0 X R1.0	4.2	16.6	
STTR1620	16.0 X R2.0	4.2	16.6	
STTR2005	20.0 X R0.5	5.2	19.9	
STTR2010	20.0 X R1.0	5.2	19.9	
STTR2020	20.0 X R2.0	5.2	19.9	
STTR2510	25.0 X R1.0	6.2	22.6	
STTR2520	25.0 X R2.0	6.2	22.6	

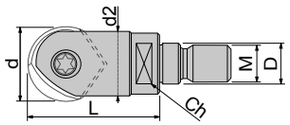
ST00

Testine per Inserti Sferici High Precision

Indexable Milling Heads for High Precision Ball End Inserts







Caratteristiche

- Testine di altissima precisione per inserti sferici “high Precision”
- Possibilità di scelta tra la versione “forata” che permette la refrigerazione direttamente sul tagliente dell’ inserto e la versione “non forata” più rigida.
- Costruite in acciaio trattato di altissima qualità con rivestimento superficiale antiusura
- Facilmente intercambiabile su qualsiasi stelo in metallo duro standard o su mandrini integrali portatestine

Features

- High precision milling heads for "high precision" ball end inserts
- Possibility of choosing between the "with hole" version which allows cooling directly on the cutting edge of the insert and the more rigid "without hole " version.
- Constructed of high quality treated steel with anti-wear surface coating
- Easily interchangeable on any standard carbide extension or integral milling head holder chuck

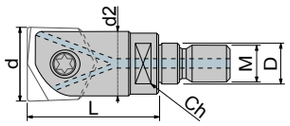
Codice Product No.	Inserto Insert Diameter d	Corpo Body Diameter d2	Lunghezza Length L	Filetto Thread M	Diametro Collare Centering Diameter D (h6)	Chiave Key Ch	Con fori Refrigerante With coolant holes	Vite Screw	Cacciavite Screwdriver
ST00-100-M6	10.0	9.6	25	M6	6.5	8	√	STV10	TX10
ST00-120-M6	12.0	10.8	25	M6	6.5	8	√	STV12	TX15
ST00-120-M6-NF	12.0	10.8	25	M6	6.5	8	-	STV12	TX15
ST00-160-M8	16.0	14.5	30	M8	8.5	10	√	STV16	TX15
ST00-160-M8-NF	16.0	14.5	30	M8	8.5	10	-	STV16	TX15
ST00-200-M10	20.0	18.0	35	M10	10.5	15	√	STV20	TX25
ST00-200-M10-NF	20.0	18.0	35	M10	10.5	15	-	STV20	TX25
ST00-250-M12	25.0	23.0	38	M12	12.5	17	√	STV25	TX25

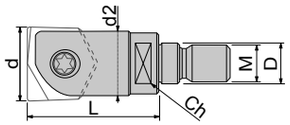
ST90

Testine per Inserti Torici High Precision

Indexable Milling Heads for High Precision Corner Radius Inserts







Caratteristiche

- Testine di altissima precisione per inserti torici “high Precision”
- Possibilità di scelta tra la versione “forata” che permette la refrigerazione direttamente sul tagliente dell’ inserto e la versione “non forata” più rigida.
- Costruite in acciaio trattato di altissima qualità con rivestimento superficiale antiusura
- Facilmente intercambiabile su qualsiasi stelo in metallo duro standard o su mandrini integrali portatestine

Features

- High precision milling heads for "high precision" corner radius inserts
- Possibility of choosing between the "with hole" version which allows cooling directly on the cutting edge of the insert and the more rigid "without hole " version.
- Constructed of high quality treated steel with anti-wear surface coating
- Easily interchangeable on any standard carbide extension or integral milling head holder chuck

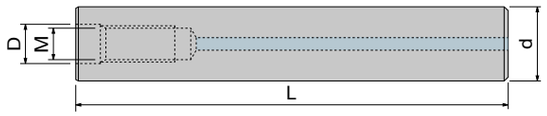
Codice Product No.	Inserto Insert Diameter d	Corpo Body Diameter d2	Lunghezza Length L	Filetto Thread M	Diametro Collare Centering Diameter D (h6)	Chiave Key Ch	Con fori Refrigerante With coolant holes	Vite Screw	Cacciavite Screwdriver
ST90-100-M6	10.0	9.6	25	M6	6.5	8	√	STV10	TX10
ST90-120-M6	12.0	10.8	25	M6	6.5	8	√	STV12	TX15
ST90-120-M6-NF	12.0	10.8	25	M6	6.5	8	-	STV12	TX15
ST90-160-M8	16.0	14.5	30	M8	8.5	10	√	STV16	TX15
ST90-160-M8-NF	16.0	14.5	30	M8	8.5	10	-	STV16	TX15
ST90-200-M10	20.0	18.0	35	M10	10.5	15	√	STV20	TX25
ST90-200-M10-NF	20.0	18.0	35	M10	10.5	15	-	STV20	TX25
ST90-250-M12	25.0	23.0	38	M12	12.5	17	√	STV25	TX25

STH

Steli in Metallo duro Integrale
Carbide Extension for Indexable Milling Heads

NEW





SMG Carbide

Caratteristiche

- Stelo in metallo duro per testine portainserto
- Varie lunghezze, diametri pari e dispari
- Tolleranza del gambo in h6 calettabile
- Compatibili con tutte le testine standard su mercato

Features

- Extension carbide for insert modular heads
- Various lengths, even and odd diameters
- Tolerance of the shank in h6 shrinkable
- Compatible with all standard modular heads on the market

Codice Product No.	Diametro Esterno Outer Diameter d (h6)	Lunghezza Length L	Filetto Thread M	Diametro Centraggio Centering diameter D (H7)	NOTE
STH10-100-M5	10	100	M5	5.5	
STH10-150-M5	10	150	M5	5.5	
STH11-100-M6	11	100	M6	6.5	
STH11-150-M6	11	150	M6	6.5	
STH12-100-M6	12	100	M6	6.5	
STH12-150-M6	12	150	M6	6.5	
STH15-100-M8	15	100	M8	8.5	
STH15-150-M8	15	150	M8	8.5	
STH15-200-M8	15	200	M8	8.5	
STH16-100-M8	16	100	M8	8.5	
STH16-150-M8	16	150	M8	8.5	
STH16-200-M8	16	200	M8	8.5	
STH19-100-M10	19	100	M10	10.5	
STH19-150-M10	19	150	M10	10.5	
STH19-200-M10	19	200	M10	10.5	
STH19-250-M10	19	250	M10	10.5	
STH20-100-M10	20	100	M10	10.5	
STH20-150-M10	20	150	M10	10.5	
STH20-200-M10	20	200	M10	10.5	
STH20-250-M10	20	250	M10	10.5	
STH24-150-M12	24	150	M12	12.5	
STH24-200-M12	24	200	M12	12.5	
STH24-250-M12	24	250	M12	12.5	
STH24-300-M12	24	300	M12	12.5	
STH25-150-M12	25	150	M12	12.5	
STH25-200-M12	25	200	M12	12.5	
STH25-250-M12	25	250	M12	12.5	
STH25-300-M12	25	300	M12	12.5	
STH32-150-M16	32	150	M16	16.5	
STH32-200-M16	32	200	M16	16.5	
STH32-250-M16	32	250	M16	16.5	
STH32-300-M16	32	300	M16	16.5	
STH32-350-M16	32	350	M16	16.5	
STH32-400-M16	32	400	M16	16.5	

SOLUTION TOOL

$$V_t = \frac{\pi \cdot D \cdot n_t}{1000} \quad \left(\frac{m}{min}\right)$$

$$n_t = \frac{1000 \cdot V_t}{\pi \cdot D} \quad \left(\frac{giri}{min}\right)$$



$$a = z \cdot a_z \quad \left(\frac{mm}{giro}\right)$$

$$V_a = n \cdot z \cdot a_z \quad \left(\frac{mm}{min}\right)$$

- Parametri di Taglio
- Cutting Parameters

$$s_{max} \approx a_z \cdot sen\,\varphi$$

$$\cos\varphi = \frac{\frac{D}{2} - p}{\frac{D}{2}}$$

$$F_t = K_1 \cdot q^r \quad (N)$$

$$a = z \cdot a_z \quad \left(\frac{mm}{giro}\right)$$

$$P_t = \frac{F_t \cdot V_t}{60.000} \quad (kW)$$

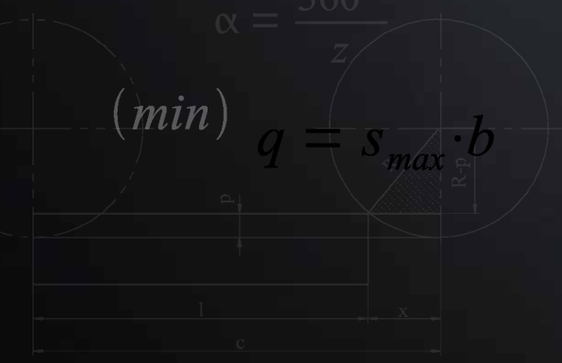
$$q = s_{max} \cdot b$$

$$V_a = n \cdot z \cdot a_z \quad \left(\frac{mm}{min}\right)$$

$$P_t = \frac{F_t \cdot V_t}{60.000} \quad (kW)$$

$$T_m = \frac{c + e}{V_a} \quad (min)$$

$$\alpha = \frac{360°}{z}$$



Informazioni
Information

Informazioni sui parametri:

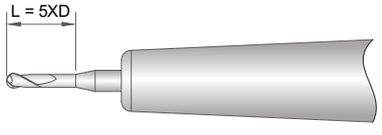
- I parametri riportati nelle seguenti tabelle sono da ritenersi puramente indicativi ed è responsabilità dell'utilizzatore finale adattarli alle proprie necessità.
- I parametri riportati sono stati calcolati tenendo in considerazione una sporgenza "standard" di 5XD. Per sporgenze differenti adeguare i parametri consultando la tabella "Fattori di correzione" riportata qui sotto.

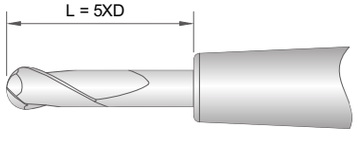
Parameter information:

- The parameters in the next tables are to be considered purely indicative and the direct responsibility is to the end user.
- The parameters exposed have been calculated considering a "standard" length of reach of 5XD. For differents length of reach, adjust the parameters by referring to the "Correction factors" table you can find below.

Fattori di correzione
Correction factors

Lunghezza Utile Length of Reach	Sgrossatura Roughing				Finitura Finishing			
	Giri/Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri/Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
2XD	~	+50%	~	~	+20%	+50%	-15%	-15
5XD	~	~	~	~	~	~	-15%	-15%
8XD	-15%	-10%	~	~	-10%	-15%	-15%	-15%
10XD	-	-30%	~	~	-10%	-30%	-15%	-15%

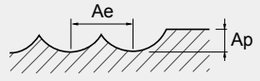




2NBH
Cutting Condition

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

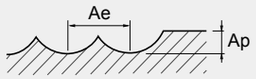
Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,2	20.000	590	0,006	0,006	19.000	560	0,006	0,006	18.000	410	0,050	0,050
0,3	19.650	655	0,009	0,009	18.600	620	0,009	0,009	17.700	460	0,080	0,080
0,4	19.300	720	0,012	0,012	18.300	680	0,012	0,012	17.350	500	0,011	0,011
0,5	19.000	780	0,015	0,015	18.000	740	0,015	0,015	17.100	550	0,013	0,013
0,6	18.700	850	0,018	0,018	17.700	805	0,018	0,018	16.850	600	0,016	0,016
0,7	18.400	910	0,021	0,021	17.400	865	0,021	0,021	16.550	640	0,019	0,019
0,8	18.150	975	0,024	0,024	17.200	920	0,024	0,024	16.350	680	0,022	0,022
0,9	17.900	1.040	0,027	0,027	17.000	1.000	0,027	0,027	16.100	730	0,025	0,025
1	17.500	1.100	0,030	0,030	16.500	1.100	0,030	0,030	16.000	800	0,030	0,030
1,2	17.100	1.240	0,035	0,035	16.300	1.180	0,034	0,034	15.680	860	0,030	0,030
1,5	16.500	1.450	0,040	0,040	16.000	1.300	0,040	0,040	15.200	950	0,030	0,030
1,6	16.300	1.480	0,044	0,044	15.700	1.330	0,044	0,044	14.920	960	0,032	0,032
2	15.500	1.600	0,060	0,060	14.500	1.450	0,060	0,060	13.800	1.000	0,040	0,040
2,5	14.250	1.650	0,075	0,075	12.750	1.525	0,075	0,075	12.250	1.075	0,055	0,055
3	13.000	1.700	0,090	0,090	11.000	1.600	0,090	0,090	10.700	1.150	0,070	0,070
3,5	12.500	1.750	0,105	0,105	10.650	1.650	0,105	0,105	10.250	1.225	0,095	0,095
4	12.000	1.800	0,120	0,120	10.300	1.700	0,120	0,120	9.800	1.300	0,120	0,120
6	10.500	1.950	0,160	0,160	9.000	1.850	0,160	0,160	8.500	1.350	0,140	0,140
8	9.500	2.100	0,180	0,180	8.800	2.000	0,180	0,180	8.000	1.450	0,160	0,160
10	8.000	2.400	0,200	0,200	7.300	2.200	0,200	0,200	7.000	1.500	0,180	0,180
12	7.000	2.500	0,220	0,220	6.500	2.300	0,220	0,220	6.000	1.700	0,200	0,200

Profondità di Taglio Depth of Cut	

2BH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,2	24.500	180	0,005	0,005	23.000	150	0,005	0,005	22.000	130	0,003	0,003
0,3	22.000	370	0,008	0,008	21.000	300	0,008	0,008	20.000	270	0,006	0,006
0,4	20.000	600	0,010	0,010	19.250	500	0,010	0,010	18.700	450	0,008	0,008
0,5	19.000	710	0,010	0,010	18.000	650	0,010	0,010	17.500	600	0,009	0,009
0,6	18.000	910	0,015	0,015	17.200	850	0,015	0,015	16.750	800	0,013	0,013
0,7	17.350	970	0,018	0,018	16.750	900	0,018	0,018	16.370	840	0,015	0,150
0,8	16.700	1.030	0,020	0,020	16.300	950	0,020	0,020	16.000	880	0,018	0,018
1	16.000	1.080	0,030	0,030	15.750	1.000	0,030	0,030	15.200	900	0,020	0,020
1,2	15.800	1.140	0,035	0,035	15.000	1.060	0,035	0,035	14.600	960	0,025	0,025
1,5	15.500	1.230	0,040	0,040	14.000	1.150	0,040	0,040	13.800	1.050	0,030	0,030
2	14.500	1.290	0,050	0,050	13.250	1.200	0,050	0,050	13.000	1.100	0,035	0,035
2,5	13.500	1.350	0,060	0,060	12.500	1.300	0,060	0,060	12.000	1.150	0,040	0,040
3	12.500	1.450	0,090	0,090	11.500	1.400	0,090	0,090	11.000	1.200	0,065	0,065
3,5	12.250	1.500	0,105	0,105	11.000	1.450	0,105	0,105	10.500	1.250	0,075	0,075
4	12.000	1.550	0,120	0,120	10.450	1.500	0,120	0,120	10.000	1.300	0,090	0,090
5	10.450	1.650	0,140	0,140	9.800	1.600	0,140	0,140	9.450	1.400	0,120	0,120
6	9.800	1.800	0,160	0,160	9.300	1.700	0,160	0,160	9.150	1.580	0,135	0,135
7	9.600	1.850	0,170	0,170	9.200	1.750	0,170	0,170	9.000	1.605	0,150	0,150
8	9.500	1.900	0,180	0,180	9.100	1.800	0,180	0,180	8.900	1.630	0,160	0,160
9	9.000	2.000	0,190	0,190	8.300	1.900	0,190	0,190	8.100	1.675	0,170	0,170
10	8.500	2.100	0,200	0,200	7.500	2.000	0,200	0,200	7.280	1.720	0,180	0,180
12	7.350	2.150	0,220	0,220	6.700	2.100	0,220	0,220	6.450	1.900	0,200	0,200
Profondità di Taglio Depth of Cut												

2BTH

Cutting Condition

Materiale Material				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 45 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 45 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Angolo Angle	Lunghezza Effettiva Effective Len.	Ap Axial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
0,5	0,4	4	0,018	28.000	840	26.040	697	26.040	607
		6	0,016	25.760	750	23.957	623	23.957	542
	0,9	6	0,014	25.760	650	23.957	540	23.957	469
		8	0,011	23.700	580	22.041	482	22.041	419
		12	0,007	21.800	525	20.274	436	20.274	379
0,6	0,4	2	0,024	29.680	930	27.602	772	27.602	672
		4	0,018	28.000	860	26.040	714	26.040	621
		6	0,016	26.320	790	24.478	656	24.478	570
		8	0,014	24.740	730	23.008	606	23.008	527
		10	0,012	23.256	670	21.628	556	21.628	484
		12	0,008	21.860	616	20.330	511	20.330	445
		15	0,005	20.550	560	19.112	465	19.112	404
	0,9	4	0,020	28.000	880	26.040	730	26.040	635
		6	0,018	25.760	790	23.957	656	23.957	570
		8	0,016	23.700	715	22.041	593	22.041	516
		10	0,014	21.800	640	20.274	531	20.274	462
		12	0,012	20.060	580	18.656	481	18.656	419
		15	0,009	18.455	520	17.163	432	17.163	375
	1,4	4	0,024	28.000	865	26.040	718	26.040	625
		5	0,023	25.200	812	23.436	674	23.436	586
		6	0,020	22.680	765	21.092	635	21.092	552
		8	0,018	20.410	670	18.981	556	18.981	484
		10	0,015	18.370	590	17.084	490	17.084	426
		20	0,010	14.690	420	13.662	349	13.662	303
	2,9	6	0,022	24.640	823	22.915	683	22.915	594
		8	0,020	21.680	710	20.162	589	20.162	513
		12	0,016	18.200	505	16.926	419	16.926	365
0,8	0,4	4	0,025	23.850	1.370	22.181	1.137	22.181	989
		6	0,023	22.560	1.300	20.981	1.079	20.981	939
		8	0,020	21.530	1.210	20.023	1.004	20.023	874
		12	0,017	20.400	1.100	18.972	913	18.972	794
	0,9	8	0,022	21.870	1.090	20.339	905	20.339	787
		12	0,019	20.770	1.050	19.316	872	19.316	758
		16	0,017	19.730	980	18.349	813	18.349	708
1,0	0,4	6	0,034	24.000	820	22.320	681	22.320	592
		8	0,032	22.630	755	21.046	627	21.046	545
		10	0,026	21.350	700	19.856	581	19.856	505
		15	0,023	20.140	645	18.730	535	18.730	466
		20	0,016	19.000	600	17.670	498	17.670	433
		25	0,014	17.860	555	16.610	461	16.610	401
		30	0,010	16.788	507	15.613	421	15.613	366
		50	0,006	12.700	360	11.811	299	11.811	260
		70	0,002	9.670	250	8.993	208	8.993	181

2BTH

Cutting Condition

Materiale Material				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 45 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 45 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Angolo Angle	Lunghezza Effettiva Effective Len.	Ap Axial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
1,0	0,9	6	0,034	25.850	1.010	24.041	838	24.041	729
		10	0,028	23.930	900	22.255	747	22.255	650
		15	0,026	22.160	790	20.609	656	20.609	570
		16	0,023	20.520	780	19.084	647	19.084	563
		20	0,018	19.000	650	17.670	540	17.670	469
		25	0,016	17.480	585	16.256	486	16.256	422
		30	0,014	16.100	525	14.973	436	14.973	379
		35	0,012	14.800	480	13.764	398	13.764	347
		40	0,009	13.600	425	12.648	353	12.648	307
		50	0,007	11.400	350	10.602	291	10.602	253
		60	0,005	9.600	270	8.928	224	8.928	195
		70	0,003	8.100	220	7.533	183	7.533	159
	1,4	6	0,038	25.300	1.044	23.529	867	23.529	754
		12	0,037	23.000	908	21.390	754	21.390	656
		16	0,032	20.900	790	19.437	656	19.437	570
		20	0,026	19.000	670	17.670	556	17.670	484
		22	0,023	18.050	570	16.787	473	16.787	412
		25	0,019	17.150	485	15.950	403	15.950	350
		50	0,008	8.580	270	7.979	224	7.979	195
	2,9	10	0,036	23.800	1.060	22.134	880	22.134	765
		15	0,029	21.280	920	19.790	764	19.790	664
		20	0,026	19.000	800	17.670	664	17.670	578
		30	0,017	16.720	680	15.550	564	15.550	491
1,5	0,4	8	0,046	20.845	1.050	19.386	872	19.386	758
		10	0,040	19.925	1.000	18.530	830	18.530	722
		12	0,036	19.000	950	17.670	789	17.670	686
		30	0,012	15.460	706	14.378	586	14.378	510
	0,9	10	0,035	21.300	1.125	19.809	934	19.809	812
		15	0,032	19.720	1.000	18.340	830	18.340	722
		20	0,026	17.500	885	16.275	735	16.275	639
		30	0,020	14.820	720	13.783	598	13.783	520
	1,4	10	0,045	21.180	1.220	19.697	1.013	19.697	881
		20	0,032	17.400	970	16.182	805	16.182	700
		30	0,019	14.240	780	13.243	647	13.243	563
		40	0,070	11.680	630	10.862	523	10.862	455
		50	0,030	9.575	500	8.905	415	8.905	361
	2,9	20	0,047	17.500	1.200	16.275	996	16.275	867
2,0	0,4	8	0,059	19.060	1.350	17.726	1.121	17.726	975
		12	0,050	18.000	1.248	16.740	1.036	16.740	901
		16	0,041	16.960	1.150	15.773	955	15.773	830
		20	0,032	16.000	1.070	14.880	888	14.880	773
		25	0,023	15.040	980	13.987	813	13.987	708
		30	0,014	14.135	905	13.146	751	13.146	654

2BTH

Cutting Condition

Materiale Material				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 45 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 45 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Angolo Angle	Lunghezza Effettiva Effective Len.	Ap Axial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
2,0	0,4	35	0,010	13.290	835	12.360	693	12.360	603
		40	0,007	12.500	760	11.625	631	11.625	549
		80	0,004	6.495	400	6.040	332	6.040	289
	0,9	12	0,045	18.660	1.355	17.354	1.125	17.354	978
		16	0,039	17.280	1.230	16.070	1.021	16.070	888
		20	0,035	16.000	1.120	14.880	930	14.880	809
		25	0,031	14.720	1.010	13.690	838	13.690	729
		30	0,027	13.540	910	12.592	755	12.592	657
		35	0,023	12.460	815	11.588	676	11.588	589
		40	0,019	11.460	735	10.658	610	10.658	531
		50	0,011	9.740	660	9.058	548	9.058	477
		60	0,007	8.280	560	7.700	465	7.700	404
		70	0,005	7.040	480	6.547	398	6.547	347
	1,4	10	0,053	19.360	1.530	18.005	1.270	18.005	1.105
		16	0,042	17.600	1.360	16.368	1.129	16.368	982
		20	0,038	16.000	1.220	14.880	1.013	14.880	881
		22	0,036	14.400	1.145	13.392	950	13.392	827
		25	0,035	12.960	1.070	12.053	888	12.053	773
		30	0,032	11.660	945	10.844	784	10.844	682
		35	0,029	10.500	830	9.765	689	9.765	599
		40	0,026	9.450	730	8.789	606	8.789	527
	2,9	12	0,080	18.900	2.100	17.577	1.743	17.577	1.516
		15	0,074	17.920	1.840	16.666	1.527	16.666	1.329
		20	0,068	16.000	1.600	14.880	1.328	14.880	1.155
3,0	0,4	8	0,120	15.730	1.780	14.629	1.477	14.629	1.285
		16	0,100	14.840	1.650	13.801	1.370	13.801	1.191
		20	0,088	13.950	1.520	12.974	1.262	12.974	1.098
		25	0,080	13.120	1.400	12.202	1.162	12.202	1.011
		30	0,072	12.330	1.280	11.467	1.062	11.467	924
		35	0,064	11.580	1.180	10.769	979	10.769	852
		40	0,056	10.890	1.090	10.128	905	10.128	787
		50	0,040	9.800	980	9.114	813	9.114	708
		80	0,016	6.860	580	6.380	481	6.380	419
	0,9	15	0,130	15.000	1.650	13.950	1.370	13.950	1.191
		20	0,100	13.800	1.485	12.834	1.233	12.834	1.072
		25	0,080	12.700	1.330	11.811	1.104	11.811	960
		30	0,060	11.680	1.210	10.862	1.004	10.862	874
		35	0,050	10.750	1.080	9.998	896	9.998	780
		40	0,045	9.880	975	9.188	809	9.188	704
		50	0,035	8.400	875	7.812	726	7.812	632
		60	0,025	7.120	790	6.622	656	6.622	570
		70	0,020	6.070	710	5.645	589	5.645	513
		90	0,010	4.363	640	4.058	531	4.058	462

2BTH

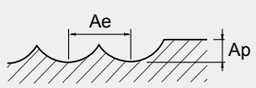
Cutting Condition

Materiale Material				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 45 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 45 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Angolo Angle	Lunghezza Effettiva Effective Len.	Ap Axial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
3,0	1,4	30	0,075	11.680	1.270	10.862	1.054	10.862	917
		40	0,060	10.500	1.100	9.765	913	9.765	794
		50	0,049	9.460	980	8.798	813	8.798	708
4,0	0,4	20	0,160	12.000	1.680	11.160	1.394	11.160	1.213
		25	0,140	11.280	1.545	10.490	1.282	10.490	1.116
		30	0,120	10.600	1.420	9.858	1.179	9.858	1.025
		35	0,100	9.970	1.310	9.272	1.087	9.272	946
		40	0,080	9.400	1.200	8.742	996	8.742	867
		60	0,050	7.450	952	6.929	790	6.929	687
	0,9	20	0,180	12.400	1.743	11.532	1.446	11.532	1.258
		25	0,160	11.400	1.570	10.602	1.303	10.602	1.134
		30	0,140	10.500	1.400	9.765	1.162	9.765	1.011
		35	0,120	9.655	1.270	8.979	1.054	8.979	917
		40	0,100	8.880	1.140	8.258	946	8.258	823
		50	0,080	7.550	970	7.022	805	7.022	700
		60	0,060	6.400	830	5.952	689	5.952	599
	1,4	45	0,120	8.250	1.100	7.673	913	7.673	794
		80	0,055	4.350	610	4.046	506	4.046	440
	2,9	25	0,200	12.000	1.800	11.160	1.494	11.160	1.300

3BH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

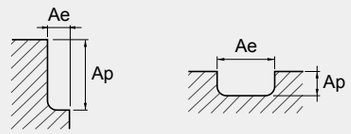
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	17.600	1.200	0,030	0,030	17.300	1.100	0,030	0,030	16.700	990	0,020	0,020
1,5	17.000	1.350	0,040	0,040	15.400	1.250	0,040	0,040	15.200	1.150	0,030	0,030
2	16.000	1.400	0,050	0,050	14.600	1.300	0,050	0,050	14.300	1.200	0,040	0,040
3	13.750	1.600	0,100	0,100	12.600	1.550	0,100	0,100	12.100	1.300	0,070	0,070
4	13.200	1.700	0,130	0,130	11.500	1.650	0,130	0,130	11.000	1.450	0,100	0,100
6	10.800	2.000	0,180	0,180	10.200	1.900	0,180	0,180	10.000	1.750	0,150	0,150
Profondità di Taglio Depth of Cut												

2NCH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

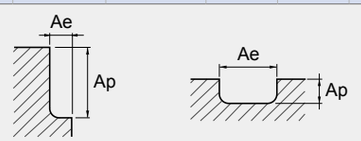
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,2	21.200	70	0,005	0,005	19.050	55	0,005	0,005	18.000	55	0,005	0,005
0,3	20.400	105	0,005	0,005	18.350	85	0,005	0,005	17.350	85	0,005	0,005
0,4	19.800	140	0,005	0,010	17.800	110	0,005	0,010	16.800	110	0,005	0,010
0,5	19.200	175	0,007	0,010	17.250	140	0,007	0,010	16.300	140	0,007	0,010
0,6	18.600	210	0,008	0,010	16.750	170	0,008	0,010	15.800	170	0,008	0,010
0,7	18.050	245	0,010	0,050	16.250	195	0,010	0,050	15.350	195	0,010	0,050
0,8	17.500	250	0,010	0,050	16.000	200	0,010	0,050	15.000	200	0,010	0,050
0,9	16.550	325	0,015	0,075	15.000	270	0,015	0,075	14.000	260	0,015	0,075
1	15.600	400	0,020	0,100	14.000	340	0,020	0,100	13.000	320	0,020	0,100
1,2	14.560	504	0,024	0,160	13.000	444	0,024	0,160	12.200	404	0,024	0,160
1,5	13.000	660	0,030	0,250	11.500	600	0,030	0,250	11.000	530	0,030	0,250
2	11.500	730	0,060	0,300	10.500	670	0,060	0,300	10.000	620	0,060	0,300
2,5	10.750	865	0,070	0,375	9.500	685	0,070	0,375	8.750	625	0,070	0,375
3	10.000	1.000	0,080	0,450	8.500	700	0,080	0,450	7.500	630	0,080	0,450
4	9.000	1.050	0,100	0,800	8.000	930	0,100	0,800	7.300	900	0,100	0,800
5	8.000	1.110	0,120	0,900	7.150	950	0,120	0,900	6.550	910	0,120	0,900
6	7.000	1.170	0,140	1,000	6.300	970	0,140	1,000	5.800	920	0,140	1,000
8	5.300	1.230	0,160	1,300	4.300	1.000	0,160	1,300	3.800	980	0,160	1,300
10	4.350	1.330	0,180	1,500	3.600	1.000	0,180	1,500	3.400	1.000	0,180	1,500
12	3.600	1.450	0,200	1,800	3.000	1.050	0,200	1,800	2.800	1.000	0,200	1,800
Profondità di Taglio Depth of Cut												

2CLH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

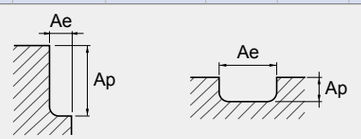
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,8	16.500	360	0,015	0,080	15.500	340	0,015	0,080	14.500	320	0,015	0,080
1	15.500	400	0,020	0,100	15.000	360	0,020	0,100	14.000	340	0,020	0,100
1,2	14.400	500	0,025	0,150	13.800	460	0,025	0,150	13.000	420	0,025	0,150
1,5	12.700	650	0,030	0,250	12.000	600	0,030	0,250	11.750	550	0,030	0,250
2	11.300	800	0,060	0,300	11.000	750	0,060	0,300	10.500	680	0,060	0,300
3	9.750	950	0,080	0,450	8.800	900	0,080	0,450	8.500	810	0,080	0,450
4	9.300	1.050	0,100	0,800	8.300	1.000	0,100	0,800	8.000	900	0,100	0,800
5	7.800	1.150	0,120	0,900	7.000	1.100	0,120	0,900	6.750	1.050	0,120	0,900
6	6.900	1.200	0,140	1,000	6.250	1.150	0,140	1,000	6.000	1.100	0,140	1,000
8	4.800	1.250	0,160	1,300	4.250	1.200	0,160	1,300	4.000	1.150	0,160	1,300
10	4.250	1.300	0,180	1,500	3.500	1.250	0,180	1,500	3.300	1.200	0,180	1,500
12	3.550	1.350	0,200	1,800	3.200	1.300	0,200	1,800	3.100	1.270	0,200	1,800
Profondità di Taglio Depth of Cut												

4NCH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

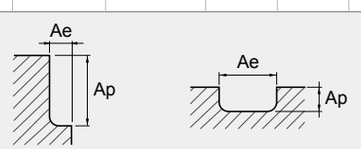
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	15.000	380	0,020	0,100	14.200	330	0,020	0,100	13.800	300	0,020	0,100
1,2	14.200	420	0,025	0,110	13.400	360	0,025	0,110	13.100	328	0,025	0,110
1,5	13.000	480	0,030	0,130	12.300	400	0,030	0,130	12.000	370	0,030	0,130
2	10.500	660	0,060	0,200	10.300	570	0,060	0,200	10.050	540	0,060	0,200
2,5	10.500	720	0,060	0,250	10.150	620	0,060	0,250	9.970	590	0,060	0,250
3	9.000	960	0,080	0,300	8.750	880	0,080	0,300	8.600	850	0,080	0,300
4	8.500	980	0,100	0,580	8.300	900	0,100	0,580	8.000	870	0,100	0,580
5	7.500	1.030	0,120	0,800	7.250	915	0,120	0,800	7.000	885	0,120	0,800
6	6.500	1.080	0,140	1,000	6.200	930	0,140	1,000	5.950	900	0,140	1,000
8	4.500	1.150	0,160	1,100	4.300	1.030	0,160	1,100	4.000	1.000	0,160	1,100
10	3.750	1.200	0,180	1,500	3.600	1.080	0,180	1,500	3.400	1.040	0,180	1,500
12	3.200	1.250	0,200	1,900	3.000	1.100	0,200	1,900	2.850	1.060	0,200	1,900
Profondità di Taglio Depth of Cut												

4CLH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1,5	11.250	1.140	0,050	0,170	10.100	1.080	0,050	0,017	9.550	1.010	0,050	0,170
2	10.700	1.200	0,060	0,250	9.600	1.140	0,060	0,250	9.100	1.050	0,060	0,250
3	9.750	1.330	0,080	0,450	8.800	1.260	0,080	0,450	8.500	1.130	0,080	0,450
4	9.300	1.470	0,100	0,800	8.300	1.400	0,100	0,800	8.000	1.260	0,100	0,800
5	8.100	1.570	0,120	0,900	7.300	1.500	0,120	0,900	7.000	1.400	0,120	0,900
6	6.900	1.680	0,140	1,000	6.250	1.610	0,140	1,000	6.000	1.540	0,140	1,000
8	4.800	1.750	0,160	1,300	4.250	1.680	0,160	1,300	4.000	1.610	0,160	1,300
10	4.250	1.820	0,180	1,500	3.500	1.750	0,180	1,500	3.300	1.680	0,180	1,500
12	3.550	1.890	0,200	1,800	3.200	1.820	0,200	1,800	3.100	1.780	0,200	1,800
Profondità di Taglio Depth of Cut												

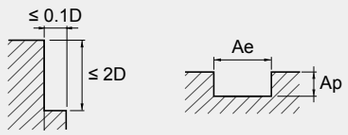
2NSH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,1	31.700	150	0,001	0,120	31.100	125	0,001	0,120	30.900	120	0,001	0,120
0,15	30.250	165	0,001	0,130	29.650	135	0,001	0,130	29.400	130	0,001	0,130
0,2	29.000	180	0,001	0,150	28.300	150	0,001	0,150	28.000	140	0,001	0,150
0,3	27.000	190	0,002	0,230	26.500	170	0,002	0,230	26.000	160	0,002	0,230
0,4	26.000	240	0,003	0,300	24.000	220	0,003	0,300	23.000	210	0,003	0,300
0,5	19.500	330	0,004	0,380	18.500	300	0,004	0,380	18.000	270	0,004	0,380
0,6	18.500	365	0,005	0,450	17.500	330	0,005	0,450	17.000	300	0,005	0,450
0,7	17.500	400	0,005	0,530	16.500	370	0,005	0,530	16.000	330	0,005	0,630
0,8	16.500	430	0,006	0,600	15.500	400	0,006	0,600	15.000	360	0,006	0,600
0,9	16.150	490	0,011	0,670	15.000	450	0,011	0,670	14.500	390	0,011	0,670
1	15.800	550	0,015	0,750	14.500	500	0,015	0,750	14.000	420	0,015	0,750
1,2	15.080	570	0,017	0,910	13.900	520	0,017	0,910	13.200	450	0,017	0,910
1,5	14.000	600	0,020	1,150	13.000	550	0,020	1,150	12.000	500	0,020	1,150
1,6	13.600	600	0,021	1,220	12.500	560	0,021	1,220	11.600	510	0,021	1,220
1,8	12.800	620	0,023	1,360	11.500	580	0,023	1,360	10.800	550	0,023	1,360
2	12.000	630	0,025	1,500	10.500	600	0,025	1,500	10.000	580	0,025	1,500
2,5	9.500	660	0,030	1,900	8.800	600	0,030	1,900	8.500	580	0,030	1,900
3	7.000	730	0,040	2,300	6.000	720	0,040	2,300	5.800	650	0,040	2,300
4	6.000	780	0,050	3,000	5.350	750	0,050	3,000	5.000	700	0,050	3,000
5	4.800	830	0,070	3,800	4.300	800	0,070	3,800	4.000	750	0,070	3,800
6	3.600	900	0,080	4,500	3.100	850	0,080	4,500	2.850	800	0,080	4,500
8	3.000	980	0,110	6,000	2.600	950	0,110	6,000	2.450	930	0,110	6,000

Profondità di Taglio
Depth of Cut



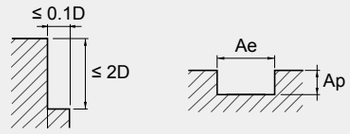
2SH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,2	27.350	105	0,013	0,150	26.000	105	0,013	0,150	24.500	85	0,013	0,150
0,3	25.000	120	0,015	0,200	24.000	120	0,015	0,200	22.000	100	0,015	0,200
0,4	23.000	135	0,018	0,275	22.000	135	0,018	0,275	20.750	110	0,018	0,275
0,5	21.000	150	0,020	0,350	20.000	150	0,020	0,350	19.500	120	0,020	0,350
0,6	20.100	155	0,025	0,450	19.200	155	0,025	0,450	18.750	125	0,025	0,450
0,7	19.200	160	0,030	0,500	18.400	160	0,030	0,500	18.050	130	0,030	0,500
0,8	18.300	165	0,030	0,600	17.600	165	0,030	0,600	17.300	135	0,030	0,600
1	16.500	170	0,040	0,750	16.000	170	0,040	0,750	15.800	145	0,040	0,750
1,2	15.300	170	0,045	0,900	14.800	170	0,045	0,900	14.550	150	0,045	0,900
1,5	13.500	175	0,050	1,100	13.000	175	0,050	1,100	12.750	155	0,050	1,100
2	10.500	180	0,060	1,500	10.000	180	0,060	1,500	9.700	165	0,060	1,500
2,5	8.650	200	0,075	1,850	8.250	200	0,075	1,850	8.000	190	0,075	1,850
3	6.800	220	0,090	2,250	6.500	220	0,090	2,250	6.300	210	0,090	2,250
3,5	6.550	235	0,095	2,600	6.300	235	0,095	2,600	6.150	225	0,095	2,600
4	6.300	250	0,100	3,000	6.100	250	0,100	3,000	5.950	240	0,100	3,000
4,5	5.550	255	0,100	3,500	5.250	255	0,100	3,500	5.100	245	0,100	3,500
5	4.750	260	0,120	4,000	4.450	260	0,120	4,000	4.250	250	0,120	4,000
5,5	4.550	265	0,130	4,250	4.250	265	0,130	4,250	4.100	255	0,130	4,250
6	4.300	270	0,140	4,500	4.100	270	0,140	4,500	4.000	260	0,140	4,500
6,5	4.000	280	0,145	4,850	3.800	280	0,145	4,850	3.800	270	0,145	4,850
7	3.750	285	0,150	5,250	3.550	285	0,150	5,250	3.500	275	0,150	5,250
7,5	3.450	290	0,155	5,600	3.250	290	0,155	5,600	3.200	285	0,155	5,600
8	3.150	300	0,160	6,000	3.000	300	0,160	6,000	2.950	290	0,160	6,000
8,5	3.050	305	0,165	6,350	2.850	305	0,165	6,350	2.800	295	0,165	6,350
9	2.900	310	0,170	6,750	2.750	310	0,170	6,750	2.600	300	0,170	6,750
9,5	2.800	315	0,175	7,100	2.600	315	0,175	7,100	2.500	305	0,175	7,100
10	2.650	320	0,180	7,500	2.500	320	0,180	7,500	2.350	310	0,180	7,500
10,5	2.550	330	0,185	7,600	2.150	330	0,185	7,600	2.000	320	0,185	7,600
11	2.400	340	0,190	7,750	1.750	340	0,190	7,750	1.650	330	0,190	7,750
12	2.150	360	0,200	8,000	1.050	360	0,200	8,000	950	350	0,200	8,000

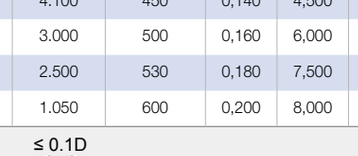
Profondità di Taglio
Depth of Cut



4NSH

Cutting Condition

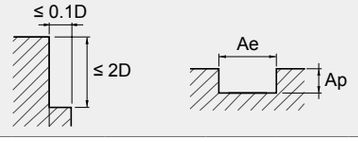
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	15.800	950	0,015	0,750	14.500	850	0,015	0,750	14.000	700	0,015	0,750
1,5	14.000	1.050	0,015	0,800	13.500	950	0,015	0,800	12.000	800	0,015	0,800
2	12.000	1.100	0,025	1,500	10.500	1.050	0,025	1,500	10.000	1.000	0,025	1,500
3	7.000	1.250	0,040	2,300	6.000	1.200	0,040	2,300	5.800	1.100	0,040	2,300
4	6.000	1.350	0,050	3,000	5.500	1.250	0,050	3,000	5.000	1.150	0,050	3,000
Profondità di Taglio Depth of Cut												

4SH

Cutting Condition

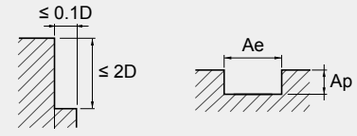
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	16.500	290	0,040	0,750	16.000	290	0,040	0,750	15.800	245	0,040	0,750
1,5	13.500	300	0,040	0,750	13.500	300	0,040	0,750	12.800	250	0,040	0,750
2	10.500	310	0,060	1,500	10.000	305	0,060	1,500	9.700	280	0,060	1,500
2,5	8.650	345	0,075	1,800	8.250	340	0,075	1,800	8.000	310	0,075	1,800
3	6.800	375	0,090	2,250	6.500	370	0,090	2,250	6.300	350	0,090	2,250
3,5	6.550	400	0,095	2,500	6.300	400	0,095	2,500	6.150	375	0,095	2,500
4	6.300	425	0,100	3,000	6.100	420	0,100	3,000	5.950	400	0,100	3,000
4,5	5.800	435	0,110	3,500	5.600	425	0,110	3,500	5.500	410	0,110	3,500
5	5.300	445	0,120	3,750	5.100	435	0,120	3,750	5.000	420	0,120	3,750
6	4.300	460	0,140	4,500	4.100	450	0,140	4,500	4.000	440	0,140	4,500
8	3.150	510	0,160	6,000	3.000	500	0,160	6,000	2.950	490	0,160	6,000
10	2.650	550	0,180	7,500	2.500	530	0,180	7,500	2.350	500	0,180	7,500
12	2.150	610	0,200	8,000	1.050	600	0,200	8,000	950	580	0,200	8,000
Profondità di Taglio Depth of Cut												

4SHH

Cutting Condition

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	18.150	300	0,010	0,020	17.250	290	0,010	0,020	16.730	270	0,010	0,020
1,5	14.850	315	0,015	0,025	14.110	300	0,015	0,025	13.670	280	0,015	0,025
2	11.550	320	0,020	0,030	10.980	305	0,020	0,030	10.650	290	0,020	0,030
2,5	9.515	335	0,025	0,035	9.050	310	0,025	0,035	8.780	300	0,025	0,035
3	7.480	380	0,030	0,040	7.100	345	0,030	0,040	6.890	330	0,030	0,040
4	6.930	425	0,040	0,050	6.585	400	0,040	0,050	6.380	370	0,040	0,050
5	5.350	455	0,050	0,075	5.080	420	0,050	0,075	4.930	400	0,050	0,075
6	3.740	480	0,060	0,080	3.550	430	0,060	0,080	3.440	405	0,060	0,080
8	3.570	545	0,080	0,090	3.390	520	0,080	0,090	3.290	480	0,080	0,090
10	2.860	580	0,100	0,100	2.720	530	0,100	0,100	2.640	500	0,100	0,100
12	2.365	620	0,120	0,110	2.240	600	0,120	0,110	2.170	540	0,120	0,110
14	2.050	638	0,140	0,120	1.950	615	0,140	0,120	1.890	575	0,140	0,120
16	1.790	645	0,160	0,130	1.700	620	0,160	0,130	1.650	590	0,160	0,130
20	1.450	685	0,200	0,140	1.380	655	0,200	0,140	1.340	610	0,200	0,140
Profondità di Taglio Depth of Cut												

6SH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material		Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB		Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Lunghezza del Tagliente Lenght of Cut (mm)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
6	15	2.300	550	2.200	500	2.000	480
	25	1.450	240	1.300	240	1.100	230
8	25	1.700	500	1.600	450	1.400	430
	35	1.050	280	900	280	800	270
10	35	1.300	480	1.200	430	1.000	410
	45	950	300	800	300	700	290
12	40	1.050	450	1.050	400	900	380
	50	750	320	600	320	550	310
16	45	830	400	800	350	690	330
	80	560	270	470	270	420	260
20	50	660	350	630	300	550	290
	100	440	230	380	230	330	220
Profondità di Taglio Depth of Cut	Tipo Corto Short Type	≤ 0.03D ≤ 1D		≤ 0.02D ≤ 1D		≤ 0.015D ≤ 1D	
	Tipo Lungo Long Type	≤ 0.01D 3D - 4D				≤ 0.005D 3D - 4D	

2NB

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

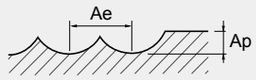
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,6	27.000	700	0,018	0,018	20.000	600	0,018	0,018	18.000	400	0,018	0,018
0,7	25.500	850	0,020	0,020	19.250	700	0,020	0,020	17.500	500	0,020	0,020
0,8	24.000	1.000	0,022	0,022	18.500	800	0,022	0,022	17.000	600	0,022	0,022
0,9	22.500	1.100	0,025	0,025	17.750	900	0,025	0,025	16.500	700	0,025	0,025
1	21.000	1.200	0,030	0,030	17.000	1.000	0,030	0,030	16.000	800	0,030	0,030
1,2	19.800	1.250	0,035	0,035	16.600	1.050	0,035	0,035	15.200	850	0,035	0,035
1,5	18.000	1.300	0,040	0,040	16.000	1.150	0,040	0,040	14.000	950	0,040	0,040
1,6	17.600	1.350	0,045	0,045	15.600	1.200	0,045	0,045	13.700	1.000	0,045	0,045
2	16.000	1.450	0,060	0,060	14.000	1.300	0,060	0,060	12.500	1.100	0,060	0,060
2,5	15.000	1.500	0,075	0,075	13.000	1.400	0,075	0,075	11.500	1.150	0,075	0,075
3	14.000	1.600	0,090	0,090	12.000	1.500	0,090	0,090	10.500	1.250	0,090	0,090
3,5	13.000	1.650	0,105	0,105	11.000	1.500	0,105	0,105	9.750	1.300	0,105	0,105
4	12.000	1.700	0,120	0,120	10.000	1.500	0,120	0,120	9.000	1.350	0,120	0,120
6	10.000	2.000	0,160	0,160	8.500	1.700	0,160	0,160	7.500	1.450	0,160	0,160
8	9.500	2.100	0,180	0,180	8.000	1.800	0,180	0,180	7.000	1.600	0,180	0,180
10	9.000	2.200	0,200	0,200	7.500	2.000	0,200	0,200	6.500	1.750	0,200	0,200
12	8.000	2.500	0,220	0,220	7.000	2.200	0,220	0,220	6.000	2.000	0,220	0,220
Profondità di Taglio Depth of Cut	Ae Ap											

2BS

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

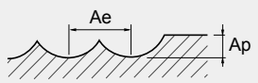
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,5	26.000	650	0,015	0,015	25.000	600	0,011	0,011	24.500	400	0,007	0,007
1	21.000	1.200	0,030	0,030	18.000	1.000	0,030	0,030	16.500	800	0,030	0,030
1,5	18.000	1.300	0,040	0,040	17.000	1.150	0,040	0,040	15.000	950	0,040	0,040
2	16.000	1.450	0,060	0,060	15.000	1.300	0,060	0,060	12.750	1.100	0,060	0,060
3	14.000	1.600	0,090	0,090	13.500	1.500	0,090	0,090	11.000	1.250	0,090	0,090
4	12.000	1.700	0,120	0,120	11.000	1.500	0,120	0,120	9.500	1.350	0,120	0,120
6	10.000	2.000	0,160	0,160	9.000	1.700	0,160	0,160	8.000	1.450	0,160	0,160
8	9.500	2.100	0,180	0,180	8.500	1.800	0,180	0,180	7.800	1.600	0,180	0,180
10	9.000	2.200	0,200	0,200	8.000	2.000	0,200	0,200	7.000	1.750	0,200	0,200
12	8.000	2.500	0,220	0,220	7.500	2.200	0,220	0,220	6.500	2.000	0,220	0,220
Profondità di Taglio Depth of Cut												

2BR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

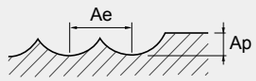
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,2	30.500	440	0,009	0,009	28.500	390	0,008	0,008	27.500	280	0,005	0,005
0,3	29.000	500	0,011	0,011	27.000	450	0,009	0,009	26.100	320	0,006	0,006
0,4	27.500	570	0,013	0,013	25.700	500	0,010	0,010	24.800	360	0,007	0,007
0,5	26.000	650	0,015	0,015	25.000	600	0,011	0,011	24.500	400	0,007	0,007
0,6	25.000	760	0,018	0,018	23.600	680	0,015	0,015	22.900	480	0,012	0,012
0,7	24.000	870	0,021	0,021	22.200	760	0,019	0,019	21.300	560	0,016	0,016
0,8	23.000	980	0,024	0,024	20.800	840	0,022	0,022	19.700	640	0,021	0,021
1	21.000	1.200	0,030	0,030	18.000	1.000	0,030	0,030	16.500	800	0,030	0,030
1,2	19.800	1.250	0,035	0,035	17.600	1.060	0,034	0,034	15.900	860	0,034	0,034
1,5	18.000	1.300	0,040	0,040	17.000	1.150	0,040	0,040	15.000	950	0,040	0,040
2	16.000	1.450	0,060	0,060	15.000	1.300	0,060	0,060	12.750	1.100	0,060	0,060
2,5	15.000	1.550	0,075	0,075	14.200	1.400	0,075	0,075	11.900	1.175	0,075	0,075
3	14.000	1.600	0,090	0,090	13.500	1.500	0,090	0,090	11.000	1.250	0,090	0,090
3,5	13.000	1.650	0,100	0,100	12.250	1.500	0,100	0,100	10.250	1.300	0,100	0,100
4	12.000	1.700	0,120	0,120	11.000	1.500	0,120	0,120	9.500	1.350	0,120	0,120
5	11.000	1.850	0,140	0,140	10.000	1.600	0,140	0,140	8.750	1.400	0,140	0,140
6	10.000	2.000	0,160	0,160	9.000	1.700	0,160	0,160	8.000	1.450	0,160	0,160
7	9.750	2.050	0,170	0,170	870	1.750	0,170	0,170	7.900	1.525	0,170	0,170
8	9.500	2.100	0,180	0,180	8.500	1.800	0,180	0,180	7.800	1.600	0,180	0,180
9	9.250	2.150	0,190	0,190	8.250	1.900	0,190	0,190	7.400	1.675	0,190	0,190
10	9.000	2.200	0,200	0,200	8.000	2.000	0,200	0,200	7.000	1.750	0,200	0,200
12	8.000	2.500	0,220	0,220	7.500	2.200	0,220	0,220	6.500	2.000	0,220	0,220
14	7.100	2.750	0,240	0,240	6.700	2.400	0,240	0,240	5.700	2.200	0,240	0,240
16	6.300	3.000	0,270	0,270	5.900	2.650	0,270	0,270	5.100	2.400	0,270	0,270
20	5.600	3.300	0,290	0,290	5.300	2.900	0,290	0,290	4.500	2.700	0,290	0,290
Profondità di Taglio Depth of Cut												

2TB

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

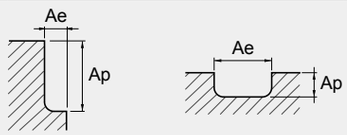
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,5	29.000	1.950	0,061	0,061	22.000	1.290	0,061	0,061	19.000	1.130	0,061	0,061
0,6	27.000	1.900	0,064	0,064	20.000	1.250	0,064	0,064	18.000	1.100	0,064	0,064
0,8	24.000	1.800	0,067	0,067	18.500	1.190	0,067	0,067	17.000	1.040	0,067	0,067
1	21.000	1.700	0,075	0,075	17.000	1.120	0,075	0,075	16.000	990	0,075	0,075
1,5	18.000	1.400	0,080	0,080	16.000	920	0,080	0,080	14.000	810	0,080	0,080
2	16.000	1.150	0,110	0,110	14.000	760	0,110	0,110	12.500	670	0,110	0,110
3	14.000	900	0,130	0,130	12.000	600	0,130	0,130	10.500	520	0,130	0,130
Profondità di Taglio Depth of Cut												

2NC

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

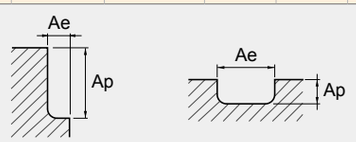
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,2	26.400	60	0,002	0,012	25.000	50	0,002	0,008	24.000	40	0,002	0,008
0,3	24.700	75	0,002	0,015	23.500	65	0,002	0,010	22.400	50	0,002	0,010
0,4	23.200	100	0,003	0,025	22.000	80	0,003	0,014	21.000	70	0,003	0,014
0,5	21.700	125	0,004	0,030	20.500	105	0,004	0,020	19.500	90	0,004	0,020
0,6	20.300	160	0,006	0,040	19.300	135	0,006	0,025	18.400	110	0,006	0,025
0,7	19.000	210	0,008	0,060	18.000	175	0,008	0,040	17.200	150	0,008	0,040
0,8	17.800	260	0,010	0,080	17.000	230	0,010	0,050	16.000	200	0,010	0,050
0,9	16.850	355	0,015	0,115	16.000	300	0,015	0,075	15.250	250	0,015	0,075
1	15.900	450	0,020	0,150	15.000	370	0,020	0,100	14.500	300	0,020	0,100
1,2	14.600	550	0,024	0,210	13.800	478	0,024	0,160	13.100	388	0,024	0,160
1,5	12.700	700	0,030	0,300	12.000	640	0,030	0,250	11.000	520	0,030	0,250
2	11.000	830	0,060	0,400	10.500	700	0,060	0,300	1.000	600	0,060	0,300
2,5	10.250	965	0,070	0,500	9.750	840	0,070	0,375	4.750	725	0,070	0,375
3	9.500	1.100	0,080	0,600	9.000	980	0,080	0,450	8.500	850	0,080	0,450
4	8.700	1.150	0,100	1,000	8.500	1.000	0,100	0,800	8.250	900	0,100	0,800
5	7.800	1.175	0,120	1,100	7.500	1.050	0,120	0,900	7.125	950	0,120	0,900
6	7.000	1.200	0,140	1,200	6.500	1.100	0,140	1,000	6.000	1.000	0,140	1,000
8	4.800	1.250	0,160	1,500	4.500	1.170	0,160	1,300	4.300	1.070	0,160	1,300
10	4.000	1.300	0,180	1,800	3.750	1.200	0,180	1,500	3.250	1.100	0,180	1,500
12	3.400	1.350	0,200	2,200	3.200	1.200	0,200	1,800	3.000	1.100	0,200	1,800
Profondità di Taglio Depth of Cut												

2CL

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

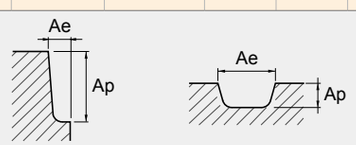
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,8	16.500	370	0,015	0,100	16.000	340	0,015	0,080	15.500	320	0,010	0,060
1	15.900	400	0,020	0,150	15.000	360	0,020	0,100	14.500	350	0,020	0,100
1,2	14.600	500	0,025	0,200	13.800	450	0,025	0,150	13.100	400	0,025	0,150
1,5	12.700	650	0,030	0,300	12.000	600	0,030	0,250	11.000	500	0,030	0,250
2	11.000	800	0,060	0,400	10.500	750	0,060	0,300	1.000	700	0,060	0,300
3	9.500	1.000	0,080	0,600	9.000	900	0,080	0,450	8.500	850	0,080	0,450
4	8.700	1.100	0,100	1,000	8.500	1.000	0,100	0,800	8.250	950	0,100	0,800
5	7.500	1.100	0,120	1,100	7.300	1.100	0,120	0,900	7.000	1.000	0,120	0,900
6	7.000	1.150	0,140	1,200	6.500	1.150	0,140	1,000	6.000	1.050	0,140	1,000
8	4.800	1.200	0,160	1,500	4.500	1.200	0,160	1,300	4.300	1.150	0,160	1,300
10	4.000	1.250	0,180	1,800	3.750	1.250	0,180	1,500	3.250	1.230	0,180	1,500
12	3.400	1.300	0,200	2,200	3.200	1.300	0,200	1,800	3.000	1.250	0,200	1,800
Profondità di Taglio Depth of Cut												

2CT

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

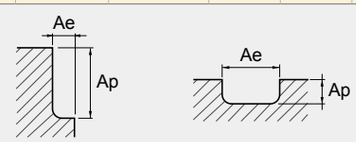
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,3	22.500	1.000	0,055	0,100	16.800	670	0,055	0,100	14.200	570	0,055	0,100
0,5	20.300	980	0,061	0,110	15.400	640	0,061	0,110	13.300	540	0,061	0,110
1	14.700	850	0,075	0,140	11.900	550	0,075	0,140	11.200	470	0,075	0,140
1,5	12.600	700	0,080	0,150	11.200	450	0,080	0,150	9.800	380	0,080	0,150
2	11.200	570	0,110	0,210	9.800	370	0,110	0,210	8.750	310	0,110	0,210
3	9.800	450	0,130	0,250	8.400	290	0,130	0,250	7.350	250	0,130	0,250
Profondità di Taglio Depth of Cut												

4NC

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

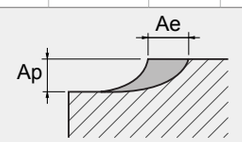
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	15.900	400	0,020	0,130	15.000	350	0,020	0,100	14.500	300	0,020	0,080
1,2	14.750	440	0,025	0,140	14.200	390	0,025	0,110	13.900	340	0,025	0,090
1,5	13.000	500	0,030	0,150	13.000	450	0,030	0,130	13.000	400	0,030	0,100
2	11.000	750	0,040	0,220	10.500	600	0,060	0,200	1.000	500	0,060	0,170
2,5	10.500	800	0,060	0,300	10.500	650	0,060	0,250	10.500	550	0,060	0,200
3	9.500	1.000	0,070	0,400	9.000	900	0,080	0,300	8.500	800	0,080	0,250
4	8.700	1.050	0,090	0,700	8.500	950	0,100	0,580	8.250	850	0,100	0,450
5	7.900	1.075	0,100	0,900	7.500	975	0,120	0,800	7.150	875	0,120	0,600
6	7.000	1.100	0,120	1,100	6.500	1.000	0,140	1,000	6.000	900	0,140	0,750
8	4.800	1.150	0,150	1,400	4.500	1.100	0,160	1,100	4.300	1.000	0,160	0,900
10	4.000	1.200	0,170	1,700	3.750	1.150	0,180	1,500	3.250	1.050	0,180	1,000
12	3.400	1.300	0,190	2,100	3.200	1.180	0,200	1,900	3.000	1.100	0,200	1,500
Profondità di Taglio Depth of Cut												

4CF

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

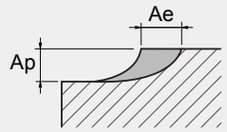
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
4	11.200	12.200	0,170	1,300	10.300	10.900	0,135	1,250	9.400	8.700	0,090	0,800
6	8.000	11.000	0,200	2,000	7.400	10.000	0,150	2,000	7.000	7.500	0,100	1,500
8	6.000	10.000	0,250	3,000	5.600	9.000	0,200	3,000	5.000	7.000	0,150	2,000
10	5.000	9.000	0,300	4,500	4.500	8.000	0,250	4,000	4.000	6.500	0,200	2,500
12	4.500	8.000	0,350	5,500	4.000	7.000	0,300	5,000	3.750	6.000	0,200	3,000
Profondità di Taglio Depth of Cut												

4CHF

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

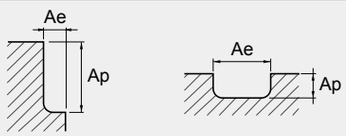
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
5	9.600	11.600	0,180	1,600	8.800	10.400	0,140	1,600	8.200	8.100	0,090	1,150
6	8.000	11.000	0,200	2,000	7.400	10.000	0,150	2,000	7.000	7.500	0,100	1,500
8	6.000	10.000	0,250	3,000	5.600	9.000	0,200	3,000	5.000	7.000	0,150	2,000
10	5.000	9.000	0,300	4,500	4.500	8.000	0,250	4,000	4.000	6.500	0,200	2,500
12	4.500	8.000	0,350	5,500	4.000	7.000	0,300	5,000	3.750	6.000	0,200	3,000
Profondità di Taglio Depth of Cut												

4CL

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

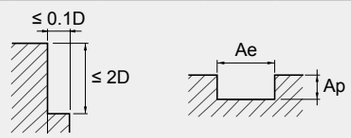
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1,5	12.000	720	0,035	0,190	11.400	570	0,040	0,170	10.700	380	0,040	0,130
2	11.000	750	0,040	0,220	10.500	600	0,060	0,200	10.000	500	0,060	0,170
3	9.500	1.000	0,070	0,400	9.000	900	0,080	0,300	8.500	800	0,080	0,250
4	8.700	1.050	0,090	0,700	8.500	950	0,100	0,630	8.250	850	0,100	0,450
5	8.300	1.050	0,100	0,900	7.800	1.000	0,120	0,800	7.300	880	0,110	0,680
6	7.000	1.100	0,120	1,100	6.500	1.000	0,140	1,000	6.000	900	0,140	0,750
8	4.800	1.150	0,150	1,400	4.500	1.100	0,160	1,100	4.300	1.000	0,160	0,900
10	4.000	1.200	0,170	1,700	3.750	1.150	0,180	1,500	3.250	1.050	0,180	1,000
12	3.400	1.300	0,190	2,100	3.200	1.180	0,200	1,900	3.000	1.100	0,200	1,500
Profondità di Taglio Depth of Cut												

2NS

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

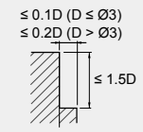
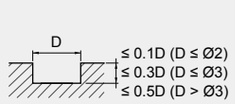
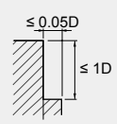
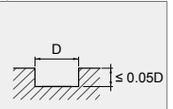
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
0,1	32.200	180	0,001	0,125	30.000	130	0,001	0,125	28.500	110	0,001	0,125
0,15	31.100	190	0,001	0,135	29.000	140	0,001	0,135	27.500	120	0,001	0,135
0,2	30.000	200	0,001	0,150	28.000	150	0,001	0,150	26.500	130	0,001	0,150
0,3	27.000	210	0,002	0,230	26.000	170	0,002	0,230	24.500	150	0,002	0,230
0,4	23.400	260	0,003	0,300	22.000	220	0,003	0,300	20.500	200	0,003	0,300
0,5	21.500	340	0,004	0,380	20.000	300	0,004	0,380	19.500	280	0,004	0,380
0,6	20.800	380	0,005	0,450	19.500	330	0,005	0,450	19.000	300	0,005	0,450
0,7	20.200	410	0,005	0,530	19.000	370	0,005	0,530	18.500	330	0,005	0,530
0,8	19.500	450	0,006	0,600	18.500	400	0,006	0,600	18.000	350	0,006	0,600
0,9	18.000	520	0,011	0,670	16.750	450	0,011	0,680	16.250	400	0,010	0,670
1	16.500	580	0,015	0,750	15.000	500	0,015	0,750	14.500	450	0,015	0,750
1,2	15.900	590	0,017	0,910	14.400	520	0,017	0,910	13.700	470	0,017	0,900
1,5	15.000	600	0,020	1,150	13.500	550	0,020	1,150	12.500	500	0,020	1,150
1,6	14.300	610	0,021	1,220	12.600	560	0,021	1,220	11.600	510	0,021	1,220
1,8	12.900	630	0,023	1,360	10.800	580	0,023	1,360	9.800	530	0,023	1,360
2	11.500	650	0,025	1,500	9.000	600	0,025	1,500	8.000	550	0,025	1,500
2,5	9.000	680	0,030	1,900	7.500	600	0,030	1,900	6.750	600	0,030	1,900
3	7.500	720	0,040	2,300	5.800	720	0,040	2,300	5.450	650	0,040	2,300
4	5.500	800	0,050	3,000	4.000	750	0,050	3,000	3.800	680	0,050	3,000
5	4.000	850	0,070	3,800	3.200	800	0,070	3,800	2.950	750	0,070	3,800
6	3.500	950	0,080	4,500	2.700	850	0,080	4,500	2.550	800	0,080	4,500
8	3.000	1.050	0,110	6,000	2.400	950	0,110	6,000	2.200	850	0,110	6,000
Profondità di Taglio Depth of Cut												

2SR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

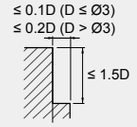
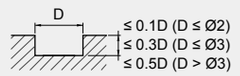
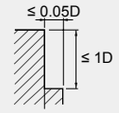
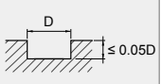
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB		Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
0,2	28.700	130	27.700	110	25.700	90
0,3	27.000	140	26.000	120	24.000	100
0,4	25.000	150	24.000	135	22.000	110
0,5	23.000	160	22.000	150	20.000	120
0,6	22.000	165	21.000	155	19.000	125
0,7	21.000	175	20.000	160	18.000	130
0,8	20.000	180	19.000	160	17.000	140
1	18.000	190	17.000	170	15.000	150
1,2	16.800	190	15.800	170	14.000	150
1,5	15.000	195	14.000	175	12.500	155
2	12.000	200	11.000	180	10.000	160
2,5	10.000	225	9.000	200	8.500	180
3	8.000	250	7.000	220	7.000	200
3,5	7.500	250	6.750	235	6.500	215
4	7.000	250	6.500	250	6.000	230
4,5	6.300	265	5.700	255	5.500	235
5	5.600	280	5.000	260	5.000	240
5,5	5.200	290	4.700	265	4.600	245
6	4.900	300	4.500	270	4.300	250
6,5	4.600	305	4.200	280	4.000	255
7	4.200	310	3.900	285	3.600	260
7,5	3.900	315	3.600	295	3.300	265
8	3.600	320	3.250	300	3.000	270
8,5	3.400	330	3.100	305	2.900	280
9	3.200	335	3.000	310	2.700	285
9,5	3.000	345	2.800	315	2.600	295
10	2.800	350	2.700	320	2.500	300
10,5	2.700	365	2.600	330	3.400	310
11	2.600	375	2.500	340	2.200	320
12	2.400	400	2.250	360	2.000	340
14	1.850	450	1.750	400	1.550	375
16	1.400	510	1.350	430	1.650	415
20	1.050	570	1.050	475	900	460
Profondità di Taglio Depth of Cut						

2SL

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

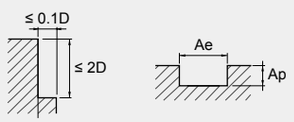
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB		Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
1	18.000	190	17.000	170	15.000	150
1,5	15.000	195	14.000	175	12.500	155
2	12.000	200	11.000	180	10.000	160
3	8.000	250	7.000	220	7.000	200
4	7.000	250	6.500	250	6.000	230
5	5.600	280	5.000	260	5.000	240
6	4.900	300	4.500	270	4.300	250
8	3.600	320	3.250	300	3.000	270
10	2.800	350	2.700	320	2.500	300
12	2.400	400	2.250	360	2.000	340
16	1.600	480	1.500	425	1.300	400
20	1.050	570	1.000	500	830	480
Profondità di Taglio Depth of Cut						

4NS

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

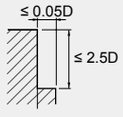
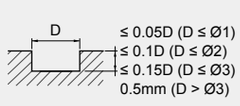
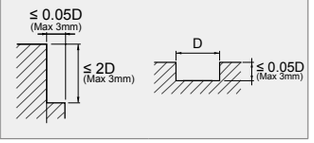
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	16.500	1.000	0,015	0,750	15.000	875	0,015	0,750	14.500	780	0,015	0,750
1,5	15.000	1.050	0,020	1,150	13.500	950	0,020	1,150	12.500	850	0,020	1,150
2	11.500	1.100	0,025	1,500	9.000	1.050	0,025	1,500	8.000	1.000	0,025	1,500
2,5	9.000	1.150	0,030	1,900	7.500	1.100	0,030	1,900	6.750	1.050	0,030	1,900
3	7.500	1.250	0,040	2,300	5.800	1.170	0,040	2,300	5.450	1.100	0,040	2,300
4	5.500	1.400	0,050	3,000	4.000	1.300	0,050	3,000	3.800	1.200	0,050	3,000
6	3.500	1.650	0,080	4,500	2.700	1.450	0,080	4,500	2.550	1.300	0,080	4,500
12	4.500	8.000	0,350	5,500	4.000	7.000	0,300	5,000	3.750	6.000	0,200	3,000
Profondità di Taglio Depth of Cut												

4SR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

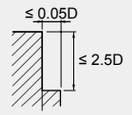
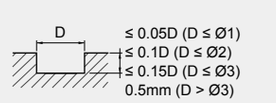
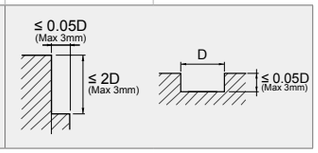
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB		Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
1	14.000	160	13.000	160	11.500	150
1,5	12.000	200	11.000	200	10.000	175
2	10.000	220	10.000	220	9.500	200
2,5	9.000	235	8.750	235	8.400	210
3	8.000	250	7.500	250	7.300	220
3,5	7.500	260	7.000	260	6.800	235
4	7.000	270	6.500	270	6.300	245
4,5	6.100	280	6.100	280	5.900	250
5	5.200	290	5.700	290	5.500	250
5,5	4.950	300	4.850	300	4.625	260
6	4.700	310	4.000	310	3.750	270
6,5	4.450	320	3.850	320	3.613	280
7	4.150	325	3.700	325	3.475	285
7,5	3.850	335	3.550	335	3.338	295
8	3.600	340	3.400	340	3.200	300
8,5	3.300	350	3.100	350	2.900	310
9	3.000	355	2.800	355	2.600	315
10	2.400	370	2.200	370	2.000	330
10,5	2.350	380	2.150	380	1.963	335
12	2.200	400	2.000	400	1.850	350
14	1.950	450	1.850	450	1.700	400
16	1.700	510	1.600	510	1.500	460
20	1.350	640	1.300	640	1.200	580
Profondità di Taglio Depth of Cut						

4SL

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

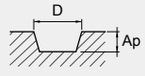
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB		Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
1	14.000	160	13.000	160	11.500	150
2	10.000	220	10.000	220	9.500	200
3	8.000	250	7.500	250	7.300	220
4	7.000	270	6.500	270	6.300	245
5	5.800	290	5.200	290	5.000	250
6	4.700	310	4.000	310	3.750	270
8	3.600	340	3.400	340	3.200	300
10	2.400	370	2.200	370	2.000	330
12	2.200	400	2.000	400	1.850	350
16	1.700	510	1.600	510	1.500	460
20	1.350	640	1.300	640	1.200	580
Profondità di Taglio Depth of Cut						

4TE

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB			Acciaio Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc			Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc		
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth
0,7	23.200	750	0,020	20.000	420	0,020	18.000	350	0,020
0,8	20.000	740	0,025	17.600	410	0,025	15.500	340	0,025
1	16.000	730	0,030	14.000	400	0,030	12.500	330	0,030
Profondità di Taglio Depth of Cut									

6SR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material		Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB		Acciaio Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc	
Diametro Diameter	Lunghezza del Tagliente Lenght of Cut (mm)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
6	15	2.650	640	2.400	600	2.200	400
	25	1.700	300	1.500	240	1.350	200
8	25	2.000	600	1.800	560	1.600	520
	35	1.250	300	1.100	280	1.000	240
10	35	1.600	580	1.400	550	1.200	500
	45	1.100	330	1.000	300	850	260
12	40	1.300	550	1.150	500	900	370
	50	900	350	800	320	650	250
16	45	1.000	480	900	430	750	360
	80	650	290	600	260	500	220
20	50	800	430	700	390	600	320
	100	550	280	500	250	400	210

Profondità di Taglio Depth of Cut				
	Tipo Corto Short Type	≤ 0.03D ≤ 1D	≤ 0.02D ≤ 1D	≤ 0.015D ≤ 1D
	Tipo Lungo Long Type	≤ 0.01D 3D - 4D		≤ 0.005D 3D - 4D

2BRHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	16.000	1.080	0,030	0,030	15.750	1.000	0,030	0,030	15.200	900	0,020	0,020
1,5	15.500	1.230	0,040	0,040	14.000	1.150	0,040	0,040	13.800	1.050	0,030	0,030
2	14.500	1.290	0,050	0,050	13.250	1.200	0,050	0,050	13.000	1.100	0,035	0,035
2,5	13.500	1.350	0,060	0,060	12.500	1.300	0,060	0,060	12.000	1.150	0,040	0,040
3	12.500	1.450	0,090	0,090	11.500	1.400	0,090	0,090	11.000	1.200	0,065	0,065
4	12.000	1.550	0,120	0,120	10.450	1.500	0,120	0,120	10.000	1.300	0,090	0,090
5	10.450	1.650	0,140	0,140	9.800	1.600	0,140	0,140	9.450	1.400	0,120	0,120
6	9.800	1.800	0,160	0,160	9.300	1.700	0,160	0,160	9.150	1.580	0,135	0,135
8	9.500	1.900	0,180	0,180	9.100	1.800	0,180	0,180	8.900	1.630	0,160	0,160
10	8.500	2.100	0,200	0,200	7.500	2.000	0,200	0,200	7.280	1.720	0,180	0,180
12	7.350	2.150	0,220	0,220	6.700	2.100	0,220	0,220	6.450	1.900	0,200	0,200

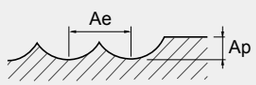
Materiale Material	Leghe di Titanio Titanium Alloy				Acciao Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	10.700	650	0,025	0,025	15.750	900	0,025	0,025	19.200	1.296	0,036	0,036
1,5	10.400	745	0,035	0,035	14.000	1.035	0,035	0,035	18.600	1.476	0,048	0,048
2	9.700	775	0,045	0,045	13.250	1.080	0,045	0,045	17.400	1.548	0,060	0,060
2,5	9.050	815	0,055	0,055	12.500	1.170	0,055	0,055	16.200	1.620	0,072	0,072
3	8.350	870	0,080	0,080	11.500	1.260	0,080	0,080	15.000	1.740	0,108	0,108
4	8.050	935	0,110	0,110	10.450	1.350	0,110	0,110	14.400	1.860	0,144	0,144
5	7.000	995	0,125	0,125	9.800	1.440	0,125	0,125	12.540	1.980	0,168	0,168
6	6.600	1.090	0,145	0,145	9.300	1.530	0,145	0,145	11.760	2.160	0,192	0,192
8	6.350	1.145	0,160	0,160	9.100	1.620	0,160	0,160	11.400	2.280	0,216	0,216
10	5.700	1.265	0,180	0,180	7.500	1.800	0,180	0,180	10.200	2.520	0,240	0,240
12	4.900	1.290	0,200	0,200	6.700	1.890	0,200	0,200	8.820	2.580	0,264	0,264

Profondità di Taglio Depth of Cut	
	Ae Ap

4BRHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	19.400	1.300	0,030	0,030	19.000	1.200	0,030	0,030	18.400	1.100	0,020	0,020
1,5	18.800	1.500	0,040	0,040	17.000	1.400	0,040	0,040	16.700	1.300	0,030	0,030
2	17.500	1.600	0,050	0,050	16.000	1.450	0,050	0,050	15.700	1.350	0,035	0,035
2,5	16.300	1.750	0,060	0,060	15.100	1.550	0,060	0,060	14.500	1.400	0,040	0,040
3	15.100	1.850	0,090	0,090	14.000	1.700	0,090	0,090	13.300	1.450	0,065	0,065
4	14.500	1.900	0,120	0,120	12.600	1.800	0,120	0,120	12.100	1.550	0,090	0,090
5	12.600	2.000	0,140	0,140	11.800	1.950	0,140	0,140	11.400	1.700	0,120	0,120
6	11.800	2.200	0,160	0,160	11.200	2.050	0,160	0,160	11.000	1.900	0,135	0,135
8	11.500	2.300	0,180	0,180	11.000	2.200	0,180	0,180	10.800	1.950	0,160	0,160
10	10.300	2.500	0,200	0,200	9.000	2.400	0,200	0,200	8.800	2.100	0,180	0,180
12	8.900	2.600	0,220	0,220	8.000	2.550	0,220	0,220	7.800	2.300	0,200	0,200
Materiale Material	Leghe di Titanio Titanium Alloy				Acciao Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
1	13.000	785	0,025	0,025	19.000	1.080	0,025	0,025	23.280	1.560	0,036	0,036
1,5	12.500	900	0,035	0,035	17.000	1.260	0,035	0,035	22.560	1.800	0,048	0,048
2	11.750	965	0,045	0,045	16.000	1.305	0,045	0,045	21.000	1.920	0,060	0,060
2,5	10.900	1.055	0,055	0,055	15.100	1.395	0,055	0,055	19.560	2.100	0,072	0,072
3	10.100	1.115	0,080	0,080	14.000	1.530	0,080	0,080	18.120	2.220	0,108	0,108
4	9.700	1.145	0,110	0,110	12.600	1.620	0,110	0,110	17.400	2.280	0,144	0,144
5	8.450	1.205	0,125	0,125	11.800	1.755	0,125	0,125	15.120	2.400	0,168	0,168
6	7.900	1.325	0,145	0,145	11.200	1.845	0,145	0,145	14.160	2.640	0,192	0,192
8	7.700	1.385	0,160	0,160	11.000	1.980	0,160	0,160	13.800	2.760	0,216	0,216
10	6.900	1.505	0,180	0,180	9.000	2.160	0,180	0,180	12.360	3.000	0,240	0,240
12	6.000	1.580	0,200	0,200	8.000	2.295	0,200	0,200	10.680	3.120	0,264	0,264
Profondità di Taglio Depth of Cut												

4CLHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

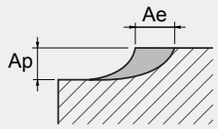
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
6	4.800	835	0,140	1,000	4.250	740	0,140	1,000	3.700	645	0,140	1,000
8	3.600	940	0,160	1,300	3.200	840	0,160	1,300	2.800	735	0,160	1,300
10	2.850	870	0,180	1,500	2.550	780	0,180	1,500	2.250	690	0,180	1,500
12	2.400	910	0,200	1,800	2.100	800	0,200	1,800	1.850	705	0,200	1,800
Materiale Material	Leghe di Titanio Titanium Alloy				Acciao Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
6	3.200	500	0,125	1,000	4.250	665	0,125	1,000	6.900	1.325	0,155	1,000
8	2.400	565	0,145	1,300	3.200	755	0,145	1,300	5.200	1.500	0,175	1,300
10	1.900	520	0,160	1,500	2.550	700	0,160	1,500	4.150	1.400	0,200	1,500
12	1.600	545	0,180	1,800	2.100	720	0,180	1,800	3.450	1.445	0,220	1,800
Profondità di Taglio Depth of Cut												

4CHFHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

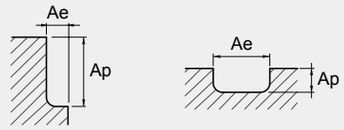
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
6	8.000	11.000	0,200	2,000	7.400	10.000	0,150	2,000	7.000	7.500	0,100	1,500
8	6.000	10.000	0,250	3,000	5.600	9.000	0,200	3,000	5.000	7.000	0,150	2,000
10	5.000	9.000	0,300	4,500	4.500	8.000	0,250	4,000	4.000	6.500	0,200	2,500
12	4.500	8.000	0,350	5,500	4.000	7.000	0,300	5,000	3.750	6.000	0,200	3,000
Materiale Material	Leghe di Titanio Titanium Alloy				Acciao Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
6	4.000	2.350	0,180	2,000	5.500	4.900	0,135	2,000	9.600	13.200	0,110	2,000
8	3.000	2.100	0,225	3,000	4.150	4.450	0,180	3,000	7.200	12.000	0,165	3,000
10	2.450	1.900	0,270	4,500	3.450	4.000	0,225	4,500	6.000	10.800	0,220	4,500
12	2.200	1.650	0,315	5,500	3.100	3.550	0,270	5,500	5.400	9.600	0,220	5,500
Profondità di Taglio Depth of Cut												

6CLHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

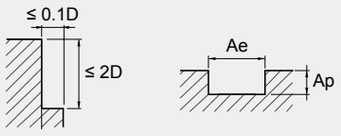
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
6	5.250	372	0,140	1,000	4.650	330	0,140	1,000	4.100	290	0,140	1,000
8	3.950	408	0,160	1,300	3.500	360	0,160	1,300	3.050	315	0,160	1,300
10	3.150	444	0,180	1,500	2.800	395	0,180	1,500	2.450	345	0,180	1,500
12	2.650	480	0,200	1,800	2.350	425	0,200	1,800	2.050	370	0,200	1,800
Materiale Material	Leghe di Titanio Titanium Alloy				Acciao Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
6	3.500	225	0,125	1,000	4.650	295	0,125	1,000	6.300	446	0,155	1,000
8	2.650	245	0,145	1,300	3.500	325	0,145	1,300	4.740	490	0,175	1,300
10	2.100	265	0,160	1,500	2.800	355	0,160	1,500	3.780	533	0,200	1,500
12	1.750	285	0,180	1,800	2.350	385	0,180	1,800	3.180	576	0,220	1,800
Profondità di Taglio Depth of Cut												

4SRHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

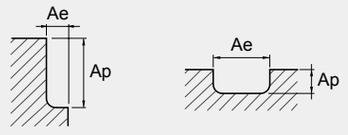
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
3	9.550	250	0,075	0,450	8.500	225	0,075	0,450	7.450	195	0,075	0,450
4	7.150	270	0,100	0,600	6.350	240	0,100	0,600	5.550	210	0,100	0,600
5	5.750	290	0,125	0,750	5.100	255	0,125	0,750	4.450	225	0,125	0,750
6	4.800	310	0,150	0,900	4.250	275	0,150	0,900	3.700	240	0,150	0,900
7	4.100	325	0,175	1,050	3.650	290	0,175	1,050	3.200	255	0,175	1,050
8	3.600	340	0,200	1,200	3.200	300	0,200	1,200	2.800	265	0,200	1,200
9	3.200	355	0,225	1,350	2.850	315	0,225	1,350	2.500	275	0,225	1,350
10	2.850	370	0,250	1,500	2.550	330	0,250	1,500	2.250	290	0,250	1,500
12	2.400	400	0,300	1,800	2.100	350	0,300	1,800	1.850	310	0,300	1,800
Materiale Material	Leghe di Titanio Titanium Alloy				Acciao Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
3	6.350	150	0,070	0,450	8.500	205	0,070	0,450	11.460	300	0,090	0,540
4	4.800	165	0,090	0,600	6.350	215	0,090	0,600	8.580	324	0,120	0,720
5	3.800	170	0,115	0,750	5.100	230	0,115	0,750	6.900	348	0,150	0,900
6	3.200	185	0,135	0,900	4.250	250	0,135	0,900	5.760	372	0,180	1,080
7	2.750	195	0,160	1,050	3.650	260	0,160	1,050	4.920	390	0,210	1,260
8	2.400	205	0,180	1,200	3.200	270	0,180	1,200	4.320	408	0,240	1,440
9	2.100	210	0,205	1,350	2.850	285	0,205	1,350	3.840	426	0,270	1,620
10	1.900	220	0,225	1,500	2.550	295	0,225	1,500	3.420	444	0,300	1,800
12	1.600	240	0,270	1,800	2.100	315	0,270	1,800	2.880	480	0,360	2,160
Profondità di Taglio Depth of Cut												

4SSHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

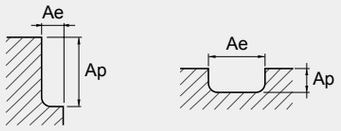
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciaio Legato - Acciao Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
4	7.150	270	0,100	0,600	6.350	240	0,100	0,600	5.550	210	0,100	0,600
6	4.800	310	0,150	0,900	4.250	275	0,150	0,900	3.700	240	0,150	0,900
8	3.600	340	0,200	1,200	3.200	300	0,200	1,200	2.800	265	0,200	1,200
10	2.850	370	0,250	1,500	2.550	330	0,250	1,500	2.250	290	0,250	1,500
12	2.400	400	0,300	1,800	2.100	350	0,300	1,800	1.850	310	0,300	1,800
16	1.800	510	0,400	2,400	1.600	455	0,400	2,400	1.400	395	0,400	2,400
Materiale Material	Leghe di Titanio Titanium Alloy				Acciao Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
4	4.800	165	0,090	0,600	6.350	215	0,090	0,600	8.580	324	0,120	0,720
6	3.200	185	0,135	0,900	4.250	250	0,135	0,900	5.760	372	0,180	1,080
8	2.400	205	0,180	1,200	3.200	270	0,180	1,200	4.320	408	0,240	1,440
10	1.900	220	0,225	1,500	2.550	295	0,225	1,500	3.420	444	0,300	1,800
12	1.600	240	0,270	1,800	2.100	315	0,270	1,800	2.880	480	0,360	2,160
16	1.200	305	0,360	2,400	1.600	410	0,360	2,400	2.160	612	0,480	2,880
Profondità di Taglio Depth of Cut												

5 & 6 TROHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

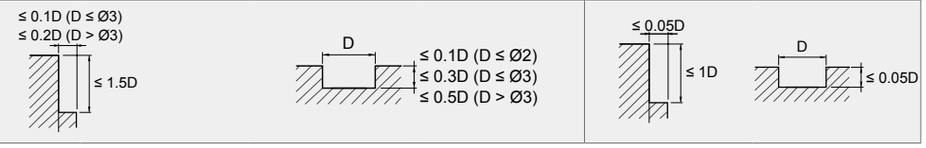
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB				Acciao Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc				Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
6	9.050	2.715	6,000	0,400	8.000	2.400	6,000	0,400	6.900	2.070	6,000	0,400
8	6.800	2.720	8,000	0,550	6.000	2.400	8,000	0,550	5.200	2.080	8,000	0,550
10	5.400	2.700	10,000	0,700	4.800	2.400	10,000	0,700	4.150	2.075	10,000	0,700
12	4.500	2.700	12,000	1,000	4.000	2.400	12,000	1,000	3.500	2.100	12,000	1,000
16	3.400	2.550	16,000	1,200	3.000	2.250	16,000	1,200	2.600	1.950	16,000	1,200
20	2.700	2.565	20,000	1,500	2.400	2.280	20,000	1,500	2.050	1.948	20,000	1,500
Materiale Material	Leghe di Titanio Titanium Alloy				Acciao Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm/min)	Ap Axial Depth	Ae Radial Depth
6	2.650	398	6,000	0,300	6.900	1.035	6,000	0,300	10.100	3.636	6,000	0,480
8	2.000	400	8,000	0,400	5.200	1.040	8,000	0,400	7.700	3.696	8,000	0,660
10	1.600	400	10,000	0,500	4.150	1.038	10,000	0,500	6.300	3.780	10,000	0,840
12	1.330	399	12,000	0,600	3.500	1.050	12,000	0,600	5.300	3.816	12,000	1,200
16	1.000	400	16,000	0,800	2.600	1.040	16,000	0,800	4.000	3.600	16,000	1,440
20	800	480	20,000	1,000	2.100	1.260	20,000	1,000	3.400	3.876	20,000	1,800
Profondità di Taglio Depth of Cut												

4SSHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

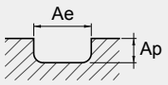
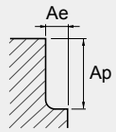
Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron < 350 HB		Acciao Bonificato - Acciaio Temprato Hardened Steel 38 - 55 HRc		Acciaio Bonificato - Acciaio Temprato Hardened Steel 55 - 68 HRc	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm/min)	Giri / Min RPM	Avanzamento Feed (mm/min)	Giri / Min RPM	Avanzamento Feed (mm/min)
6	4.900	300	4.500	270	4.300	250
8	3.600	320	3.250	300	3.000	270
10	2.800	350	2.700	320	2.500	300
12	2.400	400	2.250	360	2.000	340
Profondità di Taglio Depth of Cut						

3CA

Cutting Condition

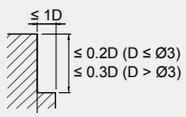
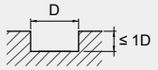
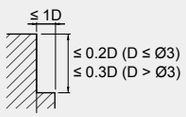
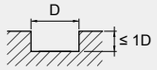
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Leghe di Alluminio Alluminium Alloys			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)		
		Fresatura Verticale Vertical Milling	Scanalatura Sloting	Fresatura Laterale Side Milling
3	24.000	200	1.690	1.800
4	22.000	230	1.730	1.910
6	16.000	245	1.880	2.120
8	12.700	270	1.900	2.140
10	10.000	315	1.990	2.140
12	8.400	350	2.210	2.430
16	6.360	430	2.400	2.550
		Ap = 0,75xD	Ap = 0,75xD	Ap = 0,75xD | Ae = 0,3xD
Profondità di Taglio Depth of Cut				

2SA

Cutting Condition

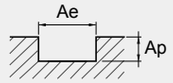
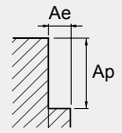
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Leghe di Alluminio Alluminium Alloys							
	300 m / min		240 m / min		240 m / min		200 m / min	
	Fresatura Laterale Side Milling		Scanalatura Sloting		Fresatura Laterale Side Milling		Scanalatura Sloting	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
1	34.000	500	34.000	400	34.000	400	34.000	300
2	34.000	800	32.000	720	32.000	720	27.000	400
3	27.000	1.200	21.000	800	21.000	800	18.000	500
4	20.500	1.300	16.000	850	16.000	850	14.000	600
5	16.500	1.400	13.000	850	13.000	850	11.000	620
6	14.000	1.600	11.000	940	11.000	940	9.400	650
8	10.000	1.700	8.000	1.000	8.000	1.000	6.800	680
10	8.000	1.800	6.500	1.000	6.500	1.000	5.400	720
12	7.000	1.900	5.400	1.000	5.400	1.000	4.500	800
Profondità di Taglio Depth of Cut								

3SA

Cutting Condition

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Leghe di Alluminio Alluminium Alloys			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)		
		Fresatura Verticale Vertical Milling	Scanalatura Sloting	Fresatura Laterale Side Milling
1	25.000	110	770	930
1,5	23.500	130	1.150	1.310
2	22.000	150	1.530	1.690
3	18.400	170	1.600	1.760
4	14.000	200	1.680	1.840
5	11.000	220	1.720	1.920
6	9.200	230	1.800	1.980
8	7.000	240	1.830	2.010
10	5.500	280	1.940	2.120
12	4.400	320	2.150	2.300
14	3.800	360	2.235	2.355
16	3.200	400	2.320	2.410
20	2.800	500	2.970	3.070
		Ap = 0,75xD	Ap = 0,75xD	Ap = 0,75xD | Ae = 0,3xD
Profondità di Taglio Depth of Cut				

4SST

Cutting Condition

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acciaio Basso Legato Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel Tool Steel - Cast Iron		Leghe di Titanio Titanium Alloy		Acciaio Inox Stainless Steel		Acciaio Temprato Hardened Steel	
	- 45 HRc						45 - 55 HRc	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
1	22.260	630	10.462	220	15.360	450	8.240	215
1,5	19.080	650	8.970	230	13.165	475	7.060	220
2	17.490	700	8.220	245	12.070	500	6.470	230
2,5	13.990	730	6.575	260	9.650	525	5.175	240
3	13.780	750	6.475	265	9.510	540	5.100	255
4	10.330	780	4.855	270	7.120	545	3.820	260
5	8.610	788	4.045	273	5.938	548	3.185	263
6	6.890	795	3.235	275	4.755	550	2.550	265
8	5.170	810	2.430	285	3.570	560	1.910	270
10	4.130	825	1.940	290	2.850	570	1.530	275
12	3.440	840	1.620	300	2.375	585	1.270	280
16	2.200	1.200	1.100	420	1.550	840	900	400
Profondità di Taglio Depth of Cut								

4CST

Cutting Condition

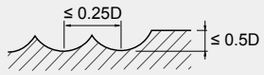
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acciaio Basso Legato Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel Tool Steel - Cast Iron		Leghe di Titanio Titanium Alloy		Acciaio Inox Stainless Steel		Acciaio Temprato Hardened Steel	
	- 45 HRc				45 - 55 HRc		- 55 HRc	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
1	22.260	630	10.462	220	15.360	450	8.240	215
1,5	19.080	650	8.970	230	13.165	475	7.060	220
2	17.490	700	8.220	245	12.070	500	6.470	230
2,5	13.990	730	6.575	260	9.650	525	5.175	240
3	13.780	750	6.475	265	9.510	540	5.100	255
4	10.330	780	4.855	270	7.120	545	3.820	260
5	8.600	790	4.050	275	5.950	550	3.200	263
6	6.890	795	3.235	275	4.755	550	2.550	265
8	5.170	810	2.430	285	3.570	560	1.910	270
10	4.130	825	1.940	290	2.850	570	1.530	275
12	3.440	840	1.620	300	2.375	585	1.270	280
Profondità di Taglio Depth of Cut	Ap ≤ 0.5 D							

2BD

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

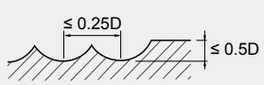
Cutting Condition

Materiale Material	Grafite Graphite	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)
0,5	28.000	1.350
0,6	27.600	1.400
0,8	26.800	1.450
1	26.000	1.500
1,5	24.000	1.650
2	22.000	1.800
3	19.000	2.000
4	16.000	2.400
5	15.000	2.500
6	14.000	2.600
8	12.000	2.800
10	11.000	3.000
12	10.000	3.200
Profondità di Taglio Depth of Cut		

4BD

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

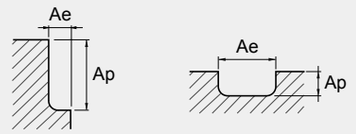
Cutting Condition

Materiale Material	Grafite Graphite	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)
1,5	24.000	2.000
2	22.000	2.200
3	19.000	2.500
4	16.000	2.700
6	14.000	3.000
8	12.000	3.500
10	11.000	4.000
12	10.000	4.600
Profondità di Taglio Depth of Cut		

2CD

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

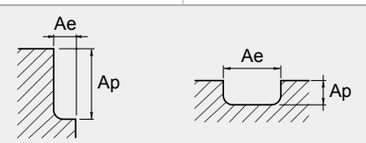
Cutting Condition

Materiale Material	Grafite Graphite			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
0,5	39.000	210	0,750	0,030
0,6	38.400	240	0,900	0,035
0,8	37.200	270	1,200	0,045
1	36.000	300	1,500	0,050
1,5	33.000	315	2,250	0,075
2	30.000	330	3,000	0,100
3	21.000	450	4,500	0,300
4	16.000	380	6,000	0,400
Profondità di Taglio Depth of Cut				

4CD

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

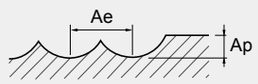
Cutting Condition

Materiale Material	Grafite Graphite			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
2	30.000	470	3,000	0,100
3	21.000	640	4,500	0,300
4	16.000	540	6,000	0,400
6	10.500	590	9,000	0,600
8	8.000	610	12,000	0,800
10	6.400	640	15,000	1,000
12	5.300	630	18,000	1,200
Profondità di Taglio Depth of Cut				

2NBC

Cutting Condition

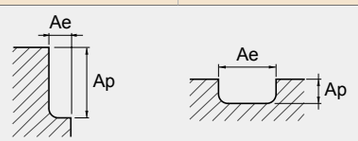
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
0,2	36.600	528	0,003	0,040
0,3	34.800	600	0,005	0,060
0,4	33.000	684	0,010	0,080
0,5	31.200	780	0,020	0,100
0,6	30.000	912	0,030	0,120
0,8	27.600	1.176	0,035	0,160
1	25.200	1.440	0,050	0,200
1,5	21.600	1.560	0,070	0,300
2	19.200	1.740	0,100	0,400
3	16.800	1.920	0,120	0,600
4	14.400	2.040	0,150	0,800
6	12.000	2.400	0,200	1,200
Profondità di Taglio Depth of Cut				

2NCC

Cutting Condition

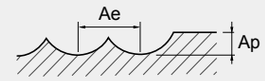
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
0,2	31.680	72	0,002	0,014
0,3	29.640	90	0,003	0,018
0,4	27.840	120	0,004	0,030
0,5	26.040	150	0,005	0,036
1	19.080	540	0,024	0,180
1,5	15.240	840	0,036	0,360
2	13.200	996	0,072	0,480
3	11.400	1.320	0,096	0,720
4	10.440	1.380	0,120	1,200
6	8.400	1.440	0,168	1,440
Profondità di Taglio Depth of Cut				

2BY

Cutting Condition

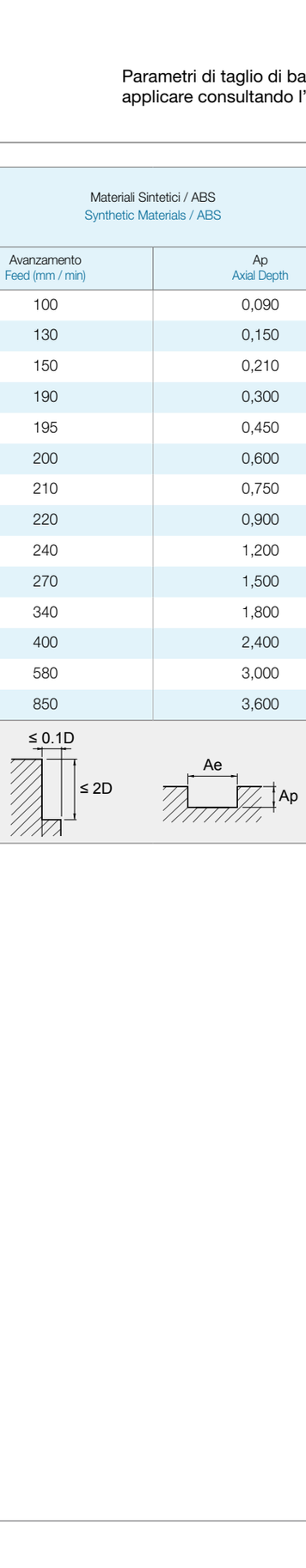
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Materiali Sintetici / ABS Synthetic Materials / ABS			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
0,3	40.000	60	0,015	0,060
0,5	37.000	120	0,025	0,100
1	32.000	180	0,060	0,200
1,5	26.500	200	0,090	0,300
2	21.000	210	0,110	0,400
2,5	20.000	225	0,120	0,500
3	19.000	240	0,130	0,600
4	17.000	270	0,150	0,800
5	15.000	300	0,200	1,000
6	12.000	350	0,250	1,200
8	9.000	420	0,300	1,600
10	6.000	600	0,500	2,000
12	4.000	870	0,500	2,400
Profondità di Taglio Depth of Cut				

2SY

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Materiali Sintetici / ABS Synthetic Materials / ABS			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
0,3	40.000	100	0,090	0,210
0,5	35.000	130	0,150	0,350
0,7	30.000	150	0,210	0,490
1	23.000	190	0,300	0,700
1,5	21.500	195	0,450	1,050
2	20.000	200	0,600	1,400
2,5	18.750	210	0,750	1,750
3	17.500	220	0,900	2,100
4	15.000	240	1,200	2,800
5	13.500	270	1,500	3,500
6	10.500	340	1,800	4,200
8	8.000	400	2,400	5,600
10	5.000	580	3,000	7,000
12	3.800	850	3,600	8,400
Profondità di Taglio Depth of Cut				

2EBTHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron				Acciao Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel			
	< 350 HB				38 - 55 HRc				55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
0,2	36.000	220	0,003	0,003	30.000	180	0,003	0,003	27.000	150	0,003	0,003
0,3	34.000	260	0,005	0,005	27.000	200	0,005	0,005	24.000	170	0,005	0,005
0,4	32.000	330	0,007	0,007	24.000	300	0,007	0,007	21.000	250	0,007	0,007
0,5	29.000	550	0,015	0,015	22.000	450	0,015	0,015	19.000	350	0,015	0,015
0,6	27.000	700	0,018	0,018	20.000	600	0,018	0,018	18.000	400	0,018	0,018
0,8	24.000	1.000	0,022	0,022	18.500	800	0,022	0,022	17.000	600	0,022	0,022
1	21.000	1.200	0,030	0,030	17.000	1.000	0,030	0,030	16.000	800	0,030	0,030
Materiale Material	Leghe di Titanio Titanium Alloy				Acciaio Inox Stainless Steel				Rame Copper			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
0,2	24.000	130	0,003	0,003	30.000	160	0,003	0,003	43.000	260	0,004	0,004
0,3	23.000	150	0,005	0,005	27.000	180	0,005	0,005	41.000	310	0,006	0,006
0,4	21.500	200	0,006	0,006	24.000	270	0,006	0,006	38.500	400	0,008	0,008
0,5	19.500	330	0,014	0,014	22.000	400	0,014	0,014	35.000	650	0,018	0,018
0,6	18.000	420	0,016	0,016	20.000	540	0,016	0,016	32.500	850	0,022	0,022
0,8	16.000	600	0,020	0,020	18.500	720	0,020	0,020	29.000	1.200	0,026	0,026
1	14.000	720	0,027	0,027	17.000	900	0,027	0,027	25.000	1.450	0,036	0,036

1FE

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Grafite Graphite		Grafite Graphite	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
0,2	40.000	1.400	30.000	800
0,5	40.000	1.600	30.000	900
0,8	38.000	1.800	28.000	1.100
1	38.000	2.000	28.000	1.300
1,2	36.000	2.050	26.000	1.350
1,5	34.000	2.100	24.000	1.400
2	32.000	2.200	23.000	1.500
2,5	28.000	2.300	21.000	1.550
3	25.000	2.400	18.000	1.600
4	20.000	2.400	15.000	1.700
6	13.500	2.500	10.000	1.800
Profondità di Taglio Depth of Cut				

2NCDHR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron		Acciao Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel		Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel	
	< 350 HB		38 - 55 HRc		55 - 68 HRc	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
0,2	36.000	220	0,003	0,003	30.000	180
0,3	34.000	260	0,005	0,005	27.000	200
0,4	32.000	330	0,007	0,007	24.000	300
0,5	29.000	550	0,015	0,015	22.000	450
0,6	27.000	700	0,018	0,018	20.000	600
0,8	24.000	1.000	0,022	0,022	18.500	800
1	21.000	1.200	0,030	0,030	17.000	1.000
Materiale Material	Leghe di Titanio Titanium Alloy		Acciaio Inox Stainless Steel		Rame Copper	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
3	1.000	60	1.200	65	1.800	120
4	940	70	1.100	75	1.700	145
6	870	85	1.050	90	1.550	170
8	800	95	950	105	1.450	190
10	740	105	900	115	1.350	215
12	670	120	800	130	1.200	240
Profondità di Taglio Depth of Cut						

2CRRC

Cutting Condition

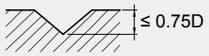
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acciaio Basso Legato Carbon Steel			Acciao Legato - Acciaio per Utensili Alloy Steel - Tool Steel			Acrilici Bonificato Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel		
		Avanzamento Feed (mm / min)			Avanzamento Feed (mm / min)			Avanzamento Feed (mm / min)	
Diametro Diameter	Giri / Min RPM	Sgrossatura Roughing	Finitura Finishing	Giri / Min RPM	Sgrossatura Roughing	Finitura Finishing	Giri / Min RPM	Sgrossatura Roughing	Finitura Finishing
1	8.800			7.050			5.650		
1,2	8.200			6.550			5.250		
1,6	7.000			5.600			4.500		
3	3.000			2.400			1.900		
4,5	2.550	50	60	2.050	40	55	1.650	30	40
5,5	2.250			1.800			1.450		
8	1.500			1.200			950		
10	1.300			1.050			850		
12	1.000			800			650		

2CE

Cutting Condition

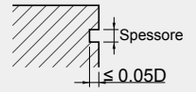
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acciaio Basso Legato Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel Tool Steel - Cast Iron		Acciao Legato - Acciaio Bonificato Acciaio Temprato Prehardened Steel Hardened Steel		Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel		Leghe di Alluminio Alluminium Alloys	
	< 350 HB		38 - 55 HRc		55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
3	1.500	100	1.200	50	1.000	40	2.000	200
4	1.350	100	1.100	50	950	40	1.800	200
6	1.200	100	1.000	50	900	40	1.600	200
8	1.100	100	900	50	800	40	1.500	200
10	1.000	100	900	40	800	30	1.400	200
12	900	90	850	40	750	30	1.300	200
Profondità di Taglio Depth of Cut								

2TC

Cutting Condition

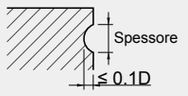
Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acrilici / ABS Acrylic / ABS		Leghe di Alluminio Alluminium Alloys	
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
3	30.310	550	27.560	550
4	22.730	575	20.670	575
5	18.180	660	16.530	660
6	15.300	720	13.780	720
8	11.370	835	10.335	835
10	9.100	990	8.270	990
12	7.580	1.105	6.890	1.105
Profondità di Taglio Depth of Cut				

4RTCC

Cutting Condition

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Materiale Material	Acciaio Basso Legato Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel Tool Steel - Cast Iron		Acciao Legato - Acciaio Bonificato Acciaio Temprato Prehardened Steel Hardened Steel		Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel		Leghe di Alluminio Alluminium Alloys	
	< 350 HB		38 - 55 HRc		55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)	Giri / Min RPM	Avanzamento Feed (mm / min)
6	1.430	70	950	50	720	40	1.900	100
8	1.070	60	720	40	540	30	1.500	80
10	860	50	580	35	430	25	1.200	70
Profondità di Taglio Depth of Cut								

STSFH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron				Acciao Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel			
	< 350 HB				38 - 55 HRc				55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
10	9.550	2.870	0,100	0,200	8.920	890	0,100	0,200	7.000	700	0,100	0,200
12	7.960	2.390	0,100	0,200	7.430	740	0,100	0,200	5.840	580	0,100	0,200
16	5.970	2.390	0,200	0,200	5.570	670	0,200	0,200	4.380	530	0,200	0,200
20	4.780	1.910	0,200	0,200	4.460	530	0,200	0,200	3.500	420	0,200	0,200
25	3.820	1.530	0,200	0,200	3.570	430	0,200	0,200	2.800	340	0,200	0,200

STTRH

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron				Acciao Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel				Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel			
	< 350 HB				38 - 55 HRc				55 - 68 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
10	11.150	4.460	0,100	0,250	8.280	3.310	0,100	0,250	6.370	2.550	0,100	0,250
12	10.080	4.030	0,100	0,300	7.700	3.080	0,100	0,300	6.100	2.440	0,100	0,300
16	9.950	5.970	0,100	0,350	6.970	4.180	0,100	0,300	5.570	3.340	0,100	0,300
20	9.080	7.260	0,100	0,400	6.370	5.100	0,100	0,400	5.100	4.080	0,100	0,400
25	8.030	8.030	0,100	0,500	5.730	5.730	0,100	0,500	4.590	4.590	0,100	0,500

STSF

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Leghe di Alluminio Alluminium Alloys				Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron				Acciao Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel			
					< 350 HB				38 - 55 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
10	15.920	6.370	0,200	0,250	9.550	2.870	0,100	0,200	8.920	890	0,100	0,200
12	13.270	5.310	0,200	0,300	7.960	2.390	0,100	0,200	7.430	740	0,100	0,200
16	9.950	4.980	0,200	0,300	5.970	2.390	0,200	0,200	5.570	670	0,200	0,200
20	7.960	3.980	0,200	0,400	4.780	1.910	0,200	0,200	4.460	530	0,200	0,200
25	6.370	3.190	0,200	0,400	3.820	1.530	0,200	0,200	3.570	430	0,200	0,200

STTR

Parametri di taglio di base, verificare eventuali correzioni da applicare consultando l'apposita tabella a pagina 188.

Cutting Condition

Materiale Material	Leghe di Alluminio Alluminium Alloys				Acciaio Basso Legato - Acciaio per Utensili - Ghisa Carbon Steel - Alloy Steel - Tool Steel - Cast Iron				Acciao Legato - Acciaio Bonificato - Acciaio Temprato Prehardened Steel - Hardened Steel			
					< 350 HB				38 - 55 HRc			
Diametro Diameter	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth	Giri / Min RPM	Avanzamento Feed (mm / min)	Ap Axial Depth	Ae Radial Depth
10	15.920	6.370	0,200	0,250	11.150	4.460	0,100	0,250	8.280	3.310	0,100	0,250
12	13.270	5.310	0,200	0,300	10.080	4.030	0,100	0,300	7.700	3.080	0,100	0,300
16	9.950	4.980	0,100	0,300	9.950	5.970	0,100	0,350	6.970	4.180	0,100	0,300
20	7.960	3.980	0,100	0,400	9.080	7.260	0,100	0,400	6.370	5.100	0,100	0,400
25	6.370	6.370	0,100	0,500	8.030	8.030	0,100	0,500	5.730	5.730	0,100	0,500

NOTE

SOLUTION TOOL

RIVENDITORE - DEALER